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“There is scarcely any well-informed person who, if he has the will, has not also the power to add something essential to the general stock of knowledge, if he will only observe regularly and methodically some particular class of facts which may most excite his attention, or which his situation may best enable him to study with effect.”—*Sir J. Herschel.*

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Page	13,	line	17	from	top,	for	“ <i>vitrcipennis</i> ,”	read	“ <i>vitripennis</i> .”
„	20,	„	5	„	„	„	“ <i>Erithon</i> ”	read	“ <i>Erithon</i> .”
„	115,	„	10	„	„	„	“ <i>Raynard</i> ”	read,	“ <i>Rayward</i> .”
„	140,	„	2	„	„	„	“ <i>picaella</i> ”	read	“ <i>picarella</i> .”
„	141,	„	42	„	„	„	“1878,”	read	“1873.”
„	260,	„	16	„	„	„	“ <i>Eulopholnotus</i> ”	read	“ <i>Eulophonotus</i> .”
„	267,	„	11	„	„	„	“ <i>Ray</i> ”	read	“ <i>Say</i> .”

EXPLANATION OF PLATES.

- Plate I.—*Siphonaptera* from Uganda (see page 79).
 „ II.—*Ornithopsylla lætitæ*, Rothschild. (see page 231).

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THE
ENTOMOLOGIST'S
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SECOND SERIES—VOL. XVIII.

[VOLUME XLIII].

NOTES ON VARIOUS BRITISH COLEOPTERA.

BY G. C. CHAMPION, F.Z.S.

The following notes on various British beetles may interest Coleopterists:—

- *Lathrobium elongatum*, L., var. *nigrum*, Joy, = *L. elongatum*, L., var. *fraudulentum*, Ganglb., see Reitter, Wien. ent. Zeit., 1907, p. 209.

Hydnobius punctatus, Sturm.—Dr. A. Fleischer (Wien. ent. Zeit., 1907, pp. 265—268) treats *H. punctatissimus*, Steph., as a variety of this species. *H. multistriatus*, Gyll., is a very close ally of *H. punctatus*, Sturm, and may perhaps occur in Britain.

Anisotoma curta, Fairm.—Mr. Gardner, of Hartlepool, has taken this rare British insect at Hesleden. He gave me a pair of it some time back, and they have remained in my collection as *A. dubia* var. ? till recently, when Commander Walker showed me a single female example of the same form that he had taken near Oxford on October 19th, 1907, *A. curta* may be known from large *A. dubia*, which has very similarly-formed posterior femora and tibiæ in the male, by its more elongate shape, the more rounded sides of the prothorax, and the smaller apical joint of the antennæ. I am indebted to Dr. Fleischer for confirming the identification of these insects, which agree perfectly with the example taken by myself at Esher in 1873.

Bruchus affinis, Fröl. (*flavimanus*, Boh.).—Some years ago Schilsky examined the so-called *B. affinis* of my British collection and pronounced them to be *B. rufimanus*, Boh., var. *velutinus*, Muls.*

* Cf. Schilsky, in Küster's Die Käfer Europa's, xxxxi, 22.

I have also seen specimens of this form in the British Museum and in the collection of Commander Walker. It occurs sparingly in various parts of Kent (Sittingbourne, Sheppey, and Chatham) in company with the true *B. rufimanus*, from which it differs in the greyer and more uniformly coloured vestiture of the elytra. The true *B. affinis* (which I have taken in Corsica) probably has no claim to a place on the British list; it has two almost bare black spots on the pygidium as in *B. pisi*, L., as noted by Boheman.

Ceuthorrhynchidius chevrolati, Bris. in litt.—The name *C. barnevillei*, Gren. (1866), should be used for this species, that of Brisout being simply a “*nomen nudum*.”

Ceuthorrhynchus chalybæus, Germ.—Continental authorities are unable, I believe, to recognise *C. chalybæus* with any certainty, but as Germar expressly states that the femora are “unarmed,” it is evident that the species known under this name in British collections has been incorrectly identified. Our insect is, in fact, the *C. timidus* of Weise (Deutsche ent. Zeitschr., 1883, p. 325), originally described from Eastern Europe, but now known to be much more widely distributed. I have taken it in abundance on *Sisymbrium officinale* at Plumstead, Dartford, and elsewhere.

Ceuthorrhynchus viridipennis, Bris. ?—This insect is mentioned (partly on my authority), but not described, in Canon Fowler’s “British Coleoptera.” It is the *C. moguntiacus* of Schultze (Deutsche ent. Zeitschr., 1895, p. 420), a species common on crucifers, especially *Diplotaxis tenuifolia*, in various parts of Germany. I have taken odd specimens of it on several occasions at Caterham, Mickleham, and Guildford, but never could be sure as to its food-plant, and Dr. Sharp gave me an example of it many years ago under the name *C. viridipennis*, Bris. These individuals are smaller, narrower, and less shining than *C. timidus*, Weise, and they have the head and prothorax a little less coarsely and more densely punctured, and (when the insect is in fresh condition) more pubescent. *C. moguntiacus* and *C. timidus* may, nevertheless, prove to be forms of one species, when a long series of each can be compared, and though both attack Cruciferae, it is hardly likely, to judge from my own experience, that their actual food-plant is the same. I am indebted to the late A. Schultze and to Dr. Karl Daniel for their assistance in determining these two insects.

Poophagus nasturtii, Germ.—All recent continental authors, including Heyden, Reitter, and Weise (1891), refer this species to *Ceuthorrhynchus*.

NOTES ON SOME GENERA AND SPECIES OF *THYSANOPTERA* NEW TO THE BRITISH FAUNA.

BY RICHARD S. BAGNALL, F.E.S.

Very little attention has been given to the *Thysanoptera* by British Naturalists since Haliday's papers* on the subject were published more than half a century ago, though it is an Order of more than usual economic interest. An excellent Monograph of them has been written by Prof. Uzel and of the species which he recognises no less than one hundred are from his own country, Bohemia. Prof. O. M. Reuter, of Helsingfors, has also added much to our knowledge of the *Thysanoptera*, whilst more recently Mr. W. E. Hinds has contributed a paper towards a Monograph of the North American forms.†

During my spare moments, unfortunately much limited, I have this year collected a large number of *Thrips* of which more than one half yet await identification, but of those named with reasonable certainty many are of special interest, and in a paper to be published shortly by the Natural History Society of Northumberland, Durham and Newcastle-on-Tyne, an account of these creatures will be given. The following species are now worthy of note, as, with the exception of *Liothrips setinodis*, Reut., and *Aptinothrips nitidula*, Hal., all are, so far as I am aware, new to the fauna of Great Britain, whilst representatives of the genera *Megalothrips*, Uzel, *Uzeliella*, mihi, *Oxyothrips*, Uzel, and *Parthenothrips*, Uzel, were previously unknown as British.

Sub-Order TUBULIFERA.

Megalothrips lativentris, Heeger.

Phlæothrips lativentris, Heeger, Sitzungsab. d. Akad. d. Wiss. Wien, ix, p. 479, pl. xviii, 1852 : *Phlæothrips longispina*, Reuter, Diagn. öfv. nya *Thysanoptera* f. Finland, ‡ p. 8, 1878—79 : *P. tibialis*, *Idem ibidem*, p. 9 : *P. longispina*, Reuter, *Thysanoptera Fennica*, § p. 8, 1880 : *P. tibialis*, *Idem ibidem*, p. 10 : *Megalothrips lativentris*, Uzel, Monographie der Ordnung *Thysanoptera*, p. 225, pls. iii and vii, figs. 20, 22, 23, 115, 116, and 117. 1895.

One of the largest European species ; the sexes are very different

* Entomological Magazine, vol. iii, 439—451 ; vol. iv, 144—146, 1837 ; and in Walker's "List of the specimens of Homopterous Insects in the Collection of the British Museum," pt. iv, Order iii, *Physapoda*, pp. 1094—1118, plates v—viii, 1852.

† Proc. U. S. Nat. Museum, vol. xxvi.

‡ Öfversigt af Finska Vetenskaps-Societätens Förhandlingar. Helsingfors, 21.

§ Bidrag till Kännedom af Finlands Natur och Folk.

in structure, so much so that Reuter described them as two species, the ♀ under the name of *tibialis*, and the ♂ as *longispina*.

In June of this year (1907) Dr. Randell Jackson sent me a large ♀ from Delamere Forest, and later he was fortunate enough to secure further specimens, including a single example of the ♂. They were found amongst fallen leaves lying on a bank clothed with heather and bilberry.

Distribution. Vienna (*a. d.*, 1818, Ritter v. Goldegg and later Heeger), Finland (Reuter), and Bohemia (Uzel).

Liothrips setinodis, Reuter.

Phlæothrips setinodis, Reuter, The Scottish Naturalist, v, p. 310, 1880 : *Liothrips setinodis*, Uzel, Mon. der Ordn. *Thysanoptera*, p. 263, pl. vii, fig. 147, 1895.

Another fairly large species, of which I have taken a fine ♀ on elm (31.VIII.07), Gibside, Co. Durham. Uzel says that it is found on the under-side of oak leaves and, in the winter, in moss.

Distribution. Scotland (Reuter) and Bohemia (var. *pragensis* only, Uzel).

Trichothrips cæspitis, Uzel.

Trichothrips cæspitis, Uzel, Mon. der Ordn. *Thysanoptera*, p. 248, 1895.

A single example, apparently referable to this apterous species, taken at Gibside in moss. It is one of the smallest forms, being less than a millimètre in length and is easily recognised from the closely allied *T. pedicularia*, Haliday, and *T. semicæca*, Uzel, by its small size, the absence (or abbreviation) of the ocelli, and by the comparatively short proboscis, which only extends to the middle of the prosternum. My specimen does not agree, however, with the published description in the coloration of the head.

Uzel says that the species is a turf-dweller (*Rasenbewohner*), whereas others of the genus are invariably found under bark, or in *Polyporus*.

Sub-Order TEREBRANTIA.

Euthrips robusta, Uzel.

Physopus robusta, Uzel, Mon. der Ordn. *Thysanoptera*, p. 104, pl. v, figs. 55 and 56, 1895.

In the flowers of the field scabious (*Scabiosa arvensis*) at Hart and near Blaydon-on-Tyne, Co. Durham, August and September. Apparently very local.

Distribution. Bohemia (Uzel).

Oxyothrips ajugæ, Uzel.

Oxyothrips ajugæ, Uzel, Mon. der Ordn. *Thysanoptera*, p. 136, pl. v, fig. 67, 1895.

Very local and scarce, in the flowers of the common bugle (*Ajuga reptans*), Ravensworth, Winlaton Mill, and Gibside, Co. Durham. May and June.

Distribution. Bohemia (Uzel).

Oxyothrips parviceps, Uzel.

Oxyothrips parviceps, Uzel, Mon. der Ordn. *Thysanoptera*, p. 139, pl. vi, fig. 72, 1895.

Apparently widely distributed, occurring in the flowers of heather and heath (*Calluna vulgaris*, *Erica tetralix*, &c.), Brodick, Arran; Colintrave and Ormidale in the Kyles of Bute; Annan, in the Solway district; Gibside, Co. Durham, and Haydon Bridge, Northumberland.

Distribution. Bohemia (Uzel).

Uzeliella, gen. nov.

On February 25th, 1907, at a Meeting of the Royal Physical Society, Edinburgh, I had the pleasure of provisionally describing under the name of *Carinopleuris lubbocki* an apterous and primitive creature which was then thought to be a new type of insect. It undoubtedly belongs to the *Thripidæ*.

The ♀ is like *Aptinothrips*, wingless and without ocelli, differing however from the species of that genus in having the abdomen laterally keeled, and in the form of the antennæ, which are six-jointed, the third joint being strongly transverse and broader than the preceding, and the sixth joint broadly pear-shaped. Further, the saw-like ovipositor is evidently laterally broader than in *Aptinothrips* and has the front outwardly-curved edge more strongly serrate.

Uzeliella lubbocki, sp. nov.

Length, .75 mm., yellowish-brown, linear, parallel-sided, body smooth and shining, though slightly rugose transversely. Very much like a small example of *Aptinothrips rufa*, Gmel., but easily differentiated by the above generic characters.

A single ♀ taken amongst thrown-up seaweed whilst searching for maritime *Collembola* at Whitley Bay, Northumberland, October, 1906. I have since that date repeatedly searched the locality for further specimens, but without success, the exact spot having un-

fortunately been spoilt by drainage operations. It is as a rule very unsatisfactory to have to describe a new species from a solitary specimen and it is for that reason that I have withheld publication so long, even now, owing to the fact that the type-slide was slightly damaged in the post, I therefore prefer to regard the above description as merely provisional. I have pleasure in naming the species in honour of Lord Avebury, to whose kindness I owe much.

Aptinothrips rufa, Gmel., var. *connaticornis*, Uzel.

This variety differs from the type in having the three apical antennal segments connate, thus forming a single joint. Winlaton Mill, Co. Durham.

Aptinothrips nitidula, Hal.

A very small form described by Haliday in 1836 (Ento. Mag., vol. iii, p. 446) which does not seem to have been met with by any other naturalist. In July of this year I found the species on the Arran coast, where it occurs on the Sea-Aster (*Aster tripolium*), and, I think, the Sea-Milkwort (*Glaux maritima*). Haliday suggested that its food-plant was the Sea-Plantain (*Plantago maritima*).

Heliothrips femoralis, Reuter.

Heliothrips femoralis, Reuter, Med. af. Soc. p. Fauna et Flora Fennica, xvii, p. 165, 1891 : Uzel, Mon. der Ordn. *Thysanoptera*, p. 170, 1895 : Bergroth, Ann. Soc. Ent. Belgique, xl, p. 67, 1896 : Hinds, North American *Thysanoptera*, p. 172, 3, pl. v and vi, figs. 55 to 57, 1903 : *Heliothrips cestri*, Pergande, Ins. Life, vii, No. 5, pp. 390, 1, 1895.

A hothouse species, very distinct from the common *H. hæmorrhoidalis*, Bouché. Since taking this insect in one of Mr. Cookson's orchid houses at Wylam-on-Tyne, Northumberland (VIII.07), I have seen an example captured by Mr. C. O. Waterhouse at Acton (22. VIII.06) and now in the British Museum.

Distribution. Finland (Reuter) and North America (Pergande and Hinds).*

Parthenothrips dracænæ, Heeger.

Heliothrips dracænæ, Heeger, Sitzungsab. d. Akad. d. Wiss. Wien, ix, p. 365, 1852 : Jordan, Zeitschr. f. Wiss. Zool., 1888, p. 47 : Reuter, *Thysanoptera*, i, Finska Orangerier, p. 166, 1891 : *Thrips dracænæ*, Regel, Bull. Phys. Math. Acad. St. Petersb., 1858, p. 632, figs. 4 and 5 : *Parthenothrips dracænæ*, Uzel, Mon. der Ordn. *Thysanoptera*, p. 170, pls. ii and vi, figs. 12—14, and 93, 1895 : Hinds, North American *Thysanoptera*, p. 176, pl. vi, figs. 62—65.

Another typical hothouse form of wide distribution; there is a single carded specimen in the British Museum, taken by Mr. C. O. Waterhouse at Acton. I would here take this opportunity of expressing my gratitude to him for his kindness in allowing me to examine this and many more interesting species of *Thrips*.

Distribution. Vienna (Heeger and von Frauenfeld), Finland (Reuter), Bohemia (Uzel), St. Petersburg (Regel), Germany (Jordan and Bohls) and North America (Pergande and Hinds).*

Thrips communis, Uzel.

Thrips communis, Uzel, Mon. der Ordn. *Thysanoptera*, p. 176, pl. vi, fig. 100, 1895.

I have beaten a large number of this small insect from the bitter-sweet (*Solanum dulcamara*) and potato plant (*Solanum tuberosum*), Shalwell, Hart, and Blaydon, Co. Durham. This and the following species are apparently attached to the leaves and flowers of the *Solanaceæ*.

Distribution. Bohemia (Uzel).

Thrips major, Uzel.

Thrips major, Uzel, Mon. der Ordn. *Thysanoptera*, p. 179, 1895.

Taken in company with, and in the same localities as, *T. communis*, also at Haydon Bridge, Northumberland, October.

Distribution. Bohemia (Uzel).

It must be acknowledged that there is some considerable difficulty in the identification of the species of certain genera, notably *Thrips sensu strictu* and *Euthrips* (*Physopus*). I have gone very carefully into the identification of the species herein noted and not only do they agree (so far as I may be allowed to judge) with Uzel's published descriptions, but the habitats of the different forms are identical.

Prof. Uzel has very generously promised me co-types of a number of his species, which will be invaluable in the working out of my own captures, as well as in settling the determination of some of Haliday's species which (owing to meagre descriptions) have not as yet been satisfactorily classified.

The Groves, Winlaton-on-Tyne :

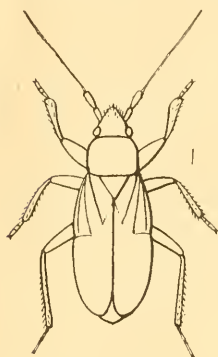
November 20th, 1907.

* In November of this year (1907) I discovered both *H. femoralis*, Reut., and *P. dracæne* Heeger, in large numbers in Brussels and Antwerp, Belgium.—R. S. B.

PACHYCOLEUS RUFESCENS, SAHLB. (FAM. CERATOCOMBIDÆ)
IN DEVONSHIRE.

BY G. C. CHAMPION, F.Z.S.

During a visit to my friend, Mr. Philip de la Garde, at Christow, South Devon, in August last, he was kind enough to give me a few *Hemiptera-Heteroptera* he had picked up at odd times in Devonshire. Amongst these I have recently detected a specimen of *Pachycoleus*



rufescens, Sahlb., a genus and species not hitherto recorded as British. The insect in question, a minute fragile creature, was shaken from moss in a swampy wood near Dawlish last March, and the actual locality was visited by Mr. de la Garde and myself in company a day or two before I went to Christow. The genus *Pachycoleus* is closely related to *Ceratocombus* and *Cryptostemma* (= *Dipsocoris*, Halid.), the only other European genera of the Family, but it may be known from both of them by the narrow, subquadrate, non-trapezoidal pronotum,

the longer rostrum, and the comparatively short second joint of the antennæ. *P. rufescens* is not unlike *Cryptostemma alienum*, H.-S., the upper surface being opaque and the head very little longer than in that species; but it is reddish-brown in colour, much smaller (the size nearly agreeing with that of *C. pusillum*, Sahlb.), less elongate, and not so depressed, and, as already stated, the pronotum is differently shaped. I have seen *C. alienum* in abundance amongst the shingle on the banks of the river at Watersmeet near Lynmouth, and also sparingly at Christow, and it is probable that the *Pachycoleus* may be found in similar situations.

The brief description appended, taken from Sahlberg's diagnosis (published in 1875), applies to the Dawlish insect:—

PACHYCOLEUS RUFESCENS.

Obovate, reddish-brown, opaque, thinly pubescent, abdomen fuscous, antennæ and legs flavous; head large, triangular, somewhat convex; pronotum distinctly broader than long, transversely convex; hemelytra subcoriaceous, a little shorter than the abdomen, narrowly rounded at the apex; legs sparsely, shortly, setose; anterior tibiæ dilated at the apex; tarsi short.

Long., $\frac{1}{2}$ lin.

Hab.: Finland.

This species has also been recorded from other European localities, but is apparently rare. It is very nearly related to, and perhaps not

really distinct from, *P. waltli*, Fieb., the latter having the body glabrous and the pronotum less transverse. I am indebted to Mr. E. Saunders for comparing the Dawlish specimen with a continental example received from M. Montandon.

Horsell: December 12th, 1907.

THE PUPAL AND ADULT STAGES OF A FLY NEW TO BRITAIN,
PIPUNCULUS MELANOSTOLUS, BECKER.

BY HUGH SCOTT, B.A. (CANTAB.).

While collecting in the part of Epping Forest near Chingford on March 25th, 1907, I found a small dark puparium, from which emerged on May 10th a male of a species of *Pipunculus*. Dr. Sharp, after examining the fly, concluded that it belongs to a species not previously recorded from Britain, *P. melanostolus*, described by Becker (Berlin Ent. Zeit., xlii, 1897, p. 40). Mr. Verrall, to whom also I am indebted for examining the fly, agrees in his opinion with Dr. Sharp.

The chief reason for recording the species lies in the fact that, so far as it has been possible to ascertain, there is no previous statement whatever of the finding of the pupal stage of any Pipunculid in Britain. On the whole the early stages of *Pipunculidæ* may be said to be not very widely known. The life-history of the Family has been described, and several puparia figured, by Dr. R. C. L. Perkins, in a Report of Work of the Experiment Station of the Hawaiian Sugar Planters' Association (Bulletin I, Part IV, 1905), dealing with a number of Australian and Hawaiian species.

The only memorandum which I have states that the puparium was found in rotten wood. Dr. Perkins who has examined it, states that it belongs to the common type of puparium of those Pipunculids which pupate in the soil or under *débris* on its surface (at any rate not exposed on the surfaces of living leaves). It is much of the same type as the puparium shown in Pl. VII, fig. 3, of his work referred to. It is somewhat short and broad, very dark piceous, with the surface dull, finely and reticulately rugulose. It is somewhat flattened dorsally, the ventral surface being much more convex; it has transverse furrows, more marked on the dorsal, scarcely at all on the ventral, surface. Dorsolaterally there is a longitudinal row of oblique impressions; two other longitudinal rows of somewhat marked impressions

are borne laterally, and some rather vague ones ventrolaterally. The length, as far as can be judged from piecing together the ruptured puparium, is about 4 mm.; greatest breadth just over 2 mm. The inner surface is smooth and shining.

It was ruptured at the anterior end, in the manner which Perkins describes (*op. cit.* p. 129) for all members of the Family in which he has investigated the puparia; the dorsal segment (fig. 1 *d*) bearing

the respiratory processes becoming detached from the rest of the puparium, and the ventral segment corresponding therewith (fig. 1 *b*) also being loosened along its hind border. In the specimen in question this ventral portion has since separated into two curved plates; a small anterior piece (fig. 1 *a*), which in the bursting due to emergence of the fly remained attached to the above-mentioned ventral segment, and this ventral segment (fig. 1 *b*) itself. This segment, the one corresponding to the dorsal plate bearing the respiratory processes, bears at its front margin, somewhat near the ventral middle

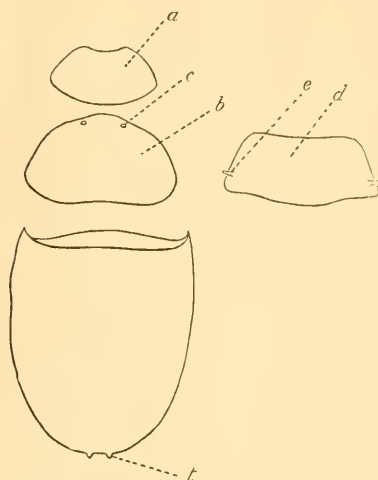


FIG. 1.—Outline of the ruptured puparium, showing the detached pieces. Explanation in text.

line, two minute rounded prominences of lighter colour than the general surface (fig. 1 *c*, where they appear on the inner surface of the segment as circular light coloured areas). Presumably these

mark the position of the anterior spiracles: Perkins (*l. c.*) states that in some cases he distinguished the anterior spiracles, but in others failed to do so in spite of the closest examination. The respiratory processes (fig. 1 *e*, and see Perkins, *l. c.*) are fine and very small. The posterior stigmatic apparatus (fig. 2) consists of a black area with fairly smooth surface, with a deep impression near its lower (ventral) edge, and a single blunt pale tubercle (figs. 1 and 2, *t*) on either side. This stigmatic area is

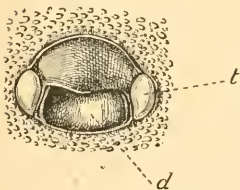


FIG. 2.—Posterior stigmatic area of puparium; *t*, one of the lateral tubercles; *d*, depression, showing a well-defined edge which is conspicuous when viewed in certain positions.

of the same type as that of the Australian *P. hylæus*, figured by

Perkins (*op. cit.*, Pl. VII, fig. 8). It is borne slightly dorsal to the longitudinal axis of the puparium, on the somewhat flattened posterior surface, and a little ventral to it is another dark, but much less definite, area, marking the position of the larval anus.

The following is Becker's diagnosis of the imago (*op. cit.*, p. 40):—

“♂ ♀. Nigro-fuscus opacus, abdomine maculis lateralibus griseis; fronte et facie nigris, albido-micantibus; antennis nigris, tertio articulo ovato acuminato, secundo articulo in mare pilis longioribus; pedibus totis nigris, halteribus concoloribus; hypopygio maris rima oblonga horizontali; hypopygio feminae magno, non sulcato, cum terebra curvata; alarum nervo quarto longitudinali non furcato, costae abscissa tertia in mare quarta duplo longiore; stigmatibus completis.

Long. corp. 4, alar. 4 mm.”

With regard to other British species, Becker states that *P. melanostolus* in some points resembles *P. ater*, Meigen (= *P. campestris*, Latreille), although the two species belong to different groups of the genus. The resemblance lies especially in the form of the third joint of the antenna; but *P. melanostolus* is readily to be distinguished by the dull, essentially differently dusted, abdomen; and by the quite black legs.

In the specimen under consideration the legs are entirely black, excepting a very small piceous portion at the bases of the tibiae, not in any way to be compared to the pale yellowish-white portions of the legs in *P. campestris*.

University Museum of Zoology,

Cambridge:

November, 1907.

PHORIDÆ IN DUMBARTONSHIRE; WITH DESCRIPTION OF A NEW SPECIES.

BY J. R. MALLOCH.

During the last two years I have devoted considerable time to the collection of the *Phoridæ*, principally at Bonhill, with the intention of adding at least a few species to our local list, which has meantime not a single representative of this Family included in it. I fortunately met with fair success, and am able to record about half of the species at present in the British list and a few others that are new to it. One of these latter, *i. e.*, *pubericornis*, which is described below, is a new species which has occurred in considerable numbers at Murroch Glen, near here, on a fungus (*Agaricus* sp.?). I do not suppose

that I have by any means exhausted the number of species in the district, but hope that, if the list may not encourage other collectors to take up this group, it may be of service to those interested in the distribution of our *Diptera*.

Conicera atra, Mg., very common on flowers during the summer ; *C. similis*, Hal., occurring along with *atra*.

Gymnophora arcuata, Mg., common in woods among ferns and undergrowth.

Trineura aterrima, F., not uncommon ; *T. velutina*, Mg., common on flower heads in summer ; *T. schineri*, Beck., common in fir plantations on the hills.

Phora opaca, Mg., not uncommon among furze bushes in an old pasture at Murroch Glen, April and May ; *P. lugubris*, Mg., common almost everywhere during April, May and June ; *P. sublugubris*, Wood, one of each sex taken September 21st, 1907 ; *P. curvinervis*, Beck., very common, especially under the stones forming weasel traps on the hill. One specimen was taken with the wings still undeveloped, which evidently goes to show that the larvæ had fed upon the bait of the previous year. Some specimens have an additional bristle situated between the upper two on the hind tibiæ ; *P. thoracica*, Mg., very common upon the trunks of beech trees in a wood here, the males have the wings either entirely clear, or very faintly infuscated at the tips ; *P. urbana*, Mg., two of each sex taken upon fence posts and tree trunks ; *P. fennica*, Beck., one of each sex taken upon tree trunks ; *P. crassicornis*, Mg., very common ; *P. concinna*, Mg., very common, extremely variable in size ; *P. unispinosa*, Ztt., common ; *P. nudipalpis*, Beck., as common as *unispinosa*, occurring along with it.

PHORA PUBERICORNIS, *n. sp.*

Black ; frons shining, of the male about $1\frac{1}{2}$ times as broad as high, of the female about equal in height and width ; antennæ of the male with the third joint large, somewhat sharply pointed, and covered with a thick yellowish pubescence, of the female much smaller, but also pubescent ; arista almost apical ; palpi of the male inconspicuous, yellow, with weak marginal bristles, of the female very small ; proboscis of the female very prominent, projecting straight downwards, as long as the height of the head ; thorax shining ; mesopleura bare ; scutellum with two bristles ; halteres yellow ; abdomen dull black ; hypopygium yellow, lamellæ symmetrical ; legs yellow, hind femora and tibiæ darkened at the apices ; fore coxæ yellow, mid and hind coxæ darkened ; fore tibiæ without a bristle on the middle, mid tibiæ with two on the basal third and the very weak apical bristle present, hind tibiæ with a bristle on the basal third ; wings greyish, veins, with the exception of the fourth thin vein, very distinct ; costa to beyond the middle of the wing of equal thickness for the whole length, first division about $1\frac{1}{3}$ times the second ; costal fringe

moderately long and dense; mediastinal vein incomplete; first thin vein starts at a little less than half way from the base of the fork with a distinct curve and ends nearly straight at about the wing tip. Long., 2—3 mm.

The species belongs to the same group as *unispinosa*, *nudipalpis*, *gracilis*, Wood, and *autumnalis*, Beck. It is most like the last named, but may be distinguished by the antennæ, the colour of the legs, and the equal thickness of the costa, from that species. The female has a striking resemblance to a species of *Tachydromia*, with its long proboscis. Taken at Murroch Glen in September.

P. abdominalis, Fln., very common, along with *curvinervis* at traps on the hill in April and May; one female taken with wings undeveloped in the trap, it afterwards developed fully, showing that it had newly emerged, having in all probability fed in the larva stage upon the bait in the trap; *P. carinifrons*, Ztt., very common in the autumn; *P. femoralis*, Mg., scarce, I have only taken four males and one female; *P. citreiformis*, Beck., not uncommon on *Heracleum* flowers in autumn; *P. vitreipennis*, Mg., one male only in August; *P. flava*, Fln., two males, one female, the males are very dark; *P. lutea*, Mg., common, one specimen occurred with the third vein unforked on one wing; *P. cubitalis*, Beck., common among aspen; *P. projecta*, Beck., common, very variable in size and colour; *P. costalis*, v. Ros., five females; *P. sordida*, Ztt., common among fungi in the autumn; *P. rufipes*, Mg., common everywhere; *P. umbrimargo*, Beck., not uncommon in the autumn.

Metopina galeata, Hal., this very minute species occurred among flowers during May and June in fair numbers.

All the species, unless otherwise stated, were taken at Bonhill.

Bonhill, Dumbartonshire, N.B.:

October, 1907.

Notes on Coleoptera at Christow and other places in South Devon, 1907.—*

CHRISTOW is a little village in the valley of the Teign, about nine miles south-west from Exeter, a word of rather necessary information! With the exception of one or two records in Parfitt's Catalogue nothing seemed to be known of the beetles of this neighbourhood, which, by virtue of being in a different river valley, is abundantly distinct from the Exeter District he quotes so much. I therefore settled down to work it as well as might be when, at the end of April, I went into lodgings on the river bank.

* See previous note, Ent. Mo. Mag., xlii, 230. In this paper the records of *Hydnobius perrisi* and *H. punctatissimus* from Shaldon are erroneous, and should be expunged.

During the first part of my stay the river was in a constant state of flood, the rubbish therefrom producing a large proportion of the total species I took. At the very outset a single *Hydrochus nitidicollis* (Ent. Mo. Mag., xliii, 136) and *Hydræna longior* occurred in it, giving a useful warning: amongst many others there were—*Notiophilus rufipes*; *Calodera umbrosa*; *Myrmedonia humeralis*, *M. laticollis*; *Callicerus obscurus*; *Homalota insecta*, *H. pavens*, *H. cambrica* (several), *H. fragilis* (2), (a northern species this), *H. luteipes* (1), *H. angustula* (2); one *Actobius procerulus* and several *A. signaticornis*; *Lathrobium angustatum* (3) and *L. quadratum* (1); *Ancyrophorus omalinus* and *A. aureus*; *Trogophlæus arcuatus* (common generally), *T. fuliginosus* (3); *Lesteva longelytrata*, *L. pubescens*, *L. sicula*, *L. punctata*; one *Rhizophagus cæruleipennis* as previously reported (Ent. Mo. Mag., xliii, 158); *Cryptohypnus 4-guttatus*; *Larinus carlinæ* (1); *Cœliodes ruber* (1); and *Phytobius 4-tuberculatus*. From a little rubbish brought down by a thunderstorm in July, one *Brachinus crepitans* was obtained—this capture is noteworthy, as the species has only, I believe, been recorded from one place in Devon previously, Ashburton (S. M., 43).

During May and June the river shingle swarmed with *Bembidia*, particularly *B. punctulatum* and *B. decorum*, but of much greater interest was *Perileptus areolatus*, which at intervals was abundant in two exceedingly restricted spots until a day when the otter hounds passed along, disturbing the whole bank, and after that not a specimen was to be found. Searching for the *Perileptus* assisted me in finding a few *Georyssus pygmæus* and one *Homalota currax*.

Moss "between wind and water" gave me ample employment at any time during my four months' stay. Though the number of species to be found therein was strictly limited—perhaps not more than 35 or 40, even if *Hydropori* and the like are included—yet I can hardly imagine its remarkable profusion of insect life could be equalled anywhere. On the whole the species were distinctly good ones, including *Hydroporus rivalis* and *H. septentrionalis*; *Helophorus arvernensis*, Muls.; *Hydrochus nitidicollis*; seven *Hydræne* (*testacea*, *riparia*, *nigrita*, *longior*, *gracilis*, *atricapilla*, and *pygmæa**) ; *Henicocerus exsculptus*; *Ochthebius bicolon*, *O. rufimarginatus*; *Ischnopoda cærulea*; *Medon ripicola*; *Dianous cærulescens*; *Stenus guynemeri*; *Limnius tuberculatus*, *L. troglodytes*; *Elmís æneus*, in profusion, and a single crippled example of *E. parallelipedus*. To my great surprise six *Bidessus minutissimus* occurred. A single *Cilea silphoides*, curiously enough, had made its home in the moss; I saw it twice in the same spot (took it the second time), so evidently its being there was not purely accidental.

Away from the river bank conditions were never favourable, partly owing to the nature of the country and partly due to the abnormal season; however, I fell in with a few nice things in the course of my long stay, some of which are new to the Devon list:—at sap, *Homalota æneicollis*, *H. sodalis*, *H. gagatina*, *Rhynchites æneovirens*; in fungus, *Homalota autumnalis* (1), *Endomychus coccineus*, *Cryptophagus ruficornis* (1), *Cis micans*, *C. hispidus*, *C. pygmæus*; three *Liosoma oblongulum* and several *Mniophila muscorum* occurred in moss in the woods, and a few *Choleva anisotomoides* and *Sericoderus lateralis* among dead leaves; one *Omosita depressa* on a bone; and, by sweeping, &c., *Bythinus securiger*, *Bryaxis impressa*,

* See Note, *infra*.

Aspidiphorus orbiculatus (one), *Onthophagus fracticornis*, *Mallhodes guttifer*, *M. mysticus*?, *Malachius viridis*, *Hydrocyphon deflexicollis*, *Clytus arietis*, *C. mysticus*, *Pachyta cerambyciformis* (common), *Tetrops præusta*, *Phytæcia cylindrica* (1), *Clythra 4-maculata*, *Chrysomela gettlingensis*, *Cassida murræa*, *Anaspis geoffroyi*, *A. costæ*, *Apoderus coryli*, *Barypeithes sulcifrons*, *Limobius dissimilis* (1), *Tychius tibialis*, *T. pygmæus*, *Sibinia primita*, *Orobites cyaneus*, *Ceuthorrhynchidius melanarius*, and *Balaninus villosus*.

For a fortnight in July I was at BOVEY TRACEY. *Notiophilus rufipes*, *Ochthebius rufimarginatus*, *Homalota autumnalis*, *Lathrobium angustatum*, and *Larinus carlinæ* occurred here also, in addition to *Elaphrus uliginosus*, *Stomis pumicatus*, *Philydrus melanocephalus*, *Aleochara mærens* (one in a scrap of fungus on a very exposed hedge well up on the moor), *Leptusa analis*, *Quedius scintillans*, *Catops sericatus*, *Helocerus claviger*, *Ptinus sexpunctatus* (one on my bed!), *Salpingus æratus*, *Polydrusus confluent*, and one *Pentarthrum huttoni* found in the window.

A single *Poöphagus nasturtii* was the best capture during a day's visit to MORETONHAMSTEAD.

On leaving Christow at the end of August we went for a month to a farm near UGBORO' BEACON, but what little collecting season there had been was now quite over. Of the few species obtained the best were—*Gyrinus colymbus* (1), *Hydræna riparia* (1), *Quedius auricomus*, *Dianous cærulescens*, and *Stenus guynemeri* from the brooks; *Omosita depressa*, *Quedius puncticollis* (1), and *Philonthus proximus* (1) from carrion; one *Leptinus testaceus* among dead leaves; one *Bythinus curtisi* in moss; *Hypera pollux* by sweeping; and half a dozen *Pentarthrum* out of a damp cupboard in our sitting room.

Several *Hydræna gracilis* and two *Limnius troglodytes* from the River Erme, and *Ischnoglossa proluxa* under oak bark, were taken at IVYBRIDGE.

A couple of flying visits to DAWLISH during the summer gave several *Sibinia sodalis*, one *S. potentillæ*, four each of *S. arenariæ* and *S. primita*, several *Salpingus æratus*, and one *Homalota mortuorum*, all swept off *Armeria vulgaris* (Thrift); three *Ceuthorrhynchus melanostictus* off *Lycopus*.

[NOTE.—Of these seven species of *Hydræna*—*testacea*, *nigrita* and *pygmæa* were very scarce indeed; *riparia* and *longior* fairly frequent; *gracilis* and *atricapilla* in the greatest abundance. Though a few *longior* were about in April and May, they were much more in evidence in August, a remark which applies also to *gracilis* in a duly comparative way; *atricapilla* was equally abundant first as last, but with this, as well as the other species, there was a very considerable falling off in numbers during the latter end of June and July. Excepting in July, *Limnius troglodytes*, too, was exceedingly common throughout. *Henicocerus* swarmed in May and then gradually fell off, till by August there was scarcely one to be seen. Practically the same as most of the *Hydrænae* is *Hydrochus nitidicollis* in having two "periods," May and end of August or later, in which it is more frequent; at the time of my leaving Christow it was still on the upward grade. I took about 25 of this species altogether].

My best thanks are again due to Mr. E. A. Newbery for the valuable help he has given me in identifying the more critical species.—PHILIP DE LA GARDE, "The Beeches," Kingsbridge, South Devon: November 11th, 1907.

Deliphrum crenatum, Grav., in *Dumbartonshire*.—Early in September last I was staying for a few days at Helensburgh on the Clyde. On the hillside just above the town runs the West Highland Railway. Still higher a belt of wood—a plantation of conifers—skirts the moors. At the time of my visit, here and there in the wood were seen small heaps of comparatively fresh chips. My niece and I spent a few minutes in examining one of these. Under the partly loosened bark were great numbers of *Rhizophagi* and a few “*Staphis*.” One of the latter was evidently new to me, and we secured four specimens. Mr. Champion has kindly examined my find, and pronounces it to be the little known *Deliphrum crenatum*, Grav., a noteworthy capture. In all probability a careful search would prove it to be fairly common in the district.—GEORGE W. CHASTER, Southport: December, 1907.

Cryptophagus schmidtii, Sturm, at Strood, Kent.—On August 26th last I met with half-a-dozen examples of this apparently very rare species of *Cryptophagus* in the granary at Strood, already well known to Coleopterists (cf. Ent. Mo. Mag., vol. xxxiv, p. 159, and vol. xl, p. 5), into which Mr. A. J. Chitty and I were driven by the rain when we were on our way to Chattenden for a day's collecting. They were found in a few handfuls of chaff, dust, &c., raked out from under a door-sill, in company with *C. cellaris*, *acutangulus*, *distinguendus*, and other ordinary granary beetles—an unexpected situation, quite different from that in which the original British specimens were taken (cf. Ent. Mo. Mag., vol. vii, pp. 206, 229). Mr. G. C. Champion kindly identified the insect for me, and I have since found one or two more among some unexamined *Cryptophagi* taken in the same granary in 1899.—JAMES J. WALKER, Aorangi, Lonsdale Road, Summertown, Oxford: December 16th, 1907.

Pyrallis lienigialis, Zell., at Oxford.—The notes by Mr. Eustace R. Banks in the current volume of the “Entomologist” (vol. xl, pp. 235, 291) on the re-occurrence of this apparently very rare species in Britain, induced me to look again at two examples of a *Pyrallis*, of which one was taken in my bedroom at light early in August, 1906, and had been placed with some doubt in my series of *P. farinalis* as a dark aberration of that common insect; the other, a ♀ like the first, but in much better condition, also came to light in the same room in the first week of August of this year. On comparison with the two examples in the Dalcian Collection of British *Lepidoptera* at the Oxford University Museum, I find that both my specimens agree exactly with the ♀, which is labelled (in C. W. Dale's handwriting) “Coll. H. Burney, 1893,” and is probably one of the specimens taken by Messrs. Thompson and Bryan at Stony Stratford, Bucks., on which the species was introduced as British in 1831 (cf. Ent. Mo. Mag., Vol. xvii, p. 256, and Entomologist, vol. xiv, pp. 84, 85). Mr. Banks (Entomologist, vol. xl, p. 291) calls attention to the record of a specimen of *P. lienigialis* as having been taken “near Oxford” on August 22nd, 1902 (Ent. Mo. Mag., vol. xxxviii, p. 273); so it may reasonably be hoped that this rare and interesting little moth, as yet found in these Islands only in a limited area in the Midland Counties, may turn up here again.—ID.: December 16th, 1907.

[Since the above was written I have found yet a third ♀ specimen of *P. lienigialis*, which my friend the Rev. W. Mansell Merry took in his garden at North Oxford—within less than half a mile of my house—by “mothing” after dark with the aid of a lantern, in August, 1907.—J. J. W.]

Hymenoptera in the New Forest, &c.—This summer, during the month of July, I have been able to add the following species to my previous lists for the New Forest:—*Myrmica lobicornis*. *Tiphia minuta*. *Salix pusillus*, 1 ♂. *Calicurgus hyalinatus*, 1 ♀. *Trypoxylon claricerum*. *Psen unicolor*, 1 ♀. *Crabro claripes*; *C. varius*. *Odynerus melanocephalus*. *Sphecodes reticulatus*, 1 ♀; *S. spinulosus*. 3 ♀; *S. puncticeps*; *S. longulus*; *S. ferruginatus*; *S. hyalinatus*, 1 ♀; *S. affinis*, *Halictus puncticollis*, 6 ♀; *H. breviceps*, 2 ♀. *Andrena niveata*, 1 ♀ (Lymington). *Cilissa leporina*, 4 ♂. *Dufourea vulgaris*, 1 ♀. *Nomada sexfasciata*, 1 ♀. *Cælixys acuminata*. *Megachile circumcincta*, 1 ♀; *M. versicolor*, 2 ♀ and 1 ♂. *Stelis aterraima*, 2 ♀. *Eucera longicornis*. *Anthophora furecata*.

The last week in August at Bournemouth produced nothing worth recording, except *Andrena argentata* and *Ammophila hirsuta*, taken on the sandhills of Poole Harbour.

Several rarities, which I have already recorded for the New Forest, again turned up this year, such as *Pemphredon morio*, 1 ♀. *Oxybelus mandibularis*, plentifully. *Crabro cetratus*; *C. gouager*; *C. signatus*, 2 ♀. *Odynerus crassicornis*, 1 ♀. *Nomada obtusifrons*, plentifully. *Stelis phæoptera*, ♂s plentiful, ♀s rarer. *Gorytes laticinctus*; I obtained from Mr. B. Piffard a ♀ specimen of this rarity, which he took early in July near the Victoria Tile Works, Brockenhurst.

Among the *Chrysididæ* the following may be worth mentioning:—*Chrysis fulgida*, 1 ♀, flying round the burrows of *Osmia fulvicentris* in a rotten post; *C. succincta*, several ♀, always taken in the neighbourhood of the burrows of *Tachytes pectinipes*. *Hedychridium coriaceum*, 3 ♂s and 5 ♀s flying round and entering the burrows of *Crabro albilabris*.

On looking over a number of *Psenulus pallipes* I found a specimen which I had included with them and taken at Brockenhurst in 1905. By its larger size and noticeably more shining appearance I suspected it was *convolor*. This was confirmed by Mr. Saunders, who kindly examined it for me.—G. ARNOLD, University of Liverpool: October, 1907.

Hemerobius marginatus, Steph., and *H. orotypus*, Walleng., in Upper Wharfedale.—On August 3rd last, I found the very delicate-looking *Hemerobius marginatus* rather commonly in the wood opposite Arneliffe village; and on September 7th I beat out the perhaps still more local—though usually more abundant where it occurs—*Hemerobius orotypus* in plenty from diseased sycamore trees in Grassington Woods. I call the trees diseased because nearly every leaf on apparently all the trees was affected by the unsightly fungus parasite *Rhytisma acerinum*, which gave to that part of the wood a most unhealthy appearance. I never noticed sycamores in such a condition before, and why *H. orotypus* should practically be frequenting only such trees is not easy to explain.—GEO. T. PORRITT, Edgerton, Huddersfield: December 16th, 1907.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *October 21st, 1907.*—MR. G. T. BETHUNE-BAKER, President, in the Chair.

The Rev. C. F. Thornehill showed various *Lepidoptera* collected at Arrochar this year, including *Larentia tristata*, L., two specimens of a nice form, with cream-coloured ground and coffee-coloured markings. He said that in daylight the markings had quite a golden tinge. The form of the markings was normal, excepting that the central band was restricted. Also included in the collection were *L. adæquata*, Bleh. (*blandiata*, Hb.), of which he took a long series, and an unrecognised *Eupithecia*. Mr. J. T. Fountain, a long series of *Bryophila perla*, F., and *muralis*, Först., from many British localities to illustrate the extent of their variability. Mr. Colbran J. Wainwright, two specimens of *Platycheirus albi-manus*, F., from Sutton Park, which were quite extraordinary. They were melanic, one showing no trace of markings, and in different degrees they showed characters intermediate between those of the male and the female sexes. Strictly speaking, they were probably not gynandromorphs, as they did not exhibit some parts definitely male and others definitely female; they would perhaps be better described as females, which in some respects varied in the direction of the male secondary characters. The chief points were, (1) the width of the foreheads, which were only about half the width of those in normal females, and in details of outline resembled those of males and not females; and (2) the fore tarsi and tibiae, which, instead of being quite simple as in normal females, showed decided widening, in this respect approaching those of normal females (in different degrees in the two specimens). The genitalia outwardly appeared female. Mr. G. T. Bethune-Baker, a nice collection of butterflies of the genus *Pararge*, with the various forms of *xgeria*, L., *megæra*, L., *mæra*, L., &c.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The Opening Meeting of the Session was held at the Society's Rooms in the Royal Institution, Colquitt Street, Liverpool, on Monday, October 21st, 1907, Mr. WM. MANSBRIDGE, Vice-President, in the Chair.

Mr. A. E. Gibbs, F.L.S., F.E.S., of St. Albans, was elected a Member.

This being the Annual Exhibition Meeting, many interesting insects were brought by the Members. Mr. B. H. Crabtree exhibited a fine series of the local melanic form of *Boarmia repandata* from Penmaenmawr, the females especially showing the white blotches characteristic of this local race; *B. gemmaria* var. *perfumaria* from Manchester; varieties of *Angerona prunaria* from Monkswood; *Aplecta nebulosa* var. *robsoni* from Delamere Ft.; *Agrotis ashworthii* from Penmaenmawr; and *Chariclea umbra* from Sidmouth. Mr. Robert Tait, jun., a number of local species, among them being a long series of *Agrotis ripæ* from South Wales coast, *A. ashworthii*, North Wales, a long series captured at rest; *Hemerophila abruptaria*, the chocolate form from the London district; *Lobophora viretata*, *Anticlea derivata*, and *Larentia salicata* from Lake Side, Westmoreland; *Dianthæcia nana* and *Eupithecia jasionæata* from Abersoch. Dr. Wm. Bell, a drawer of beautifully preserved

and mounted larvæ of *Lepidoptera*, in which he had been able to preserve the green coloration in such species as *Saturnia pavonia* and *Papilio machaon* without recourse to artificial aid. Dr. Bell had also been able to dry the plants on which the larvæ were mounted in their natural form and colour. The same Member further exhibited a box of Wicken insects, which included *Spilosoma urticæ* and an example of *Tapinostola extrema* (concolor) from that district; varieties of *Arctia caia* and a dark specimen of *Eugonia ulniaria* from Wallasey; and *Plusia moneta* from Surrey. Mr. F. N. Pierce, a drawer of minor varieties of *Abraxas grossulariata* from Wallasey. Mr. Prince, a large number of insects representing his season's work at Wallasey and Witherslack, and contributed notes. Mr. W. Mallinson, a beautiful water-colour drawing of a larva of *Deilephila galii*, one of two found at Wallasey this year. Mr. H. R. Sweeting, *Lycæna bellargus* and var. *cærulea* from Eastbourne; *L. corydon* and var. *syngrapha* taken by himself in Surrey; a series of *Noctua castanea* and var. *neglecta* from Delamere; *N. glareosa* and *N. brunnea* also from Delamere; *Moma orion* from the New Forest. Mr. W. Mansbridge, a long bred series of *Boarmia repandata* from Delamere; a bred series of *Odontopera bidentata* from Wakefield, including var. *nigra* and diaphanous specimens; series of *Nyssia lapponaria*, *Anarta melanopa*, and *A. cordigera* from Rannoch.

Monday, November 18th, 1907.—Mr. WM. MANSBRIDGE, F.E.S., Vice-President, in the Chair.

A lecture was delivered by Mr. F. N. Pierce on "The Androconial Scales of Butterflies." He explained that these scales were only found upon the males of the various species, and were even in that sex uncertain. The lecturer instanced the entire absence of this kind of scale in the case of the large group of the *Lycænidæ*, in such species as had brown males. Mr. Pierce described a hitherto unobserved scale, which he had discovered when examining the male of *Lycæna agestis*, which appeared to be not only confined to the "blues," but to a very small area consisting of a few of these new scales, on the under-side of the fore-wings, at the extreme base of the inner margin. He also enumerated some of the theories put forward from time to time as to the utility of these androconials. The lecture was fully illustrated with micro-photos of the actual scales, shown through the lantern. A discussion followed, in which most of the Members present took part.

Mr. F. N. Pierce exhibited specimens of the British *Lycænidæ* in illustration of his paper. Mr. Wm. Mansbridge, a short series of *Pygæra curtula* from Ireland, one specimen showing failure of the brown scales at the tips of the fore-wings. Mr. H. R. Sweeting, bred series of the following from Delamere: *Geometra papilionaria* and *Ellopiæ prosapiaria*, the latter showing the dusky-greyish suffusion characteristic of the locality. Dr. J. Cotton, a lantern slide of several British *Rhopalocera* photographed by Lumières' recently-perfected process. — H. R. SWEETING and WM. MANSBRIDGE, Hon. Secs.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, November 7th, 1907.—Mr. R. ADKIN, F.E.S., President, in the Chair.

Messrs. Harrison and Main exhibited a series of *Agrotis ashworthii* from larvæ collected in North Wales at Easter, including var. *virgata*. Mr. Tonge, a series of *Calocampa vetusta* bred from continental ova, and stereographs of the ova of *Ennomos fuscantaria* and of *Cirrhædia xerampelina* in situ on ash. Mr. West (Greenwich), various *Colcoptera*—*Apion hookeri*, *A. confluens*, and *Centhorrhynchus rugulosus*—all taken near Erithon chamomile. Mr. Simmons, living larvæ of *Eupithecia subfulvata*. Mr. Main, ova of a "stick" insect, *Bucillus rossi*, which resemble a short-stalked seed. Mr. R. Adkin, a bred series of *Melanippe galiata* from ova obtained at Eastbourne, and read notes on the variation shown. Mr. Turner, leaves of birch showing the web, feeding gallery, and cocoons of the Hyponomeutid moth, *Swammerdamia casiella* var. *griseo-capitella*, and read notes on the larval habits; he also exhibited (1) *Melanargia galathea* var. *lencomelas* from Gavarnie (Pyrenees); (2) *Aricia agestis* var. *alpina* from St. Moritz, Engadine; (3) *Abraxas grossulariata*, a form with but few traces of yellow and coalesced black markings; (4) several *Polyommatus icarus* ab. *clara* from Effingham; (5) *Eupithecia oblongata* ab. *centralisata* (?) bred from golden-rod, Woolwich; (6) dwarf *Malacosoma castrensis*, measuring only 24 mm., from Essex; and (7) *Anthrocera filipendula*, with the sixth spot much reduced in size and brightness and very clearly divided by the dark nervure. Mr. Grosvenor, long series of *Polyommatus corydon* and *P. bellargus* with much variation, a specimen of the latter species was without the usual discoidal spot on the under-side. Mr. Newman, (1) long series of *Hypsipetes sordidata* (*elutata*) from various localities, showing much variation, including fine red forms; (2) another gynandromorphous *Amorpha populi*; and (3) two more of the abnormal race of *Aglais urticæ*; he also recorded the occurrence in North Kent of black aberrations of *Oporabia dilutata* and *Cheimatobia brumata*. Mr. Sieh read a paper, "Collecting Lepidoptera on the Tannusberg."—HY. J. TURNER, Hon. Sec.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, November 20th, 1907.*—Mr. G. H. VERRALL, Vice-President, in the Chair.

Mr. Leonard Woods Newman, of Bexley, Kent, and Dr. Ivar Trägård, of Upsala University, Sweden, were elected Fellows of the Society.

Mr. H. St. J. Donisthorpe showed for Mr. W. West examples of *Tropideres sepicola*, F., New Forest, July, 1904: *Oxylenus variolosus*, Dufts., Darenth Wood, March, 1903; and *Apion annulipes*, Wenck., Darenth Wood, 1905. Mr. H. J. Turner, cases showing the life-history of *Coleophora onosmella*, with photomicrographs by Mr. F. N. Clark showing the surface of the ova and the structure of the micropylar area. Dr. F. A. Dixey, several species of five African genera of Pierine butterflies for the purpose of showing the strong mimetic parallelism that existed between them. Mr. Willoughby Gardner, a remarkably small specimen of *Meloë proscarabæus* with an example of the normal size. Mr. W. G. Sheldon, many examples of *Araschnia levana* var. *prorsa* and intermediates, bred from larvæ found in the department of the Aisne, France, in June last. Out of 176 individuals that emerged from the pupæ 109 were var. *prorsa*, 4 approached nearly to ab. *porima*, the rest were intermediate between *prorsa* and *porima*. To give a fuller view of this form in assistance to Mr. Sheldon's report, Dr. T. A. Chapman also exhibited specimens of *Araschnia levana*, type, bred 1897. Mr. G. Arrow,

a specimen of a handsome exotic Cockroach (*Dorylaea rhombifolia*) found alive in the Natural History Museum, an apterous species inhabiting China, India, Madagascar, South Africa, &c., and also recorded from Tropical America. Dr. G. B. Longstaff, a case containing 35 Ithomiine butterflies of 11 species, belonging to 6 genera, taken near Caracas, Venezuela, some 3600 feet above sea-level. They afforded a striking exception to Darwin's principle that closely allied forms are not usually found together. Lieut.-Colonel N. Manders, a collection of some 200 specimens of tropical butterflies belonging to the genera *Melanitis*, *Mycalesis*, *Atella*, *Papilio*, and *Catopsilia*, which had been subjected to abnormal degrees of temperature mostly in the pupal stage. The object of the experiments was to ascertain the effect of climate on the colours of tropical butterflies. Mr. W. J. Kaye, a convergent group of Heliconine butterflies, from the Potaro River, British Guiana. He said that hitherto there had not been detected any species of Danaine or Ithomiine butterfly that might serve as a model or mimic of these species, and if at any time the large *Melinæa mneme*—*Heliconius numata* group exerted any influence on these red and yellow and black species, it was unlikely that it did so now, because they have not the same flower-frequenting habit and are not found in company with them. In illustration of his paper "Mimicry in North American Butterflies of the genus *Limenitis* (*Basilarchia*)," Professor E. B. Poulton showed specimens of *Adelpha* (*Heterochroa*) *bredowi*, ranging from Guatemala to Arizona, and its northern form, named *californica* by A. G. Butler, from California and Oregon. With these he exhibited specimens of *Limenitis* (*Basilarchia*) *lorquini*, Bois., taken together with the *Adelpha*'s, by Mr. F. D. Godman, in the two last-named States. A specimen of *L. lorquini* from Esquimalt, Vancouver Island, was also exhibited for the purpose of comparison with the southern individuals. These mutual resemblances appeared to offer a striking example of Dr. F. A. Dixey's principle of the Reciprocal Mimicry. Mr. H. St. J. Donisthorpe read a paper on the Life-History of *Lomechusa strumosa*, F.

Wednesday, December 4th, 1907.—Mr. C. O. WATERHOUSE, President, in the Chair.

Mr. Walter Feather, of 10, Station Grove, Cross Hills, Keighley, Yorkshire, and the British Somaliland Fibre and Development Company, Berbera, Somaliland, British East Africa, and Mr. Rupert Wellstood Jack, Assistant Entomologist in the Department of Agriculture of the Cape of Good Hope, Cape Town, South Africa were elected Fellows of the Society.

Dr. G. C. Hodgson exhibited a number of examples of *Anthrocera trifolii*, collected on the same ground in Sussex, and showing a wide range of variation, including three fine melanic forms, and several showing six spots on the upper-wings. Mr. W. J. Kaye, a specimen of *Papilio thoas* with the central portions of both tails removed apparently by a narrow-billed bird. The injury appeared so symmetrical that it was thought likely that the specimen was an abnormality. But a careful microscopical examination showed that this was not the case. With it were several species of butterflies from British Guiana with injuries to the wings in the region of the abdomen, such injuries to Danaine butterflies being quite rare. The President, two photographs of an African Locust, which had apparently caught a mouse and was preying upon it. The specimen was found in the Congo

State. Mr. R. S. Bagnall exhibited and read notes on many rare species of *Coleoptera*, *Thysanoptera*, and *Aptera* from Northumberland, Durham, and Scotland, of which ten were new to Britain. Mr. L. W. Newman, a long and varied series of *Ennomos autumnaria* (*alniaria*), a series of *Polia xanthomista* (*nigrocincta*) bred from ova and fed on carrot, the specimens unusually large (N. Cornwall), three pairs of hybrid *Notodonta ziczac* ♂, *dromedarius* ♀, = *newmani*, Tutt, three very fine *Xylina conformis* bred by Evan John, South Wales, three cocoons (*in situ*) of *Dicranura bicuspis* collected wild in Tilgate Forest, and a fine melanic ♀ *Oporabia dilutata* taken wild in Bexley Woods, 1907. Dr. F. A. Dixey, male and female specimens of a new *Belenois* allied to *B. zochalis*, Boisdu, but quite distinct from the *zochalis* group. These were captured by Mr. Wiggins in the Tiriki Hills, north-east of the Victoria Nyanza. Professor E. B. Poulton read a paper communication from Dr. Menteith Ogilvie on "The Natural Enemies of *Bombyx rubi* in Scotland." He also exhibited specimens in further illustration of his notes on the Convergence of *Limenitis* (*Basilarehia*) read at the last meeting. Mr. J. C. Moulton read a note on the Rest Attitude of *Hyria auroraria*. Mr. A. H. Swinton communicated a paper on "The Family Tree of Moths and Butterflies, traced in their Organs of Sense." Mr. E. Meyrick, "Notes and Descriptions of *Pterophoridae* and *Orneodidae*." Mr. R. Shelford, "Studies on the *Blattidae*." The Rev. K. St. A. Rogers, introduced by Professor E. B. Poulton, "Notes on the Bionomics of British East African Butterflies," and exhibited many examples collected by him, and from the Hope Museum, Oxford, to illustrate his remarks.—H. ROWLAND-BROWN, Hon. Sec.

ON THE NOMENCLATURE OF SOME (BRITISH) *HEMIPTERA-HETEROPTERA*

BY PROF. O. M. REUTER.

In the September number (1907) of this Magazine, pp. 196-202, the eminent British Hemipterologist, Mr. Saunders, has published an article, "Additions to the list of British *Hemiptera-Heteroptera* since 1892," when his excellent work on "The Hemiptera-Heteroptera of the British Islands" came out. In this article he has indicated the various changes of synonymy which have seemed to him "necessary to bring the British nomenclature more or less in line with that of the continental authorities." He has here adhered as much as possible to the nomenclature given in Dr. Puton's "Catalogue des Hémiptères de la faune paléarctique, 1899."

In 1888 I published my "Revisio synonymica Heteropterorum palæarcticorum, quæ descriptorunt auctores vetustiores" (Acta Soc. Scient. Fenn., xv, pp. 241-313, 443-512), in which I have tried strictly to carry out the principle of priority. On account of this I changed the common names of 84 species and several genera, which had ac-

quired prescription through Puton's "Catalogue des Hémiptères d'Europe," 2nd edition, 1875. Dr. Puton was a conservative follower of what was called "la loi de la prescription," which insisted upon the keeping up of names that had acquired prescription through their being in use for a long time, independent of previously existing names, and for this reason he did not accept my alterations of names in the 3rd edition of the above mentioned Catalogue (1887). Neither were they adopted by Lethierry and Severin in their "Catalogue général des Hémiptères," I-III (1893-1896). When, however, the law of priority had at the International Zoological Congresses been sanctioned as the only norm, and when most of the more distinguished Hemipterologists had begun in their works to introduce the greater number of the names restored by me, sometimes also mentioning the older names in cases where I had been doubtful, Dr. Puton found himself at last almost alone in his opinion, and was obliged, in the 4th edition of his Catalogue (1899), to "renoncer à la prescription pour adopter la priorité." Unfortunately he has not acted here quite consistently in many cases; and the consequence of this has been that the nomenclature, which through his widely spread Catalogue has been accepted, cannot even to-day be called satisfactory. This is especially the case with many common generic names. However, in a series of articles "On the Nomenclature of the Rhynchota," published in the *Entomologist*, xxxii, No. 436 *et seqq.*, Mr. Kirkaldy has given further contributions to the settlement of a correct generic nomenclature. About my earlier changes of the names in common use he says, "my researches convince me that his main conclusions are perfectly correct."

Many of these altered generic names have, however, not been observed by Mr. Saunders in his aforesaid article, as he has maintained those used by Dr. Puton, 1899. There is, however, no doubt that a common acceptance of the right generic and specific names is only a question of time, but it will probably be delayed, as they are not even taken notice of in such an important work as Oshanin's great and deserving "Verzeichnis der palaearktischen Hemiptera," 1906. To help on, in some degree, a more rapid introduction of a correct nomenclature, I propose to enumerate here the changes that ought to be made beyond those Saunders has already put forth.

As for the research Horváth has made into the *Hemiptera* in the collection of Linné (see *Rev. d'Ent.*, 1898, p. 275), the specimens are apparently not all typical, even when they have labels in Linné's hand-writing, inasmuch as they do not correspond with his descrip-

tions. It is therefore only in a few cases, I think, that there is reason to change the common names according to Horváth's observations.

CYDNINA.

1. *Cydnus flavicornis*, Fabr., = *Ethus*, *id.*

2. [*Brachypelta*, Am. et Serv., not British, = *Cydnus*, Fabr. Type: *C. tristis*, F., = *Cimex aterrimus*, Forst., 1771, Syst. Rhyng., 1803, p. 185, 7.

Later authors, with the exception of Dallas, Stål, myself, and Kirkaldy, do not seem to have duly observed that Fabricius, in *Entomologia Systematica* (1794), as well as in *Systema Rhyngotorum* (1803), plainly marks out certain species as genotypes by adding to the diagnosis the generic characters. This I have already expressly pointed out in my *Rev. Synon.*, p. 269. Puton therefore uses *Cydnus*, F., quite wrongly for *flavicornis*, and still more incorrectly quotes *Cydnus*, Fall., under *Brachypelta* as a synonym; the genus *Brachypelta* does not exist at all in Sweden, and Fallen's generic name does not bear any relation to this species, but to *Sehirus morio*, L., under which *Cydnus tristis*, F., has been incorrectly quoted.]

PENTATOMINA.

3. *Sciocoris cursitans*, F., is maintained by Oshanin for *terreus*, Schr. Puton probably disapproved of the name, because the species had been described as a *Naucoris* (!), but then consistency required that he should have disapproved also of the name *Halticus apterus*, L., as that species was described as a *Cicada*!

4. *Neottiglossa inflexa*, Wolff, 1806, = *pusilla*, Gmel., 1789. The change has been accepted by Oshanin and is indisputably correct.

ASOPINA (= CIMICINA).

5. *Picromerus*, A. et S. (= *Cimex*, L., F., 1803). Kirkaldy has (*Entomol.*, 1905, p. 76, seqq.) shown that the type of the Linnean *Cimex* could never be *lectularius*, as (1) Linneus fixed no types, (2) *lectularius* does not agree with the diagnosis of *Cimex*, and (3) another type for the latter genus was duly selected by Fabricius later on, who deliberately fixed on *bidens* as the type of *Cimex*.

ACANTHOSOMINA.

6. *Acanthosoma dentatum*, de Geer = *Elasmotethus interstinctus*, L. The genus *Elasmotethus*, Fieb. (*part.*), Stål (*Gen. Pent.*, p. 39), differs well from *Acanthosoma* (Type: *hæmorrhoidale*, L.), and possesses like this one several species. (See Oshanin, *l. c.*, p. 168).

7. *Acanthosoma interstinctum*, Reut., = *Elasmucha grisea*, L. See Horváth, *Rev. d'Ent.*, 1898, p. 276. Oshanin uses for this species the generic name of *Clinocoris*, Hahn, Stål (*Gen. Pent.*, p. 79), but as this name is due to our common bug (see below), it ought to be replaced by *Elasmucha*, Stål (*Ann. Soc. Ent. France*, 1864, p. 54). The name *Elasmotethus* is to be accepted for *interstinctus*, L. (*dentatus*, De Geer).

8. *Elasmotethus ferrugatus*, F., = *Elasmucha*, *id.*

COREINA.

9. *Enoplops scapha*, F., = *Coreus* *id.*, was described by Fabricius, 1794, as a type for the genus *Coreus*!

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H. GUARD KNAGGS, M.D.

It is with deep regret that we announce the death on January 16th, after a long and painful illness, of DR. H. GUARD KNAGGS, the last survivor of the four original founders of this Magazine in 1864.

A detailed Obituary Notice will appear in our next Number.

January, 1908.

10. *Syromastes marginatus*, L., = *Mesocerus* (Rent.) *id.*

11. *Verlusia rhombea*, L., = *Syromastes quadratus*, F. The genus *Syromastes* was set up in 1825 by Latreille without indicating any species, with a diagnosis which only mentioned that the structure of the antennæ distinguished it from *Gonocerus*. In 1832 Laporte set up *Coreus quadratus* as a type for the genus, and it was not before 1835 that Burmeister brought in *C. marginatus*, L., here. The name *Syromastes* ought therefore indisputably to be maintained for the species of *Verlusia*.

PSEUDOPHILÆINA.

12. *Coreus*, Burm., Saund., *nec* Fab., = *Coriomeris*, Westw. *Coreus denticulatus*, Scop., = *Coriomeris id.*

BERYTINA.

13. *Neides*, auct., = *Berytus*, Fabr. *Berytus*, auct., = *Neides*, Latr., Reut. The genus *Neides* was founded by Latreille, 1802, for two species (*tipularius*, L., and *clavipes*, F.) without indication of the type. In 1803 Fabricius erected the genus *Berytus* with the type *tipularius*, thus indirectly fixing *clavipes* as the type of *Neides*" (Kirkaldy, Entomol., 1900, p. 26). Conformably to this I have already in Rev. Synon. used the above mentioned names. Later on (Proc. Ent. Soc. Wash., vii, 1905, p. 28) Kirkaldy has certainly, applying the s. c. "historical" method, fixed *tipularius* as the type for *Neides*, and formed a new genus name *Berytinus* for *clavipes* and others of the same genus. In conformity with Bergroth (Wien. Ent. Zeit., 1906, p. 10), I consider, however, the former proceeding more simple. "Die historische Methode laitet nicht zu befriedigenden Resultate" (Bergroth, l. c., p. 9).

LYGÆINA.

14. *Lygæus equestris*, L., = *Eulygæus id.* Kirkaldy has (Entomol., 1899, p. 220) pointed out how Fabricius' type for the genus *Lygæus* is a Coreid, *L. valgus*, L. (= *Holopterna*, *id.*), and that thus the genus *Holopterna*, Stål, ought to be called *Lygæus*, F. For *Lygæus*, auct. (Bull. Soc. Ent. Ital., xxxvi, 1904, p. 96), he has proposed the name *Stalagmostethus*. I have, however, previously (Rev. Syn., p. 550) called this genus *Eulygæus*. But Bergroth says (Wien. Ent. Zeit., 1906, p. 10): "Das sogenannte Gesetz der 'bon sens' kommt selten zur Anwendung, lässt sich aber wohl nicht ganz umgehen. Kirkaldy's Einführung des inveterierten Namens *Lygæus*, Fabr. für die Coreiden Gattung *Holopterna*, Stål, und die daraus als Konsequenz folgende Umänderung der Familien—Namen *Coreidæ* und *Lygæidæ* in resp. *Lygæidæ* und *Geocoridæ* dür für wohl niemals allgemein akzeptiert werden."

APHANINA.

15. *Stygnus arenarius*, Hahn, = *fuliginus*, Geoffr. I avail myself of this opportunity to point out the incorrectness in quoting, as Saunders also has done in his article, Fourcroy as the author instead of Geoffroy. The former was only publisher of *Entomologia Parisiensis*, 1785, which was an abridged edition of Geoffroy's "Histoire abrégée des Insectes qui se trouvent aux environs de Paris" (1762), in which latter work the binary nomenclature was not yet in use. Geoffroy has himself given all the new names in Entom. Par., and therefore he and not Fourcroy ought to be mentioned as the author. See Reuter, Rev. Syn., p. 287.

16. *Aphanus rolandi*, L., = *Aphanus id.* This species is the type for Laporte's

genus *Aphanus* (see Kirkaldy, Entom., 1901, p. 177). The generic name *Calyptonotus* of Douglas cannot then be accepted for this species. When Stål, in 1872 (Gen. Lyg. Eur., p. 57), separated *rolandri* from the other species, he ought to have re-introduced the older name by Laporte instead of the one given by Douglas and Scott much later. As the genus *Calyptonotus*, Dougl. and Scott also includes other allied species, it may hereafter, when the *rolandri* group has been separated, be used for the species now wrongly included under *Aphanus*, which species otherwise will lack a common generic name for their many subgenera.

TINGIDINA.

17. *Monanthia ciliata*, Fieb., = *Tingis reticulata*, H.-S. See Horváth, Synops. Tingit., 1906, p. 70.

18. *Monanthia ampliata*, H.-S., = *Tingis id.*

19. *Monanthia cardui*, L., = *Tingis id.* The type for the genus *Tingis*, Fabr., 1803!

20. *Monanthia angustata*, H.-S., = *Tingis id.*

21. *Monanthia costata*, H.-S., = *Catoplatus fabricii*, Stål. *Acanthia costata*, Fabr., which has been wrongly considered as identical with Herrieh-Schaeffer's species, is a species of *Copium*. See Horváth, Syn. Ting., p. 91. The specimen which Horváth mentions is Fabricius' type-specimen, and belongs to the University Museum in Copenhagen, from where I have had it lent to me.

22. *Monanthia dumetorum*, H.-S., = *Physatochila id.*

23. *Monanthia quadrimaculata*, Wolff, = *Physatochila id.*

24. *Monanthia simplex*, H.-S., = *Oneochila id.*

EMESINA.

25. *Ploiaria*, auct., nec Scop., = *Ploiariola*, Reut., Rev. Syn., p. 711. Saunders has, in this following Champion, identified this genus with the exotic *Ploiariodes*, Buch. White (from the Hawaiian Islands), which, however, is a quite distinct genus. See Bergroth, Verh. Zool.-bot. Gesellsch. Wien, lvi, p. 305.

NABINA.

26. *Nabis*, auct., Saund., = *Reduviolus*, Kirby. *N. guttula* was fixed in 1804 by Latreille as the type for *Nabis*, which name therefore ought to be used instead of the current *Prostemma*. See Kirkaldy, "The Entomol., 1900, p. 264." Stål already held this opinion (En. Hem., iii, 1873, p. 108), and adopted *Coriscus*, Schrank, for the species usually represented under *Nabis*. The type for *Coriscus* however was *dauci* (= *Alydus calcaratus*, L.), fixed in 1801. (See Kirkaldy, l. c., 1900, p. 263). The genus *Reduviolus* was (1837) set up by Kirby, Richardson's Fauna Bor.-amer., iv, p. 280, for a species nearly related to *ferus*, L.

SALDINA (= ACANTHIINA).

27. *Salda* = *Acanthia*, Latr. In 1797 (Préc de car. gen., p. 85) Latreille says expressly: Je ne rapporte à ce genre que les espèces de Fabr. que l'on trouve ordinairement aux bords des eaux. Kirkaldy says (Entomol., 1899, p. 218): "Reuter indicates *zosterae*, Fabr., and *littoralis*, Linn., as the types of *Acanthia*, Fabr., but as this has been accepted neither by Saunders, Lethierry and Severin, nor Puton, nor yet by Horváth, it may be worth while to recapitulate the reasons

for this step. *Acanthia*, Fabr., 1775, contained a heterogeneous assemblage, but it was not till 1797 that Latreille indicated *littoralis* and its congeners as the types of the genus. It is, I think, indisputable that (1) *Acanthia* was not broken up, nor was any type fixed till 1797, and (2) that Latreille did fix the type. I therefore see no alternative to adopting the name *Acanthia* for *littoralis*, as Reuter has already done in his monograph of the Palearctic species."

CIMICINA (= CLINOCORINA).

28. *Cimex* auct. = *Clinocoris*, Fall., 1829. As neither the genus name *Acanthia* nor *Cimex*, as Kirkaldy has shown (see above), can be maintained for our common bug, the one proposed by Fallén already in 1829 (Hem. Svec., p. 141), ought to be adopted for it, viz., *Clinocornis*. On this point Kirkaldy, Nature, 1903, p. 464; Entomol., 1905, p. 77; and Girault, Psyche, Journ. Cambr. Ent. Club, xii, 1905, p. 61. The Pentatomid genus *Clinocoris*, Hahn (1834), Stål (1872), must therefore be exchanged for *Elasmucha*, Stål.

CAPSINA.

29. *Leptopterna* = *Miris*, Fabr. 1803. Type: *dolobratus*, L.!

30. Therefore *Miris*, auct., nec Fabr. = *Stenodema*, Lap.

31. *Trigonotylus brevipes*, Reut. nec Jakovl. = *T. psammæcolor*, Reut. The true *T. brevipes*, Jakovl., from the Steppes of South Eastern Russia is a different species. See Reut., Caps. persicæ, in Ann. Mus. Zool. Acad. Sci. St. Petersb., ix, 1904, p. 5. For the British species, that also lives in great quantities on Elymus and Psamma in the islands in the North Sea and the south of Baltic, when it was still thought to be a variety of *T. ruficornis*, I proposed the name of *psammæcolor* (Berl. Ent. Zeitschr., xxix, 1885, p. 45). Later on the species has been described by Thomson as *Miris elymi*.

32. *Lopus*, Spin. nec Hahn, auct. = *Lopistus*, Kirk., 1905. The type for the genus *Lopus*, Hahn, is *chrysanthemi*, Hahn (= *decolor*, Fall.). See Reuter, Wien. Ent. Zeit., 1906, p. 216. Kirkaldy has (l. c. 1905, p. 267) wrongly understood *hieracii*, Hahn (= *thunbergi*, Fall.), as such. The name *Capsodes*, Dahlb., 1850, which was given to *gothicus*, L., may perhaps not be used for *Lopus*, Spin. nec Hahn, as it was not accompanied by any description.

33. *Globiceps cruciatus*, Reut. This name ought to be maintained instead of *flavomaculatus*. So also:—

34. *Globiceps flavomaculatus*, Fabr., Reut., Saund., instead of *selectus*, Fieb., D. and Se. Puton has without any valid reason in his catalogue re-introduced the wrong names that were already rejected. The types of Fabricius belong exclusively to the species for which I have proposed to maintain the name *flavomaculatus*. And the author, who next to Fabricius used the name, fixed it also for the same species, "in floribus pratorum" common in Sweden. Whereas of *cruciatus*, Reut. (= *flavomaculatus*, Fieb., Put. nec Fabr.), which lives on *Salices*, a couple of specimens only have occurred on Öland. See Reuter, Rev. syn., p. 257.

35. *Macrocoleus tanacetii*, Fall. = *Megalocoleus pilosus*, Schr. This alteration has also been accepted by Puton.

36. *Onychumenus decolor*, Fall. = *Lopus*, id. See above at *Lopus* = *Lopistus*.

37. *Agalliastes* = *Chlamydatus*, Curt. Already in 1886 (Rev. d'Ent., v,

p. 122) I have pointed out that *A. saltitans*, Fall. (= *marginatus*, Curt.), in Ent. Mag., 1833, p. 197, has been described by Curtis as the only species of the genus *Chlamydatus* and thus ought to be considered as the type of it. Puton, too, has resumed the name *Chlamydatus* for *Agallastes*. Also the combination of genera, of which the former genus *Agallastes* makes a part as subgenus (by Saunders) ought therefore to get the name *Chlamydatus* 1833 instead of *Plagiognathus* (Fieber 1859).

CORIXINA.

Kirkaldy has (Entomol., 1898, p. 252) called attention to this, that the genotype of *Corixa*, Geoffr., is *striata*, Geoffr. (*geoffroyi*, Leach). The subgenus, to which this species belongs, ought thus to retain the name of *Corixa*.

The names of the different subgenera are thus: *Corixa*, Geoffr., 1762 (*Macrocorixa*, Thoms., 1869). *Glaenocorisa*, Thoms., 1869 (*Oreinoecorixa*, B. Wh., 1873; Saund., 1892). Type: *cavifrons*, Thoms. *Arctocorisa*, Wullengr. (*Glaenocorisa*, p. et *Corisa*, Put., 1880; *Glaenocorixa* et *Corixa*, Saund., 1892; *Basileocorixa*, Kirk., 1898). Type: *carinata*, Sahlb. See Kirkaldy, Entomol., 1900, p. 28, Note. *Callicorixa*, B. Wh., 1873. *Cymatia*, Flor., 1860.

To the above-mentioned changes there ought to be added still a few more, in view of the principle to be followed, which I consider to be the most correct, *i. e.*, that when a specific name is existing simultaneously twice or several times within the same genus, the latter ones, as lacking every right, should be rejected *for ever* and replaced by others. Rather early Gmelin had already carried out such a rejection of double specific names used in his time, and replaced the more recent of them by new ones. Some authors, however, as soon as the two species originally called by the same name are brought into different genera resume the later of the original names which had already been replaced by another. But such a proceeding, it seems to me, threatens the necessary stability of nomenclature. If this conception is approved of, and Kirkaldy among others shares it, then the changes mentioned below must still be made with the names adopted in Puton's Catalogue of 1899; also in this respect this author has not always acted consistently. For instance, he does not approve of the name *Calocoris norvegicus*, Gmel. (= *bipunctatus*, F., *nec* L.), and *hispanicus*, Gmel. (= *sevpunctatus*, F. *nec* L.), but uses the name *C. ochromelas*, Gmel., which, according to the principle he follows, ought to be called *variegatus*, Müll. (*nec*. Poda).

Here follows the list. Many of these names have been accepted by several later authors, but a consistency in their adoption has scarcely taken place.

Ancyrosoma leucogrammes, Gmel. (*Cimex albolineatus*, 1781, *nec* Goeze, 1778), *Stagonomus italicus*, Gmel. (*C. bipunctatus*, Fabr., 1781, *nec* Linn., 1764, *nec* Fabr. 1779), *Eusarcocoris fabricii*, Kirk. (*E. melanocephalus*, Fabr., 1775, *nec* Linn., 1767),

Gastrodes grossipes, De Geer (*C. ferrugineus*, Linn., 1758, nec Scop. 1763), *Copium cornutum*, Thunb. (*C. clavicornis*, Houtt., 1765, nec Linn., 1758), *Sphedanolestes carnifex*, M. et R. (*Reduvius sanguineus*, F., 1794, nec Rossi, 1790), *Acanthia muelleri*, Gmel. (*Cimex oculatus*, Muell., 1776, nec Fabr., 1775), *Megalocerca recticornis*, Geoffr. (*C. linearis*, Fuessl., 1775, nec Fabr., 1775) *Calocoris hispanicus*, Gmel. (*C. serpunctatus*, Fabr., 1787, nec Linn., 1758, nec Muell., 1776), *C. norvegicus*, Gmel. (*C. bipunctatus*, Fabr., 1779, nec Linn., 1764), *Cremnocephalus albolineatus*, Rent. (*C. umbratilis*, F., 1787, nec Linn., 1758), *Orthotylus virescens*, D. et Sc. (*Capsus chloropterus*, Kirschb., 1855, nec H.-S., 1853).

On the other hand, Kirkaldy has without reason changed the name for *Pseudoloxops coccineus*, Meg.; a *Capsus coccineus* does not exist earlier (only *Miris*, id. Duf., and *Phytocoris*, id. Spin.).

Concerning the names for families, subfamilies and divisions, I have lately (Hemipterol. Spekul. I, Klassific. d. Capsid., Festschrift für Palmén, I, 1905, pp. 56-58) expressed my opinions and I refer to this article.

I cannot agree with Kirkaldy on the point that a family or division name necessarily must be derived from the name of the earliest described genus belonging to it, and that existing family names must be changed if they do not refer to such a one. Such a proceeding threatens the stability of nomenclature, of which several instances could be mentioned; also in this case the *earliest given family name* has priority. I have for practical reasons used the same names as Saunders in the article, which it has been my purpose to supplement by this one.

Lastly I must here touch upon the question of the formation of names for genera which are joined together. I consider it scarcely right strictly to keep to the principle that the combination should receive the earliest of those names published *in the same work* for the genera joined together. It is far more sensible to select the name of that genus which has the most numerous species.

At least it looks to me inappropriate when, for instance, a genus with one species is joined to another with a hundred, to give to the combination the name of the former genus, only because it was printed some pages earlier in the same work. The case will certainly not be very different if it had been published in previous works, but in such a case we are perhaps obliged to sacrifice to priority.

I finish here with an apology for having occupied so much space in the Magazine with such barren and uninteresting questions as those treated above. But insignificant as they are, it is of importance, that order and consistency should be introduced in nomenclature, and that every kind of arbitrariness should be excluded.

ON A NEW SPECIES OF *LACCOBIUS*, ER., WITH A TABLE OF
THE BRITISH SPECIES OF THE GENUS.

BY E. A. NEWBERY.

LACCOBIUS PURPURASCENS, nov. sp.

In bringing forward the above species as new it was my first intention to give a detailed description of the insect on the time-honoured plan; I had indeed prepared such a description, but as this must of necessity consist mainly of characters common to all the species in the genus, I have come to the conclusion that the better plan will be to show by means of a table the differences of the insect from the other British species, adding thereto some observations which will make it more clear as regards the European members of the genus.

TABLE OF THE BRITISH SPECIES OF *LACCOBIUS*, ER.

A.—Thorax not alutaceous.

1.—Size larger; head without well-marked triangular spot before eyes; apex of elytra paler than disc, but not bearing two distinct spots.

a.—Intermediate femora of ♂ with a spot of close pubescence on the under-side just beyond the trochanter; head distinctly alutaceous, except close to base; form of body short oval, nearly orbicular.

b.—Thorax with a blackish submetallic spot on disc, this spot toothed at sides leaving the side margin broadly and conspicuously testaceous, the pale colour being continued triangularly at the base towards scutellum; insect without coppery-purple reflection; average size larger, length $3\frac{1}{2}$ to 4 mm....

L. nigriceps, Th.

bb.—Thorax (and head) almost entirely brown-red, the pale side-margins being narrow, little conspicuous, and only narrowly and linearly continued towards scutellum; insect with more or less coppery-purple or coppery-green reflection, which is usually well marked; average size smaller, length 3 to $3\frac{1}{2}$ mm. *L. purpurascens*, nov. sp.

aa.—Intermediate femora of ♂ without spot of close pubescence at base; head more finely alutaceous, which sculpture usually disappears behind the transverse brace-like carina; form of body longer oval. Length 3 to $3\frac{1}{2}$ mm....

L. sinuatus, Mots. = *obscuratus*, Rey, *oblongus*, Gorham.

2.—Size smaller; head with well-marked triangular testaceous spots before eyes; apex of elytra bearing two distinct pale spots; intermediate femora as in *sinuatus*, Mots. Length $2\frac{1}{2}$ mm....

L. biguttatus, Gerh. = *bipunctatus*, Bedel, and Brit. Cat. (nec F.)

AA.—Thorax alutaceous.

- I.—Average size larger; elytra with rows of punctures irregular and confused *L. alutaceus*, Th.
- II.—Average size smaller; elytra with rows of punctures more regular...
L. minutus, L.

Laccobius purpurascens has the thorax smooth between the punctures, a character which will separate it from the greater number of the European species. The spot of pubescence at the base of the intermediate femora of the ♂ will serve to distinguish it from *L. sinuatus*, Mots., *L. scutellaris*, Mots., *L. cupreus*, Rey, *L. gracilis*, Mots., and *L. biguttatus*, Gerh. (= *bipunctatus*, Bedel). Excluding four forms of very restricted and even insular limitation,* of which I have no description, but one European species remains, namely, *L. nigriceps*, Th. *L. purpurascens* appears to be very closely allied to this last mentioned species; indeed, Captain Saint Claire Deville, to whom I have submitted specimens, is of opinion that it is "a superb new variety of *L. nigriceps* analogous to that of *L. sinuatus* (*cupreus*, Rey), which Rey has described from Corsica." It is quite possible that Captain Deville may be right, nevertheless the insect has such a different appearance from *L. nigriceps* that I prefer to bring it forward as having specific value. The remarkable coppery-purple reflection, which in its most pronounced form is somewhat suggestive of that of a ripe plum, at once strikes the eye. The size is extremely constant, being rather less than that of *L. nigriceps*, while the form of the body is a trifle more elongate. The reddish colour of the head and thorax seems to be invariable, and is well seen by artificial light, no specimen that I have examined having the blackish head and the spot on the thorax present in *L. nigriceps*. It is true that pale forms of the latter insect sometimes occur, but in that case the form of the thoracic spot will serve to identify the species.

Laccobius purpurascens was discovered by Mr. Philip de la Garde in May, 1906, crawling in swarms among the slimy ooze where water had trickled down the red sandstone cliffs, on the south side of the River Teign, Shaldon, Devon. It has been subsequently taken by Mr. G. C. Champion at the same place, and also by Mr. J. H. Keys near Plymouth.

12, Churchill Road, Dartmouth Park, N.W. :

January 2nd, 1908.

* These species are: *L. minimus*, Kuw., Corfu; *cinereus*, Mots., Caucasus; *signatus*, Kuw., Spain; and *moraguesi*, Regimb., Balearic Islands.

COLEOPTERA AND HEMIPTERA-HETEROPTERA IN
DEVONSHIRE.

BY G. C. CHAMPION, F.Z.S.

The following list of *Coleoptera*—observed by myself, or my son, in North and South Devon in August and September last—will supplement that given by Mr. P. de la Garde in the last number of this Magazine (*antè* pp. 13—15). There is little, of course, to add from Christow, but at some of the other localities visited a few interesting captures were made, including several new to the county list. Dr. G. B. Longstaff kindly invited us to spend a few days with him at Morteheo,* and he accompanied us in nearly all our excursions in that district, as well as to Braunton Burrows, &c. Mr. de la Garde and Mr. Keys helped in various ways while we were at Slapton and Shaldon, and several outings were made in their company. At Slapton we found *Bidessus minutissimus* in plenty in its original habitat, in the shallow water along the edges of the Ley; most of the other local species known from that place were, however, either very rare or absent. At Shaldon Mr. de la Garde guided us to the locality for the *Laccobius* described by Mr. Newbery under the name *purascens*—the insect occurring in abundance in the slimy ooze in the red sandstone cliffs; but a joint search for *Arena octavii* and *Sibinia sodalis* at Dawlish was unsuccessful. Braunton Burrows, so late in the season, produced but little beyond *Nebria complanata*, the same species putting in an appearance at Woolacombe. At Rockham Bay, Morteheo, I was pleased to find *Actocharis readingi*, the insect not having been previously recorded from N. Devon. A few rare or local *Hemiptera-Heteroptera* were taken, including *Mesovelia furcata*, at Slapton, and a list of them is appended at the end of this paper. The species marked thus † are not included in the Devonshire list of the Victoria County History.

COLEOPTERA.

Cicindela hybrida, v. *maritima*, Braunton Sands. *Nebria complanata*, not uncommon, under loose pieces of drift wood on the sandy beach, Woolacombe and Braunton. *Leistus fulvibarbis*, Woolacombe. *Carabus arvensis*, Woolacombe. *Badister sodalis*, Morteheo. *Dyschirius thoracicus* and *salinus*, Dawlish. *Harpalus azureus*, under stones, Saunton; *H. discoideus*, at roots of heath, Dawlish Warren. *Stomis pumicatus*, Woolacombe. *Pterostichus dimidiatus*, Saunton. *Amara patricia*, † Shaldon and Woolacombe; *A. consularis*, † Shaldon; *A. acuminata*, Lynmouth. *Taphria nivalis*, on the high ground at Haldon, above Teignmouth. *Pristonychus*

* Dr. Longstaff has enumerated most of the insects taken by us at this locality in the 3rd edition of his "*Lepidoptera* and other *Insecta* observed in the parish of Morteheo." [London: Mitchell, Hughes, and Clarke, 140, Wardour Street. 1907].

terricola, Woolacombe, under drift-wood on the sands. *Lymnæum nigropiceum*, in the shingle at Torcross. *Bembidium rufescens*, Woolacombe; *B. tibiale* and *decorum*, in abundance, on the river banks, Lynmouth and Christow; *B. monticola*, Christow; *B. saxatile*,† common on the beach, Shaldon; *B. normannum*, Dawlish. *Aëpus marinus*, Shaldon. *Dromius rectensis*, in the shingle, Torcross. *Bidessus minutissimus*, in plenty in its old locality, Slapton Ley. *Celambus inaequalis*, Slapton. *Hydroporus rivalis*, in the river, Lynmouth; *H. septentrionalis*, Christow; *H. longulus*, in numbers in the fresh water "trickles" in the cliffs, Shaldon; *H. lituratus*, Mortehoe; *H. lepidus*, Braunton. *Orectochilus villosus*, Christow. *Enochrus bicolor*, Slapton. *Laccobius purpurascens*,† Shaldon. *Limnebius truncatellus* (males, as usual, very large, and females small, not larger than *L. papposus*) and *nitidus*, abundant, in moss in the river, Lynmouth, Christow. *Helophorus arvernensis* (1) and *Hydrochus nitidicollis* (3), in the river Teign, Christow. *Ochthebius lejoli*, sparingly in the rock pools, and very dirty as usual, Saunton and Croyde; *O. vratist*† and *bicolor*, Woolacombe; *O. pygmaeus*, Slapton. *Hydraena gracilis*, Slapton, Christow, and Lynmouth; *H. atricapilla*, Christow and Lynmouth; *H. riparia*, *longior*, *nigrita*, and *pygmaea*, Christow, all in numbers, except the last-mentioned. *Alianta plumbea*, abundant in seaweed, Shaldon. *Homalota pavens*, in damp places on the cliffs, Shaldon; *H. caesula* † on the sandhills, Woolacombe; *H. longula*, swarming in the shingle, Slapton Ley; *H. sodalis*, Mortehoe. *Gnypeta caerulea*, Lynmouth and Christow. *Tachyusa atra*, Slapton. *Falagria thoracica*, commonly, at roots of grass, on the red sandstone cliffs, Dawlish. *Phytosus spinifer* and *balticus*, Dawlish and Woolacombe. *Diglossa mersa* and *Actocharis readingi*, Rockham Bay, Mortehoe, singly, the latter not previously recorded from N. Devon. *Myllæna kraatzi*, Christow; *M. brevicornis*, Shaldon. *Quedius peltatus*, Mortehoe; *Q. umbrinus* and *maurorufus*, in damp places on the cliffs, Shaldon. *Staphylinus stercorarius*, Shaldon. *Philonthus punctus* and *quisquiliarius* with its var. *dimidiatus*, the first-mentioned very rarely, *Pæderus fuscipes*, and *Scopæus rubidus*, Slapton. *Lathrobium angustatum*, Shaldon. *Dianous cerulescens*, Mortehoe and Lynmouth. *Stenus quynemeri*, Borough Wood, Mortehoe; *S. guttula*, Shaldon. *Trogophlæus arcuatus*, Christow and Lynmouth; *T. pusillus*, Christow, Mortehoe. *Lesteva sicula*, not rare, Braunton and Mortehoe. *Anisotoma dubia*, Woolacombe. *Necrophorus interruptus*, Woolacombe; *N. ruspator*, Slapton. *Neuraphes elongatulus*, in a rotten stump, Borough Wood, Mortehoe. *Corylophus sublævipennis*,† Slapton. *Olibrus millefolii*, Dawlish. *Saprinus maritimus*, Dawlish and Woolacombe. *Nitidula bipustulata*, Woolacombe. *Cryptophagus pubescens*, Dawlish. *Atomaria mesomelas*, Slapton. *Simplocaria semistriata*, Slapton, Shaldon, and Lynmouth. *Elmis volkmari*, Croyde; *E. æneus*, in profusion, Christow, Croyde, &c.; *E. nitens*, singly, Christow. *Limnius troglodytes*, common in Slapton Ley, and also in the streams at Christow, Lynmouth, &c. *Sinodendron cylindricum*, fragments found in an old stump, Mortehoe. *Geotrupes vernalis*, *Aphodius scybalarius*,† and *A. fætens*, about the rabbit burrows, Woolacombe. *Cryptohypnus dermestoides*, Slapton, on the banks of the Ley. *Scirtes hemisphaericus*, Braunton. *Lamprosoma concolor*, abundant by beating ivy in the old hedges, Hallsands. *Psylliodes napi*, on watercress, Shaldon. *Aphthona nonstriata*, Dawlish. *Cassida hemisphaerica*, Twitchen, Mortehoe. *Phaleria cadaverina*, abundant, Braunton, Woolacombe. *Microzoum tibiale*,† Braunton. *Anthicus angus-*

tatus, in the shingle, Blackpool, Slapton. *Mordellistena neuwaldeggiana* (*brunnea*), Teignmouth, singly. *Otiorrhynchus rugifrons*, Mortehoe. *Sciaphilus muricatus*, Dawlish. *Strophosomus retusus*, abundant, by sweeping herbage on the hillsides, towards evening, Mortehoe. *Trachypheus scaber*, Dawlish, Mortehoe. *Cleonus sulcirostris*,† on thistles, Branton. *Ceuthorrhynchus melanostictus*, Dawlish, on *Lycopus*, as usual; *C. hirtulus*,† Slapton. *Ceuthorrhynchidius melanarius*, swarming on watereress in seed, Shaldon. *Eubrychius velatus*, Slapton Ley. *Phytobius canaliculatus*, Dawlish. *Apion atomarium*,† common on thyme, Woolacombe; *A. craceæ*, Dawlish. *Hylastinus obscurus*, Mortehoe.

HEMIPTERA-HETEROPTERA.

Corimelæna scarabæoides, Woolacombe. *Scirius morio*, Slapton. *Alia acuminata*,† Teignmouth. *Pseudophleus falleni*, Woolacombe. *Stenocephalus agilis*, common on the sandhills, Woolacombe, also at Slapton. *Therapha hyoscyani*, Woolacombe and Mortehoe. *Myrmus miriformis*,† Mortehoe. *Metacanthus punctipes*, common on *Ononis*, Woolacombe. *Nysius thymi*, Woolacombe. *Derephysia foliacea*, Mortehoe. *Microvelia pygmaea*,† Slapton, Branton. *Mesovelia furcata*,† one macropterous example, Slapton Ley. *Nabis lineatus*,† Dawlish Warren. *Salda scotica*, several specimens, Lynmouth; *S. c-album*, Christow, Lynmouth. *Cryptostennum alienum*,† in the shingle, Christow, Lynmouth. *Myrmedobia inconspicua*,† Dawlish Warren. *Lopus gothicus*,† Slapton. *Bryocoris pteridis*, Lynmouth. *Cymatia coleoptrata*, Slapton Ley.

Horsell: January, 1908.

SUFFOLK LEPIDOPTERA IN 1906 AND 1907.

BY THE REV. E. N. BLOOMFIELD, M.A., F.E.S.

I am again indebted to the same correspondents for lists of the rarer species taken in the county during the last two seasons. The Rev. A. P. Waller records captures at Henley and Waldringfield, all taken within two miles of Waldringfield Rectory; Mrs. Mann, at Bungay; Dr. Crowfoot, at Beccles; Messrs. Claude Morley, in various localities; A. E. Tonge and J. E. Campbell-Taylor, both at Lowestoft, the former in 1906, the latter in 1904. Mr. Campbell-Taylor's list was not received in time for the report for that year.

RHOPALOCERA.—*Pararge egeria*, L., seems to be now very scarce, both Mr. Waller and Mr. Claude Morley tell me they have not seen it in the county, and the latter adds, I have never met any one who has done so; Mr. Ogden reports having seen one at Martlesham in 1907; sixty years ago it was common in the county.

HETEROCERA.—*Sphinx pinastri*, L., a worn female on a Scotch fir, August 12th, 1906, *Sarothrips undulatus*, Hb., bred from larvæ and at light, both at Waldringfield, and the latter and *Earias chlorana*, L., at Bungay, *Nudaria senex*, Hb., at Lowestoft, *Drepana binaria*, Hufn. (*hamula*, Esp.), Waldringfield, one at light, and *Gnophria quadra*, L., Lowestoft, in 1904.

NOCTUÆ.—*Leucania obsoleta*, Hb., bred, and also taken, in July, *L. favicolor*, Barr., buff and red varieties, a few at sugar, *L. straminea*, Tr., and *Senta maritima*, Tausch., all at Waldringfield, the last also at Lowestoft, *Calamia phragmitidis*, Hb. and *Nonagria geminipuncta*, Hatch., larvæ, at Waldringfield; *N. neurica*, Hb., Oulton Broad, August 19th, 1904, *Mamestra abjecta*, Hb., Waldringfield, freely at sugar in 1907, *Triphaena fimbria*, L., Lowestoft, September 6th, 1904, *Xanthia aurago*, F., Bungay, two at sugar, *Aplecta occulta*, L., two at Bungay and one at Waldringfield, a rare species in the south, *Plusia moneta*, F., in garden, and *Toxocampa pastinum*, Tr., in moth trap, both at Bungay, the latter also at Lowestoft in 1904.

GEOMETRÆ.—*Acidalia emutatoria*, Hb., in plenty, *A. rubiginata*, Hufn., plentiful at light in August 1906, both at Waldringfield; *Abraxas sylvata*, Scop. (*ulmata*), one at Martlesham, a scarce species in East Suffolk, *Eupithecia albipunctata*, Haw., and *E. coronata*, Hb., at Bungay, and *Cidaria silaceata*, Hb., Lowestoft, August, 1904.

PYRALIDES.—*Ebulea stachydalis*, Zinck., and *Scoparia angustea*, Steph., at Bungay.

PTEROPHORI.—*Agdistes bennetti*, Curt., Waldringfield at light.

CRAMBI.—*Schænobius forficellus*, Thunb., Lowestoft and *Chilo phragmitellus*, Hb., very plentiful at Waldringfield in 1906.

PHYCIDÆ.—*Homæosoma sinuella*, F., and *H. binævella*, Hb., Bungay and Waldringfield, *Nyctegretes achatinella*, Hb., one at light, *Cryptoblabes bistriga*, Haw., several beaten from oak. *Rhodophæa formosa*, Haw., and *R. marmorea*, Haw., all from Waldringfield, the last also from Bungay, as were *R. suavella*, Zinck., and *Phycis subornatella*,* Dnp., in moth trap.

TORTRICES.—*Dichelia grotiana*, F., and *Leptogramma literana*, L., at Waldringfield; *Spilonota incarnatana*,* Hb. (*amænana*), *Ortholenia antiquana*, Hb., *Euchromia purpurana*, Haw., *Grapholitha nigromaculana*, Haw., *Phloxodes immundana*, Fisch., and *Ephippiphora inopiana*, Haw., all at Bungay in moth trap; and *Eupæcilia vectisana*, Westw., Waldringfield, abundant in salt marshes in May.

TINEÆ.—*Epichnopteryx radiella*, Curt., Foxhall, May 27th, 1907; *Tinea semifulvella*, Haw., *Nemophora metaxella*,* Hb., and *Adela crasella*, Scop. (*sulzella*), at Beccles; this last was recorded by Curtis from Wrentham, but had not been taken since. *Theristis mucronella*, Scop., *Depressaria umbellana*, St., *D. ciliella*, St., *D. chærophylli*, Zell., and *Gelechia mulinella*, Zell., at Bungay, *Ecophora lunaris*, Haw., *Butalis incongruella*,* St., *Coleophora therinella*, Tgstr., and *Chauliodus illigerellus*,* Hb., at Beccles; *C. chærophylllellus*, Göze, Monks Soham, *Argyresthia curvella*, L., Waldringfield, *Laverna subbistrigella*, Haw., and *Asychna modestella*, Dup., Bungay, and *Lithocolletis stettinensis*,* Nicelli, Foxhall, May 27th, 1907.

The species marked * are new to the Suffolk list.

Guestling, Sussex :

January 3rd, 1908.

TOWARDS THE BETTER KNOWLEDGE OF THE GENUS *LECANIUM*.

BY DR. KAREL SULC.

The greatest number of our Palæarectic, Bohemian, and also British species (not introduced in bothouses) of the genus *Lecanium* (*sensu* Signoret) are grouped now in the new generic division *Eulecanium*, of Cockerell (1901), which is also used in the Catalogue of the *Coccidæ* of the world by Mr. E. Fernald (1903).

The following may be specially mentioned: *L. persicæ*, Geoff., *coryli*, L., *capreæ*, L., *douglasi*, Sule, *prunastri*, Fonse., *bituberculatum*, T. T. (*sensu* Newstead, British *Coccidæ*, 1903).

I will speak only of the truly Bohemian species, known to me at the present time, treating the males alone; the females being well described and figured by Newstead.

The results of my many years studies are, that the above-mentioned species could not be contained in a single genus having salient generic differential characters, and I propose therefore the following distribution:—

PARTHENOLECANIUM, *n. gn.*

There is no male; female parthenogenetic.

Type, *coryli*, L., *persicæ*, Geoff., both closely allied, and perhaps one and the same species.

EULECANIUM, Ckll., *Defin. emend.*

The male with six pairs of eyes, wings present, with pockets for hooks of the halteres; halteres present. Two pairs of waxy abdominal filaments.

Type, *capreæ*, L. (Syn. *tiliæ*, Sign.; *pyri*, Goethe), *douglasi*, Sule, *ciliatum*, Newstead, *alni*, Mod.; the last three names being perhaps synonymic.

SPHÆROLECANIUM, *n. gn.*

The male with three pairs of eyes, wings present, but without pockets; halteres wanting. Two pairs of waxy abdominal filaments.

Type, *prunastri*, Fonse.

PALÆOLECANIUM, *n. gn.*

The male with three pairs of eyes, wings present, with pockets for hooks of halteres: halteres present. Two pairs of waxy abdominal filaments.

Type, *bituberculatum*, T. T.

A more extended illustrated treatise on the subject will appear in the already prepared continuation of my Studies on *Coccidæ*.

Ostrava-Michálkovice, Austria:

December 1st, 1907.

ODONATA COLLECTED BY MISS FOUNTAINE IN BOSNIA AND
HERCEGOVINA.

BY KENNETH J. MORTON, F.E.S.

Our information regarding the *Odonata* of Bosnia and Hercegovina is still sufficiently meagre to warrant a short notice of a collection made by Miss Fountaine in these provinces during the past summer.

The only previous British reference relating to Bosnian *Odonata* that I know of, is a note by Mr. McLachlan on a few species taken by Mr. Malcolm Burr (Ent. Mo. Mag., 2nd ser., vol. ix, p. 249). Professor Klapálek however took a number of species (14) on a journey through the same region in 1897, and a list of these appeared in Vestn. České Akad. císaře Fran. Josefa, 1898, čís. 2.

The majority of Miss Fountaine's captures were made at Pale, in Bosnia, described by her as a small village at 3000 ft. s. m., 12 kilometers by train, and 29 by road north of Sarajevo, situated amongst pine-woods and hay fields. The other localities are Mostar and Jablanica, both in Hercegovina.

The species are as follows :—

Orthetrum cærulescens, F.—Pale, 1.VIII (teneral).

Sympetrum meridionale, Selys.—Mostar, 13.VI. *S. striolatum*, Charp.—Pale, 5.VIII. *S. flaveolum*, L.—Pale, 8.VIII.

Onychogomphus forcipatus, L.—Jablanica, 29.V, teneral ; Pale, 29.VII.

Gomphus vulgatissimus, L.—♀, Mostar, 15.VI.

Cordulegaster bidentatus, Selys.—♂, Mostar, 6.VI ; ♀, Jablanica, 27.V. These differ from Swiss examples, especially in the much broader black margins of the labrum, and the central thoracic lateral band is practically obsolete.

Æschna affinis, V. d. Lind.—Pale, 20.VII. *Æ. cyanea*, Müll.—Pale, 11—29.VII.

Calopteryx virgo, L.—Pale, 20—31.VII. A very fine form ; remarkable for their large size, and the dark colour of the wings of the ♂ goes to their base, in this suggesting the var. *festiva*, Brullé, from Greece and Asia Minor, but they differ from the latter in the hyaline tips of the wings, and the wings of the ♀ are not darkly coloured as they are in *festiva*.

Agrion puella (L.), V. d. L.—Pale, 27.VII.

The species taken by Mr. Burr and Professor Klapálek not included in the above list are :—*Libellula depressa*, L., *Orthetrum cancellatum*, L., *O. brunneum*, Fonsc., *O. ramburi*, Selys., *Sympetrum sanguineum*, Müll., *Anax formosus*, V. d. Lind., *Hemianax ephippiger*, Burm. (this from Cetinje, Montenegro), *Æschna mixta*, Lat., *Calopteryx splendens*, Harris, *Lestes barbara*, Fab., *Sympycna fusca*, Van d. Lind., *Platynemis pennipes*, Pallas, *Ischnura pumilio*, Charp., *Agrion lindenii*, Selys, and *Erythromma najas*, Hansem.

A note on the Coleopterous genus Colon.—During the last two years I have been particularly fortunate in capturing several members of this rare genus, chiefly by employing two special methods, viz., by sweeping grass in the rides and on borders of woods in the late afternoon and evening, and by systematically examining the windows of my motor shed during warm evenings in the early summer. There were very few such evenings last year, but in 1906 I took on several occasions four or five specimens in one day by the latter method. The beetles fly in at the large doors, which I purposely leave open, being, as I suppose, attracted by the comparative darkness, and having found nothing to their liking in the shed, attempt to fly out of the windows. They begin to arrive as early as 4 o'clock in June, and I conclude that this is the time to commence evening sweeping in shady places. Last year I was more successful in this respect, and particularly so on June 5th, a by no means ideal day, with a cold wind and even some rain. However, in about two hours, by sweeping over and over again about 100 yards of grass by the side of a wood, I captured 19 specimens of *Colon*, the majority of them being *C. viennense*, Herbst, but *C. serripes*, Sahlb., *C. zebei*, Kr., and *C. brunneum*, Latr., also occurred.

At one time I had considerable difficulty in identifying my specimens of the genus, but having obtained both sexes of several of the species, and having had the advantage of studying Herr Ganglbauer's "Die Käfer der Mitteleuropa," I have found things much more easy. Ganglbauer gives much the same table as Canon Fowler, but adds several most useful characters which I think are worth noting.

C. viennense and *C. serripes*.—Ganglbauer points out that in *C. serripes* the eighth joint of the antenna is narrower than in *C. viennense*, and is distinctly narrower than the ninth, and that the thorax is more strongly punctured than the elytra, whereas this is not the case in *C. viennense*.

C. brunneum, Latr.—This species, as Fowler notes, is by far the commonest member of the genus, and on account of its great variation in size gives rise to many mistakes. Generally it may be recognised superficially by its comparatively strong and diffuse punctuation and shining appearance. Smaller specimens have a narrower thorax, which is very diffusely punctured; in larger examples the thorax is broader than the elytra and the punctuation is much closer. Ganglbauer gives a specific distinction for this species, which I must acknowledge, however, is not very easy to see, viz., the anterior femora are dilated and widened at the base into a bluntly rounded angle.

C. zebei, Kr.—Ganglbauer regards this species as specifically distinct from *C. dentipes*, Sahlb., and I think any one who has compared genuine examples of the two could hardly come to any other conclusion. It is of about the same size as *C. dentipes*, and has the same long curved tooth on the posterior femora in the ♂, but in shape is markedly broader and more rounded at the sides; the pubescence is longer, coarser and less thick, and of a deeper yellowish colour; and the punctuation is much stronger and more diffuse. The var. *barnevillei* of *C. zebei* is certainly a puzzling form, and occurs not uncommonly here. It is distinctly smaller than the type form, and has a differently shaped femoral tooth in the ♂; but in my specimens I have found these distinctions quite constant, and I prefer to regard *C. barnevillei* as a good species until I have seen the intermediate forms.

The ♀ of *C. barnevillei* is of the same size as, and very much resembles a large

specimen of, *C. brunneum*, and indeed they can only be separated by a careful comparison of the two; it will then be seen that it has the thorax less strongly punctured and distinctly less shining than in *C. brunneum*.

C. denticulatum, Kr.—I have had the good fortune to take two specimens of this very rare species. It is of the same size as *C. brunneum*, but is broader, and may be recognised by its very fine punctuation, large dark club to the antennæ, and more dilated tibiæ.

C. angulare, Er.—Mr. Donisthorpe has kindly lent me a specimen of this great rarity for examination, which he took at Weybridge on April 29th, 1893. In general appearance it closely resembles *C. barnevillei*, but the ♂ can of course be easily recognised by having a small sharp tooth in the middle of the posterior femora, and the apical angle prominent. The ♀, however, must be much more difficult to identify. It can be separated from *C. barnevillei* and *C. brunneum* by its less transverse thorax and the more gradual club of the antennæ, the 8th joint being much narrower than the 9th.

C. appendiculatum, Sahlb.—There is no difficulty in identifying the ♂ of this species by the curious tufted blunt posterior femoral tooth, but the ♀ resembles *C. denticulatum* in its extremely fine punctuation. It may, however, be known by its average larger size, the sinuation of the base of the thorax, and the traces of striæ on the elytra. Fowler is in error in giving the last character to *C. denticulatum*.—NORMAN H. JOY, Bradfield, Berks: *January 2nd, 1908.*

Recapture of Læmophlæus monilis, F., in Berkshire.—Since taking *Læmophlæus monilis*, F., near Streatley on November 8th and 18th, 1905, I have visited the same tree on several occasions. The following spring I found one dead specimen under a small piece of bark. In the autumn of 1906 there were large numbers of *Litargus bifasciatus*, F., *Diplocælus fagi*, Chevr., and the three species of *Rhinosimus* on the tree, but I was disappointed at not taking the *Læmophlæus*. Last year the tree, a medium sized beech, still seemed in very good condition, but unfortunately I was unable to visit it after August until December 21st, when, however, I was delighted in finding four specimens, one of which was dead, a fact which makes me think that perhaps it was considerably more common earlier in the autumn. This makes a total of seventeen specimens that have been taken, but I have strong reason to suspect that it will not occur again on that particular tree.—ID.

Why should not Teretrius picipes, F., be commensal with *Lyctus canaliculatus*, F., as well as with *L. brunneus*, Steph.?—In his short note (Ent. Mo. Mag., Ser. 2, xviii, p. 275) entitled "Is *Teretrius picipes*, F., parasitic on *Lyctus canaliculatus*, F., as well as on *L. brunneus*, Steph.?" Mr. Bedwell states the fact that the interesting little Histerid beetle, *T. picipes*, was taken by himself with *L. canaliculatus*, at the same time pointing out that his brother Coleopterists regard this association as improbable. We all know that *T. picipes* is parasitic (in the broadest sense of the word) on *L. brunneus*, and some Entomologists seem to think it cannot be found with another beetle, however closely allied, thus expressing (perhaps unintentionally) serious doubts when they learn that it is found with *L. canaliculatus*, a beetle belonging to the same genus as *L. brunneus*, of about the same size and practically

identical habits. *Colydium elongatum*, F., is not attached to *Platypus cylindrus*, F., alone, but is found in the burrows of beetles not nearly so closely allied as the two species of *Lyctus* just mentioned. Mr Donisthorpe has taken it with *Dryocætes villosus*, F., and another species of Scolytid, as well as in the burrows of *Melasis buprestoides*, L. In conclusion, finding *Epuræa angustula*, Er., and *Acrulia inflata*, Gyll., in the borings of *Trypodendron domesticum*, L., shall we say that these two species will be found with *T. domesticum* alone and with no other beetle, however closely related?—R. S. BAGNALL, The Groves, Winlaton-on-Tyne: December 11th, 1907.

Bruchus affinis, Fröhl., a British insect.—In the Ent. Mo. Mag. (antæa, p. 2) Mr. Champion expresses the opinion that "the true *Bruchus affinis* probably has no claim to a place on the British list." This, however, is not the case. On May 14th, 1893, when in company with my old friend, the late Arthur Chitty, I swept a specimen in Darenth Wood. It has a strong tooth on the thorax, the anterior legs are all red, and the bare black spots on the pygidium are very conspicuous.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: January, 1908.

Rhizophagus parallelocollis, Er., in seed potatoes.—It may be of interest to add a further confirmation of the subterranean habits of this beetle, as referred to by Dr. Joy and Dr. Bailey (Ent. Mo. Mag., vols. xlii, p. 256, and xliii, p. 3). While digging up potatoes in my garden during August and September in the past season I several times met with the insect in the rotting seed potatoes. They occurred in potatoes which were in all stages of decay, from some that were still hard and but little changed from what they were when planted, to others that were a semi-fluid mass of corruption and most offensive. Those which were found early in August were of a paler colour than those met with later, and had apparently not long been disclosed from the pupæ. *Bathyscia wollastoni* occurred with the *Rhizophagus* in the earlier finds, but not in the later ones. The only other beetles were a few "Staphs," but the *Rhizophagus* was the characteristic species.—E. A. BUTLER, 56, Ceeile Park, Crouch End, N.: November 16th, 1907.

Fresh-water Mollusca disseminated by water-beetles.—That insects play a part in the dissemination of *Mollusca* is well known, but records of observations are by no means numerous. It is interesting therefore to note that Canon Horsley took a *Dytiscus marginalis* last summer, in the Ravensbourne stream near Catford, with two specimens of the little freshwater limpet *Ancylus lacustris* attached to its elytra.—J. R. LE B. TOMLIN, Stoneley, Reading: January, 1908.

Melanism, &c., in Abraxas ulmata.—During the early part of last summer a non-entomologist brought me a specimen of *Abraxas ulmata*, with the information that on the rough pathway and adjoining ground outside Harden Clough Wood, near here, the moth was so abundant that one could scarcely avoid treading on them as one walked along. Knowing that the species was every year more or less common in that wood, I regarded the report of its excessive abundance as probably a mild exaggeration, and thought no more about it. But about the same time, as I after-

wards learned, in another wood a few miles away, Mr. B. Morley was also astonished to find the species in immense multitudes; indeed, in a paper on the subject (*Naturalist*, November, 1907, pp. 392-4) he states that the species was "in a countless swarm. * * * To walk about the wood meant killing them at every step. The herbage and bushes were simply alive with them, everything was spangled all over with their white wings. But evidences of tragedy abounded everywhere—bodiless wings littered the ground; thousands were drowned in the stream; hopelessly deformed examples were crawling about on every hand, crippled in every conceivable way." The large number of specimens suggested to Mr. Morley the probability of "varieties" among them, and he was not disappointed, for he was able to pick out a magnificent series comprising "all sorts of forms," from very pale with few marks, to the fine melanic lead-coloured form which was found in some abundance a few years ago by the York collectors at Sledmere on the Yorkshire Wolds, and of which form Mr. Morley picked up a few beautiful examples among the hosts of the species.

My primary object in writing this note is because in the "List of Yorkshire Lepidoptera" I specially note this lead-coloured form as an illustration of melanism *not* occurring in the smoky South-west Riding of Yorkshire, *i. e.*, in the area where melanism has been chiefly noticed; but as occurring in the Sledmere district, where there is no smoke, and but little other melanism. Now, of course, the illustration will no longer hold good, for although no trace of melanism in *ulmata* has ever previously been seen in the Huddersfield district, apparently there only wanted either a sufficient number of specimens to bring it out, or else it is the direct result of some exceptional circumstance. I think the latter supposition the more probable on account of the large percentage of crippled or diseased specimens which has always accompanied the melanism in this species. Exactly the same thing occurred at Sledmere. For several consecutive seasons prior to 1901 the species occurred in profusion, with the melanic and intermediate forms common, but always accompanied by thousands of crippled examples. About that date the disease apparently worked itself out, for since then the insect has been quite a scarce species in the wood, and scarcely a variety to be found. This points to the variation in this species as being caused by disease, and it will be interesting to observe whether Huddersfield will furnish a parallel case. Why too this particular insect should occur in such extraordinary numbers in a season when nearly all other species were exceptionally scarce is a problem which is probably beyond solution at present.—GEO. T. PORRITT, Edgerton, Huddersfield: *January 6th*, 1908.

Note on the genus Antecercococcus, Green.—In the *Proc. Linn. Soc. N.S.W.*, p. 560 (1900), I erected the genus *Antecercococcus* to contain a species (*A. punctiferus*) in which the test of the adult female was incomplete and not separable from the body of the insect. The test was also characterized by the presence of tufts of glassy filaments. The insect itself was in no wise distinguishable from a typical *Cercococcus*.

The subsequent examination of further material in a more advanced stage of development shows me that *A. punctiferus* eventually develops a complete test freely separable from the body of the insect, and that it then loses more or less

completely the earlier tufts of filaments. I am now, therefore, of opinion that *Antecercococcus* must be considered a synonym of *Cercococcus*, and represents only the early adult stage of the species for which the name was founded. Recent examination of an allied form from India has confirmed me in this opinion.

Maskell's *Planchonia bryoides*, which—on my authority—was relegated to *Antecercococcus*, must also be removed to the genus *Cercococcus*. It passes through similar stages of incomplete and complete test, but retains the characteristic tufts of filaments that suggested the name of the insect.

I have recently received from the author an interesting paper entitled "On *Cercococcus eremobius*, gen. et sp. n., an aberrant form of *Coccidae*" (Trans. Linn. Soc. Lond., vol. ix, part 12, p. 455 (1907). A careful study of the description and excellent figures of the supposed new genus lead me to suspect very strongly that this also has been similarly founded upon the early adult stage of an insect that is perfectly referable to the genus *Cercococcus*. The author himself, after describing the cup-shaped test (or ovisac) with "sometimes a slight spout-like prolongation," remarks (p. 462), "Such is the structure in the great majority of specimens. But in a very few of the dried specimens the ovisac has proved to be completely closed except for an opening on the somewhat spout-like prolongation corresponding to the tail of the insect. . . . It appears as if, at a later stage in the life-history than that attained by most of these specimens, more secretory material is added to the open cup, so that the latter becomes a closed structure, as is the case in the allied genus *Asterolecanium*." This being the case, there is nothing in the character of the contained insect to separate it from its still nearer allies in the genus *Cercococcus*. In any case, the adoption of a name so closely resembling that of a nearly related genus is unfortunate.—E. ERNEST GREEN, Peradeniya, Ceylon: December 10th, 1907.

Pachycoleus rufescens, Sahlb., at Loddiswell, South Devon.—I have pleasure in noting another locality, as above, for this interesting little Hemipteron recorded as new to Britain by Mr. G. C. Champion in last month's issue of this Magazine. Five or six specimens were shaken out of moss from a streamlet in the woods, but of these I regret to say I brought home but a single example. The fact was that I examined and discarded the first individual I put into a tube, as it seemed immature. I have wondered since whether the strong transverse nervure on the hemelytra may have deceived me in this respect. Like Mr. Champion I was under the guidance of our mutual friend, Mr. P. de la Garde, to whom I instantly wrote on my return, as soon as the specimen was set and found to be mature, urging him to search for more. Up to the present, however, his endeavours have not been rewarded. Although so small, *P. rufescens* is readily discernible on the collecting sheet by its fleshy colour, as well as by its *Salda*-like power of leaping; the latter propensity and its fragile structure, however, render it rather uneasy to capture.—JAMES H. KEYS, "Morwell," Lipson Road, Plymouth: January 15th, 1908.

Some scarce British Neuropteroidea from Suffolk.—I am much obliged to Mr. Claude Morley for submitting to me recently quite a large number of *Neuropteroidea* taken by him in various localities, but chiefly in Suffolk. There are at least three or four species which call for special mention.

Phacopteryx brevipennis, Curt. A perfect ♀ which flew into light one evening in September, 1906, in Mr. Morley's house at Monks Soham. For some reason this remains one of our rarest species of *Neuroptera* (cf. McLachlan, Ent. Mo. Mag., 1902, p. 185, where the British occurrences of this insect are discussed).

Cæcilus atricornis, McLach., is another scarce species. The present specimen (which is Mr. Morley's second capture) was swept by him from a ditch at Mildenhall, Suffolk, on September 25th, 1907. The ditch was just dry enough to allow of his walking along the bottom.

Libellula fulva, Müller, although not so uncommon as it was once considered, is still a fine species to take. The specimen (also a second capture) is from Barnby Broad in FORTH Suffolk on July 5th, 1906, the earlier one being from Beeches in the same neighbourhood in 1892 (see Ent. Mo. Mag., 1897, p. 106).

Sympetrum flaveolum, Linn., from Tuddenham Fen, Suffolk, August 12th, 1906. I have no recollection of having seen any record of a more northerly point being reached by this species in the 1906 immigration.—KENNETH J. MORTON, 13, Blackford Road, Edinburgh: January 6th, 1908.

Review.

LEPIDOPTERA AND OTHER INSECTA OBSERVED IN THE PARISH OF MORTENHOE, NORTH DEVON: by G. B. LONGSTAFF, M.D., F.R.C.P.; Third Edition. To which is added a List of *Lepidoptera* noted in Lundy Island by the same: together with a First List of the Land and Fresh Water Mollusca of Mortehoe, by Mrs. G. B. Longstaff (Jane Donald). 8vo, pp. 68. London: Mitchell, Hughes, and Clarke, 140, Wardour Street. 1907.

This well-printed and excellently got-up little *brochure* treats of a part of the insect-fauna of a particularly interesting district in North Devon, and the very full list of the *Lepidoptera* (many of which have been already recorded in our pages) differs from most others in the valuable bionomic details appended to many of the species, especially in the butterflies. The lists of *Coleoptera*, *Hemiptera*, and *Hymenoptera* are much less complete, but include a good many interesting and local species, and that of the terrestrial and fresh-water *Mollusca* by Mrs. Longstaff, though admittedly only a provisional one, shows clearly the exceedingly good work that has been done in this group. Dr. Longstaff's excellent paper on the *Lepidoptera* of Lundy Island, which appeared in our last volume (p. 241, *et seq.*), is incorporated in the work, which may be said to rank very high among local lists of its kind.

Obituary.

Arthur John Chitty, M.A., F.E.S.—The grief we feel in recording the death of this well known and popular Entomologist will we are sure be shared by all who knew him. After a comparatively short illness he passed away on January 6th at

the age of 48. The eldest son of the Rt. Hon. Lord Justice Chitty, he was born in London on May 27th, 1859, and was by profession a Barrister-at-Law, but in the spare time which his legal duties allowed him he devoted himself most assiduously to Entomology, and he was a keen and most successful collector; although mainly a Coleopterist, he interested himself in most Orders, and there are few which have not been enriched by his researches and discoveries. His brother remembers him collecting butterflies as early as 1869, and during his Oxford days he used to set up ants' nest for observation, isolating them in sponge baths containing water.

The *Hymenoptera* and *Hemiptera* especially attracted his attention, and of these he made extensive collections, capturing and recording many rarities which would in most cases have escaped the eye of any but an experienced specialist. The writer of this notice was often struck by his power of rapidly appreciating minute characters which to many Entomologists are a stumbling block for years. His first note in this Magazine, "*Coleoptera* from North Wales" (vol. xxvii, p. 331) was published in 1891, and from that time he was a frequent contributor to our pages. Amongst his more important communications are those dealing with the fauna of the neighbourhood of Huntingfield and Faversham, at the former of which places he had a country house; these include the re-discovery of *Andrena ferox* (vol. xxxv, p. 13) and *Nomada guttulata* (vol. xxxix, p. 282); "Collecting (chiefly *Coleoptera*) in old hedgerows near Faversham, Kent" (vol. xl, p. 100), in which he records the occurrence in some numbers of the rare *Anthribus albinus*, L., and the still rarer *Tropideres niveirostris*, F.; and his notes on the habits of *Ponera contracta*, in whose company he used to find the rare *Machærites glabratus*. Besides the above contributions there are many others which deal chiefly with the records of captures. In vol. xxxix, p. 143, he records the first discovery in Britain of *Hydroporus bilineatus*, and points out the differential characters between it and *H. granularis*; and in the volume for last year he published an important synoptical table of the British species of *Cryptophagus*, which has been already of great service to the students of that genus. A few years ago he took up the special study of the obscure group of *Hymenoptera*, *Proctotrypidæ*, and in vol. xlii, p. 148, described a new species *Pseudisobrachium cantianum*. We hoped he might have lived to have given us many contributions towards the elucidation of this little known family.

Several communications on *Coleoptera* are to be found in the pages of the "Entomologist's Record," the staff of which he joined in March last. Amongst these his "Note on Killing and Setting *Coleoptera*" (vol. xviii, p. 134, 1906), describing for the first time the so-called "ether process," is of special interest. He joined the Entomological Society of London in 1891, serving on its Council from 1902-4, and again from 1906 to the time of his death. In its concerns he took an active interest, and rendered valuable assistance in drawing up the alterations and the by-laws which came into force in December, 1902. He was educated at Eton, where he became the head of his house, and was in the cricket eleven, and at Balliol College, Oxford, taking honors in his final B.A. examination, and he was well known at the University as a boating man and a cricketer; he was for many years Secretary of the All England Lawn Tennis Club; and was a good performer on the violin; he had also a good practical knowledge of astronomy, and made for himself more than one reflecting telescope. He married the daughter of Sir John Croft, Bart., of

Doddington, Kent, and his wife and three children survive him. The above short account shows what a loss Entomologists have suffered; but those who knew him well feel the loss not only of a fellow Entomologist, but of a personal friend whom they can ill afford to spare.—E. S.

Martin Jacoby.—It is with sincere regret that we announce the death of this well-known Coleopterist, which took place on December 21th last. Although he had been in but indifferent health for some time past, his last illness was very brief, as we understand that he was engaged in his professional work up to within a very few days of his decease. Born at Altona on April 12th, 1842, Mr. Jacoby came to Manchester as a member of Hallé's famous band in his twenty-first year, and from that time continued to reside in England. For several years he was a member of the orchestra of the Royal Italian Opera, afterwards becoming a tutor of the violin, in which career he was well known and highly appreciated in the musical world. From his early youth he was an enthusiastic collector and student of insects in general, but he gradually concentrated his energies on the *Coleoptera*, and especially on the *Phytophagous* section of that Order. Many valuable memoirs on these insects, on which he was recognised as the leading authority in England, if not in Europe, are embodied in the publications of the Zoological and Entomological Societies, and other associations of like nature on the Continent. His most important work is perhaps to be found in the "Biologia Centrali-Americana" of Messrs. Godman and Salvin, in which the *Phytophaga* of that region are described in one large volume, with an almost equally bulky supplement. His last completed work, which unhappily he did not live to see in print, is the volume on the *Phytophaga* in the "Fauna of British India," now on the eve of publication. Some years ago he parted with his valuable collection of his favourite group of beetles to M. van de Poll, of Haarlem, but had since accumulated an almost equally extensive series of these insects. In private life Mr. Jacoby was one of the most genial and amiable of men, and his loss is greatly felt by his numerous friends, especially at the Entomological Society, where he was one of the most regular attendants at its meetings since his election as a Fellow in 1886. Even more will he be missed at the annual gatherings of the Entomological Club, where his masterly solos on the violin have been for many years one of the most enjoyable features. Married in 1869, he leaves a widow, as well as a son and two daughters, with whom we sincerely sympathise.—J. J. W.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: December 18th, 1907.—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. Leslie Frederick Burt, Edgbaston, was elected a Member.

Mr. J. T. Fountain exhibited a long and variable series of *Apamea testacea*, Hb. Mr. H. W. Ellis, various *Coleoptera*:—*Lathrobium lævipenne*, Heer, a species not long known as British, of which he found six specimens in the Blatch Collection from Knowle, Bewdley, and Cannock, and he had also taken it himself at Knowle;

Agabus affinis, Pk., from Sutton; he said that he had previously also recorded *A. unguicularis*, Thoms., from thence, but that on sending the specimens to Mr. Balfour Browne they had all proved to be *affinis*; *Dermestes vulpinus*, F., from Fareham, where the larvæ were eating the wooden beams in a manure factory. Mr. G. T. Bethune-Baker, butterflies of the genus *Epinephele*, chiefly from Turkestan. Mr. Hubert Langley, *Lobophora carpinata*, Bkh., from Princethorpe Wood, and said that he had also taken *L. hatterata* there this year.—COLBRAN J. WAINWRIGHT, Hon. Sec.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, November 14th, 1907.—Mr. R. ADKIN, F.E.S., President, in the Chair.

Mr. Hugh Main exhibited imagines of *Charaxes jesus* bred from ova. Mr. Newman, series of (1) *Plusia bractea* captured in Aberdeenshire; (2) *P. chryson* (*orichalcea*) bred from Cambridgeshire larvæ. Dr. Hodgson, (1) a varied series of *Spilodes palealis* from Dover; (2) specimens of *Plebeius argus* (*xegon*) destitute of orange markings on the upper-sides; (3) several aberrations of *Agriades corydon*, including ab. *semisyngrapha* and instances with no orange markings; (4) *A. bellargus*, forms without orange on the hind-wings; and (5) a series of *Urbicula comma* from Clandon, including pale and dark forms and a beautiful cream-coloured aberration. Mr. H. Moore, a specimen of *Xylocopa violacea* captured alive in the London Docks. Mr. R. Adkin, for Mr. C. E. Young, a *Sirex juvenis* found at Rotherham. Dr. Chapman, specimens of *Oreopsyche pyrenivella* bred from cases collected at Gavarnie, July, 1907. Mr. R. Adkin read a paper, "Notes on *Portesia chrysorrhæa*," and exhibited a selection of those bred by him at Eastbourne.

Thursday, November 28th, 1907.—The President in the Chair.

The Annual Exhibition of Varieties.

Mr. Austin, of Highbury, was elected a Member.

Mr. E. C. Goulton exhibited a very varied bred series of *Hypsipetes sordidata* from Surrey localities, and two ♂ *Cosmotriche potatoria* of the pale female colour, captured at Wicken. Messrs. Harrison and Main, (1) series of *Odontopera bidentata*, bred from black Yorkshire parents, from dark Yorkshire parents, and from a very light Wisley ♀, with numerous collected specimens from many localities, and compared the variations shown; and (2) four broods of *Pieris napi*, bred from ♀s from the Klein Scheidegg Pass, Switzerland, and remarked on the *bryoniæ* forms obtained. Mr. Tonge, (1) a bred series of *Grapta c-album* from ova laid by a ♀ taken by Mr. Barrand in the Wye Valley, and gave notes on the variation produced, including var. *hutchinsoni*; (2) a series of *Dipterygia scabriuscula* taken in his garden at Reigate; and (3) a series of stereographs of entomological subjects by himself. Dr. Hodgson, a series of *Anthrocera trifolii* from Sussex (one locality), including var. *hippocrepidis* and ab. *obscura*?, typical of the results of four days' collecting of Mr. Grosvenor and himself, and gave notes on the selective processes

used, and the results of their observations. Mr. Scollick, varieties of *Abraxas sylvata*, including a broad dark-banded form, a smoky form almost devoid of markings, forms approaching var. *pantaria*, and one with an entire absence of ochreous, all from Bucks. Mr. Newman, (1) a fine melanic *Oporabia dilutata* from Kent; (2) long series of *Melitæa aurinia* from various English and Irish localities; (3) very varied series of *Notodonta choonia* from Irish and Scotch localities; (4) hand paintings of sundry forms bred by him during the season; and (5) three wild cocoons of *Cerura bicuspis* from Tilgate Forest. Mr. Grosvenor, picked series of *Polyommatus icarus* from various localities, chiefly North Downs, and gave notes on the aberrations. Mr. W. J. Lucas, the following varieties from the New Forest: *Pyrrhosoma nymphula* v. *æneatum* ♀, *P. tenellum* v. *æneatum* ♀, and *P. tenellum* v. *ruberatum*. Mr. Turner, the life-histories of *Coleophoraonosmella* and *C. bicolorella* from Surrey and Kent localities. Mr. Pratt, a short series of *Mellinia ocellaris* captured in Surrey on sugared leaves of black poplar. Mr. Edleston, specimens of *Ageria andrenæformis*, bred from collected pupæ, with the Ichneumon *Meniscus bilineatus*. Messrs. F. and H. Campion, (1) the rare grasshopper, *Chelidopternæselii* from Herne Bay; and (2) the dragonflies *Sympetrum sanguineum* from Epping Forest, Sept. 15th, *S. scoticum* from Esher, Sept. 3rd and 20th, the last small, and the ♀ of *Cordulia ænea* from Epping Forest. Mr. J. Alderson, (1) short series of *Melitæa aurinia* bred from Cumberland, much undersized and darker than usual; and (2) *Melampus epiphron*, three second brood specimens bred from ova laid by a Honister ♀, the remainder of the brood hibernated. Mr. Garrett, *Argynnis adippe* from Arundel, and *Anticlea sinuata* from the same place. Mr. Andrews, varieties of *Diptera*: (1) *Cyrtoneura stabulans* with an extra cell in each wing; and (2) specimens of *Syrphus* and *Platychirus* lacking the usual yellow abdominal markings. Mr. South, for Mr. Pope, of Exeter, (1) ♂ *Epiniphele junira* measuring only 38 mm.; (2) a pale ochreous-brown ♀ of the same species; (3) a ♂ with numerous pale ochreous blotches and with white fringes; and (4) a *Eubolia palumbaria* with dark purplish slate-coloured fore-wings with ochreous edged transverse lines; and for Mr. Haynes, an *E. tithonus* with the usual fulvous markings, but with the marginal areas whitish instead of dark brown. The last was from Salisbury, the first four from Devonshire. Mr. Edwards, *Urania leilus*, with a coloured plate showing its life-history. Mr. F. Noad Clark, ova of several species of *Coleophora*, and preparations of the ova to show the structure of the micropylar area. Dr. Chapman, *Lepidoptera* collected in the Pyrenees, including *Lycæna orbitulus* var. *oberthuri*, *Erebia lappona* v. *sthennoyo*, *E. lefebvrei*, *E. gorge*, *E. stygne*, *E. cæme*, *E. cæcilia*, *E. tyndarus* v. *dromus*, *Oreopsyche pyrenæella*, and *Marasmarcha tuttodactyla*. Mr. R. Adkin, (1) specimens of *Tortrix pronubana* bred from spring larvæ; (2) *Melanippe fluctuata* with the transverse band reduced to a mere speck; (3) six *Agriades corydon*, ♀s from Eastbourne with more or less well-defined blue scaling; (4) a dark suffused *Boarmia roboraria*; and (5) forms of *Abraxas grossulariata* with yellow shaded ground. Mr. Schoon, *Aporia crategi*, *Tapinostola bondii*, *Bryophila glandifera*, and *Sesia chrysidiformis* from East Kent. Mr. Willsdon, numerous species of *Lepidoptera*, including gynandromorphous *Crocallis elingvaria* from Manor Park, *Heliothis peltigera*, dark and light *Catocala sponso* and *C. promissa*, &c.

Thursday, December 12th, 1907.—The President in the Chair.

Mr. H. W. Andrews, F.E.S., of Welling, was elected a Member.

Mr. Newman exhibited (1) a number of pupæ of *Pieris napi* spun up on the top of the cage, showing a large range of colour variation; (2) an example of *Ennomos autumnaria* devoid of speckled markings and with red tips of wings; (3) a very dark *Melitæa athalia* from Devon; and (4) examples of *Drepana harpagula* and *Trigonophora flammea* taken some years ago. Mr. Tonge, a number of stereographs of Entomological subjects, which were exhibited in the stereoscope kindly presented to the Society by Mr. Fremlin. Mr. Kaye, a series of *Acidalia humiliata* from the Isle of Wight, and noted that they were smaller and less strongly coloured than the continental specimens. Mr. South, a bred series of *Eupithecia castigata*, showing none of the brown suffusion usual in captured specimens. Mr. Adkin, *Teras contaminana* from Polegate, and pointed out the extreme variation shown in the short series. The following Members exhibited selected specimens, series, and broods of *Pieris napi* and its various forms from English, Scotch, Irish, and continental localities: Messrs. Harrison, Main, Montgomery, Rayward, Newman, Joy, Turner, Grosvenor, Garrett, Sich, Adkin, Dr. Chapman and Dr. Hodgson. Mr. Main then read a short paper, "Some Notes on *Pieris napi*," and a considerable discussion ensued.—HY. J. TURNER, Hon. Sec.

ENTOMOLOGICAL SOCIETY OF LONDON.—The Annual Meeting of this Society was held on Wednesday, January 15th, 1908, at their rooms in Chandos Street, Cavendish Square, when the following Fellows were elected as Officers and to serve on the Council for the Session 1908-9:—President, Mr. C. O. Waterhouse; Treasurer, Mr. A. H. Jones; Secretaries, Mr. H. Rowland-Brown, M.A., and Commander J. J. Walker, M.A., R.N., F.L.S.; Librarian, Mr. G. C. Champion, F.Z.S.; other Members of the Council, Dr. T. A. Chapman, M.D., F.Z.S., Mr. A. J. Chitty, M.A., Mr. A. Harrison, F.L.S., F.C.S., Mr. W. J. Kaye, F.L.S., Dr. G. B. Longstaff, M.D., Mr. H. Main, B.Sc., Mr. G. A. K. Marshall, Prof. R. Meldola, F.R.S., F.C.S., Prof. L. C. Miall, F.R.S., Prof. E. B. Poulton, D.Sc., M.A., F.R.S., Mr. R. Shelford, M.A., C.M.Z.S., and Mr. G. H. Verrall.

The Report for the Session 1907-8 showed that the Society had increased considerably, and that the number of Ordinary Fellows exceeded that of any previous year in the Society's history since its foundation in 1833. The President then read his address, which dealt chiefly with the present unsatisfactory state of nomenclature in Entomological Science. He also advocated the establishment of a central "type" museum, on the lines of an experimental collection now formed at South Kensington for the purpose of loaning specimens to institutions, whereby it was suggested that the existing confusion might be avoided, and the general work of identification made easier. Mr. Merrifield proposed a vote of thanks to the President for his address, Prof. R. Meldola proposed a similar vote to the Officers of the Society, both of which were carried unanimously, the President, the Treasurer, and the Secretaries replying.—H. ROWLAND-BROWN, Hon. Sec.

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In Memoriam.

H. GUARD KNAGGS, M.D.

DR. HENRY GUARD KNAGGS died, after a long and painful illness, at his residence at Folkestone on January 16th, and was interred at Highgate Cemetery on the 28th. The son of a medical man practising in the North of London, he was born in High Street, Camden Town, on March 21st, 1832. After completing his education, and his training for the medical profession at University College Hospital, he married early in life, and succeeded to his father's practice in Kentish Town, where the greater part of his life was passed, and where he was universally esteemed as an able and skilful general practitioner.

From an early age Dr. Knaggs took a great interest in Entomology, and particularly in our native *Macro-Lepidoptera*, and his characteristic energy and successful discrimination in the field enabled him in a relatively short time to form one of the finest collections of these insects in London. His hearty, generous and jovial nature, so evident in almost every line that he wrote, and his wide knowledge of the practical side of the subject, made him one of the most popular of the Metropolitan Entomologists of his time. His house during the early "sixties," when so much good work was done, became an informal centre of meeting for many of the best known collectors and observers of *Lepidoptera*, especially for those resident in the North of London.

In 1861 the "Entomologist's Weekly Intelligencer" ceased to exist, and the space for entomological notes and observations in the only publication then available for the purpose, the "Zoologist," was altogether inadequate in this energetic period of our Science. The need of a periodical at a moderate price, exclusively devoted to Entomology, was very generally recognised, and our Magazine appeared for the first time in June, 1864, with a staff of five Editors, only one of whom, the Rev. T. Blackburn, whose tenure of

office was of but brief duration, is now living in South Australia. Dr. Knaggs was responsible for the *Macro-Lepidoptera*, and his "Notes on Collecting, Management, &c.," of these insects soon became a leading feature of the new Magazine, and without doubt contributed largely to its speedy success. These papers were afterwards collected and amplified into the "Lepidopterist's Guide," by which he is probably best known to the present generation of British Entomologists. Of this little book, now in its third edition (revised in 1901), no more need be said here than that it is unquestionably the most useful work in a small compass we have on the practical study of our butterflies and moths, and that in its pages the genial Doctor is seen at his best.

About this time, in addition to the hard work incidental to a large and successful general practice, he combined with his entomological pursuits the assiduous cultivation of a large kitchen garden. It is more than probable that this strenuous life, and the continuous overwork that it entailed, laid the foundation of the gout and ill-health which compelled him, first to part with his collections, and in 1874 to retire from active participation in the affairs of our Magazine. He continued, however, to contribute at intervals to our pages, his last communication (vol. xli, p. 211) being dated August, 1905. For eleven years in succession (1864-1874) the articles in the "Entomologist's Annual" dealing with the *Macro-Lepidoptera* came from his pen, and he also wrote many papers for "Science Gossip," and other periodicals of the same kind.

Dr. Knaggs, who became a Fellow of the Entomological Society in 1858, served for more than a year on the Council, but resigned in 1862. He was also for some years a Fellow of the Linnean Society.

About 1896 his failing health compelled him to relinquish his practice to his son, Dr. H. Valentine Knaggs (to whom we are greatly indebted for material assistance in the compilation of this Memoir), and to retire permanently to his old favourite hunting-ground at Folkestone, where he had previously acquired a house as an occasional seaside residence, and where, as far as lay in his power, he continued to interest himself in Entomology. It is with the *Lepidoptera* of the Folkestone district, where so many of his important discoveries in the Order were made, that Dr. Knaggs's name will be most prominently associated. The "List of the Lepidoptera of Folkestone," compiled by him and published in 1870 by the Natural History Society of that town, and now out of print, made the "Warren" a household word

amongst Lepidopterists, and is a model of what such a list should be. His generosity in distributing among his fellow-workers the rare and interesting species found by him in the district, to name only such as *Clostera anachoreta* and *Chortodes bondii* (the latter species described by himself) is by no means forgotten.

His widow, one son, and five married daughters survive him, and it is to the kindness of the former that we owe the very characteristic portrait of Dr. Knaggs accompanying this Memoir, reproduced from a photograph taken about ten years ago.—J. J. W.

TWO NEW BRITISH BEETLES.

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

PHILONTHUS CONCINNUS, Grav.

It is quite evident that most of the specimens of *Philonthus* standing under the name *ebeninus*, Grav., in our collections really belong to the allied species, *P. concinnus*, Grav. I have myself only seen one British example of *P. ebeninus* (not including the so-called *v. corruscus*, Grav.), which is in Mr. Tomlin's collection, labelled "ex. Coll. Harris." * *P. concinnus* is a very common insect on the continent. The distinctions between the two species given by Ganglbauer are the following:—*P. concinnus* is smaller than *P. ebeninus* (5—7 mm. as against 7·5—8 mm.); the penultimate joints of the antennæ are distinctly more transverse, and the hind body is more finely and closely punctured. In *P. ebeninus* the fine transverse impressed line at the base of the first three or four dorsal segments of the abdomen is sharply angled backwards in the centre; in *P. concinnus* it is quite straight, or at most only slightly angled. The *v. ochropus* mentioned by Canon Fowler is a variety of *P. concinnus*.

Ganglbauer describes *P. corruscus*, Grav., as a good species, although he remarks that it is very likely only a variety of *P. ebeninus*. I think it is best to regard such a distinct-looking form as a good species, unless there is some biological evidence that it is only a variety.

OXYPODA PERPLEXA, Muls.

Mr. Britten pointed out to me some time ago that a specimen of *Oxyпода exoleta*, Erichs., he had from the Cumberland coast did not agree with one which I had given him under the same name.

As I was unable to find out which of the two was the true

* I have the true *P. ebeninus* from Godalming and Sandown, I. W.—G. C. C.

O. exoleta, I sent them to Capt. Deville, who has kindly named them for me: the first species turning out to be *O. exoleta*, and mine *O. perplexa*, Muls. Although he says he will not absolutely commit himself to these diagnoses, I have no doubt, from a careful study of the descriptions, that he is correct. *O. exoleta* seems to occur chiefly on sandy coasts. Of *O. perplexa* I took about a dozen specimens in a rabbits' burrow at Streatley, in June, 1906, and also one in a sandpit here last year. In Ganglbauer's "Die Käfer von Mittel-Europa" *O. exoleta* is placed (with one other species) in the sub-genus *Bæoglennæ*, Thoms., on account of the great length of the third joint of the maxillary palpi. *O. perplexa* is not included in Ganglbauer's table, and it is placed next to *O. umbrata*, Gyll., and *O. sericea*, Heer, but the third joint of the palpi (which is not mentioned in his description) seems just as long as in *O. exoleta*. The following is a short translation of Ganglbauer's description of *O. perplexa*.

Very finely and closely pubescent, slightly shining, reddish-brown, head and middle segments of abdomen dark. Antennæ slightly thickened towards apex, 3rd joint somewhat shorter than 2nd, 4th to 10th each a little thicker, 4th and 5th about as long as broad, 6th and 7th slightly transverse. Thorax one-third broader than long, as broad at base as elytra, strongly contracted in front, finely and closely punctured. Elytra somewhat longer than thorax, finely, closely, and somewhat rugosely punctured. Abdomen very finely and closely punctured and pubescent. First joint of hind tarsi as long as the three following. Long., 2.9 mm. South of France (Hyères, Collioure), also found by Dr. Eppelsheim in the Palatinate of the Rhine.

It somewhat resembles *O. exoleta* in colour and shape, but differs from it in the following respects: it is larger and more shining; the punctuation is stronger and more diffuse, especially on the elytra; the antennæ are less strongly and more gradually thickened, the 2nd and 3rd joints are much more slender, and the 3rd is longer in proportion to the 2nd; the thorax is more ample; and the elytra are slightly shorter in proportion to the thorax.

Bradfield, Berks.: February 7th, 1908.

SPANISH AND MOORISH MICROLEPIDOPTERA.

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

[Continued from Vol. XII, p. 218 (1905)].

352 : 1.—ZENODOCHIUM, *gn. n.*

(Zenodoχῆιον = a place for strangers to lodge in).

Type, *Zenodochium monopetali*, Wlsm.

Antennæ $\frac{3}{4}$, not excavate, bifasciculate ($2\frac{1}{2}$), and shortly ciliate; basal joint

with broad conchoidal shield of scales, scarcely divided into a pecten beneath. *Maxillary Palpi* short, convergent. *Labial Palpi* recurved, moderately stout, median joint densely clothed, but not roughened; terminal joint shorter than median, bluntly pointed, smooth. *Haustellum* moderate, scaled. *Head* and *Thorax* smooth. *Forewings* with straightened costa and depressed, lanceolate apex: *neuration* 12 veins; 7 and 8 stalked, 7 to costa; 10 remote from 11, closely approximate to 9 at end of cell; 3 and 1 connate, 5 closely approximate; 2 short, erect. *Hindwings* (1), tapering from a widened base to a moderately acute apex: *neuration* 7 veins (3 and 4 coincident); (3 + 4) and 5 stalked; 6 and 7 remote, nearly parallel. *Abdomen* short, compressed. *Legs*, hind tibiae hairy above.

This genus agrees with *Blastobasis*, Z., *Prosthesis*, Wlsm., and *Epistetus*, Wlsm., in having 3 and 4 of the hindwings coincident, and stalked, or connate, with 5; it differs from *Blastobasis* and *Prosthesis* in having a conchoidal shield of scales on the basal joint of the antennae instead of a pecten, and from *Epistetus* in the antennae not being attenuate at joint 4.

3069 : 1.—ZENODOCHIUM MONOPETALI, *sp. n.*

Antennae pale ochreous. *Palpi* pale ochreous, with brownish dusting on their outer sides. *Head* and *Thorax* pale ochreous, the latter with a brownish fuscous patch above. *Forewings* pale ochreous, dusted with brownish scales, and with a few blackish fuscous spots; the brown dusting is especially noticeable along the costa, where there is a strong group of brown scales a little before the middle, preceded by blackish dots running to the base along the edge of the cell; it also appears on the middle of the dorsum, falling into line with two black dots, one on the fold, and one on the cell above and beyond it, and again at the tornus, above which are two more black dots about the end of the cell, a few smaller ones lying around the termen and apex; cilia pale ochreous, unspotted. *Exp. al.* 14—16 mm. *Hindwings* shining, pale greyish cinereous; cilia pale ochreous. *Abdomen* blackish, with pale ochreous bars; anal tuft ochreous. *Legs* pale ochreous, shaded with brownish on their outer sides.

Type, ♂ (87418); ♀ (87414). Mus. Wlsm.

Larva: slaty grey; head, pronotal, and anal plates chestnut-brown. *Long.*, 9 mm. *Type* (87425). Mus. Wlsm.

Hab.: SPAIN—CADIZ—Chiclana, Larva *Limoniastrum monopetalum*, 27.I.1902, 23.II.1901, excl. 14.IV—3.VII.1901, 27. IV—4.VII. 1902. Twenty-two specimens.

Bred from leading shoots of *Limoniastrum monopetalum*.

3069 : 2.—ZENODOCHIUM XYLOPHAGUM, *sp. n.*

= *Hypatima*, *sp. n.* (?), Wlsm. Ent. Mo. Mag. XXXVII. 237 (1901).

Antennae and *Palpi* pale mouse-grey. *Head* and *Thorax* whitish cinereous, irrorated with mouse-grey. *Forewings* whitish cinereous, densely irrorated with mouse-grey, the only markings indicated being a very faint spot at the end of the

cell, and an equally faint reduplicated spot about the middle of the wing, its lower half resting on the fold; the densely distributed sprinkling extends over the bases of the pale brownish grey cilia. *Exp. al.* 15—16 mm. *Hindwings* shining, pale brassy brown; cilia brownish cinereous. *Abdomen* brassy brownish. *Legs* pale brownish cinereous, the tarsi very faintly speckled.

Type, ♂ (97951); ♀ (97953). Mus. Wlsm.

Hab.: SPAIN—MALAGA—Malaga, Larva under bark of half-dead Fig-tree, 24.I., excl. 22.V—4.VI.1901. Three specimens.

Bred from larvae feeding in the wood of a half-dead Fig-tree, in company with those of one of the *Aegeriadae*.

HYPONOMEUTIDAE.

415.—PERITTIA, Stn.

3919 : 1.—PERITTIA CALPELLA, *sp. n.*

Antennae greyish fuscous. *Palpi* short, porrect; greyish fuscous. *Head* and *Thorax* greyish brown. *Forewings* greyish brown, with a slight fuscous suffusion, sparsely dotted with fuscous scales on the dorsal half of the wing beyond the dorsal third, and about the apex; at one-third from the base is an ill-defined white fascia, descending slightly inward from costa to dorsum, and somewhat projected along the fold toward the base; from the middle of its outer margin a narrow projection extends to the apex of an upright white dorsal streak before the tornus, a similar, ill-defined, white streak descending from the costa before the apex; cilia brownish grey, whitish towards the apex, where they are dusted with fuscous on their base. *Exp. al.* 8 mm. *Hindwings* brownish grey; cilia pale brownish grey. *Abdomen* greyish fuscous. *Legs* brownish grey, with some white tarsal spots.

Type, ♂ (98065). Mus. Wlsm.

Hab.: GIBRALTAR—25.XI.1903. Two specimens.

This agrees with *obscurepunctella*, Stn., in having only 10 veins in the forewings, (7 + 8) and (5 + 4) being coincident; (7 + 8) to costa, stalked with 6. *Hindwings* with 7 veins, (5 + 4) coincident; 6 and 7 stalked; 2, 3, and (4 + 5) remote.

417 : 1.—TRIBOLONEURA, *gn. n.*

(τρίβολος = a trident; νευρά = a nerve).

Type, ELACHISTA SEPULCHRELLA, Stn.

Antennae $\frac{3}{5}$, minutely ciliate, serrate toward the apex; with pecten. *Maxillary Palpi* small. *Labial Palpi* smooth, moderately long, curved, ascending; terminal joint subacute, shorter than median, both rather coarsely scaled. *Haustellum* small. *Head* smooth, coarsely clothed with long scales. *Thorax* smooth. *Forewings* twice and a half as long as wide, costa arched before the middle, thence straighter; dorsum rounded, the margin tapering very obliquely from the middle to the slightly depressed, subacute apex: *neuration* 12 veins; 7 and 8 stalked, to costa, 6 out of their stalk² to termen; 2 to 5 remote, discoidal weak between 5 and

in one cote separate.

6; media subobsolete; 1 furcate at base. *Hindwings* $\frac{1}{2}$, evenly lanceolate; cilia $1\frac{1}{2}$; *neuration* 9 veins (7 bifid); 6 and 7 stalked, enclosing apex, 7 and 7^{bis} stalked; 2 to 5 remote; discoidal bent back from 5, meeting media close to radius. *Abdomen* smooth. *Legs*, hind tibiae hairy above and beneath.

This genus is allied to *Mendesia*, Joann., and *Elachista*, Tr., the former differing in the separation of vein 6 in both wings, but agreeing in the occurrence of 7^{bis} in the hindwings. *Elachista* differs in the coincidence of veins 4 and 5 in both wings, and it will almost certainly be found that the larvae of *Triboloneura* (like those of *Mendesia echiella*, Joann., and allied forms recently found in Tenerife) are not grass-miners. Having about 60 specimens of the two species, all ♂♂, one wonders how the ♀ has been overlooked.

4034 : 1.—TRIBOLONEURA SEPULCHRELLA, Stn.

Elachista sepulchrella, Stn. Ent. Mo. Mag. VIII. 235 (1872)¹; Stgr-Rbl. Cat. Lp. Pal. II. 205, No. 4017 (1901)²; Wlsm. Ent. Mo. Mag. XXXIX. 180 (1903)³.

Hab.: MOROCCO ¹⁻³—Swany, 8.II.1870¹; Tangier, 13.I—7. III, 21.IV—1.V.1904 (*Wlsm.*).

4034 : 2.—TRIBOLONEURA CONSTANTINELLA, Rbl.

= *constantinella*, Stgr. List 43.29 (1900)¹ *LN*.

Elachista argentella, Cl. + *constantinella*, Rbl., Stgr-Rbl. Cat. Lp. Pal. II. 205, No. 4024^a (1901)².

Hab.: ALGERIA—Constantine ¹⁻², 6.V.1904 (*Wlsm.*); Philippeville, 3-11.V.1904 (*Wlsm.*); Le Tarf, 17.VI.1896 (*Eaton*).

Differing from *sepulchrella* in the separation of vein 6 of forewings.

(To be continued).

ON SOME BRITISH HOMOPTERA HITHERTO UNDESCRIBED OR UNRECORDED.

BY JAMES EDWARDS.

In the decade which has elapsed since the publication of "The Hemiptera-Homoptera of the British Islands" several additional species have become known as inhabitants of Britain. I propose now to call attention to these collectively, and as the names at present in use for our insects are not in all cases the same as those employed in the more recent Continental lists,* I have indicated the changes which will be necessary in order to secure uniformity in this respect, as well

* Puton: Catalogue des Hémiptères de la Faune Paléarctique, 1899. Oshanin: Verzeichnis der Paläarktischen Hemipteren-Homoptera, 1906.

as certain other changes in the British list which, for one reason or another, appear to me desirable.

BATRACOMORPHUS, Lewis.

R. H. Lewis (Trans. Ent. Soc. Lond., 1836, p. 51) made this genus for the insect we now call *microcephala*, H.-S.; and since *lanio*, L., and its allies are clearly congeneric with the former, the prevailing use of the generic name *Macropsis*, Lewis, is improper.

MACROPSIS, Lewis, and ONCOPSIS, Burm.

The genus *Macropsis* was, in its inception, a composite one comprising two sections, the first exemplified by *virescens*, Fab., and the second by *flavicollis*, L.; Lewis' name should be restricted to the first section and used in the place of *Pediopsis*, Burmeister. The latter author having already given the name *Oncopsis* to the second section of *Macropsis*, Lewis, this name should stand for *flavicollis*, L., and its allies instead of Fieber's restriction of *Bythoscopus*, Germ.

MACROPSIS SCUTELLATUS, Boh., and its allies.

I am now convinced that we have in this country three species which may be distinguished as follows:—

- 1 (4) Inner side of hind tibiæ pale throughout.
- 2 (3) Species living on willows *scutellatus*, Boh.
- 3 (2) Species living on brambles *rubi*, Boh.
- 4 (1) Inner side of hind tibiæ with two short black streaks, one near the base and the other just before the apex. Species living on nettles... *tibialis*, Scott.

As J. Sahlberg's description of *rubi*, Boh., contains nothing inconsistent with the characters of our bramble-feeding species, I adopt that name for it. By careful observation in the field I have satisfied myself that although *tibialis* and *rubi* may often be taken at the same time by beating or sweeping near mixed hedgerows, they really *live* exclusively on nettles and brambles respectively. Scott's description of *tibialis* applies so obviously and exclusively to our nettle-feeding species that one can only conclude that the occurrence of his specimens "on poplars" was accidental. I cannot of my own knowledge now give any morphological characters for the separation of *scutellatus* and *rubi*, but having regard to the diversity of their food-plants, the presumption is that they are biologically distinct species. Thomson (Op. Ent., iii, p. 320) gives the following contrasting characters for each:—

scutellatus.

Facie planiuscula, speculo parvo.
Elytris nervis clavi striato-punctatis.
Tibiis posticis plerumque 10-spinosis.

rubi.

Facie convexiuscula, speculo distincto.
Elytris nervis interioribus fere lævibus.
Tibiis posticis 9-spinosis.

IDIOCERUS SCURRA, Germ.

For a knowledge of the occurrence of this fine insect in our fauna we are indebted to Mr. E. A. Butler. It is readily distinguished by the evident sculpture of the head and pronotum, and the rugose surface of the elytra.

ACOCEPHALUS ÆSTUARINUS, *n. sp.*

♂. Longer and narrower than the same sex of *A. nervosus*, from which it is further distinguished by the want of any white band on the pronotum or crown. Upper-side sordid greyish-yellow, sometimes with a greenish tinge, very minutely irrorated with fuscous. Crown a little shorter than the pronotum, about twice as long in the middle as at the sides, its free edge feebly arcuate, in some examples subulate, with one very fine middle keel. Face pale, unmarked save for the dark sutures and, occasionally, traces of pale curved lines on the frons; the latter feebly and narrowly excavated next its upper edge. Abdomen beneath black, the distal edges of the last two segments broadly pale, genital plates entirely pale. Legs greyish yellow-brown, claws blackish.

Length 6—6½ mm.

♀. Similar in colour to the male, but the veins of the elytra are generally irregularly spotted with black and the cells filled with a fuscous irroration, so as to leave a wide pale margin to the veins. Crown about one-half longer than the pronotum, 2½ to 3 times as long in the middle as at the sides. Abdomen entirely pale or with dusky markings near the base of the segments on both upper- and under-sides. Last ventral segment not differing appreciably in form from that of *nervosus*.

Length 7—7½ mm.

Not uncommon beneath low plants on muddy salt marshes at Wells, Norfolk, where I beat specimens of both sexes, together with empty nymph-skins, from *Suaeda fruticosa* on August 28th, 1907. I first found it there in August, 1883, when I regarded it as the same as *A. nervosus*, and so recorded it. The female is distinctly narrower and more parallel-sided than the same sex of *nervosus*, and does not develop the different colour-forms which are so commonly met with in a series of the latter.

ACOCEPHALUS LIMICOLA, *n. sp.*

♂. Upper-side greyish yellow-brown or dark brown, elytra with a black or blackish antepical curved band somewhat similar to that found in *A. histrionicus*, their extreme apex often narrowly white. Crown very feebly excavate, subequal in length to, or in some cases a little shorter than, the pronotum, with three keels, the middle one very fine, the two lateral blunt, diverging, and not reaching the front edge. Face yellow-brown, sometimes with pale curved lines on the frons. Outline of the pronotum and basal two-thirds of the crown, in the lateral aspect, flat. Abdomen beneath black, distal edge of the last one or two segments more or less broadly pale. Genital plates pitch-brown, their inner edges narrowly reddish. Legs yellow-brown, front pairs of tibiæ black at the apex, hind tibiæ and tarsi blackish, the latter pale at the base.

Length 4 mm.

♀. Upper-side pale grey-brown closely irrorated or marbled with lighter or darker fuscous. Crown about one-half longer than the pronotum, $2\frac{1}{2}$ times as long in the middle as at the sides. Last ventral segment subequal in length to the two preceding, its apex straight or feebly concave, with a small angular notch in the middle.

Length 5— $5\frac{1}{2}$ mm.

Common at the roots of low plants in salt marshes, Hunstanton and Wells, Norfolk. This is the insect which I formerly referred to as a form of *albifrons*, L., but after further study in the field I am convinced that it is sufficiently distinct to merit a separate name. I have seen no really intergrade specimens between *limicola* and *albifrons*, and nothing could well be more distinct in appearance than the prevalent form of each. In the males of *limicola* there is a tendency to the acquisition of white spots on the elytra, which in extreme examples (*forma maculata*) form two narrow irregular interrupted bands. This form is at first sight very similar to the form of *albifrons* in which the normal broad white bands are reduced to more or less disconnected spots (? *f. polystolus*, Scott), but the latter may readily be distinguished by its smaller size, broader and less parallel-sided form, and the distinct convexity of the outline of the pronotum and basal two-thirds of the crown when viewed from the side.

EUPELIX DEPRESSA, Fab.

spathulata, Germ.

PRODUCTA, Germ.

CUSPIDATA, Fab.

Continental writers agree in treating these as three distinct species.

DORATURA IMPUDICA, Horv.

Horváth's description applies to the insect which I formerly regarded as a large pale race of *D. stylata*, and I therefore adopt his name for it. *D. impudica* is easily distinguished from *stylata* by its superior size (length, ♂, 4 mm., ♀, $5\frac{1}{2}$ mm.); it occurs commonly in August amongst grass on coast-sandhills at Holkham with *Liburnia boldi* and *Demetrius monostigma*; I first found it on sandhills at Hunstanton in July, 1885.

ATHYSANUS VARIEGATUS, Kbm.

A. SCHENKI, Kbm.

plebeja, J. Sahlb.

Whatever may ultimately be found to be the real affinities of these two species, their *habitus* certainly accords better with *Athysanus* than with *Thamnotettix*.

A. SEJUNGENDUS, Kbm.

Mr. E. A. Butler has found in salt-marshes at Yarmouth, Isle of Wight, an *Athysanus* very similar in all other respects to *A. obsoletus*, but differing in the longer and more pointed crown; the latter being in the female quite, and in the male very nearly, as long as the pronotum. The infraocellar line, which is usually present, is fine and biarcuate, and it is immediately followed by the black transverse lines of the frons; in *obsoletus* both the infraocellar line and the uppermost dark line proper to the transverse series are obsolescent or wanting; the sculpture of the crown, especially in front, appears more distinct than is usual in *obsoletus*.

Kirschbaum gave the name *sejungendus* to an *Athysanus* closely resembling *obsoletus*, but differing from that species in the greater length of the crown in proportion to the pronotum, and I therefore adopt his name. Puton and Oshanin both put *sejungendus* as a variety of *lineolatus*, Brullé (*obscurellus*, Kbm.), but I fail to see in Kirschbaum's description any justification for that course.

DELTOCEPHALUS FORMOSUS, Boh., *forma* STEINI, Fieb.

This handsome species may be readily distinguished by the strong black-and-white marking of the elytra, and the colour-pattern of the face. Surface of the crown feebly depressed, shining for about two-thirds of its length from the base, thence to its finely carinate front edge slightly raised, dull and finely rugose; bone-white, an oblong spot on each side next the front edge, and two large irregular roundish spots on the disc, black. Frons above with two curved black transverse lines separated by a pale one. Face below the eyes black, each cheek with a broad white transverse band, apex of the frons more or less pale. At the upper edge of the frons a tract, linear in the middle and widening out as it approaches each eye, is transversely rugose (lacunose); the remainder of the surface is very closely punctured (shagreened). Pronotum bone-white, with two spots next the front edge, and a broad, irregular, transverse band composed of four confluent spots, black. The British specimens which I have seen belong to the form *steini*, Fieb., characterized by the black or blackish, dilated and confluent spots on the crown and pronotum, as opposed to the fulvous markings of the same parts in the typical form.

Taken at Brandon, Suffolk, by Mr. C. Morley in August, 1906. Matsumura (Termes. Fuzetek, xxv, p. 389) transfers *D. formosus* with *phragmitis*, Boh., and *rotundiceps*, Lethierry, to his new genus *Paralimnus*.

(To be continued).

Anisotoma brunnea, Stm., from the Isle of Wight.—On July 27th, 1891, I took a small *Anisotoma* in Chale Chine, Isle of Wight, when evening sweeping, which I have never been able to make out satisfactorily. I have shown it to various British Coleopterists who did not agree about it. It was suggested that it might be a small *A. dubia*, but I did not think so, and Dr. Joy said he was sure it was one of the better and more obscure species. I have now sent it to Herr Ganglbauer, and he returns it to me as *A. brunnea*, Stm., with the description of which it agrees. There appear to be very few records of this rare species. See Fowler, "British Coleoptera," vol. iii, p. 30, and Rye, Ent. Mo. Mag., vol. ix, p. 135.—HORACE DONISTHORPE, Kensington Mansions, S.W.: February, 1908.

Meligethes subrugosus, Gyll., in South Devon.—I have to record the capture of a single specimen of the very rare *Meligethes subrugosus*, Gyll., by general hedge sweeping near Ugboro' Beacon in September last. Mr. J. H. Keys, himself the fortunate captor of one some years ago in the same district, very kindly identified the insect for me.—PHILIP DE LA GARDE: February 15th, 1908.

Coloration of Laccobius purpurascens.—In Mr. Newbery's paper on *Laccobius purpurascens* in the last number of this Magazine there is a point which, with his concurrence, I should like to make more prominent—I refer to the "green" tinge. In some examples, two per cent. perhaps, the whole of the red ground-colour is replaced by a green (somewhat similar to that of *Ischnomera cœrulea*), which is clear and decided when the insect is fresh, but appears to gradually give way to nearly the normal colouring after the lapse of a considerable time; intermediate forms occur, but I have not yet seen a case where the thorax alone was green. This green is a ground-colour, and does not prejudice the peculiar purplish bloom which is, I believe, invariably present on fresh specimens. The type of the species is in the British (Natural History) Museum.—Id.

Re-occurrence of Hydroporus bilineatus, Sturm, in Britain.—This species does not appear to have been recorded in this country since it was added to our fauna by the late Mr. A. J. Chitty in 1903 (Ent. Mo. Mag., vol. xxxix, p. 143). I am therefore pleased to be able to put on record that, whilst collecting in the Hastings district in September last, I captured a single specimen at Pett whilst washing my hands in a pool after a day's "grubbing." If I had realized the importance of my capture I could doubtless have secured more, even without a net, for I distinctly remember disturbing a number of small *Hydropori*. In addition to the above species I am able to add to the Hastings list of *Coleoptera*, *Hydræna pygmaea*, Wat., two specimens of which turned up under a stone at Fairlight, *Xenusa ovata*, Er., and *Phalacrus hybridus*, Flach, single specimen at Pett, and *Philonthus ebeninus* var. *corruscus*, Grav., at Bexhill High Woods. *Hebrus pusillus*, Fall., proved to be an addition to Mr. E. A. Butler's local list of the *Hemiptera-Heteroptera* ("Hastings and East Sussex Naturalist," Vol. I, No. 1, p. 23); it occurred singly at Rye, and with it were two developed specimens of *Microvelia pygmaea*, Duf., the only other species worth recording. My thanks are due to Mr. W. H. Bennett for putting me in the way of finding a large number of local and interesting species, and to Mr. E. A. Newbery for assistance in identifying my captures.—E. C. BEDWELL, The Grove, Coulsdon, Surrey: February, 1908.

Laccobius sinuatus, Mots. (*oblongus*, Gorham).—On looking through my material in this genus in the light of Mr. Newbery's table (*ante*, p. 30), I find that I have taken this species on the following occasions:—Cley, Norfolk, August 6th, 1888, Horsford Heath, Norfolk, April 30th, 1890, and Colesborne, Glos., May 8th, 1905. From the Horsford locality, which is one of the characteristic East Norfolk wet heaths, I did not at the same time bring *L. nigriceps*, though I got both *sinuatus* and *nigriceps* in a coast marsh at Cley. In the Colesborne locality, which is a vernal swamp on the Upper Lias at about 500 feet elevation, both species occurred, though I have not at this moment specimens of each taken at the same time.—J. EDWARDS, Colesborne, Cheltenham: February 12th, 1908.

Coleoptera and Hemiptera-Heteroptera in various localities in 1907.—Although I was not fortunate enough to make many really rare captures last season, still I have met with some species which are, at least, not common everywhere, besides a few interesting aberrations, so that my finds are perhaps of sufficient importance to enumerate. I owe to the kindness of my friend, Mr. C. J. C. Pool, several good insects from the neighbourhood of Enfield, in which district I personally met with the following:—*Amara convexiuscula*, one specimen amongst a large number of *Harpalus venus* under vegetable refuse; *Hister purpurascens*, a series from the same spot showing great variation in the amount of red coloration on the elytra, and including one specimen of the unicolorous black form (ab. *niger*); *Scyrmus minimus*, rarely, by beating hedges; *S. capitatus*, common on oaks; *Omius mollinus* and *Cis pygmaeus*, one specimen of each, obviously wanderers, beaten from a hedge, and another of the former grubbed at roots of grass; *Magdalis barbicornis*, a short series obtained from two different hedges at some distance apart, all ♂s; *Clytus mysticus* and *Ischnomera cærulea*, out of hawthorn in May; *Phlæotrya rufipes*, a fine specimen running on an old beech towards dusk one evening in July; *Haplocnemus impressus* (one) beaten out of a hedge in the same month. I was especially pleased to find a specimen of *Phyllobius maculicornis* with both the deciduous mandibles intact, and another of *P. urticæ* with one remaining; in both these species, and probably in all the rest of the genus, they are semicircular in shape short and rather broad, with a distinct blunt tooth extending outwards from the centre of the inner margin of each mandible, the extremities of these teeth almost meeting. In the specimens of the genera *Otiorrhynckus*, *Trachyphlæus*, *Tropiphorus*, and *Barynotus* retaining these mandibles which I have seen the teeth are wanting. I shall look forward with interest to solving the question whether or not they are present in the closely allied genus *Polydrusus*; probably they are. By sweeping *Ranunculus bulbosus* in Bush Hill Park in June I got a fair number of *Exomias pellucidus*, a species very liable to be passed over in the net by the unwary Coleopterist in mistake for the more generally distributed *E. araneiformis*. *Aphodius sordidus*, one, *ex sterc. equino*, in July.

On the marshes of the Lea between Cheshunt and Broxbourne I took several specimens of *Apion affine*, three in March in a stack, and three in September by sweeping, and hope another season to trace the species to its apparently unknown food-plant. At Broxbourne, on the stormy morning of Whit Monday, the few minutes' collecting allowed by the weather resulted in the very unexpected capture of a fine ♂ *Molorechus minor*, beaten from hawthorn blossom near the railway

station. I discovered in a lane here in May, 1906, a small colony of *Phyllodecta laticollis*,* Suffr. (*cavifrons*, Thoms.), inhabiting two or three trees in a fine row of Lombardy poplars, and was pleased to find them there again in August last. I think their choice of food-plant is of interest, because so very few *Coleoptera* appear to have been recorded as occurring on the Lombardy poplar in this country; the record of *Dorytomus tortrix* living upon it in Scotland, given by Fowler, is the only one I have come across. On the willows which line the opposite side of the lane *Plagioderia versicolora* and *Crepidodera chloris* are usually fairly common, but I was unable to find any of the *Phyllodecta* upon them. *Gymnetron villosulus*, which I met with rarely at Broxbourne in 1906, was absent last season. Miscellaneous captures on the marshes at various times included *Ilybius fenestratus*, not uncommon in the Lea, *Oxytelus insecatus*, *Stenus melanopus*, *Antherophagus pallens*, *Anisosticta 19-punctata* (with two pretty orange specimens), *Rhizobius litura*, quite black (two), *Corymbites tessellatus*, *Bruchus rufipes*, *Hippuriphila modeeri*, *Psylliodes picina*, scarce, as usual here, *Phyllotreta tetrastigma*, *Grypidius equiseti* (one), not seen here since 1898, *Ceuthorrhynchus alliarie*, *Hylesinus oleiperda*, and, in December, a single *Lathrobium filiforme* under willow bark.

A visit to Greenhithe in June produced *Balaninus turbatus*, rarely, also *Deporaus megacephalus* and *Conopalpus testaceus*. At Box Hill I took nothing better than *Acalles turbatus*, *Cryptocephalus bilineatus*, and *Mordella fasciata*. At Chorley Wood, Bucks., in July, I captured a nice aberration of the common *Strangalia armata*, in which the black markings are extended in a manner somewhat similar to that figured in Rye's "British Beetles," pl. 14; this specimen, in which when fresh the ground colour was quite orange, was the only insect so marked out of more than thirty seen. At Woking, in August, I got nothing worth mentioning, except a fine fresh specimen of *Cleonus nebulosus*. Epping Forest in the same month produced four specimens of *Prionus coriarius*, and here also in September I was pleased to turn up again the local *Ctenopsis walloni*, which I took there rarely in 1902.

On a visit to Deal in June, in quest of *Donacia*, I obtained, in addition to several desiderata in that genus, four specimens of *Melanotus punctolineatus*, also *Saprinus metallicus*, &c.; and on a later visit, on September 1st, a good series of *Heptaulacus sus* (*ex sterc. equino*) and also of *Apion levicolle*. On this occasion I was fortunate enough to pick up on the sandhills a remarkable example of the common *Sermyla halensis*, L., in which the basal fourth of the elytra is deep blue and the remainder coppery-red, the insect itself also being unusually attenuated in shape. In Naturg. Ins. Deutschl., VI, 662, Weise described a variety of *S. halensis*, which he named var. *cuprina*, the elytra in which are characterised as "lebhaf kupferroth oder metallisch feuerroth"; my insect, however, can hardly be referred to this variety on account both of the distinct basal blue band and also of the comparatively dull appearance, which, added to the compressed shape, makes it probable, I think, that this interesting insect is an altogether abnormal form.

A lane at Dartford, in October, produced single specimens each of *Otiorrhynchus raucus* and *Hypera murina* by grubbing.

* This name has priority according to the European Catalogue of Heyden, Reitter, and Weise, 1906.

Amongst a few *Heteroptera* noticed during the season may be mentioned : *Monanthia humuli*, not uncommon in ditches at Cheshunt ; *Heterogaster artemisiæ*, two by grubbing at Mickleham in July ; *Ceraleptus lividus*, one specimen of this rare species on Deal sandhills, September 1st ; *Zicrona cærulea*, several amongst ling in Epping Forest ; and *Aphanus alboacuminatus (pedestris)* in numbers at Dartford, October, including a single specimen with the membrane fully developed. —F. B. JENNINGS, 152, Silver Street, Upper Edmonton, N. : January 10th, 1908.

Aculeate Hymenoptera near Bradford in 1907.—The following captures are species not included in Mr. W. Denison Roebuck's list of *Aculeate Hymenoptera* in the recently published "Victoria County History of York," vol. i :—*Prenolepis vividula*, Nyl., abundant in greenhouses, Lister Park, Bradford ; *Pemphredon lethifer*, Shuck., bred commonly from bramble stems collected near Bradford ; *Sphecodes ferruginatus*, Sch., several, both sexes, Harden Moor, associating with *Halictus rubicundus* ; *Halictus atricornis*, Smith, on blackberry, Shipley Glen, in July ; *H. fulvicornis*, Kirb., Harden, females only ; *H. freygessneri*, Alf., Wilsden, August, females only. In the absence of males of the above two species from the same locality, Mr. E. Saunders—to whom I am indebted for kindly naming my specimens—does not feel justified in deciding without reservation as to the identity of these closely allied species. *Andrena lapponica*, Zett., common on the moors in June ; *A. fuscipes*, Kirb., Botanical Garden, Lister Park, Bradford. In addition to the above, it may be interesting to put on record that I captured a ♀ *Vespa austriaca*, Panz., at large on July 21st in Grass Wood, Grassington.—ROSSE BUTTERFIELD, Bank House, Wilsden, Bradford : January 15th, 1908.

Note on the British species of Proctotrupids recently described by Dr. J. J. Kieffer.—Numerous British species of Belytides have recently been described or recorded by Dr. Kieffer, from the collections of Mr. Cameron and the Rev. T. A. Marshall, in the Portuguese publication entitled "Broteria," vol. vi, parte 1, serie Zoologica, dated December 10th, 1907, pp. 5—42. They are as follows :—*Oxylabis marshalli*, n. sp. (England ?, from coll. Marshall), *O. maculata*, n. sp. (Exeter and Botusfleming, also France, Germany, &c.), *O. punctulata*, n. sp. (England), *O. leviventris*, n. sp. (Botusfleming), *O. tuberculata*, n. sp. (England) ; *Paroxylabis* (n. gen.) *semirufa*, n. sp. (England) ; *Leptorhaptus rufiventris*, n. sp. (England), *L. heterocerus*, n. sp. (England) ; *Xenotoma pleuralis*, n. sp. (England), *X. nigrescens*, n. sp. (England), *X. nigra*, n. sp. (England), *X. rufopetiolata*, Nees (England), *X. nigriceps*, n. sp. (England), *X. pallida*, Thoms. (England) ; *Pantoclis oblitterata*, n. sp. (England), *P. soluta*, n. sp. (England), *P. fusciventris*, n. sp. (England), *P. fuscipes*, n. sp. (England), *P. proxima*, n. sp. (England), *P. gracilicornis*, n. sp. (England), *P. neglecta*, n. sp. (England), *P. similis*, n. sp. (England), *P. cilipes*, n. sp. (England), *P. obscuripes*, n. sp. (England), *P. cameroni*, n. sp. (England), *P. cameroni*, var. *castaneiventris*, n. var. (England), *P. rufiventris*, n. sp. (England), *P. filicornis*, n. sp. (England), *P. trisulcata*, n. sp. (England), *P. prolongata*, n. sp. (England).—G. C. CHAMPION, Horsell, Woking : February 8th, 1908.

Review.

"THE MOTHS OF THE BRITISH ISLES:" by RICHARD SOUTH, F.E.S. First Series, comprising the Families *Sphingidæ* to *Noctuidæ*. London: F. Warne and Co. 1907.

In the present volume Mr. South, following on his useful and highly successful work on our British Butterflies in the "Wayside and Woodland Series," gives us a further instalment of his history of our indigenous *Lepidoptera*. The ground covered in this little book is very extensive, as no fewer than 335 species of moths, belonging to twelve recognised families, are dealt with in about the same number of pages. Much less space is thus available for each species than was the case in the author's "Butterflies," but the work is written on the same lines as its predecessor, and the information conveyed, if somewhat condensed, is throughout sound and reliable. The sequence of families, genera and species is a slight modification of that of Staudinger's "Catalog," of 1901, the families *Cymbidæ* and *Arctiidæ* immediately preceding the *Noctuidæ* instead of following the *Geometridæ*.

As in the "Butterflies," the plates form the chief feature of the book, and it may be at once said that the 650 coloured figures, with but few exceptions, fully maintain the high standard set by that work. If in some of the plates taken direct by the three-colour process from the insects themselves the complicated markings of the *Noctuæ*, &c., are not quite as clearly defined as in those from the beautiful drawings by Mr. Horace Knight, the texture of these insects is as a rule admirably reproduced. We would call especial attention to the beautiful (slightly reduced) figure of *Acherontia atropos* on plate 8; and the suggestion of translucency in the figures of such insects as *Notodonta trepida*, *Odontesia carmelita*, and in particular *Saturnia carpinii*, is very pleasing. A few species, especially those in which green is the prevailing tint, notably *Dipthera orion*, can on the other hand be hardly said to be adequately represented as to colour. The early stages of nearly every species are excellently figured in black-and-white, space and bulk being saved by printing on both sides of the plates. As in Mr. South's previous volume, we should very much have preferred that the scientific names used in the text (with references to their authors added), had been appended to the plates, instead of the so-called "English" designations; some of these, as the "Cream-Bordered Green Pea" and the still more egregious "Setaceous Hebrew Character" had, we thought, long been consigned to the limbo of things forgotten. Apart from this detail (which we may hope to see altered in succeeding volumes) we have much pleasure in confidently recommending this little book to every one already interested in our moths, or desirous of knowing something about them.

Obituary.

Nicholas Frank Dobrée.—On January 8th last, at the advanced age of seventy-seven, passed away Mr. N. F. Dobrée, of Beverley. Years ago Mr. Dobrée was known throughout Britain as an ardent student of the *Noctuæ*, the special liking for which he probably acquired from his friend, the late Mr. George Norman, who, prior to his death in 1881, was a regular contributor to the pages of this Journal. Both were fascinated by the *Noctuæ*, to the exclusion of the other Orders

of the *Lepidoptera*; but whilst Norman appears to have been more specially attracted by the British species, Dobrée included the *Noctuæ* of the European fauna, and was especially interested in the great variation in the forms shown by the geographical distribution of the various species. His collection of European *Noctuæ* was known as one of the best in the kingdom, probably the best private collection. As advancing years brought a natural diminution in his collecting energy, his generosity prompted him to give the collection to the Hull Museum, where it can now be consulted by any one interested in the *Noctuæ*. Hull was no doubt chosen for its location because for many years Mr. Dobrée was in business there as a corn and seed merchant. Mr. Dobrée took great interest in the Yorkshire Naturalists' Union, in the excursions of which, years ago, some of us remember him as a most genial and entertaining companion. His great knowledge of the *Noctuæ* of his own particular district of Holderness may be seen by a reference to the "List of Yorkshire *Lepidoptera*." His own Entomological contributions were mostly published in the pages of the "Naturalist" and the "Entomologist." Fond of travelling, he became acquainted with some of the leading continental Entomologists, and could speak fluently in German, French, Swedish, and Italian.—G. T. P.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *January 20th, 1908.*—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. J. T. Fountain showed a larva of *Lasiocampa quercûs*, L., from near Barmouth, together with the Dipterous parasite, *Tachina larvarum*, L., which he had bred from it. Mr. G. T. Bethune-Baker, a very fine little collection of some of the rarer African *Papilionidæ*. Mr. Colbran J. Wainwright, *Platycheirus melanopsis*, Lw., ♀, from the Riffelalp, Valais, Switzerland, a rare British species, which seems but little known on the Continent. Also various *Dolichopodidæ*, including *Campsicnemus magius*, Lw., and called attention to the extraordinary development of the fore-tarsi in the males of that species.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Annual Meeting, held at the Royal Institution, Liverpool, on *Monday, December 16th, 1907*, Mr. WM. MANSBRIDGE, Vice-President, in the Chair.

The following Members were elected Officers of the Society for the ensuing year, viz.:—*President*, Samuel J. Capper, F.E.S.; *Vice-Presidents*, Prof. E. B. Poulton, F.R.S., Oxford, J. R. Charnley, F.Z.S., H. H. Corbett, M.R.C.S., Doncaster, Wm. Mansbridge, F.E.S., Eustace R. Bankes, M.A., F.E.S., Corfe Castle, Robert Newstead, A.L.S.; *Hon. Treasurer*, J. Cotton, M.R.C.S., F.E.S.; *Hon. Secretaries*, H. R. Sweeting, M.A., Wm. Mansbridge; *Hon. Editor*, J. R. le B. Tomlin, M.A., F.E.S.; *Hon. Librarian*, F. N. Pierce, F.E.S.; *Council*, The Rev. T. B. Edrupp, M.A., Wakefield, C. E. Stott, Robert Tait, Jun., P. Edwards, M.R.C.S., J. Collins, Oxford, R. Wilding, O. Whittaker, Wm. Bell, J.P., M.R.C.S., E. G. Bayford, Barnsley, P. F. Tinnie, M.A., W. D. Harrison, and W. A. Tyerman.

The Vice-Presidential address was then delivered by Dr. J. Harold Bailey, of Port Erin, Isle of Man, and was entitled "*The Coleoptera of the Isle of Man.*" Dr. Bailey dealt with his subject in a most illuminating and scientific manner; he described the climate and topography of the island exhaustively, showing the influence of the ocean currents and prevailing winds upon the flora and fauna. The geological structure of the island was also considered as far as related to the beetles and their distribution in this interesting area. Dr. Bailey discussed the probable date when there must have existed a land connection between the coast of Ireland on the west, and that of Lancashire on the east, as evidenced by the numbers of various classes of *Coleoptera* and plants belonging to different periods of migration. Lengthy comparisons were made in this connection between the numbers and species of the different migrations as now existing on the adjacent coasts, as well as in the case of the Alpine forms found on the Manx mountains and in the highlands of Scotland and Ireland. A vote of thanks to Dr. Bailey having been proposed and suitably replied to, the following exhibitions were made, viz.:—By Mr. C. B. Williams, a fine female example of the olive banded form of *Bombus quercus* bred 1907 from a Wallasey larva. Mr. Robert Newstead, a case showing the complete life-history of the common house-fly, which he had worked out during the past summer. Mr. J. J. Richardson, about seventy species of *Lepidoptera* taken from the lamps round Sefton Park, Liverpool, during 1907. These included *Halia vauaria*, *Noctua rubi*, *Plusia iota*, *P. pulchrina*, *Epione apiciaria*, *Eugonia alniaria*, *Himera pennaria*, *Leucoma salicis*, and *Cymatophora duplaris*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, January 9th, 1908.—MR. R. ADKIN, F.E.S., President, in the Chair.

Mr. Sich exhibited a specimen of *Plodia interpunctella* captured in the Society's rooms. Mr. Gadge, specimens of *Malacosoma neustria*, from Chingford larvæ, one without a rudiment of the right hind-wing, and the other with an extremely small left fore-wing. Mr. Turner, *Dercas verhuelli*, a Pierid near *G. rhamni* and the "map" butterfly, *Cyrestis thyodamas*, both from the Khasia Hills, India. Dr. Hodgson and Mr. Grosvenor, series and specimens of *Aricia agestis* (*astrarche*), including var. *salmacis*, ab. *obsoleta*, ab. *alpina*, var. *artaxerxes*, ab. *allous*, &c., from Reigate, Sussex, N. England, and Aberdeen. Mr. Adkin, series of *Tortrix pronubana*, *T. podana*, *T. heparana*, *T. rosana*, *T. forsterana*, and *Batodes angustiorana*, reared from larvæ taken on *Euonymus japonicus* at Eastbourne in May and June, 1907, and read a paper entitled "Further Notes on *Tortrix pronubana*, including its Life-History in Britain." Reports of the various Field Meetings held in 1907 were submitted and read.

Annual Meeting, *Thursday, January 23rd, 1908.*—The President in the Chair.

The balance sheet and Committee's Report were read, and showed that the Society had closed another year of usefulness. The retiring President, Mr. R. Adkin, then read the Annual Address, in which, after dealing with recent Entomological discoveries, observations, &c., he reviewed the past history of the Society at some length.

The following is a list of the Officers and Council for the ensuing year:—
President, A. Sieh, F.E.S. *Vice-Presidents*, R. Adkin, F.E.S., and W. J. Kaye, F.E.S. *Treasurer*, T. W. Hall, F.E.S. *Librarian*, A. W. Dods. *Curator*, W. West (Greenwich). *Hon. Corresponding Secretary*, Stanley Edwards, F.L.S., F.Z.S. *Hon. Reporting Secretary*, Hy. J. Turner, F.E.S. *Council*, S. R. Ashby, F.E.S., T. A. Chapman, M.D., F.Z.S., F.E.S., H. Main, B.Sc., F.E.S., A. L. Rayward, F.E.S., E. Step, F.L.S., and A. E. Tonge, F.E.S.

In taking the Chair, Mr. Alfred Sieh proposed, and Mr. Step seconded, a vote of thanks to Mr. Adkin, and Mr. Tutt at some length paid a warm tribute to the appreciation of Mr. Adkin's services in the Society for so many years.

Mr. B. Smith, of Upper Norwood, and Mr. E. R. Goffe, of Wandsworth Common, were elected Members.

Mr. Rayward exhibited the hibernating larvæ of *Pseudoterpna pruinata* on the stems of *Genista anglica*. Mr. Newman, a large and varied series of *Amorpha populi*, mostly from captured larvæ.—H. J. TURNER, *Hon. Sec.*

ENTOMOLOGICAL SOCIETY OF LONDON.—*Wednesday, February 5th, 1908.*
 Mr. C. O. WATERHOUSE, President, in the Chair.

The President announced that he had nominated Dr. Thomas Algernon Chapman, M.D., F.Z.S., Professor Raphael Meldola, F.R.S., F.C.S., and Mr. Henry Rowland-Brown, M.A., as Vice-Presidents for the Session 1908-9.

The President announced that the Council had elected Mr. James William Tutt to serve as a Member of the Council in the place of the late Mr. Arthur John Chitty, deceased.

Mr. C. Gordon Hewitt, M.Sc., of the University, Manchester, was elected a Fellow of the Society.

Dr. T. A. Chapman exhibited a collection of butterflies made last summer at Gavarnie, in the Pyrenees, including a number of specimens of *Erebia lefebvrei*, with *E. melas* from South-east Hungary, for comparison. He pointed out, and illustrated by means of enlarged photographs the superficial differences in the wing-markings between the two species, and also drew attention to the fact that specimens of *Lycæna orbitulus* taken on the Simplon, Switzerland, are identical with *L. orbitulus* var. *oberthûri* of the Pyrenees. Mr. H. St. J. Donisthorpe, eleven species of ants taken in the hothouses in Kew Gardens in December, 1907, and January, 1908, eight being new to the published Kew list, and six species not before recorded as introduced in Britain. Mr. J. E. Collin, microscopically mounted specimens of *Epidapus seabiei*, Hopk., a potato pest in the United States, and recently discovered in England attacking narcissus bulbs by Mr. H. J. Charbonnier, of Bristol. Commander J. J. Walker, on behalf of Mr. A. H. Hamm, very young larvæ of *Sitaris muralis*, hatched at end of October and beginning of November from ova laid by ♀s in captivity (the natural place of deposit of these eggs being at the entrance to the burrow of the bee, *Anthophora pilipes*, in stone walls near Oxford). He also exhibited two specimens of the rare *Pyralis lienigialis*, Zell., ♀, taken at light in his house, Summertown, Oxford, August, 1906 and 1907. Mr. Rowland E. Turner, a box of *Thynnidae* from South America, mostly from Chile, and new species from Mendoza

and the Peruvian Andes. Prof. T. Hudson Beare, a specimen of *Trachyphloeus scabriculus* with the two deciduous mandibles still in place, taken at St. Margaret's Bay. Lieut.-Colonel Manders, the ♀ of *Papilio phorbanta* from Bourbon, an aberrant member of the *nireus* group of Papilios, and compared it with the other members of the same group from the African mainland, Madagascar and Mauritius kindly lent for the purpose by Professor Poulton. The case is dealt with more fully and the insects figured in his paper on "The butterflies of Mauritius and Bourbon," in the Trans. Ent. Soc., 1907, pp. 449—451. Dr. K. Jordan, on behalf of the Hon. Walter Rothschild, some interesting Papilionids: (a) *Troides alexandræ*, Rothsch., remarkable for the beauty of the ♂ and the gigantic size of the ♀, a new discovery by A. S. Meek, who found this fine insect in the north-eastern portion of British New Guinea at some distance inland from the coast; (b) a gynandromorphic specimen of *Troides haliphron*, Boisd., the only one known of this genus, obtained by Dr. L. Martin in South Celebes, the left side being ♀ and the right side ♂. Mr. R. Adkin, specimens of *Tortrix pronubana*, Hb., reared in June and July from larvæ collected in May, also others reared in autumn from ova deposited by moths of the June emergence. His observations had led him to conclude that, as had been shown to be the case in Guernsey, the species would be found to be practically continuously brooded throughout the summer months, the chief emergences taking place in June and October, but with stragglers appearing probably in every month from April to November. Mr. L. W. Newman, long series of *Melitæa aurinia*, and *Notodonta chaonia*, from many localities in the United Kingdom, to illustrate the wide superficial variation of the respective species. Dr. F. A. Dixey exhibited specimens of *Nychitona medusa*, Cram., and *Pseudopontia paradoxa*, Feld., observing that a former suggestion of his as to a mimetic relation between them had been confirmed by a letter lately received from Mr. S. A. Neave, at present in the Congo State, who wrote that the two forms "inhabit exactly the same localities and are barely distinguishable from each other on the wing." Mr. Rowland E. Turner communicated a paper "On Two Diplopterous Hymenoptera from Queensland," and "Notes on *Thynnidae*, with remarks on some aberrant genera of the *Scoliidæ*." Mr. Guy A. K. Marshall read a paper "On Diaposematism, with reference to some Limitations of the Müllerian Hypothesis of Mimicry." In this he pointed out the difficulty of accepting the idea of a mutual simultaneous mimicry between two unpalatable species, such as is postulated by the hypothesis of Diaposematism.

The General Meeting which followed was adjourned to March 4th.—
H. ROWLAND-BROWN, *Hon. Secretary*.

A FORTNIGHT'S WINTER COLLECTING IN VENEZUELA.

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

On December 20th, 1906, the R.M.S. "Tagus," bound to Jamaica, touched at La Guaira, a place that Charles Kingsley has immortalized in his great romance. Owing to the formalities of the Venezuelan officials we could not land till the afternoon was far advanced. The

"Aden of the Caribbean Sea" proved less hot than we had been led to expect, for a mantle of heavy clouds came far down the mountains that almost seem to overhang the town. A push was made to the most promising spur, a little to the west, where a fair number of butterflies were seen, though few were taken. The extremely steep slopes appeared to consist of bright red clay scantily clothed with small bushes, amongst which a species of *Cistus* predominated. Pursuit was almost out of the question, and one's operations were not facilitated by the well-meant attentions of some small Indian boys.

On examination at home my captures proved to be *Ithomia iphianassa*, Dbl. and Hew.; *Ageronia ferentina*, Godt., and *Tmolus cambes*, Godm. and S., one of each. Of the last named Mr. H. H. Druce informs me that the type came from Mexico, and that it has not previously been recorded south of Guatemala. There were also a worn specimen of *Sphænogona gratiosa*, Dbl. and H., two of *Terias albula*, Cram. (one of them having the black border of the hind-wing unusually pronounced), and two of the Skipper, *Heliopetes laviana*, Hew. With these Butterflies were a very few insects of other Orders.

I landed on the Venezuelan shore for the second time March 17th, 1907, but on this occasion the whole afternoon was spent in struggling with the authorities of the port, so that it was necessary to spend a night at La Guaira. The next day a halt at Zigzag Station, about 1500 ft. up the railway to the Capital, enabled me to sample the insect fauna. Butterflies were very plentiful, and I ran back to the railway carriage with specimens of *Actinote antæas*, Dbl. and H.; *Euptychia phares*, Godt., a species that I did not see again; *Phyciodes leucodesma*, Feld.; *Terias albula*, Cram., and *Hesperia syrichthus*, Fabr., together with sundry wasps, bugs, and grasshoppers.

The railway after many terror-inspiring twists gains access to the capital by a gap in the mountains on its western side.

CARÁCAS stands at a mean altitude of 3200 ft. above the sea in North Lat. 10° 30'. The city is beautifully situated on a plateau sloping southwards to the Rio Guaire; this plateau is open to the East towards Petare, closed to the West by the Observatory Hill some three hundred feet above the plain; on the South it is bounded by two low ridges that separate Carácas from El Valle, but on the North it is dominated by a lofty range of mountains, which rising abruptly from the valley culminate to the North West in Silla, 8760 ft., and Naiguata, 9300 ft.

The Observatory commands a grand prospect, but the path leading to it was far from productive, yielding only *Phyciodes anieta*, Hew. ; *Synchlœ lacinia*, Hübn., the dark form ; *Leptotes (Tarucus) cassius*, Cram., both sexes ; *Terias clathea*, Cram., a male, an aberration of the "moderately dry" form in which there was no trace of the usually conspicuous longitudinal black streak, and scarcely any of the orange border thereto ; also *Hesperia notata*, Blanch., the only example met with.

The village of EL VALLE stands at about the same level as Carácas, some four miles to the south, and as it is conveniently placed at the terminus of a tramway I visited it three times, but my first visit was spoilt by heavy rain. A bluff on the outskirts of the village displayed sufficient flowers to attract a fair number of insects, the best of which was the large Skipper, *Prenes evadnes*, Cram., the only one that I met with, but a lane leading from the village southwards to a ford proved a better collecting ground. This lane, bounded on either side by a wet ditch and a flowery hedge, had an English look that was delightfully refreshing. Here were a number of the commoner Butterflies, conspicuous among them the "Brimstone," *Callidryas eubule*, Linn. (f. *sennæ*, L.), of both sexes ; *Anosia archippus*, Fabr. ; *Actinote antæas*, Dbl. and H. ; the beautiful yellow and black *Heliconius charithonia*, Linn. ; the brilliant red, black and white *Anartia amalthæa*, Linn., flying as usual close to the water, but unfortunately in poor condition ; the dingy Satyrine, *Euptychia hermes*, Fabr. (*camerta*, Cram.), together with its more attractive white-striped congener, *E. hesione*, Sulz. ; there were also several males of the "Common White" of those parts, *Leptophobia aripa*, Boisd., and a male of the common *Terias albula*, Cram., a white member of a yellow genus. But besides these familiar forms there were several of greater interest, at all events to one new to South America. The small Nymphalines, *Phyciodes lelex*, Bates, and *P. liriopæ*, Cram. ; a female of *Terias nise*, Cram. ; two male *Sphænogona arbela*, Hübn., of an unusually pale form ; a female of the fine *Daptonoura lycimnia*, Cram. ; a specimen of the large Ithomiine, *Mechanitis veritabilis*, Butl. ; the black and white Lyeænid, *Polyniphe dumenilii*, Godt., and the Skipper, *Chiomara gesta*, H.-S. But there were in addition several Butterflies in that narrow lane which I did not meet with elsewhere in Venezuela, conspicuous among them, on the flowers of *Lantana camara*, Linn., was a specimen of the long-winged, richly silver-plated *Dione juno*, Cram., strikingly resembling *Colænis julia*, Fabr., as regards its upper surface, but with an under-

side that at once recalled the European *Argynnis lathonia*, Linn.; even more attractive was the essentially Neo-tropical Nymphaline, *Myseelia cyaniris*, Hew., grey with white stripes, shot with brilliant violet—conspicuous as this looks in the cabinet it is by no means as conspicuous when sitting, as it is fond of doing, on light grey bark; a black, white, and red Butterfly seen fluttering at the bottom of a ditch turned out to be a male of the truly exquisite *Papilio eurimedea*, Cram., perfect in shape and finish, and with a marvellous blue gleam in certain lights; less striking than the last was an unusually small female of its soberly coloured congener, *P. polydamas*, Linn.; lastly, there were two Skippers peculiar to that lane, viz.:—*Xenophanes tristis*, Boisd., and *Paches geometrinus*, Feld., both well meriting the specific name of the latter.

I tried another and very different collecting ground at El Valle—a combe on the southern side of the ridge lying immediately to the north of the village. A narrow path led through low scrub up to the crest, perhaps some 500 feet above the river. Most of my collecting was, however, a couple of hundred feet or so lower. A short distance up, near a lime kiln, several *Heliconius charithonia*, Linn., were seen, and close by the small black and white Lycænid, *Polynippe dumenilii*, Godt., was to be had in abundance; it is strange, but true, that this very small Butterfly is the proud possessor of one of the strongest scents (?)—very suggestive of pigstyes, or at any rate of pigs! Several other Lycænids were taken in this combe: *Leptotes cassius*, Cram., a male; *Catochrysops hanno*, Stoll., two males; *Thecla rufofusca*, Hew., two; *Callipsyche thus*, Hübn.,* six; but the most interesting Lycænid was a single rather sorry individual, of which Mr. H. H. Druce writes: “This is an interesting specimen. I cannot distinguish it from the well-known Eastern and African *Zizera gaika*, Trimen (*pygmæa*, Snell.), which has a wide range, India, Ceylon, Malay, Australia, South Africa (Rhodesia), &c., but I have never seen it from America, and do not know that it has been recorded. Can it have been recently introduced?” This insect was certainly taken at El Valle, March 26th, 1907, but unfortunately my record leaves it in doubt whether it was taken near the river or up the combe.

The only Satyrines found were a few *Euptychia hermes*, Fabr. (*camerta*, Cram.), but the Nymphalines were as usual well represented, conspicuous amongst them was the bright little *Cybdelis mnasyllus*, Dbl. and H., looking for all the world like a miniature

* Mr. H. H. Druce says this is the same as *Thecla agra*, Hew.; my males from Venezuela have a white tip to the fore-wing, which is not present in Jamaica specimens.

Hypolimnas misippus, Linn.; this is the only place that I came across it, but here it was quite common, fluttering about low plants, and never settling for long. *Phyciodes* was represented by one *anietæ*, Hew., and *Dynamine* by *postverta*, Cram., *theseus*, Feld., and *sara*, Bates; one of the last named was drinking at mud. A fine *Hypna clytemnestra*, Cram., caused me much tribulation; I saw it on both my visits to the combe, missing it three times, then, as I was returning to its haunt full of good resolutions to keep cool and so ensure success, a wretched boy brought it to me in triumph, having caught it with his hat! It *had been* a good specimen of the very distinct form *rufescens*, Butl. The Vanessa-like *Anæa ryphea*, Cram., was rather commoner, and I secured four; one of these was captured on the very windy crest of the ridge together with *Tusitia eresimus*, Cram., a female; *Synchlœ lacinia*, Hübn., f. *sandersii*, Dbl. and H., and two males of the common *Precis lavinia*, Cram., of the dry form corresponding to *zonalis*, Feld., but more dingy than Jamaican specimens. This is the *P. michaelisi* of Fruhstorfer (Stett. Entom. Zeit., 1907, p. 224).

My delight was great at taking *Callicore marchalii*, Guér., a butterfly more interesting to Venezuelan politicians from its bearing the mystic figures "88" upon the under-side of its hind-wings, than for its singular beauty. I also took here my first *Didonis biblis*, Fabr., a handsome black and scarlet butterfly that I was soon to become familiar with in Trinidad; it returns again and again to the same place, as do our *Vanessæ*.

Pierines were not common up that combe. Of *Meganostoma cerbera*, Feld., I took a female; of *Sphænogona gratiosa*, Dbl. and H., a male, and of *S. arbela*, Hübn., three males of an unusual pale form. The very familiar *Callidryas cubule*, Linn., was represented by a small, somewhat "dry" male. I captured one of each sex of *Pseudopieris nehemias*, Boisd. That hillside did not produce a single *Papilio*.

Skippers, as is often the case in the New World, were more remarkable for the number of species than of individuals; those met with were:—*Heliopetes alana*, Reakt. (*adusta*, Ploetz), one; *H. arsalte*, Linn., one, this has a swift, dashing flight; the large long-tailed *Eudamus catillus*, Cram., one; *E. eurycles*, Latr., one; *Arteurotia tractipennis*, Butl. and Druce, one; the pretty *Larentia*-like *Chiomara asychis*, Cram., one; one of an unnamed small black species, and one of the very widely distributed *Hesperia syrichtus*, Fabr.

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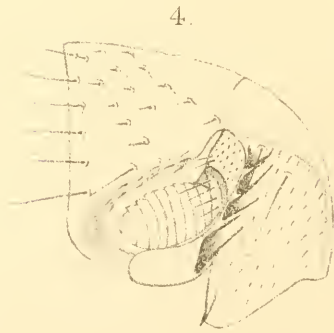
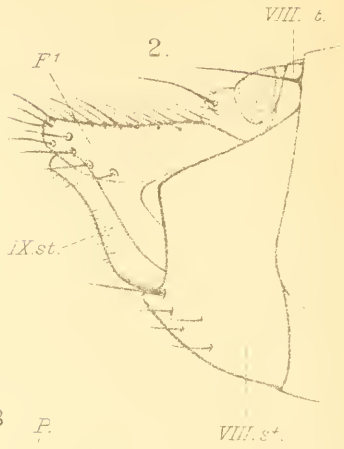
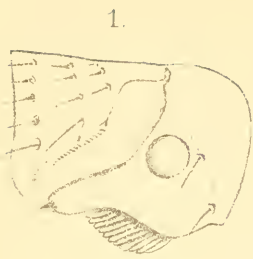
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An attempt to reach the primeval forest high on the mountains to the north of Carácas was a disastrous failure. We climbed on horseback up the once fine road to La Guaira; its cobble paving is fast disappearing, and the road itself much cut away by impetuous water-courses now left free to work their wild will, since the railway built by English engineers has given the Venezuelans an excuse for not repairing the old Royal Road. We went up and up, but no signs of forest appeared. Meanwhile threatening clouds came down the mountain, as if to meet us; the guide took us a turning towards the West and proudly showed, what he thought much better than any forest— a somewhat miserable nursery garden! We lunched in gloom at about 5000 feet, and then the rain began. There was nothing for it but to hurry down again, and we reached Carácas to find the streets in the suburbs rushing rivers and ourselves like drowned rats. Bag:—*Phyciodes anieta*, Hew., one; *Euptychia pharella*, Butl., one; *E. hermes*, Fabr., one; *Terias phiale*, Cram., a male; *Sphænogona arbela*, Hübn., a female of the usual yellow form, and five specimens of the elegant *Oressinoma typhla*, Dbl. and H., a delicate Satyrid with a broad white stripe across both wings, which often flies when the sun is not shining.

When climbing up the old La Guaira road I had noticed a wooded gorge far below on my right hand and took an early opportunity to investigate it. It proved to be a waterworks conservation and was partly enclosed. The collecting ground may be said to be from 3500 to 3700 ft. above sea-level. The shaded path was just the place for Satyrines, which were fairly numerous, being represented by *Euptychia saturnus*, Butl., three, a species that I did not find elsewhere; *E. hermes*, Fabr. (*camerta*, Cram.), five; *E. pharella*, Butl., three; and *Oressinoma typhla*, Dbl. and H., three, one of them very small.

Nymphalines were quite unusually scarce, the only species captured were *Phyciodes lelex*, Bates, and *P. anieta*, Hew. The sole Lycaenid was *Polyniphe dumenilii*, Godt. No *Papilio* was taken.

Of the Pierines, those taken were *Pseudopieris nehemia*, Boisd., six males and a female; *Sphænogona arbela*, Hübn., a male of the usual yellow form; also three males of *Terias phiale*, Cram., one of them an aberration having more black than usual on the hind-wing and but little yellow.

Heliconius was poorly represented by a single *charithonia*, Linn., but the Ithomiines were more numerous, and included *Ithomia*

andromica, Hew., two; *Acëria eurymedia*, Cram., one; *Hypoleria ocalea*, Dbl. and H., one; and *Athesis clearista*, Dbl., a female.

Actinote antæas, Dbl. and H., was of course present, and there were a few Skippers, to wit, *Hesperia syrichthus*, Linn., one; *Eudamas eurycles*, Latr., one; *Hesperia uniformis*, Ploetz, one; and a worn insect that is probably *Chiomara gesta*, H.-S.

I also secured a specimen of the pretty orange, black-bordered, day-flying Geometer, *Devarodes hypocritaria*, Guén.

But I reserve to the last my favourite hunting ground at Carácas, which I visited altogether four times during my short stay. A few minutes' walk beyond the Puente 9 de Febrero brings one to the closed Cementerio Hijos de Dios, to the right of which the path crosses a deep "barranco" where there are usually a number of *Actinote antæas*, Dbl. and H.: this is an unmistakeable Acraïne; it has a slow flight, and when at rest the fore-wings are always drawn back completely within the hind-wings, so as to give the insect a very long, drawn-out look. It is tenacious of life, but I did not detect any scent.

Beyond the barranco the path leads across a field past a cottage and round the head of another smaller barranco—where the effects of denudation with fairly well-formed "earth-pillars" may be studied—it then strikes a small water-course* cut along the mountain side. The path may be followed eastwards, beside the channel, along the contour at a height of about 3600 feet above the sea. A more delightful walk can scarcely be imagined with the city at one's feet, yet for all practical purposes miles away, since the numerous barrancos keep all but a few farmers well out of reach. There are plenty of flowers along the water-course and plenty of insects. About a mile brings one to the source, a small mountain torrent rising in the cloud regions far above, but compelled by the patient farmers to water their lands below. It is easy to scramble down the bed of the stream, but I found it better to take a path to the right leading through a picturesque farmyard, below which another water-course is reached, about 120 feet lower down the mountain. Here *Leptophobia aripa*, Boisd., was usually in abundance, together with the beautiful day-flying Arctiid, *Utetheisa (Deiopia) ornatatrix*, Linn. Turning again to the left along the channel the source was soon reached. A strip of forest on either bank hides the torrent from view, presumably to preserve the water. Here was all that a tropical Collector could desire—trees, flowers, shelter from wind, sunshine (in the forenoon), and

* This is just what a Madeiran Portuguese would call a *levada*; I have had much difficulty in learning the Spanish equivalent, perhaps *toma* or *acueducto*.

above all moisture. It was a little before 4 p.m. on the rather dull afternoon of March 20th, 1907, that I first scrambled up this gully. I had met with a few *Ithomiines* previously, but only odd ones, here and there; now it was my pleasure to see what I had read of.

Bates, in his classical paper on the *Heliconiidae*, writing of the genus *Ithomia*, says:—"They are prolific insects, and gregarious in their habits, flocks of many different species associating together. Their flight is low and weak; and they affect only certain parts of the forest, generally shady hollows, where many hundreds may often be seen sporting together, though not an individual is found in any other part of the neighbourhood."—*Trans. Linn. Soc.*, vol. xxiii, p. 539.

Again:—"The flocks of Butterflies, all of the same colour, and undistinguishable from one another when on the wing, which fly together in the same dry hollows of the forest. . . ." *Ibid.*, p. 541.

Alongside the right bank of the mountain stream was a comparatively level strip of ground, some six or eight yards wide, damp, and in places swampy, covered for the most part with the "Life-plant" (*Bryophyllum calycinum*, Salisb.). The place was overshadowed by what appeared to be a species of "Coral-tree," or "Bois immortel," as it is called in Trinidad (*Erythrina* sp.), and there was an undergrowth of Wild Coffee and a few Bamboos. As I pushed along, my movements suddenly disturbed a number of butterflies, which fluttered about in clouds, looking with their transparent wings almost like *Tipulæ*, only more ghost-like. Sometimes their wings would catch the light with an iridescent gleam, but more usually little could be seen save the opaque white marks upon their wings. Of course the more thickly sealed forms were more conspicuous, but as a rule all the black portions of the insects were invisible. It was a wonderful sight, but quite bewildering. Two or three sweeps of the net entrapped a dozen or so. I only took back that afternoon thirty-five specimens, which I imagined included three or four, possibly five or six species. In truth, there were eleven species belonging to eight genera.

A visit to the same spot the next day produced a similar result, the hour was earlier and the *Ithomiines* were not so closely packed, yet I took home thirty specimens, which proved to belong to nine species, three of which I had not taken on the first day. A third visit failed to add further to the list which stands as follows:—

<i>Athesis clearista</i> , Dbl. and H.	3
<i>Ceratinia cæno</i> , Dbl. and H.	17 (abundant).
<i>Ceratinia dionæa</i> , Hew.	2
<i>Pteronymia latilla</i> , Hew.	16 (very common).
<i>Pteronymia asopo</i> , Feld.	3
<i>Pteronymia victorina</i> , Hew.	2
<i>Ithomia agnosia</i> , Hew.	6
<i>Ithomia cymothoë</i> , Klug.	8
<i>Ithomia iphianassa</i> , Dbl. and H.	6
<i>Ithomia sylvella</i> , Hew.	1
<i>Hymenitis andromica</i> , Hew.	19 (abundant).
<i>Leucothyris phemoneë</i> , Dbl.	3
<i>Hypoleria ocalea</i> , Dbl. and H.	1
<i>Aëria agna</i> , Godm. and S.	1

A total of eighty-eight specimens, belonging to fourteen species divided amongst eight genera of one group of butterflies, is a sufficiently remarkable record for three visits to a strip of ground which certainly did not exceed 50 yards in length by 10 yards in width. While fully bearing out Bates' account, it forms a striking exception to Darwin's rule that nearly allied species are seldom found in close competition on the same ground.

(To be continued).

NOTES ON A COLLECTION OF *SIPHONAPTERA* FROM THE RUWENZORI, UGANDA.

BY THE HON. N. CHARLES ROTHSCHILD, M.A., F.L.S., F.E.S.

PLATE I. *

The species mentioned in the following article were collected by Mr. A. F. R. Wollaston from Mammalia secured by the British Museum Ruwenzori Expedition, 1906.

1.—CTENOCEPHALUS WOLLASTONI, *spec. nov.* (Pl. I, figs. 1, 2).

This species, of which we know only the ♂, is distantly related to *C. leporis*.

Head.—The frons is very strongly convex, but not angulate (Pl. I, fig. 1). There are two bristles in front of the eye. The genal edge bears a comb of 10 or 11 teeth. The genal process is large, being provided with a tooth at the apex, as in *C. canis*, *felis*, *madagascariensis*, &c. The occiput bears three rows of bristles, there being also a row of short, stout hairs along the hinder edge of the antennal groove. The rostrum reaches to three-fourths of the fore coxa.

Thorax.—The comb of the pronotum consists of 28 to 30 teeth. The mesonotum bears three rows of bristles, and in front of them several more small hairs. On the metanotum there are two rows of bristles. The metathoracical epimerum bears two rows of six each.

Abdomen.—The sternites of segments 3 to 6 bear one bristle on each side, the sternite of segment 7 bearing two.

Legs.—The hind coxa bears three bristles posteriorly at the apex, and a patch of spines on the inner surface. The mid and hind femora have two bristles ventrally before the apex on the outer side, and a subventral row of bristles on the inner side. The hind tibia bears numerous bristles on the outer surface. The longest apical bristle of the second hind tarsal segment reaches to the apex of the fourth segment. The fifth segment bears four stout bristles on each side.

Modified segments.—♂. The eighth sternite of the abdomen (Pl. I, fig. 2, VIII.st)* is very large, the tergite being small. The clasper bears a movable flap which is visible without the removal of the eighth segment. This flap (Pl. I, fig. 2, F¹) is densely covered with hairs. The ninth sternite (Pl. I, fig. 1X.st) is not completely divided in the ventral line, the right and left side halves remaining attached to each other proximally. In lateral view, as here represented, the free apical lobe of each side is curved upwards, the tip itself being rounded and slightly curved downwards.

Length 2.7 mm.

Two ♂♂ from the Ruwenzori, 6,000 ft., March 10th, 1906, off a mouse.

2.—PYGIOPSYLLA TORVUS, *spec. nov.*

Very close to *P. ahalæ*, Rothsch. (1904), from India. The rostrum, however, reaches only to two-thirds the fore coxa, the fifth segment of the labial palpus being as long as the three preceding segments together. The bristles of the eighth sternite are less numerous ventrally than in *P. ahalæ*. The long movable process of the clasper has the same shape as in *P. ahalæ*, except that the apical portion, which is curved downwards, is longer, there being also fewer minute hairs at the dorsal angle of this process. The ninth sternite is similar to that of *P. ahalæ*, but the central lobe, which bears, as in *ahalæ*, a number of stout spine-like bristles, is more rounded, and the lateral lobe is pointed.

One ♂ from the Ruwenzori, 6,000 ft., March 1st, 1906, off a mouse.

3.—CERATOPHYLLUS STYGIUS, *spec. nov.* (Pl. I, fig. 3).

Head.—There is a row of seven bristles in front of the eye, the uppermost bristle standing at the antennal groove. The upper edge of the genal process is slightly elevate, a narrow channel extending from the eye to the apex of the genal process separating the edge from the rest of the process. The frontal tubercle is small, being elongate-elliptical in dorsal aspect. The occiput bears two fairly long bristles above the antennal groove, and a subapical row of bristles, the occiput, moreover, being covered like the frons with numerous punctures bearing minute hairs. The rostrum reaches beyond the apex of the fore coxa.

Thorax.—The pronotum bears two rows of bristles and a comb of 30 teeth.

* The figure has been drawn from an unmounted specimen.

The mesonotum is densely covered with hairs, besides bearing the usual postmedian row of long ones. On the pleural sclerite of the mesonotum there are about 14 bristles. The metanotum has three rows of bristles. The metathoracic epimerum has numerous bristles arranged in four irregular rows.

Abdomen.—There is a comb of short apical spines on tergites 1 to 5, the spines standing close together and numbering over 20 on the first tergite, while they are farther apart and fewer in number on the other segments. The seventh tergite has three long and strong apical bristles. The sternites of segments 2 to 6 have a row of four bristles, besides some minute hairs, the second bristle from above being the longest.

Legs.—The hind coxa has four bristles posteriorly at the apex. The fore femur bears two bristles ventrally near the apex, while the mid and hind femora bear three in that place. The hind tibia has on the outer surface two rows of bristles near the stout dorsal bristles, there being also numerous short hairs on the ventral (= anterior) surface of this tibia. On the fifth tarsal segment there are four lateral bristles and a subbasal ventral pair standing in between the first lateral pair. The first segment of the mid and hind tarsi is longer than the second and third segments together. The longest apical bristle of the second hind tarsal segment reaches nearly to the middle of the fifth segment. The proportions of the mid and hind tarsal segments are as follows:—

	1st.		2nd.		3rd.		4th.		5th.
Mid tarsus	35	...	19	...	11	...	8	...	18
Hind tarsus.....	60	...	38	...	19	...	11	...	19

Modified segments.—♂. The eighth sternite (Pl. I, fig. 3, VIII.st) is large and bears ventrally a number of bristles, of which the most distal one is much the longest. The process (*P*) of the elasper is sinuate, each angle bearing a bristle, a very long bristle, moreover, standing dorsally of the process. The movable process (*F*) is widest in the centre, the apex being curved ventrad. There are a small number of minute hairs at the dorsal edge of this "finger," as well as on the outer surface, several longer hairs standing close together in the centre of the dorsal edge. Ventrally there is a long and a short bristle standing on the inner surface close to the edge. The ninth sternite (Pl. I, fig. 3, IX.st) is slender and bears at the incrassate apex two stout spine-like bristles on each side, there being two longer bristles further proximad at the ventral edge. Length 3.5 mm.

One ♂ from the Ruwenzori, 13,000 ft., off a mouse.

4. —*Ctenopsyllus hirsutus*, *spec. nov.* (Pl. I, fig. 4).

A large and hairy species bearing three vestigial lateral combs on the abdomen.

Head.—There are five spines at the edge of the antennal groove (Pl. I, fig. 4), the fourth being the longest and lying flat on the large genal process; the fifth spine is narrow and almost coalescent with the lower oral lobe. The rostrum nearly reaches to the apex of the fore coxa.

Thorax.—The pronotum bears three rows of bristles and a comb of 42 teeth. The meso- and metanotum have each four rows of bristles, there being also four more or less irregular rows on the epimerum of the metathorax.

Abdomen.—The abdominal tergites have four rows of bristles, the anterior row being irregular. There are, moreover, on the sides of the second, third and fourth tergites some short apical teeth (4 or 5, 3, 2) homologous to the combs of *Hystri-chopsylla*. The seventh tergite bears three long apical bristles on each side. The sternites bear all a patch of numerous bristles, which are arranged in four or more rows.

Legs.—The posterior apical sinus of the mid and hind coxæ is nearly semi-circular. The mid and hind femora bear five bristles externally before the apex. The spine-like bristles of the ventral tibiæ and tarsi are black. The fourth hind tarsal segment is nearly thrice as long as it is broad. Proportions of segments:—

	1st.	2nd.	3rd.	4th.	5th.
Mid tarsus	45	25	13	10	22
Hind tarsus.....	80	55	33	19	24

Modified segments.—The eighth tergite is very hairy, bearing numerous bristles above the stigma, and from the stigma to the ventral edge. Three long and stout bristles stand at the apical margin, the row being continued ventrally by several long bristles. The seventh sternite is sinuate. The sinus is broad and shallow, the upper lobe of the sclerite being very short and broad, and the lower one strongly rounded. The stylet is long and slender. Length 5.8 mm.

One ♀ from the Ruwenzori, 8,000 ft., January 1906, off a mouse.

5.—CTENOPSYLLUS ÆTHIOPICUS, Rothsch.

We described this species originally from both sexes, collected by Professor Yngve Sjöstedt on his Kilimandjaro Expedition at Kibonoto. The species is similar to *C. musculi*, Dugès (1832), but differs very essentially in the genitalia. In the ♂, of which sex Mr. Wollaston did not procure a specimen, the long movable "finger" of the clasper is dilated towards the apex, the eighth sternite is triangular in lateral aspect, bearing several long bristles at the apex, and the horizontal arm of the ninth sternite terminates in a hook. The bristles on the eighth abdominal tergite of the ♀ are more numerous than in *C. musculi*, and the apical edge of this sclerite is more deeply sinuate than in that insect. The head bears three genal spines in both sexes. Two or three bristles of the frontal row of the head are spine-like, being shorter and thicker than the other bristles of the same row.

Mr. Wollaston obtained one ♀ off a mouse, Ruwenzori, January 15th, 1906.

EXPLANATION OF PLATE I.

- Fig. 1. Head of *Ctenocephalus wollastoni*.
 „ 2. Genitalia of the ♂ of the same.
 „ 3. Genitalia of the ♂ of *Ceratophyllus stygius*.
 „ 4. Head of *Ctenopsyllus hirsutus*.

ON SOME BRITISH HOMOPTERA HITHERTO UNDESCRIBED OR UNRECORDED.

BY JAMES EDWARDS.

(Concluded from page 59).

D. MINKI, Fieb.

Scott introduced this species to the British list on specimens named for him by Fieber, so I now give it a place here. I cannot learn that any one has ever seen a specimen of *D. minki* with the horn of the pygofer simple, as figured by Fieber; and Professor Then, the great authority on *Deltocephalus*, is of opinion that Fieber had specimens of *pascuellus* before him when he described his *D. minki*. Melichar (Cicad. von Mitt. Eur., p. 246) and Oshanin (Cat. Pal. Hem., ii, p. 129) both treat the *pascuellus* of my Synopsis (Trans. Ent. Soc. Lond., 1888, p. 46) as a synonym of *minki*, Fieb.; this is a mistake. A specimen sent to me by Dr. Puton as *minki*, Fieb. (the one to which I referred *l. c.*), had a lateral tooth near the apical third on the horn of the pygofer, the form proper to *pascuellus*, Fall.

THAMNOTETIX STRIATULELLA, mihi.

Professor Then, in his "Bemerkungen zu vier Cicadinen-species" (Mitth. Naturw. Vereines Steiermark, 1900, pp. 258-262), has a notice of *striatulus*, Fall., in which he treats of four varieties of that species. The second of these is the insect which I described as *striatulella*, and in this connection it may be well to point out that his figure of the membrum virile of *striatulus* (*l. c.* p. 260, fig. 3), though it may represent an object similar to that which I have figured as the œdeagus of *striatulella* (Ent. Mo. Mag., xxx, p. 106, fig. 2), cannot also represent an object similar to that which I have figured (*l. c.* fig. 5) as the œdeagus of *striatulus*. I think that the *striatulus* of Professor Then and *striatulus* of English writers are not the same species, and I have not at this moment the means of determining which is really the insect described by Fallén.

CICADULA WARIONI, Leth.

According to Puton and Oshanin, this name is to be used for the insect which Dr. Melichar and myself regarded as *fasciifrons*, Stål. I do not find in the description of *warioni* any justification for the change.

CICADULA LIVIDA, mihi.

In view of Dr. Horváth's opinion (Ann. Mus. Hung., i (1903),

p. 556) that this is a variety of *fieberi*, I may say that I find nothing in the insects themselves which would justify this view. As they both live in coast-marshes I would not be surprised to find *fieberi* and *livida* together, but, as a matter of fact, I did not; the former occurred in great numbers by sweeping *Polypogon monspeliensis* and other grasses, and was quite mature in August; the latter, a much darker and more robust-looking insect, occurred sparingly on October 18th, when there were still nymphs of it about, at a place a few miles distant, and quite unaccompanied by *fieberi*.

DICRANEURA LUTEOLA, Fieb.

In his catalogue of 1872, Fieber has *Notus luteolus*, Fieb., from "Anglia" only; Douglas and Scott in their catalogue of 1876 make no mention of that species, and it is clear from the synonymy given under *Erythria citrinella*, the name used for *luteolus*, Fieb., in Cicad. d'Eur. (*Typhloeybini*), p. 5, that *variata*, Hardy, was intended. Puton and Oshanin, however, both give *luteola*, Fieb., as a distinct species.

EMPOASCA, Say (KYBOS, Fieber).

It has long been evident to me that our species of *Empoasca* which lives on poplars is different from the one which lives on alders, willows, &c., and Mr. E. A. Butler has lately sent me a third, which he found on *Salix repens* on the Towyn and Pendine burrows on the Welsh coast.

The index characters of the three species are as follows:—

- 1 (2) Claval suture fuscous. Both rows of bristles in the outer series on hind tibiae whitish, arising from dark points. Third wing-vein much darker than the second. ♂: lower distal angles of the anal lobe produced into a large, broad, flat, curved horn, which is directed inward and forward. ♀: last ventral segment produced in the middle into an oblong tube about half as long as the segment and notched at the tip; bristles in the rows on the lower side of pygofer white.....*smaragdula*, Fall.
- 2 (1) Claval suture concolorous.
- 3 (4) Dorsum of elytra concolorous, or at most suffusedly fuscous. Both rows of bristles in the outer series on hind tibiae whitish, arising from dark points. Third wing-vein not darker than the second. ♂: lower distal angle of the anal tube produced into a large, thin, sickle-shaped horn, which is directed inward and forward. ♀: last ventral segment pentagonal, the distal half produced into a triangle, of which the apex is broadly rounded and entire; bristles in the rows on the lower side of pygofer white. Lives on poplars (*P. tremula*, *P. canescens*, *P. serotina*).....*populi*, n. s.
- 4 (3) Dorsum of elytra with a broad determinate fuscous stripe. Upper row of bristles in the outer series on hind tibiae black or blackish. Third wing-

vein not darker than the second. ♂: lower distal angle of the anal tube produced into a large, thin, sickle-shaped horn, which is directed inward and forward. ♀: last ventral segment pentagonal, the distal half produced into a triangle, of which the apex is broadly rounded and feebly notched; bristles in the rows on the lower side of pygofer blackish. Lives on *Salix repens* *butleri*, n. s.

The dorsum of the elytra is often suffusedly fuscous in *smaragdula*, but I have not found the elaval suture fuscous in either *populi* or *butleri*.

With regard to the application of the name *smaragdula*, Fallén's original description (Hem. Suec. ii, p. 53, 46) is not very conclusive, but I think that the phrase "In alnetibus . . . sat frequens" leaves little room for doubt that the insect which I have called *smaragdula* was intended; neither *populi* nor *butleri* would be found on alder except by accident. Moreover, the description of the last ventral segment in the female given by Flor, Sahlberg, Kirschbaum, Fieber, and Melichar evidently refers to the species here called *smaragdula*, Fall.

CHLORITA APICALIS, Flor.

I now think that this species should not be expunged from our list. It is true that Marshall's material standing under that name in 1887, when he was good enough to send it for me to see, did not comprise a specimen of it; but having regard to the shipwreck of his collections several years before, it is nearly certain that the specimens in question did not include the insects which he had before him when writing on the group twenty years previously; and, moreover, he had not then for many years concerned himself actively with the *Auchenorhyncha*. I have never seen an example of this species, British or otherwise, but it should be easily recognised by the dark smoke-coloured membrane. Flor says that it is found at the end of July and beginning of August on limes and elms.

CHLORITA SOLANI-TUBEROSI, Koll.

By beating spruce firs and other conifers in winter one obtains two kinds of *Chlorita*, both having the suprabrachial area of the elytra hyaline throughout, and the white silky hairs on the apex of the male genital plates twice as long as the bristles on the other parts of the plates, but quite distinct in colour and habitus when alive or recently dead. One is a little the larger and more robust-looking, of a blue-green (that of a leek leaf), with the crown more broadly rounded in front, and should be called *flavescens*, Fabr.; the other is comparatively smaller and more slender, of a yellow-green (that of an

unripe crab-apple), with the crown more pointed in front, and must be, I think, the *solani* of Continental writers. I have not been able to satisfy myself that the head of our yellow-green insect is *really* narrower than its pronotum, as it should be in the *solani* of Continental descriptions, but the difference between the two in the shape of the crown I have verified by careful drawings to scale under the microscope. The colour distinctions do not entirely disappear in dried specimens, though they are, of course, much more obvious in fresh ones.

EUPTERYX URTICÆ, *forma* LEUCOCNEMA, Oshn.

Oshanin (Catalogue des Homoptères du gouv. de St. Pétersbourg, p. 27, 1907) gives this name to the form of *urticæ* which has the hind tibiæ entirely pale. In a numerous gathering of *urticæ* one generally finds a few specimens of this form; at least, I have done so quite recently, and my recollection is that in times past I have frequently discarded pale-legged specimens as immature. It would appear from Sahlberg's description that the form with entirely pale legs was the only one known to him.

TYPHLOCYBA DEBILIS, Doug.

The hitherto undescribed male of this species differs from the other sex in wanting the two round black spots on the forehead, and the black point proper to the front edge of the pronotum is frequently obsolescent; the colour differences between the sexes are thus similar to those which obtain in *T. ulmi*. In a numerous gathering of the latter one finds a few male specimens which have the two black points on the forehead that are usually found in the female only. I have not yet found out what is the actual food-plant of *T. debilis*, but on November 6th last I beat from a solitary hazel bush here, with no bramble within sight, sixteen small *Typhlocybæ*, of which thirteen were *T. tenerima*, mostly males, and three *T. debilis*, of which two were males. The latter, in the umbrella, are absolutely indistinguishable from the former.

TYPHLOCYBA HIPPOCASTANI, mihi.

This name must sink as a synonym of *lethierryi*. In view of the recorded similarity of the *app. ant.* in the latter and *hippocastani*, and of the fact that these appendages are in all other cases known to me paired organs, it occurred to me to re-examine these parts in *lethierryi*, which appeared from the type specimen mounted in balsam with much pressure, to have three or five appendages. With the

better optical apparatus now at my command I saw at once that I had been the victim of what microscopists call an "error of interpretation," and that the appendages were absolutely the same in both *hippocastani* and *lethierryi*; I had been misled by the circumstance that in my type slide of the latter the long arm of the right *appendix posterior* had become superimposed upon the left, whilst the outline of the short arm on both right and left appendices had remained distinct, hence the appearance of three *app. post.*, two short and one long. An error of this kind would have been impossible if I had examined the parts in question *in situ*, but in 1880 it had not occurred to me that such a course would be practicable, nor had I then realized that the natural orientation of the parts is more characteristic than their outline as one sees it after they have been squeezed flat in Canada balsam between two pieces of glass. The following is an amended description of the appendages of the œdeagus in *T. lethierryi* (and *T. hippocastani*):—*App. sup.* ascending divergent subterete, furcate before their half-length, the branches acuminate, the outer one about thrice as long as the inner; *app. inf.* subequal in length to the *app. sup.*, furcate from a very short base, the branches falcate approaching at the tip, the upper one about one-third shorter than the lower. So far as I know, the unequally-forked *app. sup.* is absolutely diagnostic of this species.

TYPHLOCYBA FRUSTRATOR, *n. sp.*

An entirely pale species of the *rosæ* group. ♂: crown, pronotum, and scutellum ivory-white; corium canary-yellow (chrome-yellow), more or less inclining to orange, membrane not obviously fumose. (Edeagus: *app. sup.* simple, sword-shaped, acuminate, directed outward, forward, and, in their ultimate third, upward; *app. inf.* a little longer than the *app. sup.*, furcate from a base which is about one-half as long as the branches, the latter falcate, moderately curved, approaching at the tip, subequal in length. ♀: crown and pronotum ivory-white, scutellum reddish-white, corium canary-yellow (chrome-yellow), membrane not obviously fumose.

This species forms a moderate proportion of the clouds of yellow *Typhlocyba* which one beats from various broad-leaved trees, especially elms and beeches, towards the end of the year. I have found it here and in Norfolk.

TYPHLOCYBA FRATERCULA, *n. sp.*

Another entirely pale species of the *rosæ* group. ♂: crown, pronotum and scutellum ivory-white, corium canary-yellow (chrome-yellow), more or less inclining to orange, membrane not obviously fumose. (Edeagus: *app. sup.* simple, divergent,

strap-shaped, acuminate, bisinuate, ascending in their apical third, more than twice as long as the *app. inf.*; the latter lying in approximately the same horizontal plane as the former, furcate from a short base, the branches arcuate, pointed, approaching at the tip, the outer one-third longer than the inner. ♀: crown and pronotum ivory-white, scutellum reddish-white, corium canary-yellow (chrome-yellow), membrane not obviously fumose.

I took this species off beech at Colesborne in October, 1895, and have not met with it since.

LIVIA CREFELDENSIS, Mink.

Distinguished from *L. juncorum* by its paler color and much smaller second joint to the antennæ, the latter being only sub-equal in length to the second and third joints together. The food-plant of this species appears to be unknown, but it is said to occur on grasses in wet places. I have seen a pair taken by Mr. C. Morley at Tuddenham, Suffolk

PSYLLA VIBURNI, Löw.

An entirely new species, greenish- or yellowish-white, with the distal half of the last joint of the antennæ black. Its food-plant *Viburnum lantana*, on which it occurs in the perfect state in June, is common in this district, but I have only found the insect on some plants which grow amongst scrubby underwood on a dry hill-side; I have never found it on those growing in hedges.

TRIOZA VELUTINA, Först.

Scott (Trans. Ent. Soc. Lond., 1876, p. 555) treats this as the same as *T. galii*, but this is a mistake, probably due to the fact that he had never seen *velutina*. For many years past I have taken at irregular intervals a few specimens of a *Trioza* which I regard as *T. galii*, and whenever the shelter-plant could be noted it was always *Galium verum*. On August 27th last, however, from some extensive patches of *Galium cruciatum* growing just outside a wood here, I swept up a number of specimens of a *Trioza* which agree well with the description of *T. velutina*. The two species may be distinguished as follows:—

- Elytra as a rule absolutely hyaline, nearly three times as long as broad, less sharply pointed, the costa from behind the middle gently sloping towards the dorsum. Hind thighs entirely black *galii*.
 Elytra generally yellowish-hyaline, but little more than twice as long as broad, attaining their greatest width near the middle and consequently more sharply pointed, the costa from the middle abruptly sloping to the dorsum. Hind thighs brownish-yellow at the apex *velutina*.

APHALARA PILOSA, Oshn.

Scott gave a description of *Aphalara artemisiæ*, Först., in Ent. Mo. Mag., xiii, p. 67, and subsequently, on page 282, he introduced the species as British on material taken by J. C. Dale on July 27th, 1843, and he expressed his opinion that these specimens, the locality for which he did not mention, were probably found on *Artemisia maritima*. Naturally I concluded that the *Aphalara* which I found on *Artemisia maritima* at Weybourne, Norfolk, belonged to the same species as those mentioned by Scott, particularly as my specimens agreed very well with his description of *A. artemisiæ*, Först., so far as it goes. My description of *Aphalara artemisiæ* (Hem. Hom. Brit. Isl., p. 232) was made from Weybourne specimens, and Professor Oshanin recognised in it his *Aphalara pilosa*. I have not been able to trace the specimens recorded by Scott, but Professor Poulton has kindly allowed me to examine specimens from the Dale Collection, taken in the Isle of Portland in 1877, which appear to be the true *A. artemisiæ*, Först. The two species may be readily distinguished as follows:—

Elytra naked; cell 4 subequal in length to the width of its distal edge...

artemisiæ, Först.

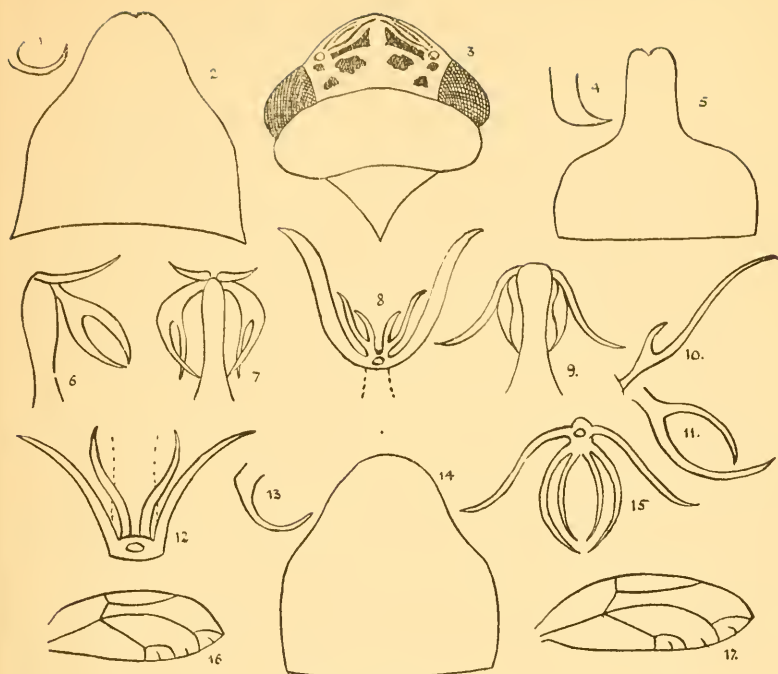
Elytra with scattered pale hairs; cell 4 nearly twice as long as the width of its distal edge *pilosa*, Osh.

A. artemisiæ, Först., lives on *Artemisia absinthium* and *A. campestris*; Dale's Portland specimens could not have come from the latter, but as Mansell-Pleydell (Flora of Dorset, ed. ii, 1895, p. 155) says that the former occurs by the roadside on ascending to the Verne, and among the quarries at Portland, there seems a reasonable probability that they came from that plant.

TRIOZA SILACEA, Meyer-Dur.

munda, Flor (nec Först.).

I do not know this as a British species, though "Britannia" is given for it by Oshanin. Flor, writing of *silacea*, Meyer-Dur, under the impression that it was the same as *munda*, Först., gives amongst other localities England (Walker) and Ireland (Hiliday), but it seems likely that he copied these particulars from Förster's account of his *munda*. *T. silacea* was found by Flor abundantly on nettles in July and August; it may be distinguished from our common nettle-feeding species by the forceps of the male, which are gradually narrowed and little more than twice as high as their width at the base.



EXPLANATION OF FIGURES.

- Athysanus sejungendus* ♀, upper fore-parts.....fig. 3
Empoasca smaragdula, horn of anal tube, ♂ " 4
 " " last ventral segment, ♀ " 5
 " *butleri*, horn of anal tube, ♂ " 1
 " " last ventral segment, ♀ " 2
 " *populi*, horn of anal tube, ♂ " 13
 " " last ventral segment, ♀ " 14
Typhlocyba frustrator, ædeagus, lateral aspect " 6
 " " " cephalad aspect " 7
 " *fratercula*, appendages of ædeagus, vertical aspect... " 8
 " *rosæ*, ædeagus, cephalad aspect..... " 9
 " " appendages of ædeagus, vertical aspect " 12
 " *lethierryi*, ædeagus, *app. sup.*, cephalad aspect " 10
 " " " *app. inf.*, lateral aspect " 11
 " *candilula*, appendages of ædeagus, vertical aspect... " 15
Trioza velutina, right elytron " 16
 " *galii*, right elytron..... " 17

Colesborne, Cheltenham :

February, 1908.

HELOPHORUS PORCULUS, BEDEL, AN ADDITION TO THE BRITISH
LIST OF COLEOPTERA.

BY E. A. NEWBERRY.

In the course of an interesting correspondence with Capt. Sainte Claire Deville, with a view to the revision of the British *Palpicornia*, he suggested that the above named species most probably occurred in Britain, as he had taken it in Jersey, and it was recorded from Scotland by M. Javet (Bedel, Fn. Seine, i, 322*). Upon investigation I find this suggestion to be correct, most of the specimens standing as *H. rugosus* in the Power collection prove to be *H. porculus*, Bedel. It appears to be widely distributed in Britain, the labels being "Balmuto, Moss Morran, Cowley and Esher," and there is a specimen from Merton, Surrey, in my own collection.

The insect may be distinguished readily from the other two British species of the subgenus *Empleurus*, Hope, by the following table:—

A. Sides of the elytra sinuate near base with humeral angle turned outwards, forming a distinct tooth; central costæ of thorax much interrupted; size large. Length, $4\frac{1}{2}$ – $5\frac{1}{2}$ mm. *H. rugosus*, Ol. (*rufipes*, Bedel).

AA. Sides of the elytra not sinuate near base, humeral angle rounded.

a. Size larger (length, $4\frac{1}{2}$ mm.). Central dorsal costæ of thorax somewhat irregular; 2nd joint of maxillary palpi slender and elongate...

H. porculus, Bedel.

aa. Size smaller (length, 3–4 mm.). Central dorsal costæ of thorax regular; 2nd joint of maxillary palpi much shorter...

H. nubilus, Fab. (*costatus*, Goeze).

The original description of *H. porculus* will be found in Bedel's Faune Seine, i, 298. The smaller and narrower form of *H. nubilus* will at once separate it from both of its allies. *H. porculus* is remarkable in having longer and more slender maxillary palpi than in either of the other species, while the marginal gutter of the elytra is less developed than that of *H. rugosus*.

12, Churchill Road, Dartmouth Park, N.W.:

March 7th, 1968.

* The Scottish record of this insect was noted by me in Trans. Ent. Soc. Lond., 1905, p. 44. To the localities given for *H. porculus* by Mr. Newberry I may add Walton-on-the-Naze, Essex, where I have taken it in abundance.—G. C. C.

MELIGETHES FIDUATUS, STURM, VAR. *ÆSTIMABILIS*, REITT., AN
ADDITION TO THE BRITISH LIST OF COLEOPTERA.

BY E. A. NEWBERY.

This very distinct variety was originally brought forward as a species by Reitter (Berl. Ent. Zeitschr., 1872, p. 133). Seidlitz (Fauna Transsylvanica, Ed. II, 1891) reduced it to a variety of *M. viduatus*, Sturm, Ganglbauer and the authors of the last European Catalogue (1906) taking the same view. It seems almost a pity that the insect was not permitted to retain specific rank, as its nearest ally is evidently *M. tropicus*, Reitt., next to which it was placed in the first edition of the European Catalogue.

The following is Reitter's diagnosis:—

Statura M. difficilis sed blandulus; ovalis, fusco-niger, nitidus, dense subtiliter punctatus, subtilissime griseo-pubescent; interstitiis punctorum prothoracis laevius; elytris supra subtilissime transversim strigulosus; antennis pedibusque rufis; tibiis anticis apicem versus dilatatis, subtilissime minus dense serratis, apice fortiter bi- vel tri-denticulatis. Long., 1·7 mm.

The insect may be distinguished from the type-form by its much more finely punctured elytra, which are distinctly cross-striated over the whole surface (and therefore rather duller than those of the type), the basal half of the scutellum being similarly sculptured. The apex of the elytra in *M. viduatus* is sometimes faintly cross-striate, but at least the basal two-thirds are smooth and shining. With the exception of *M. bidens*, Bris., *M. lugubris*, Sturm, and the purplish *M. symphyti*, Heer, we have, I believe, no other British *Meligethes* with a smooth thorax and cross-striated elytra.

I have only seen four examples of *M. æstimabilis*, all taken in Cumberland by Mr. F. H. Day of Carlisle, to whose acute eye we owe its introduction to the list. Capt. Sainte Claire Deville, who very kindly corroborated the insect for me, tells me that it is taken rarely in the north of France, where it is much less common than *M. morosus*.

12, Churchill Road, Dartmouth Park :

February 17th, 1908.

Fresh-water Mollusca disseminated by water-beetles.—Mr. J. R. le B. Tomlin's interesting note in Ent. Mo. Mag. for February last induces me to place on record the capture, some years ago in Cheshire, of a specimen of *Dytiscus marginalis*, L., flying with a small specimen of the bivalve *Cyclas cornea* closed over one of its hind legs.—WILLOUGHBY GARDNER, Deganwy, North Wales: March 8th, 1908.

Aleochara ruficornis, Grav., at Woking.—A specimen of this local species was captured here on February 6th by Commander J. J. Walker, and another by my son on February 19th, both females. They were obtained by cutting tufts in a swampy place, which is frequently flooded after heavy rains, and it is probable that they may have been brought to the spot in this way. Amongst many commoner species taken in the same place by myself, the following are perhaps noteworthy:—*Aleochara brevipennis*, *Megacronus cingulatus*, *Tachyporus pallidus*, *Tachyusa atra*, *Lathrobium punctatum* and *L. boreale*, *Stenolophus teutonius*, and *Anisodactylus binotatus* and its var. *spurcaticornis*. *Medon castaneus* has occurred in this district in mole's nests during the past winter.—G. C. CHAMPION, Horsell, Woking: March 5th, 1908.

Further captures of Arena octavii, Fauv., on Dawlish Warren.—With reference to my previous report (vol. xliii, p. 124) of the capture of a single *Arena octavii* on Dawlish Warren, I am now able to record four more from the same spot—two on February 7th and two on the 14th. These specimens all occurred a little below high-tide mark under freshly cast-up weed; this was quite free from any decaying animal matter.—PHILIP DE LA GARDE, Abbotsfield, Braunton: March 7th, 1908.

On an unrecorded form of Laccobius nigriceps, Th.—A perusal of Mr. E. A. Newbery's valuable paper on *Laccobius*, Er. (Ent. Mo. Mag., 1908, p. 30), induced a re-examination of the Cumberland and other specimens of the genus standing in my collection, the most noteworthy result being the discovery of a form or aberration of *nigriceps*, Th., apparently not previously recorded. I possess four Cumberland exponents of *nigriceps*, one from Durdan being in every way typical, while one from the Irthing Valley and two from Wanfell have the thorax evidently but not strikingly alutaceous between the punctures, instead of smooth as in the typical form. This character is not evenly distributed over the whole surface of the thorax, but is present only in parts, and is quite unlike the dense alutation present in *L. alutaceus*, Th., and *L. minutus*, L.

Except in this one point these three specimens do not differ from normal *nigriceps*. I may add that I have submitted them to Mr. Newbery, who agrees in the determination, and informs me that he has not observed this character in the species before, although he has examined many dozens.—F. H. DAY, Carlisle: February 20th, 1908.

Ceuthorrhynchidius mixtus, Rey, in Northamptonshire.—A specimen of this rare insect was taken by my friend Mr. Walter Bevins at Wakerley in August, 1906. In this example the scales on the elytra, although rather more closely placed near the scutellum, do not form a distinct spot, nor are they more closely placed at the apex than on the disc. The tubercles on the thorax are well marked, although very obtuse. The tarsi are of an extremely pale testaceous, with the claw joint pitchy. These points seem worth mentioning, as they have been variously stated by authors.—E. A. NEWBERY, 12, Churchill Road, Dartmouth Park, N.W.: February 29th, 1908.

A singular variety of Polydrusus chrysomela, Ol.—M. Bedel has recently returned to me, named by him as above, a specimen of a *Polydrusus*, which was taken on the banks of the Severn by Mr. E. W. Morse. The form is a very puzzling

one; unlike the ordinary form of *P. chrysomela*, the whole upper side, with the exception of a few scales at the posterior angles of the thorax, is entirely destitute of scales or raised hairs, but is covered uniformly with somewhat sparsely placed, decumbent, ashy pubescence, which does not conceal the blackish ground colour. M. Bedel does not appear to have seen so marked a form before, but has seen transitional specimens. It is not the var. *salsicola*, Fairm.—ID.

Trichoptilus paludum, Z., in East Devon.—Whilst collecting last September in East Devon I took several small Plumes which subsequent investigation proved to be *T. paludum*. They were flying in the afternoon over a boggy piece of ground, and their short flight of about a yard from tuft to tuft of stunted heather made them difficult to see. The most westerly record given in Barrett's "British Lepidoptera" is Dorset, but the species evidently exists over the borders of this county.—ARCHDALE SHARPIN, Bedford: *March 14th*, 1908.

Pyrameis virginiensis, Drury (huntera, F.), in the Isle of Wight.—My friend Mr. E. G. R. Waters, of St. Edmund Hall, Oxford, has just brought for my inspection, and has asked me to record for him, a fine example of this well-known American butterfly, which he captured at Luccombe, Isle of Wight, on August 26th, 1905. It was taken on the Undercliff close to the "Chine," not more than twenty yards from high-water mark, on a "yellow-flowered Composite plant," in all probability *Inula crithmoides*, which was frequented by numerous *Vanessidæ*, including *Pyrameis cardui*; of this species Mr. Waters at first thought his insect was a curious variety. It is a large ♀, expanding 2 inches 7 lines (65 mm.), rather paler in colour than usual in North American examples, but in excellent fresh condition, and with the exception of a small chip out of the right hind-wing, quite perfect; indeed, it is difficult to imagine how it can have reached the shores of the English Channel in such good order, except, as suggested by the late Mr. C. G. Barrett (British Lepidoptera, vol. i, p. 155) "in a quiescent state by means of a ship." This is the third British-caught specimen of *P. virginiensis* that I have had the opportunity of examining, the others being the example in the Dale collection at Oxford (cf. Ent. Mo. Mag., vol. xlii, p. 99), and one shown to me long ago by Mr. G. C. Bignell, taken at Antony, near Torpoint, Devon, by Miss C. L. Pole-Carew in September, 1876, and recorded in the "Entomologist," vol. ix, p. 255.—JAMES J. WALKER, "Aorangi," Lonsdale Road, Summertown, Oxford: *February 24th*, 1908.

Halesus guttatipennis, McLach., at Pocklington.—To the few localities for *Halesus guttatipennis* may now be added Pocklington, Yorkshire. Among some insects of various Orders recently given to me by Mr. William Hewett, of York, I found a specimen of this species labelled "Pocklington, October."—GEO. T. PORRITT, Huddersfield: *March 5th*, 1908.

Hystrihopsylla narbeli, Galli-Valerio.—When I was at Lausanne early this year Professor Galli-Valerio kindly gave me permission to examine the only specimen of *H. narbeli*, a ♂, on which the description of this species was based. The specimen agrees with the ♂ of *H. talpæ*, Curtis; the name *narbeli* is therefore a synonym of *talpæ*.—K. JORDAN, Zoological Museum, Tring: *March*, 1908.

Obituary.

Herbert Goss.—It is with sincere regret that we announce the decease of this well-known Entomologist, after a long period of failing health, at his residence at Surbiton Hill, Surrey, on February 16th. He had only recently (June, 1906) retired from the Solicitor's Department of the General Post Office, in which he had served for nearly 35 years, and had attained to almost the highest rank. From a very early age he manifested a great interest in various branches of Natural History, especially in the study of our native *Lepidoptera*; of these he formed an exceedingly fine and representative collection, which he continued to add to and to work at up to the last. The kindred studies of Botany and Geology were also pursued by him with characteristic vigour and keenness, his herbarium of British plants being very full and complete; and in connection with the last-named science he contributed a very interesting series of "Introductory Papers on Fossil Entomology" to vols. XV and XVI of our Magazine. These have since been reprinted (1900) under the title of "The Geological Antiquity of Insects," and form a very valuable *resumé* of our knowledge on this important branch of Geological science. The Entomological sections of most volumes of the "Victoria History of the Counties of England" that have as yet appeared were edited by Mr. Goss, who himself contributed very full and valuable accounts of the *Lepidoptera* of several of the Counties dealt with. It is, however, in his connection with the Entomological Society of London that his name will be best remembered and most honoured. Elected a Fellow of the Society in 1874, he first served on the Council in 1885; in the following year he became Secretary, and occupied that important office for the unprecedented period of eleven years without a break. He resigned in 1897, but again accepted the Secretaryship from 1901 to 1905, when he finally vacated the post in favour of the writer of this notice; in 1906 he was one of the Vice-Presidents of the Society. Throughout this long period of fifteen years in all, his tenure of office was marked by conspicuous zeal, tact, and ability; and the leading and unselfish part which he took when in 1892 he represented the Society in the successful agitation against the proposed spoliation of the New Forest, will not fail to preserve his name in grateful memory with all Naturalists and lovers of our grandest piece of sylvan scenery. Mr. Goss, who was also a Fellow of the Linnean and Geological Societies, was a man of high culture and wide and varied attainments, a brilliant pianist in his younger days, and possessing an extensive knowledge of the history of music and musical instruments, to the literature of which he contributed several papers of great interest. His death at a comparatively early age leaves a gap in our ranks which will not be readily filled.—J. J. W.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *February 18th, 1908.*—Annual Meeting.

At this Meeting, after the usual annual reports, &c., a resolution was passed to dissolve the Society, and to hand over its assets, &c., to the Birmingham Natural History and Philological Society, with the idea of forming an Entomological section of that Society.—COLBRAN J. WAINWRIGHT, *Hon. Secretary.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting, held *Monday, January 20th, 1908*, at the Royal Institution, Colquitt Street, Liverpool, Mr. WM. MANSBRIDGE, Vice-President, in the Chair.

Mr. Robert Adkin, F.E.S., of Lewisham, was elected a Member of the Society.

Mr. Oulton Harrison read a paper descriptive of recent photographs by Messrs. Harrison and Muir, of London, illustrated by lantern slides of many interesting species and varieties of *Lepidoptera* in the various stages. Dr. J. Cotton exhibited lantern slides of *Lepidoptera* photographed in their natural colours by Lumière's process. The stereoscopic effect of the objects represented was especially noticed in this exhibit. The Hon. Sec., on behalf of Mr. T. Baxter, of St. Anne's-on-Sea, a case containing some of the most interesting varieties captured in 1907; they were as follows, viz.:—(1) A long series of *Peronea hastiana*, comprising vars. *logiana*, Hüb., *divisana*, Stt., *leucophæana*, Bent., *albistriana*, Haw., *mayrana*, Hüb., *combustana*, Hüb., *centrovittana*, Steph., and other forms combining distinctly two of these, viz.:—*logiana-centrovittana*, *leucophæana-mayrana*, and *albistriana-mayrana*; further, a water-colour drawing of other named variations captured or bred in previous years at St. Anne's. (2) *Agrotis cursoria* var. *costæcærulea*, Tutt, and var. *obscura*, Tutt, the latter being exceptionally dark. (3) A varied series of *Cidaria immanata*, taken at Forres. (4) A series of *Melanthia bicolorata* showing transition from the type to var. *plumbata*, also from Forres. (5) Series of *Polia chi* var. *olivacea*, including a dark specimen, all from Co. Durham. (6) A fine variety of *Acronycta rumicis*, taken at St. Anne's in 1905; the basal, sub-marginal, and marginal areas black, otherwise as the type. (7) A short series of *Camptogramma bilineata*, banded form from Forres. (8) *Zygæna filipendulæ* var. *hippocrepidis*, and one with the outer spots only confluent, St. Anne's. (9) *Salyrus semele* from St. Anne's and Fifeshire coast, the latter bearing much stronger markings on the under-side; this form also occurs on the Crosby sandhills, but not at St. Anne's. (10) *Epinephele janira* from Fifeshire. (11) Series of *Lycæna icarus* from coast of Fife, including a var. of the female with the spots of the under-side showing through the wing as whitish blotches, and under-side vars. of the male with many of the spots obsolete, or nearly so. All the females were exceptionally bright. (12) An ochreous var. of *Amphidasyus betularia*, female, captured wild at St. Anne's, June, 1891. Also a fine intermediate bred from typical ♂ × *doubledayaria* ♀. Mr. Robert Adkin, a series of *Tortrix pronubana* bred from Eastbourne larvæ in 1907. Mr. J. J. Richardson, an aberration of *Halia vauaria* taken at light, Sefton Park, Liverpool. — H. R. SWEETING and WM. MANSBRIDGE, Hon. Secretaries.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, February 13th, 1908*.—Mr. A. SICH, F.E.S., President, in the Chair.

Mr. R. Adkin exhibited a bred series of *Anticlea rubidata* from Devonshire, and called attention to the pale olive-brown forms as not occurring elsewhere. Mr. South, a bred series of *Larentia olivata* from Torquay, two of which emerged on June 4th, 1907. Mr. Tonge, a *Melanippe fluctuata* ♀, taken on February 12th at Portsmouth, and a ♀ *Hybernia rupicaprararia*, and called attention to the peculiar droop of the wings in its resting attitude. Mr. Step, a butterfly set up

between two pieces of glass for use by students at Art Schools. Mr. Rayward, the hibernating larva of *Aricia agestis* (*astrarche*). Mr. Newman, a varied series of *Nemeophila plantaginis* from Aberdeen, an extremely light *Mellinia gilvago*, two *Hylophila prasinana* with very indistinct lines, a rayed variety of *Melanippe sociata*, and a broad banded form of *Mesotype virgata* (*lineolata*). Mr. Colthrup, species taken at ivy in the New Forest in 1907. Mr. Turner, eight species of *Pyralidæ* taken in Canada last year by Mr. L. B. Prout, including *Evergestis straminealis*, and read notes on the forms and the distribution of each; he also showed examples of several British species of *Pyralidæ* from Syria, including *Pyralis costalis*. Dr. Hodgson, a long series of *Agriades bellargus* showing the colour variation obtainable in the species. They were selected from 1904 to 1907 in various parts of the North and South Downs. He pointed out the five distinct shades of blue, and gave notes on the markings and on the aberrations obtained. Mr. Fremlin read a paper, entitled "The Effect of Physical and Chemical Agencies on *Lepidoptera*, being the Results of Experiments made in 1906-7," and a discussion took place.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON. — *Wednesday, March 4th, 1908.*
Mr. C. O. WATERHOUSE, President, in the Chair.

Major E. F. Beecher, of 2, Berkeley Villas, Pittville, Cheltenham; the Rev. K. St. Aubyn Rogers, M.A., of Rabai, Mombasa, British East Africa; and Mr. Claude Rippon, M.A., of 28, Walton Street, Oxford; were elected Fellows of the Society.

The decease of Mr. Herbert Goss, F.L.S., for many years a Secretary of the Society, was announced in a sympathetic speech by the President.

Mr. F. B. Jennings exhibited (a) A specimen of the weevil *Phyllobius maculicornis*, Germ., retaining both the deciduous mandibles, and another in which one of them is intact, both from Enfield; also a single example of *P. urticæ*, De G., from Cheshunt, retaining one of these mandibles, the particular point of interest in connection with the false mandibles in these species being that they are toothed in the centre. (b) A remarkable specimen of the common Chrysomelid beetle, *Sermyla halensis*, L., from Deal, showing unusual coloration of the elytra, which are blue and coppery-red, instead of bright green. Also, on behalf of Mr. C. J. C. Pool, a specimen of *Otiorrhynchus tenebricosus*, Herbst, from Newport, I.W., and of *Barynotus obscurus*, F., from Galway, Ireland, in the first of which both the pupal mandibles are toothed, and in the second not. Mr. H. St. J. Donisthorpe, *Otiorrhynchus sulcatus*, *Polydrusus sericeus*, and *Omius bohemani* with pupal mandibles. The *Otiorrhynchus* was dug up in its pupal cell at Oakham in 1895. The Rev. G. Wheeler, a case containing specimens of Melitæid butterflies taken by him at Riazino, in Tessin, near Bellinzona, which he had identified with Assmann's *Melitæa athalia* var. *britomartis*, they being absolutely identical with the specimens so labelled in the Swiss National Collections at Berne. The close affinity with *M. dictynna* made separation superficially very difficult, and until all the forms are reared from the ovum it would be impossible to determine whether *britomartis* constituted a separate species or not.

The following papers were communicated :—"Descriptions of New Species of *Lepidoptera-Heterocera* from South-East Brazil," by H. Dukinfield Jones ; "*Erebia lefeborei* and *Lycena pyrenaica*," by Dr. T. A. Chapman ; "A Contribution to the Classification of the Coleopterous Family *Dynastidæ*," by Gilbert J. Arrow ; "*Hymenoptera-Aculeata* Collected in Algeria by the Rev. A. E. Eaton, M.A., F.Z.S., and the Rev. F. D. Morice, M.A., F.E.S. Part III, *Anthophila*," by Edward Saunders.

At the adjourned Special General Meeting, held the same evening, the proposition to raise the Life Composition fee from £15 15s. to £21 was rejected, after discussion, by a majority of three votes.—H. ROWLAND-BROWN, *Hon. Secretary*.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH *TENTHREDINIDÆ*, &c. (21).

SELANDRIADES (pars) HARPIPHORUS AND *ATHALIA*.

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

The genera placed by Konow in his tribe *Selandriades* form a part only of those called *Selandriades* by Thomson, the latter including also Konow's *Hoplocampides* and *Blennocampides*. Most of these genera are very distinct and easily recognised ; and the species contained in them are also, generally, not difficult to determine, their characters being such as can be seen sufficiently, even in damaged or ill-prepared specimens. But to this there is one notable exception, viz., in the genus which is commonly known as *Pæcilosoma*, Dhlb., and which I have so called in these papers hitherto, but which Herr Konow now tells me should bear the name of *Empria*, Lep. (*cf.* Lep. St. F., Hist. Nat., plate 47, fig. 3). Here we have species whose determination requires us in many cases to examine minutely parts which a bad condition or preparation of the insect may hopelessly conceal, such as the claws, the genæ, and (above all) the form and sculpture of the clypeus.

The alar neuration in this group differs a good deal in the different genera, and also in the different species. Thus the hind-wings may have *two* "closed cells" (cubital and medial), or *one* only, or *none at all* ; and in one species of the genus *Taxonus* the ♂♂ show what I have called "continuous external neuration" (*Ent. Mo. Mag.*, 1903, p. 53, fig. 6).

In all cases, however, the basal n. of the fore-wing is received very near the origin of the cubitus, and its direction is more or less parallel to that of the 1st medial n. (*i. e.*, they do not converge towards the base of the stigma as in the *Hoplocampids* and some *Blenuo-*

campids). Also in the humeral area ("lanceolate cell") the humerus and brachius keep apart till the actual apex of the cell, so that this cell is never either "petiolate" or "contracted," but either "open" or crossed near its apex by a transverse nervure.

Two of the Selandriad genera, viz., *Harpiphorus*, Htg., and *Athalia*, Leach, may be separated at once from the rest and from each other by peculiar characters in their antennæ. These in *Harpiphorus* have the basal joint shorter than the second, the reverse being the case with all the other genera. In *Athalia* the antennæ have at least ten joints (and sometimes eleven or even twelve) instead of the normal nine; yet the total length of the antennæ is rather below than above the average, the individual joints being short and subquadrate. Also the antennæ (except the actual apical joint) are not in the least attenuated towards the apex; in fact, they become successively thicker as they approach it, but so gradually that they could hardly be called "clavate"—rather, perhaps, "sub-clavately filiform."*

HARPIPHORUS, Htg.

Tables for this genus are not required, as we have only one species, *H. lepidus*, Kl. This is a rather pretty little insect, something like a *Hoplocampa* or a small *Pteronus* such as *curtispinis*, but unlikely to be confused with either, owing to the very different alar neuration. The radial area is, of course, "divided;" there are three closed cubital cells only (the first and second each receiving a medial n.), the humeral area shows an oblique cross nervure. In the hind-wing there is one closed (medial) cell.

The insect is not, I believe, very common, though of wide distribution. I never took it myself, but have a British specimen from the late Dr. Capron's collection, and several correspondents have sent it to me for determination.

ATHALIA, Leach.

This is a very distinct and uniform genus, with but few species, superficially all very similar, both in form and colour. Some are very abundant in individuals, with broods rapidly succeeding one another, and occurring with little local variation everywhere throughout the Palearctic region. Others are comparative rarities everywhere, but even these are widely distributed.

* I do not understand why Mr. Cameron has said that the antennæ of *Athalia* "resemble those of *Allantus* except that they have more than nine joints." Generally at least, in the latter genus the antennæ are "fusiform," i. e., conspicuously thickened in the middle and tapering from thence to the apex, and the separate joints are also much more elongate than they are in *Athalia*.

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[VOL. XLIV.]

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Besides the peculiarities of its antennæ, *Athalia* differs from all other *Selandriads* (and also from the *Hoplocampids* and *Blennocampids*) in the strong convergence of its eyes towards the mouth-parts. In the other genera the eyes, viewed from the front, are sub-parallel. The neurulation of both wings is complete and well-developed—divided radial area, four cubital cells, humeral area with oblique cross n., two closed cells in hind-wing, &c.—it seems to represent well what may be called the central or original type of neurulation in its family, from which the other forms appear to have deviated mainly by obliteration of nervures (chiefly transverse) which were present in their ancestors.

A single type of coloration characterizes the whole genus. The ground-colour is a bright testaceous-orange, with the head (*ore excepto!*) and the thorax (at least above) entirely or largely black, and the legs (esp. tibiæ and tarsi) with conspicuous markings, also of black, which generally take the form of rings at the apices of the several joints. Exactly this type of colour appears in *Arge* (*Hylotoma*) *rosæ*, and Mr. Cameron has even said that *Athalia* “mimics” that insect. But, as this colour-scheme is universal in *Athalia*, while it appears only as an exception, *i. e.*, in a few species only in the other genus, and as most *Athalia* spp. are also much more common and widely distributed than are *Arge rosæ* and its allies, I would suggest that, if this kind of mimicry really exists between the insects in question, it would be more natural to suppose that the *Arge* spp. were the mimics, and *Athalia* the type mimicked. It may be worth note, also, that in most *Selandriad* genera (and also in the *Blennocampids*, *Nematids*, *Dolerids*, &c.) one or two particular species occur whose colour differs from that of their congeners more or less in the direction of the *Athalia*-pattern (*e. g.*, *Selandria serva*, *Empria* (*Pæcilosoma*) *luteola*, *Emphytus serotinus*, &c., any of which might be mistaken by an inexperienced or hasty observer for an *Athalia*). But to discuss this matter further would carry us beyond the purpose for which these Notes have been undertaken.

Six British species of *Athalia* are described in Mr. Cameron's Monograph, five of which—the same as are enumerated by Thomson for Scandinavia—I have myself taken in this country. The sixth, viz., *scutellariæ*, Cam., is unknown to me; and not being quite clear how to place it in my Tables, I must omit it there, but will add a note upon it afterwards.

SYNOPTIC TABLE OF FIVE BRITISH *ATHALIA* SPP.

1. Middle lobe of mesonotum and scutellum testaceous like the abdomen...
spinarum, F.
- Mesonotum and scutellum entirely black..... 2.

2. Tibiæ and tarsi black almost throughout.....*lugens*, Kl.
 — Tibiæ and tarsi only ringed at their apices with black 3.
3. Mesonotum very shining, with very sparse hardly noticeable punctures, and for the most part quite glabrous (only "antiee pube parva tenui vestitum" according to the author's description). Under-side of thorax without black marks*glabricollis*, Thoms. (= *ancilla*, Cam.).
 — Mesonotum covered with a very close though fine and short pilosity clearly visible in certain lights, its surface distinctly and more or less closely punctured, hence less shining than in *glabricollis*. Under-side of thorax (especially the breast) often more or less largely black 4.
4. Clypeus large, its apex produced into a blunt angulation at the centre, and *red*, as is also the labrum. Breast and dorsal surface of 1st abdominal segment usually, perhaps always (?), black. Anterior tarsi pale testaceous, not (or at least not conspicuously) ringed with black at the apices of the joints...
annulata, F.
 — Clypeus comparatively small, and truncate (without production) at the apex, *whitish* (not red!) as is the labrum. Breast in some varieties black, in others testaceous. Abdomen commonly without black (except the saw-sheath). All the tarsi (and tibiæ) whitish, each joint conspicuously ringed at its apex with black*lineolata*, Lep. (= *rosæ*, C.).

NOTES ON THE ABOVE SPECIES.

A. spinarum is the *Athalia centifoliæ* of Newport's celebrated essay, the famous or infamous "turnip-fly," whose ravages are mentioned in almost every general work on Entomology, and were the terror of farmers throughout South and East England in the reigns of the last two Georges and of William IV, but seem to have ceased entirely (perhaps owing to change in the methods of agriculture) since the accession of the late Queen Victoria! At present the insect is quite a rarity. I know of no one who has taken more than an occasional specimen in recent years, and have myself only met with it three or four times in England, never at any great distance from my own house, and never on turnips or in turnip-fields, but on umbellifers beside the roads which cross our commons.

Lineolata is extremely common everywhere, and often occurs in considerable numbers; but I never heard of any mischief done by its larvæ, even in fields or gardens where it abounds. Like Mr. Cameron, I have noticed its attachment to *Ajuga reptans*, but it also haunts many other low-growing flowers, and is frequent on umbellifers.

Lugens and *glabricollis* are less common, but neither can be called rare. The former occurs in this neighbourhood from time to time; the latter I seem not to have found here, but at various seaside localities and also quite in the heart of the Midland counties, so no doubt it occurs here too, though I have overlooked it.

Annulata seems to be really rare. I once took it at Merrow, near Guildford; but all my other specimens are foreigners (Algiers, Tirol, N. and S. Italy, &c.), and I cannot remember its occurrence in the "sendings" of any of my correspondents.

FURTHER NOTE ON *A. SCUTELLARIÆ*, Cam.

A. scutellariæ, C., is described by the author as allied to *rosæ* (i. e., *lineolata*), but having, besides other differences, a longer third antennal joint ("more than double the length of the fourth") and (but this only in the ♀) a "luteous scutellum and sternum." Of the middle lobe of the mesonotum, Mr. Cameron says that it has a luteous apex; but in the "Synopsis of Species" he separates it from *spinarum* as having the "middle lobe of the mesonotum black," so that I presume this last character is either inconstant or inconspicuous. Konow has always considered *scutellariæ*, C., to be a good species and identical with one known to himself from France and Germany. But he says also that the characters of the latter do not quite agree with those attributed to *scutellariæ*, C., by its author, and I do not at present understand the reasoning of a passage in the Deutsche Entomologische Zeitschrift for 1886, in which he argues for its identity with the species now under consideration. I have long been very wishful to see a British specimen of *scutellariæ*, C.; and in the autumn of 1906 my hopes were raised high by receiving from Mr. T. A. Coward, of Bowdon, Cheshire, living larvæ, which he naturally thought belonged to that species, since they were found on its recorded food-plant, *Scutellaria galericulata*, and exactly agreed with the description and figure of the larva in Mr. Cameron's Monograph (see Ent. Mo. Mag., Oct., 1906). From these, however, in the following spring, one imago only resulted, which was an undoubted and perfectly normal ♀ of *lineolata*. And Herr Konow, to whom I sent it and who agreed that it was nothing but *lineolata*, then told me that he did not believe that either species was really attached to that plant in particular, but that the polyphagous larvæ of either species might be found on it merely by accident in places where it happened to be frequent. It is much to be wished that further captures may throw light on the identity of Mr. Cameron's species and the validity and constancy of the characters on which it has been separated, for the types were bred by the author (from larvæ taken by Mr. Harker at Gloucester) as long ago as 1880, and it is therefore high time that we should have some later record of it, if it is to be retained in future British lists.

I fear I must postpone consideration of our other Selandriads to a fresh instalment of these Notes. But I should like here, if I may, to insert a few remarks in completion or correction of what I have said in earlier papers about certain species in the groups there dealt with.

Neurotoma flaviventris, Retz.—In the table of generic characters I have said that the intercostal n. of *Neurotoma* is "not forked," and this is generally true; but on examining further specimens I find that the nerve is sometimes forked, but with *the upper limb of the fork broken off short*, so that it does not reach the costa as it does in *Pamphilus*.

Pamphilus betulæ, L.—I was very glad to hear last spring from the Rev. E. N. Bloomfield that this fine insect had again appeared in England, the latest previous record known to me being that of Stephens (published in 1835!) It was taken at Ore, Hastings, on July 1st, 1906, by the Rev. F. de Bélamy. The insect (a ♀) has since been forwarded to me, and is now in my charge (February, 1908).

I have already recorded in this Magazine, but not in the present series of papers, the receipt from Mr. Bloomfield of a British ♀ of *Pamphilus gyllenhali*, Dhlb., the species most closely allied to *betulæ*, having like that sp. the character of a strongly bituberculate "frons." (See Ent. Mo. Mag., March, 1905, p. 63.)

Pamphilus pallipes, Zett.—In tabulating British *Pamphilus* I felt and expressed some doubt whether this species should be accepted as native, since I had failed to verify any of our records. Now, however, Mr. E. A. Atmore has sent me a ♀ which may safely, I think, be referred to it. He took it "in May, 1907, near King's Lynn, Norfolk, by beating birch."

Janus cynosbati, L.—This insect occurs in the Woking district, though I never found it myself. My kind and valued friend, the late Mr. A. J. Chitty, took it there last year, and presented me with the specimen, on what I little thought would be the last occasion of my visiting him.

Janus luteipes, Lep.—I mentioned this (in November, 1903) as a form of *cynosbati*, but in Konow's Monograph of *Chalastogastra*, now in course of publication, it is treated as a distinct species.

Mr. Edelsten has been good enough to give me a ♀ which he obtained in a strange situation, viz., from cocoons of *Sesia andreniformis* on *Viburnum*. He naturally thought it must be an *Ichneumonid*;

but it is certainly *J. luteipes*, and its occurrence under such circumstances is remarkable and interesting.

Sirex (Paururus) juvenus, F.—I stated in Ent. Mo. Mag., February, 1904, that most British insects recorded under this name were probably to be referred to *noctilio*, F. (= *melanocerus*, Th.), and I find that this was suggested as long ago as 1880 in Trans. Yorksh. N. U. by Mr. W. D. Roebuck. But I can now say that I have at last seen a real *juvenus* from a British locality. This is a ♀ sent to me for examination by Mr. E. G. Bayford, which had been taken at Doncaster, and recorded by Dr. Corbett in the Naturalist, 1904, p. 348. (See a paper by Mr. Bayford in the same journal, April, 1905, p. 100).

Of course, in the case of this or any other Siricid appearing in this country, there is more than a possibility that the specimen may have been imported with the timber from which it issued. But I am glad that I need no longer question the right of so often-recorded a species to a place in at least the "Visitors' List" of our native fauna.

Schizoceros furcatus, Vill.—In Ent. Mo. Mag., June, 1904, I expressed doubt as to its occurrence in Britain of recent years. But I need not have done so, for I shortly afterwards saw a specimen recently taken in Kent by Mr. Chitty; and several other undoubted "Britishers" have since come under my observation, one of which ("taken by Mr. C. J. Wainwright in Wyre Forest on May 26th, 1890") was exhibited by Mr. A. H. Martineau to the Birmingham Ent. Soc. in May, 1905, as recorded in this Magazine, July, 1905, p. 165.

Holcoeneme erichsoni, Htg.—I am greatly indebted to Mr. A. T. Gillanders, of Alnwick, for two ♀♀ of this large and handsome Nematid, which he reared (with four others) between May 11th and June 8th, 1906, from larvæ taken by himself at two places in Northumberland in July of the previous year.

The species comes next to and much resembles *H. lucida*, but is easily separated as follows:—

The pronotum and tegulæ are black, the tibiæ whitish with dusky apices. (All these parts are *red* in *H. lucida*.) The vertical area is *long* (as long as the two basal joints of the antennæ taken together) in *erichsoni*. It is *short* in *lucida* (about equal to the 1st joint taken alone).

I am sorry that I had not seen these beautiful insects when I tabulated British *Holcoeneme* spp. in Ent. Mo. Mag., April, 1906.

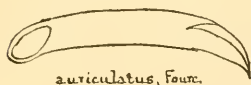
Erichsoni is the very first species enumerated under "*Nematus*" in Mr. Cameron's Monograph, but I was (and, indeed, still am) in some doubt whether *N. erichsoni*, C., can be the real *erichsoni*, Htg., above recorded, because Mr. Cameron not only in Vol. II groups his *erichsoni* with *quereûs* (a *Pristiphora*) and says nothing of its much closer affinity to *lucida*, *crassa* and *cæruleocarpa*, but also in Vol. IV, p. 199, refers it to *Lygæonematus*, Kùw., a genus with whose species the true *erichsoni* can hardly be said to agree in a single character, except those which all Nematids have in common.

(To be continued).

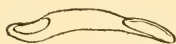
DRYOPS (PARNUS) LURIDUS, Er.,
A SPECIES NOT HITHERTO RECORDED AS BRITISH.

BY JAMES EDWARDS, F.E.S.

On looking through Ganglbauer's account of this genus (Käfer von Mitteleuropa, iv, pp. 102-107), it appeared to me probable that we had in Britain both *luridus*, Er., and *auriculatus*, Fourc. (*prolificornis*, Fab.). The two species are only to be distinguished with certainty by reference to the male genitalia, though here the differences are well marked and easy to appreciate: in *auriculatus* the basal half of the penis is compressed into an almost knife-like edge, and the



auriculatus, Fourc.



luridus, Erichs.

side-pieces (*paramera*), which form the boundary of the suboval opening at the apex of the aedeagus, are thickened and widened at the base; in *luridus* the penis is not compressed on its basal half, and the paramera are not thickened or widened at the base. I give an

outline diagram of the lateral aspect of the aedeagus in each, $\times 27$.

It may possibly be useful if I describe, for the benefit of those of my colleagues who have less experience in this kind of investigation, the rough method which I find sufficient to display the parts in question. Relax the specimen, take off the abdomen, and then from its upper surface dig out the aedeagus (a large subcylindrical corneous body), and fasten it for future reference on the same card as the specimen to which it belongs. These remarks apply to dry specimens; I believe that in fresh ones the aedeagus might be exerted by pressure. The sexes cannot be distinguished until the abdomen is taken off, but one may save oneself the trouble of getting out the knife-like apparatus of the female by noticing beforehand the upper surface of the last dorsal segment; in the male this is evidently more closely pubes-

cent than the remainder of the dorsum, in the female it is not so. The penis is the small oblong body which occupies the long axis of the suboval opening enclosed by the paramera. In *auriculatus* the apex of the ædeagus is drawn out into a beak-like point; in *luridus* it is rounded.

Owing to the small number of male specimens at present available, it is impossible to say whether one of these species is more prevalent than the other; *luridus* I have from three widely separated stations in Norfolk; *auriculatus* was common at Horning in May, 1888, and I have it also from a pond on a gravelly common in Mid-Norfolk.

I should add that I am indebted to Herr Ludwig Ganglbauer for confirming my determination of this species, and for a beautiful drawing of the parts in *auriculatus*, which enabled me to fully appreciate the aptness and accuracy of his descriptions.

Colesborne: April 14th, 1908.

TWO UNRECOGNISED BRITISH SPECIES OF THE GENUS *NOTIOPHILUS*.

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

When corresponding with Capt. Deville lately he has very kindly on several occasions communicated to me species of *Coleoptera* which are not on our lists, but which, from their abundance in France, one would expect to find here. Among these were specimens of *Notiophilus pusillus*, Wat. (*bigeminus*, Thoms.), and *N. hypocrita*, Spaeth, and a careful examination of my short series of *N. aquaticus*, L., and *N. palustris*, Duft., established the fact that both these species occur in Britain. Among my eight supposed examples of *N. aquaticus* half are *N. pusillus* (labelled Bradfield and Southport), and among the same number of *N. palustris* there are five *N. hypocrita* (labelled Bradfield, Wellington College, Lundy Island, and Garve, Ross.). They are common species on the Continent, and are probably generally distributed here.

N. pusillus resembles *N. aquaticus* in having dark tibiæ, but is distinguished, according to Ganglbauer, by being smaller and narrower; the labial palpi have the base testaceous; the striæ of the elytra extend further towards the apex, where there is a double impressed pore; in the ♂ the last joint of the maxillary palpi is

somewhat securiform, and the first joint of the middle tarsi is not thickened. In my specimens the elytra are not widened behind as in *N. aquaticus*, but are more gradually narrowed towards the apex.

N. hypocrita has the tibiæ reddish; it is narrower and more convex than *N. palustris*, and the external interstices of the elytra are distinctly alutaceous. It bears somewhat the same relationship to *N. palustris* as *N. substriatus*, Wat., does to *N. biguttatus*, F.

April, 1908.

TWO NEW BRITISH BEETLES.

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND NORMAN H. JOY, M.R.C.S., F.E.S.

LITARGUS COLORATUS, Rosenh.

Resembles *L. bifasciatus*, F., in general colouring, but is easily distinguished by its shape, smaller size, and more shining appearance; it is broader in proportion to its length, not so parallel-sided, and more abruptly narrowed in front and behind; the pubescence is longer and yellower, and the punctuation is much finer; the club of the antennæ is narrower, the last joint in particular being much longer; the thorax has only a very slight trace of a longitudinal impression at the base.

Long., 2.2 mm.

Mr. J. Ray Hardy took fourteen specimens of this species in June, 1907, in Sherwood Forest, from a fungus growing on a dead holly log, and from the leaves about it.

LONGITARSUS NIGERRIMUS, Gyll.

A very distinct, moderate sized species; colour entirely black, with a slight æneous reflection on the upper side; tarsi pitchy; antennæ rather long and slender; thorax distinctly and diffusely punctured, but sometimes almost smooth; elytra broad, with well-marked shoulders, strongly and rather thickly punctured.

Long., 2.5 mm.

Easily distinguished from all our other dark coloured species by its large size and black antennæ and legs.

Dr. W. Wallace, of Grimsby, took four specimens by sweeping at night on September 7th, 1907, near Cleethorpes, Lincolnshire, and there is an example in Mr. Tomlin's collection labelled "Greathide." In the 1891 European Catalogue, *L. nigerrimus* is recorded from Britain, but we do not know on what authority; the last Catalogue gives "Northern Europe" only.

April, 1908.

MICRAMBE VILLOSA, HEER, = *PILOSULA*, ER.,
AN ADDITION TO THE BRITISH LIST OF COLEOPTERA.

BY E. A. NEWBERY.

For some years past I have had an insect in my collection which I referred to the above species, but hesitated to bring it forward as new upon a single specimen. On the appearance of Ganglbauer's "Käfer von Mitteleuropa," vol. iii, finding that *M. villosa* was reduced to a synonym of *M. vini*, Pz., it appeared that the insect—which was evidently distinct from both *M. vini*, Pz., and *M. abietis*, Pk.—must be referred to *M. perrisi*, Bris., the only other known European species of the genus.

With a view to settling the question, I have recently sent the insect to Capt. Sainte Claire Deville, acquainting him with what is stated above. He tells me that Ganglbauer was in error in uniting *M. villosa*, Heer, and *M. vini*, Pz.; that the former is a good and distinct species, and that Ganglbauer has now recognised this from his (Capt. Deville's) observations. As *M. villosa* will probably be found in other collections, it seems now to be desirable to bring the insect forward as new to our fauna.

The British species of *Micrambe* may be separated by the following table:—

- I. Anterior angles of thorax narrowly explanate, forming only a small, obtuse, and but little projecting tooth at anterior third of sides of thorax, which is scarcely narrower immediately behind this tooth; length, 2 mm....
abietis, Pk.
- II. Anterior angles of thorax more broadly explanate, forming an angular and projecting tooth at anterior third of thorax, which is much narrower immediately behind this tooth.
 - a. Pubescence of elytra decumbent, without conspicuously longer hairs; average size smaller; length, $1\frac{1}{2}$ – $1\frac{3}{4}$ mm. *vini*, Pz.
 - aa. Pubescence of elytra with conspicuously longer upright hairs mixed with the decumbent pubescence; average size larger; length, $1\frac{3}{4}$ –2 mm.
villosa, Heer.

M. abietis, Pk., occurs on various species of *Abietineæ*, and is rare in Britain. The late Mr. A. J. Chitty found it in some numbers last year in a fir plantation near Huntingfield, Faversham.

M. vini, Pz., is common on *Ulex europæus* everywhere in western Europe.

M. villosa, Heer, appears to be rare. Capt. Deville tells me that it is found on the flower heads of several species of *Carduaceæ* (*Cirsium palustre*, *Carduus nutans*, &c.). The only British example that I have seen of it was beaten by me off hawthorn flowers in June, 1895, at Chingford, Essex; but Capt. Deville has sent several French specimens for comparison.

12, Churchill Road, Dartmouth Park, N.W.:
April 12th, 1908.

NOTES ON THE GENUS *EPURÆA*.

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

So impressed am I with my indebtedness to Canon Fowler's famous work on British *Coleoptera* that it is almost with a feeling of awe that I suggest altering one of his generally most accurate and useful tables. However, I have the satisfaction of knowing that he approves of the alteration, and I do not take any credit for the new table, as it is only a modification of the one given in Herr Ganglbauer's "Die Käfer von Mitteleuropa." I expect we have most of us realized that Fowler's plan of dividing the genus *Epuræa* by the presence or absence of dark markings on the elytra does not hold good, most of the usually unicolorous forms often being flecked with black, while some of the usually dark species are sometimes quite light. In Ganglbauer's table the main divisions are formed on quite distinct and easily recognised structural characters, and I have had no difficulty in working out all the British members of the genus from it (except *E. silacea*, Er., which I have not been able to obtain from Herr Reitter). Ganglbauer, like Fowler, divides off *E. decemguttata*, F., and *E. diffusa*, Bris., into the sub-genus *Dadophora*, Thoms., so I need not include these in the following table, especially as I do not wish to discuss here whether *E. diffusa* is specifically distinct from *E. decemguttata*. I have not followed Ganglbauer's nomenclature, simply because I prefer to call well known species by their old familiar names; but in the case of *E. oblonga*, Herbst, of our collections the altering of the name to *E. thoracica*, Tourn., is not, I think, simply a case of synonymy, this species having been wrongly identified by us. The true *E. oblonga* is more closely related to *E. pusilla*, Er., and Fowler's description of *E. oblonga* is quite correct for *E. thoracica*.

TABLE OF THE BRITISH SPECIES OF *EPURÆA*.

I. Thorax broadest behind middle of sides, much more narrowed in front than behind.

i. Species convex; middle tibiæ of ♂ simple.

1. Club of antennæ concolorous, last joint broader than penultimate ...

E. æstiva, L.

2. Club of antennæ dark, last joint narrower than penultimate.

A. Size larger, more parallel-sided *E. melina*, Er.

B. Size much smaller, sides more rounded *E. nana*, Reitt.

ii. Species more or less depressed.

1. Thorax with anterior margin strongly emarginate.

A. Elytra with very broad flattened sides.

a. Brown or brownish-black, thorax and elytra reddish at the sides; club of antennæ dark *E. parvula*, Sturm.

b. Reddish-yellow, elytra sometimes to a greater or less extent blackish; club of antennæ concolorous.

*a** Narrower; more strongly and diffusely punctured; apex of elytra more rounded; middle tibiæ of ♂ simple...

E. deleta, Er.

*b** Broader; less strongly and more thickly punctured; apex of elytra more truncate; middle tibiæ of ♂ sinuate *E. silacea*, Er.

B. Elytra with moderately broad, or quite narrow sides.

a. Apex of elytra broad and truncate *E. neglecta*, Sturm.

b. Apex of elytra rounded.

*a** Elytra with very short shining golden hairs; rust-red or reddish-yellow, elytra generally with a small dark discal spot; middle tibiæ of ♂ simple...

E. variegata, Herbst.

*b** Elytra with longer, not shining hairs; middle tibiæ of ♂ sinuate.

a† Narrower, less shining; anterior margin of thorax less emarginate; last joint of antennæ distinctly narrower than penultimate...

E. obsoleta, F.

b† Broader, more shining, anterior margin of thorax less emarginate; last joint of antennæ about as broad as penultimate ... *E. immunda*, Er.

2. Thorax with anterior margin very slightly emarginate.

A. Apex of elytra broad and truncate; club of antennæ concolorous...

E. florea, Er.

B. Apex of elytra rounded; club of antennæ darker...

E. longula, Er.

II. Thorax broadest at middle of sides, not or not much more narrowed in front than behind; elytra parallel-sided as far as middle.

i. Punctuation extremely fine; last joint of antennæ infusate...

E. thoracica, Tourn.

ii. Punctuation much stronger.

1. Size larger; club of antennæ concolorous; thorax a little broader at base than at apex *E. pusilla*, Er.

2. Size smaller; club of antennæ infusate; thorax a little narrower at base than at apex *E. angustula*, Er.

The shape of the thorax is a very good character for the two main divisions of the genus, as there seem to be no intermediate forms. The marked convexity of *E. melina*, *E. æstiva*, and *E. nana* is also a most useful character, as it can be so easily seen in the field. One need never take home large numbers of the two commonest species, *E. melina* and *E. æstiva*, if this is remembered, and the very

small *E. nana* (described by Mr. Champion in the Ent. Mo. Mag., vol. xxxii, p. 4) is hardly likely to be mistaken for either of them. There is not another species of this group at all likely to occur in Britain. I have had small specimens of *E. æstiva* doing duty for *E. florea* in my collection, and have seen it in others, as the former sometimes has the anterior margin of the thorax very slightly emarginate, but its greater convexity will at once distinguish it.

E. parvula is easily recognised by its dark colour and lighter margins, the very broad sides of the elytra, and the fuscous club of the antennæ.

E. deleta is distinctly broader and less parallel-sided than the last. It is often unicolorous testaceous, or the suture and apex of the elytra are broadly fuscous. Ganglbauer compares it with *E. immunda*, from which, however, it may be easily recognised by the broader margins of the elytra, finer and more diffuse punctuation, and more emarginate anterior margin of thorax.

E. neglecta is, as Fowler points out, a very distinct species, although the thorax is hardly broadest at the base as he describes, the sides being slightly and evenly contracted just before the base. The shape of the thorax, strong punctuation, and truncate apex of elytra will at once distinguish it.

E. variegata, which is distinguished by its very short but conspicuous shining pubescence, is a broad species with the thorax strongly narrowed in front, and the elytra rounded at the sides; in general shape it most closely resembles *E. deleta*. *E. pusilla* has very short somewhat shining pubescence, but the hairs are much less conspicuous, and this species is almost parallel-sided, with a very differently-shaped thorax.

There should be no difficulty in identifying the very variable *E. obsoleta*, if the table is carefully followed, and also the description given by Fowler.

E. immunda is rather more distinct than Fowler's description would imply. Besides the characters given in the table, it differs from *E. obsoleta* in being less parallel-sided, and the sides of the thorax are more rounded and not so abruptly narrowed at the base.*

E. longula and *E. florea*. When it is realized that in these two species the anterior margin of the thorax is much less emarginate than in any of the others (except, perhaps, small *E. æstiva*), and, indeed, is practically straight, no difficulty will be found in separating them, and the characters given in the table are sufficient to identify them individually. In *E. longula* there is often a dark spot at the apex of each elytron.

E. thoracica has very parallel-sided elytra, and is easily distinguished from all the other British species by its extremely fine punctuation.*

E. pusilla is another of the narrow parallel-sided species. Besides the difference in the shape of the thorax, it may be distinguished from *E. obsoleta* and *E. immunda* by the concolorous club of the antennæ, and from *E. parvula* by the much narrower border of the elytra.

There are three species described by Ganglbauer as occurring not rarely in North and Middle Europe, which are perhaps worth describing briefly, in case they should occur here at some future date :—

* This is the species recorded by me as *E. oblonga*, Herbst (Ent. Mo. Mag., vol. xliii, pp. 184, 234), from Chobham, where the var. *suturalis*, Reitt., also occurs. Its identity with *E. thoracica*, Tourn., was suspected at the time.—G. C. C.

E. abietina, Sahlb., is very closely related to *E. florea*, and could easily be mistaken for that insect. It is slightly broader, shorter, and more finely punctured, the anterior margin of the thorax is rather more emarginate, and in the ♂ the middle tibiae are more emarginate. It also comes near *E. immunda*, but is distinctly narrower and more parallel-sided, and the thorax is much less contracted in front.

E. boreella, Zett., is a very dark species allied to *E. pusilla*, but has the sides of the thorax strongly sinuate just before the posterior angles.

E. pygmaea, Gyll., is another dark species near *E. pusilla*, but is distinguished by having distinctly broader borders to the elytra, which are more evenly rounded at the apex.

Bradfield, Berks.:

January 26th, 1908.

FAUNA HAWAIIENSIS : MICROLEPIDOPTERA,—A CORRECTION.

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

293. (157) *Hyposmocoma nephelodes* nn.

= § *nebulifera* Wlsm. no. 293 (nec *nebulifera* Wlsm. no. 147).
Hyposmocoma nebulifera Wlsm. Fn. Hawaii. I. 628, 735, 750 no. 293.
 Pl. 23·26 (1907) ⁽¹⁾.

Hab. HAWAIIA ⁽¹⁾—OAHU ⁽¹⁾—MAUI ⁽¹⁾.

When combining tentative MS. genera, abandoned through the occurrence of intermediate forms, the idionym *nebulifera* was inadvertently included **twice** in the genus *Hyposmocoma*. The dionym *Hyposmocoma nebulifera* must be employed to designate no. 147, while, for no. 293, which requires a new name, **nephelodes** nn. is suggested.

Merton Hall, Thetford:

January 1st, 1908.

Notes on Cumberland Coleoptera in 1907.—The season of 1907 will long be remembered among Entomologists for its coldness, wetness, and the general backwardness of insects in appearing. Carefully planned expeditions were sadly interfered with or abandoned altogether, so that one's captures by the end of the year yielded less than the usual amount of interesting material for winter study. I must say, however, that on the few rare occasions when the weather conditions were favourable beetles were fairly abundant, and on the whole my collecting over a number of years leads me to the belief that a damp season is more productive of beetles than a hot, dry one. One may not capture so much in a wet season for the reason that one has fewer outings; but comparing the limited time spent in the

field in such a season with the greater amount spent in a dry one, one finds that the wet season gives relatively better results. As before, the species recorded for the first time from the county are indicated by an asterisk.

In January a few things occurred, including *Orobitis cyaneus*, L., at grass roots, *Quedius vexans*, Epp., in the usual habitat, *Aphodius tessulatus*, Pk., in abundance in sheep dung, and *Mycetoporus splendidus*, Gr., under a haystack.

In March I took *Cryptophagus pallidus*, Sturm, in numbers under haystacks, and I may here remark that all my Cumberland *dentatus*, Hbst., are referable to the *pallidus* form. One or two *Homalota exilis*, Er., occurred in moss with an occasional *Ocyusa incrassata*, Muls.

In April moss, especially that growing on the edges of boggy ponds, harboured a host of species, including *Calodera riparia*, Er., *Gymnusa brevicollis*, Pk., *Tachyporus transversalis*, Gr., *Philonthus nigrita*, Nordm., *Cryptobium glaberrimum*, Hbst., *Eræsthetus leviusculus*, Mann., *Stenus argus*, Gr., *S. foveicollis*, Kr.,* *Neuraphes elongatulus*, Müll.,* *Euplectus ambiguus*, Reich., *Euconnus hirticollis*, Ill., *Phytobius comari*, Hbst., and many more. In boggy ponds, with other species, were *Hydroporus tristis*, Pk., *H. nigrita*, F., *H. obscurus*, Sturm, *Rhantus exoletus*, Forst., *Philydrus minutus*, F., *P. nigricans*, Zett., and *Laccobius nigriceps*, Th.* In fungi on a fence post I took *Cis festivus*, Pz., an insect not taken in the county since Bold's time. Of *Lathridius bergrothi*, Reitt.,* I met with a single specimen in my back yard.

In May moss continued to be productive. On a moor not far from the Solway I had four species of *Bradycellus* on the sheet at once, viz., *placidus*, Gyll., *cognatus*, Gyll., *harpalinus*, Dej., and *similis*, Dej. A pair each of *Silpha nigrita*, Cr., and *S. opaca*, L., were secured running on roads. *Bembidium bruxellense*, Wesm., was rather common on a damp part of a moor. Usually this species occurs on shingle by stream sides, I believe. *Anchomenus viduus*, Pz.,* occurred on the edge of a small lake; hitherto the var. *mæstus*, Duft., only has occurred in Cumberland. By sweeping the long grass overhanging a muddy stream I took a nice series of *Micropeplus tesseraula*, Curt.,* and by roadside sweeping, *Agathidium lævigatum*, Er. In carrion I got one *Homalium exiguum*, Gyll. A cold afternoon on the banks of the Irthing yielded *Ilyobates nigricollis*, Pk., one of Bold's captures there, *Tachyusa scitula*, Er., and *Lathrobium multipunctum*, Gr. Sweeping in ditches produced *Psylliodes picina*, Marsh., *Ceuthorrhynchus cochleariæ*, Gyll., *Rhinoncus graminens*, F.,* *R. perpendicularis*, Reich.,* and in meadows *Gymnetron labilis*, Hbst., in plenty. *Limonius minutus*, L., occurred freely on fir trees. *Cryptophagus acutan-gulus*, Gyll.,* I took in the town.

In June *Quedius brevis*, Er., was taken in the nests of *Formica rufa*, with other species recorded from Cumberland. *Homalota parallela*, Mann., it may be remarked, was present in great numbers. *Necrobia rufipes*, De G.,* occurred on bones, the last of the genus to turn up in Cumberland. Sweeping produced many species, including *Apion gyllenhali*, Kirb., *Meligethes umbrosus*, Stm.,* and *Ceuthorrhynchus setosus*, Boh.*; the last named is very like *C. contractus*, Marsh., in the net, and it is necessary to take all *contractus* for examination at home or the rarer insect will not be detected. In the nest of a great tit in a hole in a tree I secured a series of *Microglossa pulla*, Gyll. From broom a few *Phytodecta olivacea*, Forst., var. *nigricans*, Weise, were taken. On sandy banks by the River Petheril I took

Ochthebius rufimarginatus, Steph., *Tachyusa constricta*, Er., *Philonthus fulvipes*, F., a specimen of the small form of *P. ebeninus*, Gr., and *Xantholinus ochraceus*, Gyll.

Early in July I had a day's collecting at the mouth of the River Wampool on the Solway Firth. *Bledius atricapillus*, Germ., taken but once previously in the county was abundant on mudbanks with *Trogophleus halophilus*, Kies.* I was glad to get *Dyschirius politus*, Dj., here. Inland it has occurred on the Irthing and Eden. *Bembidium* was well represented, including *lampros*, Hbst., var. *velox*, Er., *concinnum*, Steph., *normannum*, Dj., and *monticola*, Stm., the last species probably brought down so near the coast in floods. Dry flood refuse, which had evidently lain some time, yielded *Atomaria atra*, Hbst.,* and *Polydrusus chrysomela*, Ol. *Telephorus darwinianus*, Shp., was present under elods. A fine series of *Chrysomela fastuosa*, Scop., was picked off *Galeopsis* in a ditch on the margin of Bowness Moss. Later in the month I met with a large colony of *Bembidium saxatile*, Gyll., among shingle near the Solway Viaduct at Bowness.

I was away from home part of August, and my only capture of any consequence was a series of *Homalota orbata*, Er., at Silloth.

In September I had a couple of hours' collecting at Thurstonfield Lough. *Celambus quinquelineatus*, Zett.,* was common, *C. novemlineatus*, Steph.,* less so. A single specimen of *Haliphus confinis*, Steph., was of interest as it has not occurred in Cumberland since Bold's time, while *Hyphydrus ovatus*, L., which was common, has not been recorded for an even longer period. *Deronectes assimilis*, Pk., was also common. These water beetles, I may say, had but recently emerged from pupa, and many of them were rather soft and immature. *Eubrychius velatus*, Beck, was present in numbers under refuse on the sides of the lough, and could also be seen swimming in the clear water and climbing up the water plants. It is a weak swimmer and at once rises to the surface when it ceases to move its legs. In fungi I took *Philonthus proximus*, Kr., *P. puella*, Nordm., *Quedius lateralis*, Gr., *Megarthrus sinuato-collis*, Lac.,* and *Cryptophagus setulosus*, Stm.

Although not taken in 1907 the following may be here recorded:—*Agaricochara lævicollis*, Kr.,* from Penton, *Cryptophagus punctipennis*, Bris.,* from the Eden Valley, *Atomaria versicolor*, Er.,* from Silloth, *Longitarsus distinguendus*, Rye,* from Carlisle, and *Dyschirius æneus*, Dej., from Burgh Marsh.—F. H. DAY, 151, Goodwin Terrace, Carlisle: March, 1908.

Aphodius constans, Dufts., at Oxford.—This beetle, usually regarded as one of the more local and less common members of its genus, is just now, with the exception of *A. punctatosulcatus*, quite the commonest *Aphodius* in the neighbourhood of Oxford. I first found it in plenty about a week ago on the hills near Cumnor, Berks, but it has since occurred freely wherever looked for, even in the low-lying pastures within a quarter of a mile of my house. Its favourite, in fact almost exclusive pabulum, appears to be partly dry cowdung.—JAMES J. WALKER, Oxford: April 18th, 1908.

Notes on collecting Hymenoptera (Aculeata) during 1907.—Last year as a whole was so deplorable for the Lepidopterist that it is a pleasure to record a very successful one, in my experience, for the Hymenopterist. During the cold early

months of January and February I collected any perforated sticks that looked promising, and placed them indoors in large glass bottles with lino covers in a good light. Several good species emerged from these in due course, as noted below. March was very fine and warm, and most of the early species of *Andrena* were to be seen, such as *clarkella*, Kirb., *gwynana*, Kirb., *nigroænea*, Kirb., &c. On April 1st two *Osmia pilicornis*, Sm., ♂ and ♀, were taken on the Guildford Downs, together with *Halictus leucigatus*, Kirb., *villosulus*, Kirb., *cylindricus*, Fab., and *Podalirius pilipes*, Fab. Later on *Andrena spinigera*, Sm., a light brown variety, *tibialis*, Kirb., *bimaculata*, Kirb., *nitida*, Fourc., *thoracica*, Fab., *fulvicrus*, Kirb., and *dorsata*, Kirb., occurred at Cobham. In May I took the rare *Andrena lutecephala*, Steph., at Box Hill, also *spinigera*, Sm. (worn), and *helvola*, L.; in my garden at Cobham *Andrena angustior*, Kirb., *ambigua*, Perk., *floreæ*, Fab., *humilis*, Imh., *wilkella*, Kirb., *Crabro vagabundus*, Panz., *Odynerus trifasciatus*, Oliv., and *Nomada ochrostoma*, Kirb. *Andrena lapponica*, Zett., was seen at its old locality at Horsley. On May 24th I received from my friend, Mr. C. Reuss, three fine males of the very scarce *Andrena ferox*, Sm., which had fallen into his tray whilst beating for larvæ in the New Forest. A short visit to Criccieth and Abersoch in early June for *Osmia parietina*, Curt., and *wanthomelana*, Kirb., was successful, though the insects were scarce. The females of *Bombus soroensis*, Fab., were abundant at Abersoch on the flowers of the currant. On my return home I found that a number of *Osmia leucomelana*, Kirb., had emerged from one of the perforated bramble stems, together with *Stelis 8-maculata*, Sm., one ♂ and two ♀♀. On cutting this stem open I found the first two cells were *Osmia*, the third *Stelis*, the fourth *Osmia*, the fifth *Stelis*, the sixth and seventh *Osmia*, the eighth *Stelis*, the ninth *Osmia*, and the tenth an imprisoned *Pemphredon*, dead but fully developed. In another stem, containing *leucomelana* cells, I was astonished to find in the two bottom cells a dead *Stelis 8-maculata*, Sm., and a male *leucomelana*, head downwards, both fully developed. This is very remarkable, as the bottom cells usually contain females. A day at Oxshott produced *Sapyga 5-punctata*, Fab., ♂♂, *Pompilus cinctellus*, Spin., *Salix parvulus*, Dhlb., *Psen shuckardi*, Wesm., the uncommon *Pemphredon wesmaeli*, Mor., *Cælioxyx quadridentata*, Linn., *elongata*, Lep., and *Osmia cærulescens*, Linn. Towards the end of the month Mr. G. C. Vaux sent me five *Pseuulus concolor*, Dhlb., bred from perforated ash-stems taken at Ockley, the first of this rarity bred in England; also *Crabro capitosus*, Shück., ♀, from the same locality. My captures for July include among others, *Agenia hircana*, Fab., *Nysson trimaculatus*, Rossi (on bramble leaves), and *Psen shuckardi*, Wesm., *equestris*, Fab., *bicolor*, Jur. (*Daucus carota* flowers), *Crabro palmarius*, Schreb., *vagus*, Linn., *panzeri*, v. d. Lind, *Andrena rosæ*, Panz., *bimaculata*, Kirb., *nigriceps*, Kirb., *denticulata*, Kirb., *argentata*, Sm., and *dorsata*, Kirb. (second brood); *Nomada solidaginis*, Panz., *lineola*, Panz. (second brood), *jacobææ*, Panz., *albo-guttata*, H.-S., and *Stelis phœoptera*, Kirb. Towards the end of the month the very scarce *Gorytes bicinctus*, Rossi, and *Heriades truncorum*, Linn., appeared in the garden. (For my note on the latter see Ent. Mo. Mag., xliii, p. 276).

Most of the above insects occurred also during the first weeks in August, with *Pompilus minutulus*, Dhlb., *chalybeatus*, Schiödde, *Stigmus solskyi*, Mor., *Pemphredon morio*, v. d. Lind., *Nysson dimidiatus*, Jur., *Cerceris rybyensis*, Linn.,

5-fasciata, Linn., *Crabro podagricus*, v. d. Lind., and *gonager*, Lep., in addition. At Wisley I took *Pompilus bicolor*, Lep., *Salix notatulus*, Saund., *Miscophus concolor*, Dhlb., *Crabro 4-maculatus*, Fab. (with var. *geniculatus*), *scutellatus*, Schev., *Epeolus productus*, Thoms., and *Cœlixys rufescens*, Lep. The females of *Psen equestris*, Fab., were abundant at Cobham on *Daucus carota* flowers about the 15th, together with *Salix exaltatus*, Fab., *obtusiventris*, Schiödt, *pusillus* Schiödt, *parvulus*, Dhlb., *Crabro varius*, Lep., *albilabris*, Fab., *brevis*, v. d. Lind., and *Cilissa leporina*, Panz. A few hours' sunshine at Oxshott revealed the rare *Pompilus unicolor*, Spin., *bicolor*, Lep., a huge colony of *Andrena argentata* and *Nomada albo guttata*, also *Epeolus rufipes*, Thoms., in abundance. On the way home the scarce *Prosopis cornuta*, Sm., and *dilatata*, Kirb., were netted. I took *Macropis labiata*, Fab., in some numbers at Beaulieu, in Hampshire, on the 24th, also *Cilissa hæmorrhoidalis*, Fab., and *Andrena cetii*, Sehr., but not the *Nomada argentata*, H.-S. On my return home at the end of the month, *Calicurgus hyalinatus*, Fab., was taken in the garden. Most of the above were still on the wing during September, the last capture of *Gorytes bicinctus* being on the 9th. My last entry is *Cerceris rybyensis*, Linn., on October 12th, surely a very late date for this insect. —EDW. B. NEVINSON, Morland, Cobham, Surrey : *March*, 1908.

Sehirus morio, L., and *luctuosus*, M. R.—Mr. E. A. Butler has written asking me if our black species of *Sehirus* should not be referred to *luctuosus*, M. R., instead of to *morio*, L. At first I thought he was certainly right, and wrote and said so, but on looking again at my specimens I find I have two old ones, "ex coll. Kirby," which are certainly referable to *morio*, whereas my more recent ones are clearly *luctuosus*. Before turning *morio* out of our list, I should be glad if any one who has specimens of our black species would examine them, and if they are larger than usual, deep black, and have the membrane white, would let me have them to examine. There is no indication of locality on Kirby's specimens, so that further evidence is much wanted if we are to retain *morio* as a British species.—EDWARD SAUNDERS, St. Ann's, Woking : *April 15th*, 1908.

A correction.—In the report of the meeting of the Entomological Society on March 18th (p. 94), it was stated that the deciduous appendages to the mandibles in the specimens of *Otiorrhynchus tenebricosus*, exhibited by Mr. Jennings on behalf of Mr. Pool, were toothed. This, however, is a mistake, as these appendages in this species as well as in *Barynotus obscurus* are simple.—F. B. JENNINGS, 152, Silver Street, Upper Edmonton : *April*, 1908.

Obituaries.

Francis C. Lemann.—It is with very great regret that we have to record the death of Mr. Francis C. Lemann, after a short illness, from pneumonia following an attack of influenza. Owing to the distance at which he lived from London, he was probably not personally well known to many of the readers of this Magazine, or to the members of the Entomological Society, which he joined in 1883. His name

was, however, familiar to all interested in European Butterflies, through his translation of Dr. H. Frey's "Die Lepidopteren der Schweiz" on this fascinating subject, and his papers on Entomological excursions to various parts of the Continent. In his youth he spent some years at school in Russia, where he acquired a knowledge of French and German, which in after life added greatly to his pleasure when making his Continental journeys. He was well acquainted with Switzerland and Carinthia, and visited other parts of the Tyrol, Besses Alps, the Pyrenees and Corsica. The last-mentioned locality twenty-five years ago was, as far as British Entomologists were concerned, a *terra incognita*, and it was due to Mr. Lemann's instrumentality and to his great personal influence that so many have since made excursions to that island. His early business experience was gained in London, and in 1881 he joined the well known firm of Coates and Co., Plymouth, in which town he resided until his death. Mr. Lemann was a keen collector of butterflies, and had not only an excellent knowledge of his subject, but was exceptionally well versed in field work, in which he delighted—his extensive botanical knowledge being of great assistance to him in his collecting. He made no collection himself, but gave all his specimens to his friends. Mr. Lemann was a man of singularly fine character, who inspired not merely friendship, but affection, among his friends, and to those of us who have travelled with him abroad and knew him intimately, his untimely death leaves a blank which can never be filled. In Plymouth, where he was most popular, and where in his quiet way he did much good work, his genial presence and kind heart will be greatly missed by all who knew him.—A. H. J. and R. W. L.

Francis Ford Freeman.—After a long and painful illness, Mr. Francis Ford Freeman died at his residence, Abbotsfield, Tavistock, at the age of 60. Like his friend, Mr. Lemann, he took a deep interest in European *Rhopalocera*. Unfortunately, owing to being a martyr to chronic asthma, he was unable, much to his disappointment, to explore the mountainous parts of the Continent. He leaves a widow and family, and a large circle of friends to mourn his loss. He was elected a Fellow of the Entomological Society in 1883.—A. H. J.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting, held *Monday, February 17th*, 1908, Mr. R. WILDING in the Chair.

Mr. W. Mansbridge read a paper, entitled "Variation in *Lepidoptera*," in which he enumerated the different classes of variation as generally understood by Lepidopterists, and referred especially to a phase of variation which has not evoked the amount of interest its importance warrants, viz.:—colour changes from yellow or ochreous to red or brown and modifications of these. The Author showed how practically all definite melanic forms have, when first noticed, been of very local occurrence—as the majority still are—a few only having spread in comparatively recent times over large areas, and noted that when this had been the case that the particular species, *e.g.*, *Tephrosia biundularia* var. *delamerensis*, *Amphidasys betularia* var. *doubledayaria*, *Hibernia marginaria* var. *fusca*, and *Diurnea fagella*,

black forms, are common and generally distributed so that transported specimens could easily continue their race wherever they might be carried.

A capital exhibition of local forms of *Lepidoptera* was made by the Members in illustration, and a discussion ensued, in the course of which Messrs. F. N. Pierce, Dr. J. Cotton, Dr. Tinne, Robert Tait, Junr., Dr. Wm. Bell, and R. Wilding concurred generally in the views set forth in the paper.—H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
Thursday, February 27th, 1908.—Mr. A. SICH, F.E.S., President, in the Chair.

Mr. Edwards exhibited specimens of *Papilio lampsacus* and the rare *P. priapus* from Java. Mr. Raynard, the ova of *Miselia oxyacanthæ* in situ on twigs of hawthorn; all were solitary, except in one instance of two ova. Mr. Pratt, a larva of *Geometra vernaria*, which had passed two winters in that stage. Mr. Newman, living melanic ♀♀ of *Hybernia leucophearia* from Bexley, and a bred melanic form of *Larentia multistrigaria* from Huddersfield. Mr. Sich, a transparent m.m. and c.m. measure for obtaining the alar expanse of insects. Mr. Tonge, slides of Lepidopterous ova, larvæ, cocoons, pupæ and imagines. Mr. Main, slides showing details of the osmateria of *P. machaon*, and various larvæ and pupæ.

Thursday, March 12th, 1908.—The President in the Chair.

Mr. R. Adkin exhibited the Tortrices *Hedya aceriana*, *H. ocellana*, *Grapholitha minutana*, and *Semasia wæberiana*, as common metropolitan species taken by him from fences on his way to and from the station. Mr. Hy. J. Turner, four specimens of *Stickophthalma howqua*, a large species of *Morphina* from South China, and specimens of West African *Precis artaxia*. Mr. Hugh Main, ♀s of several species obtainable at the present time with their ova, viz., *Hybernia progemmaria*, *Anisopteryx æscularia*, and *Phigalia pedaria*. Mr. Andrews, the *Diptera*, *Pipiza lugubris*, a scarce Syrphid, and four examples of *Caricia tigrina* with its prey. Mr. Joy, a collection of Butterflies made by him near Calcutta during the last two seasons, and read notes. Mr. Stanley Edwards, two species of Scorpions, *Heterometrus swammerdami* from India, and *Tityus insignis* from the West Indies.—H. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON : *Wednesday, March 18th, 1908.* Mr. C. O. WATERHOUSE, President, in the Chair.

Mr. Edwin Goldthorp Bayford, of 2, Rockingham Street, Barnsley; Mr. Edgar L. Clark, of Congella, Natal; Mr. G. W. Jeffrey, of the Alpine Gold Mining Company, Barberton, Transvaal Colony; Mr. G. W. Lawn, of Tudor House, Wealdstone, Harrow; and Mr. D. Langsdon, of 20, Holland Park, W.; were elected Fellows of the Society.

Dr. T. A. Chapman exhibited photographs of the empty egg-shells and young larvæ of *Papilio homerus*. Mr. C. J. Gahan, a larva of the genus *Trictenotoma*.

This larva belonged undoubtedly to the *Heteromera*, and bore most resemblance to the larvæ of *Pyrochroidæ* and *Pythidæ*. He also showed a larva of *Dascillus cervinus* from Ireland, which had been received at the Natural History Museum by Mr. Waterhouse, a species little known in this stage. The President said that the larva in question was just now the subject of experiment, it being reported doing much damage to grass-land. It was important, therefore, to determine whether it was really destructive or parasitic on some other pest like *Melolontha*. The President, a drawing of the larvæ of *Coniopteryx*, a small Neuropteron common enough in its perfect state, but rarely found as a larva, when it may be beaten out of fir trees. Mr. W. J. Kaye brought for exhibition three *Pereute* species from the Chanchamayo district of Peru, viz, *P. leucodrosime*, *P. callinice*, and *P. callianira*, together with specimens of the Nymphaline *Adelpha lara*. He called attention to the fact that these Pierines and the Nymphaline occurred together at an elevation of from 2500 to 3000 feet. It was wrong to suppose that any *Heliconius melpomene*-like species entered the association as *Heliconius* species of this pattern did not ascend to such an elevation, or if they ever did it was only as a rare exception. Mr. L. W. Newman exhibited a long and varied series of *Smerinthus populi* bred from wild Bexley parents in June, 1907, the series ranging from extreme dark specimens (about six per cent.) to very light (about ten per cent.), and pink shaded or tinged (about twenty per cent.): the remainder being intermediate forms. It also included three gynandromorphous specimens. Mr. J. W. Tutt asked for information from any Fellows who had collected abroad relative to the suggested distinction of species in *Everes argiades*, Pall. He said that the question had been raised by M. C. Oberthür whether we have under ab. *coretas*, Oberth., and *argiades* two separate and distinct species. A discussion followed, in which the Rev. G. Wheeler, Dr. T. A. Chapman, Mr. H. Rowland-Brown and other Fellows took part, the Fellows having specimens in their collections were asked to bring series for comparison and discussion. Mr. C. J. Gahan, M.A., communicated a paper, "On the Larvæ of *Trictenotoma childreni*, Gray, and *Melitomma insulare*, Fairmaire."

Wednesday, April 1st, 1908.—The President in the Chair.

Mr. F. B. Ackerley, P.O. Box, 459, Port Elizabeth, South Africa; Mr. Charles G. Clutterbuck, Heathside, Heathville Road, Gloucester; Mr. P. A. Clutterbuck, Indian Forest Department, Naini Tal, United Provinces, India; Mr. Walter W. Froggatt, F.L.S., Government Entomologist, New South Wales; Mr. H. A. Nurse, Botanical Department, Trinidad, B.W.I.; Mr. William Boulton Pratt, 10, Lion Gate Gardens, Richmond, Surrey; Mr. Edward Richard Speyer, Ridgehurst, Shenley, Herts., and New College, Oxford; Mr. G. Talbot, Vinc Cottage, Raleigh Road, Enfield, N.; and Dr. F. Creighton-Wellman, Cuidado de Senhores Silva and Lopes, Benguella, Africa Occidental; were elected Fellows of the Society.

The decease was announced of Mr. F. C. Lemann, and Mr. T. P. Furnival, Fellows of the Society.

Mr. F. B. Jennings exhibited on behalf of Mr. R. A. R. Priske a melanic aberration of the stercorarius beetle, *Aphodius scybalarius*, Fabr., taken at Deal, in June, 1907. Professor E. B. Poulton, F.R.S., for Mr. E. E. Green, a preparation for the microscope of the tongue of *Ochromyia jejuna*. Mr. E. R. Bankes sent for

exhibition :—(1) Four specimens of *Hepialus humuli*, L., more or less covered by a sprouting fungoid growth, which was said by the editor of the "Field" newspaper, in 1880, to be possibly an early stage of a species of *Clavaria*, and to have attacked the moths after death. Mr. Banks had only met with eight Lepidopterous imagines thus affected, all of which appeared to be referable to *H. humuli*. They were found in the heath district of South-East Dorset, mostly attached to shoots of *Ulex europæus*. (2) Many dead larvæ of *Hepialus lupulinus*, L., infested with the fungus *Cordiceps entomorrhiza*, and received from Mr. W. H. B. Fletcher, in whose flower-garden at Bognor they had been found. The larva of this species proved destructive there, feeding on the roots of *Helleborus*, *Iris*, and *Pæonia*, but the infested larvæ were only obtained from clumps of *Pæonia officinalis*, working to the surface during the winter months. The larvæ were of two classes, some showing anteriorly much fibrous net-like *mycelium* growth, accompanied by a drumstick-like process often more than half the length of the larva; others showing no fungoid growth externally, and these work completely out of the soil, and lie about on the surface. Mr. J. E. Collin communicated a paper entitled "The Systematic Affinities of the *Phoridae*, and of several Brachycerous Families in the *Diptera*," by Mr. W. Weschê, F.R.M.S. Dr. T. A. Chapman, M.D., F.Z.S., read a paper on "*Stenoptilia grandis*, n. sp."—H. ROWLAND-BROWN, *Hon. Secretary*.

A FORTNIGHT'S WINTER COLLECTING IN VENEZUELA.

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

(Concluded from page 76).

On another occasion I met with a similar experience. On March 28th, 1907, a hot sunny morning, as I was walking along the upper water course where it runs through the wood almost clinging to the face of the cliff (perhaps a quarter of a mile from the previously described locality), passing under the shade of a large tree I disturbed a crowd of butterflies so dense that fourteen were easily netted in two or three swoops. Ten of these were pinched, which all proved to be *Ithomia sylvella*, Hew., four of them got away. In this instance the butterflies were confined to some four or five yards of the narrow path, and it was almost a "pure culture" of that singularly delicate little species, indeed, the only exceptions were two specimens of *Athesis clearista*, Dbl., and single specimens of *Pteronymia latilla*, Hew., and *Dircenna jemima*, Hübn. I may add that I have no reason in either case to think that the *Ithomiines* were drinking at the stream.

But besides *Ithomiines* there were plenty of other butterflies along the banks of that stream and the water-courses leading from it. To begin with the less exciting *Satyrines*. There were *Euptychia hermes*, Fabr. (*camerta*, Cram.), and the smaller *E. pharella*, Butl., the

latter very common among grass and less chary of sunlight than many of the family; the more attractive *Oressinoma typhla*, Dbl. and H., was on the contrary always found in the shade.

The commonest Nymphaline was the tiny fulvous *Phyciodes anieta*, Hew. Here also I first made acquaintance with the beautiful genus *Dynamine*, capturing three *thesens*, Feld., and one *geta*, Godm. *Anartia amalthea*, Linn., flew over the water of the levadas, and *Precis lavinia*, Cram., was as usual easier to see than to catch. A single specimen of *Pyrameis myrinnæ*, Dbl., was captured at the flowers of a Composite creeper near the farmhouse, while the shades of the wood yielded the larger game *Victorina stelenes*, Linn., and *Amphirene epaphus*, Latr.; one of the last named was drinking in the bed of the stream, where I had the bad luck to miss a *Cullicore*. But of all the beautiful butterflies seen there by far the most startling was my first *Morpho*. A huge bird-like creature sailing down the gully, now giving an azure flash, now almost disappearing as the upper surface turns away—flash, flash, flash, and it is out of sight! Shortly afterwards I had the pleasure of beating *Morpho peleides*, Koll., a male, out of a bush and netting it as it flapped away.

The sole Danaine was a male, *Anosia archippus*, Fabr., but the Acraeines were represented by a number of *Actinote antea*s, Dbl. and H., though that species was commoner in the outskirts of the city; of its congener *A. hylonome*, Dbl., I only secured a single specimen. The only Erycinids taken were a couple of *Charis argyrorodines*, Bates, and one of the conspicuous black, yellow, and scarlet *Lymnas jarbus*, Fabr.

Heliconiines were not common, but I took *Heliconius charithonia*, Linn., and two of the beautiful black and red *H. hydara*, Hew. (one of the species into which the beautiful *H. melpomene*, Linn., has been split up); these last were both males, one only of which had a very strong odour, like acetylene, or, as Mr. G. H. Swarder of Tobago suggested, hazeline (*Hamamelis virginica*). This insect is tenacious of life.

I got but one *Papilio*, but its beauty was striking even among so many fine insects, for a male *P. cymochles*, Dbl., feeding on the flowers of Lantana is a sight worth going far to see. Its handsome black, scarlet, and cream-coloured livery is in itself a feast of colour, but when that marvellous violet-blue gloss is seen, words altogether fail one.

Among the Lycænids the wide ranging *Leptotes (Tarucus) cassius*, Cram., was by far the commonest, the sexes in about equal numbers;

next in order of abundance came *Tmolus palegon*, Cram., which frequented the flowers of a Composite shrub (? *Vernonia scorpioides*, Pers.); of *Thecla rufofusca*, Hew., I captured two, but of the following only one each: *T. erolus*, Cram.; *T. togarna*, Hew.; *Theclopsis tephraea*, Hübn. (this had a peculiar, strong, rather disagreeable odour); *Callipsyche thus*, Hübn.; and *Catochrysops hanno*, Stoll, this last sitting head downwards and opening its hind-wings at intervals.

The Pierines were represented by a fair number of species, but few of them were common, indeed, of the following single specimens only were taken: *Terias nise*, Cram., a male; *T. leuce*, Boisd., a female, the only specimen met with; *T. elathea*, Cram., a male, an aberration with the black streak obsolescent; *Sphænogona gratiosa*, Dbl. and H., a female; *Enantia (Dismorphia) melite*, Clerek, a male (two were netted, but unfortunately the female got away); and the "Black-White" *Euterpe critias*, Feld., a male; as regards the last named I fear I did not notice at the time how closely it mimics some of the black and red *Papilios*, notably *P. serapis*, Boisd. (? *iphidamas*, Fabr.), a species that I took at Cartagena. The genus *Terias* was much to the fore; in addition to those already mentioned several *T. albula*, Cram., were taken, some of them remarkably small; also of *T. phiale*, Cram., four males; and of *T. delia*, Cram., three females, all of "dry" type, and one of the extreme dry form named by Butler *persistens*. Two females of *Meganostoma cerbera*, Feld., were captured; this species, of which Felder called the dry season form *therapis*, appears to me to be quite distinct from *M. cæsonia*, Stoll. Of *Daptonoura lycimnia*, Cram., I took one of each sex. Altogether I took six specimens of *Sphænogona arbela*, Hübn., four males of the ordinary yellow form (one of the form *xanthochlora*, Koll.), and a female of the unusual pale form. Undoubtedly the most conspicuous Pierine was the large and handsome "Brimstone" *Amynthia mærcula*, Fabr. This was only seen on one especially hot morning (March 21st) when several of both sexes were observed flying strongly close by the Ithomiine locality; I only secured one male, and as the day wore on the species disappeared.

There was more than the usual crowd of Skippers; but in the Neotropical Region Skippers are so common, often so inconspicuous in colour, and the allied species so difficult to distinguish, that one is apt to neglect them in the presence of more attractive game; for truly the most scientific Entomologist is but human!

Of the long-tailed *Eudamas proteus*, Linn., and *E. eurycles*, Latr.,

but one each was secured, though there were plenty about. Of *Prenes nyctelius*, Latr., I took two; of *Heliopetes laviana*, Hew., three; of *Hesperia syrichthus*, Fabr., two; of *Gorgythion begga*, Prittw., three. Of all the following there were but single examples in my bag:—*Cycloglypha thrasybulus*, Fabr.; *Chiomara gesta*, H.-S.;—the three species last named all curve the fore-wings downwards, like our *Thanaos tages*, Linn.—the conspicuous black and red *Pyrrhopyge charybdis*, Dbl. and H.; *Mylon zephus*, Butl.; *Cogia calchas*, H.-S.; *Epeus veleda*, Godm. and S.; *Mnestheus ithoria*, Butl.; *Pellicia*, sp. prop. *bromio*, Mab.; *P. dimidiata*, Ploetz; *Metron leucogaster*, Butl.; *Megistias telata*, H.-S.; *Methionopsis ina*, Ploetz; *Thymelicus dares*, Ploetz; and *Niconiades merenda*, Mab. But the most attractive of the group was *Carystus coryna*, Hew., with its brilliant “silver-washed” under-side; the only specimen seen—just where the upper water-course leaves the stream—was settled upon a mass of silvery-white shale, which shone in the sunlight with the same metallic lustre as the Butterfly. Possibly the result of mere chance, this is certainly the most remarkable instance of cryptic colouring that I have met with.

A few day-flying moths taken in the same locality must be mentioned; single specimens occurred of each. The Arctia-like Syntomid *Ctenucha venosa*, Walk., at the flowers of a white composite; the black Geometer with white transverse bar across the fore-wings *Ephialtias tryma*, Schaus; and the black, orange-tipped Geometer *Josiomorpha cruciata*, Butl., which proved tenacious of life. These, with a very elegant Agrionine Dragon-fly having carmine patches at the base of the wings (near to *Agrion brightwelli*, Kirby, and *caja*, Dru.), complete my list of captures in the best locality that it has been my good fortune to visit.

The arc-light in the patio of the (not very) Grand Hotel proved extremely attractive to big moths as well as to numerous large Locustids.

Syntomids:—*Cosmosoma tenthredinis*, Walk., one; *Eucereon setosum*, Sepp, two.

Arctiids:—*Bertholdia specularis*, H.-S., a beautiful insect, one; *Ammalo insulata*, Walk., two; *Utetheisa ornatrix*, Linn., one; *Ecpantheria muzina*, Oberth., one.

Sphingid:—*Dilophonota ello*, Linn., three.

Noctuids:—The Boarmid-like *Synia hypnosis*, Hübn., one; the huge and variable *Erebus odoratus*, Linn., quite common, ten; *E. zenobia*, Fabr., one; and the Quadrid Yellow Under-wing *Hypocala filicornis*, Guen., one. To these must be added the Boarmid Geometer *Oxydus verulia*, Cram.

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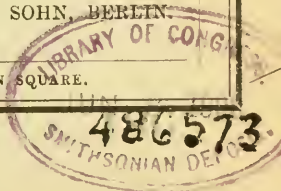
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The large Skipper, *Perichares corydon*, Fabr., turned up in one of the court-yards by day, and a recently dead specimen of the Nymphaline, *Catonephele nyctimus*, Westw., a male, was found on the floor.

With the moths were numerous big Locustids, allied to the Katydid; a green Phaneropterine and a brown Conocephaline.

On March 29th, proceeding to La Guaira to join the homeward-bound steamer, we got out at Zigzag station, 1500 ft. above the sea, and completed the journey on foot, a walk that I should much like to repeat. The road, right down to the coast, presented all the appearance of very heavy rain within a few days previously. Insects were most numerous between the station, and about 1000 ft., below this vegetation became sparse, and later on clouds overspread the sky. The most abundant butterfly was *Phyciodes leucodesma*, Feld., with its somewhat gliding flight, but *P. anieta*, Hew., and *Terias albula*, Cram., were also common, as was the handsome scarlet and black *Heliconius hydara*, Hew. A much smaller, but lovely black and red butterfly, *Hæmateræ pyramus*, Fabr., was taken on the railway track. Other Nymphalines captured were *Colænis julia*, Fabr., two; *Nica canthara*, Dbl., one; *Anartia amalthea*, Linn., two; *Dynamine sara*, Bates, three; *Synchloë lacinia*, Hübn., two of the dark form, the third of f. *saundersii*, Dbl. and H.; and *Cystineura cana*, Erichs., two, a ghostly looking thing with gliding flight, somewhat like a *Neptis*.

The only Ithomiines met with were *Tithorea furia*, Stdgr., of which I took a female at about 1300 ft., and *Pteronymia victorina*, Hew., of which I took one, and possibly saw others, at about 1000 ft. Of *Eueides isabella*, Cram., f. *hübneri*, Mén., I got but a single example. The Erycinids were limited to *Nymphidium molpe*, Hübn., and *Charis argyroclines*, Bates, one of each.

Satyrines were notable for quality rather than quantity; single specimens were taken of *Euptychia hermes*, Fabr.; *E. hesione*, Sulz., and *E. mollina*, Hübn., the last named a whitish species not taken elsewhere.

Skippers were but moderately numerous, those taken were: *Chiomara gesta*, H.-S., one; the very neat little *Heliopetes domicella*, Erichs., three; *Zopyrion satyrina*, Feld., one, a species well named, since the ocelli on its under surface are very suggestive of a Satyrid; and *Staphylus mazans*, Reak. (*ascalaphus*, Stdgr.), one.

If Skippers were but moderately numerous, Blues were decidedly scarce, for my bag included only *Thecla rufofusca*, Hew., one, at about 750 ft., and *T. togarna*, Hew., two, one taken just below Zigzag, the other as low as 500 ft.

Pierines were fairly numerous, but not so easy to catch, conspicuous among them was *Callidryas eubule*, Linn., though not really common, the specimens were large. Of *Sphænogona gratiose*, Dbl. and H., a female was taken, but others seen (at Cartagena this butterfly was noted as flying low and *through* bushes); a female *Daptonoura lycimnia*, Cram. (f. *polyhymnia*, Feld.), contrary to precedents, had a rich sweet scent. Of *Pieris calydonia*, Boisd., I brought home two males, also a male of another *Pieris*, of which Dr. Dixey says:—"probably undescribed, near *seicata*, Feld." This was taken at an altitude of about 1300 ft., close to the track. There were several good-sized Whites about that declined to be caught, it is possible that among them there may have been others of this interesting species.

Between 2 and 4 p.m., from about 1000 ft. down to about 500 ft., the Hypsid day-flying moth, *Phaloë lorza*, Boisd., was in abundance. Its flight is slow and heavy, suggesting a pale, dingy *Heliconius*; nine specimens were taken, eight of them proved to be females. Among the last butterflies taken were *Phyciodes liriopse*, Cram., and a tattered *Hypanartia lethe*, Fabr., both at about 750 ft.

At the decidedly dirty Hotel Neptuno, a fine specimen of the large Brassoline, *Caligo memnon*, Feld., was awaiting my arrival; it had been pinned upon the wall two days before by the obliging interpreter who knew my fancies.

The next morning was devoted to a stroll along the coast towards the east, anxiety as to the arrival of the steamer preventing any lengthy expedition. The best spot reached was a neglected cemetery by the sea-side, where we found *Phyciodes leucodesma*, Feld., common; *P. liriopse*, Cram.; *Anartia amalthæa*, Linn., tattered; *Terias albula*, Cram., common, one very large; *Pieris phileta*, Fabr. (*monuste*, auct.), two males—this species I have always met with close to the shore; *P. calydonia*, Boisd., a male; *Nica canthara*, Dbl., two; *Mechanitis veritabilis*, Butl., one; *Helioptes arsalte*, Linn., one; another Skipper was *Bolla* sp., of which three specimens were obtained (Mr. H. H. Druce says that there is one specimen of this species in the Godman collection unnamed)*; and *Ageronia ferentina*, Godt., settled on the pale grey trunk of a palm, which it closely matched in colour.

Anosia archippus, Fabr., was seen a little way beyond the cemetery on a purple-flowered *Asclepias*.

* I have to thank Mr. H. H. Druce for the great trouble that he took in determining my Blues and Skippers.

While walking down to the ship I picked up from the pavement a fine water-beetle, *Hydrophilus insularis*, Casteln.

So ended my fortnight in Venezuela, yielding in butterflies alone 492 specimens, of 124 species, of which 53 were represented by single examples. Let me add that I found the Venezuelans civility itself, and my operations were in no wise interfered with.

Twitchen, Mortehoe, R.S.O. :
December 12th, 1907.

CRYPTOPHAGUS LOVENDALI, GANGLB., IN THE NEW FOREST.

BY G. C. CHAMPION, F.Z.S.

On July 23rd last I found a number of *Cryptophagi* (mostly *C. scanicus*, Linn., and *C. saginatus*, Sturm) and *Mycetophagus quadriguttatus*, Müll.,* amongst dry dead leaves and fungoid growth in a hollow beech tree in the New Forest. The *Cryptophagi* included two specimens of a species unknown to me, which I have now been able to identify, thanks to the assistance of Captain Deville. It is the *C. lovendali* of Ganglbauer [Käf. Mitteleuropa, iii, p. 678 (1899)], treated by him, and also by Løvendal previously [Ent. Meddelelser, iii, pp. 245, 246 (1891—92)], as a variety of *C. pubescens*, Sturm, with a 3-jointed antennal club. The insect in question resembles the typical dark form of *C. scanicus* in colour, from which it differs in its broader shape, coarser sculpture, and slightly less dilated ninth antennal joint, this being not quite so wide as the eleventh. From *C. pubescens* it may be easily separated by its darker colour, the dilated ninth antennal joint, and the rounded sides of the prothorax. Captain Deville informs me that he has seen five specimens of *C. lovendali* from France, all from hollow trees, and there can be no doubt that it must be treated as specifically distinct. *C. lovendali*, in fact, forms a connecting link between the *Cryptophagi* with a 2-, and those with a 3-jointed antennal club. Ganglbauer, I must add, has examined one of my examples, and returned it as a species unknown to him; but this may be due to the fact that he appears to have named the Danish insect from Løvendal's description alone, without having seen a specimen.

On April 24th I again visited the particular tree in the New Forest, only to find that the cavity had been filled with broken bottles left by picnic parties, and the contents therefore could not be examined.

Horsell: May 8th, 1908.

* Cf. Ent. Mo. Mag., xliii, p. 207 (1907).

NOTE ON *CARABUS VIOLACEUS*, SUBSP. *SOLLICITANS*, HARTERT.

BY G. C. CHAMPION, F.Z.S.

Few British Coleopterists are probably aware that the British form of *C. violaceus* has been named subsp. *solllicitans* by Dr. Hartert ["Novitates Zoologicæ," xiv, pp. 334, 335 (March, 1907)]. It is stated to differ from *C. violaceus* (from Silesia, North Germany and Austria) in having "the elytra less finely, more roughly, and somewhat more irregularly granulated, thus appearing much less smooth." Dr. Hartert, it may be noted, says that "we may, for the present, accept the dictum that *C. violaceus* and *C. purpurascens* are representative sub-species of each other." The true *C. violaceus*, according to him, has the upper surface of the elytra uniformly covered with fine granulations, without any striations, and the margins of a beautiful reddish-violet, and *C. purpurascens* the elytra sharply striated with about a dozen elevated lines, between which granulations are visible. He does not mention the form from Portland, &c., recorded by Fowler (Col. Brit. Isl., i, p. 8), under the name *exasperatus*, with coarser granulations and traces of raised lines on the elytra. I have it from Parracombe, North Devon.

Horsell: May 13th, 1908.

DROMIUS ANGUSTUS, BRULLÉ, AT WOKING.

BY G. C. CHAMPION, F.Z.S.

Captain Deville recently sent me an example of *Dromius angustus*, Brullé (= *testaceus*, Er.), from Bourges, France, and suggested that the species probably occurred in Britain. In this surmise he was quite correct, as I find I have five specimens of it from the Woking district, captured by my son on January 10th, 1906, under bark of old posts. The insect is no doubt mixed in British collections with *D. meridionalis*, Dej., from which (cf. Ganglbauer, Käfer Mitteleuropa, i, pp. 406, 407) it may be distinguished by its smoother forehead—longitudinally wrinkled at the sides only, instead of completely across as in *D. meridionalis*—and the reddish colour of the body, the elytra alone sometimes in great part infusate. The specimens before me are relatively narrower than *D. meridionalis* and *D. agilis*, F., and have a large, elongate, testaceous patch on the inner part of the disc of each elytron below the base. *D. angustus* and *D. meridionalis* agree in having a single pore only on the third elytral interstice near

the apex, thus differing from *D. agilis* and its variety *bimaculatus*, Dej., which have several pores on this interstice, as well as the row on the seventh. *D. fenestratus*, F., is another form that might be expected to occur in the northern part of Britain, and I have seen examples of *D. meridionalis* from the New Forest that have been incorrectly referred to it.

Horsell: May 14th, 1908.

NOTES ON THE GENUS *CORTICARIA*.

BY NORMAN H. JOY, M.R.C.S., F.E.S., AND J. R. LE B. TOMLIN, M.A., F.E.S.

In his introductory notes on *Corticaria* Canon Fowler remarks "that we possess, in all probability, two or three more species in collections than the eight or nine at present recognised as British." He particularly mentions *C. linearis*, Payk. and *C. longicollis*, Zett. as likely to occur, and indeed instances specimens standing under *C. fulva*, Com., in Dr. Sharp's collection, which are perhaps referable to *C. longicollis*. The *C. linearis* of the Stephensian collection = *C. ferruginea*, Gyll. (*teste* G. R. Waterhouse) = *C. fenestralis*, L. Both these species we are now able to instate definitely on the British list, bringing the total of the genus up to twelve. We can find no evidence of the true *C. obscura*, Bris. having been taken in Britain, most of the specimens recorded as such having proved to be *C. eppelsheimi*, Reitt., so that (including *C. crenicollis*, Mannh., recorded in Ent. Record, vol. xviii, p. 276), there are four species to be added to the list given by Fowler, and one to be deleted.

The following are the records for these four species, so far as we have been able to ascertain:—

C. linearis.—Bradfield, two specimens (Joy).

C. eppelsheimi.—Woking ("common in powdery fungi on fir stumps during one season only") and New Forest (Champion).

C. longicollis.—Richmond Park (Rye and Champion); Epping, under bark (Pool, who first drew our attention to this species; it was recorded as *C. crenicollis* in Ent. Record, *ibid.*); Malvern, in cellar, and Sherwood, under bark (Tomlin).

C. crenicollis.—Farnham (Power); Peckham (ex coll. Chaney); Basildon, Berks, in dry oak branches (Joy); Chiddingfold, in moss in company with ants (Donisthorpe).

As we have been unable to fit these species into the table given by Fowler, we have thought it best to make out a new one, and have followed Ganglbauer's to a great extent. We also append descriptions of the four recently added species.

TABLE OF THE SPECIES.

I.—Elytra with longer, somewhat erect pubescence, or with alternate rows of longer and shorter hairs.

i.—Eyes feebly convex and not prominent, temples well developed; antennæ with the first two joints of the club not longer than broad; colour rust-red or reddish-testaceous; elytra with alternate rows of longer and shorter hairs *C. fulva*, Com.

ii.—Eyes strongly convex and prominent.

1.—Temples well developed; thorax much narrower than elytra; all the joints of the club of the antennæ evidently longer than broad; size larger *C. pubescens*, Gyll.

2.—Temples rudimentary; thorax broader in proportion to elytra; first two joints of the club of the antennæ about as long as broad; size smaller *C. crenulata*, Gyll.

II.—Elytra with shorter, depressed pubescence, the hairs being of equal length.

i.—Antennæ with at least the first joint of the club distinctly longer than broad *C. denticulata*, Gyll.

ii.—Antennæ with the first two joints of the club globose, as long as broad or somewhat transverse.

1.—Elytra with punctured striæ evanescent behind middle; species convex and broad *C. fenestralis*, L.

2.—Elytra with punctured striæ continued to apex.

A.—Size larger: length 1·8—2·5 mm.; temples obsolete or absent.

a.—Sides of thorax strongly serrate *C. serrata*, Payk.

b.—Sides of thorax obsoletely serrate.

a*.—Colour dark brown; elytra more depressed, shoulders with well-marked callosities ... *C. linearis*, Payk.

b*.—Colour testaceous; elytra more convex, shoulders with callosities obsolete *C. eppelsheimi*, Reitt.

B.—Size smaller: length 1·3—1·8 mm.; temples small, but distinct.

a.—Thorax strongly punctured; elytra somewhat rounded at sides.

a*.—Thorax much narrower than elytra, scarcely transverse, broadest before middle; elytra more rounded at sides; pubescence not conspicuous...

C. longicollis, Zett.

b*.—Thorax not much narrower than elytra, strongly transverse, broadest at middle; elytra less rounded at sides; pubescence conspicuous...

C. crenicollis, Mammh.

b.—Thorax finely punctured, elytra parallel-sided...

C. elongata, Gyll.

III.—Elytra with rows of short erect bristles, parallel-sided and cylindrical...

C. umbilicata, Beek.

C. LINEARIS, Payk.

Rather elongate, slightly convex and shining, and very finely pubescent; pitchy black or dark brown, with the shoulders of the elytra often lighter, antennæ and legs rust-red, club of the former generally brownish; head with very short and obsolete temples; antennæ with 5th and 6th joints a little longer than broad, 7th and 8th globose, the first two joints of the club as long as broad; thorax much narrower than elytra, as long as broad or slightly broader than long, somewhat strongly and closely punctured, sides evenly rounded and obsoletely serrate, base with a deep round fovea; elytra oblong, rather depressed, broadest at the middle, shoulders somewhat callose and prominent, rather strongly punctured in rows, interstices much more finely punctured; male with the anterior tibiæ feebly sinuate on inner side near the apex, and the fifth ventral segment of the abdomen slightly impressed. L. 1·8—2 mm.

Easily distinguished from *C. serrata* by its proportionately narrower thorax, with the sides much less strongly serrate, and its more depressed and more parallel-sided elytra.

C. EPPELSHEIMI, Reitt.

Closely allied to *C. linearis*, but distinguished by its entirely reddish-testaceous colour; the antennæ are slightly longer and more slender; the elytra are distinctly more convex, the shoulder-callosities are less developed, and the interstices are more distinctly wrinkled.

It resembles *C. longicollis* and *C. crenicollis* in colour, but is larger, and has the temples less developed, and the sides of the thorax less serrate.

C. LONGICOLLIS, Zett.

A small entirely rust-red, convex species, very finely pubescent; head narrower than thorax, with short but distinct temples; antennæ with 4th joint somewhat longer than broad, the first two joints of the club strongly transverse; thorax much narrower than elytra, as long as broad or somewhat transverse, broadest before the middle, and more strongly contracted behind than in front, closely and rugosely punctured, sides rather strongly crenulate, base with a fairly large fovea in the middle; elytra longish-oval, broadest at the middle and somewhat rounded at the sides, with closely-set rows of punctures, interstices narrow and wrinkled; the fifth ventral segment of abdomen in the male with a somewhat deep transverse fovea. L. 1·3—1·6 mm.

C. CRENICOLLIS, Mannh.

Somewhat convex and parallel-sided, clothed with rather short but conspicuous pubescence, entirely reddish-yellow; head and antennæ as in *C. longicollis*; thorax not much narrower than elytra, transverse, half as broad again as long, broadest at the middle, closely and rugosely punctured, sides evenly rounded and distinctly

crenulate, base with a deep round fovea; elytra somewhat convex, only slightly rounded at the sides, with rather coarse and closely-set rows of punctures, interstices more or less wrinkled; the fifth ventral segment of abdomen of the male with a transverse impression. L. 1.2—1.5 mm.

This species differs from *C. longicollis* in its more parallel-sided form, the shape of the thorax, and its distinctly more conspicuous pubescence.

April, 1908.

TWO NEW BRITISH DIPTERA: *PEGOMYIA ESURIENS*, Mg.,
AND *P. UNIVITTATA*, v. Ros.

BY A. E. J. CARTER.

When collecting at Comrie, Perthshire, last July, I took a number of flies belonging to the genus *Pegomyia*. These when worked out with the aid of Herr P. Stein's recently published paper, "Die mir bekannten europäischen *Pegomyia*-Arten" (Wiener Entomologischen Zeitung: Jahr. xxv, s. 47, 1906), yielded interesting results. The genus as it stands in the British list needs revision. Herr Stein making several important changes in nomenclature, besides recording from England some four or five new species. Of these latter I appear to have a ♀ of *P. iniqua*, Stein, taken at Musselburgh, June 27th, 1907. In Stein's paper it is recorded "ein ♀ aus England (Grimshaw)."

P. esuriens, Mg. The first of the two species now brought forward occurred to me in a woody place in the lower part of Glen Lednock, Comrie, July 8th, 1907, when I captured a well marked ♂, agreeing with the description given by Herr Stein. The species belongs to the section with black palpi, and a dark, not red or yellow coloured abdomen. Its most striking characteristic is the striped dorsum, unlike anything I have seen in this genus, and reminding one, at a first glance, of a *Mydæa*, or *Hydrophoria conica*. The ground colour is dark brown, looked at from behind it is light brownish-grey, with four distinct brown stripes, the two centre ones being narrower and shortened posteriorly. The abdomen is grey, with a fine dorsal line. Legs yellow, with front femora darkened above, and mid and hind femora darkened at the apex. Tarsi black. In my specimen the eyes are separated by a thin line, and the antennæ are black, not reddish-grey, at the base. Size, 6 mm. Stein records it from Genthin (Prussia), Berlin, Vienna, &c., down to Italy.

P. univittata, v. Ros. Herr Stein has found this species in most collections under the name of *flavipes*, Flin. He found the two species mixed in Zetterstedt's collection, and doubtless specimens of *univittata* are to be found in some of our British collections. Fallén's species is in Mr. Verrall's list, and, as I have seen British specimens of both species, *univittata* is an addition. I have not taken *flavipes* myself, but have seen an undoubted ♂ taken by Mr. H. W. Andrews at Stradbally, co. Waterford, August 8th, 1906, and a ♀, which I think must belong to this species, taken by Mr. Adams in the New Forest. In my collection are four ♂♂ of *univittata* taken at Comrie, July 9th, 1907, and two ♂♂ taken in the New Forest, July 3rd, 1905, and kindly given to me by Mr. Adams, who tells me he found the ♂ fairly common in a limited space of ground, but no ♀♀. The two species are very much alike, the most obvious difference in the ♂ being the size of the hypopygium, which is large and conspicuous in *flavipes*, and much smaller in *univittata*. The other differences, as pointed out by Herr Stein, are: pubescence on the lower part of the back of the head, yellow in *flavipes*, black in *univittata*, pre-sutural acrostichal bristles nearer (the two rows) to each other than to the dorso-centrals in *flavipes*, further apart in *univittata*, and bearing tiny hairs between the rows, *flavipes* also has on the under-side of the hind femora, in the ♂, a row of much longer bristles than occurs in the ♂ of *univittata*.

Royal Bank House, Blairgowrie:

April 6th, 1908.

NOTES ON CERTAIN MYCETOPHILIDÆ, INCLUDING SEVERAL SPECIES NEW TO THE BRITISH LIST.

BY F. JENKINSON, M.A.

The British species of *Mycetophilidæ* seem to be very imperfectly known; and in some cases what was once known is now forgotten. I know that some attention is being paid to them now; and probably some of my friends will be able to correct and supplement these notes, which cannot pretend to do much more than record my own captures during the last five years, together with some observations made in the course of my attempts to identify them. Mr. Verrall kindly devoted a day to going through most of the specimens, which now form part of the University Collection at Cambridge; and thus a higher value may be attached to some of my conclusions, verified

as they have been and in some cases corrected by his experienced eye. It will be seen that Dr. Sharp and Mr. Lamb have made notable contributions.

Additions to Mr. Verrall's List are marked with an asterisk. The genera *Epieypta*, *Brachypeza*, *Parastemma*, *Megophthalmidia*, *Gnoriste*, *Phthinia*, *Paratinia*, *Hertwigia*, and *Apoliphthisa* appear here as British for the first time, though three of them, *Parastemma*, *Megophthalmidia*, and *Apoliphthisa* do not add new species to our records.

To save trouble, I may say that I follow Winnertz in my use of the term "cross vein," which I apply to the vein joining the subcostal vein to the cubital (vein 3). Schiner, on the contrary, regards the cubital as arising out of the subcostal (which he calls the "Hauptast" of the first longitudinal vein); and what I call the basal piece of the cubital he calls the cross vein, and *vice versa*.

**Epieypta scatophora*, Perris.—I have two specimens which agree with the description of this species given by Winnertz. They were taken at Crowborough on July 28th, 1905, and August 4th, 1906. They are both females, and agree in the following points:—The forelegs have the tarsi about three times as long as the tibiæ, and the small postero-dorsal spines on the tibiæ are two in number; the ventral spines on the middle tibiæ are two, the upper being shorter than the other. The second segment of the body has what seems to me a very remarkable character, namely, two long hairs pointing backwards, rising from the hind margin of the ventral surface. The wings have vein 3 (the cubital) regularly arched, and the fork of vein 5 decidedly nearer the base of the wing than the origin of vein 4. The cross vein, A, (*i. e.*, the vein joining the subcostal to the cubital vein) is much shorter than the basal piece of vein 3, B, and about as long as the "stalk" of 4, C; *i. e.*, $A = C < B$.

A female taken at Cambridge on August 8th, 1905, has the two long ventral hairs on the second segment, and the *two* postero-dorsal spines on the front tibiæ; also the front tarsi are about three times as long as the tibiæ. But there is a third ventral spine on the middle tarsi, above the others, and about as long as the upper one. And the proportion of the three veins A, B, C, is $B = C > A$. The ventral half of the body is brownish-yellow. In view of the variability attributed to *E. punctum*, I regard this provisionally as a variety of *E. scatophora*.

Epieypta ? *sp.*—I must here mention a female (?) taken in my garden at Cambridge on July 24th, 1904, which I cannot assign to

any species hitherto described. The pale legs contrast strongly with the black body. The fore tibiæ have *two* postero-dorsal spines; the middle tibiæ three ventral spines (on one side the upper spine is wanting). The fore tarsi are about two and a half times as long as the tibiæ. The wings have no markings. The costal vein hardly passes the end of vein 3. The cross vein is as long as the basal piece of vein 3. The fork of vein 4 is almost sessile. ($A = B > C$.) Vein 3 is regularly arched. There are no ventral hairs on the second segment.

**Epicypta trinotata*, Staeg.—A female taken at Crowborough on April 17th, 1905, seems to be this. Vein 3 is wavy ("fast wellig gebogen," Winnertz). The obfuscation of the wing does suggest, in a strong light, *three* spots. Vein 4 forks very near its origin (apical fork almost sessile). The front tibiæ have one postero-dorsal spine; the front tarsi have the three middle joints enlarged, a character mentioned by Winnertz in his description of *E. punctum*. A second female taken at Crowborough on August 13th, 1906, is similar, but has vein 3, so far as I can see, straight, and there is no trace of the third (axillary) spot.

**Epicypta punctum*, Stan.—Strobl (Diptera von Steiermark, iii, 50) describes several varieties of this species, adding "enlargement of the fore tarsi, colour of the hind femora, &c. (!), always normal." But the colour of the hind femora does not seem to separate *E. punctum* from *E. trinotata*; and if I am correct in my identification of *E. trinotata* above, the character afforded by the front tarsi is also indeterminate. Still, it may be useful to mention these "varieties," even if their identification should be proved to be incorrect. He seems to have had only ten specimens altogether. (a) ♂. Thorax with fore margin narrowly orange. (b) ♀. Thorax with fairly large reddish-brown shoulder fleck; tip half of the wing greyish, especially in the "unterrandzelle" (? cubital cell) and the upper half of the first posterior cell, "almost as in *Mycetophila adumbrata*." (c) ♂. Antennæ and basal half of the four posterior coxæ black; wings as in var. *b*. (d) ♀. Posterior coxæ all black-grey; wings as in var. *b*. Strobl adds that the small third ventral spine on the middle tibiæ is often wanting. I have specimens taken at Crowborough (*e. g.*, August 26th, 1907) which agree with this var. *d*. In these $B = 2$ $C = 4$ A , or nearly so. Of several other specimens I say nothing at present. Some of them were shown to Mr. Verrall in March, 1906, as possibly *E. punctum*; and his remark was, "more probably two species closely allied to it."

Mycothera semifusca, Meig.—I took this at Logie, on the Findhorn, September 14th and 15th, 1905, and at Crowborough on August 27th, 1907. The species is in *italics* in Mr. Verrall's List.

**Brachypeza bisignata*, Winn.—Dr. Sharp took a specimen in the New Forest, in September, 1904.

**Brachypeza radiata*, *n. sp.*—Eight specimens occurred in my garden at Cambridge on the following dates:—August 2nd, 1901, July 5th (two ♀) and September 2nd, 1905, August 20th, 21st (two), and 22nd, 1906. Most of them occurred in the greenhouse; and several of them appeared just as it began to be too dark to see them and box them on the glass overhead. A specimen has since occurred, July 27th, 1907, on the hall window of the house, just outside Cambridge, to which I moved in 1906. Two days later my gardener, F. W. Lander, to whom I had shown this specimen, took one on a window of his house at Trumpington, about a mile away.

The species seems to be quite unlike anything hitherto described. The second joint of the front tarsi in the male has bristles below like *B. armata*, but the spotted wings distinguish it at once from that species. The shade across the wing before the tip darkens the veins and gives a *rayed* appearance, which suggested the specific name.

BRACHYPEZA RADIATA, *n. sp.*

Griseo-lutea; vertice, thoracis 3 vittis, scutelli medio, abdominis dorso, lateribus, ventre aliquantum infuscatis; antennarum articulis 2 primis luteis, reliquis fuscioribus. Tibiarum anticarum calcare metatarso aliquanto longiore; tarsorum anticorum secundo articulo feminae simplice, maris infra setis armato. Alis grisescentibus, macula media umbræque subapicali fuscis, venis radiorum in modum brunneis. Long. 5—6 mm. Al. exp. 11 mm. Hab. Anglia.

♂. Dull greyish-yellow with black bristles. Antennæ brownish, first two joints and base of third pale. Face and palpi ochreous; top of head ochreous between the eyes, dark behind, all covered with appressed ochreous hairs; along the back of the eyes a few black bristles. Thorax with three dark lines; marginal bristles in front, behind, and along sides black; scutellum ochreous with a dark central mark expanded at base and toward tip; hairs ochreous, but a few discal black bristles; six long black marginal bristles. Abdomen with fine ochreous and coarser black hairs; first segment considerably darkened, second to fifth dark along back, fourth to sixth with a dark shadow on sides; front of each segment darkened below. Hypopygium not clearly visible, but with two small orange club-like processes above, and two larger elongated flaps below. Legs pale, bristles black; spurs brownish-yellow; front tibiæ with the long spur fully as long as the metatarsus, and with about seven posteral bristles towards the tip, second joint of front tarsi bristly below; middle tibiæ with about six antero-dorsal bristles, about five (weaker)

postero-ventral, and about two or three (strong) postero-dorsal; hind tibiae with four to six strong antero-dorsal bristles and five strong postero-dorsal, with one or two weak dorsal bristles near the base. Wing: bristles on vein 3 begin at small cross vein (in *bisignata* they begin nearer the base). Upper branch of vein 4 has a slight bend near the middle. A spot in the angle between 3 and 4 includes base of 4. A slight cloud near the tip from 3 to lower branch of 4. The solid veins give the wing a rayed appearance.

♀ with second joint of fore tarsi simple. Lamellæ orange, club-shaped.

(To be continued).

Some Coleoptera of the Chiltern Hills.—In a previous page of this Magazine (Ent. Mo. Mag., xvii, 38), I have alluded to that district of crumpled eretaceous hills which on the north bank of the Thames between Maidenhead and Henley, run up into Buckinghamshire, under the name of the Chilterns, and recorded some of the *Coleoptera* to be found there.

A few days spent at various times during the past year in that country has provided opportunities for adding to the list; and as South Bucks is not a district which has suffered much at the hands of the Coleopterist, perhaps I may venture to put a few of the more interesting captures on record.

Chief among these I may mention *Gnorimus nobilis*, of which I extracted nine imagines, besides several larvæ and pupæ, from a hole in an apple tree filled with finely comminuted wood mould. Four more imagines subsequently emerged from the pupæ, but owing perhaps to the shock of extraction or of the journey home, three of these were more or less aborted. The larvæ were in very different stages of growth: from small grubs under an inch in length to the corpulent white curved larvæ evidently full fed—the inference being that the rate of growth in the species is modified directly by the supply, or more probably by the condition, of the nutriment individually available, for it appears improbable that these larvæ were of more than one generation, if not of one oviposition, yet while thirteen had emerged before the middle of July, at least as many more remained throughout the winter in larval form. These fed slowly through the summer and autumn, not on the decayed wood mould which filled their hollow, but on the under-side of pieces of damp apple bark supplied to them. The imago enclosed in the pupal envelope before emergence is quite white, after emergence it becomes tawny-brown, not assuming the metallic green coloration which so distinguishes it for several hours.

From the same hollow, pupæ were obtained which subsequently appeared as *Eryx ater*, and an Elaterid larva was abundant, whose development is still awaited with interest. On another tree in this orchard a white polyporus was tenanted in numbers by *Heledona agaricola*.

I have already referred to the extensive beech woods which form so salient a feature of this district, and supply to Wycombe the material for its staple industry. Too young, or rather with their older timber too rigorously felled, to offer suitable conditions for those more desirable xylophagous species which more neglected woodlands supply, they yet in their fallen leaves provide a very convenient shelter for many species of *Staphylinidæ*. Here occur in abundance, *Quedius lateralis*, *Q. nigriceps*, *Q. picipes*, and *Q. peltatus*. In the autumn *Myllæna brevicornis* was in

profusion, less common were *Ilyobates nigricollis*, and *Megacronus inclinans*, and *Oecalea badii*. *Oxyptera umbrata* and *O. annularis* were frequent; of *Homalota*, the following: *H. silvicola*, *nigricornis*, *littorata*, *sodalis*, *debilis*, *aquatica*, *muscorum*, &c.; other species among these dead leaves, besides many commoner forms, were *Choleva spadicea*, *Notiophilus rufipes*, and *Silpha atrata*, var. *brunnea*. The decayed remains of a haystack in May proved very productive, here *Oxyomus porcatus*, *Monotoma rufa* and *M. quadricollis* swarmed, *Cryptophagus bicolor*, and various species of *Cercyon* and *Hister*, and rarely *Cryptophagus umbratus* and *C. distinguendus*, with hosts of undistinguished *Brachelytra*, &c. Timber in the right condition, as I have already observed, is very scarce in the district, and the only species taken therefrom worth mention were *Agathidium nigripenne*, *Cerylon fagi*, and *Lissodema quadripustulatum*.

I was only able to use the sweep net in July, when the weather was bad, and the results depressing. *Serica brunnea* swarmed about dusk on long grass in the woods, the males far outnumbering the females. From the slopes of the hills *Otiorrhynchus muscorum* may be recorded, *Apion stolidum* and *A. pubescens*, and *Meligethes bidens*.

The heavy floods in the Thames valley of December will be remembered by all who dwelt within reach of those waters. Such a "tide" requires for success to be literally "taken at the flood," and I was unable to work the refuse till most of its occupants had probably escaped. What remained were numbers of *Stomis puniceus*, *Anchomenus piceus*, and *Bembidium gilvipes*; *Bryaxis impressa*, rarely, and the usual common species are always found in such refuse; my friend, W. H. Dollman, however, who was with me at the time, took a specimen of *Hæmonia curtisi*, an unexpected capture.

Finally, a few moles' nests were disinterred, but although moles seem abundant all through this district, their nests are singularly difficult to discover. From one of these, however, fifteen *Aleochara spadicea* were extracted, and others yielded a few *Quedius vexans*, a single specimen of *Oxyptera spectabilis*, and the usual *Heterothops*.

The above list contains few species that are at all rare, and I only put them on record for the possible use of some future compiler of the Entomological Fauna of Buckinghamshire.—W. E. SHARP, South Norwood: April, 1908.

Coleoptera taken on the wing in Surrey.—The sudden hot sunny weather prevailing on May 1st and 2nd, after an extremely cold Easter, brought out an immense number of beetles, and amongst those taken at random on the wing by my sons or myself on these two days, on the heaths about Woking, there were several species I had not seen in the district before. It is worth while therefore to enumerate the best of them:—*Anisodactylus nemorivagus* and *binotatus*, *Amara famelica*, *Bembidium doris*, *Stenolophus vespertinus*, *Acupalpus brunnipes*, *consputus*, *meridianus*, *luridus*, and *dorsalis*, *Hydroporus memnonius*, *Cercyon lateralis* and *analis*, *Homalota debilicornis*, Er. (= *planifrons*, Wat.) (one ♂), *Calodera riparia* and *umbrosa*, *Tachinus laticollis*, *Megacronus analis*, *Stenus ater*, *Bledius fracticornis* and *femoralis* (both very variable), *Oxytelus clypeonitens*, *Stilicus fragilis* (one), *Platystethus cornutus* (black var.), *Philonthus marginatus*, *ventralis*,

and *sanguinolentus*, *Pseudopsis sulcata*, *Eumicrus tarsatus*, *Onthophilus striatus*, *Hister neglectus* and *purpurascens*, *Cytilus varius*, *Nitidula rufipes*, *Rhizophagus perforatus*, *Melanophthalma similata*, *Sericosomus brunneus*, *Heptaulacus testudinarius*, *Oxyomus porcatus*, *Balaninus villosus*, *Phytobius A-tuberculatus*, *Xyleborus dispar* (one ♀), *Hylastes ater* and *opacus*, &c.

Aleochara maculata, *Oxytelus clypeonitens*, *Ditoma crenata*, *Litargus bifasciatus*, and *Xyleborus sareseni* were taken on the wing at Horsley on April 30th.

Cardiophorus asellus was found running on the heath on May 2nd, and *Calli-cerus rigidicornis* was taken at both Guildford and Woking on May 9th. The latter occurred here, as in 1907, in the runs of *Formica rufa*, with *Quedius brevis* and *Myrmedonia humeralis*.—G. C. CHAMPION, Horsell, Woking: May 9th, 1908.

Coleoptera in flood-refuse at Oxford.—The unprecedented spring snowstorm of April 26th, and the heavy rain which followed it, caused our two Oxford rivers to rise to an unusual height, and a large extent of the low-lying land adjoining their banks was inundated. As soon as the weather permitted, my nephew, Mr. H. G. Champion, proceeded with me to investigate the floating *débris* brought down by the Cherwell; at first we fished the stuff out of the water with a net, which also served to secure many of the larger beetles seen coming down with the current. Several interesting species were obtained by this method, but our greatest haul was made in a few bushels of the flood-rubbish intercepted by a little foot-bridge spanning the Cherwell at Water Eaton. The crown of this bridge, which was only to be reached by wading knee-deep, formed a convenient little dry island for investigating the stuff, the upper surface of which, while still afloat, was during the hot mornings of May 1st and 2nd literally a seething mass of beetles. The majority of these were *Pæcilus cupreus* and *versicolor* in endless variety of colour, with *P. picipimanus* and other common *Carabidæ* almost equally numerous, while the three common species of *Agriotes* helped to make up the great bulk of the larger forms. Curiously enough, the genus *Anchomenus* was very poorly represented, and *Oödes helopioides*, a fairly common riverside species, was not seen by either of us. A rough list of the beetles actually observed in this one deposit amounts to no fewer than 340 species, and this omits a good many obscure *Staphylinidæ*, &c., which cannot be identified off-hand. A decidedly unpleasant feature of this mass of insect life was the abundance of the ant, *Myrmica rubra*, which was present in thousands, and was to be seen in the act of forming new communities in the drier parts of the rubbish; these vicious little creatures swarmed all over us, and our wrists and ankles soon bore testimony to the efficiency of their stings.

Of course the greater number by far of the beetles were of common and widely distributed forms, but among them were several species of decided rarity, and some welcome additions to my local list. No fewer than eleven out of the twelve species of *Lathrobium* now known to occur in the district were represented, viz., *elongatum*, *boreale*, *fulvipenne*, *brunnipes*, *longulum*, *fovulum*, *filiforme*, *quadratum*, *terminatum*, *multipunctum*, and *pallidum*; of the last-named rare insect we each obtained a short series. Of other species, taken either on the spot or in "siftings" brought home and examined at leisure, the following may be mentioned:—*Chlænius nigricornis*, sparingly, and var. *melanocornis*, rare; *Harpalus parallelus* (or what appears

to be this form); *H. latus*, var. *erythrocephalus*, frequent; *Pterostichus anthracinus*, common, and *Trechus micros*, sparingly; *Helophorus dorsalis*, rare; *Ilyobates propinquus*, a few specimens of this rare species (my friend, Mr. J. Collins, also took *I. nigricollis* here); *Homalota languida*, one ♂, and *H. angustula*, sparingly; *Deinopsis erosa*, *Conosoma immaculatum*, *Lamprotus saginatus* (3) and *Staphylinus latebricola* (1). *Ocytus fuscatus*; this somewhat scarce species, of which there was previously only one old record from Oxford, turned up in considerable numbers. *Achenium depressum* and *humile*, frequent; *Dianthus cœrulescens*, *Stenus fuscipes*, *circularis*, *vasellus*, &c.; *Platystethus alutaceus* and *nitens*, one or two of each. *Agathidium convexum* and *rotundatum*, *Catops sericatus*, *Kissister minima*, sparingly; *Omosiphora limbata*, rather common. *Chrysomela fastuosa*, *Scaphidema metallicum*, *Apion cruentatum*, *Tanymericus palliatus*, *Barynotus elevatus*, scarce; *Alophus triguttatus*, common and fine; *Hypera suspiciosa*, *Tychius squamulatus*, *Phytobius comari*, *Baris lepidii*, &c.—JAMES J. WALKER, "Aorangi," Lonsdale Road, Summertown, Oxford: May 11th, 1908.

A food-plant of Ceuthorrhynchius setosus, Boh.—This very distinct and somewhat uncommon little weevil, which seems usually to occur by single specimens, has quite recently been found by me in fair numbers on an inconspicuous little Cruciferous plant, *Sisymbrium (Arabis) thaliana*, Hook., growing in sandy situations at Tubney, Berks. Dr. Power (cf. Ent. Ann., 1871, p. 47) once found *C. setosus* "abundantly on *Iberis amara*, L.," at Horsell; but I have repeatedly searched in vain for the beetle on this plant at Streatley, where it is a conspicuous and beautiful feature of the Flora of the chalk hills.—ID.: May 20th, 1908.

Aphodius constans, Duft., in Middlesex, Herts, and Essex.—With reference to Commander Walker's note at p. 111 ante, on the abundance of this species near Oxford this spring, I may mention that it has also occurred to me this year in a locality in each of the three counties of Middlesex, Herts., and Essex. I first met with it on February 6th at Holyfield, near Nazing, West Essex, where it was not at all uncommon, in spite of the early date. A little later I unexpectedly found a few in a field here at Edmonton. On April 12th it turned up in large numbers on the marshes at Cheshunt, East Herts. I can confirm Commander Walker as to its partiality for half-dry cowdung.—F. B. JENNINGS, 152, Silver Street, Upper Edmonton, N.: May 1st, 1908.

Capture of Notodonta phoebe, Sieb. (= *tritophus*, F.), in Bedfordshire.—On May 13th, 1907, whilst collecting round the electric lights at Bedford, I took a specimen of *Notodonta phoebe*, Siebert (= *tritophus*, F.). From Mr. R. South's recent book on the Moths of the British Isles, there would appear to be only six other records of this moth or its larva having been taken in Britain.—W. S. BROCKLEHURST, Bedford: May 8th, 1908.

Bassus flavipes, Holmgr.—I captured four females of this very rare Ichneumon in the Walkham Valley, near Grenofen Bridge, attracted by the sap flowing from an old oak tree; the tree apparently was suffering from an attack of a *Cossus* larva. Mr. Morley very kindly identified them, and tells me that many males and one

female have also been taken near Stockholm by M. A. Roman on the juice exuding from an old oak. The curiosity is in the form of the abdomen of the female; its two basal segments and the base of the third are comparatively round, but the remainder are laterally pressed flat as if by accident with a heavy weight. It was captured on June 17th, 1890.—G. C. BIGNELL, The Ferns, Home Park Road, Saltash: *April 16th*, 1908.

[In my Synopsis of the Palearctic *Bassides* (Trans. Ent. Soc., 1905, pp. 419-138), I was able to instance only four British specimens of *Trichomastix flavipes*, of which I had seen but one male. The female is described by Bridgman as a new species (*Bassus tibialis*) in Trans. Ent. Soc., 1883, p. 170, on the strength of three specimens; two of which were bred by Mr. J. E. Fletcher from pupæ of some Dipteron dug up at Worcester on May 22nd, 1872, the third was taken by Mr. F. Norgate, probably (Trans. Norfolk Soc., 1893, p. 629) in Norfolk. The genus was erected by Vollenhoven (Tijdschr. voor Ent., 1878, p. 161) for the reception of the present species, there also described as new under the name *T. polita*, "trouvé dans les dunes de Scheveningue." It was, however, first described by Holmgren (Sv. Ak. Handl., 1855, p. 356) "Hab. in Smolandia ad Anneberg, rarius;" and is also recorded from Silesia and Denmark by Thomson (Opusc. Ent., xiv, 1474), "Utkläckt ur en Scæva-puppa." Its habit of frequenting exuding sap has not before been recorded, and is, so far as I am aware, unique among the *Ichnæumonidæ*. The abdomen in Mr. Bignell's specimens varies considerably in length, and the segments appear to be unusually retractile in this species, which is much more closely allied to *Phthorinus anomalus*, Morl., than, in my previous ignorance of its female, I had suspected.—CLAUDE MORLEY].

Scarce Tenthredinidæ.—In the last instalment of "Help-Notes" Mr. Morice mentions the occurrence of several rare British species, to these I would add two more. *Pamphilus gyllenhali*, Dhlb.—Mr. E. A. Atmore took a ♀ in June, 1903, near King's Lynn on flowers of *Heracleum sphondylium*, which has been sent to Mr. Morice and determined by him; it is the second British specimen. *Xyphydria camelus*, L.—Taken by Mr. R. Brameld in the New Forest in 1906, and now in the collection of Mr. A. E. Gibbs, of St. Albans. I believe one or more others were taken in that district about the same time. Mr. Morice writes (Ent. Mo. Mag., 1904, p. 38), "Most British specimens are from Scotland or the North of England; it has never been sent to me by any correspondent." It is recorded from the New Forest (Entomologist, xxxiv, p. 54).—E. N. BLOOMFIELD, Guestling: *May 8th*, 1908.

Diptera in Dumbartonshire in 1907.—The year 1907 proved fairly productive of *Diptera*, though most of the other Orders were not much in evidence. Quite a large number of rare species were taken, and our local list is now in something like a satisfactory state. Among others, the following species were met with, most of them being additions to the West of Scotland list:—*Rhamphomyia æthiops*, Ztt.; *Empis lutea*, Mg.; *Pachymeria femoratus*, F., *P. palparis*, Egg.; *Ragas unica*, Wlk., common on trunks of trees; *Trichina flavipes*, Mg.; *Euthyneura myricæ*, Wlk., one specimen; *Drapetis nervosa*, Lw., one specimen at Cardross; *Chersodromia arenaria*, Hal., very common at Cardross among stones and seaweed on the shore; *Tachydromia pubicornis*, Ztt., *T. varia*, Wlk., *T. calceata*, Mg., common, *T.*

flavipes, F., *T. flavicornis*, Mg.; *Hypophyllus discipes*, Ahr., several of both sexes taken in a hothouse at Strathleven; *Diaphorus ocellatus*, Flin.; *Porphyrops spinicora*, Lw., *P. consobrina*, Ztt. a pair at Cardross; *Syntormon tarsatus*, Flin.; *Teuchophorus monacanthus*, Lw., common; *Micromorphus albipes*, Ztt., common; *Callinigia speciosa*, Mg., *C. amena*, Mg.; *Alloestylus sudeticus*, Schinbl., common; *Homalomyia fuscata*, Flin., *H. difficilis*, Stein., two males; *Lispocephala alma*, Mg.; *Amaurosoma inerme*, Beck (1), common, *A. armillata*, Zett. (2), not uncommon; *Leptopa filiformis*, Zett., one ♂; *Orygma luctuosum*, Mg., one ♂, Cardross; *Neottioptilum præustum*, Mg., a dozen specimens bred from pupæ found in an old greenfinch's nest in December, one *Ichneumon* emerged also; *Sciomyza scutellaris*, v. Ros (= *pollidicarpa*, Rnd, of the List), *S. cinerella*, Flin., Cardross; *Sapromyza quadrivittata*, Lw. (3), several specimens beaten out of furze bushes at Bonhill and Murroch Glen, *S. anisodactyla*, Lw., very common in a few parts of Bonhill district, *S. affinis*, not uncommon; *Sepsis pilipes*, v. d. Wulp.; *Anthomyza unguicella*, Ztt. (4), not uncommon on the shore at Cardross; *Diastata inornata*, Lw. (5), very common; *Trimerina madizans*, Flin.; *Psilopa leucostoma*, Mg., Cardross; *Philhygia picta*, Flin., *P. stictica*, Mg., *P. posticata*, Mg., *P. interstincta*, Flin.; *Pelina ænescens*, Stnh.; *Agromyza scutellata*, Flin., *A. capitata*, Ztt., common; *Leucopis obscura*, Hal., and *Sphærocera monilis*, Hal., common on carrion on the hill side above Bonhill. Several of the foregoing species are not yet in the British list. Unless where otherwise stated, all the species were taken at Bonhill. Mr. Collin has examined or identified several of the species in this list, and to him my thanks are due for much assistance in some of the groups.—F. R. MALLOCH, Bonhill, Dumbartonshire: May, 1908.

Notes on the species new to the British List, included among the above:—

- (1). *Amaurosoma inerme*, Becker.—In this species the clump of short bristles in front of the front femora characteristic of several species of the genus are absent, and all the femora are dark, with only the extreme base and tip pale. Col. Yerbury has taken this species at Aviemore (Sutherland) in May, 1904.
- (2). *Amaurosoma armillata*, Ztt., is allied to *A. tibiella*, but the femora are broadly yellowish at the tip, and the front femur has only 4—6 bristles beneath instead of the clump present in *tibiella*. I have seen specimens from only Mr. Malloch.
- (3). *Sapromyza quadrivittata*, Lw.—A very distinct dull whitish-grey species, with four brown stripes on the thorax, and two on the frons. The arista is only pubescent, the palpi black, and the third antennal joint brownish. Dr. D. Sharp has taken specimens in the New Forest in June, 1903, and July, 1904.
- (4). *Anthomyza unguicella*, Ztt.—This is a species with entirely yellow pleuræ and somewhat darkened disc to the thorax (apparently less darkened in the female than in the male). Dr. J. H. Wood and Colonel Yerbury found it in some numbers in Herefordshire in 1902.
- (5). *Diastata inornata*, Lw., is closely allied to *D. costata*, Mg., but neither the outer cross vein nor the costal margin of the wing (except at the base) are infuscated, and it appears to be a much commoner insect. I have taken it in numbers at Stokenchurch (Bucks), and near Woodbridge (Suffolk), while it has been found by Dr. J. H. Wood and Colonel Yerbury in Herefordshire.

J. E. COLLIN, Newmarket.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting, held at the Royal Institution, Colquitt Street, Liverpool, *Monday, March 16th, 1908.* Mr. R. NEWSTEAD, A.L.S., Vice-President, in the Chair.

The evening was devoted to an exhibition of *Boarmia repandata* and its varieties. Long series of the moth from various localities, chiefly from the North of England and from Wales, were shown by Mr. Robert Tait, Junr., Mr. C. F. Johnson, and Mr. William Mansbridge. The rich dark mottled forms from Delamere Forest; the greyish-white blotched race with the locally rare melanic aberration, also with white blotches, from Penmaenmawr; melanic varieties from Mansfield and Huddersfield, as well as absolutely black aberrations from Knowsley, Lancashire; the common London forms from Epping Forest and Wimbledon; var. *conversaria* from North Cornwall and New Forest; besides series of pale-coloured moths from various localities, were all represented in the above exhibits. A discussion ensued in which the Members gave their experiences with *B. repandata*. Mr. Tait stated that in breeding from extreme forms about 75 per cent. followed the parents, but pointed out that he had found it difficult to get black varieties to pair. He also remarked how closely the predominating pale form from North Wales resembled the bare rocks upon which it rested in the day time. Mr. Johnson, in his series from Maer Wood and Burnt Wood, Staffs., remarked on the great difference shown by the species in these two localities, only four miles apart. Those from the former locality being chiefly very dark greyish-black, while the latter place gave a lighter and much *browner* form. Mr. Charles Capper, London, sent a series of *repandata* from Wimbledon, and a series of *H. leucophæaria* from Richmond Park for exhibition. Mr. Newstead brought four drawers showing the life-history of the Tsetse Flies (*Glossina*), being the unique series of these flies from the Museum of the Liverpool School of Tropical Medicine. This very interesting exhibit attracted a large amount of attention, and in answer to questions Mr. Newstead alluded to the chief points in the economy of these flies. — H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secretaries*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, March 26th, 1908.*—Mr. ALFRED SICH, F.E.S., President, in the Chair.

Mr. Browne exhibited a large storebox of British *Lepidoptera*, which he was presenting to the Society. Mr. Tonge, some *Lepidoptera* recently received from Australia, including *Pyrameis kershawii*, and also a living specimen of *Xylocampa areola* (*lithoriza*) taken that day. Mr. R. Adkin, a series of *Scoparia truncicolella* taken at Oxshott on pine trunks. Dr. Chapinan, a living nearly full-fed larva of *Aricia agestis* (*astrarche*), which had fed up indoors. Dr. Hodgson, sketches of the resting attitude of *Adopæa flava* (*thaumas*) and read notes. Mr. Turner, some two dozen species of Butterflies characteristic of Sierra Leone and West Africa, including several species of *Euphædra*, *Aterica*, and *Acræa*, *Hypolimnas egesta*, *Amauris niarius*, *Mylothris rhodope*, *Lachnoptera iole*, *Salamis anavardii*, *Precis octavia*, *Catuna cœnobita*, *Vanessa harmonica*, &c. He and Mr. Sich also read notes

on the section of the genus *Tinea* containing *T. fulvimitrella*, *T. arcella*, *T. corticella*, *T. parasitella*, *T. picarella*, *T. granella*, *T. cloacella*, *T. albipunctella*, *T. caprimulgella*, *T. nigripunctella*, and *T. confusella*.

Thursday, April 9th, 1908.—The President in the Chair.

Mr. Kaye exhibited an Agaristid moth, *Scirocastnia præfecta* from Peru, which by its antennæ and general superficial characters closely resembled an Erycinid. Mr. B. Adkin, a drawer of the various forms of *Angerona prunaria* and another of *Boarmia repandata*. A discussion arose as to labelling insects geographically. It was suggested that a label of locality might be placed at the side below each set of a species from one locality. This would be impossible in a collection where the idea was merely to group the varieties. Mr. South exhibited several species of *Cucullia* with a view to gain some definite idea as to what the insect known as *C. scrophulariæ* really was. Considerable discussion took place, but no definite result was arrived at. Mr. Sich, a number of "house-moths," some eleven species, including *Endrosis fenestrella*, *Borkhausenia pseudospretella*, *Tinea pellionella*, *T. pallenscentella*, *T. fuscipunctella*, *Tineola biselliella*, &c., and read a short paper on his exhibit. A discussion took place as to the ravages of these pests.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, May 6th, 1908. Mr. C. O. WATERHOUSE, President, in the Chair.

Mr. Thomas Godfrey Andros, of Wilton House, 31, St. Saviour's Road, Jersey; Mr. Chourappa Chetti, Assistant Curator of the Government Museum at Bangalore, India; Mr. Frederick Charles Fraser, I.M.S., M.D., M.R.C.S., L.R.C.P., of Trichinopoly, India; Mr. Walter M. Giffard, of Keeaunoki Street, Honolulu, Hawaiian Islands; and Mr. Alfred Vander Hedges, of 42, Kensington Park Gardens, W.; were elected Fellows of the Society.

Mr. A. H. Jones exhibited an example of the melanic ab. *nigra* of *Tephrosia consonaria* bred from a wild ♀ taken near Maidstone, by Mr. W. Goodwin, and a living larva of *Sesia andreniformis* feeding in the stem of *Tiburnum lantana*. Mr. R. Shelford, a number of specimens of insects in amber of great geological age, showing several forms closely allied to those of existing insects; one Orthopteron being very near to *Ectobia lupponica*. The President, a living example of *Blatta* found in bananas from Mexico. Mr. Shelford said he thought the species to be *Panchlora nivea*, Linn. Mr. H. M. Edelsten, a living larva of *Nudaria senex*, and living larva and pupa of *Calligenia miniata*. He drew attention to the elubbed bristles on the former as being incurved. Mr. O. E. Janson, a white aberration of *Epinephele jurtina*, taken in Holme Park, Sussex, in June, 1904. Professor E. B. Poulton read a letter from Mr. S. A. Neave giving an account of the bulbul feeding its young with various "unpalatable" species. He also exhibited a collection of Asilids and their prey from the Tring Museum, and a series of *Neptis* from Madagasear to illustrate the specialization of this butterfly in its island forms. A discussion on the characteristic coloration of insular forms in this and other *Lepidoptera* followed, in which Dr. T. A. Chapman, Mr. G. A. K. Marshall, the Rev. G. Wheeler, Col. N. Manders, and other Fellows participated. Lieut.-Col. N.

Manders exhibited a collection of butterflies from Bourbon demonstrating examples of mimicry, and the effects of the interaction of species. He concluded by describing the physical characteristics of the island, and said that the area favourable for the existence of *Euplœa*'s was extremely small, and as the larvæ of *goudoti* and *euphon* fed on the same plants there was in all probability a struggle for existence set up in which the invader proved the stronger and eventually exterminated its rival. In the discussion which followed Professor Poulton remarked that in the neighbouring island of Rodriguez there was a species of *Euplœa* (*desjardinsi*) greatly resembling *euphon*, and no doubt a geographical race of that species, and this would also suggest that *euphon* formerly existed in Bourbon. Mr. W. J. Lucas, a glow-worm found at Oxshott on May 4th, inside the shell of the snail *Helix cantiana*. There was no doubt that the larva was feeding on the snail, for on breaking away parts of the shell he found the moist remains of it near the apex. Mr. Lucas also brought for exhibition the ♂, ♀, and nymph of the dragonfly *Oxygastra curtisii*, first described by the late J. C. Dale, and at that time supposed to be confined to the British Islands. Mr. H. St. J. Donisthorpe, an example of the beetle *Xantholinus distans*, Kr., taken at Helton, near Dumfries, on May 1st, a species new to the British list.*

Mr. W. J. Lucas read a paper on "The British Dragonflies of the 'Dale Collection.'" Dr. T. A. Chapman, on "The Distinction of Several Species of *Everes*, determined by their Genitalia," and exhibited photographs to illustrate his remarks. He announced that as the result of his investigations *Everes argiades*, Pall., and the so-called var. *coretas* were separate, though very nearly allied species.—
H. ROWLAND-BROWN, *Hon. Secretary*.

ON THE PROCTOTRYPID GENUS *ANTÆON*,
WITH DESCRIPTIONS OF NEW SPECIES AND A TABLE OF THOSE
OCCURRING IN BRITAIN.

BY THE LATE ARTHUR J. CHITTY, M.A., F.E.S., &c.

[It will be with considerable satisfaction that English entomologists learn that the very fine collections of all Orders of British insects amassed by Mr. Chitty have been presented by Mrs. Chitty to the Hope Department of the Oxford University Museum, with the proviso that a selection of the more conspicuous insects, suitable for the younger students, be presented at Prof. Poulton's discretion to Eton: in remembrance of Mr. Chitty's own younger days, and in anticipation of his son's advent on the stereotyped line of education.

While going through these collections and arranging for their transmission, I found that which I had hoped to discover—the following very valuable article, upon which I was aware that Mr. Chitty was engaged when he wrote me, for the last time, that he feared he "was in for a bad time," on November 26th last. This

* *X. distans* has been recorded by me from Braemar, cf. Ent. Mo. Mag., x, p. 158 (December, 1878).—G. C. C.

is here set forth exactly as I found it, though here and there the caligraphy was not of the easiest to decipher, being obviously jotted down with one eye still to the microscope.

So little has ever been done in Britain upon the *Proctotrypidæ* that it is well, I think, to add a few details of capture, &c., respecting the other species of this genus in Mr. Chitty's collection, which had recently been determined by himself, with the aid of the various papers on the subject by Kieffer, Thomson, Ashmead, and Walker. Nothing could be more regrettable than the loss rendered to British entomological science by his death, except that created amongst his circle of friends.—CLAUDE MORLEY, Monk's Soham House, Suffolk : *February 25th, 1908.*]

ANTÆON BARBATUS, *sp. n.*

♀. This species at once works down to No. 7 of Kieffer's table, and has the wings hyaline. The question whether it has a raised or sunk line on the head before the antennæ was, however, not easy of solution, and I think it very easy to make a mistake in this particular. The internal branch of the pincers is very indistinct; it has no plate unless two of the hairs at the end, which are a little thicker, should be so termed. It has a few hairs along its length. It is soldered throughout its length to the tarsal fifth joint. The metatarsus is as long as the next three joints, the fourth being short. The head, which is rather wide with the base not strongly curved or margined, is strongly coriaceous, somewhat dull and with short hairs. There are indistinct, rather irregular ridges along the inner margins of the eyes. Mandibles testaceous. Mesothorax shining, but finely alutaceous, with long whitish hairs. Metathorax with a cross ridge before the declivity, and another at it; base reticulate, declivity very finely rugose. Stigma except at base, and radius, brown; the other veins pale. Legs testaceous; base of hind coxæ, hind femora except at extreme base and apex, the thickness of the front and middle femora below, dark brown; hind and middle tibiæ, with fifth joint of their tarsi, darkened.

♂. Follow Kieffer's table of ♂♂ to No. 7, distinguish from *A. flavinervis*, as described, by the scape being decidedly longer than the third joint, the mesonotum being punctured in front, the stigma and radius being brown, the other nervures brownish-yellow, the antennæ black; the legs testaceous, with all the coxæ in part, the thickened part of the front four femora below, and the hind femora except their base, blackish-brown; the four hind tibiæ darker, especially behind; apex of intermediate tarsi and the hind tarsi also darker; tegulæ brown.

The type of this species was beaten from birch in the Bentley Woods, near Ipswich, on May 25th, 1902, by Mr. Claude Morley, who has taken a second specimen by sweeping low herbage at Wimbledon on June 21st, 1897; he noticed that this specimen had the power of feigning death, curled, like a *Chrysid*, in a complete ball. The Rev. T. A. Marshall considered it to be *Antæon brevicornis*,

Dalm. I took one specimen at Huntingfield, near Faversham, on May 21st, 1904; and on May 27th, 1906, I beat it commonly from birch at Cannock Chase.

ANTEON KIEFFERI, *sp. n.*

♀. First part of the radius distinctly longer than the second. Head with a single frontal ridge, starting from the front ocellus and not reaching the space between the antennæ. Head entirely rough, with large punctures on the vertex, shagreened about the ocelli, where the large punctures are almost entirely wanting. Head rounded and narrowed behind the eyes; occiput straight and bordered. Prothorax longer than mesothorax and arcuate behind, largely punctured in front, with short radiating striæ, narrowed in front and subquadrate behind. Mesothorax and scutellum shining, with a few punctures [mesonotum very finely alutaceous?—C. M.]. Metathorax with three areæ, but the outside longitudinal boundaries are indistinct, entirely rugulose, level at base and then sharply declivous (30°). Internal branch of the chelæ with plates or hair, except near the bend, which is only moderately strong; apex with plates as long as the thickness of the branch; middle of branch, with what are apparently short plates, in proportion (nearly) of 3.1.1.4.2; inner branch free from fourth, and reaches back to the second joint; empodium two-thirds of fifth joint, and dark at swollen apex. Antennæ moderate, dark brown except basal three-fourths of scape, which is reddish-yellow; scape long and curved; second joint much thinner, more than twice as long as thick, and not half the length of the first, which with pedicellus is about equal to second and third; fourth and fifth a little shortening, fifth slightly thicker, sixth shorter and thicker, seven and eight and nine shorter and equal in length and of same thickness as sixth, tenth one-third as long again as ninth; second joint and apex of first pieceous, third to tenth black. Face hairy in front, clypeus black, mandibles and palpi reddish-yellow. Wings yellowish and a little darkened near the stigma; basal nervures pale, stigma brown except at extreme apex, radial nervure concolorous; first section straight and nearly three times as long as the second. Legs yellow; hind femora brown, darker at apex; hind tibiæ a little darker, especially at apex, than the rest; coxæ black at base.

This species is described from a single ♀ taken by Mr. Claude Morley on the water of a horse-trough on the outskirts of Ipswich, on May 13th, 1895; it was named *Chelogyneus frontalis*, Dalm., by Rev. T. A. Marshall.

ANTEON RUFULOCOLLIS, *sp. n.*

[I can find no detailed description of this species among Mr. Chitty's MSS., but doubtless the characters assigned to it in the following table will be sufficient to indicate its distinction from the allied species. In Mr. Chitty's collection is a single ♀, which he captured at Tubney, near Oxford, on July 1st, 1906.—C. M.]

ANTEON ELLIMANI, *sp. n.*

♂. Go to No. 15 of Kieffer's table, then: Antennæ with base of scape and last

four joints reddish-yellow ; other joints black above, reddish-yellow below. Head wider than thorax, large, rather shining, punctured, more closely about the eyes. Thorax shining, finely punctured ; notauli marked in front ; metathorax arched from base, rugose, with a distinct area. Wings hyaline ; stigma, radius and subcosta brown, costa lighter, other nervures pale. Coxæ dark, rest of legs pale yellowish, except apices of all the tarsi, lower part of the thickness of the front and intermediate femora ; hind femora, except knees, and the hind tarsi, a little darker than the others.

I took the type of this species while collecting with Mr. E. Geo. Elliman, of The Broadway, Chesham, Bucks, in honour of whom and his very excellent work among the *Micro-Coleoptera* I have named it. It was captured on June 17th, 1906 ; Mr. Claude Morley took a second specimen in Marvell Copse, near Newport, in the Isle of Wight, on June 25th, 1907.

ANTÆON BREVIVENTRALIS, sp. n.

♂. Go to No. 18 of Kieffer's table. Metathorax gradually sloping. Head shining, distinctly punctured, large. Abdomen only a little longer than the metathorax. Scape a little shorter than joints two and three ; antennæ reaching beyond end of petiole. Apex of mandibles with four teeth. Mesonotum shining, less strongly punctured than the head ; notauli distinct in the front half. Wings not quite clear hyaline ; stigma, costa, subcosta and radius brown, other nervures pale and little visible. Legs black or dark brown, with apices of front femora whitish ; front tibiæ and tarsi light testaceous ; intermediate knees and base of tibiæ, and tarsi testaceous ; base of hind femora pale testaceous.

The only specimen I have seen of this species was captured by me at Walmer on June 24th, 1904.

ANTÆON SUFFOLCIENSIS, sp. n.

♂. Go to No. 25 of Kieffer's table, but hind tibiæ dark ; then include : Head dull and shagreened (or very finely punctured), traces of notauli, antennæ as there described under *A. neglectus*, Kieff., but third joint a little shorter proportionately to the others and about twice as long as thick. Mesonotum shining, punctured ; metathorax and wings as in *A. dorsalis*, but stigma and tegulæ reddy-brown and radius almost pale. Coxæ and trochanters black ; front legs dark testaceous, femora darker except at apices ; middle legs as the front ones, but darker throughout ; hind legs almost black.

This description is drawn from two specimens in Mr. Morley's collection, which were in all probability captured in Suffolk. [Unfortunately the two examples here referred to were taken by Mr. Albert Piffard at Felden, near Boxmoor, in Herts.—C. M.]

ANTÆON MORLEYI, sp. n.

♂. Follow Kieffer to No. 32. Head distinctly punctured, more closely in front, shining. Pronotum closely and almost rugosely punctured ; mesonotum

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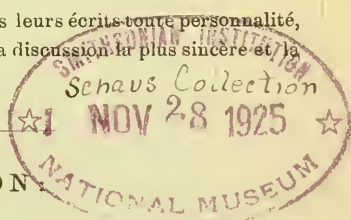
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punctured in front, but very sparingly behind; notauli very distinct in front, but not entire; metanotum sloping from base in a decided curve and somewhat abruptly behind, rugose with an area a little more finely rugose. Antennæ a little tapering, long, black throughout; third joint longer than scape, not as long as the first and second together; the second nearly twice as long as third, which is about three times, and the fourth about four times, as long as thick; all the remaining joints about three times as long as thick. Coxæ dark, with the trochanters, or at least the posterior, testaceous; front legs testaceous except the centre of femora and last joint of tarsi, which are darker; intermediate legs testaceous, except lower part of thickness of femora and last joint of tarsi; hind legs testaceous, with base of femora, knees, apex of posterior tibiæ and tarsi darker. Wings hyaline; stigma and radius brown, other veins testaceous; tegulæ pale.

This species is named in honour of Mr. Claude Morley, F.E.S., &c., the learned author of "*Ichneumonologia Britannica*," who has done so much towards the elucidation of our indigenous parasitic *Hymenoptera*, and who captured the only specimen I have seen of the present species by sweeping flowers of meadow-sweet at Foxhall, in Suffolk, on August 10th, 1902.

ANTEON BEAUMONTI, *sp. n.*

♂. Go to No. 36 of Kieffer's table. Wings slightly brownish. Antennæ very long, longer than whole body. Head transverse, not so square as usual, contracted behind the eyes, very shining, with few punctures. Legs testaceous; base of coxæ, of femora except extreme base of the anterior, hind knees, apex of hind tibiæ and tarsi, brown.

A single ♂ was taken at Chobham on July 28th, 1894, by the late Mr. Alfred Beaumont, F.E.S., whose extensive collection has been of great assistance to me, and in whose honour this insect is named. In his collection it stood under the name *Dryinus penidas*, Walk. (Ent. Mag., iv, 1837, p. 423, ♂ = *D. scapularis*, Walk., *lib. cit.* p. 419, ♀), which is recorded from the London district in June or July, and as found by Haliday near Holywood, in Ireland. It may be the same insect; but Walker's description is certainly insufficient.

ANTEON LUFFNESSENSIS, *sp. n.*

♂. First section of the radius a little shorter than the second; the second prolonged by an almost transparent vein to the wing margin; the radius as a whole running in a curved line, with only a slight break between the two sectors. Metathorax gradually sloping without an area, rugulose, but not really dull. Head and thorax shining and brilliant, with scattered punctures. Antennæ long; scape decidedly shorter than the third joint, not quite twice as long as the second, which is more than twice as long as wide; the third quite four times as long as wide, and the fourth even longer; the ninth about as long as the third, and the tenth as the fourth. Mesonotum and metanotum as in *A. hyalinipennis*, but the latter is not dull; mesopleuræ shining, punctured in front around what I take to be the trachea.

Cubitus and discoidal nervure present, but less marked than the other nervures. Anterior legs testaceous or reddish-yellow, except basal half of coxæ, which are black; hinder legs darker, femora with traces of darker lines, especially at base and apex; coxæ as those of front legs. Wings not quite hyaline; nervures much the colour of the front legs, and stigma of the hind ones. Very close to *A. hyalinipennis*, Kieff., and to *A. fuscipennis*, Kieff., but apparently distinct.

This species is described from a single specimen taken by Mr. W. Evans at Luffness Links, Scotland, on July 19th, 1898. [It may well be that Mr. Chitty intended the name of this species to be "*luffnasensis*"; I have only MS. to take it from, and am strongly of opinion that he altered his mind as regards the more correct rendering of the Latinised locality; if the above be the less classic form, the fault is my own.—C. M.]

ANTEON OBSCURICORNIS, Kieff., ♂.

Only the ♀ of this species is described. For the ♂ follow Kieffer's table to No. 25. Head shining, sparingly punctured. Parapsidal furrows indicated. First part of radius three times as long as the second. Legs black or blackish-brown; trochanters in part, knees (hind knees very narrowly), base of front femora, front tibiæ and base of the four front tarsi, dirty brownish-yellow.

I beat two ♂♂ of this species, together with six ♀♀ and my *A. barbatus*, described above, from birch at Cannock Chase on May 27th, 1906.

(To be continued).

HYDROPHILIDÆ FOUND NEAR WEST AYTON, YORKSHIRE.

BY THE REV. W. C. HEY, M.A.

When I came to reside at West Ayton seventeen years ago, my searches for *Hydrophilidæ* were singularly unsuccessful, and I was much disposed to write down the region as barren. I am now as much inclined to consider it richer in *Hydrophilidæ* than perhaps any district in Great Britain. West Ayton lies about five miles south of Scarborough, just at the south end of Forge Valley, a picturesque, post-glacial cañon of the river Derwent. Within a short distance of my house are low-lying pools, upland moors, with quite a sub-alpine character, large streams, and trickling rills. It is, therefore, not remarkable that after careful research a very large number of species of *Hydrophilidæ* have rewarded my labours, as the appended list shows. I include *Cælambe* and *Deronectes*.

Cœlambus versicolor, Schall.—Abundant in large disused brick ponds at Snainton, but not found elsewhere.

C. inaequalis, F.—Common and general about Ayton.

C. impresso-punctatus, Schall.—Ponds at Ayton and Snainton, very scarce.

Deronectes latus, Steph.—Under stones in a mountain stream near Langdale.

D. assimilis, Payk.—In the brick ponds at Snainton only.

D. depressus, F.—Very common in the river Derwent at Ayton.

D. duodecim-pustulatus, Fab.—Also in the river Derwent at Ayton, but scarce.

Hydroporus pictus, F.—Snainton, &c. A common species.

H. granularis, L.—This minute species occurs in some very old brick ponds near the village of Seamer.

H. rivalis, Gyll.—In rapid reaches of the Derwent in Forge Valley.

H. septentrionalis, Gyll.—In company with *rivalis*, though hardly so plentiful.

H. lineatus, F.—Common in the district.

H. tristis, Payk.—This is abundant in pools on the high moors.

H. umbrosus, Gyll.—Frequent at Ayton and Seamer.

H. angustatus, Sturm.—Frequent.

H. gyllenhalii, Schiödte.—Very plentiful in pools on Seamer Moor.

H. morio, Dej.—In great quantities in the trench round a barrow on Hutton Buxel Moor, and in many pools on the high moors.

H. vittula, Er.—In the Seamer brick ponds, in small numbers.

H. palustris, L.—Very common.

H. erythrocephalus, L.—common.

H. rufifrons, Duft.—Seamer brick ponds, only two examples.

H. longulus, Muls.—This occurs in tiny rills trickling through *Sphagnum* on the slopes of the high moors near Langdale.

H. melanarius, Sturm.—Not so rare as supposed. I have taken it in several mossy pools on the high moors.

H. memnonius, Nic.—In many ponds, but not in plenty.

H. nigrita, Fab.—Common.

H. discretus, Fairm.—A few individuals in small pools.

H. pubescens, Gyll.—Common.

H. planus, F.—Very common.

H. lituratus, F.—Seamer, very scarce.

H. oblongus, Steph.—Seamer brick ponds ; very uncertain in appearance. Some years I have not been able to take it, while in others I have met with a score or more.

My list contains 30 species ; two more have been met with in the district by other collectors, viz., *ferrugineus*, Steph., and *obsoletus*, Aubé.

Ponds and watercourses are disappearing so rapidly before the devastating hand of improvement, that it is especially desirable that records for aquatic insects should be preserved.

West Ayton, Yorkshire :

June, 1908.

PHYLLOTRETA DIADEMATA, Foudr.:
AN ADDITION TO THE BRITISH LIST OF COLEOPTERA.

BY E. A. NEWBERY.

The small group of the genus *Phyllotreta* with entirely black elytra and pale basal joints to the antennæ is a difficult one to differentiate, and it is with some hesitation that I venture to bring forward the above insect as British.

Capt. Sainte Claire Deville, however, assures me that the specimens I sent him for corroboration are undoubtedly the *P. diademata* of Foudras, which should therefore find a place in our list. He suggests that *P. crassicornis*, All., is also very likely to occur in Britain; it is, on this account, included in the following table:—

- A. Antennæ (relatively short) with 1st joint entirely red; 5th joint notably longer than 4th. On *Iberis amara*. L., 1.5 mm.....[*P. crassicornis*, All.].
- AA. Antennæ with 1st joint black or spotted with black above, or at the base; 4th and 5th joints not disproportionate.
 - a. Head punctured solely on a transverse zone going from eye to eye; punctures of elytra strong, close, and confused. L., 1.8 mm....
P. diademata, Foudr.
 - aa. Head more or less entirely punctured.
 - b. Punctuation of elytra coarser and more regular, almost in lines, especially near base; average size larger. L., 1.8—2 mm....
P. atra, F.
 - bb. Punctuation of elytra finer, close and confused; average size smaller. L., 1.5—1.8 mm. ... *P. ærea*, All. (= *punctulata*, Brit. Colls.).

The construction of a satisfactory table is not an easy matter, owing to the contradictory statements of authors. The above, in the main, is taken from that of Bedel (*Faune Seine*, v, pp. 184–5); but the characters derived from the punctuation of the head made use of by Foudras, Allard and others, do not appear to be sufficiently constant to be relied on. *P. atra* and *ærea* are easily separated by the table; *P. diademata* is about the size of *P. atra*, with the close and confused elytral punctuation of *P. ærea*, which, however, is much coarser than that of the latter species.

The only specimens of *P. diademata* that I have seen were taken by my friend Mr. P. de la Garde in several localities in South Devon. Capt. Deville tells me that it is not rare in France (except in the south) on *Cardamine pratensis* in humid woods, &c., from April to June; he believes that it also occurs on some of the species of *Nasturtium*.

12, Churchill Road, Dartmouth Park, N.W.:

June 15th, 1908.

BUTTERFLIES AND *NEUROPTERA* IN PERTHSHIRE.

BY KENNETH J. MORTON, F.E.S.

When at Blair Athole in July of last year the little collecting that I did outside the *Neuroptera* was devoted to the butterflies of the district. It may be interesting to give some notes that I have made regarding them in view of the unusual nature of the season. My attention was first directed to the butterflies by their great scarcity in the early part of the month, the cold sunless weather which had prevailed for a long time before having continued right on to about the middle of July. Then there came a spell of splendid sunshine with the almost incredible result that there were as many, if not more, butterflies in evidence than I have ever seen before in Scotland within the same limits of time and space.

In the few bright intervals during the dull grey days of the early part of the month, the only butterflies seen were odd specimens of *Pieris napi*, a few desolate looking *Cænonympha pamphilus*, and one or two *Aglais urticæ* (doubtless hibernated examples). My favourite hunting ground was the banks of the burn which issues from Loch Moraig, and here on July 7th, at an elevation of 7-800 feet, was taken the first specimen which suggested better things, a ♂ of *Cupido minima*, in good condition. On the same day I saw a fresh fritillary, almost certainly *Brenthis selene*. But these appearances were not followed by any marked improvement, and it was just a week later, on the 14th, a really fine warm day, that I took the first *Aricia astrarche* var. *artaxerxes*, but only one. Next day was again fine, and wishing to take some of this species which a year or two before I had seen on Tummelside, past its best at the beginning of July, I cycled over there and found none! It was clear that my capture of the day before was quite the first emergence. On the way back to Blair Athole, through Glen Errichtie, *Polyommatus icarus* was seen for the first time.

On the 16th, by the side of the burn, *A. astrarche*, var. *artaxerxes*, was out in earnest, and during the next week it became abundant on the higher slopes rising from the burn side—these slopes golden with a wealth of *Helianthemum*, acres seeming on a cursory glance to grow nothing else. By the burn side *P. icarus* was most abundant and in the finest condition.

On the 17th and 18th I was in Rannoch; two days of absolutely cloudless sky; but things were late. *Brenthis euphrosyne* was found in quite fair condition in the Black Wood, where *B. selene* was abundant.

On the 21st the first *Argynnis aglaia*, a newly emerged ♂, was taken by the burn side. Next day *Epinephile ianira* was first seen, a fine large specimen as the Scotch usually are, and *A. var. artaxerxes* was still abundant. The last occurred even along the banks of the River Garry, thus ranging from 400 to 1000 feet. By the burn side *Cænonympha dorus* had been taken in fine condition during the previous few days.

On the 24th I cycled some 10 miles up Glengarry to within about 5 miles of Dalnaspidal, taking *A. var. artaxerxes* by the way. Leaving the main road at an altitude of about 1000 feet, I crossed over to Glen Errichtie. At about 1147 feet *Erebia epiphron* was taken flying over the grassy patches at the road sides, and it was visible here and there up to the summit of the road, 1452 feet, but it did not appear to go over to the descent on the south side. Most of the specimens were out of condition, but it was certainly interesting to find this little alpine species in such a place. All over the moor through which this road passes *C. dorus* was common and mostly in fine order. *B. selene* was noticed here going over 1000 feet.

On July 25th I found what was apparently the chief locality of *Cupido minima*, a bank near the burn, a little lower down than I was wont to strike it on my frequent visits. One or two of the females were still passable as to condition. Near the same place worn *Rumicia phlæas* were flying; large light coloured specimens, which must have been very beautiful when fresh. I had seen this species earlier in Glen Tilt, but had failed to take any.

The Blair Athole district proved almost useless for *Odonata*, and I am not sure that I observed in the neighbourhood any species beyond *Cordulegaster annulatus*, *Libellula quadrimaculata*, and *Enallagma cyathigerum*. At Rannoch some of these insects seemed to be just coming out, and they also seemed to be either less responsive to the fine weather than the butterflies, or there was something wrong with the atmospheric conditions, although apparently so perfect. Bearing on this point, in the Black Wood biting flies are usually a great pest, but during the two days spent there they gave no trouble whatever. Of *Somatochlora arctica* a few specimens were seen; they kept as a rule high up amongst the tree tops, and were much less active than usual. I was unable to take any, and I also failed to capture the only *Æschna cærulea* seen, a beautiful ♀ met with not far from the road along the side of the Loch about a mile from Kinloch Rannoch. The usual common species, such as *Æschna juncea*, *Cordulegaster annulatus*, *Libellula quadrimaculata*, and *Pyrrosoma nymphula*, were in much less numbers than usual.

Of *Trichoptera* a fair number were taken, the most interesting being a ♀ of *Limnophilus elegans* at Loch Moraig (no longer a rarity since Dr. Cassal has collected the species with so much success on the Isle of Man); and *Tinodes dives*, a species that has been recorded from but few English localities. This latter species was found in some abundance at a streamlet which rushed down the sloping fields below the house where we lived. It was apparently confined to a very short stretch where the stream deviated from its straight downhill course, and took a more slanting direction before it entered the almost level ground approaching the River Garry.

13, Blackford Road, Edinburgh :

June, 1908.

NOTES ON CERTAIN MYCETOPHILIDÆ, INCLUDING SEVERAL SPECIES NEW TO THE BRITISH LIST.

BY F. JENKINSON, M.A.

(Concluded from page 133).

Brachypeza radiata, n. sp. (continued).—This year the species has appeared earlier than in previous years. I took a ♀ on May 30th, and another, on a window, on May 31st.

Anatella ciliata, Winn.—Seems to be scarce. I have taken three specimens, Logie, September 15th, 1905, and Crowborough, April 2nd, 1906, and January 1st, 1907.

A. ? sp.—The commonest species of the genus is not in the List; it agrees generally with *A. flavicauda*, Winn., having the two spurs of the middle tibiæ almost equal in length.

Azana anomala, Walk.—Three specimens, May 13th and 21st, 1904, and May 24th, 1905; all on the north windows of my friend Mr. Horace Darwin's house on the outskirts of Cambridge.

**Parastemma brevicornis*, Zett.—I do not know this insect; but Walker prints (Ins. Brit., iii, 31) Haliday's description of *Leia helvola*, and in the errata (p. 342) he substitutes, presumably on Haliday's authority, *brevicornis*, Zett. (with which he also identifies his *Cordyla valida*). Walker says: "Very rare; has been found at Holywood, near Belfast. In Mr. Haliday's collection." It is probably too much to hope that Haliday's specimens are still in existence. The genus *Parastemma* is due to Grzegorzek (Berl. Ent.

Zeit., xxix, 199 [1885]). "Vena costali transcendente cacumen venæ cubitalis, vena auxiliari brevissima in subcostalem desinente. Ocelli in fronte horizontaliter siti."

**Acnemia longipes*, Winn.—One at Crowborough, October 3rd, 1903.

Allocotocera pulchella, Curt.—Several at Crowborough, July 19th and 20th, 1905, and again August 4th and 9th, 1906. One near Inverness, July 25th, 1902. Also taken by Dr. Sharp and myself in the New Forest, July 7th, 1904. One female at Cambridge, July 27th, 1907.

Leia elegans, Winn.—One at Crowborough, August 27th, 1907. Dr. Sharp took one in the New Forest in September, 1904.

**Leia variegata*, Winn.—Crowborough, October 4th, 1903 (three specimens), July 19th, 1905 (one), August 13th, 1906 (one), October 6th, 1906 (one, immature), August 26th and 28th, 1907.

Megophthalmidia crassicornis, Curt., B. E., xiv, 645.—Curtis puts this in the second division of the genus *Leia*, distinguished by the ocelli forming an arch (instead of a triangle) on the crown of the head. Mr. Verrall omits it in his 1888 list. In the second edition (1901) it appears in such a way as to suggest that it should have a genus to itself; but no generic name is given. Meanwhile, in 1889, Dziedzicki had redescribed it (*Horæ Soc. Ent. Rossicæ*, xxiii, 525, and plate XXI) as *Megophthalmidia zugmayeriæ*, from two specimens, a male taken in summer in Austrian Silesia, and a female taken August 13th, 1888, at Gräfenberg.*

Mr. C. G. Lamb took a male at Wells, Somersetshire, in July, 1902, and I have taken two males, at Crowborough, October 1st, 1903, and in the New Forest on July 10th, 1904. It is a very remarkable insect, with its thick orange antennæ, cylindrical body, and large descending hypopygium.

**Phthinia humilis*, Winn.—Mr. Verrall assigns to this species two flies which I took at Crowborough on July 20th and 26th, 1905. (Another on August 14th, 1906).

A specimen from the banks of the Divie, near Dunphail, July 5th, 1902, which I had previously been inclined to call *P. humilis*, is, as Mr. Verrall points out, a much browner insect, and presumably represents another species. More specimens are wanted. These insects, with their long legs, are extraordinarily fragile, and require careful handling.

* It is just possible that *M. zugmayeriæ* is not identical with *M. crassicornis*, if Dziedzicki has drawn the "margo posterior laminæ basalis" exactly.

**Gnoriste bilineata*, Zett.—Mr. C. G. Lamb took an insect at Nethy Bridge in June, 1905, which appears to be this. The thorax has a fine, paler, central line as well as the two dark side lines, and may thus represent Zetterstedt's *G. trilineata*, which Kertész (Kat. der paläarktischen Dipteren, i, 42) identifies with *bilineata*. Mr. Lamb's specimen does not agree with *apicalis*, *harcyniæ*, or *longirostris*. The rostrum is very long, and may well reach to the fourth abdominal segment; but in its present position I cannot say with certainty.

**Paratinia sciarina*, Mik.—A single male of this species was taken at Carrow Abbey, outside Norwich, on June 13th, 1904. A specimen taken at Crowborough in April, 1904, is smaller, and the sides of the thorax are yellower; it seems to be another species.

The genus *Paratinia* (Mik, Verh. zool.-bot. Ges. Wien, xxiv, 333 [1874]) differs from *Polylepta* by the long cell, straight cubital vein, equal length of third and fourth joints of palpi, spineless tibiæ, and long hairs on the wing; the fork of vein 5 is almost directly under the small cross vein; from *Empalia* by the spineless tibiæ, long cell, and long stalk of vein 4, which last character also separates it from *Lasiosoma*; in *Empheria* the eyes are round, the costal cross vein is over the cell, and the fork of 5 is nearer the base.

**Polylepta undulata*, Winnertz.—This is the only species of the genus that I have taken or seen (Logie, August 27th and 29th, 1903; Crowborough, June 28th, 1903; and in the New Forest by Dr. Sharp, June, 1903). Specimens standing as *P. splendida* in Mr. Verrall's collection agree with mine. The distinctive marks, according to Winnertz, are the following: in *P. splendida* the fore tarsus is $1\frac{1}{2}$ times the length of the tibia, the metatarsus three-fourths of the tibia, and the fork of 5 is under the fork of 4; in *P. undulata* the fore tarsus is $2\frac{1}{2}$ times the tibia, the metatarsus $1\frac{1}{2}$, and the fork of 5 is much nearer the base.

**Hertwigia marginata*, Dziedz.—The genus *Hertwigia*, Dziedz. (Pam. Fiz. V [1885]) "differs from *Tetragoneura* by the greater length of the mediastinal vein, which joins the subcostal over the cell, also by the forking of vein 5, and the course of vein 3" (which in *Tetragoneura* is almost straight, in *Hertwigia* bent where the cross vein meets it).

"From the other *Sciophilinæ* it differs by the fact that the mediastinal vein in the other genera ends in the costal vein, whereas in *Hertwigia* it joins the subcostal vein. From *Paratinia* it differs in

the same way, and also by the formation of the palpi" (the fourth joint being narrow, sickle-shaped, twice as long as the third), "and by the presence of spines on the middle and hind tibiæ." I ought to say that in one of my specimens, as Mr. Verrall at once noticed, the mediastinal vein breaks off short and does not reach the subcostal vein. I took a specimen at Reinacharn, near Dinnet, August 28th, 1900, and two at Logie, August 24th and 25th, 1903.

**Apoliphthisa subincana*, Curt. — This barbarous† sgeneric name was introduced by Grzegorzek in 1885 (Berl. Ent. Zeit., xxix, 205) being placed between *Empalia* and *Tetragoneura*. He says "Vena auxiliaris ante medium cellulæ cubitalis in costalem desinit *absque vena transversali superiore*. Cellula cubitalis bis longior quam lata. Basis furcæ posterioris ante basim anterioris."

Curtis (Brit. Ent., 641) figures under the name of *subincana* a Sciophilid fly without a costal cross vein. He describes it as "similar to *S. (Lasiosoma) hirta*; black, sparingly clothed with hoary hairs, legs yellowish-ochre, tips of trochanters and of hinder thighs blackish; tibiæ fuscous, tarsi darker. $1\frac{3}{4}$ line long. Beginning of May, Coomb Wood." This agrees well enough with specimens taken by Dr. Sharp and myself at Brockenhurst early in July, 1904, by Dr. Sharp *ibidem* in September, 1904, and by myself at Crowborough, April 21st, 1903 (one ♂), and August 8th and 13th, 1906. *Sciophila fenestella*, Curt. (Walker, iii, 42) seems also to belong to this genus.

**Empheria lineola*, Meigen. — Miss M. A. Sharp took a specimen of this handsome fly at Brockenhurst, May 29th, 1907.

Empheria pictipennis, Hal. — This charming species occurs in the New Forest, at Crowborough, and at Logie, not rarely.

Asindulum ? *sp.* — I have not yet identified satisfactorily the dark species of *Asindulum* which is as common as *A. flavum*.

**Diadocidia valida*, Mik. — (Verh. zool.-bot. Ges. Wien, xxiv, 329, 1 tab. VII [1874]). "Vein 1 ends *far beyond* fork of 5; third costal section as long as fourth. Fore tarsi simple."

A single specimen at Logie, September 26th, 1904.

Diadocidia ferruginea, Meig., seems to occur generally.

Southmead, Chaucer Road,
Cambridge :
February, 1908.

† Mr. Collin reminds me that Grzegorzek in fact writes *Apolephthisa*, and not *Apoliphthisa*. But, as the Greek word he presumably means to represent is not ἀποληφθῆσα but ἀπολειφθῆσα, and as the confusion between α and η is one of the commonest which editors of classical texts have to correct, it seems to me only reasonable to spell the word correctly. *Paratania* from παρατάνω is, of course, also barbarous in a different way (= παρατατική).

Aphodius scybalarius F., *ab. nigricans* Muls., at Deal.—My friend Mr. R. A. R. Priske has recently shown me a specimen of the above rather striking aberration of *A. scybalarius*, which might easily at first sight be taken for another species. This insect has the elytra entirely dark, with the exception of the first and second interstices on each side of the suture, which are lurid-testaceous for part of their length, as is also the extreme apex. The specimen thus sufficiently agrees with Mulsant's description of his var. *nigricans* ("Lamellicornes," 1st ed., 1842, p. 179) to be included under it. This melanic form is known as British, having been taken by Dr J. H. Bailey on the sandhills at Wallasey, Cheshire, as recorded in a paper on the variation and distribution of the British Aphodii by Mr. F. Bouskell, read some years ago before the Leicester Literary, &c., Society. There is in the Power Collection at South Kensington a specimen of *A. scybalarius* from Weybridge in which the elytra are entirely suffused with brown; this, however, presents a much paler appearance than Mr. Priske's specimen, with which I have compared it. The latter was taken by him in company with the typical form during a visit we paid to Deal sandhills on June 23rd, 1907.—F. B. JENNINGS, 152, Silver Street, Upper Edmonton, N. : April 6th, 1908.

Some interesting Coleoptera at Hendon.—At Easter I paid two visits to the manure heap at Hendon, which two years ago yielded me a fair supply of *Eumierus rufus*. On each occasion I brought away a bag of siftings, and the result of their investigation was certainly unexpected. *Trichopterygidae* were present in considerable numbers, the most remarkable being unquestionably *Ptenidium punctatum*, which was fairly plentiful. This species, so far as I know, has hitherto been recorded only from decaying seaweed on the sea coast, and its occurrence in a manure heap so far away from the sea is difficult to explain. I have subjected the insects to the closest scrutiny to see if there could be any doubt as to the correctness of their identification; I also showed them to Mr. E. A. Newbery, who agrees with me that they are certainly *P. punctatum*. The manure comes from a neighbouring farm, and I could detect no seaweed in it; nor indeed is it very likely that seaweed would be brought so far inland for use either as manure or in other ways. I cannot, therefore, throw any light upon the presence of the insect in such a habitat.

The second species of interest was *Alphitophagus quadripustulatus*, of which I got two specimens. This insect, according to Fowler, is usually found amongst meal, flour, and fragments of bread, and Mr. Newbery tells me that it has also been recorded from amongst bones and the refuse near chemical factories, so that its tastes seem to be rather ill-defined, and hence its occurrence in a manure heap is less difficult to explain. Just as *Alphitobius diaperinus*, another flour-loving species, has been found in stables in the coal mines of Northumberland, having been probably introduced in the horses' food, so *Alphitophagus* may similarly have been introduced into the stables and thence into the manure heap.

The third noteworthy species was *Holoparanecus caularum*, which was so common, that one bag of siftings of no great size yielded about 150 specimens. Probably many others escaped notice on account of their small size. It was indeed difficult to detect them, as they were not very active in their movements, and seemed disinclined to leave the fine dust of the siftings. I had to spread this out in the thinnest possible layer on a white dish; at first no specimens would be seen, but

after waiting a few minutes they began to appear here and there one after another. Several times I was on the point of throwing the stuff away, thinking I had exhausted its contents, and then suddenly others would begin to appear. As I have plenty of duplicates I shall be happy to supply Coleopterists who may be in want of this interesting little species.

Of *Eumicrus rufus* only a single specimen occurred. Other species which are perhaps worth mentioning were *Euthia scydmaenoides*, *Neuraphes sparshalli*, *Euconnus finetarius*, *Millidium trisulcatum*, *Monotoma spinicollis*, *quadricollis*, and *rufa* (the last two in plenty), *Aglenus brunneus*, and *Xylophilus populneus*.—E. A. BUTLER, 56, Cecile Park, Crouch End, N. : May 7th, 1908.

Dasytes plumbeus and *D. oculatus* of British Collections. *Synonymic note*.—The synonymy given in Fowler's "British Coleoptera" for the two British species of *Dasytes* with reddish tibiae appears to be quite erroneous; the common species with comparatively small eyes in the male should stand thus:—

Dasytes flavipes, Ol. (nec F.).

puncticollis, Reitt.

The synonymy of the rare British species with large eyes in the male is as follows:—

Dasytes plumbeus, Müll.

flavipes, F.

tibialis, Zett.

coxalis, Muls.

oculatus, Brit. Cat. (nec Kies.).

Capt. Deville, to whom I have submitted British specimens of the male of both species, agrees with the above synonymy, and tells me that both are common in France. Crotch, when bringing forward as new his so-called *D. oculatus*, referred it correctly to *D. coxalis*, of Mulsant, the description of this author (Floricoles, Lyons, ed., p. 362), agreeing well with our insect. *D. oculatus*, Kies., has hitherto only been found in Spain.—E. A. NEWBERRY, 12, Churchill Road, N.W. : June 10th, 1908.

Recapture of Lathrobium elongatum, v. *fraudulentum*, Ganglb., at Slapton Ley.—When staying at Kingswear in April I took the opportunity of walking over to Slapton Ley to search for *Lathrobium elongatum*, v. *fraudulentum*, Ganglb. (v. *nigrum*, Joy, Ent. Mo. Mag., vol. xvii, p. 271). However, no sooner had we arrived than the rain came down in torrents, and only half an hour was spent in examining the flood-rubbish on the north shore of the lake. Three specimens of *L. elongatum* were seen, and as two were ♂ examples of the variety with quite black elytra, this variety will probably prove to be common at the locality, but of course has always been mistaken before for *L. brunnipes*, F.—NORMAN H. JOY, Bradfield, Berks : June 3rd, 1908.

The Coleoptera of Lundy Island.—Further examination of the material collected in 1906 necessitates the following corrections and additions to our paper in Ent. Mo. Mag., 2nd series, xviii, pp. 27—29:—

Notiophilus palustris, Duft.—All these specimens prove to be *N. hypocrita*, Spaeth.

Helochaeres lividus, Först., should be deleted.

The additions are, *Quedius semiæneus*, Steph., *Ptenidium fuscicorne*, Er., *Hypera variabilis*, Hbst., and *Scymnus redtenbacheri*, Muls., of which last several specimens were mixed up with the more common *S. testaceus*, Mots.—N. H. JOY and J. R. LE B. TOMLIN, "Stoneley," Reading: June 12th, 1908.

Rhytidosomus globulus, Hbst., near Oxford.—I swept a specimen of this rare and curious little weevil off a sapling of white poplar (*Populus alba*) in a marshy place at Cothill, Berks, on June 10th. So few British localities for *Rhytidosomus* are as yet on record, that a new one may be of interest. *Dorytomus tremulae*, Payk., was taken on the same spot this afternoon.—JAMES J. WALKER, Oxford: June 13th, 1908.

Probable immigration of Plusia gamma and Pyrameis cardui.—A good many presumably immigrant specimens of *Plusia gamma* were seen by me, for the first time this year, on Horsell Common, Surrey, on the very hot morning of June 4th. Examples in similar rather faded condition were observed on the 5th at Oxford, as well as on the chalk downs near Cholsey, Berks, where two or three *Pyrameis cardui* also put in an appearance. One fine large ♀ of the latter species was evidently ovipositing on *Carduus nutans*.—ID.

Occurrence of Steganoptycha subsequana, Haw., in Norfolk.—I have taken a specimen or two of this somewhat rare insect every year for the last five or six years, and two years ago I thought I had done well to take half a dozen beautiful examples. This season, however, I have found the species near King's Lynn in some numbers, but many of the specimens were unfortunately worn. *S. pygmaea*, its close ally, usually appears here about the third week in April, but this year I did not see it until the 29th of the month. *S. subsequana* does not put in an appearance here until the end of the first week of May, and is to be met with until the 20th of the month, or later. *S. pygmaea* seems to be exclusively attached to spruce fir (*Pinus abies*), but *S. subsequana* is attached to silver fir (*Pinus picea*) as well as spruce fir. *S. subsequana* is an addition to the Norfolk list.—E. A. ATMORE, King's Lynn, Norfolk: June, 1908.

Cataplectica farreni in Norfolk.—I have met with three specimens of this species near King's Lynn, whilst sweeping for *Coleoptera*. This is an interesting find, and I believe has not previously been recorded from elsewhere than Cambridge-shire. This is another welcome addition to the Norfolk list.—ID.

Aculeate Hymenoptera at Minehead, August 16th to September 23rd, 1907. Salix parvulus and Alydus calcaratus.—In collecting on the moors overlooking Minehead, I noticed along the little sandy zigzag foot tracks a small species of *Salix* or *Pompilus* hunting and capturing a red-bodied bug: at first sight it looked like a rather large *Pompilus* injured in some way and travelling heavily, but a second and closer inspection showed that the *Pompilus* was dragging along a bug much bigger than herself—the bug being beneath, and trailing on the ground—the *Pompilus* half flying, half running, with a scurrying kind of motion. I caught several of these pairs, but, except in one instance, the *Pompilus* escaped, the bug being left

in the net; the overhanging heather made it difficult to use one's net cleanly, and the *Pompilus* was too smart, but the bugs were heavy, and from their appearance no doubt been well stung. Mr. Edward Saunders has very kindly examined my specimens, and pronounced the *Pompilus* to be *Salix parvulus*, and the bug *Alydus calcaratus*; but as *Salix pusillus* was also taken in the same spot it is very probable that this species also was engaged in bug-hunting.

The following captures at Minehead may be worth recording, Mr. Saunders again most kindly naming my specimens:—*Pompilus cinetellus*, Spin., ♀; *Salix parvulus*, Dahlb., ♀; *S. pusillus*, Schiödte, ♀; *Agania variegata*, Linn., ♀; *Ceropales maculata*, Fab., ♀; *Astutus boops*, Schr., ♀; *Nysson 3-maculatus*, Rosse, ♀ (four specimens); *Entomognathus brevis*, V. de L., ♀; *Crabro lituratus*, Panz., ♀; *C. interruptus*, De G., ♀; *Tespa norvegica*, Fab., ♂; *Megachile versicolor*, Smith, ♀; *M. ligniseca*, Kirby, ♀; *Lasius fuliginosus*, Latr., strong colony in large oak tree; *Hedychrum roseum*.—G. A. JAMES ROTHNEY, Pembury, Tudor Road, Upper Norwood: June 7th, 1908.

[The capture of *Salix parvulus* conveying an Hemipterous larva is most interesting. I have never before heard of any of the *Pompilidæ* capturing *Hemiptera*; and Professor Poulton, who is collecting records of *Hymenoptera* and their prey tells me that he does not know of any such case. *Hemiptera* are well known as the prey of *Astutus*, a genus of *Sphagidæ*, red and black insects, somewhat resembling the *Pompilidæ* in general appearance, though very distinct in structure.—E. SAUNDERS].

Reviews.

FOREST ENTOMOLOGY: by A. T. GILLANDERS, F.E.S. With 351 Illustrations. 8vo. Edinburgh and London: William Blackwood and Sons. 1908.

The influence of insects on the well-being of such of our old woodlands as yet remain, and still more so on that of the new plantations which are now being established in all parts of the British Islands, is so great and evident, that it must claim the serious attention of every one concerned with their care and management; and the ability to recognise the various forms of insect life which attack and destroy arboreal vegetation, as well as a competent knowledge of the methods of dealing with their ravages, form an indispensable part of the equipment of the modern forester. Hitherto, although there is no lack of excellent treatises on the subject by Continental and American authors, we have had no book entirely devoted to economic forest Entomology by an English writer; and in this respect the present work, in which the extensive practical experience of Mr. Gillanders is embodied, is especially welcome. After a brief introductory sketch of the principal Orders of Insects, and an interesting account of the frequently destructive "gall-mites" (*Eriophyidæ*), the insects known to be more or less injurious to forest growth are considered in detail, commencing with the *Coleoptera*. In this as in the other Orders, it is safe to say that no species is omitted with which the forester may be concerned; in fact a good many are included, which, however plentiful and destructive they may be abroad, are here of only rare or casual occurrence; though, as in the case of the remarkable beetle *Xyleborus dispar*, they may in isolated instances give rise to a certain amount of damage. In each species the life-history is clearly described, and in nearly every

case the insect itself, with the characteristic injury caused to the tree or shrub on which it feeds, is illustrated by one or more figures from various sources, and of varying degrees of excellence, but on the whole very good and adequate for the purposes of recognition. At pp. 186-8 we find an interesting account of the (until recently) very rare sawfly *Nematus erichsoni*, Hartig, which became a serious pest to the larch in Cumberland in 1906; and in Chapter VII, dealing with the *Lepidoptera* under the restricted title of "Moths," is a full description of another larch pest, the Tineid *Argyresthia lœvigatella*, H.-S., a species not yet included in our lists, but which has within the last year been recognised as inflicting serious and characteristic injury to the tree in Northumberland, as well as near Oxford and in other parts of the country. Useful hints on collecting, preparing, and mounting insects are given in Chapter XI, and Chapter XII deals with insecticides and general remedies; while the list of forest and fruit-trees and shrubs, with the injurious insects affecting them, brings into a very concise tabular form the nature of the injuries caused by each pest. Of necessity a large portion of the work is compiled from many sources, which in all cases are duly acknowledged, and we may congratulate the author on the clear and methodical way in which he has presented his subject. To all who are practically concerned with arboriculture and forest management, as well as to those wishing to know something of the relations between our trees and their associated insects, we strongly recommend this book, of which the excellence of the general "get up" is guaranteed by the name of the publishers.

THIRTY-FIRST ANNUAL REPORT AND PROCEEDINGS OF THE LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY, SESSION 1907. St. Albans: Printed by Gibbs and Bamforth, Ltd.

The report for last year of this energetic and flourishing Association, besides presenting an excellent portrait of our esteemed correspondent Mr. J. R. le B. Tomlin, embodies two papers of exceptional value, especially to students of our British *Coleoptera*. The Annual Address, by the Vice-President, Dr. J. Harold Bailey, deals with the *Coleoptera* of the Isle of Man, a locality of unique interest from a faunistic point of view. Besides the excellent general account of the Manx beetles, some 680 species of which have been recorded up to the present time, the details of the climate, geology, and botany of the Island, and the deductions of the author as to the derivation of its Coleopterous fauna, will be welcomed by Entomologists as a valuable contribution to the literature of the subject. Of equal value is the exhaustive list of "The *Coleoptera* of Lancashire and Cheshire," by W. E. Sharp, F.E.S. The compiler of this List, after an excellent *resumé* of the probable derivation of our British beetle-fauna, and of the physiography of the two counties, does full justice to the good work of the so-called "Lancashire School" of Entomologists, in whose ranks were included some of the best working Coleopterists of the last half-century. The number of species recorded as occurring within the area is 1486, or about 45 per cent. of the total number included in the list of British beetles; while the writer has evidently not been limited as to space, as too often happens with lists of this kind, and has thus been able to give full and valuable details respecting many of the most interesting forms. It may well be said that this catalogue may be taken as a model for any other that may be forthcoming, and that it should be in the hands of every Coleopterist in our Islands.

Obituary.

Pierre Adrien Prosper Finot.—We regret to record the decease of this well-known French Orthopterist, which took place at his residence at Fontainebleau where he had lived in retirement for some years, on April 14th last. Until 1870 he was a Staff-Captain in the French Army under Napoleon III, serving with distinction in the Franco-Prussian War, and being taken prisoner at Sedan, but on his return to France, remaining true to his Bonapartist attachment, he withdrew from the world and devoted himself to Entomology and kindred pursuits. The works by which he is best known to Entomologists, all of very high value and beautifully illustrated from his own drawings, are:—"Les Orthoptères de France" (1888); "Catalogue raisonné des Orthoptères de la Régence de Tunis" (in conjunction with Ed. Bonnet) (1885); "Faune de l'Algérie et de la Tunisie, Insectes Orthoptères" (1897), and "Faune de la France, Insectes Orthoptères" (1890). We are indebted to Mr. Malcolm Burr, F.L.S., for the materials of this brief obituary notice.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting, held at the Royal Institution, Colquitt Street, Liverpool, *Monday, April 13th*, 1908. Mr. R. NEWSTEAD, A.L.S., Vice-President, in the Chair.

The Chairman delivered a lecture entitled "The Bionomics of Mosquitoes," in which he dealt with the sub-families *Anophelinæ* and *Culiciniæ*: he described the Anopheline genera *Anopheles* and *Pyrethrophorus*, contrasting them with the Culicine genera *Culex* and *Stegomyia* in a very clear and thorough manner. Mr. Newstead illustrated the lecture by blackboard drawings and by the following exhibits:—Living larvæ and pupæ of *Corethra* and *Culex*: a case showing the complete life-history and distribution of *Stegomyia calopus*, the mosquito which transmits yellow fever; and the following species concerned in carrying filariæ, which not uncommonly cause the condition known as elephantiasis, viz.: *Culex fatigans*, *Pyrethrophorus costalis*, *Myzomyia rossi*, *Mansonia africanus*, and *Stegomyia fasciata*.

The remainder of the evening was devoted to an exhibition of *Hydræcia nictitans*, *H. lucens*, and *H. paludis*, most of the Members present having brought their series of these moths. The discussion was opened by Mr. F. N. Pierce, who showed preparations of the genitalia of the three species named above under the microscope, as well as of the new species brought forward by the Rev. C. R. N. Burrows, of Mucking, at a recent meeting of the City of London Entomological Society. Mr. Pierce demonstrated that the genital ancillaries are markedly different, and fully support the view that we have really four distinct species confused under the name *nictitans*. Mr. Pierce also showed photographs of genitalia of *Retinia buoliana* and *R. pinicolana*, clearly proving these two insects to be distinct.

Other exhibits were:—By Mr. W. Mansbridge, a series of *Zygæna achilleæ* from Argyll, with *Z. minos* from Wales for comparison. Mr. F. N. Pierce also showed *Z. achilleæ* from the Continent, with many other species of the genus. Mr. W. A. Tyerman, a bred series of *Amphidasys strataria* from Delamere; the

females especially being very dark and heavily banded. Mr. Mounfield, of Warrington, showed, in addition to his very fine series of *H. nictitans*, *lucens*, and *paludis*, a very dark brown form of *Drepana falcula*, pale and dark forms of *Hadena adusta* and *Macaria liturata* var. *nigrofulvata*, all from Delamere; also varieties of *Abraxas grossulariata* from Warrington.—H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, April 23rd, 1908.—Mr. R. ADKIN, President, in the Chair.

Mr. R. Adkin exhibited a specimen of *Argynnis aglaia* with the left fore-wing only about half-size, but otherwise perfect. It was taken at Eastbourne. He also showed a larva of *Tortrix pronubana* with a parasite larva attached to its under surface. Mr. Gadge, light forms of *Orgyia antiqua* and *Rumicia phæas*. Mr. Kaye, an asymmetrical form of *Anticlea badiata*. Dr. Chapman, living larvæ of *Polygonatus icarus* and *Plebeius argus* (*ægon*), the former quite and the latter nearly full-grown. Mr. Newman, stems of *Viburnum* containing larvæ of *Sesia andreniformis*, larvæ of *Camptogramma fluviana* and *Agrotis ashworthii*, and imagines of *Cucullia scrophulariæ* and *C. verbasci*. Mr. Moore, two Indian Pierids, *Catopsilia catilla* and *Delias eucharis* with bleached wings. Mr. B. Adkin, specimens of *Cucullia scrophulariæ*, *C. verbasci*, and *C. lychnitis* for comparison. Mr. Main, larva, pupa, and imago of the Meal-worm, *Tenebrio molitor*. Mr. Sich, specimens of *Xanthia fulvago* (*cerago*) var. *flavescens* from Forbes. Mr. Rayward made some remarks on the life-history of *Sesia andreniformis*.

Thursday, May 14th, 1908.—Mr. A. SICH, F.E.S., President, in the Chair.

Dr. Chapman exhibited a larva of *Lycæna semiargus* from a Pyrenean ovum, nearly full-grown, and he called attention to the curious fine brown scaling in a bred Pyrenean example of *Tanagra atrata*. Mr. Adkin, from Mr. McArthur, from Aviemore, nodules of resin on twigs attacked by *Retinia resinana* larvæ, a curious "mop" of twigs on a branch of fir no doubt caused by a gall-insect, and cocoons of *Dicranura vinula* opened by birds? Mr. Harrison, a living larva of *Phorodesma smaragdaria*. Mr. Newman, larvæ of *Dryas paphia*, *Argynnis aglaia*, and *A. adippe*, one set had been wintered outdoors and were very small, the others kept in a cool house were in their last instar. He showed ova of *Vanessa atalanta* just hatching. Mr. Edwards, specimens of *Papilio astorion* and *P. philoxenus* from Northern India, and *P. warszewiczii* from Bolivia. Mr. Rayward, a considerable number of *Lepidoptera*, which he was placing in the Society's cabinets. Mr. A. H. Jones, a number of butterflies taken in Hungary to illustrate his paper, "Notes on Hungarian Butterflies," including *Neptis lucilla*, *N. aceris*, *Limenitis populi*, *L. camilla*, and *L. sibylla* taken together in one forest opening, *Chrysophanus alciphron* extremely large and boldly marked, *Colias myrmidone* ab. *alba* (a parallel form to var. *helice* of *C. edusa*), the local *Erebia melas* (with which he had placed *E. lefebvrei* from the Pyrenees and *E. glacialis* var. *nicholli* from Campiglio for comparison), *E. medusa* var. *psodea*, *Chrysophanus thersamon*, *Pararge climene*, *P. roxelana*, *Cænonympha ædipus*, &c.

Thursday, May 28th, 1908.—Mr. ALFRED SICH, F.E.S., President, in the Chair.

Mr. J. St. Aubyn, of Balham, and Mr. N. D. Riley, of Upper Tooting, were elected Members.

Mr. Main exhibited living larvæ of a species of "Stick" insect. Mr. West (Ashtead), a series of *Anticlea badiata* bred from larvæ taken on his rose trees. Mr. Tonge, stereoscopic views of the ova of *Saturnia carpin*i and *Macrothylacia rubi*; of the ova of *Malacosoma castrensis* and *M. franconica*; and of fertile and infertile ova of *Panolis piniperda*. Mr. Newman, pupæ of *Dryas paphia*, *Argynnis adippe* and *A. aglaia*. Mr. Rayward, pupa *in situ* of *Trochilium crabroniforme* and pupa-case of *Egeria culiciformis*. The former emerged downwards and the latter upwards. Mr. Carr, an imago and cocoons of *Earias chlorana*. Mr. Turner, a long series of *Pancalia leuwenhoekella* from Box Hill; a short bred series of *Swammerdamia griseo-capitella* from Oxshott; and the very beautiful Hydrocampid, *Ambia instrumentalis*, from Northern India. Mr. Gilbert Arrow gave an address, with lantern slides and numerous specimens, on "The Origin and Use of Horns in Coleoptera."—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON.—CONVERSAZIONE, Friday, May 15th, 1908, in the Rooms of the Civil Service Commission, Burlington Gardens, W. (by kind permission of H.M. Board of Works). Mr. C. O. WATERHOUSE, President.

The Exhibitions were as follows:—In the Large Room—Prof. E. B. Poulton, F.R.S., Mimicry in American Papilios; Col. D. Bruce, F.R.S., Microscopic preparations to illustrate the Entomological aspects of the Sleeping Sickness; Lt.-Col. N. Manders, R.A.M.C., series of *Melanitis leda* taken at different seasons; Dr. G. B. Longstaff, plants of *Bryophyllum calycinum*, a favourite resting place of *Callidryas eubule*; rest attitudes of butterflies; flies mimicking wasps; and water grasshoppers; Dr. F. A. Dixey and Dr. G. B. Longstaff, scents in butterflies; The President, Illustrations of Tsetse and other biting flies; Mr. E. A. Butler, Dimorphism in *Hemiptera*, and recent additions in the Order to the British list; Mr. R. Shelford, Insects preserved in Amber; Lt.-Col. C. T. Bingham, Nest of Wasp from Assam, with occupant attacking spider; Mr. H. J. Elwes, F.R.S., Variation and Dimorphism in Indo-Chinese and Indo-Malayan Butterflies; Mr. W. J. Kaye, Heliconine Butterflies from British Guiana; Mr. W. F. Rosenberg, rare *Heterocera* from South America; Mr. H. Eltringham, Mimicry in African Butterflies; Mr. O. E. Janson, Goliath Beetles; Mr. H. C. Phillips, Parasites on *Lepidoptera*; Mr. G. T. Porritt, Melanism in West Yorkshire *Lepidoptera*; Mr. C. P. Pickett, British *Lepidoptera*; Mr. L. W. Newman, living British larvæ and pupæ; Mr. A. E. Sich, *Lepidoptera* of South London; Mr. Selwyn Image, *Lepidoptera* observed within six miles of Charing Cross; Mr. R. Adkin, local variation in a common British species; Mr. S. J. Capper, drawings by S. L. Mosley of varieties of British *Lepidoptera*; Mr. H. C. Phillips, drawings of Butterfly subjects; Mr. Selwyn Image (for Mr. C. Whall), drawings by Miss Garnett of Coleophorid species; Mr. A. H. Jones, the Genus *Anthocharis*; Miss M. E. Fountaine, Spring Butterflies of the Mediterranean Region: The Rev. G. Wheeler, rare and variable species of Swiss Butterflies; Dr. T. A. Chapman, Homœochromatism in French Butterflies; Mr. A. W. Bacot, *Malacosoma neustria* and *M. castrensis*, and their hybrid forms; Mr. L. B. Prout and Mr.

A. W. Bacot, Experiments in Mendelian Heredity with *Acidalia virgularia*; Mr. A. Hall and Mr. C. J. Grist, Mimetic Nymphaline Butterflies and their Models; Mr. S. Edwards, *Morphos*; Mr. J. A. Clark, Varieties of *Peronea cristana*; Mr. R. South, Aberrations of *Peronea cristana* and *P. hastiana*; Mr. H. St. J. Donisthorpe, Insects and other forms associated with British Ants; the British Ants; and observation nests of *Formica rufa* and *F. sanguinea*; Mr. A. Harrison and Mr. H. Main, local forms and varieties of *Pieris napi* and *Aplecta nebulosa*; Mr. A. E. Tonge, Stereoscopic Photographs from nature; Mr. H. J. Turner, Life Histories of the genus *Coleophora*; Mr. E. B. Nevinson, British Aculeate *Hymenoptera*; Mr. H. Main, Photographs of *Lepidoptera*; and the Obligation Book of the Entomological Society of London with the signatures of the Duchess of Kent and the Princess Victoria, afterwards Queen Victoria.

The following short Lectures were delivered in the Theatre:—at 9.30, The Inhabitants of Ants' Nests in Britain; H. St. J. Donisthorpe, F.Z.S. At 10, The Entomological Aspects of the Sleeping Sickness; Col. D. Bruce, C.B., F.R.S. At 10.30, Insect Mimicry; Prof. E. B. Poulton, D.Sc., M.A., F.R.S.; all the above addresses being illustrated with the lantern.

In the Small Room, Microscopes, with subjects of Entomological interest, were exhibited by Fellows and others.

H. ROWLAND-BROWN and Com. J. J. WALKER, R.N., *Hon. Secretaries*.

Wednesday, June 3rd, 1908.—Mr. H. ROWLAND-BROWN, Vice-President, in the Chair.

Mr. H. St. J. Donisthorpe brought for exhibition pseudogynes of *Formica sanguinea*, caused by the presence of the beetle *Lomechusa strumosa* in the nest, from the New Forest. Mr. H. J. Turner, living larvæ of *Coleophora maritimella* on *Artemisia*, and also a species of Asilid and its prey. Mr. C. J. Gahan, living specimens of a "leaf insect" from the Seychelles, bred in England by Mr. W. H. St. Quintin, probably *Pulchriphyllium crurifolium*, Serville; and *Lampyridæ* of considerable interest collected by Mr. E. E. Green in Ceylon, and including both sexes of the genera *Lamprigera* and *Dioproma*, the larviform females of which had hitherto been unknown. He called attention also to the existence in China, Ceylon, and the Malay Peninsula of remarkable larviform females greatly resembling in form the females of the American group *Phengodini*, and being somewhat similarly provided with rows of luminous points. The males of these forms were not yet identified, but he suspected they would prove to belong to genera at present referred to the family *Drilidæ*. Mr. R. Shelford remarked that in several of the Malacoderm *Coleoptera* from the Malay Archipelago regarded as larval or apterous forms, the males and females were indistinguishable, and underwent practically no metamorphosis. Mr. G. C. Champion, specimens of *Dromius angustus*, Brullé, and *Cryptophagus lœvendali*, Ganglb., recently recorded by him from Woking and the New Forest respectively; also two species of the Staphylinid genus *Leptotyphlus* and one of the Curculionid genus *Alaocyba*, extremely minute blind insects, much smaller than any known British representatives of the groups in question. Col. C. Swinhoe, several boxes of butterflies taken by him during the present year (1908) in the Canary Islands, chiefly from Grand Canary and Teneriffe, observing that, with the exception of *Lycæna webbiana*, all the species met with suggest

a foreign origin. Mr. J. E. Collin communicated "Notes on the Value of the Genitalia of Insects as Guides in Phylogeny," by Mr. W. Wesché, F.R.M.S. Dr. D. Sharp communicated a paper "On certain *Nycteribiidae*, with descriptions of two new species from Formosa," by Mr. Hugh Scott. Dr. J. Hancock, "Further Studies of the *Tetriginæ* (*Orthoptera*) in the Oxford University Museum." Mr. J. C. Moulton, "Mimicry in Tropical American Butterflies." Professor E. B. Poulton, "Heredity in *Papilio dardanus* from Natal, bred by Mr. G. F. Leigh, F.E.S., of Durban," and exhibited, in illustration, a large series of the forms of *P. dardanus* from Natal and Chirinda. Mr Hamilton H. Druce, "New Species of *Hesperiidae* from Central and South America," and exhibited the specimens described; also a series of the sub-family *Pyrrhopyginæ*, together with the genus *Erycides* of the sub-family *Hesperiinæ* showing the great similarity of some of the species with those of the *Pyrrhopygine* genus *Jemadia*, and also pointed out that the sub-family *Pamphilinæ* contained genera with species again almost exact copies of those shown in the two previously mentioned sub-families. Dr. G. B. Longstaff called the attention of Fellows to a very interesting paper on "The Life-History of House Flies," by Dr. A. Griffith, in the monthly publication of "Public Health."—J. J. WALKER, *Hon. Secretary*.

ON THE BRITISH SPECIES OF *PHORA* (PART II).

BY JOHN H. WOOD, M.B.

The smaller the forms of life, the more numerous, as a rule, are the species. And so in this genus *Phora*, whilst the larger and more specialized species (Group I) are fairly manageable, the smaller and simpler ones (Group II) are well nigh overwhelming in number and variety. Here in this small corner of the county of Hereford I have myself picked up about ninety distinct and well-defined species belonging to the latter Group, in fact, all those, with but few exceptions, treated of in this paper. Nor does this number, great as it is, exhaust even my own neighbourhood, for other forms have been kept back which, either from the want of some good structural character or from scantiness of material, it would at present be unwise to name. What, then, will be their number when there are more workers in the field and the gathering ground is wider?

In dealing with so huge an assortment of closely allied forms, it becomes absolutely necessary to divide them up, if possible, into Sections. Yet to this end the very simplicity of their structure offers a serious impediment; and in place of the absolute characters that were found so useful in the earlier Group, we have now to depend upon comparative ones mainly. There is, it is true, the undivided second thick vein (Section A) as in Group I, but it helps little here, and marks off only a single species, Verrall's *formicarum*, which may

not be a true *Phora* after all. However, in the number of bristles on the scutellum we have a thoroughly satisfactory character, and I have taken advantage of it to separate the species into those with four or more bristles (Section B), and those with only two. The former run to nearly twenty forms, leaving the large number of seventy, or thereabouts, to be dealt with in the latter. These I further break up according as the wing costa is long (Section C) or short (Section D). This character, however, has the disadvantage, common to all comparative qualities, of leaving a doubt sometimes into which division an insect should go; but at the same time it has the advantage of being an easily come-at-able one, for in whatever way an entomologist may pin or set his insect, the wings are always in view.

On the whole the arrangement leads, I think, to a fairly natural grouping of the species. Section B contains most of the species which in size and structure come nearest to those in Group I. Section C also consists chiefly of large species, and only includes a very few which can be called tiny; whereas the reverse occurs in Section D, nearly all the tiny forms being found here, and whilst some may be of fair size, scarcely one is actually large.

For the further grouping within the Sections much use has been made of the colour of the halteres, the length of the costal fringe, and of the condition of the meso-pleuræ, whether bare or bristly. I am indebted to Mr. Collin for pointing out to me the last-mentioned characteristic, and a very important one it is. The position of these bristles is in the upper hind corner, below the edge of the dorsum. Two types may be recognised: one in which all the bristles or bristly hairs are of equal or nearly equal size; the other in which one, very rarely more, is much longer than the rest and lies far back, up against the posterior suture. The costal fringe can scarcely be considered a very important structure, yet perhaps for this very reason, and because it is apparently uninfluenced by sex, its length, whilst varying greatly among the different species, is remarkably constant so far as each individual one is concerned. In this respect it has the advantage even of the scutellar bristles. For in the males of at least three of the species in Section B the anterior bristle is considerably smaller than the posterior one; and accompanying this reduction, there is more or less individual variability, which in *spinigera* may be so extreme that a specimen here and there might well be supposed to be one of the two-bristled species, the bristle being little more than a fine hair, such as is found among some of these. As regards the reliability of the colour of the halteres, I need add nothing to what

was said earlier in these notes, except that further experience has only confirmed and strengthened one's faith in it.

Frequent reference will be made to the male genitalia. Here again two chief types are met with, one in which the hypopygium is small, the other in which it is large; the first is associated with a short and stout abdomen, very feminine in build; the second with a long and slender one. In the smaller type the hypopygium is usually concealed within the last abdominal segment, leaving visible only the anal protuberance (in this case always small); but should it be exposed, it looks like a small body stuck on to the blunt-ended abdomen. In the larger one, on the other hand, it is usually more or less exposed, and has the appearance of a natural prolongation of the abdomen, whilst the anal organ, as a rule, is large. There is, however, considerable difference in size among the large hypopygia; hence it will be convenient to subdivide them into "large" and "medium or moderate." In the former both the hypopygium itself and the internal parts are usually fully exposed, the anal protuberance at the same time being large and conspicuous; in the latter the exposure is less complete, and the anal protuberance of more moderate size. These internal parts or, as I shall term them, "subanal body," are extremely complex in structure, and are connected with the intro-mittent organ. No doubt they would afford excellent points of distinction under the microscope, but are too minute for ordinary descriptive work. On the under-side of the hypopygium and close to the edge of the last abdominal segment is often present a chitinous projection of very varied form, sometimes flap-like, sometimes like a slender prong, simple or forked, or of much more complex shape. It may be called the ventral process, but it needs a full exposure of the genitalia to render it visible. The shell of the hypopygium is occasionally cut into lateral processes or lamellæ, which are either symmetrical or the reverse. It is by no means a common condition, and is almost confined to some of the species in Section B, being one of the points which show their relationship to Group I. Occasionally, also, one or more conspicuous bristles spring from its lower edge on each side, and serve as good specific characters. Lastly, it is as well to take note of a pair of curious curved bristles at the extremity of the anal protuberance, since their presence at once settles the question—where it might otherwise be doubtful—of sex, and whether the small object peeping out from the end of the abdomen be the point of the ovipositor or of the anal organ.

A character also of much importance is the row of bristles or

cilia on the upper border of the hind tibiæ. The size and number of these bristles vary greatly, but in opposite directions, that is to say, the larger they are the fewer is their number, and *vice versa*. Where the legs are brown or black, it is so general a rule for the front legs to be paler that it will be unnecessary to refer to this detail in the descriptions.

For the sake of brevity I shall use the figures 1, 2, and 3 to represent respectively the first, second, and third costal divisions. I would also point out that I take the first costal division to be the portion lying between the humeral cross vein and the inner edge of the first thick vein, rather than the outer edge of this vein—the more correct measurement. And for the reason, that since the outer edge runs almost insensibly into the costa, whilst the junction on the inner side is clear and definite, the eye naturally selects the latter for the boundary. Nor is the point so small as it looks, for on reaching the costa the vein usually expands more or less, and it therefore makes quite an appreciable difference, when dealing in such small dimensions, on which side of it the measurement be taken. Further, the length of the frons is taken at the margin of the eye, which usually gives a rather shorter measurement than if it were taken up the centre.

GROUP II.

Frons with a central channel; two or four bristles at the base of the antennæ, directed forwards. Shaft of tibiæ without spines, at most with rows of bristles.

Second thick vein undivided.

SECTION A.

Second thick vein divided.

Scutellum with four or more bristles.

SECTION B.

Scutellum with only two bristles.

Costa long (to middle of wing or nearly) or very long (well beyond middle).

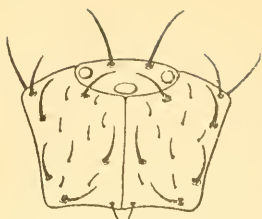
SECTION C.

Costa short or very short (from $\frac{2}{5}$, or a little over, to $\frac{1}{3}$ the wing length).

SECTION D.

SECTION A.

♂ ♀. Thorax greyish, scutellum with four bristles; abdomen black, short and broad; frons grey, about as broad as long, the bristles large and curiously arranged, inner bristle of lower row placed close to the eye, below and scarcely internal to the outer one, the under pair of supra-antennal bristles small and directed forwards, the upper pair directed backwards, simulating the inner bristles of the lower frontal row as ordinarily found (fig. 1); antennæ dusky



yellow, arista very short (shorter than frons), straight and rigid-looking, palpi yellow; wings faintly yellow, fringe shortish, costa about to middle of wing, veins yellow, thin veins faint; legs pale yellow, hind femora moderately stout, tibiae bare; hypopygium with a pair of narrow lamellæ, anal process extraordinarily long, clear yellow, the pair of terminal bristles unusually large and black; ovipositor exposed, chitinous, large, and black; halteres yellow...

scarcely $\frac{1}{2}$ mm. *formicarum*, Verr.

Since these remarks were penned I have seen two papers on the *Phoridæ* by Mr. Charles T. Brues. One, a monograph on the North American *Phoridæ*, appeared originally in the Transactions of the American Entomological Society, No. 4, vol. xxix, 1903. Here the chief interest for us lies in the author's establishment of a new genus (*Aphiochæta*) for the species in *Phora* which come under Becker's Group II, whilst he restricts the name *Phora* to the forms with spinous tibiae (Group I). The steps seem quite justifiable and will probably be generally adopted, although it does not actually advance the grouping beyond the point where Becker left it. The other paper, entitled "Phoridæ from the Indo-Australian Region," deals with the species in the Hungarian National Museum, and was first published in the III Annales Musci Nationalii Hungarici, 1905, pp. 541—555. In founding a new genus under the name *Plastophora* for one of the species, Brues, relying on the published description, suggests that Verrall's *Phora formicarum* should also be referred to it. Looking, however, at the characters given for the genus, this can hardly be the case. In the first place the arrangement of the frontal bristles in *formicarum* is very peculiar and quite distinct from that in *Plastophora*, neither is "the proboscis enlarged and heavily chitinated"; the spurs, too, of the hind tibiae are smaller than, not equal to, those of the middle ones, the legs are not very stout, and the mediastinal vein is present.

Coquillett's genus *Pseudacteon* (Canad. Ent., 1907, p. 208) (which Brues probably erroneously considers a synonym of *Plastophora*), has a similar arrangement of the frontal bristles to *P. formicarum*, and it is quite possible our British species will be found to be congeneric with *Pseudacteon crawfordii*, Coquillett, a species parasitic upon the ant *Solenopsis geminata*.

SECTION B.

- 1 (2) *Supra-antennal bristles erect, that is, directed straight outwards.*
- ♂ ♀. Thorax, abdomen, and halteres deep black, meso-pleuræ bare; frons nearly twice as broad as long, slightly shining, supra-antennal bristles small, one pair only, palpi black, rather large and thickly margined with short stiff bristles; wings fuscous, fringe long, costa rather beyond middle of wing and thickened on its outer half, 1 about as long as 2 + 3, and 2 scarcely longer than 3, first thin vein comes off with a gentle curve well external to the fork, and is recurved at the margin; legs blackish-brown or brownish-black, hind tibiae bare; hypopygium moderately large and dark grey, a large flap-like lamella on the right side, but hardly a trace of one on the left, anal protuberance minute and hairy.....2—2 $\frac{1}{4}$ mm. *unbrimargo*, Beck.

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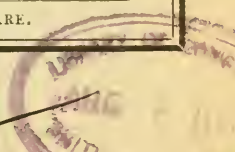
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2 (1) *Supra-antennal bristles depressed, directed forwards towards the mouth (normal).*

3 (4) *Scutellum with six strong and equal bristles.*

♂ ♀. Thorax, abdomen, and halteres black, meso-pleuræ with one or more long bristles and other shorter ones; frons barely half as broad again as long, supra-antennal bristles large and equal, the under pair close to the middle line, palpi yellow; wings tinged with yellowish-brown, fringe very short, costa to middle of wing, 1 nearly three times as long as 2, first thin vein leaves at the fork, runs a nearly straight course and is slightly recurved at the margin; legs blackish-brown (♂), yellowish-brown (♀), hind femora dilated, tibial cilia distinct though short; male abdomen slender, hypopygium large and grey, no lamellæ, the shining black ventral process very large, of irregular shape, curving round the subanal body (which, when exposed, is also shining black) from left to right, the long anal process is yellow with a black base...

2¼—3 mm. *sewspinosa*, Coll., ms.

4 (3) *Scutellum with only four bristles.*

5 (10) *Cilia on middle and hind tibiæ in a double row, one on each side the seam; those of the inner row on hind tibiæ very large, of the outer much smaller.*

The three species are very similar. They are large and robust insects with bare meso-pleuræ and yellow halteres; the frons nearly as broad as long, the inner bristle of lower frontal row almost vertically underneath the outer one, supra-antennal bristles large and equal, the upper pair set wider apart than usual; wings brownish-yellow, fringe very short, angle formed by the forking of thick vein acute, first thin vein recurved at margin (slightly in *picta*); legs yellow, hind femora dilated and blackened at the tip, front tibiæ ciliated with fine and small bristles on upper edge; sides of second abdominal segment projecting and surmounted with a row of bristles; hypopygium provided with symmetrical lamellæ, subanal body concealed, anal protuberance long and cylindrical.

6 (7) *First costal division not greatly longer than the second.*

♂ ♀. Thorax and scutellum yellow or reddish; frons yellow, antennæ orange, palpi pale yellow armed as usual (Becker says bare or nearly so); costa thin, reaching beyond middle of wing, fringe fine and open, first thin vein, barely recurved at margin; abdomen (♂) yellow beneath, black above with narrow yellow hind margins to the segments and a series of yellow triangular marks down the centre, extending the whole length or limited to some of the hinder segments, (♀) as in the male, or entirely black with only the hind margins pale; lamellæ of hypopygium yellow, small and rounded...

2½ mm. *picta*, Lehm.

7 (6) *First costal division greatly longer than the second (twice or more than twice as long).*

8 (9) *A pair of small, curved and blunt-ended spurs beneath the end of the anal protuberance of the male. First abdominal segment of female mainly yellow, at least the front and hind margins pale, sometimes entirely yellow.*

♂ ♀. Thorax and scutellum yellow or reddish; frons reddish, more or less clouded with grey, third joint of antennæ orange; hind femora fringed underneath with long black hairs; abdomen black with broad yellow hind margins to segments, belly more or less yellow; lamellæ of hypopygium very long and rather narrow 3 mm. *meigeni*, Beek.

9 (8) *End of anal protuberance without such spurs, first abdominal segment of female entirely black.*

♂ ♀. Variable in colour. Thorax and abdomen black, the former sometimes with a reddish tinge, or yellow (Becker); frons grey with a yellowish band above insertion of antennæ, inner bristle of lower frontal row not so directly underneath outer one as in the others, third joint of antennæ black, sometimes orange in female; hind femora with only ordinary hairs; hypopygium mainly whitish, lamellæ of moderate size and pointed; ovipositor dirty white, contrasting with the black abdomen 2—2½ mm. *giraudi*, Egg.

10 (5) *Cilia on middle and hind tibiae in a single row—inside the seam (normal).*

11 (26) *Halteres clear yellow, or dusky yellow (emarginata).*

12 (17) *Meso-pleuræ bristly (bristles all equal or nearly so in size).*

13 (14) *Costa not much more than $\frac{2}{3}$ the wing length; fringe short.*

♀. Thorax yellow or red; abdomen black, yellow underneath; frons nearly half as broad again as long, grey with a narrow yellow margin over the antennæ, one pair of small supra-antennal bristles, antennæ very small and dusky red, arista shorter than usual (not half as long again as length of frons), palpi yellow; wings tinged with yellow, 1 twice as long as 2, first thin vein recurved slightly at margin; legs yellow, hind femora moderately stout, with a black spot at the tip and fringed below on the inner half with long hairs, tibial cilia strong and rather numerous; ovipositor exerted, large and black...

1½ mm. *rufa*, n. sp.

14 (13) *Costa at least to middle of wing; fringe long.*

15 (16) *Palpi of male very large and nearly bare. Fore tarsi thickened in both sexes.*

♂ ♀. Very variable in colour. Thorax usually black, often tinged with red sometimes quite red or yellow in female; abdomen black, except in the pale females, in which it is mainly yellow with the dorsum suffused with reddish-grey; frons black, rather broader than long, under pair of supra-antennal bristles half the size of the large upper pair, antennæ small and black, palpi yellow, sometimes dusky (♂), yellow and rather large but of ordinary form and clothing (♀); wings lightly tinged with brownish-yellow (♂) more deeply (♀), veins yellow and fringe moderately long, costa to middle of wing (♂) beyond middle (♀), 1 twice as long as 2 (♂) barely half as long again (♀), first thin vein not or scarcely recurved at margin; legs yellow, hind femora dilated with the tip darkened, tibial cilia strong; hypopygium moderately large, the sub-anal body usually concealed, when not, a yellow flap-like ventral process is also exposed, the yellow anal protuberance of moderate size; ovipositor not exerted..... 1¾—2½ mm. *projecta*, Beek.

16 (15) *Palpi of ordinary size. Fore tarsi not thickened.*

♂. Thorax and abdomen black; frons black, about one-fourth broader than long, four large and equal supra-antennal bristles, antennæ small, palpi dull yellow, armed with very large bristles; wings light yellowish-brown, veins brown and fringe very long, costa to middle of wing, 1 not half as long again as 2, first thin vein comes off at the fork with a gentle curve and pursues a straight course to the margin; legs dark brown, hind femora dilated, tibial cilia large and sparse; hypopygium much as in *projecta*, but anal protuberance longer...

2 mm. *dubitalis*, n. sp.

17 (12) *Meso-pleuræ bare.*

18 (19) *Second thick vein widely dilated as far as the fork in the male, and thence rapidly narrowing, in the female simple. Palpi in both sexes unusually pale, almost white.*

♂ ♀. Thorax black with an obscure reddish tinge, humeri yellow and pleuræ obscurely so; abdomen black, dusted with grey; frons very much dusted with grey, nearly twice as broad as long, four large and nearly equal supra-antennal bristles, antennæ bright orange with a dusky spot below the insertion of the arista, small in male but occupying nearly whole of the joint in female; wings lightly tinged with yellowish, veins black and fringe very long, costa rather beyond middle of wing, 1 twice as long as 2; angle at the fork very acute; legs yellow, hind femora dilated, with a dusky spot at the tip and fringed below with long hairs, which are longest on the outer half, tibial cilia large; hypopygium of moderate size, anal protuberance very small, hind margin of last abdominal segment (♂) encircled by about eight long bristle-like hairs at regular intervals 2 mm. *cubitalis*, Beck.

19 (18) *Second thick vein normal. Palpi not unusually pale, yellow.*

20 (21) *Costa very long (well beyond the middle), first costal division shorter than the second. A row of bristles on the dorso-lateral region of second abdominal segment in both sexes.*

♂ ♀. Variable in colour. Thorax from a rusty yellow or dusky red to black; abdomen black; frons about half as broad again as long, dusted with grey, under pair of supra-antennal bristles not half the size of upper, antennæ black, sometimes red; wings deeply tinged with yellowish-brown, veins yellow, fringe rather short; legs yellow, hind femora stout, dusky at tip, tibial cilia sparse and very strong; a few bristle-like hairs round the margin of the last abdominal segment in both sexes, hypopygium large with a large and yellow anal protuberance, the subanal body (usually concealed) is small, and a small and simple ventral process, yellow in colour, is also present...

2 mm. *ruficornis*, Mg.

21 (20) *Costa moderately long, at the most (albicans ♀) slightly beyond the middle; first costal division twice or nearly twice as long as the second. No bristles on second abdominal segment.*

22 (23) *Halteres dusky yellow. Abdomen not dusted with grey.*

♂ ♀. Thorax and abdomen black; frons black, about twice as broad as long, but scarcely as much (♀), upper pair of supra-antennal bristles large, under pair

minute, third joint of antennæ very large (at least half as large as the eye) and oval (σ) round and of moderate size (φ), arista straight (not wavy), scarcely longer than frons (σ) but somewhat longer (φ), palpi yellow; wings lightly tinged with yellowish-brown, fringe moderately long, costa barely to middle of wing. 1 about double 2, first thin vein comes off external to the fork at a bend in the thick vein; legs brownish-yellow, hind femora moderately stout, tibial cilia fairly long and sparse; hypopygium of moderate size, the yellow anal protuberance large, compressed laterally and deeply scooped out at the tip (emarginate), so that the under-side projects in an unusually long lip; ovipositor long and exerted $1\frac{1}{4}$ mm. *emarginata*, n. sp.

23 (22) *Halteres clear yellow*. Abdomen dusted with grey.

24 (25) *Frons broad (about half as broad again as long) in both sexes*.

σ φ . Thorax and abdomen black, the latter thickly dusted with whitish-grey, causing an almost silvery gleam in some aspects, the former more thinly and with a darker grey; the anterior scutellar bristle in the male much smaller than the posterior one, sometimes barely more than a strong hair, but of equal size in the female; frons grey, upper pair of supra-antennal bristles small and under pair minute, antennæ rather large (best estimated by comparison with the eye in profile), male palpi small and yellow, with the bristles short, of ordinary size and armature in female; wings lightly tinged with grey, fringe long, costa to middle of wing (σ) rather beyond (φ), 1 nearly twice as long as 2; legs light yellowish-brown, hind femora dilated, tibial cilia short and numerous but distinct; hypopygium large, subanal body rarely, if ever, exposed, anal process large and dusky with the extremity yellow; ovipositor more or less exerted $1\frac{3}{4}$ — $2\frac{1}{4}$ mm. *albicans*, n. sp.

25 (24) *Frons narrow (not broader or scarcely broader than long)*.

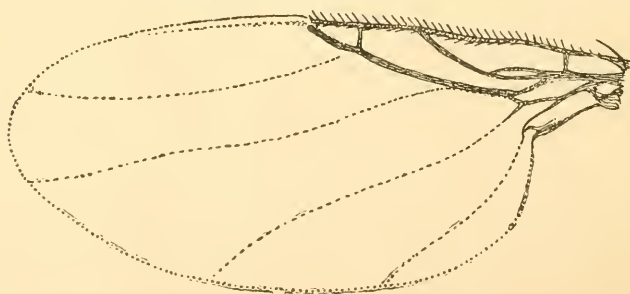
σ φ . Very like preceding species, but smaller and appearing at a different time of the year. Further distinguished by the frons, thorax and abdomen being much more thinly dusted with grey, the antennæ only moderately large, by the four small supra-antennal bristles being of nearly equal size, the costa shorter and the tibial cilia longer and less numerous $1\frac{3}{4}$ mm. *rata*, Coll. ms.

26 (11) *Halteres black*.

27 (32) *Meso-pleuræ bare*.

28 (29) *Palpi (σ) very large and almost bare, much like those of nudipalpis*.

σ . Thorax and abdomen black; frons about one-fourth broader than long, four



smallish and nearly equal supra-antennal bristles, antennæ small, palpi black with a short terminal bristle; wings clear, veins fine and delicate and fringe very short, costa fine and black, about to middle of wing, 1 more than twice as long as 2, inner branch of second thick vein inclined backwards towards base of wing (fig.); legs brown, hind femora slender and tibiæ bare; second abdominal segment longer than the others, hypopygium moderately large, anal protuberance small and black..... $1\frac{1}{4}$ mm. *retroversa*, n. sp.

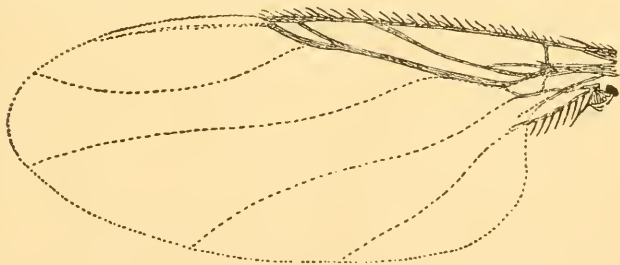
29 (28) *Palpi not over large, nor bare.*

30 (31) *Frons distinctly longer than broad; highly glossy.*

♂. Thorax and abdomen black, the former rather shining; supra-antennal bristles minute, antennæ small, palpi small and black thickly margined with short and stubby bristles; wings dark yellowish-brown, veins dusky and fringe short, costa to middle of wing, 1 scarcely longer than 2; legs black, fore tarsi thickened (the first joint being about as wide as the tibia), hind tibiæ bare, but their upper surface curiously scored with diagonal furrows; second abdominal segment longer than any other; hypopygium very large, glossy black at the base, with a pair of large curved and pubescent lamellæ, anal process minute...
2— $2\frac{1}{4}$ mm. *nudipes*, Beck.

31 (30) *Frons very broad (twice as broad as long), and dull.*

♂ ♀. Thorax and abdomen black, second abdominal segment armed with bristles as in *ruficornis*; four large and equal supra-antennal bristles, antennæ (♂) large and oval, reaching when viewed in profile considerably above the centre of the eye, (♀) small and round, palpi small and yellow, the bristles ordinary; wings deeply tinged with brownish yellow, veins thick and brown, fringe very short, costa fine and reaching beyond middle of wing, 1 more than twice as long as 2, angle formed at the forking of second thick vein extremely acute (fig.);



legs yellowish-brown, hind femora rather slender, tibial cilia distinct, but short and numerous; hypopygium of moderate size, anal protuberance small and yellow.....2— $2\frac{1}{4}$ mm. *fuscinervis*, n. sp.

32 (27) *Meso-pleuræ bristly, with at least one bristle extra long.*

33 (34) *Legs pale.*

♂. Thorax and abdomen black, meso-pleuræ with one extra large bristle; frons at least half as broad again as long, upper pair of supra-antennal bristles moderately large, under pair minute; antennæ rather large, brown, sometimes black, palpi yellow; wings nearly clear, fringe short, costa well beyond middle of wing, yellowish-brown, as also the veins, 1 about equal to 2 + 3, first thin

vein recurved at the margin; legs yellow, sometimes slightly smirched with grey, fore tarsi short and somewhat thickened, hind femora only moderately stout and without a dark spot at the tip, tibial cilia weak; abdomen usually short and flat, wide at the base and pointed at the anal end, with the third, fourth and fifth segments much shorter than the second and sixth, or of the ordinary slender form with the segments more nearly equal; hypopygium grey, a pair of small rounded and hairy lamellæ, subanal body generally concealed, but if exposed large and in front of it a flap-like yellow ventral process

1½ mm. *paludosa*, n. sp.

34 (33) *Legs dark.*

35 (36) *Arista short, not longer than the frons. Meso-pleuræ with two or three extra long bristles.*

♂ ♀. Thorax and abdomen black; the anterior sentellar bristle smaller than the posterior in both sexes, sometimes reduced in the male to a weak hair; frons rather broader than long, under pair of supra-antennal bristles minute, upper pair of moderate size, antennæ full large (♂) small (♀), palpi small and dusky, with the usual bristles; wings light grey, fringe short, costa to middle of wing, 1 rather shorter than 2 + 3, the angle included at the fork acute; legs black or blackish-brown, sometimes (♀) yellowish-brown, hind femora dilated, hind tibiæ compressed laterally and distinctly arched on the upper border, tibial cilia sparse and large; hypopygium large and knob-like, the inner parts concealed, anal protuberance long and dusky yellow; ovipositor very long and exerted 1¾—2 mm. *spinigera*, n. sp.

36 (35) *Arista of the ordinary length. Meso-pleuræ with only one long bristle.*

♂ ♀. Thorax and abdomen black; frons about one-fourth as broad again as long (♂) less (♀), four large supra-antennal bristles, the under pair low down and close to the middle line, antennæ rather large, palpi dusky yellow; wings clear or lightly tinged with grey, fringe short, the veins blackish, costa to middle of wing or rather beyond (♀), 1 about twice as long as 2 (♂) one-and-a-half times (♀). angle formed by the forking of second thick vein large (nearly a right angle) (♂) but less (♀); legs from yellowish-brown to blackish-brown, hind tibiæ moderately stout, and of the usual form, the cilia fairly long and rather numerous; hypopygium large and grey, the large subanal body is sometimes exposed, and in front of it is a small black and curved ventral process, anal protuberance large and blackish; ovipositor of moderate size...

1¾—2 mm. *campestris*, n. sp.

(To be continued).

ANISOTOMA FLAVICORNIS, CH., AN ADDITION TO THE BRITISH LIST OF COLEOPTERA.

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

ANISOTOMA FLAVICORNIS, Ch.

Closely resembles *A. parvula*, Sahlb., but differs from it in being of a broader form, and in having the thorax more finely and diffusely punctured and the transverse striation on the elytra more distinct; the antennæ are entirely testaceous, and

the club is slightly broader than in *A. parvula*, and the last joint is narrower in proportion to the penultimate; the ♂ has a large, sharp, thorn-shaped tooth at the apical angle of the posterior femora and in the ♀ (at any rate in my specimen) the posterior femora are distinctly angled beneath; in *A. parvula* they are quite simple in both sexes.

A. flavicornis appears to be a very rare species on the Continent. I took a ♀ specimen on the evening of June 8th by sweeping grass at the side of a watercress bed. I have visited the same locality on three ideal evenings for sweeping since then, and have obtained two ♂♂ within ten yards of the same spot. The ♂, of course, is abundantly distinct from *A. parvula*, and the ♀ also can be easily recognised by the colour and shape of the club of the antennæ.

Bradfield: July 1st, 1908.

A NOTE ON THE COLEOPTERA OF THE SCILLY ISLANDS.

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

The only note I am aware of on the *Coleoptera* of the Scilly Islands is one by Mr. Champion in Ent. Mo. Mag., ser. II, vol. viii, pp. 217-220 (1897). He here gives a list of 102 species taken by him on a trip of nine days to the Islands during July of that year, and adds to these 40 species taken by Mr. J. J. Walker on July 28th, 1879, and 13 species by the Rev. H. S. Gorham on August 16th, 1893, making a total of 126 species recorded from Scilly. Hoping to add to this list by visiting the islands earlier in the year, I crossed over on April 13th last, and spent four days on Tresco. The weather conditions were anything but favourable, a strong and extremely cold north-east wind rendering collecting impossible, except in quite a few sheltered spots, which however fortunately included one side of the large fresh-water lake; the only beetles seen in the open the whole time were *Cicindela campestris* and *Meloë proscarabæus*. In spite of this I collected 200 species, of which 139 are additional to the list already noted. Comparatively few of these are at all uncommon, but one has not before been recorded from Britain, and another is a very interesting and distinct insular form, which I describe here as a new sub-species. I had hoped to be able to visit Annet to examine the nests of the puffins which breed there, but the sea was too rough to allow me to land. The only other island I collected on was Bryher, quite close to Tresco, but I found it very dry, and it only produced four or five species new to the list.

A good deal of time was spent on the few sheltered sandy beaches, but the examination of moss and shaking old reeds at the side of the lake were the most productive methods of collecting. A few species were taken under the bark of fir logs, this tree being evidently a comparatively recent introduction, and a large Longicorn larva, which I was unfortunately unable to identify, was common in this situation. I have to thank Mr. Dorrien Smith for kindly giving me permission to collect anywhere on the island, including his beautiful sub-tropical garden.

The Coleopterous fauna of the islands evidently closely resembles that on the neighbouring mainland. Mr. Tomlin and I spent a few days in Cornwall when I returned from Scilly, and I was much struck by the number of comparatively uncommon species which occurred in both localities. Among these may be mentioned *Badister peltatus*, Pz., *Pterostichus gracilis*, Dej., *Læmostenus complanatus*, Dej., *Oxyropa perplexa*, Muls., and *Pissodes notatus*, F.

This is in marked contrast to Lundy Island, which seems to harbour so many species not found on the North Devon coast. Nor do I think that the number of species inhabiting Scilly will ever prove to be as many as on Lundy. At present the totals are 269 and 464 respectively, but Scilly has not yet been so well worked. The Scilly group consists of a number of comparatively low lying rocky islets (none I believe being higher than 160 ft.) with a good deal of sand, very little damp marshy ground, but a few large ponds. The ground evidently gets very much dried up by the end of summer, as indeed Mr. Champion mentions in his note. Lundy, on the other hand, stands straight out of the sea, some 300 to 450 ft. high, so that, even in fine weather, there is often a cloud clinging to its summit, which no doubt prevents undue evaporation of moisture. On the east side there are many damp places and small rock pools, and here the moss is wonderfully deep, and the vegetation thicker and more luxuriant than anything I saw on Scilly at the same time of year. The following is a list of the *Coleoptera* not before recorded from the Scilly Islands, including two which I saw in a small collection made by one of Mr. Dorrien Smith's gardeners, Mr. E. Smith.

Cicindela campestris, L., very abundant. *Notiophilus biguttatus*, F. *Leistus fulvibarbis*, Dj. *Nebria brevicollis*, F. *Loricera pilicornis*, F. *Dyschirius globosus*, Hbst. *Badister peltatus*, Pz., not rare by shaking old bundles of reeds lying on the ground. *Stenolophus vespertinus*, Pz. *Acupalpus exiguus*, Dej. *Harpalus latus*, L. *Anisodactylus binotatus*, v. *spurcaticornis*, Dej., two specimens. *Pterostichus cupreus*, L.; *P. nigrita*, F.; *P. gracilis*, Dej., common. *Amara lucida*, Duft.

Calathus flavipes, Fourc. *Læmostenus complanatus*, Dej., common under pieces of wood near the beach. *Anchomenus dorsalis*, Müll.; *A. thoreyi*, Dej., very common under reeds, and all very brightly coloured. *Bembidium rufescens*, Guer.; *B. assimile*, Gyll. *Trechus minutus*, F. *Dromius linearis*, Ol.; *D. nigriventris*, Th. *Haliplus ruficollis*, De G. *Laccophilus obscurus*, Pz. *Celambus inæqualis*, F. *Hydroporus gyllenhali*, Schiöd.; *H. pubescens*, Gyll. *Hydrobius fuscipes*, L. *Philydrus nigricans*, Zett. *Cymbiodyta ovalis*, Th. *Chætarthria seminulum*, Pk. *Oethebius viridis*, Pyron. *Cereyon littoralis*, Gyll.; *C. obsoletus*, Gyll.; *C. flavipes*, F.; *C. melanocephalus*, L. *Megasternum boletophagum*, Marsh. *Aleochara lanuginosa*, Gr.; *A. succicola*, Th., Bryher. *Oxyopoda perplexa*, Muls.; *O. longiuscula*, Gr. *Calodera æthiops*, Gr. *Alianta plumbea*, Wat. *Homalota halobrectha*, Sharp; *H. puncticeps*, Th.; *H. angustula*, Gyll.; *H. euryptera*, Steph.; *H. trinotata*, Kr.; *H. triangulum*, Kr.; *H. germana*, Sharp; *H. sordidula*, Er.; *H. muscorum*, Bris. *Phytosus spinifer*, Curt.; *P. balticus*, Kr. *Oligota inflata*, Mann.; *O. atomaria*, Er. *Myllæna intermedia*, Er. *Conosoma lividum*, Er. *Tachyporus solutus*, Er.; *T. humerosus*, Er.; *T. hypnorum*, F.; *T. brunneus*, F. *Tachinus rufipes*, De G. *Mycetoporus lepidus*, Gr. *Heterothops dissimilis*, Gr. *Quedius mesomelinus*, Marsh.; *Q. cinctus*, Pk.; *Q. obliteratedus*, Er. *Philonthus carbonarius*, Gyll.; *P. politus*, F.; *P. marginatus*, F.; *P. cephalotes*, Gr., Bryher. *Cafius sericeus*, Holm.; *Actobius cinerascens*, Gr. *Xantholinus punctulatus*, Pk. *Leptacinus linearis*, Gr. *Lathrobium brunnipes*, F. *Stilicus affinis*, Er. *Medon bicolor*, Ol. *Sunius angustatus lyonessius*, sub-sp. nov. *Stenus juno*, F.; *S. ærosus*, Er. *Bledius unicornis*, Germ.; *B. arenarius*, Pk. *Oxytelus rugosus*, F.; *O. sculptus*, Gr.; *O. sculpturatus*, Gr.; *O. complanatus*, Er. *Lestera punctata*, Er. *Homalium rivulare*, Pk.; *H. læviusculum*, Gyll.; *H. pusillum*, Er. *Proteinus ovalis*, Steph. *Calyptromerus dubius*, Marsh. *Agathidium lævigatum*, Er. *Anisotoma dubia*, Kug. *Choleva watsoni*, Spence. *Scydmænus collaris*, Müll. *Tychus niger*, Pk. *Rybaxis sanguinea*, L. *Bryaxis juncorum*, Leach. *Trichopteryx atomaria*, De G. *Ptenidium fuscicorne*, Er.; *P. nitidum*, Heer. *Corylophus sublævipennis*, Duv., abundant. *Sericoderus lateralis*, Gyll. *Stilbus testaceus*, i. z. *Coccinella 11-punctata*, L. *Mycetæa hirta*, Marsh. *Kissister minima*, Aub. *Omosita colon*, L. *Rhizophagus depressus*, F. *Monotoma brevicollis*, Aub. *Coninomus nodifer*, West. *Enicmus transversus*, Ol. *Corticaria denticulata*, Gyll. *Cryptophagus hirtulus*, Kr.; *C. affinis*, Stm. *Atomaria berlinensis*, Kr.; *A. ruficornis*, Marsh. *Ephistemus gyrrinoides*, Marsh. *Parnus prolifericornis*, F. *Aphodius fimetarius*, L.; *A. ater*, De G.; *A. pusillus*, Hbst.; *A. punctato-sulcatus*, Stm. *Geotrupes stercorarius*, L.; *G. vernalis*, L. (E. Smith). *Melolontha vulgaris*, F. *Haltica oleracea*, L. *Psylliodes chrysocephala*, L. (Bryher). *Blaps mucronata*, Lat. (E. Smith). *Meloë proscarabæus*, L. *Apion dickroum*, Bed.; *A. humile*, Germ. *Trachypylæus myrmecophilus*, Seid. *Cænopsis waltoni*, Boh. *Alophus triguttatus*, F. (Bryher). *Pissodes notatus*, F. *Phytobius 4-tuberculatus*, F. *Caulotrypis æneopiceus*, Boh. *Hylastes ater*, Pk.

SUNIUS ANGUSTATUS LYONESSIUS, sub-sp., nov.

Resembles *S. angustatus*, but differs from it in being on the average slightly smaller; the elytra are shorter and distinctly narrower in proportion to the thorax (the insect is winged), and the punctuation is closer and more rugose, so that they

are duller; the general colour is distinctly more fuscous, the thorax being sometimes reddish-brown; the yellow on the elytra is not nearly so bright and is never so sharply defined as in *S. angustatus*; the elytra vary in colour from being entirely dirty testaceous to having a narrow border of yellow, the rest of the elytra being fuscous; the commonest form has the elytra dirty testaceous with a fuscous spot at the scutellum, and one in the middle of the outer margin of each elytron. The type form of *S. angustatus* did not occur on the island.

I took thirteen specimens of this sub-species in moss, haystack refuse, &c., and could probably have taken many more had I worked specially for it, but, although I at once recognised it as a new form to Britain at any rate, I preferred not to waste too much time over one species. I do not hesitate to describe this very distinct insular form as a sub-species, as I do not consider the term "variety" as used generally by Coleopterists at all applies to such constant forms occurring apart from the type.

CRYPTOPHAGUS HIRTULUS, Kr.

In general shape most closely resembles *C. scanicus* v. *patruelis*, Sturm., but is generally rather darker in colour, and is easily distinguished by the structure of the thorax. The borders of the thorax are much narrower; the anterior callosities are more prominent and terminate in a sharp tooth; the middle tooth is larger, and the sides of the thorax are distinctly more strongly contracted behind. In Mr. Chitty's table it has to be placed with *C. cylindrus*, Kies., on account of the narrow border of the thorax, and from this species it is easily separated by its much broader form.

I took three specimens of this quite distinct species on Treseo, one from a cellar window, and the others from haystack refuse. Mr. Newbery has a specimen of *C. hirtulus*, which was taken in a house thirty years ago at Merton, Surrey, and which Capt. Deville identified for him at just about the time I took my specimens.

Bradfield, Berks :
June, 1908.

CELIOXYS AFRA, LEP.—A BEE NEW TO BRITAIN—FROM THE NEW FOREST.

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

During a recent visit to Lyndhurst I was greatly pleased to find a ♀ specimen of the above most interesting addition to the British List in the collection of Miss Ethel Chawner. It was ticketed "New Forest, VIII, '92"; and Miss Chawner tells me that it must have been taken at or near Burley, where she was staying all the summer of 1892, but that "not knowing its value" she "did not make any special note of it."

Four specimens of *C. afra* were taken in Guernsey and recorded by Mr. W. A. Luff in Ent. Mo. Mag., Feb., 1907, "flying in company with *Megachile argentata*, Fab." In a note attached to Mr. Luff's paper (*l. c.*, page 40), Mr. Edward Saunders calls attention to the great interest of the capture, and says "in this country I have sought in vain for any of the small red-tailed *Cœlioxys* associating with *Megachile argentata*. I was much pleased to find *Cœlioxys brevis* with *M. argentata* in Jersey, and now *C. afra* turns up with it in Guernsey. . . . These little species belong to a group of which we have no exponents in Britain, and which is peculiar in having the white bands of the abdomen formed of scale-like hairs. . . . I have always looked on *C. afra* as quite a southern form."

As will be seen from the above remarks of Mr. Saunders the present insect is very easily distinguishable from any of the hitherto recorded species of British *Cœlioxys*. This is especially the case with the ♀, which, besides the peculiar scale-like pilosity which it shares with the ♂, is characterized by having the apical dorsal segment of the abdomen red at the tip, and the apical ventral segment entirely red, *projecting very little beyond the apical dorsal*, and with a small but strong emargination at its apex, the corners of this emargination having the appearance of minute sharp teeth. (In the ♀ of *C. brevis*, which, as said above, is attached to *M. argentata* in Jersey, and which may also quite possibly turn up some day in this country, the apical segments are coloured much as in *C. afra*; but the form of the apical ventral segment is quite different, projecting far beyond the apical dorsal segment, and sharply acuminate, without any emargination at its apex).

A most excellent description of both sexes of *afra* has been drawn up (in Latin) by Moesary in "Acad. Hung. scient. math. phys., &c.," 1879, and is quoted in full by Friese, "Bienen Europa's," Part i, p. 68. It is too long to reproduce or translate here *in extenso*, but the following brief diagnosis is mainly founded upon it—

Calcaria pale; two spots formed of white scales at the base of the scutellum; breast and great part of the legs clothed with white scales; apices of abdominal segments, in the centre above fringed narrowly with white scales arranged in *single* rows, at the sides and beneath with similar but longer scales in *many* rows forming wide fasciæ.

♀ with a sharp carina between the antennæ; a short, rather sharp, carina on the 6th abdominal dorsal segment before its red obtuse apex, a white spot of scale-like pubescence on each side of the same segment; the 6th ventral segment produced slightly beyond the dorsal apex, red, broad, its disc impressed, and its apex emarginate.

♂. 5th dorsal segment armed on each side with a small obtuse tooth; 6th, with a deep central fovea and eight spines, viz., four above (all about equally long, but the outer pair much sharper than the inner) and four below (the basal pair very small and obtuse, the apical pair long and rather sharp); apex of 4th ventral segment strongly impressed, widely emarginated, and tuberculated on each side.

Woking: June 22nd, 1908.

ECCOPTOMERA MICROPS, Mg., AND *AGROMYZA BICORNIS*, KALT.,
TWO DIPTERA NEW TO THE BRITISH LIST.

BY J. R. MALLOCH.

During the last two years Mr. A. H. Hamm has sent me for identification a large number of specimens of *Diptera* from the Oxford district, and amongst them were a few species that are rare. I do not intend at present to record any but the above two species, though I am certain that several more are additions to the British List.

Eccoptomera is a peculiar genus belonging to the *Helomyzidæ*, and which may be distinguished from all the other sub-genera in that group, except *Æcothea*, by the exceptionally small eyes, and from *Æcothea* it may be distinguished by the mid-tibiæ being bare, except for the terminal spurs, and not having bristles as in that genus. This species, *microps*, Mg., was first sent to me by Mr. Hamm early in 1907, with an accompanying note stating that it had been taken in moles' nests, where it was not uncommon.* Upon examination I decided it was *microps*, but requested Mr. Hamm to send it to Mr. J. E. Collin for his opinion. Mr. Collin returned it as correct. The species may be easily distinguished from *longiseta*, Mg., which I recorded in this Magazine (1907), by its dark thorax, the dark spots at the apices of the hind femora, and the brownish 3rd joint of the antennæ. After receiving this species from Oxford I set myself to find it in this district, Bonhill, Dumbartonshire, and was successful in obtaining one specimen from a mole's nest in March, 1908. I also obtained one pupa from a mole's nest and a ♀ specimen emerged therefrom, so that evidently the larva feeds upon the offal, or refuse, in the nest. No doubt a search in moles' nests would show that this species is not rare, and probably *longiseta* is also to be found in underground nests.

The second species, *Agromyza bicornis*, Kalt., belongs to the

* Mr. J. Collins and I have found this species frequently in moles' nests at Oxford in February and March, but rarely more than one or two in a nest.—J. J. W.

section of that group with black halteres, and is one of the most characteristic species in the genus. The male possesses a peculiar group of vibrissæ forming a fasciculus on either side of the mouth. In the ♀ these bristles are much smaller and do not form a fasciculus. I identified my own specimens from Bonhill as *curvipalpis*, Ztt., and sent them to Mr. Collin as that species. In returning the specimens Mr. Collin stated that it was synonymous with *bicornis*, Kalt., and probably Zetterstedt may have mistaken the peculiar upwardly directed fasciculus for the palpi, hence his name. The species is undoubtedly *bicornis*, Kalt., and is very probably the insect described by Schiner as *curvipalpis*, Ztt. I found one specimen among a recent lot sent by Mr. Hamm, I have taken seven myself, Mr. Collin tells me he has taken it also, and I have seen two specimens, taken, I believe, in the Clyde district, belonging to Mr. R. Henderson, Glasgow.

Bonhill, Dumbartonshire, N.B. :

June, 1908.

OBSERVATIONS ON *EMPIS LIVIDA*, L.

BY A. H. HAMM.

It was with feelings of mingled surprise and delight that I read Mr. Milburn Howlett's most interesting account of the pairing of *Empis borealis*, which appeared in this Magazine for last October (vol. xliii, p. 229). The author here showed for the first time that the prey upon which the female feeds during the period of copulation is provided for her by the male. I there and then made a mental resolve to attempt to confirm the observation, and to witness for myself this extraordinary phenomenon: and my desire has been gratified beyond my expectations.

The following brief account of various observations extending from June 25th to July 7th inclusive will, I hope, speak for itself.

During an afternoon ramble on June 25th, while in search of *Diptera* and other insects, I came upon a spot by the roadside, about two miles from Islip, on the London Road between Islip and Wheatley, with a fairly broad grassy margin bounded by a high hedge, on which the herbage was very rank, the ground being of a slightly marshy nature. At this spot many individuals of *Empis livida* were seen resting on the leaves of various plants and grass stems. These

insects were entirely without prey, and I waited for some time in the hope that I might be rewarded later in the evening with some material to supplement Professor Poulton's recent paper on "Predaceous Insects and their Prey."* Just after 7 p.m. I saw the first male and female *in copula*, the female being in possession of prey; I then observed another pair hanging from a grass stem, the female also with prey. I continued to find fresh examples at intervals of a few minutes until six pairs *in cop.* had been captured, and in all of these the female was in possession of prey. It then occurred to me that if I abandoned the search for specimens *in cop.* I might perhaps witness the act of pairing. I accordingly fixed my attention upon the females, as far as I could see without prey, at rest on the herbage, &c. In a short time one of these females took to flight, and was almost immediately joined by several others. Together they slowly circled round and round in a kind of maypole dance, about three or four feet from the ground: so slow was their flight that ample opportunity for careful observation was afforded. After circling round a few times a male suddenly appeared among the dancers, having probably flown from the high hedge near by. He singled out a female and immediately gave chase. I then instantly netted the pair and found the prey which had been dropped into the net.

The remaining females then settled down again on the grass stems, &c. After a short interval the same scene was again enacted, and the pair netted before copulation had taken place. In this way four pairs were captured, and in every case the prey was dropped in the net. In two instances the flies which had been captured as prey were apparently uninjured and walked about the net. In another case as the male was chasing the female, and a few inches behind, I purposely interposed the net between them and captured the hindmost individual, and found as expected that it was a male with prey. After this four other males were seen to pursue females in the manner described above. These were watched very carefully to see, if possible, when and how the prey was transferred from one sex to the other. When the male overtook the female there was a brief struggle in the air; when this was over, the insects at once came to rest on the herbage, and were found to be paired. Only two or three seconds intervened between the time when the male overtook the female and the moment when they came to rest; so far as I could see the female was always in possession of the prey at the moment of alighting.

* Trans. Ent. Soc. Lond., 1906, p. 323.

Although I carefully examined every unpaired female seen at rest—and the number was considerable—in no instance did I find an example with prey.

The next observations were made on June 27th, when Mr. G. H. Grosvenor and I visited Bagley Wood, near Oxford. At 6.40 p.m. we came upon a very damp spot thickly overgrown with rushes (*Juncus*), on which were resting many individuals of this species. We decided to watch events, and soon found several pairs *in cop.*, some of which were captured; in all cases the female was noted to be in possession of the prey. In one instance we were able to watch the female squeezing the prey continually, probably the better to obtain the juices. We were not only enabled to confirm my previous observation of a day or two before, but to add a few details unnoted on that occasion. Those found at rest *in cop.* were closely observed, and it was seen that the male hung by its anterior pair of legs to the edge of a leaf or grass stem, supporting the whole weight of the female and her prey; the intermediate and posterior pairs of legs were tightly clasped round the female. A few males with prey were also seen settled upon the rushes, and these were carefully examined in order to ascertain the manner of holding the prey. From these observations we were perfectly satisfied that the prey was entirely free from the proboscis, being apparently held by the intermediate and posterior pairs of legs. In some cases, when the prey was rather large, an anterior leg would also be used for holding it, and the male Empid would then hang by one leg only. In one instance three males with prey were seen within a few inches of one another; one of these was boxed, and still retained its hold upon the prey for a minute or so after capture; another male with prey under observation rose to a female which was circling round quite close to it, and immediately paired in the air in the usual way. The insects were then netted as they were flying locked together. Another male, with a *Tortrix viridana* as prey, was seen to give chase to a female, and in my eagerness to secure the two I lost the female. We found no difficulty in distinguishing the sexes on the wing. The females fly very evenly and slowly round and round, while the flight of the male is more clumsy, due probably in some measure to the fact that he is burdened by the prey, which, when not too small, can be distinguished during flight; the male, furthermore, looks much browner than the female.

Further confirmation was afforded on June 29th when I visited "Mud Lane," just off the Cowley Road, Oxford; here, at 7.18 p.m., in a ditch bordering Lincoln College Cricket Ground, were found a

number of the same species. Six males were seen to give chase to females as they were circling round, and in each case both male and female were netted and the prey found in the net; in one instance the male retained possession of the prey, and walked up the side of the net still holding it. One pair was captured *in cop.*, the prey being in possession of the female; in another case two males were seen simultaneously to give chase to the same female. All three Empids were netted, and two insects captured as prey were found lying in the bottom of the net. On one occasion a male was observed to chase a female and to be repelled twice; at its third attempt the male was netted, and no prey was found in this instance.

Visits were also made to the last named locality on the evenings of June 30th, July 1st, 2nd, 4th, 6th and 7th, and on each occasion many observations were made almost identical with those narrated above.

The above observations entirely confirm Mr. Howlett's conclusions. The following interesting questions are raised:—(1) Does the male of *Empis livida* devour prey, and if so, to what extent compared with the female? (2) Does the female obtain food independently of that provided for her by the male, and if so, does she obtain it before as well as after pairing? (3) How does the male disable or kill the prey which he provides for the female? The facts here recorded show that the prey carried by the male is usually dead or motionless.

University Museum, Oxford:

July 9th, 1908.

Quedius nigrocæruleus, Muls. et Rey., &c., in Devonshire.—On February 8th, I obtained two examples of *Quedius nigrocæruleus*, Muls. et Rey., from moles' nests in a meadow by the River Plym. There were also in the nests a great many Staphylinid larvæ, varying in size, but on an average about half an inch long. Some score or so of these I have succeeded in rearing to maturity, and they prove to be *Q. nigrocæruleus* also. It seems therefore desirable to note the fact that both perfect beetle and larva occur together. A few days later than above date I caught two more mature examples of the *Quedius*, both in fine condition, in moles' nests several miles distant from the first locality. This seems to show that the occurrence of the first-named individuals was not irregular at all.

I did not observe the larvæ feed, but the following trifling incidents were noted: April 29th, larva discovered in a cell it had formed in the sand at the bottom of the feeding case (the cell did not appear to be lined in any way, and later on no traces of any cells were found when the sand was thrown out), pupation completed May 11th, perfect insect emerged early in June. May 1st, another pupa noticed;

May 21st, eyes darkened ; 30th, became perfect insect ; June 2nd, vacated its cell. In both cases the colour was well advanced before the pupal envelope was discarded ; and none of the specimens reared showed more than quite slight traces of immaturity of colour, nevertheless, they were rather tender to the touch. Many of the larvæ pupated amongst the nest *débris*, the supply of sand being probably too meagre, but all darkened before assuming the perfect state.

Heterothops nigra, Kr., occurred frequently and I also took two *Aleochara spadicea*, Er., one *Hister marginatus*, Er., and one *Choleva angustata*, F., in the nests, in which I have since obtained six examples of *Quedius vexans*, Epp. On July 18th I took a single (slightly damaged) specimen of *Quedius riparius*, Kelln., on the banks of a stream at Bovey Tracey.—JAMES H. KEYS, Morwell, Lipson Road, Plymouth : *July*, 1908.

Scymsus pulchellus, *Herbst.*—Having for a long time been doubtful about the identification of a series of *Scymsus* which is recorded as *S. testaceus*, Mots., in the "Irish Naturalist," 1902, p. 63, I referred specimens to Herr Ganglbauer. He was good enough to take the opinion of Herr Winzelmüller, a specialist on the genus, and their verdict is that they are *S. pulchellus*. The locality where they occurred is Gortconny Bog, near Ballintoy, Co. Antrim. None of my examples have the four distinct spots of the type ; they are either unicolorous, brown-red, or dark, with the two spots on each elytron broadly united. Herr Winzelmüller surmises that the Irish forms may be the var. *bilunulatus*, Weise, which he only knows by description.—J. R. LE B. TOMLIN, "Stoneley," Reading : *July 17th*, 1908.

Stenophylax alpestris and *Hemerobius quadrifasciatus* near *Sheffield.*—On July 4th last I had a day's collecting in an outlying wood ten miles' drive (no railway) from Sheffield, in company with Mr. L. S. Brady of Sheffield, and Mr. Corder of Sunderland. I was fortunate enough to take there no less than nine specimens of the rare *Stenophylax alpestris*, besides missing one or two others. They were mostly beaten out of pines in a wet marshy part of the wood. Its habits seemed curious for a *Stenophylax*, and indeed, were much more like those of a *Limnophilus*. Its Trichopterous companions were *Plectrocnemia conspersa* and *Limnophilus hirsutus*, but only sparingly. Beating the pines and larches, too, produced *Hemerobius quadrifasciatus* in abundance, many of them very dark, and indeed, when in the net, looking as black as *subnebulosus*.—GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield : *July 11th*, 1908.

Macaria liturata var. *nigrofulvata* in *Yorkshire.*—In the wood near Sheffield where I captured the *S. alpestris*, and on the same visit, I took a specimen of the variety *nigrofulvata* of *Macaria liturata*. This very striking form has of late years been taken in some numbers in Delamere Forest, in Cheshire, but scarcely anywhere else, and has not previously been recorded from Yorkshire. Curiously, it was the only specimen of *liturata* I saw that day, nor did my companions see any so far as I know. The fine slaty melanic form of *Venusia cambricaria* occurred not uncommonly to all of us.—ID.

"*Is Scoparia dubitalis a root- or a moss-feeder?*"—In the last volume of this Magazine (p. 42) I asked the question "*Is Scoparia dubitalis a root- or a moss-feeder?*" giving my own small experience and that of the late William Machin. As no answer appeared I endeavoured to find one myself. On May 7th last I paid a visit to a spot where I noticed the imago flying abundantly at dusk last summer and commenced pulling up the roots of *Rumex acetosella* without any success; as there was no moss to examine I tried the decayed vegetable matter and at once found a larva (a very dingy one even for a *Scoparia*!) feeding just beneath the surface under a very slight web; upon placing it with a handful of its food in a glass vase it obligingly spun its web against the side and fed for two or three more days, as quite a pile of frass testified, and then left, to spin up in a neat little earth-covered cocoon of grey silk, about an inch from where it had been feeding. A ♀ appeared on June 9th. From the above remarks it would seem that the larva is neither a moss- nor root-feeder, unless my solitary larva differed in its taste from its brethren. I quite expected to find it feeding in spun-together roots of *R. acetosella*—A. THURNALL, Thornton Heath: *July 3rd, 1908.*

Tachytes pectinipes, Linn., and its prey.—As evidence about the prey of this species seems conflicting (*vide* Saunders' *Hymenoptera Aculeata*, p. 80), it may be well to put on record the capture of a specimen here which was storing a good sized grasshopper. It was dragging the semi-paralyzed Orthopteron, about six times its own weight, by a series of rapid dashes up the face of an almost perpendicular rock to its burrow in a sandy crevice seven feet high.—WILLOUGHBY GARDNER, Deganwy, North Wales: *July 10th, 1908.*

Nomada guttulata at Swanage, Dorset.—Both sexes of this rare inquiline were visiting the flowers of *Veronica chamædrys* on the cliffs in the early part of last June. It seemed, however, to be rare there as elsewhere, for I saw no more than seven specimens in as many days devoted solely to it. Close observation of two colonies (in full working order) of *Andrena cingulata*, on which, according to Fries, *N. guttulata* is probably parasitic, produced nothing to support his view; on the other hand, the burrows of *A. nana*, which was the only other *Andrena* patronising the *Veronica*, seemed equally unattractive to the *Nomada*. Such specimens as I took might easily be passed over, both during flight and at rest, for large examples of *N. flavoguttata*.—C. H. MORFIMER, Holmwood: *July, 1908.*

Metatropis rufescens, Herr.-Schf., in the New Forest.—In the latter half of June I found a good many adult specimens (often in pairs) of this very elegant bug, by sweeping a small patch of *Circæa lutetiana* under the beech trees at Wood Fidley, New Forest. None, however, were seen in any of the earlier stages. In the sweeping-net *Metatropis* bears a strong superficial resemblance to one of the small light coloured *Tipulidæ* of the genus *Limnobia* so common in damp shady places, and is exceedingly active, taking readily to wing, though fortunately it is by no means as fragile as its delicate appearance would lead one to suppose.—J. J. WALKER, Oxford: *July 16th, 1908.*

Mallota cinibiciformis, Fln., in Northamptonshire.—On July 16th I took an example of the rare Dipteron, *Mallota cinibiciformis*, Fln., in Ashton Wold, Oundle, on privet blossom. I am indebted to Mr. E. E. Austen for the identification of the specimen in question.—N. CHARLES ROTHSCHILD, 6, Chelsea Court, S.W. : July, 1908.

Pegomyia univittata, v. Ros., and *P. setaria*, Mgn., in North Kent.—With reference to Mr. A. E. J. Carter's article in the June number of this Magazine, I am pleased to be able to record the capture of two males of *P. univittata*, v. Ros., at Bexley on June 20th. I also take this opportunity of recording the capture of a male of *P. setaria*, Mgn., at Chattenden on August 19th, 1905. This specimen agrees in most points with the description of *P. setaria*, Wdm., in Dr. Meade's "Descriptive List of British *Anthomyiidae*"; it is not included in the second edition of Mr. Verrall's "List of British *Diptera*," but Mr. Carter, who has been good enough to compare my specimen with the description in Herr Stein's recent Monograph, agrees in its identification as *P. setaria*, Mgn.—H. W. ANDREWS, Shirley, Welling, Kent: June 27th, 1908.

Review.

A NATURAL HISTORY OF THE BRITISH BUTTERFLIES, THEIR WORLD-WIDE VARIATION AND GEOGRAPHICAL DISTRIBUTION; A TEXT-BOOK FOR STUDENTS AND COLLECTORS; by J. W. TUTT, F.E.S. Vol. II, pp. 495, plates xxviii London: Elliot Stock. Berlin: Friedländer & Sohn. 1907—1908.

The second volume of Mr. Tutt's great work on our British butterflies deals with the very interesting little group of the superfamily "*Ruralides*," known to collectors as "Hairstreaks" (*Ruralinæ*), and with the first two of our "Blues" (*Lycæninæ*)—the essentially tropical *Lampides bæticeus*, a rare visitor to our shores, and our much more familiar "Holly Blue," *Celastrina argiolus*. To these seven species 400 pages are devoted, and the fact that the account of the last named butterfly, with a general summary of the tribe (*Celastrinidi*) to which it is referred, occupies no fewer than 105 pages (pp. 378—482), shows, if further proof were needed, that the work of Mr. Tutt is if possible even more detailed and conscientious than in the volume on the subject that has already appeared. Every reference to each of these butterflies, from pre-Linnæan times to the present date, would seem to have been brought together by the indefatigable author and his colleagues in the work, and the result is a mass of information which would be positively overwhelming were it not for the clear arrangement with which we are now familiar in Mr. Tutt's books; though perhaps here and there a little repetition may be noticed.

From such a wealth of valuable material it is by no means easy to make choice of any one subject of outstanding interest. We would, however, refer specially to the discussion as to the nature of the green colouring of the under-side of *Callophrys rubi* (pp. 97—99); and to the very full account of the life-histories of *Edwardsia w-album* (of which the generic name, pre-occupied in both Zoology and Botany, is amended by Mr. Tutt on p. 483 to the somewhat quaint title of

"*Chattendenia*"), and of *Strymon pruni*. The details of the almost universal distribution, in the warmer regions of the Old World, of *Lampides bœticus*, and of its more or less successful attempts to establish itself as a resident in less favoured regions (pp. 358—378) will be read with great interest; and the recorded instances of the occurrence of the species in England, seventeen in all, are critically discussed by the author on pp. 375—6, with the result that several at least of these records appear to be open to grave doubt. Perhaps the most interesting passage in the book is the practical demonstration, mainly by the exhaustive researches of Dr. Chapman, of the specific identity of the numerous and often very discordant-looking races of *Celastrina argiolus* occurring throughout the north temperate regions and extending into the tropics of both hemispheres (pp. 399—427).

As in the case of the preceding volume, the first eleven chapters (pp. 1—80) are devoted to general considerations of the preliminary stages of butterflies, the subjects here dealt with being the "Æstivation and Hibernation of Butterfly Larvæ"; "The Gregarious Habit of Butterfly Larvæ," and "Family Habits of Butterfly Larvæ." These chapters will be found of exceptional interest, as besides the numerous observations on the larvæ of our British Butterflies, a very large amount of detailed and valuable information on the allied and representative species in the Palearctic and Nearctic regions is here brought together. Indeed, we think it very desirable, in the event of the author not already having this idea in view, that the preliminary chapters of these and the succeeding volumes should be published as a separate work, which would form a most substantial contribution to the general knowledge of our butterflies, and of their allies abroad. The speculation on p. 11, that the failure of certain species, such as *Pyrameis cardui* and our two forms of *Colias*, to establish themselves as permanent residents in the British Islands, is due to the inability of their larvæ to accommodate their period of hibernation to our winter, is specially interesting and suggestive.

The numerous half-tone plates which illustrate this volume, especially those depicting the life-history of the species, fully maintain the high standard of excellence reached by those which appeared in Vol. I, and we would especially call attention to Plates IV and IX, in which all the stages of *Callophrys rubi* and *Strymon pruni* are clearly and beautifully rendered from photographs by Messrs. A. E. Tonge and Hugh Main.—J. J. W.

Societies.

BIRMINGHAM NATURAL HISTORY AND PHILOSOPHICAL SOCIETY.—The newly constituted Entomological Section (the old Birmingham Entomological Society) held its first meeting after the amalgamation on April 13th. The President, Mr. GEO. T. BETHUNE-BAKER, in the Chair.

The resignation of Mr. Colbran J. Wainwright from the Hon. Secretaryship after nineteen years' service was received with great regret, and Mr. A. H. Martineau was elected to fill the office for the present year.

The President exhibited and described some *Lycænidæ* from Australia, all of which are associated with ants during some portion of their life-history. Mr. H. Willoughby Ellis gave an account of the present knowledge of British Myrmeco-

philous Lycinid larvæ, and gave a list of records up to date, with remarks on the methods pursued by the ants in obtaining the juices from them. He also gave an account of the British Myrmecophilous *Coleoptera* with special mention of the work he and Mr. A. H. Martineau had carried out in the Midlands during the past year. Mr. A. H. Martineau exhibited specimens of *Formicoxenus nitidulus*, Nyl., from the nests of *Formica rufa*, L., from Knowle (Warwickshire). Mr. Herbert Stone, a piece of "marble ebony" sapwood showing ebony around the galleries of insects, also lancewood similarly ebonized. Mr. Hubert Langley, specimens of *Asthenia pygmaea*, Hb., and *Anybia epilobiella*, Roem., from Princethorpe, both species being additions to the Warwickshire List. Mr. H. Willoughby Ellis read a short paper on the present knowledge of the genus *Dinarda*, Grav., embodying the work of Donisthorpe and Wasmann and his own observations of the species collected from the nests of *Formica rufa*, L., and *F. sanguinea*, Latr., and from a number of specimens received from friends — ALFRED H. MARTINEAU, *Hon. Sec.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
Thursday, June 25th, 1908.—Mr. ALFRED SICH, F.E.S., President, in the Chair.

Mr. Tonge exhibited a large species of Mayfly (*Ephemera*) in the penultimate stage. Mr. Goulton, living larvæ of *Tethea subtusa* taken in Surrey. Mr. Rayward, batches of ova of *Macrothylacia rubi* found on heather tops at night, when they were very conspicuous. Mr. Edwards reported the capture at Blackheath of a ♂ and ♀ *Amphidaxys betularia*, var. *doubledayaria*, in cop. Various Members gave notes on this season's captures and observations.

Thursday, July 9th, 1908.—The President in the Chair.

Mr. Newman exhibited a rayed variety of *Abraxas grossulariata*. Mr. West (Greenwich), a short series of the local Coleopteron, *Dyliscus circumcinctus*, from Great Yarmouth, and specimens of the rare *Bidessus unistriatus* from the same place. Mr. R. Adkin, read a short account of the various meetings held during the Congress of the South-Eastern Union of Scientific Societies at Hastings. Messrs. Sich and Step made a few remarks on the excursions made during the Congress.—HY. J. TURNER, *Hon. Secretary*.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH TENTHREDINIDÆ, &c. (22).

SELANDRIADES (continued) SELANDRIA TO STROMBOCEROS.

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

Since the last instalment of these Help-Notes went to press, I have sustained an altogether irreparable loss by the death on March 18th of Pastor Konow. The promise of his assistance—a promise ever since amply fulfilled—was my chief encouragement to undertake this series of papers, and whatever in them hitherto has been of real value is (I may say without exaggeration) entirely due to

him. This summer, had he lived, my debt would have been largely increased; for we had planned that I should visit him bringing my entire British "material" of certain troublesome genera (*Dolerus*, *Tenthredopsis*, &c.) for final study and comparison with his own collections, before I came to write upon them. It is with no little anxiety that I now face the prospect of having to continue this work without the help that has hitherto made it comparatively easy, and on which I had counted as available till my task should be completed.

Proceeding now in our consideration of the British Selandriads we come to the genus from which the tribe is named, viz., *Selandria*, Klug.; and along with this I propose in the present paper to treat of three other genera, formerly united under the name *Strongylogaster*, Dahlbom, but distinguished by Konow in 1885 as *Strongylogaster*, *Thrinax*, and *Stromboceros*. All species of *Selandria* and nearly all of the other three genera* possess the very unusual and easily recognised character of a perfectly simple "open lanceolate cell" (Ent. Mo. Mag., 1903, p. 51, fig. 4a). An insect having that neurulation, *along with a broad ovate abdomen, and a costa conspicuously thickened before the stigma*, may be set down at once as a *Selandria*; but if the abdomen be elongate and cylindrical, and the costa simple, it should be sought in the three other genera.

SELANDRIA, Klug.

Selandria embraces a fairly large number of British species—all very uniform in general habit, but divisible by colour into two well-marked groups, in one of which the abdomen is red or orange (testaceous), while in the other it is entirely or nearly entirely black. The first group have a superficial likeness to *Athalia*-species, while the others mostly resemble (apart from their very different neurulation) certain of the more broad-bodied *Blennocampids*.

I can vouch from my own experience for all the species enumerated in Mr. Cameron's "Monograph" as British insects, except *temporalis*. Of this I can only say that I have seen the specimen so called (from Dumfries) in Mr. Cameron's collection at South Kensington, and see no reason to question that author's identification of it with *temporalis*, Thomson (a species otherwise unknown to me). I am acquainted also with two British species which are not mentioned in the Monograph, unless perhaps they are identical with forms there described as aberrations respectively of *flavens* and *stramineipes*. These are *wüstnei* and *fürstenbergensis* (first described

* The exceptions are *Strongylogaster filicis*, Klug., and *Thrinax* (?) *sharpi*, Cam.

by Konow in W. E. Z., 1885). Both were sent to me from Scotland by their captors, *wüstnei* by the Rev. A. Thornley from Ben Nevis, *fürstenbergensis* by Mr. J. R. Malloch from Arrochar, and both were examined and determined by the author of the species, so that I do not hesitate to include them in the following Table.

SYNOPTIC TABLE OF BRITISH *SELANDRIA* SPP.

1. Abdomen testaceous 2.
- Abdomen black 5.
2. Eyes almost as broad as long. Genæ well developed (about as long as the 1st antennal joint) 3.
- Eyes about twice as long as broad. Genæ narrow (many times shorter than the 1st antennal joint) 4.
3. Apex of clypeus, two basal antennal joints, and prothorax, yellowish or creamy-white. (3rd antennal joint considerably longer than 4th) *flavens*, Kl.
- Clypeus, antennæ, and prothorax black, or at most only narrowly and obscurely rufescent. (3rd antennal joint longer than the 4th, but clearly shorter than in *flavens*) ... *wüstnei*, Knw.
4. Smaller (7—8 mill. long). 3rd antennal joint not as long as the three apical joints together. (A common species in all districts) *serva*, F.
- Larger (9—11 mill. long). 3rd antennal joint evidently longer than the three apical joints together. Second medial nerve *regularly* interstitial (it is only *exceptionally* so in *serva*). Last ♂ ventral segment with a broad rounded apex. (Rare in Southern England, but Mr. Thornley has taken it freely in Lincolnshire, and the "Monograph" calls it "a common Scotch species") ... *sizii*, Vollenh.
5. Tegulæ white or yellowish 6.
- Tegulæ black 9.
6. Tempora not margined behind; pentagonal area not distinct (sec. Thomson and Cameron) *temporalis*, Th.
- Tempora margined behind; pentagonal area distinct 7.
7. Corners of pronotum widely yellowish (enclosing a small black circular spot). Labrum black. Claws simple *fürstenbergensis*, Knw.
- Pronotum black. Labrum pale. Claws bifid 8.
8. Abdomen entirely black (♂ and ♀) *stramineipes*, Kl.
- Abdomen white at extreme apex. (♀ only known!).
(According to Konow, i. litt., only a ♀ variety of *stramineipes*, "certainly not specifically distinct") *analisis*, Thoms.
9. Legs testaceous yellow *morio*, F.
- Tarsi and apices of tibiæ black, bases of the latter whitish *cinereipes*, Kl.
(= *aperta*, C.)

STRONGYLOGASTER, Dahlb.

Most of the species placed under *Strongylogaster* in the Mono-

graph belong (see. Konow) to *Thrinax* or *Stromboceros*. Of *Strongylogaster*, as defined by Konow, we seem to have the same three species which occur in Scandinavia and in Germany, viz., *cingulatus*, F., a very common species, and *xanthoceros*, Steph. (= *geniculatus*, Thoms.), and *filicis*, Kl., which are both apparently very rare. All occur on ferns in early summer, and I have taken both sexes of all three species in one day while collecting with Herr Konow in Mecklenburg. In this country I have only found *cingulatus*, both sexes of which I have taken pretty abundantly in the New Forest and elsewhere, though both Smith and Cameron speak of the ♂♂ as extremely rare. *Xanthoceros* ♀ I have received from Mr. Donisthorpe (Sherwood Forest, June, 1907), and another specimen was sent to me for identification in 1907 by Mr. C. Morley. The only British record for *filicis* known to me is that given in the Monograph "a ♂ taken by Mr. James Hardy at Wooler in Northumberland"; but according to Herr Konow the *Tenthredo atricornis* of Stephens "found near London, but rarely, in June" is probably to be referred to *filicis*. The Monograph, however, makes *atricornis* an aberration of *cingulatus*, and *xanthoceros* also. But there can be no doubt that the latter = *geniculatus*, and both Thomson and Konow regard its differences from *cingulatus* as specific.

The above species form Thomson's Sectio I of *Strongylogaster*. When once known they may be distinguished at a glance from those of his Sectio II (*Thrinax* and *Stromboceros*) by their much greater size and different style of coloration. They are also more punctured and less shining, and are further separable by the mesothorax being without "præsterna discreta" (Ent. Mo. Mag., 1903, p. 115, fig. 9).

SYNOPTIC TABLE OF BRITISH *STRONGYLOGASTER* SPP.

1. Claws not bifid. Humeral area in fore-wing divided not far from the apex by a transverse almost perpendicular nerve. Tegulæ black. Abdomen quite black in ♂, red (more or less black on the dorsum) in the ♀ without discoloured bands at the apices of the segments. Puncturation of abdomen above very coarse and rugose making the surface quite dull and opaque...
filicis, Kl.
- Claws bifid. Humeral area without cross nerve. Tegulæ white. Abdomen of ♂ entirely or largely reddish-testaceous; that of ♀ black with at the apex of each segment a conspicuous discoloured band whose tint gradually shades away from obscure red through orange and yellow into clear white at the actual apex. Puncturation of abdomen shallow and indistinct, its surface more or less shining 2.

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[VOL. XLIV.]

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2. ♂ abdomen practically quite red after the second segment. ♀ antennæ black (except the two small basal joints, which are red). Femora red (except their black bases). Upper half of stigma thickened and dark (opaque)...

cingulatus, F.

- ♂ abdomen distinctly blackened at apex, and more or less streaked transversely with black on the intermediate segments. ♀ antennæ testaceous, at least up to the base of the 4th joint. Femora black with their extreme apices whitish. Stigma about equally translucent throughout, testaceous...

xanthoceros, Steph.

THRINAX, KONOW.

In this genus the 3rd antennal joint is not as in *Strongylogaster* and *Stromboeceros* longer than the 4th, but either subequal to it or shorter. In the ♀ ♀ the valves forming the saw-sheath have a singular mucronate production at their apices; and, in some species at least, this makes the saw-sheath when viewed from above or below look actually tridentate.

Three British species certainly belong to *Thrinax*, and I believe also a fourth, viz., *Strongylogaster sharpi*, Cam. The specimens of the latter at South Kensington are in such a deplorable state that I have found it impossible to examine them satisfactorily, but at any rate they do not belong either to *Strongylogaster* in Konow's sense or to *Stromboeceros*. They are certainly very small as compared with the other *Thrinax* species, and their neurulation is apparently identical with that of *Strongylogaster filicis*; but they are as unlike that insect as possible in all other respects, and on the whole, judging from their form, colour, and antennæ, I can place them nowhere but in the present genus.

In naming our British species I have as usual followed Konow, and given in brackets, where they differ, the names employed by Mr. Cameron in the "Monograph."

SYNOPTIC TABLE OF BRITISH *THRINAX* SPP.

1. Lanceolate cell divided not far from the apex by a transverse almost perpendicular nervure. Very small species *sharpi*, C.
- Lanceolate cell "open" without cross-nervure. (Length, about 6—8 mill.)... 2.
2. "Antennæ of ♂ shorter than body; lateral mucronations at apex of the saw-sheath in the ♀ adjacent to each other" (see. Konow in W. E. Z., Jan., 1885) *contigua*, Konow.
(= *mixtus*, C. and Thoms., nec Klug).
- ♂ antennæ as long as the body, mucronations of ♀ s.s. *divergent* 3.
3. Clypeus and labrum black. Mucronations of ♀ s.s. only *slightly* divergent and very hairy. Femora of ♀ almost entirely black. Red of abdomen clearer,

more extensive and less interrupted by black, forming a complete band across the middle segments *mixta*, Kl.
(= *femoralis*, C.).

— Clypeus and labrum white; s.s. of ♀ scarcely pilose, and its mucronations *strongly* divergent. Femora of ♀ whitish-yellow. Red of abdomen obscure, forming rather an irregular dorsal splash than an actual band... *macula*, Kl.

Macula is probably the commonest species, at any rate in Southern England, and is the only one that I have personally met with. *Mixta* has been sent to me by Mr. Evans, of Edinburgh. *Contigua* (= *mixta*, C.) and *sharpi* I only know from the collections at South Kensington.

STROMBOCEROS, KONOW.

This genus is distinguished from its allies by the very thick 1st joint and the elongate (not transverse) 2nd joint of the antennæ, and in the ♀ by the short saw-sheath with simply rounded apex. We have, I believe, one species only, viz., *delicatulus*, Fall., generally occurring upon ferns.

It is a small and frail-looking, but pretty, little insect, with the unstable coloration (greenish fading to yellow) of a *Pteronus* of the *miliaris* group. No doubt, as Mr. Cameron says, it is more frequent in North Britain than in the south. But it is certainly not "entirely absent," and I doubt even if it is "very rare," in any part of England; for I have specimens from several midland and southern localities, and only last year Mr. Champion took it in Devonshire (Mortehoe) and kindly sent me the specimen.

(To be continued).

ALEOCHARA CRASSIUSCULA, SAHLB.: A BRITISH INSECT.

BY G. C. CHAMPION, F.Z.S.

My old friend, Mr. W. West, of Greenwich, has recently sent me specimens of this important addition to our list for determination, noting at the same time that the species was not described in Canon Fowler's work. About twenty examples were captured by him in May last, from under dung, on the Denes at Great Yarmouth, where *A. nitida* and *A. lanuginosa* also occurred in profusion. *A. crassiuscula*, Sahlb. (for which the name *A. mæsta*, Grav., is adopted in the last edition of Reitter's Catalogue, but which is, of course, not the

*A. mæsta** of our British lists), is closely related to *A. tristis*, Grav.—the two species forming the section *Isochara* of Bernhauer—but is easily separable therefrom by the very densely and much more finely punctured hind body, and the less coarsely punctate elytra, the latter with the discoidal patch always testaceous in colour. The following description is taken from Mulsant and Rey's "Brévipennes, sect. Aléocharaires," p. 65 :

BARYODMA (POLYCHARA) CRASSIUSCULA, Sahlb.

Sub-elongate, somewhat broad, sub-parallel, sub-convex, finely and densely pubescent, the pubescence wholly decumbent ; moderately shining, black, the disc of the elytra testaceous, the mouth, base of antennæ, and feet rufo-piceous, the knees and tarsi paler. Head finely, somewhat densely punctate. Antennæ distinctly thickened, the 2nd and 3rd joints sub-equal in length. Prothorax strongly transverse, moderately retracted in front, arched upon the sides, as broad behind as the elytra, finely and somewhat densely punctate. Elytra strongly transverse, a little shorter than the prothorax, somewhat broadly rounded at their postero-external angle, densely and roughly punctate. Hind-body moderately elongate, sub-parallel, rather finely and very densely punctate.

♂. Sixth abdominal segment sub-sinuously or simply truncate, and very finely, obsolete crenulate along the apical margin. Sixth ventral segment sinuate upon the sides, and sub-acutely prolonged in the middle, and somewhat densely ciliate along the posterior margin.

The elytra are sometimes wholly or in great part testaceous, but in the Yarmouth specimens (as in the long series from various Mediterranean localities before me) the scutellar region and sides are more or less infusate. *A. crassiuscula* is widely distributed on the continent, but apparently becomes commoner southward ; it is said by Mulsant and Rey to occur in dung and rotten fungi. The very densely punctured hind body and the testaceous patch on the disc of the elytra render it easy of recognition.

Horsell : August 15th, 1908.

CEUTHORRHYNCHUS PARVULUS, BRIS.: AN ADDITION TO THE
BRITISH LIST OF COLEOPTERA.

BY E. A. NEWBERY.

The above interesting addition to the British list was taken in some numbers in June last, by my friend Mr. Philip de la Garde, on *Lepidium heterophyllum*, Benth. (= *L. smithii*, Hook.), growing chiefly on a rubble-bank, near Braunton, Devon. Capt. Sainte Claire

* The name *A. sparsa*, Heer (= *succicola*, Thoms.), is used for this species.

Déville, to whom I sent specimens for corroboration, has been good enough to compare these with Brisout's original types, and is quite satisfied that they are correctly named. He tells me that the insect occurs in France on *Lepidium campestre*, Brown.

The species comes in the group with the following essential characters:—antennæ with 7-jointed funiculus; femora without teeth; claws slender, simple. It may be separated from the other British species in the group by the following table:—

A.—Suture of elytra without a band of closely placed whitish scales from base to apex.

a.—Elytra without a spot of whitish scales on the scutellum.

b.—Elytra black, with distinct double rows of scale-like whitish pubescence on the interstices; size larger. Long., 2—3 mm....

C. assimilis, Payk.

bb.—Elytra more or less blue or violet, scantily clothed with hair-like pubescence on the interstices; size smaller.

c.—Elytra bright blue, greenish, or violet; thorax usually brassy.

Long., $1\frac{1}{2}$ — $1\frac{3}{4}$ mm. *C. erysimi*, F.

cc.—Elytra dark blue, sometimes nearly black; thorax not brassy.

Long., 1— $1\frac{1}{3}$ mm. *C. contractus*, Marsh.

aa.—Elytra with a spot of closely placed white scales on the scutellum.

d.—Tegument of elytra black. Long., $1\frac{1}{2}$ —2 mm....

C. cochleariæ, Gyll.

dd.—Tegument of elytra, at least in part, reddish. Long.,

$1\frac{1}{2}$ — $2\frac{1}{4}$ mm. *C. querceti*, Gyll.

AA.—Suture of elytra with a band of closely placed whitish scales from base to apex.*

e.—Band of scales continued to apex of thorax; base of antennæ and legs ferruginous. Long., 2— $2\frac{1}{2}$ mm. ..

[*C. suturalis*, F.]

ee.—Band of scales not continued on thorax; antennæ and legs entirely black. Long., $1\frac{1}{2}$ —2 mm....

C. parvulus, Bris.

Ceuthorrhynchus parvulus bears a very strong superficial resemblance to small *C. floralis*, Payk., but may be readily separated by its 7-jointed funiculus, and by the different character of the scales on the interstices of the elytra, which are broader and whiter, and therefore more conspicuous. The original description may be found in "L'Abeille," Tome v, p. 441. *C. querceti* is not unlike the pale form of *C. terminatus*, Hbst.; it was added to our list comparatively recently by Mr. Champion (Ent. Mo. Mag., xxxv, 142). Specimens of

* The scales on the elytra are very liable to be abraded. Since constructing the above table I have seen a number of denuded specimens, in which only a trace of the sutural band is visible; but these cannot well be mistaken for any other species in the group, if size and the remarkable resemblance to *C. floralis* are taken into consideration.

C. cochleariæ occasionally occur with 6-jointed funiculus. *C. suturalis* has very small claim to be considered a British insect. The other species in the table are all common.

It may perhaps be as well to mention that the only British species now remaining in the genus *Ceuthorrhynchidius*, if we follow Schultze and the latest (1906) European Catalogue, are *horridus*, Panz., *troglodytes*, F., *rufulus*, Duf. (= *frontalis*, Bris.), *dawsoni*, Bris., and *barnevillei*, Gren. (= *chevrolati*, Brit. Cat.), all of which have a 6-jointed funiculus; tarsal claws dentate on inner side of base; elytral interstices with a row of upright bristles; and the dorsal teguments usually reddish.

13, Oppidan's Road,
Primrose Hill, N.W.:
August 11th, 1908.

A NEW INDIAN SPECIES OF *ANARSIA*.

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

The object of describing this new *Anarsia* is to admit of reference being made to it by Mr. H. Maxwell-Lefroy, the Government Entomologist, in his forthcoming Manual of Indian Entomology, as it is a species of some economic importance.

ANARSIA EPHIPPIAS, *n. sp.*

♂ ♀. 11—12 mm. Head and thorax pale grey, irrorated with dark grey. Palpi whitish-grey, irrorated with dark grey, second joint suffused with dark fuscous except towards apex, terminal joint in ♀ with two oblique dark fuscous bands above middle. Antennæ dark grey, beneath pale spotted. Abdomen grey mixed with blackish, apex whitish-ochreous. Fore-wings elongate, narrow, costa slightly arched, apex round-pointed, termen extremely obliquely rounded; fuscous, irrorated with grey-whitish, and irregularly sprinkled with dark fuscous; a subtriangular dark fuscous spot on middle of costa, preceded and followed by two or three indistinct, dark fuscous, oblique strigulae; sometimes five or six irregular blackish marks arranged as fragments of a median longitudinal streak, but these are often little indicated: cilia grey, irrorated with grey-whitish and a few black specks. Hind-wings grey, thinly scaled and subhyaline towards base, darker posteriorly, in ♂ veins and termen suffused with dark fuscous; cilia grey.

Pusa, Bengal; four specimens. Bred in August from larvæ feeding amongst spun leaves of *Arachis hypogæa* (ground-nut) (Maxwell-Lefroy).

Thornhanger, Marlborough
August 17th, 1908.

NOTES ON THE BRITISH DRAGONFLIES OF THE "DALE COLLECTION."

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

Now that the "Dale Collection," in accordance with the will of the late Charles William Dale, has found a home in Oxford, and is under the care of Prof. E. B. Poulton, it will be possible for entomologists to consult it in the Hope Department of the University Museum. To assist the number (still small, but nevertheless increasing) of those who are interested in the British *Odonata*, the following notes of the species contained in the collection have been prepared.

To look at, this part of the collection is not prepossessing. The specimens are often badly set, and in poor, to extremely poor, condition; but as regards historic and scientific interest their importance is of the first order, though one would have liked to find them with a cared-for appearance nevertheless. The majority of the specimens bear labels of some kind—often two, or even more—but still there is unfortunately a considerable number without any sign of history whatever. This is a pity, for James Charles Dale, the father of the late owner, and John Curtis were fellow workers and collectors, and there is little doubt that the figures* in Curtis' "British Entomology" are taken as much from Dale's insects as from his own, and to this is due to some extent the importance of the "Dale Collection."

In this paper the *Anisopterides* are passed in review, the *Zygopterides* being reserved for a later occasion. The former are contained in seven and a half drawers, and comprise the respectable total of 168 insects. All are here referred to, although it may be possible to say nothing about them except the negative fact that they are unlabelled. The sex is given in every case. (J. C.) means that the label is in J. C. Dale's handwriting, (C. W.) in that of his son; "filled in" is added if the label is partly printed. There may of course be now and then a little doubt as to the identity of the handwriting, but there usually is not; that of C. W. Dale is at times barely decipherable. Sometimes a label is pinned at the side of an insect; this is indicated by the addition of "at side." In one or two cases these side labels are apparently incorrect. The numbers in brackets give the order in which the insects stand in the cabinet.

Commander J. J. Walker has been kind enough to check the many numbers and dates, and to assist me in recognising the handwriting of both J. C. and C. W. Dale, though that of the latter could not easily be mistaken.

* The dragonflies, however, are three only.

Libellula depressa.—There are six specimens, two males (1, 2) and one female (4) being without labels. A female (3) is from Whittlesea Mere, July, 1837 (J. C. in red ink). A female (5) bears three labels, Herne Bay, 1842 (J. C.), *depressa* ♀ (J. C.), and Glanvilles Wootton (at side); as does also another female (6), W. Mere (J. C. in red ink), July 16, 1837 (J. C. filled in), and Peterborough (at side). In the case of No. 5, the first and third labels do not agree.

Libellula quadrimaculata.—Four males, (7) Wn. Chester (?) 1843; (8) Middlemarsh (J. C. in pencil), and May 11, 1819 (J. C. filled in); (9) Scotch, 1847; (10) Chant, 46.

L. q. prænubila, var.—Two females, (11) Parley (J. C. in pencil); (12) Whittlesea (J. C. in pencil), and June 26, 1818 (J. C. filled in).

Libellula fulva.—Six specimens, of which a male (13) and a female (15) are unlabelled. A male (14) is from Herne (J. C. in pencil), July 5, 1837 (J. C. filled in); another male (16) has Parley Heath (at side); while a third (17) is labelled Ireland, R. W.* 1849 (J. C.), and Dingle (at side). A female (18) is dated May 19, 1819, and has Herne (at side).

Libellula cancellata.—Again six specimens, three males and three females. Of the males (19) has a blank pink label, (21) has Chant, 46, while (23) has June 24, 1842 (J. C. filled in), and Whittlesea Mere (at side). The three females each bear two labels (20) Ent. Club, and in addition, from C. W. D. 29/1/1877 (C. W. in pencil); (22) Farr, and H. Y.; (24) Aug. 16, 1837 (J. C. filled in), and Huntingdon (at side).

Libellula cærulescens.—Seven examples, one female (28) bearing no label. Of the rest five males are thus described: (25) Cosmore Common, July, 1839 (J. C.); (26) July 1, 1839 (J. C. filled in), and Middlemarsh (at side); (27) Scotch, 1847 (J. C. probably), and N. B. (at side); (29) Ireland, 1849, R. W. (J. C.), and Ireland (at side); (31) Land's End, Augst, 1864 (C. W.), and Land's End (at side). The seventh, a female (30) is from Boscombe Chine, June, 1846 (J. C.).

Libellula flaveola.—This is one of the more interesting species, owing to the doubt as to whether it breeds in this country, the uncertainty of its appearance and perhaps also the paucity of females pointing to its being a migrant. The cabinet contains seven examples, six males and one female, one of the males (35) being unlabelled. So few British females are known, that this well authenticated example (34) is of considerable importance. Two males (32, 33) and the female (34) apparently belong to the same catch, they bear labels (32) Whittlesea, July 16, 37 (in MS.); (33) *basalis* (J. C.), and July 16, 1837 (printed label filled in); (34) Whittlesea (J. C. in red ink), July 16, 37 (J. C.), and in pl.† July 16, 37, Stilton Fen (J. C.). No. 36 is labelled Ent. Club, (37) has two labels, *basalis* (Stephens' writing probably), and Mr. Stephens. (38) has Whittlesea Mere (at side).

Libellula striolata.—Twelve specimens, one male (40) and two females (47, 49) being unlabelled. The other males are—(41) Charmouth, Oct., 67 (C. W.); (43) Constantine, 1873 (printed label, 73 filled in); (48) Charmouth, Sept^b. 1845 (J. C.), and Sep. 3, 1845 (J. C. filled in); (50) labelled as the last, but with

* Richard Weaver, probably.

† *In pluribus* (?).

"Glanvilles Wootton" (at side), this side label being probably the wrong one. There are five females with labels—(39) W. Mere, 1842 (J. C. probably); (42) with four labels, 1014 (printed), Dale, Apr 1833 (on the reverse $\frac{2 \frac{2}{7} 5$), Dale, and I. of Iona, Aug 4 1825; (44) Nov 19 1821 (J. C. filled in), and Glanvilles Wootton (at side); (45) Constantine, 1873 (printed label, 73 filled in); (46) *vulgata* (J. C. probably). The date of No. 44, presumably that on which it was captured, is the latest with which I am acquainted; I have taken the species myself on November 14th.

Libellula meridionalis.—Both specimens of this "casual" are males without record of date or place of capture. No. 51 is described as *meridionalis*, ♂ (possibly in J. F. Stephens' writing). No. 52 is labelled *meridionalis*, De Selys (J. C.), and Evans (J. C.).

Libellula vulgata.—Of this species, which is perhaps a "casual" like the last, the Dale Collection contains four specimens—two males (53 and 54) without labels, and two females (55 and 56). No. 55 is described as "*L. vulgata* ♀ adulte," and No. 56 is labelled, "from Mr. Harrison of Hull, 1837" (J. C.'s writing, almost certainly), and is of special interest as being the earliest of the five British specimens of which we possess records.

Libellula fonscolombii is yet another "casual," of which the collection contains three specimens, two—(57) a male, and (58) a female—being old and unlabelled. No. 59, a male, is one of those captured by Chas. A. Briggs, in Surrey, 3 June 1892 (C. A. B.'s label). A second label gives "Fleet Pond, Surrey" (C. W.), which is a mistake for "Boldermere, or Hut Pond," near Ripley, where Mr. Briggs made his captures. Fleet Pond, moreover, is in Hampshire.

Libellula sanguinea.—There are seven examples—six males and one female, which probably represent fairly the proportion in which the sexes are usually captured. No. 60 bears record, Whittlesea (J. C.); (61) Aug. 15, 1837 (J. C. filled in); (62) in pl. Aug. 15/37, Holme, Hunts. (J. C.), and Whittlesea (J. C. in red ink); (63) unlabelled; (64) Whittlesea Mere, 1825, Mr. Bently (J. C.); (65) Whitwell (J. C.), Aug. 16, 1837 (J. C. red label, filled in), and Whittlesea (at side). The single female (66) is labelled—Aug. 15/37, Hulme, Hunts. (J. C.), and Huntingdon (at side).

Libellula dubia.—Seven specimens, of which two males (68, 69) and one female (71) are unlabelled. A male (67) is described as "H. D. 1843. Epping," and is evidently one of Doubleday's insects; but it is extremely unlikely that it was taken at Epping. Another male (70) is from Delamere, Ches. (C. W.). A female (72) bears the date Aug. 11, 1837 on a yellow label with J. C.'s figures, while another female (73) has a yellow label of the same sheet as the last, but not filled in. The last insect has Yorkshire (at side), which no doubt refers to the previous insect also.

Libellula scotica.—Of this species there are no less than fourteen examples, of which two (75, a male, and 86, a female) are in "teneral" condition, and five (75, 77, 81, 85, 87), three males and two females, are without labels. The rest are described as follows:—a male (74) W. Mere (J. C. in red ink); a female (76) Cooke (J. C. probably); a female (78) W. Mere (J. C. in red ink); a female (79) June 28, 1818 (J. C. filled in); a female (80) Purbeck (at side); a male (82) Gl.

Wootton (printed), and Glanvilles Wootton (at side); a male (83) July 11, 1842 (J. C. filled in); a female (84) Cooke (J. C. probably); a female (86) Scot^d.—R. W. (J. C. probably).

Cordulia curtisii.—No doubt the five examples of this species are the most interesting in the whole collection, as J. C. Dale is the author of its name. His original description is to be found in London's Magazine of Natural History, Vol. ii, p. 60. In connection with this he writes, under date, Sept., 1833:—"On June 29, 1820, I discovered a new *Cordulia* on Parley Heath, Hampshire. It is one of the finest insects I have ever found; and I had proposed to name it after a certain friend, but objection has been raised to its bearing his name 'he not being the captor.' As it has remained a nondescript up to this time, and is unnoticed, so far as I can find out, by Van der Linden, Charpentier, and other writers, I now venture to describe and name it after a friend whom I saw capture it." There is no specimen in the collection bearing the date 1820, though No. 89, a mature female with "Parley Heath" (at side), may be of that date. The other specimens with their labels are:—a female (92) July 16, 1823 (J. C. filled in), and Parley Heath (at side); a male (88) June 8, 1831 (J. C. filled in), and Parley Heath (at side); a male (90) C. W. Dale, Iford, June 10, 1892. (C. W.); a female (91) Bournemouth [in Hants.*], 1903 (C. W.), and Bournemouth (at side). As both sexes of the species were described by J. C. Dale in September, 1833, we must look upon all the specimens he then possessed as co-types. Very possibly also any examples of earlier date than this in the "Curtis Collection," now in the Victoria National Museum at Melbourne, may have been passed under review when the description was being made. The female is figured in Curtis' "British Entomology," pl. 616, and the author speaks of one specimen on June 8th, 1831, captured by himself—presumably the one figured, and also presumably taken when in company with J. C. Dale, who also has a specimen of that date.

Cordulia ænea.—Five specimens:—a male (94) Chant, 46; and four females, (93) May 24, 1821 (C. W. filled in); (95) Thorne Moor, Mr. Beckett (in red ink, C. W. probably); (96) H. D. 1843 (probably H. Doubleday's writing); (97) Chant, 46.

Cordulia arctica.—Five specimens, one of which, a female (101), has no label. A male (98) is labelled "Irish" in pencil, probably in C. W.'s writing, and a female (99) is similarly labelled, but has in addition "Killarney" at the side. A male (100) is labelled "Scotch," in pencil, probably in C. W.'s writing, and a female (102) has "Scotland" at the side. Of these the Irish examples are the most interesting, as the species was scarcely to be expected from Killarney. Possibly, however, there are other dragonfly surprises in store from the south-west of Ireland.

Cordulia metallica.—Again five examples, the earliest of them being comparatively modern. A male (107) has a label "Dr. White, June, 1870" filled in by C. W., and "Strathglass" at side (C. W.). The other four, also males (103—106), were taken by J. J. F. X. King at Guisachan, in August, 1899, and all bear his typed label to that effect.

Gomphus vulgatissimus.—There are six specimens, all but one rather sparsely labelled. A male (108) has "Lydlimeh" at side; another (109) simply bears the

* The words within [] are a guess only, the writing being practically indecipherable.

number "4," a third (110) has H. D. 143 (J. C.); and a fourth (111) June 11, 1820 (J. C. filled in). A female (112) has H. D. 1843 (J. C.); another (113) has May 11, 1819 (J. C. filled in), and Parley Heath (at side).

Cordulegaster annulatus.—Of this species there are eight examples, of which two males (118, 120) are unlabelled. The remaining six bear the following inscriptions:—a male (114) Mus. Cheldr.; a male (115) Dale; a male (116) June 10, 1817 (J. C. filled in); a female (117) Glanvilles Wootton (at side); a female (119) Chant, 46; a female (121) Glanvilles Wootton (at side).

Æschna pratensis.—The examples of this species are in two groups, some being placed in Drawer 4, others in Drawer 5. There are eight in all, of which a male (125) has no label. The rest are labelled as follows:—a male (122) H. D. 1843 (J. C.); a male (124) Chant, 46; a female (123) H. D. 1843 (J. C.); a female (126) June 29, 1818 (J. C. filled in), and Parley Heath (at side); a male and a female (135, 136) Kirkman's Sale, 1847 (J. C.); a female (137) Parfitt, Exeter, 1858, and Devonshire (at side), also *aspis*? var. (at side).

Anax formosus.—Eight specimens of this fine insect, of which one male (127) bears no inscription. The rest are labelled as follows:—a male (128) May 23, 1831 (J. C. filled in); a male and a female (129, 133) Chant, 46; a male (131) *Æschna* (in pencil); a female (130) July 28, 1819 (J. C. filled in), and Parley Heath (at side); a female (132) Ent. Club; a female (134) Glanvilles Wootton (at side).

Æschna mixta.—This insect, not long since considered so scarce as British, is well represented by seven rather fully labelled specimens:—a male (140) Black Pond, 7.9.01 (W. J. L.)*; a male (141) Curtis. Dover (in pencil), and Dover (at side); a female (138) Ent. Club, and W. Christy Jersey; a female (139) Ent. Club; a female (142) Yarmouth, Pagett. f. Farr, June, 1849 (J. C.), and Suffolk (at side); a female (143) Walton, 1844 (J. C.); a female (144) Gl. Wootton, July, 1807 or 8? (J. C.), July c. 1807 (at side, J. C. filled in), also Glanvilles Wootton (at side).

Æschna borealis.—Four specimens, one female (145) being without a label. The other three are from Scotland, as would be expected. They are:—a male (146) Jul. 1854 (J. C. filled in), and Scotch. R. W. 54 (J. C. in pencil); a female (147) July, 1847 (J. C. filled in), and Scotch. 1847. Hodgkinson (J. C.); a female (148) Rannoch, June, 1896 (C. W.), and Rannoch (at side).

Æschna cyanea.—This common species is represented by four examples only, one female (149) bearing no label. The others are:—a male (150) Herne Bay, 1842 (J. C.); a female (151) Kirkman's Sale, 1847 (J. C.); a female (152) Glanvilles Wootton (at side).

Æschna juncea.—Eight specimens, two only being males. The males are (153) Jul. 1846 (J. C. filled in), and Scotch. R. W. 1846 (J. C.); (160) Loch Swilly, Donegal, Thos. Lighton, Esqr. (? J. C.'s writing), and IRELAND (at side). Females:—(154) Jul 21, 1825 (J. C. filled in), and 735, also Scotland (at side); (155) Woolmer Fo. 1842 (J. C.), and Jul 9, 1842 (J. C. filled in); (156) Rannoch, June, 1896 (C. W.), and Rannoch (at side); (157) Penzance, E. R. Dale, Aug., 1864 (C. W.), and Penzance (at side); (158) British, Dr. Leach (J. C.); (159) Manchester, 1842 (J. C.), and Lancashire (at side).

* This is one of the author's Surrey specimens.

Æschna rufescens.—The collection contains four only of this local Fen species:—a male (162) Norfolk, July, 1905 (C. W.), and Norfolk (at side); a male (163) June 28, 1818 (J. C. filled in); a female (164) Aug. 5, 1824 (J. C. filled in), and Whittlesea Mere (at side); also a male (161) with a label bearing 11 or II (?).

Æshna (sic) grandis.—Four specimens, two, a male (165) and a female (166) being unlabelled. The other two are:—a male (167) Parley Heath (at side); a female (168) Xchurch, and Christchurch (at side).

(To be continued).

NOTES ON PHORIDÆ IN DUMBARTONSHIRE, WITH DESCRIPTION OF A NEW SPECIES.

BY J. R. MALLOCH.

During the month of March, 1908, I spent some time searching moles' nests in the hope that I might discover some species of *Phoridæ* which had not yet occurred to me. I succeeded in obtaining from one nest a large number of pupæ, which, though they did not prove to belong to an unrecorded Bonhill species, were of a species that is generally considered rare, *i.e.*, *urbana*, Mg., and the closely-allied *thoracica*, Mg. I got forty pupæ from the nest and bred about thirty *urbana*. There was no evidence of any carrion having been in or about the nest, so that the inference is that the larvæ fed upon the mouldy grass, &c., which formed the outer portion of the nest. A peculiar feature about the emergence of the flies is that they sometimes took forty-eight hours to develop their wings. I paid particular attention to most of them and I did not observe one case in which the wings developed in less than twelve hours. I have taken other species, notably the allied *curvinervis*, Beck., and also *abdominalis*, Flin., in an undeveloped condition, but they always attained maturity in an hour or two. Possibly the underground habitat may have something to do with this peculiarity. Another strange thing about the emergence of the specimens is that they began to appear in the beginning of April. All my specimens that I had netted were taken in June. This applies to both species. Dr. Wood gives *urbana* as occurring under carrion in the spring; but in the north here even the common *curvinervis* does not appear till May. The pupæ were kept in a cold room, so that artificial conditions could hardly be responsible for their early appearance, especially after only a fortnight's time.

Early in spring during the last three years I have taken a species of *Phora* commonly here which I have confounded with *lugubris*, Mg. For want of typical specimens of that species I allowed those to remain in my series, and I have given several away to friends as *lugubris*. Lately I obtained a good series of the true *lugubris*, and I at once saw that my specimens were quite different and belonged to a species not in the British list. I have accordingly now resolved to describe the species so that it may be possible to clear up this matter a little for others who may be situated as I was before I got sufficient material to assist me.

PHORA INTERMEDIA, n. sp.

♂, ♀. Black; frons shining, short, about half as long as broad, frontal bristles strong, lower row convex; 3rd joint of antennæ large in the ♂, moderately large in ♀, arista pubescent; palpi in the ♂ large and broad with weak marginal bristles, in ♀ narrow with strong end and weaker marginal bristles; proboscis in ♂ small, in ♀ large and projecting beyond the palpi; thorax shining; scutellum with four bristles, the basal pair distinctly weaker than the apical; halteres black; abdomen hardly shining, 1st and 6th segments lengthened in both sexes, 1st segment emarginate posteriorly; the peculiar patch present at the base of the 2nd segment of the abdomen in *lugubris* is also seen in this species, but more distinctly; hypopygium large and glossy, smaller than in *opaca*, but very similar in appearance; *intermedia* may always be distinguished by the single process on the right side (viewed from behind) being simple at the tip and not dentated, and also by the pair of processes on the left side being much more dissimilar in size than in *opaca*, the outer being about three times the size of the inner; anal protuberance small and black with a few long hairs; legs black, yellow generally present on all the joints in variable proportion, the fore-tibiæ and the tarsi usually pale; fore-tarsi thickened, longer than the tibiæ by the length of the last joint; fore-tibiæ with one bristle below the basal third and no apical bristle; mid-tibiæ with two bristles in the basal third and an outer fringe of short hairs, apical spur long; hind tibiæ with one bristle situated almost on the middle; wings in the ♂ tinged with brownish-yellow, in the ♀ much darkened; costa to beyond the middle of the wing, thickened on the outer half and short fringed; 1st division slightly longer than the 2nd; 3rd vein forked, and distinctly thickened; 1st thin vein leaving the 3rd thick vein at considerably beyond the fork with a gradual sweep and ending nearly straight at the wing tip; 4th thin vein ending abruptly in both sexes at about two-thirds to the wing margin. 2—2½ mm.

This species differs from *lugubris*, Mg., in the unequal size of the scutellar bristles, in the position of the hind tibial bristles, in the absence of the rectangular twist to the base of the 1st thin vein, in the abbreviated 4th thin vein, and its smaller size. From *opaca*, Mg., it may be distinguished by the length of the abdominal segments, by

the characters given in the description referring to the hypopygium, and by the presence of the hind tibial bristle, as well as the differently sized scutellar bristles. The thickened costa and large hypopygium will serve to separate it from *sublugubris*, Wood. The species is very common at Bonhill, Dumbartonshire, in May and June every year.

Phora vitripennis, Mg., which has hitherto been a very scarce species here, turned up on July 11th this year in a most unexpected manner. I had the impression that the likeliest place to look for this species was in humble bees' nests; but while searching for small *Phoridae* on a wall which skirts the highway between Bonhill and Dumbarton, the day being wet, I discovered a number of this insect on a patch of moss. The first specimens I took were a pair *in cop.* I searched carefully for more, and altogether I took twenty-eight specimens, several of which had the wings in an undeveloped condition. The species was just emerging, and I saw one male emerge from the moss, and it looked quite strange with the yellow thorax and minute milk-white wings. Those undeveloped specimens were matured in an hour or two. The ♀ if taken singly may confuse one if worked out by Dr. Wood's table, as the costa extends beyond the middle of the wing, the 2nd division being quite $1\frac{1}{3}$ times the 1st. The hind tibial bristles are constant however.

Bonhill, Dumbartonshire, N.B.:

July, 1908.

HYADINA NITIDA, Mcq., A SPECIES OF DIPTERA NEW
TO THE BRITISH LIST.

BY J. R. MALLOCH.

Last September I found at Bonhill, Dumbartonshire, a specimen belonging to the genus *Hyadina*, which I had some doubt about, and I submitted it to Mr. Collin, who returned it as *nitida*, Mcq. The genus comes next to *Philhygrina* in our list, and the species may be distinguished from that genus by the bristles on the sides of the face being much finer, by the shining brownish colour of the insects, and by the matt black marks on the scutellum and, except in *nitida*, on the pleuræ. The following table should serve to distinguish the species:—

- 1 (2) Scutellum entirely matt black *scutellata*, Hal.
 2 (1) Scutellum with central part shining.
 3 (4) Pleuræ with matt black spots *guttata*, Flin.
 4 (3) Pleuræ without matt black spots *nitida*, Meq.

The clear spots on each side of the outer cross vein in *guttata* are absent in *nitida*, and in the latter the 5th vein is much less distinctly bent before the cross vein, and the legs are paler. All three species occurred abundantly at Bonhill in May and June of this year.

Bonhill, Dumbartonshire, N.B. :

June, 1908.

Additional localities for Anisotoma flavicornis, Ch. Brisout.—We are indebted to Mr. N. H. Joy for the first record of this species as British. It will be found, I think, that nearly all the examples standing in our collections under the name *A. parvula* are really *A. flavicornis*. At any rate, that is the case as regards my own series of nineteen specimens, seventeen apparently belonging to *A. flavicornis* and two to *A. parvula*. The sharply toothed posterior femora of the ♂ of *A. flavicornis*, as stated by Mr. Joy, readily distinguishes that species, but the females of the two insects are by no means easily separable, the colour of the antennal club not being a reliable character. My own *A. flavicornis* are all from Kent or Surrey—Darenth Wood, Cobham Park, Whitstable, Caterham, Mickleham, Claygate, and Guildford (some of these localities being quoted by Canon Fowler, on my authority, for *A. parvula*) and my two *A. parvula* are from Chattenden and Chatham respectively.—G. C. CHAMPION, Horsell, Woking: August 15th, 1908.

Supplementary note on Mr. N. H. Joy's list of Scilly Island Coleoptera.—Mr. Joy, in his valuable "Note on the Coleoptera of the Scilly Islands" (*antea*, pp. 175—178), appears to have overlooked my Supplementary List [Ent. Mo. Mag., xxxv, pp. 156, 157 (July, 1899)], bringing up the total number of species from 126 to 162. Amongst the 36 additions to my first list, 23 are not included by Mr. Joy, and 13 (out of his 139 said to have not been previously recorded) have to be deducted, making the present number 275. It may be remarked that I made my head-quarters on St. Mary's, whereas Mr. Joy spent his time on Treseo, which I visited for a few hours only. This island, with its large freshwater-lake, and its beautiful sheltered shrubberies and gardens, is evidently, as might be expected, a much more favourable hunting-ground than the wind-swept treeless, St. Mary's, as shown by the large number of species (200) met with by Mr. Joy. Apparently he found no trace of *Pleurophorus* (*Psammobius*) *cæsus*, which is said to have occurred on Treseo. This may be the insect alluded to by Mr. Holme? *Pissodes notatus* and *Hylastes ater* are, of course, introduced forms. Doubtless others of the same class will yet be found there.—ID.: August 17th, 1908.

Further captures of Malachius vulneratus, Ab., in Kent.—Having had occasion, a day or two ago, to refer to Mr. G. R. Waterhouse's Catalogue of British *Coleoptera* (1858), a particular name attracted my attention—p. 57, *Malachius*, sp. 5, *spinuosus*, Er. ?

Knowing how very careful my father was, I wondered why he had included that species in his list. I looked in his collection, and, somewhat to my surprise, found five specimens standing under that name. On the first is written, "*Malachius spinuosus*, ♀, Erichs.," and on the back of that label, "Kiesenw.," so I presume it was identified by Kiesenwetter. The insect was captured in Sheppey, on June 29th, 1856. The second specimen was taken on the opposite banks of the Medway, near Upnor, on May 31st, 1857, and the others in Sheppey on June 21st, 1858. These are all referable to *M. vulneratus*, Ab. Rye, it may be observed, also included *M. spinuosus*, in his "British Beetles" (1866, p. 258), and it is difficult to understand why the species has been quietly dropped out of our lists. I have already recorded the capture of *M. vulneratus* by Dr. Power in Sheppey, in June, 1859 (Ent. Mo. Mag., xli, p. 234). His specimens, as well as those in my father's collection, are all of the female sex—E. A. WATERHOUSE, British Museum (Natural History), Cromwell Road, S.W.: *August 11th*, 1908.

Colias edusa, ♂c., in 1908.—In my visits to the Isle of Sheppey, annually made in August from 1904 onwards, a good look-out has always been kept for *Colias edusa*. This year, for the first time since 1904 (Ent. Mo. Mag., vol. xl, p. 256), this erratic butterfly has put in an appearance in some numbers; the first specimen was observed on July 29th, and a week later it was sufficiently common to admit of a dozen or more being seen in the course of a sunny morning, in the lucerne-fields within a couple of miles of Sheerness. Up to the date of my leaving the Island, August 18th, the number of ♂s has been out of all proportion to that of the other sex, only four ♀s in all having been seen. The specimens that have been taken are for the most part very fine and in brilliant condition, but in all my long experience with this species, I have never before seen it so restless and so active on the wing; the difficulty of capture being enhanced by the persistent way in which they were "mobbed" by every butterfly, large or small, which came near them in their flight. I could not hear of any having been observed by the local collectors in the early months of the summer, though a solitary ♀ was taken on September 9th last year. *C. hyale*, which has not been taken in Sheppey since 1902, when it was very common, was not seen at all, and *Pyrameis cardui*, though present, was much scarcer than I had expected from the immigration of the species in June (*ante*, p. 157). I obtained one larva of *Manduca atropos*, about three-quarters grown, on August 5th, and heard of others having been found in the potato-fields.—JAMES J. WALKER, Oxford: *August*, 1908.

Clunio marinus, Haliday, in Scotland.—On June 27th this year (1908), when collecting marine animals in the rock-pools near Dunbar, Dr. J. H. Ashworth and I had the good fortune to meet with a colony of this curious marine midge. With the exception of one female, all the specimens I secured—about a score—are males. They were particularly plentiful on some patches of *Laurentia hybrida*, *Ceramium*,

and other small sea-weeds. This is, I believe, the first record of *Clunio marinus* from Scotland and the east coast of Britain. References to the occurrence of the insect on the coasts of Ireland, Isle of Man, and the South of England will be found in this Magazine for the years 1894 and 1903. — WILLIAM EVANS, 38, Morningside Park, Edinburgh: *July 21th*, 1908.

Nephrocerus flavicornis, Ztt., at Lyndhurst.—After a lapse of eleven years I have once more had the good fortune to take, on July 28th last, in my garden here, a ♀ specimen of this rare Dipteron.—F. C. ADAMS, Fern Cottage, Lyndhurst: *August 2nd*, 1908.

Review.

PRACTICAL HINTS FOR THE FIELD LEPIDOPTERIST: by J. W. TUTT, F.E.S. Second Edition, Part I. London: Elliot Stock, 62, Paternoster Row, E.C. Berlin: R. Friedländer & Sohn. April, 1908.

In a previous number of this Magazine (vol. xli, p. 73) we had the pleasure of noticing Mr. Tutt's very useful and comprehensive work under the above title. The first edition of "Practical Hints" being now in the hands of nearly every advanced student of the Order *Lepidoptera* in our Islands, and thus being out of print, the indefatigable compiler has found time in the intervals of the other work on which he is engaged to bring out a new edition. This is substantially the same as the first, with the addition to Part I of several Chapters, separately paged (1)–(28), dealing with matters of general interest to the Lepidopterist; and it is with these new chapters that we are now mostly concerned. The first is devoted to the apparatus required for a day's work in the field, according to the author's experience of many years; and Chapter II is occupied with the various methods of killing Lepidopterous insects in the best condition for setting. The old-fashioned but very useful "laurel-jar" is described on p. (6); but in our own experience we find the laurel equally effective and much less likely to "go wrong" when simply cut up finely and not bruised as recommended. Chapter III deals with "Pinning," and in the next chapter the case for the various kinds of pins—enamelled black, gilt, and plain white or "silvered"—is decided in favour of the first-named, though we notice that the Curators of most, if not all, the chief public collections are unswerving in their adherence to the last, as well as to the "high setting" alluded to on p. (19) in the very interesting and practical Chapter V on "Setting *Lepidoptera*." The methods and importance of labelling form the subject of Chapter VI, especial reference being made to the elaborate and detailed system in use in the "Insect Department" of the Oxford University Museum. Chapter VII, entitled "Holiday Collecting," contains on p. (28) a very useful reference list, compiled by the Rev. C. N. Burrows, of papers and notes on the more famous British and Alpine localities, contributed to the "Entomologist's Record." As before, the work is interleaved for the collector's own notes; and we heartily wish this new edition the same success as its predecessor has deservedly gained.

Society.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
Thursday, July 9th, 1908.—Mr. ALFRED SICH, F.E.S., President, in the Chair.

Mr. Hy. J. Turner exhibited a female specimen of *Agriades bellargus* caught at Rannmore, measuring only 22 mm. in expanse, and an example of *Hesperia malvæ* from Eastbourne with hind-wings normal, but having coalesced blotches on the fore-wings as in *ab. taras*. Mr. Newman, living larvæ of *Xylina semibrunnea* with that of *X. socia* for comparison, pointing out the peculiar green ground tint and the more distinct lateral line of the former. Mr. Adkin, light and dark forms of larvæ of *Biston hirtaria*, pointing out that the difference was permanent through each moult, and that the depth of colour did not seem to depend upon environment. Mr. West (Greenwich) the following Hemiptera taken by him in June in the New Forest :—*Cicadetta montana*, *Sigara minutissima*, *Eysarcoris æneus*, and *Orthostira cervina*. Mr. Carr, the nymph skin of the large Dragonfly *Anax imperator*, found at Oxshott. Mr. Sich, a larva and pupa of *Parnassius apollo* ? sent by Mr. Egbert Sich from the Engadine, Switzerland, and stated that when irritated the larva protruded an osmaterium. Mr. Tutt called attention to the waxy secretion covering the surface of the pupa which effectually secured it from the damp of the marshy ground upon which it pupated.—HY. J. TURNER, Hon. Secretary.

ON THE PROCTOTRYPID GENUS *ANTEON*, WITH DESCRIPTIONS OF NEW SPECIES AND A TABLE OF THOSE OCCURRING IN BRITAIN.

BY THE LATE ARTHUR J. CHITTY, M.A., F.E.S., &c.

(Concluded from page 146).

TABLE OF BRITISH SPECIES.

♀ ♀.

- | | | |
|--------|---|-------------------------------|
| I. | Wings atrophied or almost wanting..... | 1. <i>subapterus</i> , Kieff. |
| II. | Wings normally developed. | |
| | Head reticulate, at least in front of eyes..... | 2. <i>crenulatus</i> , Kieff. |
| | Head not reticulate, shagreened, punctured or smooth. | |
| A. | First section of radius distinctly longer than second, ordinarily two or three times as long, and making an angle with it. | |
| a. | Head with one or three frontal ridges, stretching from the front ocellus to between the antennæ. | |
| a". | Inner branch of the chelæ without plates, except sometimes at their extremity; anterior metatarsus longer than the three following joints united; head finely shagreened or smooth. | |
| a"". | Antennæ longer, with 3rd joint three times as long as thick... | |
| | | 3. <i>barbatus</i> , Chitty. |
| b"". | Antennæ shorter, with 3rd joint at most $2\frac{1}{4}$ times as long as thick. | |
| a""". | Extremity of the inner branch of the chelæ with two or more plates. | |
| a"""". | Metathorax with three areæ; antennæ reddish-yellow...4. <i>carinatus</i> , Kieff. | |

- b^{''''''}. Metathorax with at most one distinct area ; antennæ brown, at least on the apical half.
- aa. Inner branch of the chelæ curved at the end and with a group of very short plates, not exceeding in length a third of the thickness of the branch, middle with a row of bristles as short as the plates ; vertex strongly shagreened5. *arcuatus*, Kieff.
- bb. Inner branch of chelæ straight to its end, which bears two plates as long as the thickness of the branch, the middle with bristles as long as the plates ; head dull or slightly shining ; metathorax with a cross ridge, without an area.....6. *vicinus*, Kieff.
- b^{''''}. Extremity of inner branch of chelæ without plates ; metathorax without a cross ridge.
- aaa. Antennæ reddish-yellow, thickened at end.....7. *flavicornis*, Dalm.
- bbb. Antennæ brown, short and not thickened8. *imberbis*, Kieff.
- b^{''}. Inner branch of the chelæ with one or more rows of dense plates ; fourth joint of the anterior tarsi the longest.
- x. Head transversely striated with three ridges ; third joint of antennæ twice as long as wide9. *tricarinatus*, Kieff.
- xx. Head rugosely punctured with one ridge ; third joint of antennæ three times as long as wide.....10. *kiefferi*, Chitty.
- b. Head without a frontal ridge, rarely with a little ridge situate before the ocellus, and hardly longer than it ; usually with an impressed longitudinal line more or less distinct.
- z. Wings hyaline, with a transverse band occupying the apical third...
11. *infectus* (Hal.), Walk.
- zz. Wings hyaline, at most with a brown spot.
- y. Inner claw of chelæ without lamellæ.....12. *rufulocollis*, Chitty
(? *dorsalis*, Nees, ? *collaris*, Dalm.).
- yy. Inner claw of chelæ with lamellæ.
- s. Prothorax and mesonotum, except the part between the parapsidal furrows, blackish-red ; no frontal furrow ; otherwise like *unicarinatus*...
13. *fuscicollis*, Kieff.
- ss. Prothorax orange, yellow or whitish.
- t. Insect yellow, with the eyes, a point at the base of the hinder tarsi, and the metathorax, black.....14. *ephippiger*, Dalm.
- tt. Head, thorax or abdomen mostly black.
- u. Prothorax as long or a little longer than the mesonotum...
15. *claricollis*, Kieff.
- uu. Prothorax longer than the mesonotum.
- v. Head distinctly punctured in front ; clypeus and face with whitish pubescence ; scape hardly longer than third joint of antennæ...
16. *gaullei*, Kieff.
- vv. Head less distinctly punctured, with no whitish pubescence ; scape distinctly longer than third joint17. *cameroni*, Kieff.
- sss. Prothorax black.
- o. Fourth joint of anterior tarsi a little shorter than third, first longer than second and third united, third a little shorter than first (the metathorax and inner claw of chelæ also different ; but MS. illegible.—C. M.)...
18. *longitarsis*, Kieff.

- oo. Fourth joint of anterior tarsi hardly longer than third, which is equal to the two following united, and a little longer than the fifth; metathorax not shining19. *breviflilis*, Kieff.
- ooo. Fourth joint of anterior tarsi a little longer than the first, equal to or longer than the fifth; inner claw of chelæ with one or two rows of plates; metathorax with three areæ.
- p. ° Prothorax a third longer than mesothorax, and narrower than it, coriaceous, feebly shining; wings hyaline20. *gracilicollis*, Kieff.
- pp. Prothorax a third or fourth shorter than the mesonotum; thorax shining, shagreened, with a few shallow punctures; wings yellowish on the apical third21. *fusiformis*, Kieff.
- oooo. Fourth joint of anterior tarsi not half as long as first, shorter than fifth; inner claw of chelæ often unarmed, except at the extremity.
- q. A short ridge placed before the front ocellus and hardly longer than it.
- r. Metathorax with a transverse curved ridge, forming the boundary between the horizontal and sloping part; joints of flagellum distinctly longer than wide; parapsidal furrows distinct for the front half; inner claw of chelæ entirely straight.....22. *rectus*, Kieff.
- rr. Metathorax with a large, dull, rugose area; sixth to ninth joints of antennæ not longer than wide; parapsidal furrows indistinct; inner claw of chelæ curved at the end23. *obscuricornis*, Kieff.
- qq. No trace of a frontal ridge.
- f. Legs entirely black-brown24. *brachycerus*, Thoms.
- ff. Legs, at least the anterior, in part light coloured.
- g. Metathorax with a transverse ridge.
- h. Legs clear brown; head with a very short ridge in front of ocellus...
22. *rectus* (cf. *supra*).
- hh. Trochanters, knees, tibiæ and tarsi testaceous-yellow; hind tibiæ brown, except base; head coriaceous, hardly shining, with an indistinct impressed line.....25. *scoticus*, Kieff.
- gg. Metathorax with one or three areas, more or less distinct; inner claw of chelæ curved at end.
- i. Metathorax with three quite distinct areæ26. *triareolatus*, Kieff.
- ii. Metathorax with one indistinct area.
- j. Intermediate and hind legs brown, knees testaceous; anterior legs brown with the knees, tibiæ and tarsi testaceous; coxæ brown with the apices testaceous27. *brevicollis*, Kieff.
- jj. Legs and apices of coxæ of a bright yellow colour, except the tibiæ, which are brown; second joint of antennæ clear brown...28. *flavitaris*, Kieff.
- jjj. Legs reddish-brown, base and thickened part of femora brown; parapsidal furrows indistinct; area well marked.....23. *obscuricornis* (*supra*).
- jjjj. Legs black, trochanters, knees, tibiæ and tarsi brownish-yellow; hind tibiæ brown29. *curvatus*, Kieff.
- B. First section of radius shorter, or at most as long as second; radius usually curved.
- a. First section of radius as long as second; anterior metatarsus longer than the other joints.

- x. Inner claw of the chelæ unarmed except at the extremity, which is bent and armed with two teeth; antennæ long; legs, except base of posterior coxæ, clear yellow; metathorax with a distinct area...
30. *æqualis*, Kieff.
- xx. Inner claw with one or two rows of plates, interrupted before the extremity; metathorax without a distinct area.
- s. Mandibles, clypeus, face below, scape, palpi, coxæ, and legs yellow; rest of antennæ brown; third joint of antennæ a little shorter than the scape31. *frontalis*, Dalm.
- ss. Face entirely black, except mandibles and sometimes the clypeus; third joint of antennæ as long as, or longer than, the scape.
- z. Pronotum at least as long as mesonotum; head strongly punctured.
- i. Third joint of antennæ five times as long as thick; flagellum black; posterior coxæ only blackish at the base; otherwise like *procericornis*...
32. *melanocera*, Kieff.
- ii. Third joint of antennæ three and a half times as long as thick; joints of antennæ one and two reddish-yellow, three to six brown, seven to ten brownish-yellow33. *crassiscapus*, Kieff.
- zz. Pronotum a little shorter than mesonotum; head smooth, or shagreened, or very finely punctured; metathorax gradually sloping from base.
- q. Ninth joint of antennæ not more than half as long again as thick.
- r. Antennæ, coxæ, and legs transparent yellow.
- h. Mandibles white with brown teeth; ninth joint of antennæ longer; wings yellowish34. *vitellinipes*, Kieff.
- hh. Mandibles clear yellow; ninth joint shorter; wings whitish, with nervures and stigma clear yellow35. *longifilis*, Kieff.
- rr. Flagellum brownish-red; two basal joints of antennæ and the legs red...
36. *halidayi*, Kieff.
- qq. Ninth joint of antennæ at least twice as long as thick; antennæ black or yellowish-red.
- v. Head smooth and shining; mandibles, palpi, antennæ, legs, and coxæ yellow; wings whitish, with nervures and stigma very pale yellow; third joint of antennæ as long as first37. *försteri*, Kieff.
- vv. Head finely punctured or shagreened, shining; wings hyaline and a little yellowish, with nervures and stigma clear yellow; third joint of antennæ distinctly longer than first38. *procericornis*, Dalm.
- aa. First section of radius shorter than second (except in *halidayi*, which has antennæ little shorter than body); fourth tarsal joint sometimes as long as the metatarsus.
- s. Pronotum subquadrate, at least as long as mesonotum.
- t. Antennæ transparent yellow, and as long as the insect...
39. *longicornis*, Dalm.
- tt. Antennæ with flagellum brownish-red, the first two joints and the legs red; antennæ little shorter than body36. *halidayi* (cf. *supra*).
- ttt. Flagellum black or dark brown; the first two joints of antennæ, base of third, coxæ and legs clear red40. *declivis*, Kieff.

- ss. Pronotum a third shorter than mesonotum ; black ; mandibles, antennæ, coxæ, and legs transparent yellow ; wings hyaline, nervures and stigma very clear yellow41. *pallidinervis*, Kieff.

♂ ♂.

- A. First section of the radius two or three times as long as the second ; third joint of antennæ at most two and a half times as long as thick.
- a. Head with one or three frontal ridges ; scape longer than third joint.
- x. Metathorax truncate with a curved cross ridge, dividing the horizontal and steep part ; head dull and coriaceous6. *vicinus*.
- xx. Metathorax with one or three areæ.
- s. Parapsidal furrows well marked in front.
- o. Flagellum beneath, scape, coxæ, and legs red42. *flavinervis*, Kieff.
- oo. Antennæ black ; the four hind legs mainly dark23. *obscuricornis*.
- ss. Parapsidal furrows wanting, or barely traceable.....43. *parvus*, Kieff.
- aa. Head without frontal ridge, but usually with a frontal impression in the form of a line.
- r. Scape a little shorter than the third joint44. *nitidellus*, Kieff.
- rr. Scape as long as the third joint.
- c. Head almost smooth, shining, indistinctly shagreened or punctured ; metathorax without well-defined area45. *fuscoclaratus*, Kieff.
- cc. Head distinctly, densely, and finely punctured ; metathorax with three areæ, as dull and rugose as the adjoining parts ; funiculus slighter than two basal joints of antennæ46. *filicornis*, Kieff.
- rrr. Scape distinctly longer than the third joint.
- f. Metathorax gradually sloping with a triangular area : that is to say, closed above by a straight line.....47. *triangularis*, Kieff.
- ff. Metathorax with a median area curved above, or without an area.
- g. Antennæ beneath, base of scape and of joints, yellow ; legs yellow, except part of femora and hind tibiæ48. *ellimani*, Chitty.
- gg. Antennæ and legs entirely pale yellow49. *xanthostigma*, Kieff.
- ggg. Antennæ black or brown-black.
- h. Metathorax without a well-marked area.
- i. Metathorax truncate ; area badly defined ; head shagreened ; third joint of antennæ half as long again as thick ; parapsidal furrows indicated by traces or wanting.....50. *indivisus*, Kieff.
- ii. Metathorax gradually sloping, without an area.
- j. Head shining, with a puncturation neither close nor distinct ; third joint of antennæ two and a half times as long as thick ; parapsidal furrows distinct in type, wanting in variety51. *divisus*, Kieff.
- jj. Head shining and very distinctly punctured52. *breviventralis*, Chitty.
- hh. Metathorax with one or three well-defined areæ.
- k. Metathorax with one well-marked area.
- l. Legs, without coxæ, yellow or testaceous, the posterior sometimes a little brown.
- m. Coxæ black, except at apices53. *trivialis*, Kieff.
- mm. Coxæ and scape entirely yellow54. *flaviscapus*, var., Kieff.

- ll. Knees, except sometimes those of hind legs, tibiæ and tarsi, testaceous ; femora and coxæ black or brownish-black (*cf* also *indivisus*, No. 50).
- n. Parapsidal furrows well marked.....27. *brevicollis*.
- nn. Parapsidal furrows little marked.
- p. Head dull and shagreened ; scape a little longer than third joint ; second joint two and a half times as long as thick ; third joint about double the length of fourth, and longer than third.....55. *suffolciensis*, Chitty.
- pp. Head shining and densely punctured ; frontal line a little marked...
56 *vulgaris*, Kieff.
- kk. Metathorax with three areæ.
- q. Head dull, shagreened ; only traces of parapsidal furrows present...
43. *parvus*.
- qq. Head shining ; parapsidal furrows wanting or well-marked...
57. *succineipes*, Kieff.
- B. First section of the radius hardly longer than the second.
- t. Scape longer than the third joint58. *minutellus*, Kieff.
- tt. Scape shorter than the third joint59. *nigroclavatus*, Kieff.
- C. First section of radius equal to or shorter than the second ; scape shorter than third joint ; metathorax without area.
- u. First section of radius equal to second ; third joint of antennæ three to five times as long as thick.
- v. Head, except sometimes frons, and thorax, shining and smooth...
60. *integer*, Kieff.
- vv. Head distinctly punctured.
- w. Antennæ with the first two joints yellow-red.
- x. Thorax distinctly punctured61. *parvicollis*, Kieff.
- xx. Thorax smooth or partly shagreened...
62. *pyrenaicus*, Kieff., var. *caledonicus*.
- ww. Antennæ unicolorous black.....63. *morleyi*, Chitty.
- uu. First section of radius shorter than second.
- y. Third joint of antennæ two and a half times as long as thick...
64. *curvinervis*, Kieff.
- yy. Third joint of antennæ more than three times as long as thick.
- k. Metathorax truncate, horizontal in its basal half ...65. *fractinervis*, Kieff.
- kk. Metathorax gradually sloping from the base66. *hyalinipennis*, Kieff.
- (Not tabulated by the Author.—C. M.)..... { 67. *beaumonti*, Chitty.
68. *luffnessensis*, Chitty.

[NOTES ON OTHER SPECIMENS IN MR. CHITTY'S COLLECTION.

2. *A. arcuatus*, Kieff.—One, Blean Woods, near Faversham, 12.6.04 (Chitty) ; one, beaten from white poplar, Bentley Woods, near Ipswich, 11.7.04 (Morley).
2. *A. vicinus*, Kieff.—One, Holme Fen, 3.6.05 (Chitty) ; one, named *Antæon flavicornis*, Dalm., by the Rev. T. A. Marshall, among grass at the base of a large aspen on the bank of the Alde at Farnham, Suffolk, 24.7.99 (Morley).

1. *A. imberbis*, Kieff.—One, named *Anteon brevicornis* (Dalm.), Thoms., by the Rev. T. A. Marshall, beaten from birch or poplar in Assington Thicks, Suffolk, on 21.5.99 (Morley).
1. *A. carinatus*, Kieff.— 7.05 (E. Saunders).
1. *A. infectus* (Hal.), Walk., “or *scapularis*, Hal.; head without frontal ridge.”—One, Chesham, 17 6.06 (Chitty).
3. *A. gaullei*, Kieff.—One, Tubney, near Oxford, 1.7.06 (Chitty); two, both named *Chelogygnus ephippiger*, Dalm., by Marshall, swept in marshes on bank of the Gipping at Bramford, Suffolk, 7.7.97, and swept from *Fumaria officinalis* flowers at Tattingstone, Suffolk, 5.7.99 (Morley).
1. *A. gracilicollis*, Kieff.—One, bred from nest of *Leptothorax acervorum*, Monks Wood, Hunts. (Chitty).
1. *A. fusiformis*, Kieff.—One, swept in the Reydon alder carr, near Southwold, Suffolk, on 4.6.05 (Morley).
1. *A. delicatulus*, Chitty, MS. (between *fusiformis* and *rectus*, Kieff.).—One, named *Chelogygnus* sp., by Marshall, swept in marshes, Ranworth Broad, Norfolk, 15.6.01 (Morley).
3. *A. æqualis*, Kieff.—Synonymized by Mr. Chitty with *Dryinus lucidus*, Hal., Curt., Walk., Ent. Mag., 1837, p. 415. Two, named *Chelogygnus lucidus* by Marshall, taken at Whitby on 13 and 20.8.97, and one at Colwyn on 28.8.91 (Beaumont).
1. *A. försteri*, Kieff.—One, Faversham district, 4.6.06 (Chitty).
1. *A. longicornis*, Dalm.—(Provisionally labelled “*oxoniensis*, Chitty”).—One, Oxford, 1.7.06 (Chitty).
3. *A. melanoleucus*, Nees, Mon., 388; Ent. Mag., 1837, p. 427.—Three, Faversham district, 4.6.06 (Chitty).]

ON THE BRITISH SPECIES OF *PHORA* (PART II).

BY JOHN H. WOOD, M.B.

(Concluded from page 174).

Formicarum, Verr.—I have not come across the insect myself, probably because I have not gone the right way to work. Lubbock, who discovered both the insect and its parasitic habits, says that if a nest of *Lastus niger* is disturbed at any time in the summer, these small flies may be seen hovering about and every now and then making a dash at one of the ants. The original specimens appear to have

been lost; those I have seen were swept by Mr. Collin in the paddock behind Mr. Verrall's house at Newmarket in August, 1897.

Umbrimargo, Beek.—This insect may be recognised at once by the peculiar lie of the supra-antennal bristles. Apparently a common and widely distributed species. My earliest date for it is May 4th, and from thence it continues on to the end of the summer.

Sexspinosa, Coll. MS.—A fine and unmistakable species, known from any of our other species by the six large bristles on the scutellum. Very local. Most of my specimens come from Stoke Wood, where I find it in the damper parts. I also have it from Dorstone and Wapley Hill in the west and north of the county respectively. The only other British locality I know of is Nethy Bridge, where it has been taken both by Colonel Yerbury and Mr. King. Mr. Collin writes that the female is represented in Kowarz's collection, now in the possession of Mr. Verrall. It seems to be double brooded, being on the wing in June and again in August, September and October.

Picta, Lehm.—Scarce, and always to be considered a prize when one is included in the day's bag. The dates and localities for my one male and three females are—♂, Stoke Wood, June 26th, 1903, ♀ ♀, Haughwood, May 20th, 1902, Stoke Wood, June 21st, 1900, and July 31st, 1907. Another in Mr. Verrall's collection was taken by Mr. Jenkinson at Logie, July 5th, 1902. These are the only British examples I know of.

Giraudi, Egg.—Here again I have but four representatives, two males and two females. The males were taken at Woolhope, August 16th, 1902, and June 5th, 1905, the females at Westhide, May 17th, 1905, and Coldborough Park, June 12th, 1906. All belong to the black form, in which the whitish genitalia stand out as the most obvious character. The yellow form is represented by a single specimen in Mr. Verrall's collection, taken by Dr. Sharp in the New Forest in June, 1906. This sums up all I know of it as a British insect.

Meigeni, Beek.—Of this I have met with one male from Stoke Wood, June 10th, 1907, and seven females, their dates ranging from July 20th to September 17th in the years 1905, 6 and 7. The females also are all from Stoke Wood, with the exception of two, which were swept in a small boggy pool in what is known as Middle Park, part of an old deer park just outside the wood. The pool is supplied by a strong perennial spring, and has a small alder bed at its head. It is a singularly rich bit of ground, and one never comes away from it empty handed. All my specimens have a red or yellow thorax, and I have not seen the dark form which is met with abroad.

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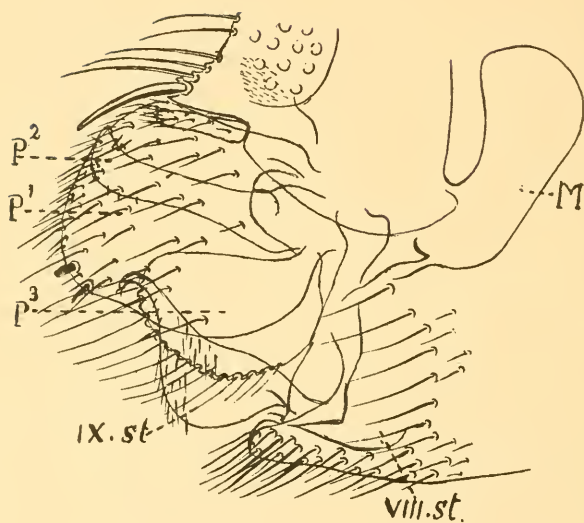


FIGURE 1.

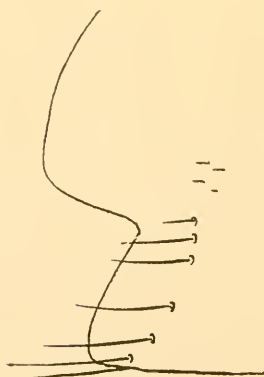


FIGURE 2.

Retroversa, n. sp.—A single male, Stoke wood, July 15th, 1905. Quite distinct from *projecta*, the only point in common between them being the large palpi. But even here the resemblance is only in the matter of size, the shape of the organ being different in the two species. It comes, however, much nearer to an insect from the West Indies, the *magnipalpis* of Aldrich, yet is quite distinct. For in *magnipalpis* the 1st costal division is not longer than the 2nd (it is more than twice as long in *retroversa*), the inner branch of the 2nd thick vein is not turned backwards, and the course of the 2nd thin vein is peculiar, being almost parallel to the 1st vein, all which points are clearly shown in a figure of the wing in Brues' Monograph.

I have besides another remarkable form with large and bare palpi, belonging to this Section, but as its condition is poor, it will have to stand over for the present.

Nudipes, Beck.—Becker described the species from the female, I have only met with the male. I came upon it in the first instance by sweeping two specimens at Woolhope on May 4th, 1903; subsequently two others were captured in Stoke wood, also in the spring of the year (April 4th, 1906, May 15th, 1907). There seems to be very little difference in the sexes. The high and glossy frons, the small and stubby-bristled palpi, and the peculiar sculpture on the hind tibiæ are sufficient to prevent confusion with any other species.

Fuscinervis, n. sp.—I find it wherever I collect. Mr. Collin records it from Chippenham Fen in June, and Mr. Malloch has also sent it me from Bonhill. We may, therefore, conclude that it is a common and widely distributed species. June and July are the times to look for it. A rough and ready way of identifying it is:—the male by the large antennæ, and both sexes by the extremely small angle formed by the branching of the 2nd thick vein.

Paludosa, n. sp.—Found only in wet places in June, July, and August, and widely distributed in the county. Cusop Dingle, Tram Inn, Howle Hill, near Ross, Shobdon Marsh, and the banks of the rivers Wye and Monnow are among the places in which I have met with it. In some of its localities it occurs in fair numbers, yet, strange to say, I have never taken the female. The contrast between its pale legs and deep black body, its small size, and broad squat figure are highly characteristic.

Spinigera, n. sp.—This fine and very distinct species is, for the present at least, confined to Herefordshire, and even here it is rare and local. In the four years, 1904–07 inclusive, I have accumulated

only nine specimens, about equally divided between the sexes. Its period of flight seems also to be unusually brief for a *Phora*, extending only from the middle of May to the first week in June. With the exception of one from Ashperton Park, all the others were taken in Stoke wood. The extreme extent to which the anterior scutellar bristle is reduced in one of the males, and its small size in all of them, led me originally to treat the sexes as distinct species, placing the male in the Section with only two scutellar bristles. They have, however, so much else in common, that there cannot be a doubt that they are one and the same thing. The female bears a superficial resemblance to the same sex of *campestris*, but the long projecting ovipositor and very short arista are quite sufficient to distinguish it; whilst other characteristic features are the two or three strong pleural bristles (only one in *campestris*), and the wide flattened and arched hind tibiae.

Campestris, n. sp.—A common species, occurring as far north at least at Bonhill. It is rather variable in the colour, both of the wings and legs, the darker legs being associated with the clearer wings, and *vice versa*—an illustration of the general rule governing colour in these insects.

Besides the unnamed species alluded to above, under *retroversa*, there are at least two other forms in my collection with four bristles to the scutellum, which are without a doubt distinct species, but I prefer waiting for more material before introducing them.

ON THE BRITISH SPECIES OF *HELOPHORUS*, FAB.

BY JAMES EDWARDS, F.E.S.

The difficulty which I have experienced in the process of determining the British species of *Helophorus* in my collection leads me to conclude that their differential peculiarities may be restated with advantage. I therefore offer the following table, prepared with the insects before me, in which I have contrasted the best index-characters that I could find for the several species, and I believe that the segregation of the specimens according to the characters here employed will give a result more satisfactory than that to which we are accustomed. In most of the species there is rather a wide range of variation, both in size and colour. The species of the *affinis* group are at first sight very difficult but here I had the advantage of possessing examples of all three determined by Herr Ludwig Gangl-

bauer, without which I certainly could have come to no satisfactory conclusion concerning them. With the view to facilitate reference to extra-British literature I have adopted the names used in the last European catalogue; they are not, in some cases, those to which we have been accustomed, but I am not in a position to say that they are wrongly applied by the authors of that work.

- 1 (14) Elytra with a scutellary stria.
- 2 (3) Elytra black; 3rd, 5th, and 7th interstices tuberculate...
tuberculatus, Gyll.
- 3 (2) Interstices not tuberculate.
- 4 (9) Alternate interstices cariniform and setose.
- 5 (6) Humeral angle of elytra almost acute*rufipes*, Bosc.
- 6 (5) Humeral angle of elytra rounded off.
- 7 (8) Intermediate furrows on thorax angulated near the middle...
porculus, Bedel.
- 8 (7) Intermediate furrows on thorax nearly as straight as the dorsal one...
nubilus, Fab.
- 9 (4) Alternate interstices not cariniform and setose.
- 10 (11) Last joint of maxillary palpi symmetrically fusiform. Eleventh elytral interstice not cariniform*alternans*, Gené.
(*intermedius*, Muls.).
- 11 (10) Last joint of maxillary palpi more convex on the outer- than on the inner-side, the latter nearly straight. Eleventh elytral interstice cariniform.
- 12 (13) Joints 2—4 of the hind tarsi successively decreasing in length, the second hardly $1\frac{1}{2}$ times as long as the third. Hind margin of last ventral segment evidently denticulate*aquaticus*, L.
- 13 (12) Second joint of the hind tarsi more than $1\frac{1}{2}$ times as long as the third, the latter a little longer than the fourth. Hind margin of the last ventral segment nearly entire*aqualis*, Thoms.
- 14 (1) Elytra without a scutellary stria.
- 15 (18) Last joint of maxillary palpi symmetrically fusiform.
- 16 (17) Thorax coarsely granulate throughout, its sides strongly rounded before the middle, the subsequent narrowing excavate*arvernicus*, Muls.
- 17 (16) Thorax coarsely granulate at the sides only, which are moderately rounded before the middle with the subsequent narrowing straight...
brevipalpis, Bedel.
- 18 (15) Last joint of maxillary palpi more convex on the outer- than the inner-side, the latter nearly straight.
- 19 (31) The longitudinal furrow on the head widened in front.
- 20 (34) Thorax widest before the middle.
- 21 (22) Elytra dark brown with an oblique suffused patch on the basal third, another near the middle of the outer margin, and a sharply-defined

roundish spot near the apical fifth next the suture, on each, yellow...

4-signatus, Baeh.

(*dorsalis*, Auctt. Angl.).

22 (21) Elytra not as in *4-signatus*.

23 (26) Sides of thorax evidently convergent in front as well as behind.

24 (25) Thorax at the base twice as wide as its length down the middle, much narrowed behind. Elytra brown-bronze, or at least with a bronze reflection, the fine punctuation on the interstices in the scutellar region irregular or in double rows *viridicollis*, Steph.

(*venipennis*, Thoms.).

25 (24) Thorax at the base $1\frac{1}{2}$ times as wide as its length down the middle, but little narrowed behind. Elytra without bronze reflection, the punctures in the interstices in the scutellar region in a single row...

dorsalis, Marsh.

(*mutanti*, Rye).

26 (23) Sides of thorax not evidently convergent in front, contracted from the apex to the base in a nearly straight line.

27 (28) Elytral interstices usually quite flat, nearly three times as wide as the length of the section of stria between each puncture. The rows of interstitial punctures relatively more evident than in the two following species by reason of the comparatively smaller size of the punctures in the striae. Disc of thorax simply punctured *affinis*, Marsh.

28 (27) Elytral interstices usually distinctly convex, less than twice as wide as the section of stria between each puncture. Punctuation of disc of thorax areolate, *i.e.*, the punctures placed singly in the meshes of an impressed irregular reticulation.

29 (30) Elytra, in the lateral aspect, resembling those of *brevipalpis*; compared with *granularis*, longer in proportion to their height, the slope of their apical third very gradual. Flattened part of sides of thorax broad...

griseus, Hbst. (Ganglb.).

30 (29) Elytra, in the lateral aspect, shorter in proportion to their height than in *brevipalpis* and *griseus*, the slope of their apical third distinctly more abrupt. Flattened part of sides of thorax very narrow...

granularis, L. (Ganglb.).

(*brevicollis*, Thoms.).

31 (19) The longitudinal furrow on the head not widened in front.

32 (33) Granulation of thorax about equally strong throughout. Elytra in the lateral aspect distinctly longer in proportion to their height than in *viridicollis*, the apical slope more gradual *crenatus*, Rey.

33 (32) Granulation of thorax somewhat more feeble on the disc than at the sides. Elytra, in the lateral aspect, distinctly shorter in proportion to their height than in *viridicollis*, the apical slope more abrupt...

strigifrons, Thoms.

34 (20) Thorax widest in the middle.

35 (36) Sides of thorax strongly granulate..... *laticollis*, Thoms.

36 (35) Thorax smooth and shining, at most feebly granulate at the sides...

nanus, Sturm.

H. tuberculatus, Gyll.—This very distinct species has been but rarely taken in Britain. The best account of its occurrence is that by Mr. Lennon (Ent. Mo. Mag., xxxi, p. 174), who took a single specimen near Dumfries in May, 1895, with *Agabus affinis*, in a shallow marshy place, far removed from any running water whatever, in the middle of a fir wood much overgrown with long sphagnum. On the Continent it is reputed to occur on peaty ground.

H. rufipes, Bosc.—I never found this species in Norfolk, but under the name *cinereus*, Marsh., it was recorded for that county by Burrell (Trans. Ent. Soc. Lond., 1807, p. 207). Under the name of the Turnip Mud-beetle it forms the subject of Leaflet No. 143 issued by the Board of Agriculture and Fisheries. Attention was drawn to it on account of the damage which it caused both in the larval and imago states to turnips growing in Aberdeenshire.

H. porculus, Bedel.—Norfolk examples of this species stood in my collection as *rugosus*, Ol. (*rufipes* Bosc.) from 1882 until quite recently.

H. nubilus, Fab.—By far the commonest of the group to which it belongs.

H. alternans, Gené.—A submarine species, sometimes abundant in brackish ditches.

H. aquaticus, L.—In the Colesborne district this species presents practically no variation, but in east Norfolk one occasionally met with examples in which the elevation of the alternate interstices on the elytra is very strong.

H. æqualis, Thoms.—This is what is known to British collectors as the "small form" of *aquaticus*, than which latter it is a little smaller with the surface of the elytra in the front half more even and the sculpture of the thorax much more feeble on the disc than at the sides. The material now at my command does not enable me to form any decided opinion as to whether it should be regarded as a distinct species or, as Ganglbauer puts it, an extreme form of *aquaticus*; field observations would be of great value in this respect. In all the specimens of reputed *æqualis* in which I have been able to make an accurate measurement of the joints of the hind tarsi I find that the reduction in the size of the insect is accompanied by the relative proportion of the second and third joints set forth in Thomson's diagnosis; and, in the few examples in which I have been able to examine this feature, the denticulation of the free edge of

the last ventral segment is much less evident than in typical *aquatius*, but this one would expect to accompany the reduction in size. I should be glad to hear from some Entomologist who has found *æqualis* really at home, and taken several specimens at the same time and place; so far I have only heard of it as occurring singly here and there, with the exception of six examples (two of which are before me) taken at the same time by Mr. Champion in the New Forest.

H. arvernicus, Muls.—This is chiefly a northern species, and occurs, for the most part, on the muddy banks of streams in hilly districts. It has recently been recorded from Devonshire (*cf.* Ent. Mo. Mag., xliv, p. 33). My Norfolk record of it is an error founded on a large and strongly marked example of *griseus* determined for me many years ago by the late T. P. Dossetor.

H. brevipalpis, Bedel.—I have found this the most abundant species of the genus wherever I have collected in inland districts in Norfolk and Gloucestershire.

H. 4-signatus, Bach.—This has always been an uncommon species to me; I first met with it in 1890, when I got three specimens out of a deep brick-lined cavity filled with dirty water, in which there was no visible vegetation, in the fowl-yard of a suburban house at Norwich. At Colesborne it occurs more freely, and one can usually get two or three specimens per annum by dredging in vernal swamps on grass land.

H. viridicollis, Steph.—This abundant and exceedingly variable species is, with a little experience, very easy to recognise. It is distinguished from *dorsalis* by having the elytra bronze or with a bronze reflection, their interstices usually broader and less convex with the parts near the scutellum bearing fine scattered punctures, and the thorax broader in proportion to its length with the narrowing behind arcuate throughout. I have seen a very handsome example from Aviemore, in coll. Champion, with blackish-green head and thorax and the elytra entirely sordid yellow. I have a specimen selected from a large gathering made at Colesborne, in which the elytral interstices are only subequal in width to the striæ and very convex.

H. dorsalis, Marsh.—This is a strictly subaritime species. Compared with *viridicollis* the elytra are without bronze reflection, sometimes with pale spots, the interstices narrower and more convex with the fine punctures in single rows throughout, and the thorax

narrower in proportion to its length with the narrowing behind straight or inclining to concave.

H. affinis, Marsh.—An uncommon species, of which the greater number of my specimens are from the "Breck" district of south-west Norfolk; but I have taken single examples on two occasions at Colesborne, and have seen specimens taken by Mr. Champion at Lee, Keut, and in other parts of the London district.

H. griseus, Hbst. (Ganglb.).—Next to *brevipalpis* this is the species which I have taken most frequently.

H. granularis, L. (Ganglb.).—This is reputed to be a very common species on the Continent, but its claim to be regarded as a British species rests, so far as I know, upon two specimens from Killarney, recorded by Blackburn under the name *brevicollis*, Thoms. (*cf.* Ent. Mo. Mag., xiii, p. 39); two others in the Power collection, from the London district, which seemed to Canon Fowler to agree with a type specimen sent by M. Bedel and the determination by Messrs. Johnson and Halbert (*Proc. Roy. Irish Acad.*, Ser. 3, vol. vi, p. 612, 1902) of specimens recorded from Killarney by Wollaston (*Zoologist*, v, 1847) as *brevicollis*, Thoms. The difference between *griseus* and *granularis* in the relative length of the elytra in proportion to their height, when viewed from the side, is very evident, and I have examined large numbers of *griseus* without finding one which showed any approach to the proportions proper to *granularis*.

H. crenatus, Rey.—This insect resembles a large *viridicollis*, from which it is easily distinguished by the middle furrow on the head not widened in front, and the dorsal interstices of the thorax as strongly umbilicate-punctate as the intermediate ones, indeed, the punctuation of the entire surface of the thorax might fairly be described as equally strong throughout. The elytral striae are coarsely and closely punctured, and the interstices are somewhat narrow and convex, but not more so than in many examples of *viridicollis*. These particulars are taken from a specimen belonging to Mr. Champion and labelled "Ganglbauer, Mte. Legnone." The species is recorded from England by M. Pandellé, and has really nothing to do with *viridicollis*.

H. strigifrons, Thoms.—Of the size and appearance of *viridicollis*, but in the lateral aspect the elytra are evidently higher in proportion to their length and the slope of their apical third is distinctly more steep. The middle furrow of the head is not appre-

ciably widened in front. The sculpture of the dorsal interstices of the thorax is somewhat less strong than that of the intermediate and lateral ones, but evidently stronger than in *viridicollis*. The dorsal interstices of the thorax are obliquely impressed near their basal third, and the inner part of their apical two-thirds is gently excavated towards the central channel and thus forms a distinct subelliptic impression; this character, however, is frequently met with in specimens which are obviously nothing but *viridicollis*, and may be in the example before me only an individual peculiarity. These particulars are taken from a specimen kindly lent to me by Mr. Champion and labelled "Pommern, Goeslin Lüllwitz." Our information with regard to this species remains practically where Blackburn (*l.c.*) left it in 1876; to him it appeared to be not uncommon in Scotland and Ireland, but he had not seen any English examples. I have seen no British specimens of it, nor have I met with any fresh record of its occurrence in this country.

H. laticollis, Thoms.—I have taken this species at Horning, and have specimens from Woking ex coll. Champion.

H. nanus, Sturm.—Occurs very sparingly in the Colesborne district; well-marked examples are conspicuous in the water-net by reason of the dark parallelogram common to both elytra.

The circumstantial account of it given by Blackburn (*l.c.*) renders necessary some notice of *H. planicollis*, Thoms. Ganglbauer treats it as a synonym of *viridicollis*. I have not seen any specimen possessing the characters laid down for it, and therefore transcribe the material part of Thomson's diagnosis. "*H. æncipenni* statura et magnitudine simillimus, prothorace longitudinaliter haud convexo, lateribus parum rotundatis, elytris minus fortiter punctato-striatis, interstitiis æqualibus angustioribus, femoribus basi nigro-fuscis distinctus."

In the catalogue of British *Coleoptera* bearing the names of Messrs. Beare and Donisthorpe, *obscurus*, Muls., is introduced as a distinct species under a separate number with v. *shetlandicus*, but the better opinion seems to be that *obscurus*, Muls., is the same as *viridicollis*, Steph. Kuwert's name was given to specimens from the Shetlands with black metallic shining elytra.

Colesborne, Cheltenham :

September 4th, 1908.

CALODERA PROTENSA, MANN.: A BRITISH INSECT.

BY G. C. CHAMPION, F.Z.S.

Two species are confused in my collection under the name *Calodera nigrita*, Mann. One of them is the true *C. nigrita*, from the London district (the insect found in plenty by Dr. Power in the Hammersmith marshes), and which also occurs at Reigate, Woking, Iwade (Kent), Colchester, &c.; the other, found by Mr. B. Harwood at Colchester, is referable to *C. protensa*, Mann. (*humilis*, Er.). This addition to our list is thus characterized by Mulsant and Rey (Brévipennes, se t. Aléocharaires, p. 536):—

Elongate, subdepressed, very finely and very densely punctured, finely pubescent, subopaque, black, the mouth, the base of the antennæ, the knees, and tarsi rufo-testaceous. Antennæ with joint 3 shorter than 2, 7—10 moderately transverse. Prothorax subquadrate, slightly narrowed behind, not quite so wide as the elytra, obsoletely canaliculate down the middle. Elytra subquadrate, depressed, scarcely longer than the prothorax. Hind body subparallel, very finely and very densely punctate throughout.

♂. Sixth dorsal segment obtusely or subsinuously truncated at its apical border; sixth ventral segment obtusely angulated at the apex.

Length $1\frac{1}{2}$, breadth $\frac{1}{3}$ lin.

C. protensa differs from *C. nigrita* (the only other European species of the genus with a grooved prothorax) in its smaller size, the shorter antennæ, with joints 5—10 more transverse and 4 relatively smaller, and, more particularly, by the much more densely punctured, duller hind body, with the basal depressions of segments 1—4 finely punctate (instead of rugose as in *C. nigrita*). It is found somewhat rarely on river banks in France and Germany. Mr. Harwood's examples were captured near Colchester, in an osier bed, in the spring of 1906, a locality where he has also taken *C. nigrita* (in 1888), *C. riparia*, and *C. æthiops*.

There are still two other European species of the genus that may yet be found in Britain: *C. uliginosa*, Er., an insect of the same size as *C. nigrita*, but with the prothorax simply foveate at the base, &c.; and *C. rufescens*, Kr., this latter being closely related to *C. riparia*, but having the hind body more densely punctured, &c. Reddish varieties of nearly all the species of *Calodera* (and of *Ityocara rubens*, Er., and *Amarochara umbrosa*, Er., also) are to be met with, and in some specimens of *C. nigrita*, *C. protensa*, and *C. æthiops* the femora and tibiæ are very little darker than the tarsi.

Horsell: August 31st, 1908.

SPANISH AND MOORISH MICROLEPIDOPTERA.

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

(Continued from page 55).

PHALONIADAE.

236.—PHALONIA, Hb.

1762.—PHALONIA REVERSANA, Stgr.

Cochylis reversana, Stgr. Stett. Ent. Ztg. XX. 228, No. 43 (1859) ¹.
Conchylis reversana, Stgr.-Wk. Cat. Lp. Eur. 99, No. 721 (1861) ².
Cochylis reversana, Stgr.-Wk. Cat. Lp. Eur. 245, No. 869 (1871) ³.
Conchylis reversana, Hrtm. MT. Münch. Ent. Ver. 111. 179, No. 869 (1879) ⁴.
 Stgr.-Rbl. Cat. Lp. Pal. 11. 99, No. 1762 (1901) ⁵ [*partim*, i. e. "And."; nec "Bilb.", = *versana*, Wlsm.].

Hab.: SPAIN (ANDALUSIA) ¹⁻⁵—CADIZ—Chiclana, V ^{1, 4}; MALAGA—Malaga, 17. IV—S.V.1901 (Wlsm.); GRANADA—Granada, Larva *Helichrysum* sp. (*angustifolium* ?) VI, excl. 7-14.VI.1901 (Wlsm.).

In April and May, at Malaga, and subsequently in June at Granada, I found a *Phalonia* by no means common among a species of *Helichrysum*, from which I also bred some specimens. These on comparison with others determined by Ragonot, Staudinger, and Hofmann as "*reversana*, Stgr." proved to be quite distinct.

Seebold [Deutsche Ent. Zts. Iris XI. 304 (1898)] omits reference to the original occurrence of *reversana* in Andalusia, but under this name erroneously records the other species from Bilbao.

Among my series of nineteen Andalusian specimens there is a remarkable uniformity, and they are easily separable from the Bilbao and French specimens issued by Staudinger and Bang-Haas to correspondents under the name of "*reversana*, Stgr.", these latter appear also absolutely uniform throughout a series of fifteen in my collection.

The question naturally arises, which of the two species is the true *reversana*, Stgr.? From the description it is not difficult to recognise that the Andalusian insect alone represents Staudinger's *reversana*, described in 1859 from two specimens taken at Chiclana in May. The most important indication, of the actual form before him, is to be found in Staudinger's expression, "*fasciis duabus flavo-viridibus*," an excellent description of the colour of these markings, standing out as they do, clearly defined upon the white ground-colour.

The main point of difference between the two forms is to be found in the width of the first fascia. In the species usually accepted as *reversana* this is narrow, slightly curved, and of a dark colour, whereas in the true *reversana* it is distinctly wider, usually straighter and more uniform in width up to the middle of the cell, and of a paler olivaceous hue, the ground-colour of the forewings moreover is, although slightly greyish white, much less sprinkled and clouded with grey-brown scales; the cilia of the true *reversana* have a yellowish tinge, those of the more clouded northern form are white, with slight sprinkling of brownish grey.

The average size of the southern specimens (*reversana*) is certainly greater, reaching to 17 mm., but occasionally they do not exceed 13 mm. I have seen none which can in any way be regarded as intermediate between the one and the other, and have no hesitation in suggesting the neonym **versana** for **reversana*, Seebold (Stgr. & Bang-Haas), nec Stgr., And., 1859.

1762 : 1.—*PHALONIA VERSANA*, *sp. n.*

= *Conchylis *reversana*, Seebold Deutsche Ent. Zts. Iris XI. 304 (1898) ¹; Stgr-Rbl. Cat. Lp. Pal. II. 99, No. 1762 (1901) ² [*partim*, i. e. "Bilb."; nec Stgr., "And.", 1859].

Antennae fawn-white. *Palpi* white, shaded with fawn-brown on their outer sides. *Head* and *Thorax* white, the latter with a slight fawn-brown shade across the middle. *Forewings* white, mottled with pale fawn-brown, and with a strong darker brown dorsal streak rising before the middle, and a triangular dorsal spot of the same before the tornus; there is also a small spot of these darker scales beyond the lower angle of the cell, and a few more in a short streak at the base below the costa; the paler fawn-brown mottling is evenly distributed, showing margins of the white ground-colour between the patches, of which the two most conspicuous are one on the middle of the costa, above the apex of the dorsal streak, and another, rather larger, half-way between this and the apex, a sinuate shade connecting it to the lower end of the termen, and, with some interruption, also to the middle of the dorsum; the brown dorsal streak is somewhat pinched-in below the fold, thence extending obliquely outward, expanding on the fold and above it, its termination not very clearly defined at about half the width of the cell; cilia white, mottled with pale fawn-brownish, the termen also shaded with the same. *Exp. al.* 13—14 mm. *Hindwings* brownish grey; cilia shining, silvery whitish. *Abdomen* brownish grey. *Legs* fawn-whitish.

Type, ♂ (5092); ♀ (5093). Mus. Wlsm.

Hab.: NE. SPAIN—Bilbao, V¹⁻². W. FRANCE—LANDES—Dax, Larva *Helichrysum*, excl. 20.VI.1876 (*Rgt.*): MORBIHAN—Plouharnel, 25.V—24.VI (*Rgt.*, *Hfm.*): FRANCE (*Stgr.*). Fifteen specimens.

In the late M. Ragonot's copy of Staudinger's Catalog is the following note on *reversana*:—"Gall. oc., Vannes, 28.VI., Cannes, V., Bilbao, *Helichrysum staechas*," this refers doubtless entirely to *reversana* (not to *reversana*).

The position of the markings is almost exactly similar to those of the true *reversana*, Stgr., but the differences above indicated should enable any one to separate the species without hesitation. [I have now another closely allied species from Tenerife, feeding on *Artemisia*.]

TINEIDAE.

424.—PHYLLONORYCTER, Hb.

4206 : 1.—PHYLLONORYCTER NEVADENSIS, *sp. n.*

= *Lithocolletis* **adenocarp*i, Wlsm. Ent. Mo. Mag. XXXVII. 239 (1901), *nee*. Stgr.

Antennae white, faintly barred with pale reddish ochreous. *Palpi* pale reddish ochreous. *Head* reddish ochreous; face white. *Thorax* reddish ochreous, with some white scales. *Forewings* shining, bright reddish ochreous, dusted on the costa, on the cell, and on the dorsum with white length-scales, varying but slightly in number and distribution; without basal or marginal streaks; costal cilia white, dorsal and terminal cilia whitish ochreous, apical cilia reddish ochreous. *Exp. al.* 7 mm. *Hindwings* pale grey; cilia whitish ochreous. *Abdomen* yellowish. *Legs* white.

Type, ♂ (98051). Mus. Wlsm.

Hab. : SPAIN—GRANADA—Sierra Nevada, above 5000 ft., Larva *Adenocarpus decorticans*, 3.VI. excl. 3-7.VI.1901. Fourteen specimens.

This is the species referred to by me (*l. c.*) under the name *Lithocolletis adenocarp*i, as flying in myriads, and beaten and bred from *Adenocarpus (decorticans)* in the Sierra Nevada, near Punta de Veleta, about a day's march east of Granada. It is however quite distinct from Staudinger's species, being only two-thirds its size, freely dusted with white scales, and easily distinguished by its white costal cilia.

433.—OPOSTEGA, Z.

4279 : 1.—OPOSTEGA CHALCOPEPLA, *sp. n.*

= *rosmarinella*, Stgr., List (1894) ¹ LN.

Antennae pale yellowish; eye-caps silvery white. *Palpi* (short) yellowish. *Head* and *Thorax* white. *Forewings* silvery white, with light yellowish brown marginal specks around the apex, and sometimes a spot of the same on the middle

of the dorsum, or scarcely before it; cilia white; underside shining, yellowish brown, costa narrowly white, except at the extreme base, cilia white. *Exp. al.* 13—14 mm. *Hindwings* yellowish brown, with a shining, brassy reflection; cilia white, but somewhat smoky, especially toward their base, the costal cilia brownish, except at the apex; underside slightly paler than the forewings, cilia somewhat smoky. *Abdomen* yellowish brown. *Legs* pale yellowish brown.

Type, ♂ (88647), *Coto*. Mus. Wlsm.

Hab.: SPAIN (ANDALUSIA) ¹—HUELVA—Coto, 23–24.IV.1901. S. FRANCE—Cannes, 23.II.1881; Mentone, 20.III.1893. Seven specimens.

Rather larger than *menthinella*, Mn., from which it is separable by the absence of a golden sheen on the outer half of the forewing, as well as by the shining brassy hindwings, which at once distinguish it from other species of the genus. This is the insect which has been distributed by Dr. Staudinger for many years under the name *rosmarinella*. I have taken it at Cannes, Mentone, and Coto, where I had no reason to suppose that it was associated with Rosemary, for which reason I have not adopted Staudinger's logonym.

(To be continued).

HALICTUS LONGULUS, SMITH, A SMALL FORM OF
H. MALACHURUS, KIRBY.

BY EDWARD SAUNDERS, F.R.S.

Halictus malachurus and *H. longulus* have stood for many years as distinct species in our list. The latter, however, has not been identified for certain since F. Smith's time. I have had specimens from that author in my collection and have twice taken single examples, one at Ventnor and one at Chobham, which I have referred with doubt to his species, but the ♂ has never been determined satisfactorily, and I have always felt doubtful whether the specific rank of *longulus* could be maintained. The smaller size, the slightly less truncate propodeum, the somewhat sparser puncturation of the basal segment of the body were the only characters I could detect in the few examples I possessed, to distinguish it from *malachurus*; so although I have felt bound to keep them distinct until I could get further indications of their identity, I have often wished for an opportunity of finding them at home and in numbers to form a better opinion on the subject.

Such an opportunity occurred to me at the end of last June, when I found large colonies of *longulus* in the Isle of Wight, at Totland Bay and Freshwater, the latter being one of Smith's localities; they burrow in hard pathways (as does also *malachurus*), and one large colony was in a hard bare patch of ground at the base of the green slope of the downs leading from Freshwater over the cliffs to Alum Bay.

The first colony I met with was at Totland Bay just in front of the coastguard station, but I could find no males; later on, however, I caught males of *malachurus* abundantly along a hedgerow behind the fort, about 300 yards away from the colony. This puzzled me, especially as I caught a large normal *malachurus* ♀ on a yellow composite close to the hedge. I watched the colony carefully for days but could not see a sign of a male near it (afterwards I found *longulus* ♀ freely at the yellow flowers near the hedge). At Freshwater I had a very similar experience—there were no males to be seen flying over the colony (except those of *H. morio*, which raised my hopes for a moment), and yet about fifty yards off I took *H. malachurus* ♂ sparingly about flowers. These experiences were very disappointing; however, eventually I found a new colony altogether between Totland Bay and Freshwater, and there I succeeded in taking males and females freely flying over the same area of ground. All the males were what we know as *malachurus*, all the females were of the small form which Smith called *longulus*. The ♂ is variable in size, but all the specimens are larger than I should have expected as males of *longulus*. The males of *Sphecodes subquadratus*, Smith, were also common in the colony, as well as *Andrena fulvicrus* and *humilis*, *Halictus morio* and *H. villosulus*, so that the pathway exhibited a very lively scene; at the same time there was nothing to create any doubt that these males were the partners of the females of *longulus*, and I feel no longer any hesitation in considering it as a small form of *malachurus*.

What the ♂ which Smith describes under *longulus* in the 2nd ed. of his Catalogue of British *Hymenoptera* may be I do not know, but the description of its "metathorax" (propodeum) does not appear to me to represent that of any species of the *cylindricus* group.

St. Ann's, Woking :

September 9th, 1908.

A NEW BRITISH FLEA.

BY THE HON. N. CHARLES ROTHSCHILD, M.A., F.L.S.

PLATE II.

ORNITHOPSYLLA, *gen. nov.*

Frons strongly angulate in ♂, more evenly rounded in ♀, with a distinct tubercle in both sexes. Eye fully developed. No genal comb. Antennal groove closed. A row of short stout bristles above the same. Club of antenna segmented all round, almost globular in ♀, one-third longer than broad and sub-truncate at the apex in ♂. Second segment of maxillary palpus half as long again as first. Dentition of mandibles minute. Labial palpus consisting of four segments; end segment obliquely truncate, bearing three apical bristles.

Prothorax without comb. Ventral edge of pleura of mesothorax oblique, the large stigma not being entirely covered.

Apical bristles of the seventh abdominal tergite situated at the edge of the segment, which is not distinctly sinuate.

Hind coxa with a comb or patch of spines on the inside.

First midtarsal segment as long as the second or a very little shorter. Fifth segment of all tarsi with four lateral bristles.

Eighth abdominal sternite of ♂ ventrally produced into a hairy lobe. Clasper with three processes, two being broad and irregularly rounded, the third finger-shaped with the tip curved upwards. The right and left halves of the ninth sternite connected with each other at the elbow of the segment. Tenth sternite of ♂ with a movable stylet-like process on each side.

Type: *O. lætitia*, spec. nov.

The genus comes nearest to *Archæopsylla*, Dampf (1908, type: *erinacei*), and *Spilopsyllus*, Baker (1905, type: *leporis*). Distinguished especially by the entire absence of combs from the head and thorax, the much finer dentition of the mandibles and the longer and much more distinctly segmented club of the antenna.

ORNITHOPSYLLA LÆTITIA, *spec. nov.*

(Figures 1 and 2).

Head.—The frons bears a row of three bristles, the uppermost being placed in front of the eye. The rostrum is as long as the maxillary palpus, reaching to the apical fifth of the fore coxa. The proportional lengths of the segments of the maxillary palpus are 15, 21, 12, 16, the lengths of the segments varying but little.

Thorax.—The pronotum is dorsally as long as the first and second segments of the maxillary palpus together. It bears a row of about sixteen long bristles on the two sides together. The meso- and metanota have each also one row of long bristles, there being, however, short additional hairs on the back. The pleura of the mesonotum bears one or two bristles at or near the meral suture, and usually two more above the stigma, there being occasionally one or two additional bristles above the stigma, while there are apparently never any bristles near the dorsal edge

of the pleura. The episterum of the metathorax is without bristles, the sternum, however, bears one small one. The epimerum of the metathorax has two rows of bristles, each containing seven or eight, the anterior row being more or less irregular.

Abdomen.—The tergites bear one row of bristles, except the first, which has in both sexes a number of additional bristles on the back, the number of bristles in the row being usually sixteen on the anterior segments and twelve on the posterior ones, on the two sides together. The seventh tergite has both in ♂ and ♀ one long apical bristle accompanied by two or three small hairs, some of our ♀ ♀ having, however, two long apical bristles on each side. The basal sternite has no bristles, apart from a ventral pair of short ones. The sternites of segments three to sixth have on each side a row of three or four bristles in the ♂ and four or five in the ♀, the sternite of the seventh segment bearing in the ♂ also three or four bristles, while there are six to eight on this segment in the ♀. The seventh sternite of the ♀ is sinuate (Fig. 2), the outline of the segment not being quite constant.

Legs.—The hind femur has posteriorly on the outer side three or four subventral bristles, and one or two more further basad, there being a row of seven to nine on the inside. The bristles of the tibiae are strong. The hind tibia has four pairs of dorsal bristles situated in notches, beside the apical bristles the shorter (= outer) bristles of these pairs being short and blunt. The first hind tarsal segment bears three or four pairs of stout lateral bristles, inclusive of the apical bristles, there being further basad also a number of small bristles. One of the apical bristles of the first hind tarsal segment reaches a little beyond the apex of the second segment, while the longest apical bristle of the second segment extends to the centre of the fifth or a little beyond. The fifth segment bears in all tarsi two stout spines ventrally at the apex, the longer one being placed in the centre of the apical edge and the other a short distance away from it towards one side. In the midtarsus this segment is as long as the second. The proportional lengths of the tarsal segments are :—

	1st.		2nd.		3rd.		4th.		5th.
Mid tarsus	22—24	...	22—24	...	11	...	8	...	22—24
Hind tarsus	42—49	...	28—32	...	13—16	...	9—10	...	23—26

Modified segments.—♂. The eighth sternite of the abdomen bears a row of about ten bristles, besides a number of shorter ones, the ventral apical lobe being densely covered with bristles (Fig. 1). The clasper is not separated by a suture from the dorsal portion of the ninth tergite. The manubrium (M) is large, being abruptly curved upwards. The large flap (P¹) of the clasper bears numerous hairs on the lateral surface and is densely hairy at the dorsal and apical edges, there being no hairs, however, at the ventral edge. This flap has, in addition, two short spines, the upper one of which is obtuse, being very strongly chitimized. The second process (P²) is long and slender, being curved upwards at the apex and bearing a few small hairs. The third process (P³) is broad, its dorsal edge being somewhat incurved, while the ventral and apical edges are rounded and provided with long thin bristles. The ninth sternite (IX st.) is very peculiar. The ventral (= horizontal) portion of this sclerite is widest proximally to the centre and thence gradually tapers almost to a point, the apex being curved downwards. The tenth tergite bears dorsally on each side a row of five or six bristles, of which the last one is very thick.

♀. The eighth abdominal segment has no bristles above the stigma. The bristles situated at and near the apical and ventral edges are very numerous, there being also about eighteen bristles on the lateral surface. The eighth sternite is elongate-triangular and without any bristles. The tenth tergite is sinuate at the apex distally to the insertion of the stylet. The dorsal portion of this tergite bears numerous rather strong bristles between the stylet and the sensory plate ("pygidium"). The stylet is slender, being about five times as long as it is broad near its base. It bears a long apical bristle and one or two small ones further basad. The tenth sternite, in side-view, is subtriangular, bearing ten bristles at the edge and one on the lateral surface near the apex.

Length = ♂ 2.1 mm.; ♀ 3 mm.

We have a small series of this remarkable species bred by Mr. Norman H. Joy (in whose honour the insect is named) in July of this year from the nest of a Puffin (*Fratercula arctica*) taken in the Scilly Islands.

Tring Park, Tring :

September, 1908.

Note on the Coleoptera found in the nests made by Bombycid larvæ.—It is perhaps worth while calling attention to the fact that two species of *Coleoptera* are found on the Continent in the nests made by the gregarious larvæ of the pine processionary-moth, *Thaumatopea* (*Cnethocampa*) *pityocampa*. These are *Dermestes aurichalceus*, Küst., which feeds upon the cast larval skins, and *Micrambe perrisi*, Bris., which lives in the larval excrement.* Dr. Chapman and I have taken the *Dermestes* in this way, in abundance, at Tragacete and Albarracín, Spain (*cf.* Trans. Ent. Soc. Lond., 1902, pp. 118, 123), but we did not meet with the *Micrambe*, possibly owing to an excusable timidity in handling the nests of the insect in question. At least two British Bombycids—*Malacosoma neustria* and *Eriogaster lanestris*—make somewhat similar nests to those of *Cnethocampa*, and it is possible that they may also be found to contain beetles. Perhaps some of our Lepidopterists will examine such nests when opportunity offers? I am indebted to M. Henri du Buysson, of Brout-Vernet, for calling my attention to this habit of the *Micrambe*. This well-known French savant also informs me that *Hister helluo*, Truqui (a species not unlike our *H. marginatus*, Er.), chases and devours the larvæ of *Agelastica alni*, L., upon the leaves of alder, and that *Agnathus decoratus*, Germ. (a rare European Lagriid), lives upon the larvæ of *Rhizophagus politus*, Hellw., *R. cæruleus*, Waltl, and *Xyleborus pfeili*, Ratz., under the bark of alders that have fallen into the water.—G. C. CHAMPION, Horsell, Woking: August 31st, 1908.

Anaspis garneysi, Fowl., &c., bred, from the New Forest.—About a year ago I brought home from the New Forest a small quantity of dry wood-mould, taken from a hole in an old oak, mainly in the hope of finding *Scraptia fuscula*, and from

* *Homalota palustris*, Kies., has been found in numbers in my garden in the excrement of various Lepidopterous larvæ.

this dusty substance various beetles have from time to time emerged, even during the winter. The beetles include representatives of four species, viz., *Mycetophagus piceus*, *Dorcatoma chrysomelina*, and *Englenes oculatus*, in some numbers, and three specimens of *Anaspis garneysi*. This habitat of the *Anaspis* has not, I believe, been previously recorded.—ID.

Corymbites castaneus, L., in Yorkshire.—I am pleased to be able to record the recent occurrence of *Corymbites castaneus*, L., in Yorkshire. I found a single specimen of this very rare beetle on a willow bush by the side of the moorland streams above Ravensgill, Pateley Bridge, on June 8th. Mr. E. A. Newbery, to whom I am frequently indebted for much kindness, has identified the insect.—M. LAWSON THOMPSON, 20, Emerald Street, Saltburn-by-the-Sea: September, 1908.

Pselaphus dresdensis, Herbst, near Oxford.—This usually rare species has within the last month been found by my friend Mr. J. Collins, and subsequently by myself, not uncommonly in long damp moss about the roots of willow-bushes in a little swamp near Yarnton, Oxon, where a single example had previously been taken by me on April 24th last year. Its congener, *P. heisei*, occurred with it, but was very rare in comparison. In the same moss *Myrmedonia collaris*, unaccompanied by ants, was of frequent occurrence, with *Homalota clancula* and *Myllæna kraatzi* (both rare), *Bryaxis impressa* and *sanguinea* (both very common), and a few very clean specimens of *Bagöus claudicans*, Boh. (*frit*, Brit. Cat.), &c., &c.—JAMES J. WALKER, Oxford: September 15th, 1908.

Apion lævigatum, Kirby, at Braunton, North Devon.—I have to report the capture of a single ♂ *Apion lævigatum*, Kirby, at Braunton in June last. The insect was taken when sweeping over low herbage (*Rumex*, &c.), amongst which there was some *Echium*, but I could find no *Gnaphalium*.—PHILIP DE LA GARDE, 2, Esplanade, Teignmouth: September, 1908.

Hydroporus marginatus, Duft., at South Brent, South Devon.—Three specimens of *Hydroporus marginatus*, Duft., have occurred to me during August last at South Brent, one in the river Avon and two in the tributary Glazebrook.—ID.

Dasytes plumbeus, Müll. (= *oculatus*, Brit. Cat.).—Supplementary to my recent note (see p. 156) on the synonymy of this species, which has hitherto been considered very rare as British, it may be of interest to mention that Messrs. E. A. Waterhouse and C. J. C. Pool met with the insect in some numbers on the 18th of last June, on the flowers of an Umbelliferous plant growing in a lane near Godalming. The narrow form of the insect as compared with the common *D. flavipes*, Ol., was very apparent in the net, and Mr. Waterhouse and Mr. Pool at once came to the conclusion that the insect was what we must now call *D. plumbeus*, Müll., an opinion since corroborated by Capt. Deville. The disproportion of the sexes was very great, very few females being taken. I have also received the insect from Peterboro' (E. A. Elliott), and Maldon, Essex (W. Bevins). Nearly all the specimens standing as *oculatus* in the Power collection must be referred to *D. flavipes*, Ol.—E. A. NEWBERY, 13, Oppidan's Road, Primrose Hill, N.W.: Sept. 15th, 1908.

Additional British examples of Micrambe villosa, Heer.—Although brought forward on a single specimen (see *ante* p. 105) several examples have since been found in the Power collection, as well as in numerous private collections.—ID.

Combat between Xantholinus linearis and Dyschirius thoracicus.—While walking along, half way up the sand cliffs at Corton, near Lowestoft, on August 21st, I suddenly saw a *Xantholinus* running along at a considerable pace down the side of the cliff, with its abdomen unusually stiffly protruded. Its head was considerably elevated, and in its jaws it held a *Dyschirius* by the under-side of the thorax; the abdomen was doubtless extended in order to counterpoise the weight of the prey. The captor proceeded unsteadily over the sifting sand for three or four seconds, evidently much incommoded by the struggles of the *Dyschirius*, which seemed too heavy to be kept altogether from touching the sand with its hind legs; and when this happened sufficient leverage was obtained for it to fasten its mandibles upon one of the captor's antennæ. The counter attack so deeply affected the *Xantholinus* that it dropped its burden upon the sand, and the latter instantly made off up the cliff as swiftly as possible; but the *Xantholinus* followed close at its heels, or rather so closely that for some time its jaws were feeling for a deadly grip between the Carabid's head and thorax. Then a loose grain of sand gave way, precipitating both some inches, with the result that the *Dyschirius*, recovering itself first, made off again upwards, while the *Xantholinus* struck out to the left, still searching with lateral twistings of head and antennæ to ascertain the whereabouts of the fugitive; but with no success, so I placed both in a tube, where no notice was taken of one another.—CLAUDE MORLEY, Lowestoft: August, 1908.

Note on the nesting habits of Dasypoda hirtipes, Latr.—Whilst at Totland Bay I had the opportunity of watching a colony of *Dasypoda* in which a number of females were forming their burrows in a hard pathway; they were working hard at them at 6 p.m. on July 7th, and it was very interesting to see how well adapted their extremely plumose legs are for the purpose of removing *débris*. A female would disappear down her hole, and after a short interval a movement in it would be evident, and up would come a load of sand, entirely filling the opening, and behind it the bee working her way out backwards, her body and fluffy legs quite preventing any of the sand from slipping back. The amount brought up each time was of about the same bulk as the creature herself; as soon as she arrived outside she gave the sand a parting kick or so, left it, and shot down into the hole again as hard as she could. In this way the *débris* was deposited by degrees into, I suppose, an inconveniently large heap, for every now and then she would, after bringing up her load, run backwards for about two or three inches scattering the sand by extending her hind legs laterally several times in rapid succession, thereby forming a regular path, along which she scuttled back into her hole. I have often wondered why *Dasypoda* required such largely developed pollen brushes, but probably they are a good deal due to some special peculiarities in nest building; they were certainly being used freely as brushes in this case.—EDWARD SAUNDERS, St. Ann's, Woking: September, 1908.

Odynerus basalis in Dorset.—While staying at Swanage I was fortunate enough to discover, towards the end of June last, in close proximity, two large colonies of this, hitherto our rarest British wasp. It occurred on ground which I have hunted fairly regularly for years (except from 1903 to 1907), and curiously enough on the day following that on which I made the acquaintance of Mr. E. B. Nevinson, who, having carefully looked up the old records of *basalis* (five specimens in all, the most recent being in 1896), had written to me to join him in searching for this very insect; adding his opinion—since justified—that it might make its appearance earlier than was generally supposed. Both colonies were using last year's burrows, one in hard sandstone, and the other in light peaty soil; while, except for the two small patches thus occupied, the surrounding country showed no trace of the insect. I have heard it suggested that "*basalis*" might possibly be parasitic, but this is not so. Old cocoons from the "peat colony" were large for the size of the wasp, each surrounded with a coating of fine sand and stones, and occurred barely an inch below the surface. Few were eaten through from below, so that it would seem that the eggs are generally deposited singly. When I was compelled, early in July, to leave Swanage the old emergence holes were still being used, but Mr. Nevinson informs me that, later, he saw the ♀♀ working at their new burrows, and that investigation of two of these showed, in each case, an egg in company with three Lepidopterous larvæ (probably a *Depressaria*), deposited (in the sandstone colony) at a depth of 2½ inches. There was no trace of any tubes such as are constructed by *O. spinipes*. *Chrysis cyanea*, *C. viridula*, and one other, probably *integrum* or *ardens*, occurred at the burrows, but had the appearance of being casual visitors only. A long series of *basalis* showed a marked uniformity in colour and size.

Mr. Edward Saunders, to whom I sent specimens, informs me, as I had also noticed, that the insect should be placed in the *Leionotus* group, the ♂ having the extremities of the antennæ hooked, the ♀ having no fovea on the apical margin of the basal segment of the abdomen, and neither sex having this segment carinated. Mr. Saunders also expressed the opinion that *basalis* would prove to be *herrichii*, Sauss. I could detect no difference between one of my captures and a continental *herrichii* of his sufficient to enable me to separate the two, and I must leave it to him to decide.—C. H. MORTIMER, Holmwood: September, 1908.

[After seeing a series of Mr. Mortimer's captures I feel convinced that *basalis*, Smith, is identical with *herrichii*, Sauss. This being so, *herrichii*, Sauss., is the name we must use, as it was published a year in advance of Smith's *basalis*.—E. SAUNDERS].

A romantic tragedy in low life.—The following episode will probably appeal to the romantic side of Entomologists—particularly the fairer portion of them. While collecting *Diptera* near here on July 23rd, I saw seated on a burdock leaf a medium sized very dark *Crabro*. She was apparently sound asleep, and was taking no interest in her surroundings. Presently there alighted on the same leaf a pair (♂ and ♀) of *Pæcilobothrus nobilitatus*, one of our commonest and handsomest *Dolichopodidæ*. The ♂ began immediately to "display"—waltzing round the ♀ with head lowered and wings rapidly vibrating, the white spots at the tips of his wings forming little silvery quadrants, so rapid were the vibrations. By-and-by the ♀ was moved by the ardour of the male's wooing, and the two insects began to

revolve round one another. Their gyrations carried them near the *Crabro*, and as the ♂ passed close to and with his back turned to her—P O U N C E, and she seized him! I tried to box Mistress *Crabro* and her victim, but she dropped into the long grass; so I had not even the satisfaction of adding them to Professor Poulton's biological series.

This tragedy will serve, however, as a peg on which to hang an inquiry. At the *Conversazione* of the Royal Society held in July last Mr. Enoch gave an exhibition of predaceous *Hymenoptera* and their prey. In the illustrations of the exhibit, reproduced in some of the weekly papers, one is given of a *Crabro* on the wing pursuing a fly, the illustration apparently being the reproduction of an incident as recorded by the Cinematograph. The pursuit and capture of other insects on the wing by predaceous insects seems, however, to be so rare (it is one for which I have personally been for many years on the look out for) that I hope to draw out the experience of others.

It is almost an every day occurrence to see a *Crabro* lying in wait on an Umbellifer head, or on a cake of cowdung, and pouncing on any unwary fly which comes within reach; but on these occasions the method pursued is always that of lying "doggo" and never that of hawking. The tragic fate of our gallant little gentleman is nothing unusual, the pathos lies in its having overtaken him in the midst of his love-making.—J. W. YERBURY, Bridgend: *August 5th*, 1908.

Callicera ænea, F., in South Wales.—*Callicera ænea* is such a rare insect, that any instance of its occurrence seems worthy of being placed on record. It may interest some of your readers, therefore, to know that I took a female specimen on blackberry blossom on the Aberavon Golf Links, Port Talbot, on July 28th.—ID.: *August 18th*, 1908.

Nephrocerus flavicornis, Ztt.—After sending off my note concerning this Dipteron which appeared in the last number, I took another female on August 13th. This time it came in at an open window and settled on the glass.—F. C. ADAMS, Fern Cottage, Lyndhurst: *September*, 1908.

Society.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, July 23rd*, 1908.—Mr. ALFRED SICH, F.E.S., President, in the Chair.

Mr. Sich exhibited *Cerostoma xylostella* ♀, and said that it was bred from a larva without the broad reddish stripes down the back, which form he said might be sexual. Mr. Turner, living larvæ in their curiously contorted cases of the very rare *Coleophora siccifolia* taken by Mr. Sich and himself at Chiswick; he also showed a large number of *Pyralidæ* from North America. Mr. Newman, a living hybrid larva, *Smerinthus ocellatus-populi*, and noted its distinct characters; he also showed bred specimens of *Argynnis paphia* var. *valesina*, *Boarmia repandata* var. *conversaria* (produced in the third generation), and the yellow form of *Callimorpha dominula* (also of the third generation). Mr. Adkin, series of *Aylinia semibrunnea* and *A. socia*, and read notes on the differentiation of the two species,

calling attention to the wing form, the black blotch in the anal angle of the former, and the absence of any distinct band in the same species. Mr. South, in addition noted the inner marginal line in *A. semibrunnea*, the brown not black abdominal tufts in *A. socia*, and the much darker thorax of the latter.

Thursday, August 6th, 1908.—The President in the Chair.

Mr. C. W. Spurring, of Blackheath, was elected a Member.

Mr. R. Adkin exhibited a series of *Odontopera bidentata* bred from melanic parents from Yorkshire, and read notes on the forms. All but three followed the parents. Mr. Newman, bred specimens of *Argynnis paphia* and *A. aglaja*. Mr. Edwards, a ♀ *Nemotois cupriacellus* taken at Bysfleet; he also showed a large number of *Diptera*, *Hemiptera*, and *Hymenoptera* taken by him at Cannes, Fontainebleau, and Macugnaga. Mr. Sieh, the larva of *Aristotelia stipella* var. *naviferella*, a miner in *Chenopodium* leaves. Mr. West (Greenwich), the following *Hemiptera* from Esher, *Salda cocksii*, *Cyrtorrhinus pygmaeus*, *C. caricis*, and *Nabis boops*, with *Bryocoris pteridis* from Carlisle. Mr. B. H. Smith, ova of *Porthesia chrysorrhoea* laid on a sea-buckthorn at Deal.

Thursday, August 27th, 1908.—The President in the Chair.

Mr. R. Adkin exhibited two series of *Dictyopteryx bergmanniana*, one bred from garden rose and the other from wild burnet rose, and read notes on the different habits of the two broods of larvæ. Mr. Turner, a light form of *Crambus chrysoneuchellus*, characteristic of Eastbourne, and two forms of *Eurrhynx urticata*, one having the marginal spots small and well separated, the other having them coalesced into a wide band. Mr. Brown, a specimen of *Leucania faricolor* from Benfleet. Mr. Newman, examples of the hybrid *Smerinthus ocellatus-populi* just bred, *Crymodes exulis* from Shetland including females, living larvæ of *Dicranura bicuspis* from Tilgate Forest, an *Abraxas grossulariata* with the hind-wings with only rayed marginal spots and the discoidal, and a *Melanargia galathea*, the left hind-wing of which was var. *procida*. Mr. Joy, a living larva of *Cyclopides palemone (paniscus)*. Mr. Cowham, two varieties of *Amphidasys betularia*. Mr. B. H. Smith, a bred series of *Eugonia polychloros* from the New Forest, including a dark smoky form. Mr. Goff, a *Rumicia phleas*, showing a complete absence of copper on the lower wings. Mr. Sieh, mines of *Nepticula acetosæ* from Surrey, and gave notes on the life-history of the species. Mr. Fremlin read a short paper, entitled, "Insects as carriers of Disease."—H. J. TURNER, Hon Secretary.

LEPIDOPTERA IN THE UPPER ENGADINE.

BY GEORGE T. BETHUNE-BAKER, F.L.S., F.Z.S.

Having decided to spend our holiday last year in the Upper Engadine, we started early on Friday, June 28th, and arrived at our first halt (St. Moritz) on the following evening. We had decided that the first week should be one of entire rest, and therefore we remained quietly at this lovely alpine village (the Bourg) for seven

days. But what is rest, doing nothing at all? To me, to do nothing at all, but to "laze" absolutely—if you will allow the modernism—is the most wearying of all occupations.

So, having been good and taken a Sabbath day's rest, I was ready for a quiet day on and above Ober Alpina on Monday, June 30th, but little was on the wing, for clouds occasionally hid the sun, though *Papilio machaon* soon sailed by in her queenly way when undisturbed, and evidently it was not the first day of her appearance—others followed, none good enough for capture; and as I made my way up the steep incline, for I fear I did not keep to the legitimate path, *Parnassius apollo* sped by at a rapid pace—*apollo* always seems to me to be a much more sporting insect than its near relation *delius*, of course it is quite proper that it should be; the latter (*delius*) allows itself to be so easily captured compared with it, and at first there is always with me a certain amount of excitement in taking *apollo*, a feeling I do not think I ever experience with *delius*; then comes another and another, all quite fresh, evidently the virgin flight of more than one.

Still I ascend, disturbing *Leptidia sinapis*, which falls easily to the net and is quite a typical specimen, then comes a large beautifully fresh *Endrosa irrorella*, whilst among the pine woods a handsome dark *Gnophos myrtillata* was boxed at rest, and others not so dark caught on the wing. At last we emerge into the meadow below the small but welcome restaurant, with the pretentious name Ober Alpina, and the first thing that comes across the flowers is *Heodes hippothoe*, a perfectly typical example, though taken 7000 feet above the sea, *Lycæna semiargus* comes next, followed rapidly by several *eumedon*, a single *icarus*, the only one caught here, and a single *astrarche*, which latter I do not think I have ever taken so high before.

But the view from here! How glorious it is with its series of lovely coloured lakes as far as the eye can reach, and the mountains and the colour of all—a view that never fades from the memory; but as I ascend yet higher a gale of wind springs up of such force that no insect would breast it, and so I return down the other side into calmer regions to the Campfer Lake, adding nothing to my list except a single *Colias phicomone*.

The next day was dull and cold, with a heavy snow storm all afternoon and evening; but the Wednesday was beautiful, and it was interesting to see how soon the warm rays of the sun brought the butterflies to the flower heads to dry their wings in the welcome heat. Two *Papilio machaon* were very conspicuous, both bedewed all over, one literally with snow on its outspread wings, raised at about a right angle to each other and with the primaries covering a good half of

the secondaries. This morning our walk lay over towards Pontresina by the little lake and through the woods, and *Erebia curvyle* was added to my list, as also was its smaller ally *tyndarus*. The *Lycenidae* were remarkable for their absence, only one or two *L. semiargus* and *minima* being taken. Again I try the Ober Alpina hill, and on my way take several *Zygæna nubigena* just freshly emerged from the pupa, and as I get well above the restaurant a wild dash and a rapid stroke brings *Macrothylacia rubi* into the net, quite fresh, quite typical, a specimen that I could easily pair from Dartmoor, but I take it there early in May, and here we are the 3rd of July, but about 7500 feet high.

Again the wind begins to blow, it nearly always does I believe up here, but it is less strong and less keen, and *Lycæna orbitulus* soon comes along and also one or two *pheretes* are netted, when a strange *Cræmbus* flies across my path but is soon in the net, turning out to be *alienellus*, the first time I have seen it alive; but where are the *Melitææ* and *Argynnidae*?—only one *phæbe*, two or three *dictynna*, and a few *Argynnis selene* were captured, whilst on my way down the only *Erebiæ* that are seen are a few *melampus* and one *tyndarus*; evidently it is a very late season. So the next day, a brilliantly hot one, we make our way down to Silvaplana along the Maloja road, and a hot one it turns out to be, but different species soon put in an appearance—*Lycæna eros* not uncommon and in the pink of condition; I take one *damon* equally fresh, so thirstily drinking in the moisture near a rivulet that it allows me to box it without a quiver; a beautiful *arion*, that might almost be an *euphemus*, is netted, with the basal spots reduced to points; *eumedon* soon comes along and is transferred to a box, whilst settling in the dust in the hottest part of the road are several of that exceptionally lively little genus *Orenia*, and *alpestris* is added to the list; but as the sun disappears for a time a small Aretiid dashes across the road towards the fir trees on the right, a ready stroke, however, reveals a quite fresh *Parasemia hospita*, and in a minute or two a typical *plantaginis* shares the same fate.

But the sun does not shine and the wind blows so I begin to search, and soon come across a little *Lycæna* at rest among the grass on a sheltered bank near to the end of the Silvaplana lake, close to Sils Maria, it turns out to be a very large specimen of *minima*, the bank literally is alive with them, hundreds could have been taken, some at rest head downwards and some head upwards—it was a sight to see them, so numerous were they; two *bellargus* were boxed with them from the same bank.

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[VOL. XLIV.]

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We return again dissatisfied ; but with our faces homewards, the sun greets us once more, and as we make our way across the Campfer meadows towards the " Bad," having resolved to take the lower road, about 4.30 to 5 p.m., *Ino statices* v. *heydenreichii* could be boxed by the dozen, nearly all *in copulá*, and even more commonly *geryon* v. *chrysocephala*, also in the same position ; evidently this is the time of copulation, for another morning and earlier in the afternoon they were feeding, flying, and ovipositing ; I also took one *Zygæna* v. *manni* near this spot.

The time had come, however, to move on to Pontresina, hoping for better results. Our first afternoon's walk was up the hill on the right side of the stream as we go up it, but beyond one *Vanessa io* taken at rest below a vast overhanging rock, very little was seen ; however, an occasional *Gnophos mendicaria*, two *glaucinaria*, and one or two *Psodos quadrifaria*, enlivened the walk.

Many were the days spent in the Roseg Valley, so they will therefore be better considered altogether. *Parnassius delius* was common in both sexes in a stony spot surrounded by the rushing Roseg streams, where the ♀ could be seen ovipositing on the saxifrage that was in abundance among the stones ; all the specimens I took were very pale indeed, quite different to those on the Bernina Road by the Heu Thal, and also in the Heu Thal itself ; here they were much suffused, but I fear the marshy land on the Bernina Road will be no more, for the electric railway over the Pass goes through the very ground they love, and it will no doubt be drained by this time ; with *delius*, *Colias phicomone* was flying abundantly, and *Erebia pharte* often strayed over the stones from the grassy side of the stream ; here also it was that I found just emerged from the pupa a male *M. rubi* within an inch of the water, its cocoon I could find nowhere, and I wondered whether a heavy thunderstorm that raised the height of the streams considerably had not placed it under water.

Up to this point in the Valley *Erebia euryale* was common ; *tyndarus* was by no means common here, but on the mountain on the way to the Piz Languard both it and *melampus* occurred, whilst further along the Roseg towards the Tschierva Glacier *lappona* was in good condition there, I also took a few specimens of *mnestra* ; *Zygæna exulans-vanadis* swarmed, both sexes flying briskly in the hot sun or feeding on the flower heads ; *Zygæna* v. *manni* also occurred on the same ground. *Plusia hohenwarthii* was often stopped in its rapid flight and found resting places in my boxes, whilst one *P. ain* did likewise.

Returning along the same path nearly all the *Zygænidæ* that I saw were paired, the time would be about the same as adopted by the genus *Ino*. The *Melitææ* that I took along this same valley were all of interest, the best being some beautifully fresh *maturna-wolfens-bergeri*, which occurred not uncommonly among the honeysuckle before the first bridge; a nice pair of fairly typical *aurinia* also fell to my net, and one or two *merope* occurred further up the Valley. On the other side just beyond the bridge, *parthenie-varia* was not uncommon with a few *dictynna*. Of the *Argynnides*, *pales* was as usual common; *amathusia* had seen its best days and was not common, I also took it on the Alp Grumm over the Bernina Pass; just near the *delius* ground a very dark *Argynnis* flew rapidly past which I thought might be a prize aberration, so I gave chase, with the result that a fine fresh dark *thore* was added to my list; *niobe*, and its form *eris*, were not rare in the meadows by the Bernina stream at the end of the village, *eris* being the commoner of the two.

On another day by the Tschierva Glacier one or two *Æneis aello* allowed themselves to be captured, and one *Pararge hiera* near the Hotel de Roseg. *Cænonympha arcania* v. *satyrion* occurred everywhere, whilst one or two between it and *darwiniana* were also taken. With the *Lycænidæ* in this valley I was disappointed. *Chrysophanus hippothoe* was not common, and one or two *virgaureæ* were seen but not captured. *Lycæna argus* was not uncommon; *optilete* rare in the Roseg Valley, but very common in the Bernina Valley, and up towards the Morteratsch Glacier; *pheretes* I only took around and above the Roseg Hotel, whilst *orbitulus* occupied much the same ground, but was commoner; *eros* was taken, also nearer the village but not commonly; *icarus* was decidedly rare, *eumedon* being fairly common; I took a few *bellargus* near the village in the meadows; *semiargus* and *minima* were common nearly everywhere, but *arion* very rare, only two var. *obscura* falling to my net. Of the *Pieridæ*, *P. napi-bryoniæ* occurred sparingly, and one *callidice* was stopped in her mad flight. In the Bernina Valley I took one *Lycæna donzelii*, but along the horizontal path towards the Schäfberg it was plentiful on the last day of my visit, being unusually late in its appearance.

The locality "par excellence" where I should collect in the future would, however, be the Heu Thal, where I only spent three days, none of which were downright real butterfly days, however, the results showed that systematic collecting would be most fruitful. On the best day I had in the valley the sun shone with intense heat during the morning, and at the many rivulets insects assembled on the moist

ground almost by the thousand. The *Lycænideæ* occupied the central position, both in numbers and fact, for I should say they numbered ten to one, whilst the other genera always occupied the outskirts of the crowd. So intent were they with the moisture that after placing myself where my shadow would not fall over them and disturb them, in one instance I succeeded in carefully putting seven or eight glass bottomed boxes over selected specimens before the assemblage was "flushed," when they rose as one; the great majority, however, settled on the same spot within a minute or so, and each box covered three and four, and in one instance six specimens, such as *Lycæna pheretes*, *orbitulus*, *eros*, *minima*, of unusually large size. *Melitæa cynthia* occurred in both sexes, the males being very wild in their flight; v. *merope* was very plentiful, as also was *varia*. *Argynnis pales* was one of the most abundant species, many being beautifully clear red forms with the markings small, *napæa* also occurred, and I took two very pretty aberrations, one very dark, and another bright reddish with the posterior row of black spots confluent with the subterminal row in the primaries, and no other markings except two confluent small dots in the cell. Among the *Heterocera*, *M. rubi* again, on July 31st, fell to my net. *Anarta cordigera* and *melanopa* were both captured. *Psodos trepidaria* occurred here (two specimens), but more commonly on the Piz Languard on the rough ground below the hut; *alpinata* was rare; *coracina* and *quadrifaria* everywhere on the lower ground, such as the Roseg and Bernina Valleys. In the Heu Thal, *N. plantaginis* with *hospita* and *floccosa* flew in the hot sun. *Endrosa roscida* v. *melanomos* and *aurita* v. *ramosa*, beautifully suffused with black in some of the internervular spaces, and *Lithosia cereola* were all taken. Of *Zygænideæ* I did not take any *exulans* here, but several v. *manni* occurred and *Ino heydenreichii*. Among the genus *Crambus* I took several that I had not taken before—a nice *alienellus*, and a second at St. Moritz, a beautiful ♀ *zermattensis* and one *maculalis*, this is I believe a new locality for this species, and *radiellus* was common.

I have not mentioned several species taken in other parts. *Colias palæno* and ab. *herrichi* were not uncommon, the former I took sparingly everywhere—on the Bernina Pass, at Maloja, and between these spots, it being quite common in the woods between Pontresina and St. Moritz, where also *herrichi* occurred sparingly. Here I had the pleasure of watching the large black woodpecker for some little time, but of course directly it discovered me it did not show itself again.

After the long days' excursions it was not often I felt inclined

to work the electric lights at night, and they were so numerous and powerful at some of the Hotels that one hardly knew which to take. I took, however, several species, among them being one *Acronycta myricæ* and several beautiful *Dianthæcia cæsia*; *Leucania comma* was common and very wild in its movements; one *Mamestra glauca* came within reach. The lively sun-loving little species of the genera *Oreana* and *Titanio* always have an attraction for me, and of the former I took each of the Swiss species *lugubralis* and *helveticalis* rarely, *rupestralis* and *alpestralis* more commonly; *rupestralis* was of an unusually dark colour. *Titanio phrygialis* was abundant everywhere, *schränkiana* was as usual rarer, and on the whole it is certainly more difficult to catch. I have not enumerated a number of the species of the *Geometræ*, having confined myself to the more interesting species.

THREE DAYS AT ALVANEN BAD.

On our return from Pontresina we decided to make a day or two's stay at Alvanen Bad, tempted so to do by a sight of several captures made by the Rev. C. Travers, who made a short stay there in July, and caught several beautiful *Limenitis populi*, and also found the pupæ. We therefore stayed there the first three days in August. Returning from the high Alps the heat seemed very great, though this was rendered pleasanter in the beautiful gardens of the Bad Hotel, through which rushed the river, not having lost its glacier colour. Two well-flown females of *Aporia cratægi* were the only *Pieridæ* taken. Of the *Melitææ* I took a small series of *aurelia*, and only one *dictynna*. *Argynnis dia* and *amathusia* occurred rarely; *niobe* and *paphia* were very common, and very vigorous in the hot sunshine; *aglaia* was rare, or rather, I only took one fine female perfectly fresh. *Melanargia galathea* was common in the clearings of the woods. *Erebia æthiops*, large dark specimens, was fairly common along the edge of the woods just over the river; it was the only representative of the genus. *Satyrus cordula* was flying high among the pine trees on the side of the hill above the Hotel; it required hard work and a very steady aim to secure them, for they had a knack of doubling, almost like a tumbler pigeon, and so avoiding the net, but I found that by aiming low, thus keeping the bulk of the net below them, I outwitted their manœuvres, and so I succeeded in obtaining a nice series. *Pararge hiera*, very worn, was the only *Pararge* that I saw. Among the *Lycænidæ* the species though few in number were very abundant. *Thecla spini* occupied the same ground as *S. cordula*. *Lycæna ægon* was represented by a single specimen; *corydon* was most abundant, as also was *damon*, the latter is an insect that

always has a special attraction to me, its under-side is so soft and beautiful. This short list completes the "blues," but it was evidently too late for the majority of butterflies.

I took a few species of *Heterocera* of more or less interest, such as *Cymatophora duplaris*, *Gnophos cælibaria* v. *spurcaria*, *Ortholitha limitata* and *bipunctaria*. *Lithosia deplana* and *lurideola* were boxed, whilst in the meadows by the river, *Zygæna lonicæræ* and its v. *major* were not uncommon, *transalpina* also occurred in very nice condition, *fausta* was freshly on the wing, whilst *carniolica* v. *hedysari* was common, but had evidently been out some time. The more I see of this genus the more I feel that the male copulates more than once, and I am inclined to believe that the female does so as well, for in the case of *hedysari* I took a very worn female *in copulâ* with a well worn male; in another case I took a quite fresh female copulated with a male with scarcely any scales. I have found this also to be the case in the Aosta Valley; well do I remember a meadow covered with scabious flowers, every head seemed to be tenanted with one or more *Zygæna*; again I noticed that the females require courting, and they can without difficulty prevent copulation by raising the abdomen, and though the male will crawl all over its would-be spouse yet the elevation of the terminal segments of the abdomen was quite effective, and the males each time desisted in the end. Now, it is inconceivable that the old female I found copulated had not done so before, the insects were too plentiful; my assumption, therefore, is that in the first instance the copulation had not been of long enough duration, and therefore a second act impelled by instinct became necessary. I have never found any insect so insisitive as the one under consideration (*hedysari*); I tried to separate two pairs, but come apart they would not, I pulled them so far that the males' clasps were extruded to their farthest point, and both the terminal segments were stretched so far that my tenderer feelings prevailed, seeing that they would evidently prefer death together rather than be separated; this therefore took place, and I now have the two males with their genitalia fully exposed, for I did not part them till I came home, when having relaxed them I carefully drew them apart, but I had to ease each side of the clasps before the desired end was accomplished.

Among the *Crambidæ* I took *C. specularis*, *pyramidellus* and *marginatellus*, so that, taking into consideration the fact that part of my time was occupied with photography I suppose I must not complain at my three days' sojourn at this pleasant Alpine watering place.

19, Clarendon Road,
Edgbaston, Birmingham :
August, 1908.

A FURTHER NOTE ON THE COLEOPTERA INHABITING MOLES' NESTS.

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

Since my paper on this subject was issued (Ent. Mo. Mag., vol. xlii, pp. 198-202, 237-243) much work has been done both here and abroad, and I think it would be of interest now to collect the published records, at any rate so far as this country is concerned. I am also able to add notes kindly supplied me by several friends, particularly by Messrs. Britten, Donisthorpe, and P. Harwood, and by the late Mr. Chitty. Several papers on the *Coleoptera* occurring in the nests of mammals and birds have been published on the Continent, the most important of which, by Herr H. Bickhardt, appeared in the "Entomologische Blätter" (3 Jahrg., Nr. 6, 7). He gathers together several short and isolated notes, and enumerates 113 species, as having been taken in nests, but many of these can hardly be regarded as anything more than accidental visitors. I prefer to keep to my original classification of the mole's-nest beetles, viz.: A, those peculiar to the nests; B, those commonly found in the nests and breeding there, but which also breed elsewhere; C, the accidental visitors.

To the first class five species have been added since my paper was written, viz.: *Oxypoda longipes*, Muls.; *Quedius longicornis*, Kr., *Q. nigroceruleus*, Rey; *Medon castaneus*, Gr.; and *Hister marginatus*, Er. All these species had been taken in Britain before, but as they were so extremely rare, and have been found so much more commonly and so obviously "at home" in the moles' nests, there can be no reasonable doubt that this is their natural habitat. These make a total of nine species of beetles specially attached to moles' nests.

ALEOCHARA SPADICEA, Er., has been recorded as abundant in several localities, and it is curious how very rarely it has been found outside the nest. Besides Berkshire, I have records from Oxford (*Walker*), Coulsdon, Surrey (*Bedwell*), Guildford and Woking (*Champion*), St. Margaret's, Herts, and Cobham, Surrey (*Chitty*), Oulton Broad (*Donisthorpe*).

OXYPODA LONGIPES, Muls.—This species was first taken in considerable numbers at Malvern in January, 1907, by Mr. Tomlin. They were in somewhat deep nests made of grass in thick clayey ground. It is apparently very local, as the only other records I have from nests are Oxford (*Walker*) and Suffolk (*Bedwell* and *Donisthorpe*). Besides Dr. Sharp's original record for the insect from Scotland,

Mr. Chitty took it in the same country, and I captured one, certainly not in a mole's nest, in Ross-shire last year. It seems strange that the species should apparently not require a mole's nest for a home in Scotland, as I think it improbable that these were chance captures of specimens bred in moles' nests, the insect having never been taken away from a nest in England. It would be interesting to compare the ♂ genitalia of Scotch and English specimens.

HOMALOTA PARADOXA, Rey.—Apparently this is not a common species. It has occurred at Bradfield very sparingly, but Mr. Chitty found it "abundantly" in one nest at Oxford; and it has also been taken at Huntingfield, Kent (*Chitty*) and Guildford (*Champion*).

HETEROTHOPS NIGRA, Kr., appears to be the commonest species wherever moles' nests have been examined, but I did not meet with it in the two nests I found near Strathpeffer, Ross-shire, last year. As *H. prævia*, Er., has not been taken in a mole's nest, it is now abundantly clear that these two are distinct species.

QUEDIUS LONGICORNIS, Kr.—Mr. P. Harwood first took five specimens of this species in a mole's nest at Newbury as long ago as November, 1906, and shortly afterwards I came across it near Bradfield. Since then it has been observed in nests at Woking and Guildford (*Champion*), Oxford (*Walker*), and Oulton Broad (*Donisthorpe*). It has also been taken in moles' runs by Mr. Donisthorpe, and in Suffolk (*Morley*), Great Salkeld (*Britten*), and Southampton (*Pool*). The insect is fairly common in nests at Bradfield in January and February, a large proportion of the specimens being then immature. The fact that it has been found somewhat commonly in the runs of the mole and "abroad," makes it probable that *Q. longicornis* leaves the nest after hatching out much more readily than does *Q. vexans*. Fully mature dark specimens more closely resemble *Q. vexans* during life than one would suppose, the difference in the length of the antennæ not being conspicuous to the naked eye. The dull thorax is perhaps its best distinguishing character.

Q. VEXANS, Epp.—I think we may probably regard this species as common, and generally distributed throughout Britain, wherever moles are found.

Q. NIGROCÆRULEUS, Rey.—It is curious that there should be three species of this genus inhabiting moles' nests, but this appears to be the least common of them. It has been noted at Woking (*Champion*), St. Margaret's, Herts, and Cobham, Surrey (*Chitty*),

Oulton Broad (*Donisthorpe*). and Devon (*Keys*, who also found the larva), and I took it in Cornwall myself this year.

MEDON CASTANEUS, Gr.—Mr. Walker first took this species in moles' nests in a sandy place near Oxford, and it is probable that it will be found in other sandy districts. Mr. Chitty bred one out of a nest from Mickleham, and Mr. Champion has taken it in some numbers at Woking.

HISTER MARGINATUS, Er.—In January, 1907, I captured a single specimen of this species in a leaf-nest near Bradfield, and subsequently found it rather commonly both here and at Bournemouth, and took two specimens in Ross-shire. It has also been taken at Woking (*Champion*), Oxford (*Walker*), Huntingfield, Kent, and Cobham, Surrey (*Chitty*), Oulton Broad (*Donisthorpe*), and Devon (*Keys*).

I have little to add to my notes on the species in group B. :—*Bythinus securiger*, Reich., does not appear to have been found by other collectors, but probably only because sedge-nests have not been very carefully sifted. *Neuraphes rubicundus*, Schaum, I have taken on several occasions. Several species of *Choleva* occur commonly in the nests and no doubt breed there, as I have found immature specimens of various species: *C. morio*, F., I still think is the most characteristic, the others being *C. angustata*, F., *C. cisteloides*, Fröhl., *C. agilis*, Ill., and *C. nigrita*, Er. I find that the *Ptenidium*, so commonly found, especially in sedge-nests, is *P. atomaroides*, Mots., not *P. evanescens*, Marsh., as recorded by me. *Oxytelus fairmairei*, Pand., is the most interesting addition to this group, and has occurred at Oxford and Bradfield. *Homalota ravilla*, Er., and *Aleochara succicola*, Th., should certainly be included here,⁶ but it is probable that *Onthophilus globulosus*, Ol., recorded by Mr. Bedwell, was only attracted by the abnormal foulness of the nest, moles' nests being always quite "sweet." *O. globulosus* is undoubtedly a subterranean species.

I have collected at various times a few other insects, woodlice, &c., from moles' nests, and Mr. Donisthorpe has very kindly had several of these named for me by specialists, but nothing of great interest has turned up. I prefer to leave these to be dealt with more fully than I could expect to do by these specialists at some later date. I have, however, carefully collected the fleas that are found so commonly in the nests, and Mr. N. C. Rothschild has identified the following six species for me :—*Ceratophyllus gallinæ*, Schrk.

(several on two occasions), *Otenophthalmus agyrtes*, Heller, *C. bisoc-todentatus*, Kolen., *C. gracilis*, Taschb., *C. pentacanthus*, Rothschild, and *Hystriohopsylla talpæ*, Curt.

I know of no further records of beetles from the nests of other British mammals. The capture of *Oxytelus clypeonitens*, Pand., in the nest of a wood-mouse at Bradfield may point to this being the natural habitat of this rare species. Mr. Britten tells me he has often examined nests of the hedgehog, but has always drawn them blank so far as beetles are concerned, and this has been my experience.

Bradfield, Berks. :

October 11th, 1908.

A NEW *PAPILIO* FROM AFRICA.

BY THE HON. L. W. ROTHSCHILD, PH.D., F.E.S.

PAPILIO LEUCOTENIA, *spec. nov.*

Body sepia colour, eyes with an indistinct creamy border, the femora dirty cream colour, tibiae and tarsi somewhat transparent with a greenish tint, the tarsi being less pale than the tibiae; abdomen with a creamy spot on each side ventrally at the base, the ventral surface clothed with buffish creamy hairs; clasper elongate-triangular, the harpe long, somewhat shaped like a hockey stick. Antennæ more than two-thirds the length of the cell of the fore-wing.

Wings, *above*, proximally sepia colour, distally brownish-black; a straight creamy band across the disc of both wings, traversed by the thinly black veins, the band on fore-wing touching the lower angle of the cell, gradually widening posteriorly, being 8 to 10 mm. wide at the hind margin, and becoming a little broader in the centre of the hind-wing, and then narrowing again towards the abdominal margin, which it reaches close to the anal angle; the outer edge of the band on the hind-wing rounded and at the veins slightly dentate, the inner edge being quite straight and crossing the cell a little distally of the submedian vein; the disc dusted with creamy scales at the outer edge of the band of the hind-wing; fore-wing, moreover, with a small creamy subapical spot. Distal margin of fore-wing spotted and scalloped much as in *P. mackinnoni*, Sharpe (1891), but at the apex much more strongly, the subapical rounded tooth (at the 4th subcostal) distinctly projecting; the basal half of the fore-wing covered with very numerous short hairs, but there are no cottony streaks. Hind-wing very hairy in the basal half, strongly dentate, with a long spatulate tail, which is shaded with buffish scales, the apex remaining black, the two teeth situated behind the tail long, the fringe spots creamy, resembling those of *P. mackinnoni*.

Under-side: fore-wing uniformly brownish-black from the base to the band, with a creamy spot in the lower angle of the cell, the apical area mottled with pale cinnamon, creamy and blackish, there being a submarginal row of indistinct creamy spots down to the posterior angle. Hind-wing very much variegated with pale

cinnamon, blackish and creamy spots, lines and bands, the pattern very irregular, the most prominent markings being as follows :—a more or less distinct black band, a black half-moon between the costa and the cell ending in an ill-defined black cell patch, on the disc an irregular black line externally bordered with cream colour which latter forms a conspicuous spot behind the third radial vein and a hook-shaped spot behind the first median, further distad a row of cinnamon spots, of which the central ones somewhat resemble a figure 3, while the two upper ones are deeply incurved and paler, distally to these spots a brown-blackish band much shaded with grey, at the outer side of which there is a row of angle-shaped brownish-black spots, upon these follow a row of cinnamon patches centred with blackish; the tail pale cinnamon, the tip black except at the vein. The cell of the hind-wing broad and strongly rounded at the apex, the subcostal branching off farther from the base than the lower median; the precostal short, abruptly curved with a short spur on the basal side. Length of fore-wing, 55 mm.

Hab.: Rugose Forest, east of the south end of Lake Kivu, German East Africa, 2100–2300 m. Two males obtained by Herr R. Grauer in December, 1907.

This species has no very near ally, combining some characters of *P. mackinnoni* and *hornimani*, with characters of *P. phorcas*.

The Museum, Tring:

October, 1908.

YPONOMEUTA RORELLUS, HB., IN BRITAIN.

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

This species was included among the British *Lepidoptera* by some of our older authors, including Haworth, Stephens, and W. Wood, but, since it eventually turned out that the individuals, to which they had applied the name, were merely forms of *Yponomeuta padellus*, L., and no evidence of the occurrence of the true *rorellus* in Britain was forthcoming, it disappeared from our lists more than half a century ago, and has never been reinstated therein. I have much satisfaction, therefore, in now claiming for it a place as a British insect, and in being able to prove that it is fully entitled thereto.

On July 26th, 1895, I took a nice example (not then identified) of *Y. rorellus* in a remote part of the Isle of Purbeck, Dorset, and about ten days previously Mr. A. C. Vine observed many, in fine condition, at rest on a wall near Brighton, but thinking them referable to one of our common species, he only captured two individuals, just for the sake of comparison. Noticing, however, subsequently that these differed from all his other representatives of the genus, he finally consulted me about them, and a search for further material

in my many store-boxes full of acquisitions resulted in my finding three old examples, two of which had stood in the Burney collection, and one in the S. Stevens collection, among the *irrorellus*: their history is unknown to me, but they are obviously of British origin. The specimens from the above-mentioned four sources agree well with Hübner's figure of "*rorrella*" (fig. 234), and are beyond all doubt specifically identical with those forming the beautiful series of *rorellus* in the Frey and the Stainton continental collections, with which I compared them last autumn. The insect must, I think, be very rare, as a rule, in this country, and the six examples already referred to are the only extant British ones that are known to me, nor are any included in the sets of allied species in the national British collection. Neither Mr. Vine nor I have seen it again, and unfortunately the orchard ground, which was opposite the above-mentioned wall, and in which my friend thinks it highly probable that the moths observed in 1895 had been bred, was soon afterwards built over.

Yponomeuta padellus, L., or *malinellus*, Z., has been observed over the English Channel during migration (Ent. Rec., xix, 189 [1907]), but the beautiful condition of all the specimens of *rorellus* that have, to our knowledge, been noticed in Britain, seems to quite preclude the idea of their having flown from any distance.

Y. rorellus, Hb. (*exp. alar.* 25-26 mm.), need never be confused with *irrorellus*, Hb. (*exp. alar.* 22-25 mm.), for its ground-colour is whiter, its black spots are decidedly smaller, its grey cloud is fainter and more extensive, and it has no large dark spot on the fold. Its much larger size is, of itself, sufficient to separate it from the grey-clouded white forms of *padellus*, L. (*exp. alar.* 17-20 mm.), which it otherwise closely resembles in general facies, as also in the size and position of the black spots. In *rorellus*, moreover, the grey longitudinal cloud extends just below, but does not embrace, the posterior half of the costa, whereas, when *padellus* shows a similar grey cloud, this envelops the corresponding portion of the costa.

Continental authors appear to be agreed that the larva of *rorellus* feeds in May and June upon willow, various collectors having found it upon *Salix alba*, while *S. caprea* and *helix* are mentioned, on Hartmann's authority, by Sorbagen (Kleinschmet. d. M. Brand., 163 [1886]), and according to Rössler, as quoted by Kaltenbach in Pflanz. Klas. Insek., 169 (1874), plum must be its food-plant at Darmstadt. Treitschke (Schmet. Eur., ix, 1, 222 [1832]) and Kaltenbach (*op. cit.*, pp. 574-5) give Kollar as responsible for the statement that the insect

is double-brooded, and that the larva lives upon sloe and sallow, but, in Vlind. Ned. Mier., 508 (1882), Snellen contends that it feeds "only on sallow (*Salix alba*), and not on sloe (*Prunus spinosa*) as Treitschke says." I have failed to find any confirmation of Kollar's belief that the species produces two broods in the course of the year.

Norden, Corfe Castle :

May 15th, 1908.

NOTOCHILUS HAMULATUS, THOMS., AN ADDITION TO THE
LIST OF BRITISH *HEMIPTERA*.

BY EDWARD SAUNDERS, F.R.S., &c.

This species, which closely resembles the common *Notochilus contractus*, H.-S., has probably been overlooked by most collectors, and it will probably be found not uncommonly when it is looked for. I have seen several specimens from this country. Mr. Champion has found two in his collection labelled "London district," one of which he has very kindly given to me. Mr. E. A. Butler has also two specimens, but without notes of locality, one of these, however, came from Dr. Capron's collection, and so was probably from the neighbourhood of Shiere in Surrey. Mr. West of Lewisham has one taken in rubbish at Lewisham; he took two specimens in the same spot which he sent to me for examination, they are both of the small size and dark colour of *hamulatus*, but one of them has all the other characters of *contractus*, and I feel convinced is only a small dark variety of it.

N. hamulatus may be known by its smaller size, its rather shorter and therefore thicker looking antennæ, its shorter pronotum, which is less widened posteriorly (N.B.—both species are macropterous), and rather more closely and more rugosely punctured, its transverse impression rather less strongly marked. The elytra are rather darker, especially at the base, and the spot near the apex is reduced to a minimum, the corium also is less punctured.

I bring this forward as it is generally recognised on the Continent as a distinct species; but I must say I think that the characters which distinguish it from *contractus* are unusually "slender."

St. Ann's, Woking:

October 17th, 1908.

ON THE BRITISH SPECIES OF *PHORA* (PART II).

BY JOHN H. WOOD, M.B.

APPENDIX TO SECTION B.

By an oversight a very distinct species, at least in the case of the female, was omitted from its place in the table. It belongs to the small group with bristly pleuræ and yellow halteres, and will come next after *dubitalis*, necessitating the following alteration in the table:—

- 16a (16b) *Costal fringe very long* 2 mm. ♂. *dubitalis*, sp. n.
 16b (16a) *Costal fringe only moderately long. End of female abdomen bright orange.*

♂ ♀. Thorax and abdomen black, the latter in female with the whole of the 6th segment and under parts of the 5th of a rich yellow or orange, anterior scutellar bristles half the size of the posterior ones; frons black, and slightly shining, rather broader than long ♂, but of equal dimensions ♀, supra-antennal bristles moderately large and nearly equal; palpi dirty yellow ♂, clear yellow ♀, broad and strongly bristled; wings clear or nearly so, their veins fine and dark, 1 barely longer than 2 and shorter than 2+3, angle at the fork moderate; legs black, bristles on hind tibiæ fairly large, with the central one plainly the longest; male abdomen stout, hypopygium not large but with a well developed yellow ventral process, anal organ yellow and of moderate size; ovipositor yellow, large and stout; halteres slightly clouded at the extreme tip ♀, but more extensively ♂ $1\frac{1}{2}$ – $1\frac{3}{4}$ mm. *flavicauda*, n. sp.

In all one male and three females have been captured. The male and one of the females were taken September 9th, 1907, at Wall Hills near Ledbury; another female was swept from under spruce firs in Stoke Wood, July 24th, 1907; and the third was found at Woolhope, July 24th, 1905, on the flowers of wood *Angelica*. The female, with its remarkable orange-ended abdomen, is quite *sui generis*, but the male is without any striking character, and comes rather near *dubitalis*, the species with which it is bracketed. The latter, however, is a larger insect with tinted wings, a longer costal fringe, and with the thin veins coarse and strongly marked, the 1st costal division is also distinctly longer than the 2nd and rather longer than the 2nd and 3rd together, and the fork more open than in *flavicauda*; further, the tibial bristles are longer and the central one not larger than the others. There are other small differences which need not be mentioned.

On a recent visit to Sweden Mr. Collin took the opportunity of examining Zetterstedt's and Fallen's types, and made some very in-

interesting discoveries, involving the names, among others, of two of the members of this Section, namely, *sexspinosa*, Coll., and *cubitalis*, Beck.

Sexspinosa, Coll. MS. Mr. Collin's words are "*flavicoxa*, Ztt., is our *sexspinosa*. In Zetterstedt's collection I found a pair, the ♀ has an additional (though obviously adventitious) bristle on the scutellum, making seven in all. Becker (Die Phoriden) in his Table of Group II has correctly placed this species, if it be taken as belonging to the Section with four scutellar bristles, but in the descriptive part of his work he sinks it as a dark variety of *ruficornis*."

Cubitalis, Beck. This Mr. Collin writes me is undoubtedly the same as *humeralis*, Ztt., the former being the male with its incrassated thick vein and the latter the female with the vein simple; he also calls my attention to a paragraph in Zetterstedt's Dipt. Scand., xiv, p. 6474, which reads as follows:—

"11. *Tr. humeralis*. Zett., vii, p. 2862 ♀, and xii, 4824.

"Specimina maseula, alar nervo auxiliari manifeste crasso et nigro, in Lapp.

"infer. legit Prof. Boheman; Mus. Acad. Holm."

which proves that Zetterstedt had correctly recognised the male.

Tarrington, Hereford :

October, 1908.

Coleoptera in the Woking district.—The following species of *Coleoptera* have been captured in this neighbourhood since the publication of my last "Note" (antea, p. 134), a few of them being new to the district:—*Dyschirius politus*, on the wing; *Calodera nigrila*, one specimen, on the wing, June; *Medon apicalis*, two at Chobham, May 30th, and one at Woking, June 23rd, all on the wing towards sunset; *Homalota debilis*, *Oxytelus clypeonitens*, *O. fairmairei*, *Bledius opacus*, *Trogophloeus tenellus*, *Acrognathus mandibularis* (sparingly), *Neuraphes angulatus*, *Triarthron märkeli*, *Monotoma longicollis*, &c., all on the wing, June; *Oxyptoda nigrina* (in plenty), *Ptilium exaratum*, *P. kunzei*, *Melanophthalma similata** (in some numbers), &c., in a bundle of faggots on the Common, June; *Colon serripes* and *C. viennense*, on the wing, June; *Coninomus carinatus*, one specimen, in a pine stump, Chobham; *Antherophagus silaceus*, Chobham, August 29th, by sweeping grass, &c.; *Epuræa thoracica*, not rare, on the wing, around a heap of pine logs, Chobham, June 14th; *Elatér sanguinolentus*, sparingly, and *Cryptocephalus ochrostoma*, on birch and aspen, Chobham, June 6th; *Dorcatoma flavicornis* and *Cænocara bovistæ*, on the wing towards evening, July; *Phléophilus edwardsi*, one specimen, by sweeping, September 5th; *Conopalpus testaceus*, on the wing, June 26th; *Mordellistena*

* This species was again noticed at Guildford, on spruce, in May, June, and September, and it has recently been found by Dr. Sharp and Mr. J. J. Walker in the New Forest.

humeralis, on *Anthriscus* in the garden, *M. nenivaldeggiana*, by sweeping; *Asemum striatum*, two specimens (one on the wing, the other on a pine log), Chobham, May 30th—the first seen at large in this district; *Molorchus umbellatarum*, on the wing, June 26th; *Pogonochærus dentatus*, September 12th. In two Cossus-oaks a number of the usual beetles occurred in June, in addition to several specimens of *Lucanus cervus*, viz., *Thalycra sericea*, *Cryptarcha* (both species), *Soronia* (both species), *Epuræa 10-guttata*, *Ips 4-punctata*, *Thamiaræa cinnamomea*.—G. C. CHAMPION, Horsell, Woking: October 6th, 1908.

A few additions to the Coleoptera of the Isle of Wight.—The following, among the various additions made during my stay in August last to the list of *Coleoptera* known to occur in the Isle of Wight, are of considerable interest. *Trogolinus anglicanus*, Sharp.—I took a specimen under seaweed at Bembridge, and another on the sea wall at St. Helen's a few days later when in company with Prof. Poulton; as far as is known at present the insect has only been taken at Plymouth, where it was discovered by Mr. J. H. Keys, and in New Zealand! (see Ent. Mo. Mag., vol. xxxvi, p. 232); my capture disposes of the idea that it can have been introduced from New Zealand. *Aphthona nigriceps*, Redt.—I swept a specimen in a copse near Sandown, it has hitherto only been recorded from Eggington, near Burton-on-Trent, Cowfield, and from Kirkealdy in Scotland; its food-plant is *Geranium pratense*. *Ochthebius exaratus*, Muls.—Abundant in a small pool on the cliffs near Sandown; Fowler only gives Gravesend, Whitstable, Southend, Rainham and Lewes as localities for it. *Ceuthorrhynchus triangulum*, Boh.—At roots of *Achillea millefolium*, Sandown; only a few localities in the south and south-east are given for this species.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: October, 1908.

[*T. unicolor*, Sharp, from New Zealand appears to be very similar to *T. anglicanus*, Sharp, but has not been identified actually with the latter insect, and from Dr. Sharp's description (*l.c.*, 232) it would seem that they are distinct.—W.W.F.].

Habitat of Anaspis septentrionalis, Champ.—Whilst staying with my friend Professor T. Hudson Beare at Nethy Bridge, Inverness-shire, last month, I captured a specimen of this species. I found it in the centre of a woody fungus on a Scotch fir; the insect being newly hatched, and a very perfect example. It was fortunately a male, so there was no difficulty in identifying it by its very distinct characters in that sex (see Ent. Mo. Mag., vol. xxvii, p. 105). I believe this is the only specimen that has been taken since Champion took his original pair in 1876 at Aviemore, a little further south than Nethy Bridge.—ID.: October, 1908.

Leucania vitellina, &c., in South Devon.—From September 18th to the 25th I was collecting on the South Devon coast, for most of the time in company with Mr. T. A. Lofthouse of Middlesbrough. For so rare a species we found *Leucania vitellina* by no means uncommon, for it occurred at sugar on most nights, though usually in single specimens. On the night of the 19th, however, we took five, besides missing a sixth, unless indeed it was one which was afterwards captured. That this species now regularly breeds on the South Devon coast I think there is no doubt, for it has become gradually commoner during the nine or ten years I have known it

as occurring there, and the specimens we took last month were all too fresh for us to believe they could be immigrants. On the other hand *Caradrina ambigua*, which I used to take on the same ground in the greatest profusion (two hundred a night could easily have been obtained), seems to be gradually decreasing in numbers, and this year probably less than a dozen altogether were seen by both of us. It really seems as if this species, which for several years after its first appearance in Britain increased in such rapidity, will before long disappear entirely. Common moths were plentiful. *Agrotis saucia*, in great variety, was the most abundant species, and indeed took a good lead in point of numbers; other species included *Epanda lutulenta*, *E. lichenea*, *E. nigra*, *Polia flavocincta*, all of the dark var. *meridionalis*, as it occurs also in West Yorkshire, *P. chi* all very pale, *Xylina petrificata* and many others. The two Orthopterous, *Leptophyes punctatissima* and *Meconema varium*, were also frequent visitors to the sugar in about equal numbers.—GEO. T. PORRITT, Dalton, Huddersfield: October 2nd, 1908.

Re-occurrence of Tortrix pronubana, Hb., at Bognor.—In Ent. Mo. Mag., Ser. 2, xvi, 276 (1905), Mr. W. H. B. Fletcher chronicled the capture of a specimen of *Tortrix pronubana* in his garden at Bognor on October 23rd, 1905, and, in proof of the success attending the efforts of this attractive species to establish itself in that locality, it seems worthy of mention that my friend has observed imagines of *T. pronubana* in the same spot in September and October of 1906-7-8, and that, during these last two years, he has seen them also in late June and early July. It will be remembered that Mr. Robert Adkin has already recorded (Entom., xxxix, 265 [1906]; xl, 162 [1907]) the insect, which appears to especially favour the county of Sussex, as producing a summer as well as an autumn brood at Eastbourne. Mr. Fletcher thinks it probable that, in his garden, *Choisya ternata* and *Pittosporum tobira* are its chosen food-plants, for, during the earlier half of last August he noticed therein several Tortricid larvæ feeding on these shrubs.—EUSTACE R. BANKES, Norden, Corfe Castle: October 15th, 1908.

Vanessa io, &c., at West Hartlepool.—On September 19th last I was much pleased to see a fine specimen of *Vanessa io* in my garden here, the only specimen I have seen on the wing for 30 years; it remained busily engaged flitting from flower to flower of my French marigolds most part of the day, and I hoped to see it again, but it came no more, and was probably devoured by the sparrows which are sadly too numerous in the hedge close by. Upon looking into my breeding cage (a large coffin-like structure of wood and zinc) on October 3rd I was surprised to find a fine male *Dicranura bifida* had emerged. I collected a few larvæ last autumn (1907), but imagined that all had emerged in June and July; where this one had pupated I am at a loss to know, but probably in some obscure corner of the box, where it had been overlooked. Is not this a very unusual date for this species to emerge?—J. GARDNER, Laurel Lodge, Hart, West Hartlepool: Oct. 8th, 1908.

Hibernation of Pyrausta nivalis.—In the Transactions of the Entomological Society for 1907, p. 411, I called attention to the curious fact that the larvæ of *Marasmarcha* (a genus of Plume Moths, including the well-known *phæodactyla* [now *lunædactyla*]), hibernated in small cocoons, which they spin on the ground or

amongst surface material, just after hatching and without eating anything. I find that the same habit appears to obtain in *Pyrausta nivalis*, though my observations are not so complete as to exclude the desirability of their repetition. In fact I gave the larvæ no chance of feeding, and so the habit may be an alternative one under compulsion, even so, it is remarkable enough. In mid July I got some moths to lay eggs on thyme, which they did with reluctance and sparingly, they probably wanted some composite plant. However, I treated them with neglect, and now, September 28th, find that about half the young larvæ died, the remainder are alive in small white silken cocoons, made in the dead petals of the flowers of the thyme. It may be that they ought to have fed somewhat before making these cocoons, they could hardly have the common *Pyrale* habit of hibernation as full-grown larvæ.—T. A. CHAPMAN, Betula, Reigate: September 28th, 1908.

The macropterous and brachypterous forms of Drymus brunneus and sylvaticus.—I have had in my collection since 1892 some large pale specimens of *Drymus brunneus* (1 ♂ and 2 ♀ ♀) which I caught by sweeping in a damp place on Esher Common in August, and which I have often looked at wondering if they really belonged to that species. The other day I was examining them again, and noticed that the shape of the pronotum was quite different in the Esher specimens to that of the ordinary form, being much widened towards the base and only slightly contracted across the middle, whereas, in ordinary specimens there is a deep contraction in the middle, the sides converging from the anterior dilatation towards it, and then diverging to the basal angles, the width of the base being scarcely if at all greater than that of the widest portion of the pronotum in front of the constriction. These Esher specimens are macropterous, and I think they are worthy of note, as I cannot find the macropterous form of *D. brunneus* mentioned by any of the authorities which I have been able to refer to. In consulting Flor's "Rhynchoten Livlands" in this matter I find he mentions both forms of *Drymus sylvaticus*, the brachypterous form being that which we know by the name of var. *ryei*. I have always kept this variety as distinct in my collection, but I had not realized that its characters depended on its being brachypterous.—EDWARD SAUNDERS, St. Ann's, Woking: October 17th, 1908.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, Sept. 24th, 1908.—MR. ALFRED SICH, F.E.S., President, in the Chair.

Dr. Chapman exhibited a dark suffused specimen of *Brenthis pales* from Saas-Fée, and an example of *Anthrocera exulans* var. *flava* from the same locality. Mr. Cowham, an example of *Ophiodes lunaris* bred in July, 1907, from an ovum sent him from South France by Dr. Chapman. Messrs. Harrison and Main, a long series of *Eupithecia absynthiata* bred from larvæ collected on ragwort near Cork. Mr. Newman, long series of *Agriades corydon* taken near Dover, including var. *obsoleta*, and many blue females; many blue females of *Polygonmatus icarus* from North Kent; and two striking forms of *Dicranura vinula*, one very dark, almost chocolate suffusion, the other having the zigzag lines unusually cleanly cut and dark, the

middle area being very light. Mr. Ashdown, a large number of *Lepidoptera* met with during a trip to Switzerland in July, 1908, including *Pieris daphidice*, *Thecla w-album*, *T. ilicis* ab. *cerri*, *Polyommatus doris*, *Lycæna arion*, *L. orion*, *L. pheretes*, *L. damon*, *Melitæa parthenie*, *Eneis aëlla*, *Salix cordula*, *Pararge æchine*, *Thyris fenestrella*, *Cleogene lutearia*, *Psodos coracina*, &c., &c. Mr. Moore, *Lepidoptera* from Northern Nigeria. Mr. Coote, living larvæ of *Celastrina argiolus*, including one example which had been of an obscure red colour through all its instars. Mr. Sich, *Parnassius apollo*, the imago bred from the larva exhibited at a previous meeting, and made remarks on the differentiation of the larva from that of *P. delius*.

Thursday, September 24th, 1908.—The President in the Chair.

Messrs. Harrison and Main exhibited a series of bred *Macaria liturata* var. *nigrofulvata* from Delamere ova. Of the fourteen specimens bred thirteen were of the dark form. Mr. Newman, varieties of *Abraaxas grossulariata*, including ab. *varleyata*, ab. *nigrosparsata*, dark forms, and a rayed specimen; a very darkly powdered *Selenia illustraria*; two *Gnophos obscurata* var. *mundata* from Lewes; a rayed form of *Pieris napi*; a yellow aberration of *Noctua rubi*; and a long bred series of *Argynnis aglaia* with much variation. Mr. Turner, a fine ♀ of *Euvanessa antiopa*, taken at Vitznau on August 10th, and a well marked and brilliant ♀ of *Erebia æthiops*, taken at Gersau on July 27th. Mr. Noad Clark, photomicrographs of the ova of *Coleophora virgaureella* laid on the pappus hairs of *Solidago virgaureæ*. They were upright eggs, and the young larvæ emerged from the micropyle. Mr. Step, a *Diloba ceruleocephala* bred by his son, in which the "80" mark was blurred and extended. Mr. West (Greenwich), specimens of *Aleochara crassiuscula*, a Coleopteron new to Britain, discovered by him at Great Yarmouth; and also the rare and local Homopteron *Idiocerus scurra* from Blackheath on poplars. Mr. Moore, a larva of *Acronycta psi* having an unusual development of the fleshy "horn." Mr. Sich, larvæ of *Aristotelia hermannella* mining a leaf of *Chenopodium album*, and referred to its colour changes.—HY. J. TURNER, Hon. Secretary.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, October 7th, 1908. Mr. C. O. WATERHOUSE, President, in the Chair.

Mr. James J. Joicey, of 62, Finchley Road, London, N.W., and Mr. Robert M. Prideaux, of Woodlands, Brasted Chart, Sevenoaks, were elected Fellows of the Society.

Mr. W. G. Sheldon brought for exhibition a case containing butterflies from Andalusia taken in the spring of this year. They included *Anthocharis tagis*, low-level and high-level forms, *Zegris eupheme* var. *meridionalis*, *Melitæa phœbe* var. *occitanica*, *M. deione*, a very large and well-marked form, and *Melanargia ines*, with one striking aberration showing a strong melanic tendency. Dr. Herbert Charles, a remarkable aberration of *Dryas paphia* taken by him in the New Forest in July last. With the exception of the borders and the bars, all the wings were suffused with deep velvety brown triangular patches, the maculations being entirely absorbed

therein. Mr. Hugh Main, living larvæ of *Blatta germanica* to illustrate their colourless condition on first emergence. Mr. H. St. J. Donisthorpe, examples of (a) *Agrius biguttatus*, F., found in Sherwood Forest, July, 1908, not taken in Britain for about thirty years, this being the first record for the Midlands; (b) *Pyropterus affinis*, not uncommon in Sherwood Forest, July, 1908; (c) a species of *Phora*, with pupæ bred from larvæ which came out of the body of a *Clerus formicarius* taken alive in Sherwood Forest with the *Agrius*, and probably parasitic on it; (d) *Trogolinus anglicanus*, Shp., a specimen taken at Bembridge, August 3rd, 1908, with a specimen from Plymouth, and only known before to occur in New Zealand and at Plymouth; (e) *Phyto melanocephala*, Mg., bred from woodlice taken at Bembridge, Isle of Wight, August, 1908, with pupæ, and a woodlouse with Dipterous pupa *in situ*. The life-history of fly was hitherto unknown, though the larvæ of *Rhinophora atramentaria*, Mg., a nearly related species, have been recorded as parasitic on *Oniscus asellus*. Mr. A. Harrison, a gynandromorphous example of *Pieris napi*, bred from parents taken in North Cornwall this year. Mr. E. R. Speyer, a case of rare and interesting dragonflies taken in the British Isles, 1908, including (a) *Sympetrum fonscolombii*, Selys, taken in Hertfordshire on June 24th and July 27th, respectively, the ♀ probably the first taken in England; (b) *Somatoclora metallica*, Lind., a ♂ captured in Sussex on August 4th, being the first authentic record of this insect in England; (c) *Anax imperator*, Leach, a ♂ caught in Hertfordshire on June 24th with *Libellula depressa*, ♂ in its jaws; (d) *Libellula depressa*, Linn., two ♀♀ taken late in the season, showing the appearance of blue powder on the abdomen; and (e) *Libellula quadrimaculata*, Linn., four specimens, two taken in Sussex, showing the remarkable difference in the amount of suffusion on the wings in individuals; the other two from widely different localities, one from North Wales showing great, and one from Ventnor, Isle of Wight, showing very little wing-suffusion. Mr. Norman Joy, a number of *Coleoptera* new to the British list, including *Sunius lyonessius*, Joy, and *Cryptophagus hirtulus*, Kr., from the Scilly Isles; *Anisotoma flavicornis*, Bris., and *Corticaria linearis*, Payk., from Bradfield; *C. longicollis*, Zett., from Epping, and *Oxygoda perplexa*, Muls., from Cornwall. Mr. H. M. Edelsten, specimens of *Æschna isosceles* and *Libellula fulva* from the Norfolk Broads, taken in June last, and *Orthetrum cærulescens* from Chagford, taken in July. Mr. W. J. Lucas, a spike of the grass *Molinia cærulea* with dead Syrphids, *Melanostoma scalare*, Fabr., attacked by the parasitic fungus *Empusa muscæ*, found on Esher Common, October 3rd, 1908. Many or most were attached by the point of the head only in a very peculiar manner, and apparently all were females. Mr. O. E. Janson, a specimen of *Cryptamorpha desjardinsi*, Guer., found by Mr. C. F. Selous in his house at Barton-on-Sea, Hants, on June 26th. This beetle is recorded as living in banana plants in Mauritius and Madeira, and may have been introduced here in the banana fruit. Mr. G. C. Champion, on behalf of Mr. W. West, who was present as a visitor, specimens of the following insects: *Aleochara crassiuscula*, Sahlb., taken at Great Yarmouth in May, 1908; varieties of *Donacia dentipes* and *D. simplex*, from Caistor Marshes; *Nabis boops*, Schiödtte, taken at Esher in August, 1908; and *Idiocerus scurra*, Germ., taken at Blackheath, Kent, in September, 1908. Mr. L. W. Newman, specimens of (a) *Crymodes exulis* from the Shetlands, including the rare female; (b) *Callimorpha dominula*, two yellow aberrations bred from East Kent ova. In 1906 a yellow ♀ was bred. This

was paired with a typical *red* ♂, and the result in 1907 was that the whole brood were typical *Reds*. These *Reds* were paired, and in 1908 the brood (a small one) produced 25 per cent. of the yellow form; (c) *Camptogramma fluviala*, a varied series bred from ova laid by a ♀ taken at Eastbourne; and (d) a yellow aberration of *Noctua rubi* from Yorkshire. Dr. F. A. Dixey, a number of Central and South American butterflies belonging to six different subfamilies, but all showing the same obvious character of a diagonal reddish band on a general dark surface. He stated, in reference to some general remarks by Mr. W. J. Kaye on a previous occasion, that although there was no direct geographical continuity between the areas of distribution of several of the species shown, there appeared to be sufficient connection of an indirect kind to warrant the supposition that the whole constituted an assemblage of mimetic character.

Dr. G. B. Longstaff, M.A., read a paper on "Bionomics of Butterflies." Mr. L. J. Hare, F.E.S., "Some additions to the *Perlidae*, *Neuroptera-Planipennia* and *Trichoptera* of New Zealand." Mr. Roland Trimen, F.R.S., "On the larvæ of *Hamanumida dædalus*, Fab., *Hoplitis phyllocampa*, n. sp., and *Eulopholnotus myrmeleon*, Feld., with descriptions of the imagines of the two Heterocera." Mr. A. M. Lea, F.E.S., Government Entomologist, Tasmania, "A Revision of the Australian and Tasmanian *Malacodermata*."—H. ROWLAND-BROWN, *Hon. Secretary*

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH *TENTHREDINIDÆ*, &c. (23).

SELANDRIADES (continued) *ERIOCAMPA* AND *PÆCILOSOMA*.

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

Four genera besides those already discussed in these pages complete the list of our *Selandriads*. These are *Eriocampa*, Htg., *Pæcilosoma* (originally called *Pæcilstoma*, Dhlb.), *Emphytus*, Klug, and *Taxonus*, Htg. In all the humeral area is crossed by an oblique nervure.

ERIOCAMPA, Htg.

Of this genus as re-defined by Konow we have only one recorded species, the well-known *ovata*, L. In Mr. Cameron's Monograph six other species appear under the name *Eriocampa*, but these have been removed by Konow from the *Selandriads* to the *Hoplocampids*, and I have already dealt with them as such under the name *Eriocampoides*, Knw., in No. 17 of these papers (Ent. Mo. Mag., Jan., 1907).

E. ovata ♀ is an extremely common and easily recognised insect. It is something like a highly magnified *Tomostethus dubius*—black and shining with blood-red pro- and mesonotum; but the humeral area in

all *Tomostethus* spp. is petiolate. It is about 6 mill. long, and very broad-bodied in proportion to its length.

The late F. Smith made many attempts, recorded in the Entomologists' Annual, to discover the ♂ by breeding. He never could succeed, however; and as other Entomologists have had similar experiences, it has not unnaturally been inferred that the insect was purely parthenogenetic, and that no ♂ ♂ of it existed at all. But at last, in W. E. Z., 1885, Konow described the missing ♂. It was said to be entirely black, like the ♂ of the nearly allied species *umbratica*, Klug (of which, strange to say, neither the ♂ ♂ nor ♀ ♀ are rare in Germany), but to differ from it in sculpture and puncturation. So far as I know, no such insect has even yet been met with in this country; but since it seems that after all it exists, collectors should still be on the look out for it, and lucky will he be that finds it!

Eriocampa differs from all species of *Pæcilosoma*, *Emphytus*, and *Taxonus* in lacking developed genæ—the eyes practically touch the mandibles; and also from all of them, except *Taxonus agrorum*, in having two closed cells, cubital and medial, in the hind-wing. In this character it agrees with *Athalia*, *Selandria*, *Strongylogaster*, &c. Perhaps its nearest relation in the Tribe is *Selandria*; but from that the cross-nervure in the lanceolate cell at once distinguishes it.

PÆCILOSOMA, Dhlb.-Thomson.

The proper name of this genus is a matter as to which opinions may differ. It was first distinguished by Dahlbom under the name *Pæcilstoma* (*sic*), which was either a misprint or a slip of the author's, for it can hardly be doubted that he meant his name to express the characteristic spotted *body* (σῶμα), not *mouth* (στόμα), of the insect. Accordingly Thomson altered the name to *Pæcilosoma*, and the change has been generally accepted. But in November, 1846—after the appearance of Dahlbom's work, but before that of Thomson—Brullé published the fourth volume of Lepelletier's "Hist. Nat. Insect., &c.," introducing Lepelletier's MS. name *Empria** for a genus to include that author's *T. pallimacula*, which was evidently a *Pæcilosoma* (see its figure in plate 47 of Brullé's work). It would appear therefore that, strictly, the name *Empria* has priority over the name *Pæcilosoma*, though not over *Pæcilstoma*, and should stand if Dahlbom's original name requires to be altered. For this reason, no doubt, shortly before his death Herr Konow wrote to me on a postcard "*Pæcilosoma* must

* Not *Empyria* as it appears in Cam. Mon., i, p. 206.

be called *Empria*, Lep." However, on the whole I think it better in these papers to acquiesce in the name which most authors (including Konow himself in his published works) have adopted, viz., *Pæcilosoma*.

This is in many respects a peculiar and a very puzzling genus. Some of its species can be distinguished with little difficulty; but in other cases it is necessary to take into account a number of minute structural characters, most of which are somewhat variable, and even when this is not so are often difficult to see and easily misinterpreted.

All but two of our species have a peculiar coloration, which (as said above) has given the genus the name: viz., the abdomen above bears on each side a row of pale yellowish or whitish somewhat transverse spots, four segments being flecked in some species, five in others, and so on. The spots are much more conspicuous in some species than in others, and they always show up more or less distinctly according to the way in which the specimens under examination are held and lighted, while in old specimens which have shrivelled or become mouldy and faded, they may easily be overlooked altogether. But if they can be seen at all the insect exhibiting them may at once be set down as a *Pæcilosoma*.

The neuration in the wings of *Pæcilosoma* spp. varies more than is usual within the limits of a single genus, and some, but not all, of these differences appear to be specific. Thus, in one species (*candidata*) the hind-wings are regularly without any enclosed cell; while all the others have *one* such cell (a medial) normally, and aberrations occur—one was lately sent to me by Mr. Harwood, of Colchester—in which a cubital cell is also present. In the fore-wings the first cubital nervure may or may not be obliterated, so that some specimens have three cubital cells like *Emphytus*, and others four, like *Taxonus*. I am not sure to what extent this character is specific. In some cases it seems to be rather sexual, and in others, again, merely individual. Thus I find that all my own *klugi* specimens have four cubital cells, and all my *immersa* only three. But, on the other hand, I have remarked instances of both conditions in specimens of *liturata*, *longicornis*, and *tridens*; and have also noted that in *longicornis* the first cubital nerve is usually present in the ♂♂, and absent in the ♀♀.

To determine *Pæcilosoma* species correctly is by no means easy. The best characters seem to lie in the antennæ, the structure of the clypeus (first pointed out by Konow), and the claws. To a certain extent the coloration of the different species helps to distinguish

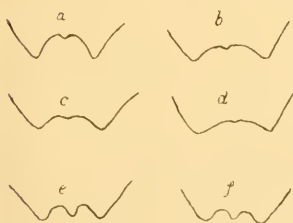
them; but, except in a few cases, their differences in this respect are too slight, and apparently also too capable of varying in individuals, to be of much practical value.

To realize the characters of the antennæ they should be looked at sideways, not from above. In this aspect it will be found that those of certain species are long and slender with nearly parallel-sided joints throughout and every joint many times more long than broad, while others are comparatively short and stout with at least the sub-apical joints compressed and dilated. In the clypeus we have to notice whether the emargination at its apex is deep or shallow, and to what extent it is interrupted in its middle by a sort of tooth-like projection, which is really the apex of a more or less distinct carina following the longitudinal diameter of the clypeus. The characters of the claws are difficult to see. They are bifid in some species, and nearly or quite simple in others, the former being the most usual condition; but a claw which is really bifid only looks so in particular aspects, and it is not always possible to get a clear view of it in those aspects, the hairs, or the pulvillus, or some other obstacle getting in our way.

The following outline sketches* (figs. 12 and 13) will, I hope, assist collectors in making use of my table of characters for this genus:—

FIGURE 12.

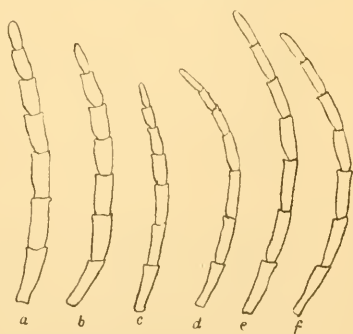
Apical outline of clypeus in certain
Pæcilosoma spp.



- a. *excisa*, Thoms. ♀ d. *liturata*, Gmel. ♀
b. *klugi*, Steph. ♀ e. *longicornis*, Thoms. ♀
c. *immersa*, Klug. ♀ f. *tridens*, Knw. ♀

FIG. 13.

Antenna characters in certain
Pæcilosoma spp.



- a. *klugi*, Steph. ♀ d. *immersa*, Klug. ♀
b. *liturata*, Gmel. ♀ e. *longicornis*, Thoms. ♀
c. *excisa*, Thoms. ♀ f. *tridens*, Knw. ♀

* Those in fig. 12 were traced from photo-micrographs of specimens from which the mandibles and labrum had been removed to show the outline of the clypeus more clearly. Those in fig. 13 were obtained rather differently. The objects were set up as though to be photographed, and the images thrown by them on the focussing screen were traced through paper laid upon it. Until I thought of this simple device, I always employed a "camera lucida" to obtain my records of structural details in the insects I was studying. But I find the focussing-screen method so much less troublesome, that I expect in future to make much use of it.

SYNOPTIC TABLE OF BRITISH *PÆCILOSOMA* Spp.

1. Genæ very short, evidently shorter than the basal joint of the antennæ; abdomen above, at least at the extreme apex, testaceous, its dorsal segments *without* pale lateral flecks on their discs 2.
- Genæ quite as long as the basal antennal joint, usually much longer. Abdomen flecked above with pale spots laterally, but otherwise black throughout... 3.
2. Abdomen testaceous-orange throughout (pronotum, tegulæ, and legs yellowish)...
abdominalis, F.
= *luteolum*, C.
- Abdomen shining black, except its testaceous apex. (Its dorsal segments narrowly white at the apex, but not pale spotted on their sides)...
pulverata, Retz.
3. Hind-wings with no enclosed medial cell...*candidata*, Fall.
- Hind-wings always with an enclosed medial cell 4.
4. Antennæ short and heavy-looking (lateral view !), their penultimate joints incrassate beneath, and much wider though little longer than the apical joint (figs. 13*a*, *b*, *c*). Claws not bifid, except in *klugi* 5.
- Antennæ slender and elongate, penultimate joints very little wider than the apical joint (figs. 13*d*, *e*, *f*). Claws always bifid..... 7.
5. Apex of clypeus deeply and angularly excised (the sides of the excision look like long triangular teeth). See fig. 12*a*. Bases of all the tibiæ pale. Hind calcaria short. Claws almost simple. For antennæ see fig. 13*c*...
excisa, Thoms.
- Apex of clypeus with a shallower emargination, rather arcuate than angular. Hind tibiæ practically quite black or fuscous from base to apex 6.
6. Body larger, broader, coal-black and shining (except for the usual whitish markings, which are often very obscure in this species). Wings with a blackish clouding. Antennæ, see fig. 13*a*. Calcaria long (about as long as the third tarsal joint). Claws bifid. Clypeus without a distinct carina on its disc, except just at the apex, where a sort of tooth-like tubercle projects into the emargination (fig. 12*b*). Intermediate tibiæ hardly paler in front than behind. Vertical area about three times broader than long ...*klugi*, Steph.
(? = *guttatum*, C.).
- Smaller, more slender, and greyer-looking—not so intensely black and shining as *klugi*, and with the pale markings usually more conspicuous. Antennæ, see fig. 13*b*. Calcaria short and claws not bifid. Clypeus more shallowly emarginate, bisected by a distinct narrow carina, which projects very little into the emargination (fig. 12*d*). Intermediate tibiæ evidently pale in front. Vertical area hardly twice as broad as long*liturata*, Gmel.
(= *submuticum*, C.)
7. Legs (femora included) yellowish. Clypeus (fig. 12*c*) with only a *small* tooth in the centre of its emargination—not, therefore, bi-excised. Thomson notes its white tegulæ, &c., and the regular obliteration of the first cubital nerve, and Konow its short “almost circular” eyes. Antennæ (fig. 13*d*) shorter than in the following species, but of the same slender type...*immersa*, Klug.
(= *fletcheri*, C.).

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
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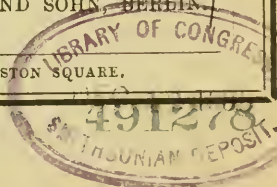
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- Legs with at least the femora black and their paler parts rather grey than yellow. (Clypeus (fig. 12e, f) “bi-excised”—i.e., with a conspicuous large triangular tooth interrupting its emargination. The first cubital nerve may be present or absent 8.
- 8. Body of a more shining black—only four dorsal rings of abdomen with lateral white or greyish markings. Antennæ in ♀ (fig. 13e) at least as long as the abdomen, in ♂ evidently much longer *longicornis*, Thoms.
- In structure almost identical with the last, except that the ♀ antennæ are far shorter; but in general appearance differing, owing to the greater extent and more conspicuous colour of its pale (lacteous) markings on the body and legs. Five dorsal rings of the abdomen have lateral streaks or spots; and the wings are clearer (less blackish) hyaline. (The ♂ antennæ are hardly longer than those of the ♀) *tridens*, Knw.

Besides the above nine species, I have what seems to be a tenth (one ♂ and one ♀ taken in Warwickshire). The ♂ antennæ seem to be as long as in *longicornis*; the clypeus is “bi-excised,” with the lateral teeth much rounder and less acute than that in the centre. The coloration is light, as in *tridens*, and the legs paler than in that species, the tibiæ especially have white bases as in *excisa*. A ♀ sent to me by Mr. Harwood is, I believe, one of the same species. Konow doubtfully named my specimens “*hungarica*, Knw., or *nov. sp.?*” In most respects the description of *hungarica* suits my insects; but their claws are distinctly bifid, while *hungarica* is said to have “*unguiculi simplices*.”

Mr. Cameron describes a *P. nigricorne* (from a ♂), and I have seen what I suppose to be its “type” at South Kensington. It is prepared in a manner which makes examination of its structure very difficult; but from such characters as I can see (*e. g.*, the strong convergence of the discoidal and first medial nerves) I do not think it can belong to this genus, nor to the *Selandriads* at all. My impression is that it would prove to be an *Eriocampoides*, if it could be examined properly; but at present I cannot be positive about it.

(To be continued).

ARÆOCERUS FASCICULATUS, DE GEER, AS A BRITISH INSECT.

BY F. H. DAY, F.E.S.

For some years past a beetle has been noticed in numbers sitting and jumping on the window panes and walls inside a biscuit factory in Carlisle. The time of its appearance is usually in August and September. During the present year the workmen drew the atten-

tion of my friend Mr. James Murray to the insect, and upon careful enquiry he found that it was well established, but in what substance it was breeding he has not yet discovered. Probably, however, it is one or other of the numerous imported articles used in the factory, such as cocoa, coco-nut, almonds, &c. Mr. Murray kindly gave me some living examples, but being unable to work out the species any more precisely than that it probably belonged to the *Anthrribidæ*, I passed it on to Mr. E. A. Newbery, from whom I learn it is *Aræocerus fasciculatus*, De Geer, its place being just before *Choragus*.

This is a cosmopolitan insect, variously stated to be of Eastern and Australian origin. It has occurred at the Cape of Good Hope, in India, China, Japan, the United States, Mexico, Honduras, Panama, and Australia. Wollaston met with it in St. Helena, and stated that it usually occurred in imported produce, "particularly seeds and berries" (Col. Sanctæ Helenæ, p. 174).

Although now omitted from the British list, it has been frequently captured in our Islands. Stephens (Ill. Mand., vol. iv, p. 211) records it "from London, Suffolk and Devon," under the name of *Phlæobius griseus*, Fab., remarking that it was probably not indigenous, and giving a fairly good figure (plate xxi, fig. 2). In the "Manual," p. 267, he repeats his notes on the species. Bold records it from Sunderland (*cf.* Ent. Ann., 1872, p. 40), and it is noted and illustrated as an imported species in "British *Coleoptera* delineated," by Shuckard (p. 75 and plate 6, fig. 5, Supplement). It appears in the same character in Crotch's Catalogue, 2nd edition (1866), after which it dropped out of our lists. Fowler (Col. Brit. Isles, vol. v, p. 114), however, mentions the species again, but as "evidently an importation." In the "Entomologist's Record," 1902, p. 338, Mr. Newbery records the capture of a single *Tropideres* (*Encdreutes*) *hilaris*, Fähr., in a London warehouse. After seeing my examples of *A. fasciculatus*, however, he finds that his insect is really the latter species, and requests me to point out the error, which arose partly through comparison with a bad type and partly by the circumstances in which the specimen was obtained—near some recently purchased broom-tops, with which Bedel (Col. Bassin du Seine, vi, p. 16) states *T. hilaris* is associated.

There seems no reason now why this beetle should not be reinstated in the list of reputed British species. In the Carlisle locality it is breeding and established, and will doubtless be found in other districts.

The synonymy of the insect, like that of other cosmopolitan species, is extensive, viz. :—

ARÆOCERUS, Schönh., = PHILÆOBIUS, Steph.

fasciculatus, De Geer.

coffeæ, L.

crassicornis, F.

cacao, F.

peregrinus, Hbst.

japonicus, Thunb.

griseus, Steph.

capillaricornis, Ray.

mæstus, Lec.

var. *sambucinus*, Boisd.

When alive the insect is very active, possessing much the same jumping powers as *Choragus sheppardi*.

In conclusion, I must express my indebtedness to Mr. Newbery for his assistance in the preparation of these notes.

Carlisle : October 29th, 1908.

THE LIFE-HISTORY OF *XANTHIA OCELLARIS*.

BY H. O. MILLS.

As very few specimens of *Xanthia ocellaris* have been taken in England the following notes on the ova and larvæ may be of interest.

A female of this species taken at light in September, 1907, in the Thames Valley laid her eggs in the corner of the box in which she was kept, ignoring some poplar twigs which were supplied.

The eggs hatched out at intervals from March 8th to April 6th, 1908, and the young larvæ at once burrowed into half open catkin buds of the black poplar, working their way between the florets. Later on the larvæ worked down between the outer case of the bud and the catkin, and all through their life showed a great fondness for concealing themselves as much as possible.

Catkins of the balsam poplar were supplied at times, and some few of the larvæ that took to them seemed to grow more rapidly than the rest. At intervals also partly open leaf-buds of black, Lombardy and balsam poplar were given as well as various low plants, but as long as catkins were to be had the larvæ would touch nothing else.

About May 1st the weather became much warmer, with the result

that the supply of catkins rapidly came to an end. The larvæ were again supplied with various low plants and the fully formed leaves of Lombardy poplar, and at once began to feed on the latter.

There was some disposition at first to spin the leaves together, mostly those at the end of a twig, but as the larvæ grew they abandoned this habit. They still, however, kept out of sight as much as possible, generally lying between a leaf and the bottom of the box in which they were kept.

As the larvæ seemed to need some better shelter than the green food-plant, they were given bundles of last year's oak leaves loosely tied together, and they invariably retired into these when not feeding.

When the larvæ seemed nearly full fed they were supplied with soil, and into this they burrowed in the daytime; later on they all burrowed and spun close, though very flexible, cocoons with particles of earth mixed with the silk. The last batch stopped feeding by May 29th, and the first pupa was noticed on June 2nd.

The insects began to emerge on July 20th, and were all out by August 15th, a full month before their usual time. This may have been due to the fact that they were fed up in tin boxes, for the imagoes from a smaller batch of eggs laid by the same female, but reared separately by a friend in ordinary breeding cages, did not emerge till the middle of September, their normal time.

The eggs are shaped and ribbed like a sea-urchin, but are more flattened; the colour is apple-green. They were laid very close to, and in many cases overlapping, each other. The shells are very flexible, as those laid right in the corner of the box were forced quite out of their proper shape.

On first emerging from the egg the larvæ were iron-grey with a darker head, but in a few days they had changed to a dull white; still however keeping the dark head.

In about a fortnight the larvæ had reached a length of one-quarter to three-eighths of an inch. The colour was then translucent reddish-brown on the back, with three very narrow pale lines; the lateral lines were darker and browner, and below them was a whitish streak. Underbody green, head brown, but not so dark as the lateral lines; there was also a brown plate on the first segment behind the head. The first three segments tapered very perceptibly towards the head.

When nearly full grown the larvæ looked very different. The head and prolegs were bright brown; the plate behind the head was darker, showing the dorsal line cream-coloured and very narrow; and the subdorsal lines also cream but broader. From the back the light dorsal line did not show very distinctly, except at the point of each segment; it was lowered on each side by a dark brown line, which were also more pronounced at the front of the segments. The subdorsal lines were similar but less marked than the dorsal, in contrast to the way they showed on the plate. The spiracles showed as minute black dots.

The general colour of the larvæ was dark grey-brown above the spiracles, dusted irregularly with minute paler dots; below the spiracles greenish-grey with similar paler dots. A very few scattered hairs on the head and next segment.

The larvæ did not roll in a ring when disturbed, but sometimes feigned death, lying straight out. Oftener, however, they bent the head round to about the middle of the side.

The cocoon of silk and earth was very flexible and the pupa bright brown in colour.

Hurst Cottage, Hampton, Middlesex :
October, 1908.

Since writing these notes a female taken this season and given to Mr. E. B. Nevinson has laid eggs in rows between the buds of the poplar catkins and the stem of the twigs, a well protected position, and evidently the natural one.

FURTHER NOTES ON THE HYMENOPTEROUS GENUS *BRACON*, FAB.

BY CLAUDE MORLEY, F.E.S.

Since the publication of my former paper on this subject (Ent. Mo. Mag., 1906, p. 106) several additional breedings have been effected in this interesting genus, showing that it certainly preys upon at least three Orders of insects.

On March 30th, 1907, I gathered a number of dead and dry heads of knapweed (*Centaurea nigra*) in my garden here; on April 21st following three ♂♂ *Bracon minutator* had emerged at 10 a.m.; one was moribund on the 28th and died on May 2nd; the other two died during the nights of April 24th and 25th. On the 22nd one ♂ emerged at 8 a.m.; was moribund on the 27th and died on 28th. On the 24th one ♂ emerged at 8 a.m.; was moribund on May 1st and died on 2nd. On the 26th one *Pimpla sagax*, Htg., ♂, was out at 9 p.m. and died on 29th; it was a very retiring insect, and kept constantly hidden among the *débris*, refusing to come up to the gauze covering of the jam jar in which were the heads. On May 2nd and 6th two ♂♂ *Pteromalus* sp. were emerged, the former at 6 p.m.; both were shortly destroyed by the heat of the sun on the jar. On May 23rd a ♀ of probably the same species of *Pteromalus* had emerged; and on June 9th the first ♂ *Urophora solstitialis*, Linn., emerged at 8.30 a.m. Nothing more appeared at all except a few ♂♂ and a ♀ of the Dipteran. It is comparatively certain, therefore, that the *Bracon* was parasitic, and the *Pteromalus* hyperparasitic through the *Bracon*, upon the *Urophora*; but the presence of the *Pimpla* is unexplained;

was it merely hibernating in the heads or had it preyed upon the *Urophora* also, as Giraud found *P. arudinator* to prey upon *Lipara lucens*? Mr. Collin has also bred *Bracon minutator* from *Trypeta jaceæ* in heads of the same plant in June, 1906; and I took both sexes commonly at Tuddenham with the late Mr. Chitty in August of the same year.

Bracon fulvipes was common in the Isle of Wight in June, 1907; I have also taken it at Southwold in Suffolk, and Beaumont found it at Plumstead.

B. stabilis, *B. exarator*, *B. fuscicoxis*, *B. guttiger*, *B. epitriptus*, *B. larvicida* and a ♂ of *B. prætermisus* all occurred to me with more or less frequency in the Isle of Wight in June, 1907.

B. roberti—One ♀ was bred at Tring in 1908 from *Sesia andreniformis* by the Hon. N. C. Rothschild; this species, only known from Belgium and England, has not before been bred. I am indebted to Mr. Rothschild for this, the only specimen I have seen.*

B. caudatus and *B. longicaudis*, Ratz.—Both these species have been bred at Enfield in May, 1908, from the burrows of *Hylesinus fraxini*. The latter had not been noticed in Britain before, and is brought forward as new to our fauna at Trans. Ent. Soc., 1907, p. 62.

B. flavator, Fab.—Mr. Pool has given me three ♀ ♀ of this South European species (which I also possess from Bucharest). Mr. Donisthorpe kindly sent them to me with the information that they were bred from *Bostrichus capucinus* at the Millwall Docks, in London, in the middle of July, 1908; it is a much larger and more handsome insect than any of our indigenous species of the genus. Ratzburg says (Ich. d. Forst., i, 46) that it "lives on *Cerambyces* in dry wood;" and he bred a ♂ of his synonymous *B. flavulator* from fir billets. It has also been bred in France by Lichtenstein (Bull. Soc. Fr., 1873, p. 22) from *Hesperophanes mixtus*, Fab., in dead fig trees (cf. Marsh., *Bracon d'Europe*, i, 137).

Monks Soham House, Suffolk :
November 10th, 1908.

Additional localities for Aleochara crassiuscula, Sahlb.—Last week while looking over some of Mr. J. J. Walker's Oxford captures, I detected an example of this species which was captured on his own doorstep on October 20th, 1906, and to-

* Since writing the above, I have examined two more specimens of *Bracon*, bred from the same host by Mr. E. A. Cockayne on June 1st, 1908; they had constructed cocoons of their own manufacture in the moth's borings. One of these is certainly referable to *B. variator*, Nees, and the second appears to represent a form intermediate between it and *B. roberti*, Wesm. Marshall could find no distinction between these species, but the sculpture of the second segment; and I am strongly of the opinion that the latter must sink as a mere form of *B. variator*.—C. M.

day Mr. W. West informs me that he took two specimens of it on October 31st, and another on November 2nd, in a manure heap, within 200 yards of his house at Lewisham. As Mr. West remarks, it looks as though the insect had followed him home from Great Yarmouth, and established itself close at hand. *A. crassiuscula* may be gradually spreading in England, as are such coprophagous beetles as *Aphodius granarius* and *Sphæridium scarabæoides* in other countries. This last mentioned beetle has been introduced into the United States, and it is recorded by Mr. Dury (Ent. News, 1908, p. 386), as swarming in fresh cow excrement in Ohio, in August last.—G. C. CHAMPION, Horsell: November 5th, 1908.

A method for collecting Coleoptera in running streams.—At the April meeting of the Newark (U.S.A.) Entomological Society (as reported in the Entomological News for October, 1908, p. 393), Mr. Roberts reported a method for collecting *Coleoptera* in running streams which perhaps might be tried with advantage in this country. It is as follows:—"To collect in flowing streams, a loosely woven cloth should be stretched across and through the stream, and the stones, gravel, and sand overturned and stirred up a short distance above it. The dislodged beetles will be swept into the cloth to which they will cling for support, and it is only necessary to draw up the cloth and reap the harvest. On one occasion Mr. Roberts collected by actual count 700 beetles in this manner, after stirring up about two feet of sand and gravel."—ID.

Note on the Scottish mountain form of Notiophilus aquaticus, L.—*Notiophilus pusillus*, Waterh., having been reinstated in our list (*anteà*, pp. 103, 104), it is necessary to call attention to the small mountain form of *N. aquaticus* recorded by myself from Braemar in 1873 (Ent. Mo. Mag. x, p. 158), as it may be mistaken for *N. pusillus*. The insect in question is much smaller than typical *N. aquaticus*, bronze or bluish-bronze in colour, and has the second and third joints of the antennæ wholly or in part testaceous, the prothorax much narrowed behind, and the elytra very finely punctate striate, the striæ almost obsolete towards the apex. This form also occurs at Aviemore, and it seems to come very near the var. *strigifrons* of Baudi, from the Piedmontese Alps, which, however, is said (Ganglbauer, Käfer von Mitteleuropa, i, p. 118), to have the frontal keels divergent before and behind, a character upon which too much stress has perhaps been placed. *N. pusillus* Waterh., it may be observed, was described from a single specimen from an unknown locality lent to Mr. Waterhouse by Mr. Bentley, and the type is probably lost; it is doubtless conspecific with *N. bigeminus*, Thoms. The only representative of the latter I possess is one from the Haute-Marne, France, given me by Captain Deville as *N. pusillus*. Amongst my British *N. aquaticus* there are none with the elytra so distinctly striated to the apex as in this French insect, nor have any of them a definite double impressed pore near the tip; Mr. Joy, however, states (*loc. cit.*) that he has specimens of it from Bradfield and Southport. *N. aquaticus*, to judge from the continental examples before me, is an extremely variable species. Capt. Deville (L'Abeille, xxx, p. 182) mentions a small alpine form of it (length about 4 mm.) from various localities in France, and this is doubtless similar to the Scottish insect noted by myself, for which the name *strigifrons* can be provisionally used. To the localities given for *N. hypocrita*, Spaeth (= *germinyi*, Fauv.) (*anteà*

p. 103), I may add, Braemar, Woking, Sheppey, and Hayling Island. This seems to me to be a very dubious species, and scarcely more than a variety of *N. palustris*.—ID.

Autumnal Coleoptera at Oxford.—The exceptionally fine and warm weather of this autumn has been very favourable to the use of the sweeping-net, which has proved remunerative up to as late a date as November 17th. Among many species of *Coleoptera* taken in this way at Wytham Park, I may note *Helophorus porculus*, *Caloderma umbrosa*, *Homalota pagana* and *puberula*, *Homalium oxyacanthæ*, *cæsum* var. *tricolor*, and *iopterum*; *Anisotoma cinnamomea*, locally, not rare under old beech trees, as usual varying much in size and in the development of the ♂, and including one or two of the var. *anglica*, Rye; *A. rugosa* (?) *dubia*, *ovalis*, and *punctulata*, the last-mentioned being common, and often very highly coloured; *Hydnobius punctatissimus* sparingly, mostly of the black form; *Phlæophilus edwardsi*, *Apion filirostre* (frequent) and *atomarium*, *Liosomus ovatulus* var. *collaris*, *Ceuthorrhynchus moguntiacus*, Schultze, and *euphorbiæ*, *Hylesinus oleipera*, &c. *Tetratoma desmaresti*, taken here also by sweeping by Mr. J. Collins, is an interesting addition to the local list.

At Tubney I was fortunate enough on October 30th to sweep up another ♀ specimen of *Anisotoma curta*, within a few yards of the spot where I obtained one on October 15th last year (cf. *ante*, p. 1). *A. triepkei*, both sexes, and *Aphanisticus pusillus* also occurred here, and *Lycoperdina bovistæ* turned up, as many as ten examples being found in one little ripe puff-ball not as big as a walnut.

A fine ♂ example of *Acanthocinus ædilix*—not the first, by the way, that has been met with in the city—was taken in Oxford on October 29th, and brought alive to the University Museum.

I may here note another specimen of *Anisotoma lunicollis* from the Isle of Sheppey, taken on August 4th by sweeping on the cliffs.—JAMES J. WALKER, Oxford: November, 1908.

Cryptophagus subdepressus, Gyll., and *Melanophthalma similata*, Gyll., at Nethy Bridge.—In the issue of this Magazine for November, 1907 (vol. xliii, p. 250), Mr. Champion said that he had taken these two insects by beating spruce firs at Guildford in August and October of that year. Dr. Joy, when introducing the former species to our notice in the October issue (*l. c.*, p. 225), stated that he had beaten his two specimens off young fir trees. During my visit to Nethy Bridge in August and September last, I, therefore, tried beating the young Scots firs in the hope of finding the new *Cryptophagus*, but without success; remembering Mr. Champion's note I determined to try the spruce fir, though that tree is not at all common in that neighbourhood, and was immediately successful; I found both insects in fair numbers by beating the lower branches of a large group of fine spruce firs in the immediate neighbourhood of the village.

The *Cryptophagus* must, I feel certain, be attached to the spruce fir, and Dr. Joy's captures of it on the young Scots fir must have been accidental, for, on working at spruce firs in other localities, I found it was always to be obtained. I took it in the neighbourhood of Loeh Garten some three or four miles from the

village, and again near the Coylum Bridge in the Rothiemurchus Forest, on both occasions on the spruce fir, though beating the Scots fir trees close around produced not a single specimen.

I obtained the *Melanophthalma* only at the first locality at Nethy Bridge. Mr. Donisthorpe, who was staying with us in the middle of September, obtained a good series of both insects.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: November 12th, 1908.

Pyropterus affinis, Payk., at Nethy Bridge.—On the very first day of my visit I captured this species under the bark of a Scots fir stump on the golf course. The only other record for Scotland is that by Mr. Champion, who took it at Aviemore in 1892 (Ent. Mo. Mag. vol. xxviii, p. 243).—ID.

Phlæophilus edwardsi, Steph., at Nethy Bridge.—While sweeping long grass in a glade in the pine forest near the village late on the afternoon of September 13th, I obtained a single specimen of this insect. As far as I know this is the first record of the species from Scotland, though Mr. Britten takes it in Cumberland. It is certainly an interesting capture from this far northern locality.—ID.

Re-occurrence of Gnorimus variabilis, L.—When I came some two years ago to reside within a short distance of Purley Oaks, Surrey, I had in mind that in Fowler's "British Colcoptera" (vol. iv, p. 59), it is mentioned as one of the localities for the above mentioned rare Lamellicorn and I determined to see if it could be rediscovered. Accordingly, one day early last May I set out to prospect.

The old Oaks are now few in number, and the majority are enclosed by a very high fence of the almost unclimbable order; however, my lucky star was in the ascendant, for in thick frass under a piece of loose bark on the very first tree I came to, I turned out twenty-eight living and three dead full-fed larvæ of what I thought must be *Gnorimus variabilis*.

Having carefully removed the larvæ and carried them home, I placed some damp earth and frass in a tin, and put the larvæ on the compost into which they disappeared with astonishing rapidity. On June 5th any doubts I had as to identity were dispelled by the appearance of the first imago, but when the 15th of the month arrived and no more had presented themselves, I turned out the box and found that eleven larvæ had been killed by some fungoid growth, four of the remainder had come off hopeless cripples, and the other twelve were perfect specimens of the beetle.

A visit to the tree with Mr. W. E. Sharp, early in July, resulted in the discovery of four imagines and two more dead larvæ but although we examined every one of the oaks in the enclosure, not another tree appeared to contain a single specimen, though one showed traces of the species having formerly occurred in it. The whole thirty-seven living and dead specimens were congregated under a piece of bark about two feet by eighteen inches.

The larva is described by the Rev. Canon Fowler in the volume of this Magazine for 1892, page 242, and the most recent record I can find of the capture of the species is that by the Rev. Theodore Wood of a specimen taken at Balham in July, 1897, (vide Ent. Mo. Mag., vol. xxxv, p. 94).—E. C. BEDWELL, The Grove, Coulsdon: October 19th, 1908.

Procas armillatus, F., in Nottinghamshire.—While sweeping along a dry sandy hedge-bank in a lane at Edwinstowe, on the borders of Sherwood Forest, at dusk on June 10th last, I was pleased to take a specimen of this rare beetle in fine condition. Further sweeping failed to produce other examples. This appears to be only the third specimen recorded during the last twelve years, and, so far as I can ascertain, the locality is a new one for the species.

In the same spot *Philopodon geminatus*, F., was common, and *Atactogenus exaratus*, Marsh., not scarce, but the specimens of the latter were very rubbed.—ID.: November 7th, 1908.

Onthophilus globulosus, Ol., &c., in mole's nests.—With reference to Mr. Joy's remarks in the last number of this Magazine (p. 248), on my record of the above species, I should like to say that since my first capture (Ent. Mo. Mag., vol. xliii, p. 62), I have found thirteen more specimens in the same locality distributed between six nests; all of the nests being quite "sweet," in fact the foul nest from which I obtained the original specimens was, as Mr. Joy says, in quite an abnormal state.

For my part I think the species is quite as likely to be as much attached to mole's nests as to rabbit burrows, but the species appears to be a very local one. It will, however, I think be found more commonly if collectors will search the earth around the actual nest, as it is from this source I have been able to obtain the greater number of my specimens.

As Mr. Joy states that he knows of no records from mole's nests of *Bythinus securiger*, except his own, it may be of interest to record that I took four specimens from a nest at Oulton Broad, Suffolk, on March 29th, 1907.—ID.

Abundance of larvæ of Pyrochroa coccinea, L., and *Athous rhombeus*, Ol., in the New Forest.—In August last I had two days' collecting with Dr. Sharp and Mr. Lamb in the New Forest. Everything was so dry that there was little to be obtained, but in one or two parts of the forest the larvæ of *Pyrochroa coccinea*, L., and *Athous rhombeus*, Ol., were so plentiful that we refrained at last from stripping off bark to search for beetles, as it seemed a pity to disturb and perhaps destroy them. The former of these were in all stages of growth, from a few millimètres in length up to nearly 40 mm. The abundance of the larvæ is in strange contrast to the extreme scarcity of the perfect insect, but the habits of the latter do not as yet appear to be known, and it ought, apparently, to be looked for during a particular short season of two or three days, and at a particular hour. The black larvæ of *Athous rhombeus* were mostly well grown. They appear to have cannibalistic propensities, for we found one with the body of another sucked nearly dry in close proximity. The perfect insects are rarely found in the open, but I swept a single specimen off bracken near Brockenhurst, many years ago.—W. W. FOWLER, Earley Vicarage, Reading: November 14th, 1908.

Olibrus pygmaeus, Sturm, on *Filago germanica*.—Whilst collecting at Cromer, some time back, I found the above species upon the small and curious looking *Filago germanica*. Nearly every plant examined had one or more specimens upon it, usually in the flower-head, and so far as I could see they confined themselves to the *Filago*.

Olibrus flavicornis, Sturm, I have found on two or three occasions on *Crepis biennis* in this neighbourhood, but am not prepared to say this is the plant it usually frequents; it is, however, not unlikely, as the species of this genus seem so frequently to be associated with plants of the order *Compositæ*.—E. GEO. ELLIMAN, Chesham : November 7th, 1908.

Hemiptera from Cambridgeshire.—I have taken the following Hemiptera mostly during the last three years. From Wicken Fen, *Acompus rufipes*, Wolff, (also from Quy), *Nabis lineatus*, Dahlb., *Salda elegantula*, Fall., *Calocoris ticiensis*, Mey., (Sept., 1907), *Teratocoris antennatus*, Boh., 1 ♂, (June, 1908). From the Devil's Dyke, near Swaffhamprior (moss), *Corimelæna scarabæoides*, Linn. (1), (Oct., 1907), *Podops inuncta*, Fab., (also from Cambridge), *Dryinus pilicornis* (1), (Oct., 1906), *Dicyphus globulifer*, Fall. (sweeping). From Cambridge and neighbourhood, *Heterogaster urticæ*, Fab. (on nettles), *Stygnus rusticus*, Fall., *Dictyonota crassicornis*, Fall., *Monanthia ampliata*, Fieb. (common), *M. costata*, Fieb. (2), (sweeping aquatic plants), *M. dumetorum*, H. Schiff. (hawthorn, abundant in May), *Hebrus ruficeps*, Thoms., *Microvelia pygmaea* (undeveloped ♀ ♀ in numbers), *Reduvius personatus*, Linn. (flying to light, rare), *Nabis flavomarginatus*, Scholtz., *Salda cincta*, H. Schiff. (in sphagnum, Oct., Nov., April), *Megalocera longicornis*, Fall., *Pæciloscytus nigritus*, Fall., *Ranatra linearis*, Linn. (2), *Corixa distincta*, Fieb., *limitata*, Fieb., *bonsdorffii*, Sahlb., *coleoptrata*, Fab. (all Oct., 1908, abundant), *C. semistriata*, Fieb. (rare, but from three localities), *C. germari*, Fieb., 3 ♀ ♀, *Sigara minutissima*, Linn. (five in branch of Cam).—II. R. TOTTENHAM, 7, Magdalene Street, Cambridge : November 9th, 1908.

Microplax albofasciatus, Costa, in Jersey. — Besides the above captures in Cambridgeshire, it may be worth while to record the occurrence of this usually southern Hemipteron from Jersey. It was taken in December, 1906, in refuse of seaside plants such as *Armeria*, &c.—LD.

Further notes on the breeding of Abraxas grossulariata var. varleyata.—In continuation of my notes on the breeding of *Abraxas grossulariata* var. *varleyata*, it will be remembered (Ent. Mo. Mag., Dec., 1907, p. 276), that the two broods I then had for further experiment were the produce of two ♀ *varleyata*, crossed with typical ♂ ♂, but which had been bred from a *varleyata* ♀ crossed with an ordinary wild ♂, the previous year, and the result of which had been typical specimens only. Through a disastrous accident which occurred when the larvæ were nearing full growth in the spring of this year, I lost nearly the whole of both broods, so that out of the lot I bred only nine moths, five of which (four ♂ ♂ and one ♀) were of the ordinary type, and four, (all ♂ ♂) of *varleyata*, so that we may fairly assume that the broods would have produced both forms in about equal numbers. In confirmation of my own experiment in 1907, where *varleyata* crossed with the wild ordinary type produced nothing but typical specimens, a collector in a neighbouring town last year paired a fine ♀ *varleyata* which he had bred from his own garden with a typical ♂ from the same source, and from them a fairly large brood of moths was reared this year, but again only typical specimens, not the least trace of

varleyata showing up in any of them. The specimens from this year's brood were again paired together, and it remains to be seen what they will produce next year.

I may add that having been so unfortunate with my liberated larvæ, I had collected for me afterwards from the gardens near my house, towards two thousand wild larvæ and pupæ, and from them I bred no less than six *varleyata* (five ♂♂ and one ♀), an unusually large percentage. With them appeared other very pretty forms, notably a pale ♀, with the usual orange entirely replaced by olive-green.—GEO. T. PORRITT, Dalton, Huddersfield : November 4th, 1908.

On some Irish Hymenoptera.—Mr. H. W. Andrews has been so good as to present me with some interesting *Hymenoptera*, collected by him in Cork, Kerry and Waterford during the past two seasons; he was mainly in search of *Diptera*, and these specimens were merely picked up at odd intervals in the midst of his own specialities. I am indebted to the Rev. F. D. Morice for the names of the Saw-flies, and to Mr. Saunders for those of the Bees and Wasps.

PARASITICA.

Calichneumon derasus, Wesm., ♂, Kenmare, 26.vii.08. *Barichneumon lepidus*, Grav., ♂, a specimen with a long streak of pollen firmly affixed to each side of the face, between the scrobes and the clypeus, but not reaching the latter; Stradbally, 22—30.vi.07. *Ichneumon extensorius*, Linn., ♀, Glengarriff, 3 viii.08. *Alomyia debellator*, Fab., ♀, Stradbally, 27—30.vi.08. *Microcryptus bifrons*, Gmel., ♂, Kenmare, 29.vii.08. *Microcryptus labralis*, Grav., ♂, Stradbally, 22—30.vi.07. *Phygadeuon exiguus*, Grav., ♂, Stradbally, 22—30.vi.07. *Acrorienus macrobatus*, Grav., ♀, one very small specimen of only 10 mm. in length; a very local species in Hants and Devon; Stradbally, 22—30.vi.07. *Ephialtes tuberculatus*, Fourc., ♀, Stradbally, 22—30.vi.07. *Pimpla instigator*, Fab., ♀, a very large specimen, Stradbally, 22—30.vi.07. *Meniscus catenator*, Panz., ♀, Stradbally, 22—30.vi.07. *Henicospilus ravidulus*, Linn., ♂, Loo Bridge, 22.vii.08. *Anomalou cerinops*, Grav., ♀, Loo Bridge, 28.vii.08. *Meloboris crassicornis*, Grav., ♀, Kenmare, 26.vii.08.

BRACONIDÆ:—*Microgaster sticticus*, Ruthe, ♀, Kenmare, 29.vii.08.

ACULEATA.

Chrysis ignita, Linn., ♂, Stradbally, 22—30.vi.07. *Salix exaltatus*, Fab., ♂ ♀ Loo Bridge, 28.vii.08. *Nysson spinosus*, Fab., 2 ♂♂, Loo Bridge, 28.vii.08, and Stradbally, 22—30.vi.07. *Mellinus arvensis*, Linn., ♀, this "had made a burrow ending in three pockets, two of which were stored with paralysed flies, and each contained a small larva, and the third was empty, or else I missed the contents. I tried to feed up one of the larvæ, but it died in about a week," Glengarriff, 7.viii.08. *Crabro dimidiatus*, Fab., ♀, Kenmare, 1—6.viii.07. *I'essa austriaca*, Panz., ♀, Kenmare, 1—6.viii.07. *Odynerus pictus*, Curt., ♂ ♀, Stradbally, 27—30.vi.07. *Odynerus trimarginatus*, Zett., ♂, Stradbally, 27—30.vi.07. *Halictus rubicundus*, ♀, Kenmare, 27.vii.08. *H. smeathmanellus*, 2 ♀♀, Stradbally, 22—30.vi.07. *Andrena fucata*, Smith, ♂, Stradbally, 22—30.vi.07. *Nomada alternata*, ♀, Stradbally, 27—30.vi.07.

TENTHREDINIDÆ.

Abia fasciata, Linn., ♀, Stradbally, 22—30.vi.07. *Abia candens*, Knw., ♀,

Stradbally, 22—30.vi.07. *Arge ustulata*, Linn., ♂, Stradbally, 22—30.vi.07. *Allantus arcuatus*, Först., Glengarriff, 3.viii.08. *Tenthredopsis coqueberti*, Klug, ♀, Stradbally, 22—30.vi.07. *Tenthredo livida*, Linn., 2 ♀ ♀, Stradbally, 22—30.vi.07, and on 19.viii.08.—CLAUDE MORLEY, Monks Soham House, Suffolk, Oct. 15th, 1908.

Eccoptomera microps, Mg., and other *Diptera* in moles' nests in the east of Scotland.—In the August number of this Magazine, p. 180, Mr. Malloch records *Eccoptomera microps*, Mg.—another interesting addition to the list of British *Diptera*—from the Oxford district and Dumbartonshire. These records I am able to supplement by the following from the east of Scotland, where I found the same fly in moles' nests on several occasions last spring. My specimens have been shown to Mr. Collin. Near Largo (Fife), February 19th, 1908, two ♂ ♂ in separate nests; Prof. Hudson Beare was with me when these were obtained; we were looking in moles' nests (of which we examined a dozen) for beetles. Gùllane (East Lothian), March 5th, ♂. South of Leadburn (Peeblesshire), April 4th, ♂ and ♀. Besides the *Eccoptomera*, I also got some other *Diptera*, as under, in moles' nests. *Lonchoptera lutea*, Pz., var. *palustris*, south of Leadburn, April 4th, 1908, two ♀ ♀; named for me by Mr. Collin. *Limosina* sp.?, Largo, February 19th, Gùllane, March 5th, several ♀ ♀. *Sciara* sp.?, two specimens, Gùllane, March, and a Chironomid, several, Gùllane, Ravelrig, Leadburn and Elie.—WILLIAM EVANS, Morning-side Park, Edinburgh: September 30th, 1908.

Sympetrum fonscolombii: a correction.—At the meeting of the Entomological Society on Oct. 7th last, a male and female *Sympetrum fonscolombii*, De Selys, were exhibited, and in the account of their capture in Hertfordshire it was stated that the insect had not been taken in Britain since the year 1892 when Mr. Briggs recorded specimens from Surrey, and that the female was probably the first that had ever been recorded in England.

This is a mistake, for Mr. Boyd has recorded the insect in 1903 from Cornwall, where he took a female in June (Ent. Mo. Mag., 1903, p. 201).—E. R. SPEYER, Ridgehurst, Shenley, Herts: November 11th, 1908.

[This specimen was, up to the time of his death, in the late Mr. R. McLachlan's collection.—G. T. P.]

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The opening meeting of this Society was held on October 19th at the Royal Institution, Colquitt Street, Liverpool, Mr. WM. MANSBRIDGE, Vice-President, in the Chair. The meeting was exhibitional in character, the members showing results of the season's work.

Mr. Robert Tait, Jr., brought a long series of *Agrotis agathina*, bred from Welsh larvæ, and noted that the red form occurred much more frequently among wild imagines than among moths bred at Manchester from larvæ taken on the same ground earlier in the year. From the Isle of Wight, fine series of the following:—*Agrotis lunigera*, *A. cinerea*, *Acidalia humiliata*, *Setina irrorella*; from Pendine, S. Wales, *Boarmia repandata* var. *conversaria*, *Callimorpha dominula*; from Lakeside, *Numeria pulveraria*, *Tephrosia consonaria*, and a very long series of *T. biun-*

dularia, varying from almost white to the extreme form of var. *delamerensis*. Mr. Tait stated that he had bred a partial second brood of the following species, viz.—*B. repandata* v. *conversaria*, *Aplecta herbida* and *A. humiliata*, a living example of which latter he exhibited at the meeting. Mr. Mountifield, of Warrington, showed a fine series of *Lithosia sericea*, and *Leucania pallens*, a red variety from Warrington; *Macaria liturata* var. *nigrofulcata*, a short series from Delamere Forest. Mr. Robinson, of Warrington, also exhibited *L. sericea*, as well as *Hydræcia petusitis*, *H. lucens*, *H. nictitans*, *H. paludis*, *Hadena glauca*, *Orthosia suspecta*, *Agrotis nigricans*, and *Acronycta leporina* var. *melanocephala*, all from Warrington and neighbourhood; and from Delamere Forest he showed *Aplecta nebulosa* var. *robsoni*, and *Lithosia mesomella*. Mr. T. Baxter, a long series of *Abraxas grossulariata* and varieties from St. Anne's, and short series of *Polia chi*, vars. including *olivacea* and melanic forms from Yorkshire, also strongly marked typical specimens of this variable moth from Barmouth. Dr. Edwards, series of *Abraxas sylvata* and *Noctua glareosa* from Carnarvon; *Eupithecia pulchellata* from the Lake District; *Dasychira fascelina* from Formby; *Celena haworthii* and *Luperina cespitis* from Delamere Forest. Mr. Prince, several boxes of local insects, including a very long series of *Nyssia zonaria*. Mr. H. R. Sweeting exhibited *Aplecta nebulosa* and var. *robsoni* and *Boarmia repandata* from Delamere; *Cucullia asteris* from Essex; *Moma orion* bred from New Forest pupæ which had lain over two winters. Mr. W. J. Lucas, of Kingston-on-Thames, a number of excellent photographs of *Lepidoptera*. Dr. Bell, several varieties of *Bombyx quereus* from Wallasey, including the olive variety. He stated that the larvæ from which the olive form were bred were black, with very dark brown hairs; this had also been noted by other collectors, and was supported by a further exhibit, by the same member, of young larvæ from olive parents and from typical parents, in which this difference was well seen. Mr. Malinson, a specimen of *Deilephila galii*, bred from one of two larvæ found at Wallasey, September, 1907. Mr. W. Mansbridge exhibited a series of *Aplecta nebulosa* v. *robsoni*, very dark grey forms, and var. *pallida* bred 1908; *Polia chi* v. *olivacea* from near Leeds, and stated that this form had increased from about 5 per cent. noted in 1890—1, to about 20 per cent. noted this year; a series of black *Boarmia repandata* from Knowsley, Lanes., and a male *Porthesia similis* from Simonswood, without the black spots on the hind margin of the fore-wings; a short series of *Peronea permutana* from Wallasey.—H. R. SWEETING and WM. MANSBRIDGE, Hon. Secretaries.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, Oct. 8th, 1908.—MR. ALFRED SICH, F.E.S., President, in the Chair.

Mr. Ashdown exhibited about seventy species of *Coleoptera*, *Hemiptera*, &c., taken by him in July, 1908, in Central Switzerland, including *Trichius fasciatus*, *Trichodes apiarius*, *Edemera podagrariz*, *Leptura rubra*, *Clytus massiliensis*, *Strachia ornata*, *Edipoda cærulescens*, &c. Mr. Tonge, two bred specimens of *Aphantopus hyperanthus* ab. *cæca* from Surrey, and a bred specimen of *Melanargia galathea* var. *procida* from Hampshire. Messrs. Harrison and Main, a bred series of *Pseudoterpna pruinata* (*cytisaria*) from Epping Forest, showing great variation in the size, distinctness, and presence of the usual submarginal light coloured line.

Mr. Newman, a bred series of *Malacosoma castrensis* from Essex, including the rare yellow unicolorous ♀ and the dark chocolate ♂; a bred series of *Sesia andreniformis* from North Kent, where it was much subject to the attacks of ichneumonids, a series of *Hepialus humuli* var. *hethlandica* and *Pachnobia hyperborea* from Shetland; *Anarta melanopa* from Rannoch; a second brood *Abraxas grossulariata* bred, October 8th, the first to emerge from over 100 pupæ; a living *Thera firmata*, second brood; and a living second brood specimen of *Enmorpha elenor*. Mr. R. Adkin, recently deposited ova of *Tortrix pronubana*. Mr. J. P. Barrett made a comparison of the Lepidopterous fauna of North Kent thirty years ago and that of to-day, illustrating his remarks by series of *Aporia crataegi*, *Nonagria sparganii*, *Acidalia ochrata*, *Agrotera nemoralis*, *Tapinostola bondii*, *Eremobia ochroleuca*, &c. Mr. South, on behalf of Mr. Waller, a ♀ *Trichiura crataegi*, with one antenna ♂. He also showed an *Epinephele jurtina* (*janira*) from Box Hill, with large pallid spaces, and a bred series of *Rhodophæa suavelia* from Eastbourne. Mr. Main, a living "stick" insect, bred from the ovum shown in the spring. Mr. Sieh, bred *Gillmeria pallidactyla* from Byfleet.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 21st, 1908.* Mr. C. O. WATERHOUSE, President, in the Chair.

Monsieur Charles Oberthür, of Rennes, France, was elected an Honorary Fellow of the Society. Mr. Charles B. Autram, of the Insectarium, Kanny Koory, Silchar, P.O., Cachar, Entomologist to the Indian Tea Association; and Mr. Richard Beck, Sanderhayes, Bitterne Road, Southampton; were elected Fellows of the Society.

Mr. E. C. Bedwell exhibited examples of the rare Lamellicorn beetle *Gnorimus variabilis*, L., found by him in thick frass under bark of oaks trees, near Purley Oaks, Surrey. Mr. G. C. Champion, a specimen of *Pytho depressus*, L., with two tarsi to the right hind-leg, bred from a larva or pupa found under pine bark at Binn, Switzerland. Mr. W. G. Sheldon, a case to illustrate the several forms of *Thais rumina*, the var. *medesicaste*, and the ab. *canteneri*, Hey., from South Spain and from France. Mr. W. J. Lucas, a set of eight examples of *Libellula quadrimaculata*, from Scotland and the south of England, to illustrate the range from the type form to the var. *prænubila* of Newman. Mr. H. M. Edelsten, a varied series of the same dragonflies from the Norfolk Broads. Mr. L. W. Newman, paintings of two forms of *Dryas paphia* bred by him this season from ova of parents taken at Brockenhurst, resembling the aberration of this butterfly shown by Dr. Herbert Charles at the last meeting. Mr. W. J. Kaye, synaposematic series of specimens from Ecuador comprising *Ithomiinæ* and *Pierinæ*. Of the former there were *Dircenna zavaletta* 5 ♂ 2 ♀, and *Leucothyris zelica* 14 ♂ 0 ♀. Of the latter there were *Dismorphia othöe* 15 ♂ 6 ♀, *Dismorphia leuconia* 7 ♂ 1 ♀, and *Dismorphia* sp. ?, 4 ♀. He pointed out that the usual coloration of *Leucothyris* species was black and transparent, but here was one, *L. zelica*, which was yellow, and the significant fact illustrated by the exhibit was that there were in the aggregate more Pierines than Ithomiines, and taking *L. zelica* alone there were only 14 specimens to the 33 of the associated *Dismorphias*. It appeared therefore to be quite possible that the *L. zelica* obtained its yellow colouring by its association with the Pierines and played the part

of mimic instead of model. Mr. H. M. Edelsten, a tube containing ova of *Leucania brevilinea*, *in situ*, laid within the sheathing leaf of a dead reed-stem found in Norfolk in 1908. Mr. A. H. Harrison, numerous examples of *Aplecta nebulosa*, of the form *robsoni*, bred from parents taken in Delamere Forest, being proportion in breeding grey form, 25 per cent.; var. *robsoni*, 51 per cent.; and var. *thompsoni*, 24 per cent. Mr. A. E. Gibbs, a case containing a series of *Everes argiades*, taken this year at various altitudes in the Vosges region, showing a fine large form; *Lycæna bellargus*, a ♀ from South Devon, with the wings on the left side, especially the secondary, splashed and streaked with male colorations; *Lycæna icarus*, ♂, also taken in South Devon, measuring only 19 mm. in expanse; and an example of *Chrysophanus phlæas* from Harpenden, approaching on the right side ab. *schmidtii*, the ground colour of the primary being silvery-white, with the exception of a broad streak of copper colour extending from the base of the wing where it is widest, to the transverse row of black spots. Mr. F. M. Dadd exhibited specimens of *Erebia ligea* from various German localities, and a small series of *E. euryale*, with examples of var. *adyte* taken at Zermatt and Pontresina; and one each of vars. *ocellaris* and *extrema* from the Stilfer Joch. Among the Pontresina *adyte* was a single specimen which might be placed among the *ocellaris* without the slightest hesitation; although not quite so dark as any of these. The exhibit also included one specimen of the form *euryaloides*, which is accredited to *euryale* in both the above-mentioned works, occurring with the *adyte* at Pontresina. He suggested as a result of his observations that the facts point to one of two things. Either all these forms were forms of one species, or if any division were to be made, it should be by drawing the four-spotted forms *ligea* and *euryale* together, and raising the three-spotted form *adyte* to the rank of a species with the forms *ocellaris* and *extrema* and *euryaloides* as sub-forms; also forms of *Lycæna corydon* (*a*) from England and the Thuringer Wald; (*b*) var. *apennina* from the Sabria mountains; (*c*) the form from the south of France, and (*d*) a form from Berlin for which he suggested the name *borussia* as being distinct from all other forms, first in the ♂ by its greater size, secondly in the extreme width of the black border of the fore-wings. Mr. Dadd then proceeded to exhibit a pair of *Scodion belgiaria* var. *favillacearia*, and a typical male for comparison, this being the only form of the species occurring on the heather around Berlin; and four examples of butterflies which he suggested as hybrids, viz., *L. corydon* × *bellargus* from Airole, *Cænonympha satyrion* × *pamphilus* from Wengen, *Colias hyale* × *palæno* from Obertsdorf, and *Pieris napi* × *rapæ* from Berlin, apparently exactly intermediate between the two species. Prof. E. B. Poulton exhibited a family of eight butterflies bred by Mr. G. F. Leigh, F.E.S., from ova of *Charaxes neanthes*. Seven of the offspring were *C. neanthes*, and one *C. zoolina*: thus proving, so far as such numbers constitute sufficient evidence, what has long been suspected, viz., that these superficially dissimilar butterflies are forms of the same species.

Dr. F. A. Dixey, M.A., M.D., read a paper, illustrated by lantern slides, "On Müllerian Mimicry and Diaposematism. A Reply to Mr. G. A. K. Marshall." A discussion followed on the whole subject in which Mr. R. Shelford spoke in favour of Mr. Marshall's views, and Prof. E. B. Poulton, F.R.S., in favour of Dr. Dixey's contentions.—H. ROWLAND-BROWN, *Hon. Secretary*.

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