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“The more I observe, the more I find the necessity for observation ; and the less I rely on what I have observed.”—*Saussure*.

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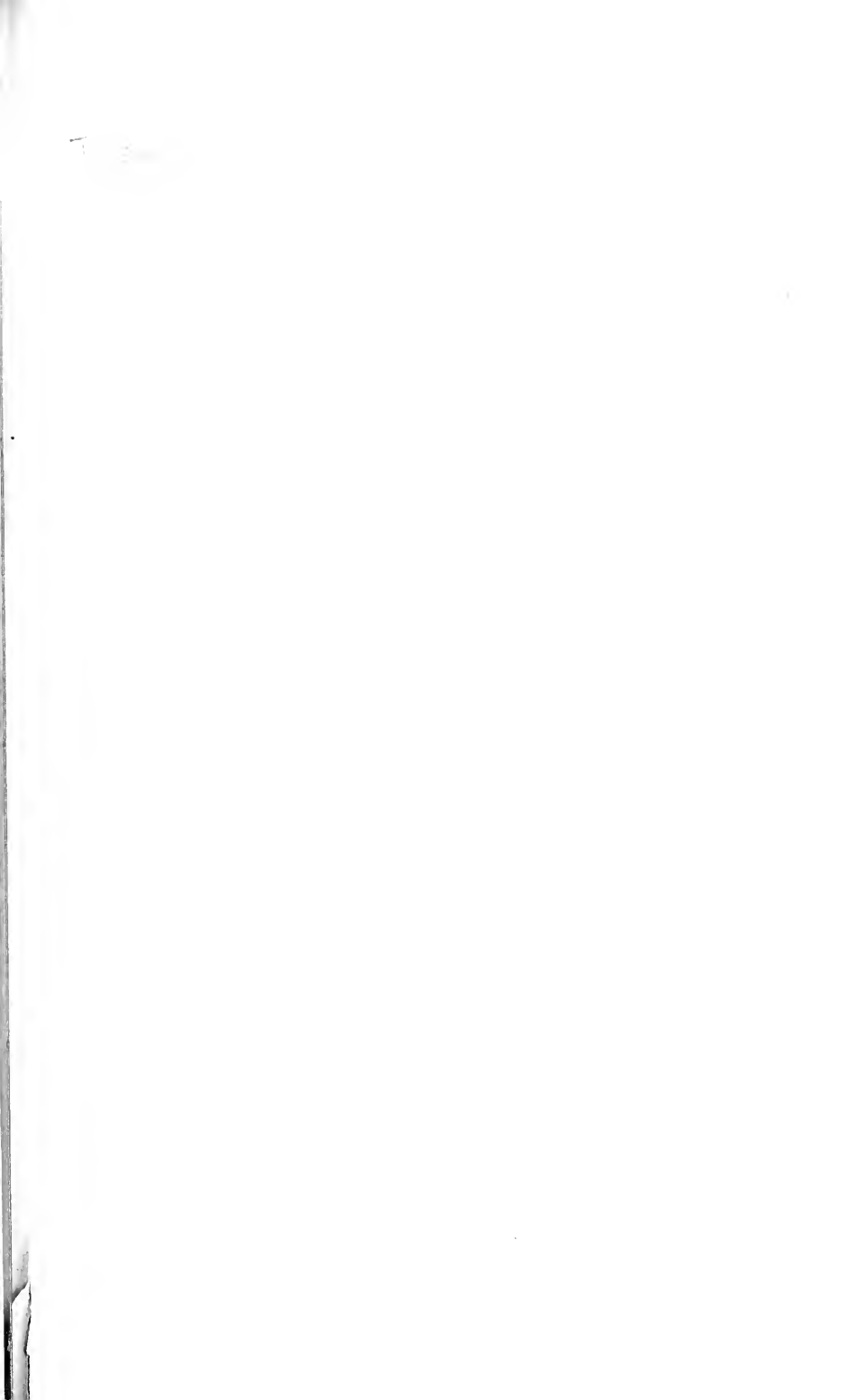
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- Plate I.—Sketch Map of Vicinity of Hyères (see page 35).
 " II.—*Hastula hyerana*, Mill. (see page 76).
 " III.—New African *Siphonaptera* (see page 176).

ERRATA.

- Page 12, line 13 from top, for "Hereditary," read "Hereditiy."
 " 40, " 13 " bottom, for "Schrank," read "Schenck."
 " 47, " 12 " " for "August" read "August."
 " 59, " 15 " " " " *C. aricularia* " read " *O. aricularia*."
 " 63, " 1 of footnote, for "species" read "specimens."
 " 64, " 16 from bottom, for "clandicans" read "claudicans."
 " 69, " 11 " top, for "andersoni" read "anderssoni."
 " 87, " 19 " bottom, for "Edoparva" read "Edoparva."
 " 87, " 21 " " " " *Chilosia* " read " *Chirosia*."
 " 96, lines 26 and 27 from top, for "brought to Kent by the birdstuffer" read
 "brought to Kent, the birdstuffer."
 " 97, line 17 from top, for "London's" read "Loudon's."
 " 99, " 14 " " " " " " "
 " 100, " 5 " bottom, for " " " "
 " 101, " 16 " top, " " " "
 " 186, " 18 " bottom, " " *Amphydasis* " read " *Amphidasys*."
 " 191, " 18 " " " " " *grass* " read " *graves*."
 " 195, " 14 " " " " " *glaucus* " read " *glaucous*."
 " 205, lines 7 and 9 from top, for "Gyllenhal" read "Gyllenhal."

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[VOL. XLIII.]
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THE
ENTOMOLOGIST'S
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SECOND SERIES—VOL. XVIII.

[VOLUME XLIII].

NOTES ON *NEUROPTERA* COLLECTED IN CORSICA BY
MISS FOUNTAINE.

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

During a part of the summer of 1906 Miss Fountaine was in Corsica, and amassed a considerable number of *Odonata*, *Ascalaphidæ* and *Myrmelconidæ*, which she kindly presented to me. These specimens were in first rate condition, and although the majority of the species are probably known already from the Island, yet there are one or two of quite exceptional interest, notably two fine males of *Hemianax ephippiger*, Burm., an insect whose status as a European species seems to be still somewhat uncertain.

The *Odonata* are represented by the following species:—

Libellula depressa, Linn.—Both sexes; Evisa, June 4th, and La Piana, June 23rd.

Orthetrum brunneum, Fonscol.—Both sexes; La Piana, June 24th. A most interesting form, and the specimens are of great value as serving to throw light on the *Libellula cygnos* of de Selys, regarding which there existed considerable uncertainty. These Corsican specimens agree with de Selys' description, and Dr. Ris to whom I submitted them considers that they represent a good geographical race. *Orth. brunneum* has a wide range (I have seen it from Spain, Southern France, Switzerland, Austria, Asia Minor, and even from Quetta in N. W. India); and Ris says that none of the examples seen by him from any other country have shown any marked distinctness from the Central European type, while the Corsican form certainly does so. I leave Dr. Ris to deal further with this subject in the great work on the *Libellulinae* which he has in preparation.

Orthetrum cærulescens, Fab.—La Piana, June 24th; also teneral from Corte and Barchetta appear to belong to this species.

Crocothemis erythræa, Brullé.—La Piana, June 24th and 25th.

Hemianax ephippiger, Burm.—Luri, Cap Corse, May 3rd; 2 ♂♂. McLachlan (Ent. Mo. Mag., xxxix, p. 96), in connection with the capture of a ♀ of this

species at Devonport gives some information as to its previous occurrences in Europe, both sporadically and in migratory swarms, and states that there is no evidence that it breeds in Europe. It is probably most at home in countries on the confines of desert regions in Africa and Asia. Specimens I have seen from N. W. India have that decolorate aspect which seems to be characteristic of desert dragon flies, an aspect which these Corsican specimens do not possess. The latter are in excellent condition, quite mature but not old. Miss Fountaine informs me that the species was only fairly common at Luri. There was nothing about their movements when taken to indicate that they were on migration. They flew about the banks of wooded streams apparently quite at home. Miss Fountaine also mentions that she believes the same species was seen by her in the Oasis near Biskra, Algeria, but she failed to take it there.

Calopteryx hamorrhoidalis, V. de Lind. — Barchetta, May 28th, and La Piana, June 24th. A beautiful form of extreme southern type. The dark colour of the wings of the ♂ goes practically to the very apex of the wing, even more distinctly so than in a series of Algerian males from Sebbon. The well defined apical dark patch in the hind-wings of the ♀ is of nearly uniform density throughout, in contrast to the Algerian examples in which the patch becomes paler towards the apex, a character noticeable in a less degree in females from the Pyrenees. In one specially dark female from La Piana a faint trace of the apical patch appears also on the fore-wing.

Pyrrosoma tenellum, Villers.—La Piana, June 24th.

ASCALAPHIDÆ.

Ascalaphus corsicus, Ramb.—Evisa, June 9th to 17th, and La Piana, June 24th to 30th.

Theleproctophylla barbara, L.—1 ♀, La Piana, June 29th. Van der Weele has recently shown that this species and Klug's *T. variegata* are good and distinct species. (Notes from the Leyden Museum, vol. xxv, Note III, pp. 95-98).

MYRMELEONIDÆ.

Palpares libelluloides, Linn.—La Piana, June 27th and 28th. McLachlan (Ent. Mo. Mag., vol. xxv, pp. 346, 7) has pointed out amongst the distinctive characters of this form (when compared with *P. hispanus*, Hagen) the small size of the sub-basal spot of the hind-wings, and the less numerous irrorations of the fore-wings. In the Corsican examples taken by Miss Fountaine the sub-basal spot is much larger than in specimens from Greece and Asia Minor, and the irrorations also recall *P. hispanus*. The specimens are in these respects intermediate, but the markings of the body are those of *P. libelluloides*.

Formicaleo tetragrammicus, Fab.—Evisa, June 17th, one.

Macronemurus appendiculatus, Latr.—1 ♂, La Piana, June 24th.

Creatris r-nigrum, Ramb.—Evisa, June 18th. Apparently identical with a specimen from Spain which I have under this name. But there is still a good deal of uncertainty about the smaller southern *Myrmeleonidæ*.

13, Blackford Road, Edinburgh :

November 4th, 1906.

THE OCCURRENCE OF *RHIZOPHAGUS PARALLELOCOLLIS*, ER.,
IN BURIED CORPSES.

BY J. HAROLD BAILEY, M.B.

Dr. Joy's note on the occurrence of dead specimens of this species in a grave (Ent. Mo. Mag., vol. xlii, p. 256) prompts me to forward some extracts from a medico-legal work, which throw considerable light on its life-history. The work in question is "La Faune des Cadavres," "Application de l'entomologie à la médecine légale," par P. Megnin, 1894.

Chap. II. Faune des cadavres inhumés, ou des tombeaux, p. 98.

"M. le Professeur Brouardel avait fait faire des exhumations pendant l'hiver de 1886--87, au cimetière d'Ivry pour se rendre compte de l'état de décomposition de certains cadavres inhumés dans des conditions spéciales, et nous avait procuré l'occasion d'assister à ces exhumations.

"Les cadavres en question avaient été enterrés à des époques connues, variant de deux à trois ans, et sur chacun d'eux, nous avons pu faire une ample récolte de larves, de coques de nymphes et même d'individus adultes de diverses espèces d'insectes. Après leur détermination, nous avons reconnu que, si le nombre des larves qui dévorent les cadavres inhumés est très considérable en individus, par contre celui des espèces est très limité, beaucoup plus que sur les cadavres à l'air libre; plusieurs sont les mêmes dans les deux cas, mais il y en a de spéciales aux tombeaux, dont les mœurs, jusqu'ici inconnues, sont extrêmement intéressantes pour les entomologistes.

"Les espèces d'Insectes que nous avons recueillies dans les bières exhumées, soit à l'état parfait, soit à l'état de larves, sont les suivantes. Quatre espèces de Diptères: la *Calliphora vomitoria*, la *Curtoneura stabulans*, la *Phora aterrima* et une Anthomyide du genre *Ophira*; deux espèces de Coléoptères: le *Rhizophagus parallelocollis* et le *Philonthus ebeninus*. Les larves des Coléoptères et celles des Diptères ont un rôle très actif dans la décomposition des cadavres inhumés.

"Quant aux larves de *Rhizophagus*, elles étaient encore en pleine activité et nous en avons récolté un grand nombre des très vivantes, ainsi que quelques individus, à l'état parfait. Comment ces divers insectes arrivent ils sur des cadavres inhumés à deux mètres de profondeur et enfermés dans des cercueils aux planches assez bien jointes?

"Nous devons dire tout de suite, relativement à ces cercueils, que l'humidité et la poussée des terres provoquent très vite un voilement des planches et que de larges voies de pénétration se produisent promptement ainsi que nous l'avons constaté. Un fait curieux nous a fait découvrir de quelle manière les larves de Calliphores et surtout de Curtonèvres qui sont bien plus abondantes que les précédentes, arrivent sur les cadavres: les cadavres inhumés pendant l'été, seuls en présentaient des restes, tandis que ceux inhumés pendant l'hiver en étaient totalement dépourvus, bien qu'ils présentassent en abondance, des chrysalides d'Anthomyies et surtout de Phoras, et de nombreuses larves très actives de Rhizophages.

"Quant aux Phoras et aux Rhizophages trouvés en pleine vie sur des cadavres inhumés depuis deux ans, il faut forcément admettre que leurs larves proviennent d'œufs pondus à la surface du sol par ces insectes, attirés par des emanations cadavériques particulières, perceptibles à leurs sens si délicats; que les larves qui sont sorties de ces œufs ont traversé toute la couche de terre qui les séparait du cadavre, en se servant peut-être des galeries des vers de terre, et, dirigées par leur odorat, elles sont ainsi arrivées à la surface du cadavre, comme d'autres larves de mouche arrivent, ainsi qu'on le sait, sur les truffes en décomposition cachées aussi dans la terre.

"Un fait de mœurs très curieux nous a aussi été révélé par nos recherches; c'est que les Phoras s'adressent de préférence aux cadavres maigres, tandis que les Rhizophages ne se trouvent que sur les cadavres gras; la larve de ce dernier insecte paraît, en effet, ne vivre que de gras de cadavre, et nous ne l'avons trouvée que sur des amas de graisse rancie qui avait coulé au fond de la bière en s'y moulant et provenant des cadavres très gras.

"Cette dernière larve était, jusqu'à présent, tout à fait inconnue des entomologistes, aussi bien que celle de la Phora, du reste, et l'on ignorait comment et où se passait la première phase de la vie de ces insectes. Le *Rhizophagus parallelcollis* est un petit Coléoptère très rare dans les collections, et on l'avait rencontré exclusivement dans l'herbe des cimetières; on voit maintenant pourquoi: c'est qu'il était là pour y pondre, ou bien il venait d'accomplir son voyage souterrain à la suite de sa métamorphose et revenait à l'air libre pour s'accoupler."

Port Erin, Isle of Man:

November 5th, 1906.

HALIPLUS IMMACULATUS, GERH.; A SPECIES (OR VARIETY) OF
COLEOPTERA NEW TO THE BRITISH LIST.

BY E. A. NEWBERY.

In bringing forward a new British species of *Haliplus* in the difficult *ruficollis* group, it is necessary to make a few observations. The views of continental authorities are very diverse as to the specific value of many of the known forms. To take two of the most important modern authors, M. Bedel (Fn. Seine, 1881, I, 222 and 226) admits but two forms as species, *i.e.*, *ruficollis*, De G., and *fluviatilis*, Aubé. In the above work he considered *heydeni*, Wehneke, and *immaculatus*, Gerh., as varieties of *ruficollis*, but he has recently returned to me specimens sent to him for corroboration, as *fluviatilis*, var. *immaculatus*, Gerh., having evidently altered his former opinion. Seidlitz (Fauna Trans., 1891, Arten, 84-5), is much more analytical,

and considers the above named four forms to be good species; he also includes many others not yet recorded from Britain in the *ruficollis* group. I will offer no opinion on these conflicting views beyond remarking that if *immaculatus* is not considered worthy of specific rank, that of *fluvialtilis* can hardly be maintained.

In all the British species of the group the males have the first three joints of the anterior tarsi dilated, each joint being slightly produced forward on the outer side; the intermediate tarsi are also dilated. The females have the elytra alutaceous.

The British forms may be distinguished thus:—

I.—Thorax very short, more than double as broad as long, with strongly converging sides; elytra short and broad, with the greatest breadth just behind shoulders, from thence narrowed to apex. 2.3—2.5 mm....

H. ruficollis, De G.

II.—Thorax less short, at most twice as broad as long, with sides less convergent; elytra having its greatest breadth nearer middle, with the shoulders more gently rounded; body more oval and narrower than in *ruficollis*.

A.—Elytra broader, with sides more parallel for four-fifths of their length, then rather abruptly narrowed to apex. 2.5—2.8 mm....

H. immaculatus, Gerh.

AA.—Elytra narrower, with sides more convergent, gradually narrowed to apex from about the middle.

a.—Black lines on elytra never interrupted near base, nor dilated into spots. 2—2.3 mm. *H. striatus*, Sharp.

aa.—Black lines on elytra interrupted in places, notably near base. 2—2.5 mm. *H. fluvialtilis*, Aubé.

H. immaculatus is far removed from *ruficollis* by being the most parallel-sided of the group. The dark lines, in which are placed the punctures, are broader and more conspicuous than those of *striatus* and *fluvialtilis*, and are very rarely interrupted; the punctures themselves being larger and less closely placed than those of the two latter species. Sometimes the dark lines are slightly dilated in places giving an appearance of vague spots. According to Seidlitz the species is more common than *fluvialtilis*. The only British specimens I have seen were taken by Mr. W. H. Tuck near Bury St. Edmunds.

12, Churchill Road,

Dartmouth Park, N.W.:

November 14th, 1906.

LACCOBIUS SINUATUS, MOTS., AN UNRECOGNISED BRITISH SPECIES.

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

AND

J. R. LE B. TOMLIN, M.A., F.E.S.

When critically examining the *Coleoptera* we took on Lundy Island last April we came across four specimens of a *Laccobius* which was evidently distinct from any recognised British species. On consulting Ganglbauer's "Die Käfer von Mitteleuropa" we easily identified them as *L. sinuatus*, Mots. In our catalogues this name is given as a synonym of *L. nigriceps*, Thoms., but it has long been given to a distinct species on the Continent. From *L. nigriceps*, which it resembles in the punctuation of the elytra and the smoothness of the interspaces of the thorax, *L. sinuatus* may be easily distinguished by its more oblong form; it is also on the average rather smaller. The male characters are of importance. In the ♂ of *L. nigriceps* the under-surface of the intermediate femora close to the trochanters has a small patch of short, stiff, somewhat closely set bristles, which are not found in the ♂ of *L. sinuatus*. As the ♂♂ may be easily recognised by the dilated anterior tarsi, this character is a very useful and distinct one. From the other three British species *L. sinuatus* may be distinguished by its less rounded form. We have also seen specimens of it from Cambridge (Gorham) and North Wales (W. E. Sharp); it is probably, however, not a common species in Britain as it is not represented in the Power collection.

December, 1906.

ALGERIAN MICROLEPIDOPTERA.

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

(Continued from Vol. XLI, p. 128).

3478: 1.—SCYTHRIS BUBANIAE, sp. n.

Antennae ($\frac{1}{2}$), tawny fuscous. *Palpi* slender, projecting; hoary, with sooty suffusion towards the apex. *Haustellum* very long, clothed with hoary scales toward the base. *Head* purplish fuscous. *Thorax* purplish fuscous, mottled with brownish cinereous. *Forewings* rather stunted, lanceolate, with rounded cilia; dark purplish fuscous, evenly speckled with brownish cinereous and hoary whitish scales, these indicating no pattern, except one obscure spot at the end of the cell; toward the apex and termen they become somewhat elongate, partially projecting over the base of the long dark smoky grey cilia. *Exp. al.*, 11–12 mm. *Hindwings* nar-

rower than the forewings; dark tawny fuscous, with long dull smoky grey cilia. *Abdomen* brownish fuscous, banded with whitish cinereous at the sides. *Legs* purplish fuscous, with broad whitish cinereous bands on the tibiae and tarsi.

Type, ♂ (96576); ♀ (96577). Mus. Wlsm.

Hab.: ALGERIA—Hamman-es-Salahin; Larva *Limoniastrum* (*Bubania*) *feei*, 3.IV. excl., 15.IV—2.VI.1903. Five specimens.

Larvae and pupae in loose webs at the base of the stems and on root-crowns of *Limoniastrum feei*. The young larva begins by mining down the leaf.

3478: 2.—SCYTHRIS ANTHRACODES, *sp. n.*

Antennae testaceous. *Palpi* short, slender, projecting; dark testaceous. *Head* and *Thorax* testaceous, mixed with fuscous. *Forewings* testaceous, evenly sprinkled with dark fuscous scales, sometimes tending to coalesce; at the tornus is a rather square black patch, occupying half the width of the wing, followed at a little interval by a black angular streak embracing the apex, the space between these being somewhat paler than the general ground-colour and becoming almost ochreous on the costa; cilia pale hoary testaceous, with a dark greyish fuscous shade running through them in their outer half. *Exp. al.*, 8–9 mm. *Hindwings* tawny greyish, the scales appearing somewhat fugitive and disclosing the transparent texture of the wing, especially in a small, narrow, fenestrum at the middle of the base; cilia tawny grey. *Abdomen* greyish fuscous, anal tuft paler. *Legs* blackish, with pale hind tarsal annulations.

Type, ♀ (97189); ♂ (97190). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 1–28.III.1895 (*Eaton*); Hamman-es-Salahin, 25.III.—26.IV.1904 (*Wlsm.*). Fourteen specimens.

In the ♀ the dark scaling is more distinctly speckled, the ground-colour appearing somewhat whiter, while the abdomen is distinctly pale ochreous on its anal half and beneath.

3523: 2.—SCYTRHIS EUCHARIS, *sp. n.*

Antennae stone-whitish. *Palpi* stone-whitish, the median joint shaded externally with fuscous towards its apex. *Head* and *Thorax* pale brownish cinereous. *Forewings* stone-whitish, sprinkled throughout with blackish scales, with faint brownish ochreous lines along the fold and margins of the cell; the black speckling is dense in a small patch before the middle, which reaches from the lower edge of the cell, also in a small spot at the end of the cell, it is otherwise evenly distributed, but does not extend into the pale brownish cinereous cilia. *Exp. al.*, 15 mm. *Hindwings* pale brownish grey; cilia pale brownish cinereous. *Abdomen* and *Legs* pale brownish cinereous.

Larva stone-grey, with longitudinal, ochreous, dorsal stripes and a broad, paler, lateral stripe; spots black. *Head* and pronotal plates honey-brown, the latter blackish posteriorly, suture white. *Legs* brownish olivaceous. *Long. (infl.* 21.III.), 16 mm.

Type, ♀ (96490); ♂ (96491); Larva (97305). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 16.IV.1895 (*Eaton*), 23.III—3.IV.1903 (*Wlsm.*); Hammam-es-Salahin, 13–16.IV.1904; Larva *Traganum nudatum*, III—IV, excl., 29 IV.1904, 8–14.V.1903. Twenty-two specimens.

The larva was found from March 13th to April 4th on *Traganum nudatum*, forming sand-galleries near the base of the stems; the moth was bred in April and May. Most nearly allied to *albidella*, Stn. (*Stgr.-Rbl*, 3537), which should be numbered 3523:1, and removed to the neighbourhood of *dissimilella*, H.-S.

3523:3.—SCYTHRIS PLUMBEOGRISEA, *sp. n.*

Antennae, *Palpi*, *Head*, and *Thorax* pale brownish ochreous. *Forewings* pale brownish ochreous, almost entirely suffused, except along the margins, with leaden grey; cilia pale brownish cinereous. *Exp. al.*, 12–14 mm. *Hindwings* shining, pale rosy-grey; cilia pale brownish cinereous. *Abdomen* pale brownish ochreous. *Legs* pale ochreous, the tarsi slightly suffused with leaden grey.

Type, ♀ (96520); ♂ (89398); Mus. Wlsm.

Hab.: ALGERIA—Biskra, 3–6.IV.1895, 21.V.1894 (*Eaton*), 7.III—30.IV.1903 (*Wlsm.*); Hammam-es-Salahin, 12.IV—1.V.1904 (*Wlsm.*). Twenty-two specimens.

Varying slightly in the tendency of the ochreous colouring to encroach on the darker portion of the fore-wings. In the hind-wings veins 4 and 5 are stalked.

3523:4.—SCYTHRIS TALPELLA, *sp. n.*

Antennae leaden grey. *Palpi* short, slender, recurved, smooth; leaden grey, with a few whitish scales. *Head* and *Thorax* leaden grey. *Forewings* dull leaden grey, sprinkled with white scales, these somewhat concentrated in a twice-interrupted streak along the fold, and along the outer half of the costa; cilia greyish brown. *Exp. al.*, 11 mm. *Hindwings* pale grey; cilia pale brownish grey. *Abdomen* pale leaden grey. *Legs* pale brownish grey.

Type, ♂ (97309); ♀ (96243). Mus. Wlsm.

Hab.: ALGERIA—Hammam-es-Salahin, 15.III.1904; Biskra, 14–25.IV.1903. Four specimens.

Allied to *plumbeoigrisea*, Wlsm., but smaller and darker. Veins 4 and 5 of the hindwings are stalked.

3523:5.—SCYTHRIS ERMINEA, *sp. n.*

Antennae brownish white. *Palpi* white. *Head* white, with a black spot in front. *Thorax* white, with a black spot posteriorly. *Forewings* white, thickly bestrewed with elongate jet-black spots, of which the outlines are not hard nor clearly defined, some of them being partially joined together by intermediate black scales;

none of these spots actually touch the costa, although three or four assume the form of length-streaks parallel to it; others are ranged obliquely across the middle of the wing, nearly to the flexus, others again parallel to the termen, which is itself also narrowly black-scaled; costal cilia white, apical cilia smoky, dorsal cilia pale brownish cinereous. *Exp. al.*, 10–12 mm. *Hindwings* pale brownish grey; cilia pale brownish cinereous. *Abdomen* pale grey. *Legs* whitish, the tarsi smeared with smoky grey.

Type, ♂ (96518); ♀ (96336). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 6.IV.1894 (*Eaton*), 31.III–30.IV.1903 (*Wlsm.*); Hammam-es-Salahin, 16–18.IV.1903 (*Wlsm.*); El-Kantara, 22.IV–25.V.1903 (*Wlsm.*). Thirty-two specimens.

3523: 6.—SCYTHRIS CAMELELLA, *sp. n.*

Antennae greyish, basal joint pale brownish ochreous. *Palpi*, *Head*, and *Thorax* pale brownish ochreous. *Forewings* pale brownish ochreous, mottled with black, of which there is a conspicuous oblique spot, on the middle of the dorsum, diffused upward and outward in a smoky shade containing two darker streaks, one on the cell, the other below the costa beyond its middle, a similar shade occurs below the costa before the middle; there is also a conspicuous black spot below the fold at one-fourth from the base; cilia at the apex pale brownish ochreous, below it dark smoky grey, appearing almost blackish in some lights. *Exp. al.*, 9–11 mm. *Hindwings* pale leaden grey; cilia rather smoky, dark brownish ochreous. *Abdomen* pale leaden grey. *Legs* pale brownish ochreous, terminal joints of the tarsi smoky.

Type, ♂ (89974); ♀ (89972). Mus. Wlsm

Hab.: ALGERIA—Biskra, excl. S.IV.1895 (*Eaton*), 7–19.IV.1903 (*Wlsm.*). Five specimens.

The species appears to be somewhat scarce, as I met with very few examples, and can at present say nothing about its habits. It is distinct from anything with which I am acquainted. Mr. Eaton bred a single specimen from “a cocoon which was found in the angle of a string-course of one of the pillars of the colonnade of an hotel” at Biskra.

3538: 1.—SCYTHRIS COMPSIAS, *sp. n.*

Antennae brownish grey, the basal joint white. *Palpi* porrect, slender, white, tipped with brownish grey. *Head* dirty white, with a yellowish brown tinge. *Thorax* dirty white, mottled with pale brownish grey. *Forewings* white, speckled and smeared with brownish grey, shading to greyish fuscous in an outwardly angulated transverse fascia before the middle, and in an irregularly scattered oblique band of spots beyond the middle, with a few scales of the same dark colour about the apex; cilia brownish grey, with some white scales overlapping their base. *Exp. al.*, 9–10 mm. *Hindwings* shining, iridescent rosy grey; cilia bronzy grey. *Abdomen* greyish; ♂ with conspicuous, long, recurved anal claspers. *Legs* greyish white, with small darker tarsal spots.

Type, ♂ (96519); ♀ (96201). Mus. Wlsm.

Hab.: ALGERIA — Biskra, 23.III—16.IV.1903. Eighteen specimens.

Flying freely at dusk over a small annual *Mesembryanthemum* on a low hill near the cemetery.

Most nearly allied to *acanthella*, Gdt., but much smaller and quite distinct. In the forewings vein 4 is subobsolete; and in the hindwings there are only 7 veins, 4 and 5 being coincident, and the discoidal obsolete between 3 and 5.

3538: 2.—SCYTHRIS PURA, *sp. n.*

Antennae cream-white. *Palpi*, *Head*, and *Thorax* cream-white. *Forewings* and *cilia* rather shining, cream-white, with a slight brownish tinge toward the apex; underside slightly tinged with ochreous. *Exp. al.*, 12 mm. *Hindwings* very pale bluish grey; *cilia* brownish white. *Abdomen* and *Legs* white.

Type, ♀ (96539); ♂ (97188). Mus. Wlsm

Hab.: ALGERIA — Hammam-es-Salahin, 26.IV.1904, 17.V.1903. Two specimens.

A small pure white species, quite distinct from anything with which I am acquainted.

(To be continued).

DESCRIPTION OF A PEST TO THE BAMBOO IN INDIA.

BY W. L. DISTANT.

Mr. Charles B. Antrim, Entomologist to the Indian Tea Association, has forwarded me some specimens which Dr. H. H. Mann had found attacking bamboos at Darjiling. They represent an undescribed species of *Fulgoridæ*, belonging to the subfamily *Delphacinae*, and constitute a second described member of the genus *Purohita*, which I founded on a Ceylonese form, *P. cervina* (Faun. B. I., Rhynch., 111, p. 470).

PUROHITA ARUNDINACEA, *sp. n.*

Body and legs ochraceous; antennæ fuscous; face carmine-red to posterior margin of eyes, thence cretaceous-white to clypeus; lateral margins of prosternum carmine-red, inwardly margined with cretaceous-white; anterior and intermediate legs striped with black, apices to tarsi black; the carinations to vertex, pro- and mesonota greyish, as is also the apical area of the latter, which has a dark apical spot; abdomen above with the three posterior segments purplish-red with the margins ochraceous; tegmina creamy-white, all the veins spotted with black, the marginal spots largest, and commencing at end of radial area, terminating at apex

of claval area; wings hyaline, the venation pale fuscous; vertex strongly ridged at lateral margins, and with a faint central pale carination; pronotum angularly emarginate at posterior margin; face strongly tricarinate; clypeus medially and laterally carinate; first joint of antennæ long and broad, broadly centrally ridged on each side, second joint more than half the length of first; apical spine to posterior tibiæ long and robust; tegminal veins more or less granulose.

Long. excl. tegm., 4 to 5 mm.; exp. tegm., 11 to 14 mm.

Hab : Darjiling, 3100 feet. Found attacking Bamboos.

Stcene House, Selhurst Road,
South Norwood, S.E. :
December 6th, 1906.

A NEW BRITISH FLEA.

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

CERATOPHYLLUS BOREALIS, *sp. nov.*

A pale species. The rostrum reaches to the apex of the fore coxa. The mesonotum has numerous small hairs between the base and the post-median row of bristles. The mesothoracic epimerum bears four bristles (2, 2), the metathoracic epimerum having five (2, 2, 1), a small hair in addition standing at the stigma.

The first abdominal tergite, like the metanotum, has three rows of bristles, and anterior of them there are a few more hairs.

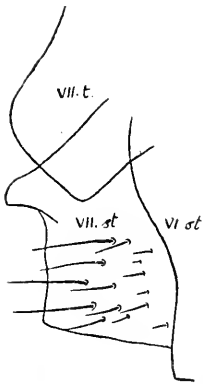
The other abdominal tergites bear three rows of bristles on each side, the anterior one consisting of four or five bristles only, on each side, there being anteriorly of it one or two more hairs representing a fourth row.

The sternites of segments 3 to 5 bear a row of three or four bristles and a row of a few small hairs. The sternite of the sixth segment has a row of five bristles. The hind femur bears a lateral row of three or four bristles on the inside, besides the subapical bristle.

The principal differences between this species and its allies are in the shape of the seventh sternite (fig. VII *st.*). This is truncate, with the upper angle produced into a lobe.

We have one female specimen of this species, for which we are indebted to Mr. Norman H. Joy. It was taken on the Island of St. Kilda in July of this year, and probably came from the nest of a gannet (*Sula bassana*).

Tring Park, Tring :
December, 1906.



Records of Coleoptera for Herefordshire and Shropshire wanted.—I should be very much obliged if Entomologists who have collected *Coleoptera* in Herefordshire or Shropshire would send me any records (of common or uncommon species) during January for the Victoria County History. The late Mr. Blatch and Mr. Horner took a good many interesting species in Shropshire, and Stephens recorded many rare ones; but Herefordshire appears to have been practically unworked, although it is probably exceedingly rich in this Order.—W. W. FOWLER, Earley Vicarage, Reading: December 18th, 1906.

A new locality for Panagæus crux-major, L.—It may interest your readers to know that Mr. F. Palin took a specimen of *Panagæus crux-major* at the village of Ashton, near Oundle, on November 10th last.—N. CHARLES ROTHSCHILD, Tring: December 18th, 1906.

Hereditary and Sexual dimorphism in Abraxas grossulariata, var. variegata.—At the end of June last year I was fortunate enough to obtain a pairing from fine specimens of the variety *variegata* of *Abraxas grossulariata*, and was of course extremely interested to see what the result in the progeny would be. Exceptional care was taken of the brood of larvæ, and consequently the losses from deaths during the winter were very few. All the moths (a considerable brood) emerged during June of this year, and every specimen, without a single exception, was of the extreme form of *variegata*. I had of course never anticipated such a result, for it was altogether contrary to my previous somewhat extensive experience in breeding melanic forms of other species. As a rule, in captivity, it has taken three generations to produce an almost entirely melanic race, and even then there have almost always been a few reversions to the type. But in the case of *variegata*, although the parents were bred from wild larvæ collected from gardens in this neighbourhood, the assumed first generation produced a brood as absolutely uniform as could occur in the most constant of true species. I have written "assumed first generation" because the variety is so excessively rare in a wild state that it is highly improbable that both the parents of my last year's moths were of the variety, and possibly neither of them were.

Another interesting fact revealed by the brood was that the variety is sexually dimorphic. Probably none of us had expected such a thing in *Abraxas grossulariata*, and even when the first dozen or fourteen moths emerged, all males, and possessing more or less of the white rays on the hind-wings, it did not occur to me that the rays were a male characteristic. But when the females began to emerge, and showed no trace of any white rays, the fact was of course apparent, and was at once confirmed by an examination of the seven specimens in my cabinet series of the moth, the three males being rayed, and the four females without rays. These white rays give a very pretty effect to the males, and are generally present on the hind-wings only, and usually varying in number from two to five, although I possess two specimens in which there is only one, and then merely a white spot; and one single male only out of the entire brood shows no trace of a white ray. Occasionally the white rays extend to the fore-wings, but usually not more than two on each wing, though I have one very beautiful example, bred in 1905 from a wild larva, which has six rays on each fore-wing, and seven and six respectively on the hind-wings.—GEO. T. PORRITT, Edgerton, Huddersfield: December 11th, 1906.

Occurrence of Xanthia ocellaris, Bkh., in Norfolk.—Mr. R. S. Smith, Jun., of Downham Market, has recently submitted a Noctuid to me for identification. I saw at a glance that it might be *Xanthia ocellaris*, and a reference to Barrett's "*Lepidoptera*" convinced me that I was right. This specimen is a ♂, and in very fine condition. Mr. Smith tells me that he captured it in West Norfolk the first week in September of this year; he also states that he has another specimen, not in such fine condition, which was taken by himself in the same district two years ago. I am aware that this rare species has been taken in Suffolk, but I believe this is the first record of its occurrence in Norfolk; it will, therefore, be a very welcome addition to our county list.—E. A. ATMORE, King's Lynn, Norfolk: *November, 1906.*

Stenoptilia graphodactyla, Treitschke, a new British "Plume."—While collecting in East Dorset during the past summer I had the good fortune to discover the larvæ of this pretty little moth feeding in the flowers of the Marsh Gentian (*Gentiana pneumonanthe*), and several of the perfect insects were bred. I also beat one or two of them from amongst mixed herbage, but they seem to be sluggish in their habits, and only fly for a short distance after having been disturbed. It occurred in boggy places on heaths, and unless the larvæ feed on other plants it is never likely to be very numerous, as the Marsh Gentian appears to be local. This form of *graphodactyla* is near to var. *pneumonantes*, Schleich.—GERVASE F. MATHEW, Dovercourt, Sussex: *November 22nd, 1906.*

Nonagria sparganii reared from the egg.—Though other Entomologists have frequently reared this species from larvæ, I am not aware that it has been bred in captivity through all its stages before. This was done in a glass tank during the past summer. The eggs were laid by bred moths in August, 1905, as described in a previous notice (see *Ent. Mo. Mag.*, vol. xiii, p. 67). The beautifully concealed eggs passed the winter, hatching as before May 10th—12th, 1906, the perfect insect emerging end of August. Though the ♀ moth was watched depositing her eggs on the edge of Iris leaves, I regret not being able to satisfy myself exactly how it was accomplished. The eggs were laid after dark, so the moths had to be observed through the glass by the aid of a lamp, and it was not very easy to see how the parent moth managed to gum the margin of the leaf down in this marvellous manner. This is a point which requires further elucidation in the life-history of the insect.—W. R. JEFFREY, Ashford: *November 13th, 1906.*

Habit of Hæmatobia irritans, L.—On July 25th I met some cows coming home from the common called Coe Fen, and I at once noticed that at least one had a *band* of flies round the base of each horn. Then and also subsequently on August 20th I had difficulty in catching specimens from the horn. But I have no doubt that they were specimens of *H. irritans*, which were plentiful about the cows. I do not know whether this peculiar habit has been noticed in England; but Dr. Sharp at once gave me a reference to Riley, *Insect Life*, II (1889), p. 101. In America, it seems, it is known as the "Horn Fly." I found them again common on September 9th in the cow sheds of a friend, and was told they have often been noticed to form a dense ring on the horns.—F. JENKINSON, Southmead, Chaucer Road, Cambridge: *November, 1906.*

Nephrocerus flavicornis, Zett., &c., at Cambridge.—On July 26th, about 6.30 p.m., I went to my brother-in-law's house at Newnham. The entrance faces the Newnham mill pool, beyond which is the rough grassy pasture called Sheep's Green, enclosed by the two branches of the river and intersected by old water-courses, dry in summer. The east wind blew from the pasture straight to the door of the house. There is a window on each side of the door. On these windows were three flies: *Pachygaster ater*, *P. leachii*, and *Nephrocerus flavicornis*. This last was a fine female. I at once carried it off to show to my friend Dr. Sharp, who beheld it with surprise and delight. It sat in the pill-box very much like the male I took in the New Forest in June, 1903 (Ent. Mo Mag., vol. xxxix, p. 227). The head was close to the surface on which the insect rested, the body was curved (the back concave) and sloped up at something like an angle of 45°. On July 16th, at 3 p.m., the sun being hot, I found *Mallota cimbiciformis* asleep in my greenhouse, where *Xylomyia marginata* and *Stegana coleoprata* again occurred. On September 6th my garden was visited by *Cyuoymia mortuorum*. On the 27th of the same month I moved to my present address.—ID.

Xylomyia marginata, Mg., at Cambridge.—Dr. Sharp asks me to mention that about July 24th he began to find *Xylomyia marginata*, Mg. (females), commonly at Newnham among Lombardy poplars and felled walnut trees. He has obtained larvæ from the latter, which have since been cleared away.—ID.

[With reference to Mr. Jenkinson's note I may add that all the specimens of *Xylomyia marginata* captured by me—about 50—were of the female sex. Moreover, those found subsequently by Mr. Verrall in the same way were also all females. This is of some importance as regards the habits of the species of the genus; for *X. maculata*, the allied form, is not very rare in the larval state in the New Forest, and yet, so far as I know, but one specimen of the imago (and that one a female) has been captured there. These facts seem to indicate that the imago has some peculiar habit, perhaps that of ascending the trees immediately after emergence, so that only females, which descend for the purpose of oviposition, are met with by the Entomologist.—D. SHARP.]

Piezostethus flavipes, Reut., at Carmarthen.—While on a visit to the town of Carmarthen last August I had the opportunity of looking over a corn mill and warehouse, and amongst some of the usual granary *Coleoptera* I found a living brachypterous specimen of the Hemipteron, *Piezostethus flavipes*, Reut., a species not hitherto recorded from this country. I learn from the proprietors of the warehouse that they receive grain from abroad, and amongst other places from the Black Sea Ports. The insect is therefore probably an importation from those regions. This is not however its first occurrence in England, as I find that Mr. Edward Saunders has a specimen quite similar to mine, which is labelled "in Persian wheat from Bussorah, found living in a warehouse in England." Nothing more definite is known as to the locality of this specimen.

It would of course be premature to claim this as an addition to our British fauna, as there can be no doubt that it is an introduced species, and the evidence is not yet sufficient as to its naturalization. But I am publishing this note in the hope

that other collectors who have an opportunity of searching corn warehouses may be on the look out for the insect, and so determine whether it is merely a casual importation or has succeeded in establishing itself amongst us.

Piezostethus flavipes is a small species $1\frac{1}{2}$ mm. in length, of a light pitehy colour, with recumbent pale pubescence. The hemielytra, together with the antennæ and legs, are wholly flavous. The pronotum is shining and narrowed in front, and the abdomen is widest behind the middle. In the brachypterous form the hemielytra reach the base of the third segment of the abdomen. Reuter (Monogr. Anthocorid. orb. terr.) gives this species as the only representative of the subgenus. *Arrostus*, which differs from *Piezostethus* proper, *inter alia*, in the absence of exserted setæ at the end of the abdomen. This character, together with the above colour distinctions and the narrower pronotum, will easily distinguish it from *P. cursitans*. In its macropterous form it is said to be most like *P. formicetorum*. It is recorded by Reuter from France (Rouen, in *navibus*), and from North Italy. According to Doderò it lives on *Sesamum* — E. A. BUTLER, 53, Tollington Park, N. : November 7th, 1906.

A correction.—In Ent. Mo. Mag., vol. xlii, p. 254 (November, 1906), line 19 from top, should read "*Sympetrum flavicolum*, L. Fa. Fr., No. 551."—ESBEN PETERSEN, Silkeborg, Denmark : November 24th, 1906.

Reviews.

THE VICTORIA HISTORY OF THE COUNTIES OF ENGLAND: A HISTORY OF DEVONSHIRE. INSECTA. edited by HERBERT GOSS, F.L.S., &c. pp. 82 folio. London : A Constable and Co., Limited. 1906.

Devonshire, the third in size of the English counties, and one of the most beautiful and interesting of them all, is not less fortunate than those already treated of in the "Victoria History," in the number and ability of the Entomologists, resident and otherwise, who have aided in compiling the list of its rich Insect fauna. All the Orders are well worked out, and we would call attention to the section on the *Lepidoptera* by our late esteemed colleague, Mr. C. G. Barrett, and that on the *Hymenoptera* by Mr. G. C. Bignell, as especially well and fully executed; the introduction to the list of the Parasitic *Hymenoptera*, by the last named veteran Entomologist, is a masterly account of the life-history of that deeply interesting group. In the list of the *Coleoptera*, due in great measure to the energetic work of Mr. J. H. Keys in the Plymouth district, just over 1700 species are enumerated, a number which is sure to be largely augmented by the more complete exploration of many parts of the county as yet almost unworked. In the list are included the interesting records in this Order by Dr. Leach, made in the early part of the last century, and of which many have only been confirmed quite lately; as well as the important recent captures of *Coleoptera* in Lundy Island by Messrs. Joy and Tomlin recorded in our pages. The list of the *Diptera* by Mr. E. E. Austen, though it includes as yet only one-sixth of the total number of the known British forms, is noteworthy for the fulness and precision of the data, mainly due to Col. Yerbury, attached to each species, and may well serve as a model for future lists of the same kind.

A STUDY OF THE AQUATIC COLEOPTERA AND THEIR SURROUNDINGS IN THE NORFOLK BROADS DISTRICT: by FRANK BALFOUR BROWNE, M.A., F.R.S.E., F.Z.S. Second Paper (Reprinted from the Transactions of the Norfolk and Norwich Naturalists' Society, vol. viii).

The present paper is in continuation of one noticed by us in vol. xli, p. 243, and like it is of very high bionomic interest and value to the students of our "water-beetles." It embodies the further researches of the author in the rich district of the Norfolk Broads in the season of 1905, and is written on the same lines and the same thoroughness as its predecessor. A large amount of additional information as to the life-history and distribution of many species has been obtained, and the results of the writer's assiduous collecting and observation are presented graphically in two very interesting charts, in which the work of the two years covered by both papers may be compared at a glance

Obituary.

William Christopher Boyd.—It is with deep regret that we heard of the death, on September 18th last, of Mr. W. C. Boyd, who was head of the firm of Messrs. J. and C. Boyd, Manchester Warehousemen, of Friday Street, London, E.C. He was elected to the Entomological Society of London as long ago as 1867, at which time he resided at Cheshunt, though for some years past The Grange, Waltham Cross, has been his home. Deeply interested in all the British *Lepidoptera*, including even the minutest of the sadly neglected *Tineina*, our friend made the most of his opportunities of studying them, and the notes from his pen that are scattered through many volumes of this Magazine testify to his keen powers of observation, and his consequent success as a collector; the earliest of these is to be found in vol. v (1868-9), and the latest in vol. xl (1904)! In proof of the valuable work for which we are indebted to him, it will be sufficient to mention that *Coleophora potentillæ* (Boyd MS.), Stn., was new to science when he discovered it, and that his additions to the British List include the extremely rare *Ebulea catalaunalis*, and the very local *Nepticula minusculella*. Mr. Boyd was, in addition, an ardent sportsman, equally proficient with his gun and with the cricket ball, and his interest in philanthropic work is shown by the fact of his being one of the Governors of St. Bartholomew's Hospital. A most cheery and pleasant companion, blessed with a strong vein of humour, he will be much missed by those of us who were privileged to enjoy his friendship.—EUSTACE R. BANKES.

William Chaney.—We regret to learn of the death of this veteran Entomologist, who passed away peacefully in his sleep on November 3rd, 1906, at the ripe age of 78 years. A native of Chatham, and employed in the Royal Dockyard there, he became interested in Entomology at an early age, and contributed many notes on the *Lepidoptera* of his neighbourhood to the "Entomologist's Weekly Intelligencer" and other periodicals. The knowledge which he acquired of the insect fauna of that beautiful and productive portion of the County of Kent was most thorough, and his "List of the *Macro-Lepidoptera* of the Rochester District," published in the quarterly "Rochester Naturalist" (1884-1889) is one of the most valuable and

interesting productions of its kind ever issued by a local Natural History Society. About 1869 he was transferred to the Admiralty, and shortly afterwards took a prominent part in the foundation of the South London Entomological Society, with which he retained his connection until his death. Latterly he took up the study of the *Coleoptera* and *Hemiptera*, and amassed good collections of these Orders, which he disposed of a few years ago, though to the latest he retained his interest in Entomology. Mr. Chaney was a man of fine physique and of wide and varied reading, and a genial and hearty companion in the field; and the writer of this notice, whose deceased friend was his earliest Entomological instructor, recalls many pleasant days spent with him among the insects of the woods and chalk-downs of the Chatham district.—J. J. W.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *October 15th, 1906.*—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. J. T. Fountain showed living larvæ and imagines of *Hadena unanimitis*, Tr., found on the canal bank at Marston Green and also at Earlswood, at both of which places they were abundant. Mr. E. C. Rossiter remarked that he had recently come across two broods of *Smerinthus populi*, L., one of which occurred on common poplar, and the whole brood was of the dark variety of the larva; and the other brood was upon an aspen with whitish under-side to the leaves, and all the larvæ belonged to the light form, and it seemed as if the larvæ had followed the colour of the under-side of the leaves they happened to have lived upon. Mr. G. H. Kenrick, however, said that he had found both forms, the light and the dark, side by side upon the common poplar. Mr. G. H. Kenrick showed some *Lepidoptera* taken on the Cotswolds during a short visit paid to them early in August. They included *Lycæna corydon*, Fab., *Drepana cultraria*, F., *Boarmia abietaria*, Hb., *Botys hyalinalis*, Hb., a nice series, &c.; also a number of *Lycænidæ* from Java and the Malay Archipelago. Mr. G. T. Bethune-Baker, various *Lepidoptera* taken in Devonshire last July. Whilst there he had carefully observed *Satyrus semele*, L. ovipositing, with the result that he had discovered that its eggs were never laid upon the fresh green grass stems, but upon the broken stems of the previous season, near the top. Mr. Simkins, various *Lepidoptera*, including a fine series of *Gastropacha quercifolia*, L., bred from Surrey ova. Mr. W. Harrison, *Cerura furcula*, L., bred from larvæ obtained near Sandwell Park.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The usual Monthly Meeting of this Society was held at the Royal Institution, Liverpool, on Monday, November 19th, Mr. R. WILDING, Vice-President, in the Chair.

A paper was communicated by Mr. J. Collins of Oxford embodying his observations upon the habits of *Sitaris muralis*, a beetle associated with the mason-bee *Anthophora pilipes*, with specimens of both taken near Oxford. Mr. Collins also sent for exhibition *Apion astragali*, *A. sanguineum*, *Panagæus 4-pustulatus*, and *Lebia chlorocephala*, as well as the Tortrix *Stigmonota pallidifrontana* from

Oxford. Mr. W. Mansbridge read a paper entitled "Notes on a melanic race of *Agrotis ashworthii*," and exhibited a long series of moths bred in 1905 in illustration of his remarks; a discussion ensued, and in further illustration Mr. F. N. Pierce, F.E.S., exhibited *A. candelarum*, together with microscopic preparations of the genitalia of both insects, and Dr. Bell showed the preserved larva of *A. ashworthii*. Mr. Mansbridge reviewed the evidence for and against the view that *ashworthii* and *candelarum* are the same species, and suggested the name *substriata* to distinguish the new form. The opinion of the meeting was to the effect that more evidence of identity was required, especially as regards early stages and structural detail of *candelarum*. Other exhibitors were Mr. W. A. Tyerman, a box of *Lepidoptera*, including *Pygerra pigra* from Ireland, *Eupithecia isogrammata* and *Plusia festucae* from Lathom; *Noctua stigmaticea* and *N. glareosa*, one of the latter a very rosy specimen, from N. Wales; *Acronycta leporiva*, var. *melanocephala*, *Notodonta dromedarius* and *N. dictyoides* from Kirby, Lancashire. Mr. R. Wilding, species of the Coleopteron *Anara anthobia* from the Liverpool district. Mr. E. J. B. Sopp, F.E.S., the scarce cockroach *Epitampra burmeisteri* taken in the Manchester Docks and identified by Mr. R. Shelford; *Panchlora virescens* from the Manchester Docks, Hoylelake, and Warrington; *Acridium wypticum* from Birkdale; also, on behalf of Mr. W. J. Lucas, the scarce *Stenobothrus elegans* from the New Forest, and, on behalf of Mr. W. E. Sharp a nymph of the cockroach *Periplaneta australasiae* from Brockenhurst.—H. R. SWEETING and WM. MANSBRIDGE, Hon. Secs.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, November 8th, 1906.—Mr. R. ADKIN, F.E.S., President, in the Chair.

Messrs. Harrison and Main exhibited bred and variable series of (1) *Tethea subtusa* from Fermanagh, and (2) *Numeria pulveraria* from various localities, and pointed out the characteristic forms prevailing in each. Mr. Newman (1) *Anthrocera purpuralis* (*minos*) from N. Wales; (2) a dwarf example of *A. exulans*; (3) a pale *A. filipendulae*; and (4) a very variable series of *Rumicia phlæas*, the pick of some 3000 third brood specimens passed through the net at Bexley. Mr. Moore, a specimen of *Aglais urticae* very nearly approaching var. *polaris*. Mr. Goulton, a specimen of the rare *Heliothis armiger* taken at light at Sutton, and a series of *Fgeria myopæformis* from the same locality. Mr. Edwards, some large species of *Coleoptera* from Sierra Leone. Mr. Rayward, ova of *Strymon* (*Thecla*) *w-album* found *in situ* on bark and twigs of wych elm. Mr. R. Adkin, a series of *Scoparia dubitalis* from Eastbourne, including some exceedingly pale forms, and also the very pale form from Mr. C. G. Barrett's collection, and read notes on this local race.

Thursday, November 22nd, the President in the Chair.

A Special Exhibition of Varieties. Mr. South exhibited the very large Chinese *Vanessa urticae*, var. *chinensis*, to compare with the very small *V. urticae*, ab. *urticoides*, bred from larvæ fed on hop. Mr. Lucas, for Messrs. F. W. and H. Campion, (1) a ♂ of the very rare dragonfly *Sympetrum vulgatum*; (2) a series of *S. flavicolum*, including a ♀; and (3) a series of *Cordulia ænea*. All were taken in Epping Forest. Messrs. Harrison and Main, (1) a brood of *Pieris*

brassica, including examples of the female in which the two discal spots on both upper and under-sides were more or less united into a band; (2) series of *Aplecta nebulosa* from Delamere, Epping, and New Forests for comparison; (3) bred series of *Tephrosia biundularia* from the New Forest and from Delamere, the former light, the latter dark and intermediate; (4) bred examples of *Dianthæcia cæsia* from the Isle of Man; and (5) *Acronycta alni* from the New Forest. Mr. Kaye, a captured specimen of *Apatura iris* from the New Forest, measuring $3\frac{1}{2}$ inches in expanse, much larger than any bred specimen. Mr. Dobson, four species of the genus *Sympetrum* taken in one place in Surrey on September 3rd, *S. striolatum*, *S. flavolum*, *S. sanguineum*, and *S. scoticum*; he also showed series of sixteen species of Bees of the genus *Bombus*. Mr. G. B. Brown, his captures during a ten days' holiday at Deal, in late July, including *Lithosia pygmeola*, *Calamia phragmitidis*, *Agrotis tritici*, *Eremobia ochroleuca*, *Dianthæcia cucubali*, &c. Mr. P. J. Barraud, a series of dark and intermediate forms of *Xylophasia monoglypha* from St. Bees', Cumberland. Mr. South, a short series of *Dicrorhampha flavidorsana* from his garden, and read notes on its distinctness and occurrence. Mr. Tonge, the *Lepidoptera* taken by him on the Suffolk coast in July, including *Egeria apiforme*, *Mamestra abjecta*, *Leucania straminea*, *Senta maritima*, *Acidalia emutaria*, &c., together with a series of admirable photographs of the natural resting positions of numerous species of butterflies and moths. Mr. Goulton, varied series of *Oporabia dilutata*, *Melanthia ocellata*, and *Ypsipetes sordidata* (*elatata*) from Rammore Common, the last comprising black-banded, green, wainscot, and other forms. Mr. Lucas, to illustrate Mr. Champion's exhibit, *S. vulgatum* ♂s from Richmond Park and from Denmark, and also drawings of the ♂ genitalia of *S. striolatum* and *S. vulgatum*, as well as photo-micrographs of the former ♂. Mr. Chittenden, melanic *Larentia multistrigaria* from Yorkshire, dark *Hadena adusta* from Rannoch, dark *Ypsipetes impluviata* from Arran, &c. Mr. Clark, the Ichneumon *Ophion luteum*, taken on November 21st. Mr. R. Adkin, a series of *Tortrix pronubana*, reared from larvæ collected at Eastbourne from *Euonymus* in September last, only two specimens having been obtained previously in this country; he also showed an asymmetrical specimen of *Macroglossa stellatarum*, the transverse lines of the left fore-wing uniting into an irregular patch. Mr. Sich, two imagines with cases, of what he thought were *Coleophora multipennis*, and also German examples of *Valeria oleagina*, *Catephia alchymista*, &c. Dr. Chapman, (1) a long series of a recently described species of *Cænonympha* from Galicia, Spain, viz., *C. mathewi*, Tutt, closely allied to *C. dorus*; (2) a series of *Lycæna idas*; (3) a series of *L. ægon* with red on the hind margin of the hind-wings; (4) a number of *Erebia palærica*, all three species from Galicia; and (5) a representative exhibit of *Hastula hyerana* and its forms from Hyères. Mr. T. W. Hall, white blotched varieties of *Arctio villica* and a *Eupithecia*, showing the characters of both *E. minutata* and *E. assimolata*. Dr. Hodson, (1) *Agriades corydon* with light outer margins; (2) *Polyommatus icarus* with large blotches of black replacing the orange on the under-side of the hind-wings; and (3) *Aricia agestis* with the markings along the outer margins conspicuously wedge-shaped. Mr. Garland, for Mr. Pickett, (1) a gynandrous *Angerona prunaria*; (2) an *Ematurga atomaria* with six wings; (3) a long series of *Hemerophila abruptaria* showing many melanic forms; (4) fine aberrations of

Agriades corydon from Dover this year; (5) a light *Melitæa cinzia*; and (6) a very pale *Pararge egeria*. Mr. West, Greenwich, cabinet drawers containing his collection of British *Chrysolelidæ*, *Endomychidæ*, *Coccinellidæ*, &c. Mr. Gadge, a wire arrangement to affix to flower-pots for breeding purposes, which could be folded up when not in use. Mr. West, of Ashted, under the microscope, the curious Y-shaped scales of *Pseudopontia paradoxa*, received from Mr. Moore.—
HY. J. TURNER., Hon. Sec.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, November 21st, 1906.*—
Mr. F. MERRIFIELD, President, in the Chair.

The Secretary read a list of the Fellows nominated to serve as Officers and other Members of the Council for the session of 1907-8.

Mr. Walter E. Collinge, 55, Newhall Street, Birmingham, and Mr. H. S. A. Guinness, of Balliol College, Oxford, were elected Fellows of the Society.

Mr. H. W. Andrews exhibited specimens of *Odontomyia angulata*, Pz., from the Norfolk Broads, a species of which few captures have been recorded of recent years, and *Ictericia westermanni*, Mg., a rare Trypetid, taken by him in the New Forest. Dr. F. A. Dixey, specimens of South African *Pierisæ* demonstrating that the wet-season form of *Teracolus regina*, Trim., was in mimetic association with an undescribed species of *Belenois*, intermediate between *B. calypso* and *B. thysa*. Mr. William John Lucas, on behalf of Messrs. H. and F. Campion, a male specimen of *Sympetrum vulgatum* taken in Epping Forest on Sept. 4th last, of which species only three other authentic British specimens are known. Mr. R. Adkin, a short series of *Tortrix prouubana*, Hb., including both sexes, which he had reared from larvæ and pupæ collected from *Euonymus* at Eastbourne in September last. The only previous records for the species in Britain are single male examples captured at Eastbourne and at Bognor respectively in the autumn of 1905. Dr. T. A. Chapman, a long series of *Ctenonympha mathewi*, Tutt, from an examination of which he concluded that it must be regarded as a geographical or subspecific variety of *C. dorus* and not as a fully established species. Professor E. B. Poulton, F.R.S., communicated "A Permanent Record of British Moths in their Natural Attitudes of Rest," and "Further Notes on the Choice of a Resting Site by *Pieris rapæ*," by Mr. A. H. Hamm; Mr. R. Shelford, M.A., F.L.S., "Studies of the Blattidæ"; the Hon. N. Charles Rothschild, "Notes on the Life-History of *Sesia andraniformis*, Lasp.;" and Mr. Hubert W. Simmonds, "Notes on an Unusual Emergence of *Chrysophanus salustius* in New Zealand."

Wednesday, December 5th.—The President in the Chair.

The Hon. Secretary announced that the Entomological correspondence of the late Mr. A. H. Haliday had been presented to the Society by Dr. E. Percival Wright, of Trinity College, Dublin.

Mr. H. C. Pratt, Government Entomologist, Federated Malay States, Kuala Lumpur; Capt. H. J. Walton, M.B., F.R.C.S., Indian Medical Service; Mr. Arthur Ernest Gibbs, F.L.S., Kitchener's Meads, St. Albans; Capt. James Bruce Gregorie-Tulloch, King's Own Yorkshire Light Infantry; Mr. John Ashburner Nix, Tilgate, Sussex; Mr. Herbert W. Southcombe, J.P., 16, Stanford Avenue, Brighton; and Mr. Roland E. Turner, 21, Emperor's Gate, N.W.; were elected Fellows of the Society.

Mr. A. W. Bacot exhibited a specimen of *Catocala nupta*, taken at rest at Hackney, November 9th, 1906, remarkable for having two well developed tarsi on the left fore-leg; also three ♀ specimens of *Lasiocampa quercus*, L., bred from larvæ from Cornwall in 1906. One of these larvæ had been submitted to a pressure of from 10 to 30 atmospheres (105 to 450 lbs. per square inch) on two occasions; a pressure which had proved fatal at once to a frog, used as a control experiment. A discussion followed in which Dr. F. A. Dixey, Dr. Greenwood, and other Fellows joined. Dr. T. A. Chapman, a long series of *Hastula hyerana*, Mill., bred this year from larvæ collected at Hyères; and a diagrammatic map of the neighbourhood to explain the distribution of the species in that area. Dr. F. A. Dixey, specimens of *Teracolus omphale*, Godt., bred by Mr. G. A. K. Marshall. The exhibit showed that under arranged conditions of moisture and warmth the wet-season phase might be artificially induced. Mr. L. B. Prout read a paper entitled "*Xanthorhœ ferrugata*, Clerck, and the Mendelian Hypothesis." Dr. F. A. Dixey communicated a paper "On the Diaposematic Resemblance between *Huphina corva*, Wallace, and *Ixias baliensis*, Frühst."—II. ROWLAND-BROWN, *Hon. Sec.*

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (17).

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

HOPLOCAMPIDÆ = *PHYLOTOMA*, Fall., *HEPTAMELUS*, Hal.,
ERIOCAMPOIDÆ, Knw., *HOPLOCAMPA*, Htg.

The *Hoplocampidæ*, as defined by Konow, include four British Genera. One of these, *Heptamelus*, contains but a single species, *H. ochroleucus*, Haliday. I know it only from the specimens in the Cameron Coll. at S. Kensington; but any one fortunate enough to find it should be able to identify it at once, as it possesses the unique character of *seven*-jointed antennæ. A figure which, though uncoloured, gives a good idea of the insect's general appearance, will be found on Plate 13 of Mr. Cameron's Monograph (vol i). The other three Genera contain insects having some resemblance to certain small Nematids, and agreeing with that group in one important point—the situation and direction of the discoidal (= basal) n. in the fore-wings. They may be known from these, however, by combining three characters, which do not appear together in any Nematid, viz., (1) the radial cell is "divided," (2) the two medial nerves are received in different cells, (3) the humeral area in the fore-wing is not "petiolate," but either "contracted" (*Hoplocampa*) or "with oblique cross nerve" (*Phyllotoma*, *Eriocampoides*).

PHYLOTOMA, Fall.

These are small and inconspicuous insects, not above 5 mm. long,

with a considerable expanse of wing, and long, very filiform antennæ, which have always more than nine joints, and sometimes as many as fifteen. Thomson (followed in this by Mr. Cameron) sometimes gives "antennis 10-12-articulatis," "antennis 15-articulatis," &c., among the characters for distinguishing particular species; but personally I have more often found this character a snare than an assistance, and Herr Konow, to whom I referred my difficulties, tells me that he does not consider these differences in the number of joints to be specific. This was also Hartig's view, who says that in all the species the number of joints is normally from 12 to 14, but in particular specimens may fall as low as 10, or rise as high as 15. (It is well known that in multi-articulate structures there is usually much variability in the precise number of the joints).

Really satisfactory characters for distinguishing *Phyllotoma* spp. have still, it seems, to be discovered. Their coloration is far from constant, the antennal characters cannot (as we have seen) be trusted, nor—as Herr Konow assures me—those derived from the clearness or infuscation of the wings. Still, properly prepared examples of such species as occur in this country can usually be named without much difficulty.

I possess British examples of four out of the five species described in the Monograph. Of the fifth (*ochropoda*, Thoms.), I have only seen the specimens in the Cameron Coll. at S. Kensington. The locality recorded for them is Worcester. I am glad not to have to propose any changes in our present names for the species belonging to this genus.

SYNOPTIC TABLE OF BRITISH *PHYLLOTOMA* spp.

1. Abdomen black, with or without white markings at the sides or on the venter. Humeral cell in hind-wings *complete* (i.e., the humerus and brachius join before approaching the apex of the wing) 2.
- Abdomen entirely or in great part reddish. Humeral cell in hind-wings *open* at the apex (i.e., the humerus does *not* run into the brachius) 4.
2. Pronotum and tegulæ black; legs, "pale-yellow verging to testaceous" (Cam.) with black bases.....*ochropoda*, Thoms.
- Pronotum and tegulæ white (or partly so); ground colour of legs white ... 3.
3. Abdomen with distinct white markings at the sides. Wings hyaline with (generally) a rather conspicuous fuscous streak below the stigma...
nemorata, Fall.
- Abdomen immaculate at sides. Wings darker than in *nemorata* (blackish), but not definitely streaked below the stigma*aceris*, Kalt.

4. ♂ with breast and pleuræ largely white ; ♀ with the face broadly bordered with white along the eyes, and the apex* of the saw-sheath pilose or pubescent. (Antennæ, according to Thomson [but see above], ♀ 14-articulate, ♂ 15-articulate) *microcephala*, Klug.
- ♀ with breast and pleuræ black ; ♀, generally at least, with the sides of the face black, apex of saw-sheath “nearly glabrous” (Thoms.). Also, according to Thomson, the antennæ in both sexes are shorter and have fewer joints (♀ 10–12, ♂ 11–12) *vagus*, Fall.

ERIOCAMPOIDES, KHOW.

The species forming this genus have been separated by Konow from *Eriocampa*, Htg. and removed to the *Hoplocampides*, because of the situation of their “discoidal” (= basal) nerve in the fore-wing. They are all very similar in general appearance—shining black insects, with short broad bodies, and heavy-looking antennæ, which are much thicker in the middle than at the apices, and not, as in *Phyllotoma* and *Hoplocampa*, thin and filiform throughout.

All my own specimens of *Eriocampoides* (and, I believe, all that have reached me from other collectors) belong to one or other of the four species tabulated below. I subjoin to the Table some remarks as to the other species recorded as British in the Monograph, but, at present, more or less enigmatical to me for various reasons.

SYNOPTIC TABLE OF BRITISH *ERIOCAMPOIDES* SPP.

1. Clypeus truncate ; wings evenly (slightly) infuscated throughout ; humeral area in hind-wing appendiculate—*i.e.*, the humerus and brachius meet long before the areal nerve enters the latter *æthiops*, F. (= *rosæ*, C.).
- Clypeus excised ; wings unequally infuscated ; humeral area in hind-wing *not* appendiculate, but receiving the areal nerve into itself at (or a little before) its apex 2.
2. Hind tibiæ black, *not* ringed with white at the base ; wings clear at base and apex, slightly clouded in the middle *limacina*, Retz.
- Hind tibiæ broadly ringed with white at the base 3.
3. Wings with only a fuscous streak under the stigma, clear at base and apex. The ♂ may be known at once by having hind-wings with “continuous external neuration.” (See Ent. Mo. Mag., 1903, p. 53)..... *varipes*, Kl.
- Wings with dusky bases, their apices only clear ; ♂ with neuration of hind-wing normal..... *annulipes*, Kl.

Further remarks as to British Eriocampoides spp.—Of the three remaining species described by Mr. Cameron under *Eriocampa* two, viz., *cinxia*, Klug, and *testaceipes*, C., are referred by Konow to the n. g. *Eriocampoides*.

* This character seems to be reliable, but it needs a good lens and a good light to see it satisfactorily.

I have examined two specimens called *cinxia*, and one called *testaceipes*, in the Cameron Coll. at S. Kensington. Of the former one is carded, and its clypeus invisible. The other seems to me to have a truncate clypeus and tibiæ ringed at the base with white. These are characters of *cinxia*, Klug; but having no knowledge of that species, except from descriptions, I do not venture either to assert or deny that the S. Kensington specimens really belong to it. I have thought it safer accordingly to omit them from my Table. As to the *testaceipes*—specimen—which I suppose to be the author's "type"—I am in still greater uncertainty. It appears to be an *Eriocampoides*, though even as to that I dare not be quite positive; and it certainly differs from the species known to me in having entirely yellowish hind tibiæ, and in other points. But there is obviously something abnormal and monstrous about this particular specimen. The abdomen is thoroughly deformed (so that neither Mr. Waterhouse nor I could make out whether it was a ♂ or a ♀), and appears to consist of at most five segments. Further, the specimen is "carded," which makes a thorough examination of it almost impossible. Accordingly, without further material, I prefer to express no opinion as to the validity or otherwise of the supposed species.

According to Thomson and Cameron the species with *excised* clypeus have generally* "two middle cellules" (*i. e.*, the cubital n. is *present*) in the hind-wings, those with *truncate* clypeus "only one." This may be true as a rule; but I have thought it best not to include in my Tables a character which is admittedly inconstant, especially as specimens of *Eriocampoides* have not unfrequently occurred to me having the cubital n. present in one hind-wing, and absent from the other!

HOPLOCAMPA, Hartig

The species of this genus are more elongate in form, and brighter in coloration than those of *Eriocampoides*. They are easily distinguished also, both from that genus and from *Phyllotoma*, by the "contracted" humeral area, and the filiform but 9-jointed antennæ. Some of them (*e. g.*, *pectoralis* and *testulinea*) might be hastily mistaken for *Dineura* spp., but the medial nn. in their fore-wings are not, as in that genus, "received in the same cell," nor is the humeral area "petiolate." I tabulate such species only as I know for certain to be British.

* Thomson says "*plerumque*." From the expressions used in the "Monograph," vol. i, p. 219, it seems that Mr. Cameron has found it so *always*; but I certainly have not done so.

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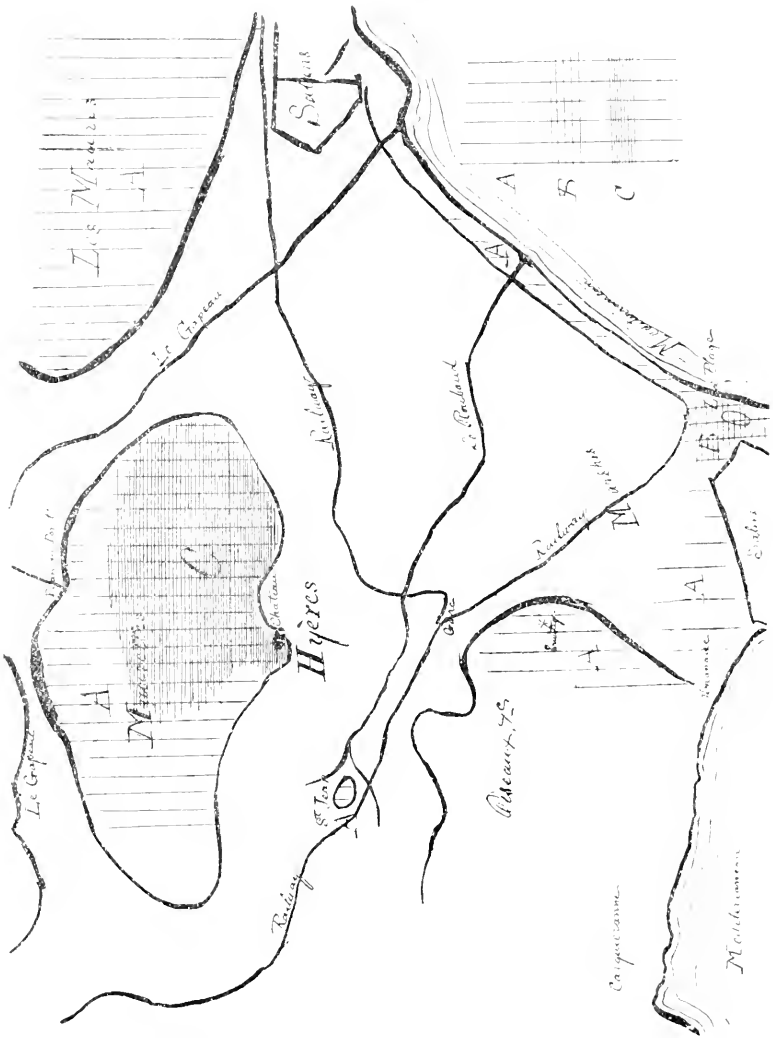
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SKETCH MAP OF VICINITY OF HYÈRES, SHOWING—

- A, supposed distribution of *H. hyerana*.
- B, locality referred to as "La Plage" on coast.
- C, " " " " "Les Maurettes" on hill.
- * Ermitage.

Scale, about one inch to a mile.

SYNOPTIC TABLE OF BRITISH *HOPLOCAMPA* SPP.

1. Clypeus deeply emarginate or excised. Head never entirely black above, thorax with at least the pronotum pale, dorsum of abdomen black only at the base (except in *testudinea*) 2.
- Clypeus scarcely emarginate. Head, thorax, and abdomen, except its extreme apex, black above 5.
2. The largest of the species (6—7 mm. long). Stigma black at base, pale at apex. Body pale fulvous-brown, with the vertex and the dorsal surface of the thorax and abdomen for the most part black and shining *testudinea*, Klug.
- Smaller species (3—5 mm. long) stigma unicolorous or only a little darker at its base 3.
3. Stigma slightly darker at base; ♀ with a large mark on the breast and the apex of the saw-sheath black. (Above, the thorax is mostly black; the abdomen so only at the extreme base; the head testaceous in the ♂ with a black spot enclosing the ocelli, blackish in the ♀ with two little yellow spots between the ocelli and the antennæ) *pectoralis*, Thoms.
- Stigma unicolorous. Body beneath entirely pale 4.
4. Clypeus roundly excised. Head and mesonotum very shining, practically impunctate. (Colour above very variable—thus the thorax may be mostly black, or black at the sides and testaceous in the middle, or streaked with black on the side lobes only, or testaceous altogether) *cratægi*, Klug.
- Clypeus angularly excised. Head and mesonotum dull, strongly and very densely punctured. (Thorax generally almost immaculate, sometimes, at any rate in the ♂, with black markings on the mesonotum)....
ferruginea, Pz.
5. Abdomen testaceous beneath. Antennæ, at least above, and stigma brownish. (Breast red in the ♂, black in the ♀) *chrysorrhæa*, Klug.
- Abdomen black beneath, testaceous only at apex. Antennæ distinctly reddish-yellow above and beneath. Stigma yellowish, rather darker at the base. (Breast, in both sexes, black) *rutilicornis*, Klug.

Mr. Cameron records also as British species—*gallicola*, Cam., from Devonshire, *alpina*, Thoms., from various Scotch localities (and also from England, “in Mr. Marshall’s collection”), and (in vol. ii, pp. 221-2) *plagiata*, Klug, from Weybridge. Of these, (1) *gallicola* is not represented in the South Kensington coll. Konow believes it to be identical with *pectoralis*, and to have been probably only a chance visitor in the galls from which Mr. Parfitt reared it: and in fact Mr. Cameron himself says that these galls were “undoubtedly

those of a *Nematus*." (2) *Alpina*, Thoms., is (*teste* Konow *in litt.*) a good species, differing from *cratægi* not only in its paler coloration but in certain points of structure. I have seen the specimens called *alpina* at South Kensington, and am not prepared to say that they do not belong to that species, with the description of which they certainly agree at least in colour. But as I have no first-hand knowledge of Thomson's species, and have seen specimens of *cratægi* (determined as such by Konow), which, to the best of my recollection, were as pale as the South Kensington insects, and otherwise resembled them, I do not feel that I ought to tabulate *alpina* among the species positively known to me as British. (3) *Plagiata*, Klug, has long been familiar to me as a continental species (Austria, Switzerland, &c.), but I never saw a British specimen, and it is not recorded by Thomson from Scandinavia. Herr Konow tells me it is pretty widely distributed in Central Europe, but more particularly in its southern parts. In recording it from Weybridge, Mr. Cameron himself speaks doubtfully as to its distinctness from *cratægi*, from which he separates it only by small colour-characters, which are certainly quite unreliable. As I have myself taken specimens of *cratægi* in the Weybridge district, coloured in accordance with Mr. Cameron's description of *plagiata*, I feel pretty sure that *plagiata*, C, is not Klug's species. The real *plagiata* is to be identified, not so much by its *colour*, as by certain points of structure. The excision of its clypeus is more angular (less rounded) than that in *cratægi*, and it has a very deep and conspicuous fovea on its "frons" between the antennæ, whereas in *cratægi*, though a corresponding fovea exists, it is much shallower and often hardly noticeable.

I may say that while *cratægi* in our southern counties is a very common and a very variable species, it seems to be rare in the North. (Only one specimen represents it in the Cameron Coll.). Hence it would not be surprising if some of its extreme aberrations should have been referred by Mr. Cameron to other species, owing to the absence in his district of the intermediate forms with which we are here (in Surrey, Hants, Sussex, &c.) so familiar.

(To be continued).

FURTHER NOTES ON THE *COLEOPTERA* OF LUNDY ISLAND.

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

AND

J. R. LE B. TOMLIN, M.A., F.E.S.

When we set sail from Instow on April 12th last year for Lundy, there were none of the usual misgivings, as to whether the sea was too rough for our small craft, but rather whether there was enough wind to take us across. Nor were they entirely without foundation, and eventually we had to set to and row for the last three or four miles, taking about seven hours for the journey of 21 miles. Consequently little collecting could be done that day, but we were afield early the next morning. Our cottage was beautifully situated on the edge of a sloping cliff over 400 feet high on the east side of the island, and commanded a splendid view of the landing place and of Rat Island, made familiar by the photographs in the illustrated papers in connection with the "Montagu" disaster.

Beetles were soon found in plenty, and we did not get further than 100 yards away from home the whole of that first morning. Examining moss and the roots of grasses, and turning over stones, was the chief work done both then and during the eight days we were on the island. In this period we found time to examine practically every part of Lundy, although some of it would no doubt have repaid further search. There were of course many more damp places than in August, 1905, and they produced a good many interesting species, but over the actual water-beetles we spent very little time. It was interesting to find several of the waterfall species. A few things such as *Hylastinus obscurus*, Marsh., were specially and successfully sought for, and the last morning was spent in examining rubbish from the cellar of the "General Stores"—the only shop on the island. Our mackintosh sheets monopolised the counter, and soon many of the islanders were enthusiastically pointing out such small fry as *Enicmus* or *Oligota*, and marvelling at their characters under a platy-scope lens! About eight species were thus added to the list, including *Ptinus fur*, L., and *Pentarthrum huttoni*, Woll.

Of the special local species, *Psylliodes luridipennis*, Kuts., was rather uncommon on the wild cabbage, but *Ceuthorrhynchus contractus*, Marsh., swarmed on this plant, quite three-quarters of the specimens belonging to the var. *pallipes*, Crotch. The degree of redness in the legs and rostrum of this form is very variable.

After two or three days' search, *Melanophthalma distinguenda*, Com., was discovered in great abundance at the roots of a kind of coarse grass, and several colour varieties occurred (*cf.* Ent. Mo. Mag., 2nd series, xvi, p. 274). The capture of the new British *Cardiophorus*, *erichsoni*, Buyss., has already been recorded (*ibid.*, xvii, p. 156), as also has *Laccobius sinuatus*, Mots. (*ibid.*, xviii, p. 6). We took a great many examples of *Stenus ossium*, Steph., to ascertain whether they all belonged to the var. *insularis*, Joy, but curiously enough not a single one is quite as small and narrow as the two from which the variety was described; the series, however, shows a perfect gradation from the variety to the type form. One specimen of *Scydmænus* remains unidentified, and appears to be different from any on the British list.

On critically examining our captures, we find that we have added as many as 201 species to the list already published (*ibid.*, xvii, p. 1). This brings the total up to 462, a surprising number for a small island of just over one thousand acres. Considering the number of species of which only single specimens occurred, and that there are 43 of Wollaston's and Smith's captures which we have not confirmed, it is fairly safe to assume that there are still a good many unrecorded species inhabiting the island.

The following is a list of beetles new to Lundy, and we have thought it convenient to mark those of special interest with a †.

Notiophilus palustris, Duft.; *Leistus fulvibarbis*, Dj.; *Loricera pilicornis*, F.; *Dyschirius globosus*, Hbst.; *Acupalpus eriguus*, v. *luridus*, Dj.; *Bradycellus distinctus*, Dj.; *B. verbasci*, Duft., *B. similis*, Dj.; *Harpalus latus*, v. *erythrocephalus*, F., *H. attenuatus*, Steph., *H. anxius*, Duft., *H. neglectus*, Dj.; *Stomis punicatus*, Pz.; *Pterostichus minor*, Gyll., *P. diligens*, Stm.; *Amara ovata*, F., †*A. lunicollis*, Schiöd., *A. familiaris*, Duft.; *Pristonychus terricola*, Hbst.; *Anchomenus fuliginosus*, Pz.; *Bembidium mannerheimi*, Sahl.; *Dromius melanocephalus*, Dj.; †*Hydroporus longulus*, Muls., †*H. discretus*, Fairm.; *Colymbetes fuscus*, L.; *Gyrinus natator*, Scop.; *Philodrus melanocephalus*, Ol.; *Anacæna globulus*, Pk.; *Helochares lividus*, Först.; †*Laccobius sinuatus*, Mots.; *Chaetarthria seminulum*, Pk.; *Sphæridium scarabæoides*, L., *S. bipustulatum*, v. *semistriatum*, Cast.; *Ceryon depressus*, Steph., *C. hæmorrhous*, Gyll., *C. melanocephalus*, L., *C. flavipes*, F., *C. granarius*, Er.; *Cryptopleurum atomarium*, Ol.; *Oxyropa longiuscula*, Gr., *O. hæmorrhœa*, Sahl.; †*Atemeles emarginatus*, Pk.; †*Myrmedonia limbata*, Pk.; *Callicerus obscurus*, Gr.; *Alianta plumbea*, Wat.; *Homalota hygrotopora*, Kr., *H. angustula*, Gyll., *H. exilis*, Er., *H. triangulum*, Kr., *H. palustris*, Kies., *H. nigra*, Kr., *H. sordidula*, Er., *H. longicornis*, Gr.; *Oligota inflata*, Mann., *O. pusillima*, Gr.; *Mylæna infuscata*, Mat., *M. brevicornis*, Mat.; †*Hypocyptus lœviusculus*, Mann.; *Tachyporus pallidus*, Shp.; †*Lamprinus saginatus*, Gr.;

Megacronus analis, Pk.; *Mycetoporus lepidus*, Gr.; †*Heterothlops pravia*, Er., *H. dissimilis*, Gr.; *Quedius mesomelinus*, Marsh., *Q. fuliginosus*, Gr., *Q. molochinus*, Gr., *Q. maurorufus*, Gr., *Q. attenuatus*, Gyll.; *Leistotrophus murinus*, L.; *Staphylinus erythropterus*, L.; *Philonthus splendens*, F., *P. laminatus*, Creutz., *P. fimetarius*, Gr., †*P. albipes*, Gr., †*P. vernalis*, Gr., *P. nigrita*, Nordm., *P. micans*, Gr.; *Actobius cinerascens*, Gr.; *Xantholinus punctulatus*, Pk., *X. longiventris*, Heer; *Othius fulvipennis*, F., *O. melanocephalus*, Gr.; *Lathrobium elongatum*, L., *L. fulvipenne*, Gr., *L. brunripes*, F.; *Cryptobium glaberrimum*, Hbst.; *Stilicus affinis*, Er.; *Medon brunneus*, Er.; *Sunius angustatus*, Pk.; *Pæderus riparius*, L.; *Eræsthetus scaber*, Gr., *E. ruficapillus*, Lae.; †*Stenus guynemeri*, Duv., *S. providus*, v. *rogeri*, Kr., *S. buphtalmus*, Gr., *S. brunripes*, Steph., *S. flavipes*, Steph., *S. nitidiusculus*, Steph., *S. paganus*, Er.; *Oxytelus rugosus*, F.; *Trogophlæus elongatulus*, Er.; *Lestera punctata*, Er.; *Philorinum sordidum*, Steph.; *Homalium læviusculum*, Gyll., *H. concinnum*, Marsh.; *Proteinus ovalis*, Steph.; *Megarthus affinis*, Müll., *M. depressus*, Pk.; *Phlæobium clypeatum*, Müll.; *Calyptomeres dubius*, Marsh.; *Clambus armadillo*, De G.; †*Agathidium lævigatum*, Er.; †*Silpha opaca*, L., *S. rugosa*, L., *S. atrata*, L.; *Choleva agilis*, Ill., *C. fusca*, Pz., *C. nigrita*, Er.; *Catops sericatus*, Chaud.; *Neuraphes angulatus*, Müll.; *Scydmaenus scutellaris*, Müll., *S. sp. ?*; *Pselaphus heisei*, Hbst.; *Tychus niger*, Pk.; *Bythinus puncticollis*, Den., *B. bulbifer*, Reich.; *Bryaxis juncorum*, Leach; †*Euplectus ambiguus*, Reich.; *Trichopteryx grandicollis*, Mann., *T. fascicularis*, Hbst.; *Ptenidium evanescens*, Marsh.; *Orthoperus atomus*, Gyll.; *Corylophus cassidioides*, Marsh.; *Olibrus particeps*, Muls.; *Stilbus testaceus*, Pz.; *Coccinella hieroglyphica*, L.; *Coccidula rufa*, Hbst.; *Hister bimaculatus*, L.; *Nitidula bipustulata*, L., *N. rufipes*, L.; *Omosita discoidea*, F.; *Meligethes æneus*, F.; *Monotoma brevicollis*, Aub.; *Cartodere ruficollis*, Marsh.; *Corticaria denticulata*, Gyll., *C. fulva*, Com.; *Cryptophagus saginatus*, Stm., *C. cellaris*, Scop., *C. bicolor*, Stm.; *Atomaria fuscata*, Sch., *A. ruficornis*, Marsh.; *Typhæa fumata*, L.; *Cytilus varius*, F.; *Simplocaria semistriata*, F.; *Aphodius fimetarius*, L., *A. pusillus*, Hbst., *A. punctatosulcatus*, Stm., *A. luridus*, L., and var. *nigripes*, F., *A. depressus*, Kug.; *Geotrupes mutator*, Marsh.; †*Cardiophorus erichsoni*, Buys.; *Athous hæmorrhoidalis*, F.; *Agriotes obscurus*, L., *A. pallidulus*, Ill.; *Necrobia violacea*, L.; *Ptinus fur*, L.; *Phytodecta olivacea*, Först.; *Phædon cochleariæ*, F.; *Lochmæa suturalis*, Th.; *Longitarsus holsaticus*, L., *L. atricillus*, L., *L. membranaceus*, Foudr., †*L. gracilis*, v. *poweri*, All.; *Psylliodes cuprea*, Koch.; †*Crypticus quisquilius*, L.; *Opatrum sabulosum*, L.; *Apion immune*, Kirb., *A. loti*, Kirb.; *Otiorrhynchus scabrosus*, Marsh., *O. picipes*, F., *O. muscorum*, Bris.; *Trachyphlæus scaber*, L.; †*T. laticollis*, Boh.; *Cænopsis waltoni*, Boh.; *Sciaphilus muricatus*, F.; †*Sitones cambrius*, Steph., *S. regensteineus*, Hbst., †*S. lineellus*, Gyll., *S. tibialis*, Hbst., *S. suturalis*, Steph.; *Hypera variabilis*, Hbst., *H. trilineata*, Marsh.; *Liosoma ovatum*, Clair.; †*Bagous limosus*, Gyll.; †*Gymnetron beccabungæ*, L.; *Cionus pulchellus*, Hbst.; *Acalles plinoides*, Marsh., *A. turbatus*, Boh.; *Ceuthorrhynchus pollinarius*, Först.; *Rhinoncus pericarpus*, L.; †*Pentarthrum huttoni*, Woll.; *Caulotrypis æneopiceus*, Boh.; †*Hyglastinus obscurus*, Marsh.

APHODIUS STURMI, HAROLD, NOT A BRITISH INSECT.

BY THE REV. W. W. FOWLER, D.Sc., M.A., V.P.L.S.

In the Entomologists' Record, xv, p.92, Mr. Frank Bouskell records a specimen of an *Aphodius* taken near Plymouth by Mr. J. H. Keys, as *A. sturmi*, Harold, and says that Herr Reitter had confirmed its determination. Mr. Keys has kindly sent me the specimen for examination, and it is nothing, I feel sure, but a very small and somewhat immature example of *A. nitidulus*, F.; I have one in my own collection which is only a little larger. It is certainly not *A. sturmi*, which is narrower, more compact and parallel-sided and subcylindrical, and differs in punctuation, in the denticulation of the anterior tibiæ and in the spurs at the apex of the intermediate tibiæ. In all these respects Mr. Key's insect agrees with *A. nitidulus*, except that the punctuation of the thorax is rather more remote; in *A. sturmi*, however, it is closer than in typical *A. nitidulus*. *A. sturmi*, therefore, cannot claim a place in the British list.

I think that all Coleopterists interested in the British fauna will agree, firstly, that no species should be introduced on a single specimen, except under exceptional circumstances, and never in the case of closely allied species, where any doubt can possibly exist; and, secondly, that the determination of continental authorities should not be accepted as absolutely final, without being verified, as is too often the case.

While writing on this subject I should like to point out that *Lathrobium lævipenne*, Heer, has quite recently been introduced on a single female specimen, which has been confirmed by Herr Ganglbauer; the male characters of the species are very peculiar, and had it been a male, there might have been no need, perhaps, to wait for further captures, but any Coleopterist might be deceived by a single female specimen of the closely allied species of the first group of the genus *Lathrobium*, and, although the record may very likely be correct, still it would be well if it received further confirmation.

Earley Vicarage, Reading:
January 14th, 1907.

[Since the above was written, I find that the male of *Lathrobium lævipenne* has been taken, and therefore the species is authenticated as British.

This does not, however, overthrow my point, that it was introduced as British on a single female specimen, and that we ought not to be so ready to take the *ipse dixit* of a single continental authority without verification; at any rate in the case of obscure and easily confused groups.]

PROGRESSIVE MELANISM :
FURTHER NOTES ON *HASTULA HYERANA*, MILL.

BY T. A. CHAPMAN, M.D., F.Z.S.

(Continued from Vol. XLII, p. 246).

PLATE I.

One of the interesting points that arise from my 1906 experience with *Hastula hyerana* concerns the larva. My observations on the larvæ at Hyères in 1904 and in Sicily in 1905, went to show great differences in the larval economy in the two habitats. I correlated this with the very different habits of its food-plant at the two places. Therein, I believe, I was quite right. In 1906, however, I found that both the plant and the larva at Hyères were less markedly of the Hyères habit observed in 1904, and partook in some degree of the Sicilian peculiarities noted in 1905. It follows of course that I was wrong in supposing that the differences were racial as between the *hyerana* at Hyères and that in Sicily. The conclusion the 1906 facts point to is, that the larval habits are probably very nearly the same at both places, and are variable from year to year according to the luxuriance or otherwise of its food-plant.

It would seem that in 1904 I hit upon a year when the *Asphodel* grew very rankly at Hyères, and on precisely opposite conditions at Taormina in 1905. At Taormina the preceding winter had been unusually severe, there having been frost intense enough to grievously damage the lemon trees and in places to kill the *Opuntias*, so that, though I do not know what is the normal aspect of *Asphodel* at Taormina, its wretched condition in many places in 1905 may not have been an ordinary one, but due to the plants having made less growth than usual through the winter.

However this may be, the *Asphodel* was not so luxuriant at Hyères in 1906 as in 1904; large plants conspicuously damaged by the presence of ten to twenty larvæ of *H. hyerana* were not seen, single larvæ were common, and three or four to a plant was a maximum rarely exceeded, and indeed infrequent.

When there was only one larva to a plant the effect was inconspicuous, although the presence of the larva was almost always evident on a careful look at the plant, and it was quite unnecessary to handle it. A majority of the plants flowered freely, and it was very common to find the solitary larva that the plant afforded burrowing in the flower-head, which consequently showed a good deal of deformity when sufficiently advanced.

In this respect the conditions of 1906 were much nearer than those of 1904 to those Millière describes; he found his larvæ apparently altogether in the flowering stems.

These differences in the larval habits had one other very curious result. The parasites affecting the larvæ in 1904 were confined to *Xanthandrus comtus*. Of this fly I had more than a score against 56 imagines of *H. hyerana*. The Sicilian larvæ produced Tachinid and Hymenopterous parasites and no *X. comtus*, though that fly existed there.

In 1906, instead of *X. comtus* being in number about one to three of the bred moths, only four or five larvæ were met with, although several hundred moths were bred. The *hyerana* larvæ were not sufficiently gregarious to attract, or if attracted to permit of the rearing of the fly. On the other hand several Tachinid flies emerged as well as two Hymenopterous parasites, all of common species of omnivorous habits.

That *X. comtus* could not thrive on more or less solitary larvæ is obvious, but why should these be more readily found by Tachinids and Ichneumons? Possibly a plant capable of entertaining a number of larvæ also enabled them to hide more deeply.

Without attaching much importance to, or expecting any serious result from, the procedure, it occurred to me to keep separate the larvæ of *H. hyerana* collected from two localities at Hyères. These localities happen to be almost exactly three miles apart, and have between them in any moderately direct route a gap of at least a mile and a half absolutely without *Asphodel*. The result, however, was very remarkable, and is the first definite fact offering the possibility of a clue to the significance of melanism in the moth.

From the one locality the dark specimens were only 14 per cent. of the moths bred, in the other 48 per cent. There were a sufficient number of moths bred to make these figures thoroughly trustworthy. In the one case 169 moths with 23 dark specimens, and in the other 246 moths with 117 dark ones.

In the first set were five *ab. marginula*, in the second only one. If these be called dark ones, then the percentage would be 17 per cent. and 48 per cent. (in round figures).

The first locality with few dark specimens was "La Plage," the sea shore opposite Hyères; the second with many dark specimens was the "Maurettes," the low hills behind Hyères.

The interval separating the two localities, together with the

different constitution of the moths, suggests that there is some effective segregation of the two colonies from each other. By any direct route they are a mile and a half apart, by some long roundabout way they may be still further, but for all I know may be in more immediate relationship to each other. The picture I frame for myself of them is that the hill form desires to be entirely dark, the shore form to be entirely light, but that they are not separated from each other strictly enough to allow this tendency its full force, but the shore form affects that on the hills and keeps it more or less pale, whilst in return it affords material for producing the smaller proportion of dark forms that occur at La Plage. It is not, however, necessary to assume that the tendency at either place would, if undisturbed, produce a pure dark or light race. At the same time, I think the shore form left to itself would be light, but the hill form would not be entirely dark, not at any rate whilst the pale form is still probably entrenched in a vigorous heredity.

A tolerably coherent picture results from taking this view, in connection with my hypothesis of recent immigration, and combining therewith a careful analysis of Millière's report of how and where he found his larvæ. The little detail given by Millière was passed over by me as a mere gossiping account of how he met with the larva; it may have been so meant by Millière himself. It is, however, very clear and lucid, and fits in admirably with the other facts to support the hypothesis of immigration. He says—

“In April, 1855, I pursued Entomology in the neighbourhood of Hyères. In exploring places near this town I was struck by the quantity of *Asphodelus ramosus* (= *microcarpus*) spread over all parts of the country, but chiefly on the stony hills when warmly exposed. This lily, whose appearance was a novelty to me, interested me in the most lively way. It exhibited tufts of leaves, long and slender and of a splendid green, from the middle of which rose a thin, branched stem, ending in a large spike of white and purple rayed flowers. Such was the *Asphodel* as I saw it under the beautiful skies of Provence, amongst a flora that seemed untouched by any winter. I suspected that some larvæ ought to be found on this green, healthy and strong plant. I searched for many an hour without result.”

This is the item which I think important. Having, though fifty years later approached the country round Hyères, in much the same spirit as did Millière himself, I entertain no doubt that the district in which he made this vain search was on the Maurettes, the low hills

behind the town; it is the nearest and most attractive ground, and one where the *Asphodel* would first attract attention. Here Millière could find no *H. hyerana*. I submit that the reason was that at that date it did not exist there. He proceeds -

"Yet, when I got to the top of a little hill lying between the town and the arm of the sea which separates the 'Iles d'Hyères' from the continent, I met, at a place called l'Ermitage, with a further large quantity of this elegant lily so pleasing to the sight. I quickly observed several stems pierced near their summits, &c."

As soon as he examined a locality where *hyerana* actually existed he found it at once. Knowing the ground and species as I do, I cannot for a moment believe that Millière could have missed the insect on the Maurettes had it been there, and there is in my mind no doubt that the Maurettes was the district over which he failed to find it. It is difficult, indeed impossible, to suggest any other place where he could spend "the long hours" during which he says he searched in vain.

Now the Hermitage, better known now as Costebelle, is an outlier of the Plage (shore) area, and is separated from the Maurettes by nearly two miles.

My view is that *H. hyerana* had not very long before (10, 20, 30 years?) reached La Plage and was now well established there, but had not yet succeeded in crossing over to the Maurettes, which it did shortly after, either directly or by a route much longer, but possibly with shorter gaps, *via* Bormette and the Maures mountains. On reaching the Maurettes, or probably on reaching the Maures, if it came that way (it may, if so, have been on the way at Millière's date), melanism appeared, and was found so useful that it reached its present high percentage.

I am indebted to Mr. Raine and Mr. Powell for some detailed information about the distribution of *Asphodel* at Hyères, which extends my more limited knowledge, and entirely confirms the picture I had, on fewer data, formed of it.

I have made a rough map of the vicinity of Hyères, in order to show the relations to each other of the "La Plage" and "Les Maurettes" localities of *hyerana*, the position of Millière's locality "l'Ermitage," and their relation to the probable range of the insect at Hyères, which is very much the area of *Asphodelus microcarpus* there.

It shows A (upright lines) the supposed distribution of *H. hyerana* at Hyères; B (wide cross lines) the source of the "La Plage" specimens; C (close cross lines) the habitat of the "Les Maurettes" race. Except that I know that the insect occurs some miles further to the east, the facts represented by B and C are all that I can positively assert, but the blank portions of the map as uninhabitable by *H. hyerana*, except perchance by a stepping stone here and there, may be accepted as fairly trustworthy.

(To be continued).

NOTES ON THE LEPIDOPTERA OF AROSA AND THE SPLÜGEN
AND SAN BERNARDINO PASSES.

BY A. H. JONES, F.F.S.

From what I can gather, Arosa, lying at an elevation of 5900 feet, has been little worked entomologically; from the evidence of a resident friend of mine that a butterfly net is seen on rare occasions, it may therefore be of interest to place on record the species of *Lepidoptera* I noticed during my stay between July 7th and 26th last. One great attraction to this district is the pine woods, intersected by various paths which lead up to the tree limit in one direction, and down to the river Plessur in another, giving an endless variety of localities to explore. The country somewhat reminds one of the Upper Engadine, from which, as the "crow flies," it is distant about 40 miles in a north-westerly direction. Arosa is reached from Coire by diligence and being a climb of 4000 ft. is a very tedious business and it is better to walk by the old road taking the diligence as far as Tschierschen, but to this route I will refer later.

Although the country is so truly beautiful, the mountains in the immediate vicinity are disappointing as the highest does not reach 10,000 feet; there are no glaciers and in the summer practically little snow, only here and there small patches on the mountain sides. Such was the appearance of Arosa when I reached it on July 8th, but in a few days how all was changed! Clouds for several days had been sweeping up and down the valley, the temperature fell on July 12th, and for two days the snow fell intermittently, covering the mountains, trees, and meadows, presenting the appearance of the depth of winter; although the snow lay six inches deep in the meadows, it had all disappeared in two days under the influence of the warm

sun: butterflies were then disporting themselves as usual and Arosa was again as I found it on my arrival.

The locality does not appear to be so rich in species as the Upper Engadine. *Erebi*s were not plentiful and I saw but one specimen of *Parnassius*, probably *delius*. *Pieris napi*, var. *bryoniae*, was extremely numerous in one spot near the river Plessur where its food-plant, *Biscutella laevigata*, grew in great abundance; another butterfly, *Lycæna minima*, was to be seen in hundreds together, resting on the muddy roads. I have seen *L. argus* and *corydon* in countless numbers in the Alps under similar conditions but never *minima*.

On July 18th, a cloudless day, I walked over the Furkahöhe Pass (8020 ft.) to Davos Platz, which is 1000 ft. lower than Arosa. At the top of the Pass a dark form of *Erebia glacialis* was not uncommon flying over the screes and some of the specimens were distinctly v. *pluto*. The following day I returned by way of the Strela Pass (7800 ft.) and Langwies, but did not meet with anything of particular interest.

I returned to Coire by the old road already referred to. On reaching Tschierschen *Erebi*s suddenly became very abundant and that local species *æme* was in great numbers, but I dared not linger, as storm-clouds were gathering in every direction and I reached the inn only just in time for shelter.

On July 28th I left Coire for Splügen, by way of Thusis. Having the day before me I collected along the Via Mala. Butterflies, such as *Argynnis paphia* and other species met with at a low elevation, were extremely numerous. At Splügen I stopped at the Bodenhaus and Post, a most comfortable hotel for a prolonged stay. Just beyond the village the road bifurcates—to the left over the Splügen Pass, and to the right over the San Bernardino Pass—I made excursions to the top of both passes, but did not meet with any particular species. The best collecting ground, during my short stay, I found to be on the Splügen Pass, just beyond the first tunnel. Here *Erebia eriphyle* was fairly common, and *Parnassius delius* in considerable numbers. I also took a specimen of *Plusia bractea* flying in the sunshine. I left Splügen on August 4th.

The following is a list of the *Lepidoptera* met with; I am indebted to Mr. Louis B. Prout for kindly naming the more obscure species.

On one or two nights at Arosa the electric light proved very

attractive, but the lamps being suspended out of reach of the net only a small portion of the specimens seen were captured.

Papilio machaon.—Arosa, occasional specimens.

Parnassius apollo.—Sufers, 4673 ft., near Splügen, common; *delius*, Splügen Pass, common.

Pieris brassicae.—Arosa; *napi*, ab. *bryoniae*.—This species was extremely common at one spot near the river Plessur. At first I could not account for its abundance, having hitherto only taken a few specimens in a day, but the mystery was solved by finding that the ground was carpeted with the plant *Biscutella levigata*, upon which I detected the females depositing their ova. I collected about 100, which I forwarded to my friend, Mr. Charles Fenn, in England, and he has successfully obtained about 30 pupæ. He states that the larvæ fed freely on "Garden Rocket." The rapidity with which the larvæ fed up seemed to be amazing, for they were all in pupæ by the beginning of August. I may mention that no imagines have appeared this autumn.

Euchloë cardamines, occasionally, Arosa, July 8th to 15th.

Leptidia sinapis, occasionally, Arosa.

Colias pateno, scarce, San Bernardino Pass; *phicomone*, rather common, Splügen.

Gonepteryx rhamni, occasionally, Arosa and Splügen.

Limenitis sibylla, Via Mala.

Pyrameis cardui, very worn, Splügen, August 2nd.

Vanessa polychloros, one specimen, Arosa, 5500 ft.; *io*, *urticeæ*, fairly common, Arosa.

Melitæa parthenie, *athalia*, and *dictynna* (dark specimens), not uncommon, Arosa.

Argynnis selene, *euphrosyne*, a few, Arosa; *pales*, Splügen Pass, common, August 1st; ab. *napeæ*, several fine examples; *thore*, Arosa: a very beautiful series, including three females; this butterfly was very local, only occurring at one spot on the "Waldweg;" I was very anxious to find the food-plant of the larva, and I watched the females for some time, but failed to detect them depositing ova; *amathusia*, Arosa and Splügen, fairly common; *lathonia*, Sufers, Splügen, a few, August 3rd; *paphia*, very abundant, Via Mala; I took two ab. *valezina*: these differ from the New Forest specimens in that the ground colour is slightly lighter; *aglaia*, *niobe*, and *adippe*, fairly common, Splügen.

Melanargia galathea.—I took a very beautiful variety of the ♀, the markings on the under-side of the hind-wing being very pronounced and spreading over the wings.

Erebia epiphron, *melampus*, Arosa, a few; *eriphyle*, one or two at Arosa, fairly common on the Splügen Pass, mostly females; *pharte*, Splügen, not common; *æme*, very abundant, but local, Tschierschen, 4430 ft., July 26th; *stygne*, Arosa, not very common; *glacialis* and ab. *pluto*, Furkahöhe, 8020 ft., Arosa, July 18th, not uncommon; *gorge*, Splügen Pass; *æthiops*, Via Mala; *euryale*, Arosa, a few, but on the Splügen Pass they were simply in hundreds, arising in clouds from the muddy places in the road; *ligea*, Via Mala, common; *lappona*, common on the lower slopes of the Furkahöhe; *tyndarus*, Strela Pass, a few.

Pararge hiera, two fine; *micra*, occasionally, Arosa.

Cænonympha pamphilus, Sufers, August 3rd; *arcunia*, v. *satyrion*, Arosa.

Chrysophanus virgaureæ, Splügen; *hippotoë*, v. *eurybia*, San Bernardino Pass; *dorilis*, v. *subalpina*, Splügen.

Lycæna pheretæ, Strela Pass, July 19th; *astrarche*, ab. *allous*, *eros*, *icarus*, Arosa; *hylas*, Splügen; *corydon*, Sufers; *eumedon*, *semiargus*, fairly common; *minima*, very abundant, Arosa; *arion*, a very small form, Arosa, not common.

Hesperia alveus, Arosa scarce.

Stilpnotia salicis, Esp., electric light, Arosa.

Acronycta euphorbiæ, Hb., and *myricæ*, Gn., several, electric light, Arosa.

Agrotis exclamatoris, Esp., electric light, Arosa.

Mamestra pisi, Esp. (similar to Scotch specimens), electric light, Arosa; *dentina*, Esp. (small), electric light, Arosa.

Dianthæcia nana (*conspersa*, S. V.), electric light, Arosa.

Miana strigilis, Esp., electric light, Arosa.

Rhizogramma detersa, Esp., electric light, Arosa.

Caradrina cinerascens, Tgstr., v. *rougemonti*, one specimen, electric light, Arosa.

Plusia bractea, Ib., flying in the sunshine, Splügen Pass; this is the second time I have taken the species flying in the daytime; *pulchrina* (v. *aurum*, Gn.), electric light, Arosa.

Cymatophora duplaris, Gn., electric light, Arosa.

Acidalia fumata, Steph., electric light, Arosa.

Anaitis præformata, Hb., electric light, Arosa.

Larentia fluctuata, Hb., *montanata*, Schiff., *spadicearia*, Schiff. (*ferrugata*), *verberata*, Scop., *nebulata*, Tr., *incultaria*, H.-S., all at electric light, Arosa; *lugubrata*, Stg. Cat., Maran, Arosa; *molluginata*, Hb., electric light, Arosa; *affinitata*, Steph., electric light, Arosa (interesting aberration, note Mr. Prout).

Selenia lilunaria, Esp., electric light, Arosa.

Gnophos myrtillata, Thub., rather common, Arosa; *cælibraria*, H.-S., Arosa.

Dasydia tenebraria, Esp.: this interesting species was not uncommon on the Furkahöhe Pass, 8020 ft., flying in company with *Erebia glacialis*, ab. *pluto*: curious in the neighbourhood of so much snow to find only two species both perfectly black.

Ematurga atomaria L., a few, Arosa.

Diacrisia saunio (*russula*, Hb.), several, electric light, Arosa.

Arctia caja, Esp., not uncommon, electric light, Splügen.

Endrosa aurita, a few, Arosa, also at light.

Hepialus humuli, L., Arosa.

Titanio schrankiana, Hochenw., Arosa.

Pyrausta uliginosalis, Steph., Arosa.

Shrublands, Eltham:

November 19th, 1906.

ADDITIONS TO THE LIST OF *HYMENOPTERA-ACULEATA*
OCCURRING IN THE ISLAND OF GUERNSEY.

BY W. A. LUFF, F.E.S.

In this Magazine for June and July, 1902, and October, 1903, Mr. Edward Saunders published a complete list of the *Hymenoptera-Aculeata* then known to occur in the Islands of Jersey, Guernsey and Alderney. During the present year Mr. E. D. Marquand has devoted a great deal of time and energy to collecting the Guernsey species. The specimens captured have been submitted to Mr. E. Saunders for examination and naming, the result being that 26 species are additions to the list. The most interesting of these are *Diodontus friesei*, Kohl, a non-British species, which had, however, been previously taken in Jersey by Mr. Saunders, a species of *Halictus* of the *subauratus* group, but worn and difficult to determine for certain, and *Cælioxyys afra*, Lep., which Mr. Saunders informs me is quite a southern species, common in Algeria, Spain, &c. In Guernsey they were flying in company with *Megachile argentata*, Fab.

The following are the additions to the Guernsey list:—

Mutilla rufipes, Ltr., taken by Master Cecil Marquand at St. Martin's. *Pompilus unguicularis*, Thoms., Saints' Bay, June 2nd; *P. cinctellus*, Spin., Moulin Huet Bay, July 17th. *Salix pusillus*, Schiödt, L'Aneresse Common, June 5th. *Astutus boops*, Schr., two specimens, Moulin Huet Cliffs, July 17th. *Tachysphex unicolor*, Pz., Icart Cliffs, July 28th; *T. pectinipes*, L., L'Aneresse, June 19th. *Diodontus friesei*, Kohl, Creux Mahie, June 12th, L'Aneresse, June 19th, Saints' Bay, June 28th. *Gorytes tumidus*, Pz., Petit Port Cliffs, August 1st; *Nysson dimidiatus*, Jur., Petit Port Cliffs, August 1st; *N. spinosus*, Fab., Saints' Bay, July 14th. *Crabro albilabris*, Fab., Saints' Bay, June 28th. *Halictus quadri-notatus*, Kirb., Saints' Bay, June 2nd, Creux Mahie Cliffs, June 12th, Saints' Bay, June 28th; *H. brevicornis*, Schk., Icart Point, May 19th, Fermain Bay June 4th, Petit Bo, June 13th; *H. nitidiusculus*, Kirb., Saints' Bay, April 11th, Petit Bo, April 12th, Moulin Huet, April 17th, Saints' Bay, April 21st. *Halictus?* near *subauratus*, Ross., Moulin Huet Cliffs, July 17th. *Andrena pilipes*, Fab., Vazon Bay, July 18th; *A. fulvago*, Chr., Petit Port, June 9th, St. Martin's Point, June 26th, Petit Bo, June 23rd and 30th; *A. nana*, Kirb., Petit Bo, June 23rd and 30th, Fermain Bay, May 15th and June 4th; *A. minutula*, Kirb., Petit Bo, June 23rd; *A. wilkella*, Kirb., Moulin Huet Bay, June 17th, Saints' Bay, June 21st. *Dasypoda hirtipes*, Ltr., Vazon Bay, July 18th. *Nomada fucata*, Pz., Icart, July 28th. *Cælioxyys afra*, Lep., four specimens, Vazon Bay, July 18th. *Megachile circumcincta*, Lep., L'Aneresse Common, June 19th. *Podalirius quadrimaculatus*, Pz., L'Aneresse Common, July 12th.

The following species taken by myself in Sark have not been recorded from any of the other Islands:—

Salix obtusiventris, Schiödte, August 20th, 1902. *Nysson interruptus*, Fab., July 10th, 1906. *Andrena humilis*, Imh., July 12th, 1906.

Brock Road, Guernsey :
November, 1906.

NOTE ON THE ABOVE.

The occurrence of *Diodontus friesei*, Kohl, in the Channel Islands is of great interest. I took a few in Jersey, but did not record it, as at the time I thought it was only *minutus*; the ♂ may be easily known from that species by the form of the intermediate metatarsi—in *minutus* these are much produced and widened towards the apex, in *friesei* they are bent but hardly widened; like *minutus* it has the mandibles yellow. Hitherto *friesei* has only been recorded as a South European and Mediterranean species.

The capture of *Cælioxya afra* is I think still more interesting. In this country I have sought in vain for any of the small red tailed *Cælioxya* associating with *Megachile argentata*. I was much pleased to find *Cælioxya brevis* with *M. argentata* in Jersey, and now *C. afra* turns up with it in Guernsey.

It is curious that in each island *Megachile argentata* should have a different species to associate with it; possibly, however, both of them may yet be found in the two islands. 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. They are both common in South Europe; *C. brevis* has occurred in Central Europe, but I have always looked upon *C. afra* as quite a southern form.—E. SAUNDERS.

HALICTUS BREVICORNIS, SCHRANK, AN ADDITION TO THE LIST OF BRITISH HYMENOPTERA.

BY EDWARD SAUNDERS, F.R.S.

I met with both sexes of this insect some years ago somewhat plentifully in Jersey, and since then have kept a careful look out for *brevicornis* in this country. It was not, however, till last summer, when collecting at Southbourne, near Christchurch, Hants, that I succeeded in meeting with the species. On the wing it so closely resembles *villosulus*, K., in the ♀ sex (the only one I was able to get) that it might be very easily passed over, and I feel sure that had I not made it a rule, since my visit to Jersey, to examine suspected *villosulus* pretty carefully before rejecting it, I should have failed to recognise *brevicornis*.

The chief distinguishing character of the ♀ which appeals to one is the greyer

look of the insect. Further examination shows several other characters, but these are not recognisable in the net. In the first place the hairs of the thorax are paler than in *villosulus* and rather more abundant, and the puncturation is finer. The wings are unusually pellucid, and their nervures, especially the stigma, are very pale; the propodeum is rather longer and more rounded posteriorly, and its sculpture rather finer; the posterior margins of the abdominal segments are pale, and the abdomen is clothed at the sides and on the apical segments with greyish-white hairs; the whole insect appears to be less densely black than *villosulus*. The ♂ is quite distinct from *villosulus*, resembling more closely that of *breviceps*; it is, however, generally a trifle larger, its face is rather longer, and the joints of the flagellum are wider than long. The wings are pellucid and pale-veined as in the ♀.

Eight ♀ obtained after many hours' collecting along the coast between Southbourne and Hengistbury Head on *Hypochaeris radicata* amongst numbers of *villosulus*, July, 1906. During the last few days, I have seen two or three females, sent to me by Major Nurse of Bury St. Edmund's, taken at Eastbourne in August, 1906.

St. Ann's, Woking:

January 5th, 1907.

A NEW BRITISH FLEA.

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

TYPHLOPSYLLA ISACANTHUS, *sp. nov.*

Allied to *Typhlopsylla pentacanthus*, but differs in the following characters:—

The fifth genal spine, instead of being short and broad as in *T. pentacanthus*, is the same shape as the others, being about equal in length to the second. This fifth spine in *isacanthus* is not placed so far dorsally as it is in *pentacanthus*. The frontal notch of the head is more developed in the present species. In *T. isacanthus* the

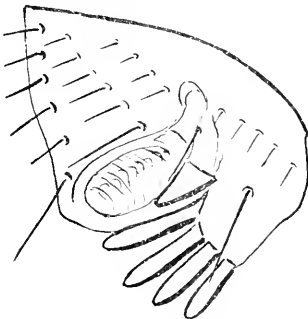


Fig. 1.—*pentacanthus*.

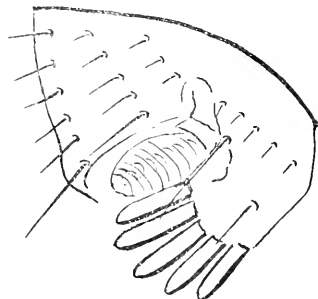


Fig. 2.—*isacanthus*.

bristle placed at the anterior edge of the antennal groove is larger than in *T. penta-*

canthus; while the single long bristle situated on the side of the frontal portion of the head is nearer to the genal spines, and the pronotal comb consists of twenty-two teeth instead of fourteen, the most ventral spines being small in both species.

Only the ♀ of this species is known. A single specimen was taken from a Bank Vole (*Hypudæus glareolus*) at Lyndhurst in the New Forest by Mr. F. J. Cox, in December, 1906. Some years since another example (also a ♀) was taken from the same host by Mr. George Tate at Lyndhurst, but was unfortunately destroyed before it had been described.

148, Piccadilly, W.:

December, 1906.

Meloë rugosus at Broadstairs and Margate.—I have again met with this species both in spring and autumn—on the former occasion in a cutting in the cliff near Margate, in company with *M. cicatricosus*, and on the latter in the old locality on the road between Broadstairs and St. Peter's. I suppose there can be no doubt that it hibernates, as a rule, probably, without leaving the burrow of the bee in which it has passed the earlier stages of its existence.—THEODORE WOOD, The Vicarage, Lyford Road, Wandsworth Common: October 22nd, 1906.

Is Scoparia dubitalis a moss or a root feeder?—Until comparatively recently all the larvæ of this genus were supposed to feed on moss or lichens only, but thanks to Dr. Wood (Ent. Mo. Mag., xxv, p. 126) we now know that one of them (*cebræ*) is entirely a root feeder. Little or nothing seems to be known about the larva of *dubitalis*, common as the imago is in many places. Mr. Bankes, to whom I recently wrote for information, tells me that he knows practically nothing of the larva or its habits. Some years ago he confined ♀♀ in pots containing sorrel roots, moss, &c., but all to no purpose. It is true that Leech ("British Pyralides"), quoting Hartmann, says the larva feeds on moss and lichen growing on tree trunks in March and April, and Meyrick ("Handbook," p. 423), says "larva on mosses, iii, iv." Many years ago Machin (Entom., viii, 81) records the breeding of a specimen of the var. *ingratella* from sorrel roots dug up in Folkestone Warren when searching for *Trochilium chrysidiforme* larvæ, and he again alludes to it in Ent. Mo. Mag., xxvi, 22. This larva of course may have crept into the roots to spin up, as probably it would be full fed at that period of the year. Now for my own experiences. In November, 1884, wishing to breed some *Epiblema trigeminana*, I dug up some roots of *Senecio jacobæ* near Brentwood, shaking out all the earth and *débris* collected round the base of the stems (which I cut off just above the root stocks), and replanted them in fresh clean earth in flower pots; the *trigeminana* duly appeared in June, 1885, and on the 14th of the same month two *dubitalis* (followed by another the next day) appeared! I am quite sure there was no moss for their larvæ to feed upon, and if moss feeders, it seems unlikely that they would have been full fed in November, knowing that the larvæ of those species which are known to us are not full fed until the spring; so, coupling Machin's experience with my own, it seems

quite feasible that it may be, like its relative *cembrae*, a root feeder. The imago is usually much more common in rough open fields than in woods, and as Mr. Bankes suggests, the larva may perhaps feed on the ground mosses which usually grow in such places, just as I strongly suspect the larva of *pallida* does in its boggy haunts, but I have never been able to find it. If any reader could give me any information about the larva of either or both the above-named species I should be very grateful.

—A. THURNALL, Thornton Heath: *January 10th, 1907.*

Psychodidæ in Dumbartonshire in 1906.—When the West of Scotland list of *Diptera* (B. A. Handbook) was published in 1901 there were only two species of *Psychodidæ* included. As I was aware of the fact that there must be many more species in the district than these two, I resolved to do something towards obtaining a better idea of the number of species occurring at least in this locality during the past summer, and, thanks to the kindness of the Rev. A. E. Eaton in identifying my specimens, it is now possible to extend the list to twenty-one species, one of which is not included in the following list as it has not yet been described, although already known to Mr. Eaton. The species marked with an asterisk are those not included in previous list:—*Pericoma *exquisita*, Etn., very common in many different places, but more especially in Murroch Glen; *P. fallax*, Etn., not uncommon; *P. *blandula*, Etn., scarce; *P. *nutna*, Etn., not uncommon on tree trunks at Bonhill; *P. *cognata*, Etn., one specimen, Bonhill; *P. trivialis*, Etn., not uncommon, Bonhill; *Ulomyia fuliginosa*, Mg., common throughout the district; *Pericoma *neglecta*, Etn., scarce, Bonhill; *Clytoecerus *ocellaris*, Mg., very common everywhere; *Pericoma *trifasciata*, Mg., very common in one or two spots at Bonhill; *P. *auriculata*, Curt., very common throughout the district; *P. *notabilis*, Etn., fairly common in many marshy parts of the district; *P. *caliginosa*, Etn., common in one part of Murroch Glen; *P. *morulus*, Etn., two specimens, Bonhill; *P. *sulcata*, Hal., common where it occurs, Bonhill; *P. *advena*, Etn., two specimens, Bonhill; *P. palustris*, Mg., common, Bonhill; *Psychoda *phalænoides*, L., common everywhere and all year round; *P. *albipennis*, Zett., common; *Trichomyia *urbica*, Curt., three specimens at Strathleven. The undescribed form is also common at Bonhill. As the species here enumerated are the result of only occasional collecting of the group, owing to the fact that each specimen requires a tube to itself, unless the tube is very large, to prevent the specimens destroying themselves, I believe that the list might easily be much enlarged by careful work.—

J. R. MALLOCH, Bonhill, Dumbartonshire, N.B.: *January, 1907.*

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The Annual Meeting of the Society was held in the Royal Institution, Liverpool, on 17th inst., Mr. RICHARD WILDING, Vice-President, in the Chair.

Lieut. the Hon. R. O. B. Bridgeman, R.N., of Salop, was elected a Member of the Society.

The following Office Bearers were elected for the ensuing year:—President,

S. J. Capper, F.E.S.; Vice-Presidents, Dr. J. H. Bailey, M.B., Port Erin, E. J. B. Sopp, F.R.Met.S., Prof. E. B. Poulton, D.Sc., M.A., F.R.S., J. R. Charnley, F.Z.S., F.E.S., Dr. H. H. Corbett, Wm. Mansbridge, F.E.S.; Treasurer, Dr. J. Cotton, F.E.S.; Secretaries, H. R. Sweeting, M.A., Wm. Mansbridge, W. D. Harrison; Editor, J. R. le B. Tomlin, M.A., F.E.S.; Librarian, F. N. Pierce, F.E.S.; Council, J. Kidson Taylor, W. Webster, M.R.S.A.I., F. R. Dixon-Nuttall, F.R.M.S., Dr. P. F. Tinne, M.A., M.B., the Rev. T. B. Eddrup, M.A., C. E. Stott, R. Tait, Junr., Dr. P. Edwards, J. Collins, R. Wilding, O. Whittaker, Dr. W. Bell, J.P.

After the formal business of the Meeting, the retiring Vice-President, Prof. T. Hudson Beare, B.Sc., F.E.S., of Edinburgh, communicated his address to the Society. The Professor, after detailing the chief scientific achievements of Entomologists during 1906, made a number of interesting and valuable suggestions for individual as well as collective furtherance of our studies, and instanced the remarkable work accomplished by such diligent investigators as Dr. Joy and Mr. H. St. J. K. Donisthorpe and others among the rarer or least known *Coleoptera* occurring in Great Britain. A vote of thanks to the author was proposed by Mr. Wilding, and seconded by Mr. E. J. B. Sopp, F.R.Met.S., and it was resolved to print the paper in the Society's proceedings.

The following exhibits were made by the Members:—Dr. Cotton, a long series of *C. typhon*, var. *rotkliebii*, from Witherslack, a series of *Lycæna astrarache*, var. *salmacis*, from N. Lancashire, and a series of *Noctua glareosa* from Delamere. By Mr. R. Sweeting, a number of *Cynthia cardui* from Eastbourne, a specimen of *Deilephila livornica* taken at light in Knowsley Park last June, *Macaria liturata* and its var. *nigrofulvata* from Delamere, and *Lycæna icarus* and *L. corydon* from Eastbourne. Mr. F. N. Pierce, F.E.S., a box of *Lepidoptera* from India. Mr. J. J. Richardson brought moths collected in the neighbourhood of Bidston, Cheshire, at ivy bloom:—A series of *Himera pennaria*, *Cerastis vaccinii*, *Luperina testacea*, the last from Wallasey, and *Hybernia defoliaria* from Sefton Park, Liverpool. Mr. W. Mansbridge showed *Carpocapsa nimbana* and *Sciaphila communana* from the London district, received from Mr. A. Thurnall of Croydon.

The Hon. Treasurer's report showed the Society to be in a satisfactory position.—
H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secs.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, December 13th, 1906.—Mr. HUGH MAIN, B.Sc., Vice-President, in the Chair.

Messrs. Harrison and Main exhibited (1) series of *Anticlea rubidata* from N. Cornwall and from Devon, the former less red and generally greyer; and (2) a bred series of *Chesias spartiata*. Mr. Goulton, photographs of larvæ in their feeding and resting positions. Mr. Garrett, series of *Euchloë cardamines*, *Agriades corydon*, *Urbicola comma*, *Tryphæna fimbria*, and *Limenitis sibylla*, the last named from Arundel. Mr. Kaye, a number of Syntomid moths from British Guiana, which showed strong constriction, or colour simulating constriction, in the basal segments of the abdomen, thus much resembling species of *Hymenoptera*, of which many were also exhibited. Messrs. Rayward and Tonge, ova of *Bithys (Thecla) quercus* *in situ* below the winter buds of oak; they were from Rammore Common. Mr.

Turner pointed out interesting cases of *Coleophora lutipennella* on the same buds, all extremely small. Mr. Sich, specimens of *Tinea pallescentella*, and gave notes on its occurrence, exhibiting *Gelechia pinguinella* and *Borkhausenia pseudopretella*, which much resemble it in general appearance. Mr. Newman, (1) a long bred series of *Laphygma exigua* with captured specimens for comparison, and a living *Stauropus fagi*, which emerged on December 9th. Mr. Jennings, a series of *Otiorynchus blandus* from the Isle of Man. Mr. Carpenter, (1) a *Pieris brassicæ*, with the discal spot connected with the apical patch; (2) a bred series of *Melitæa athalia*; and (3) a series of *Plusia moneta* bred from larvæ found in his own garden.

Thursday, January 10th, 1907.—Mr. R. ADKIN, F.E.S., President, in the Chair.

Mr. John Alderson, of Ballham; and Mr. B. Richard, of Rotherhithe, were elected members.

Messrs. Harrison and Main exhibited a long series of *Cidaria miata*, bred from New Forest ova, and showing much variation in tone and mottling. Mr. Newman, a large number of bred *Notodonta chaonia*, showing a good deal of variation in colour and banding. Mr. Dods, *Lepidoptera* from Africa, including *Papilio demoleus*, *Deiopeia pulchella*, *Danais dorippus*, &c. Mr. R. Adkin, a specimen of *Epinephela janira*, in which the usual tawny markings were of a straw colour and somewhat extended. Mr. Turner, a number of remarkable *Hemiptera* from S. America, including mimics of beetles, seeds, thorns, &c., and the interesting moth-like species, *Pæciloptera phalœnoides*; he also showed a *Cænonympha pamphilus* from Chipstead, having pale patches on all four wings; and a series of *Aglais urticæ*, showing restricted blue lunules in specimens from Engelberg and Lapland.

Reports of the various Field Meetings of the Society held during 1906 were read.

Mr. Adkin read a paper, entitled, "Further Notes on the Occurrence of *Tortrix pronubana* in England."—HY. J. TURNER, *Hon. Secretary*.

TEN YEARS' WORK AMONG VERTEBRATE CARRION.

BY CLAUDE MORLEY, F.E.S.

There is by no means a fixed idea in the minds of most British Coleopterists as to what may be regarded as a "carrion beetle," though the average Collector would say that the number was a very large one, including perhaps half the *Brachelytra*, a hundred species of *Clavicornia*, as well as such genera as *Trox* and *Necrobia* in the bones and some *Teredilia* upon the fur and feathers. This, at least, was my own conception till, looking through my diaries, I was astonished to find that, in the course of slightly over ten years' assiduous collecting (in winter, which is almost the best time for carrion beetles, as well as in summer), I had taken hardly more than a hundred species altogether. In this total is included *everything*

found among carrion, even to three *Grodephaga*, a pine-feeding *Rhizophagus*, some *Cryptophagi* and an *Atomaria*, whose presence in such a *paupulum* is surely accidental.

The actual figures are 113 species of *Coleoptera*, and these may be divided into four classes:—(1) Those who are simply sheltering beneath carrion, or have possibly been attracted to it in order to prey upon carrion-feeders—as the last mentioned kinds; (2) Those which will devour any decaying animal—and in some cases, as in *Cereyon* and *Phalacrus*, vegetable-matter; (3) Those occasionally found in this situation, though much more frequently in some others; and (4) The genuine burying-beetles and scavengers, whose eggs are protected by and larvæ subsist upon decaying vertebrate animals.

1.—In the first class I place *Calathus fuscus*, *Bembidium obtusum* and *Cymindis axillaris*, all of which have occurred to me in April, February and July respectively, beneath a crow, a rabbit and a gull; *Chilopora longitarsis* I have seen *approaching* a mole, though I have never taken it in carrion; three *Quedii*, *impressus*, *fuliginosus* and *mesomelinus*, have each occurred to me once in a crow in March and April (the first-named also in pigeon in May and rabbit in September), but I incline to think, on account of their usually subterranean habits, that their presence was accidental, especially as *Q. impressus* is often abundant in sheep's dung. *Trogophleus rivularis* was certainly once found on a dog in April, but the latter was lying in a very swampy place, and the specimen was probably but a casual wanderer. Perhaps *Rhizophagus depressus* should be classed with the fur-and-feather species, but since this—seven specimens—were but once found (on a hung-up jay in April) in a fir wood where they are common in their natural habitat, they more probably belong here. Single specimens of *Monotoma picipes* in rook in May, *Atomaria ruficornis* in horse's skin in June, *Rhinosimus planirostris* in a "bird" in June, *Cryptophagus dentatus* in mouse in May, and *C. lycoperdi* (so named by Newbery) in crow in April—all these are certainly accidental, unless the first should prove to be a "bone species."

2.—The second class embraces sixteen of my species, and to it may certainly be referred the three *Cereyons*, *analis*, *littoralis* and *unipunctatus*, all found in a dog on the beach of a salt-water river in the middle of April; the second species was in hundreds and was also found in the same situation during the following March; the last was also taken on a cow's head in a ditch at Lyndhurst in August. On the same dog was *Cafius xantholoma*, which appears pretty omnivorous if the food be but flavoured with sufficient salinity. *Platystethus arenarius* in the cow's head at Lyndhurst, *Oxytelus inustus* in a pigeon in May, *O. rugosus* and *O. sculpturatus* in dogs in April, have each only occurred upon one occasion; *O. sculptus* has twice turned up in rats in the middle of April, 1895 and 1904; and *O. tetracarinatus* twice, in a crow and a pigeon in March and May. *Lathrimæum* and *Homalium* are found in such a variety of situations that they cannot be claimed as true carrion feeders, although *L. unicolor* and *H. rivulare* have both occurred upon four occasions, the former always in birds (crows in March and April, pigeon in

May) and the latter upon rabbits in May and November, crow in March and stoat in May; I have twice met with both *L. atrocephalum* on rabbit in February and crow in March, and *H. oxyacanthæ* in dog in March and horse in June. *Proteinus ovalis* is sometimes abundant in these situations, though even commoner on vegetable refuse; it has occurred upon eight occasions:—in crow, dog and mole in March, dog, crow, and rabbits in April, and pigeon in May. A drowned dog in a reedy ditch produced seven specimens of *Phalacrus caricis* on April 16th, and two more on May 1st, 1895.

3.—I am not of opinion that any *Homalota* is exclusively found in carrion; certainly all those I have noted, with the possible single exception of *H. divisa*, which has occurred thrice in rabbit, horse and lamb in May and June, are more usually met with elsewhere; those noticed are *H. aquatica* in rabbit in May, *H. atramentaria* in rat in April and pigeon in May, *H. succicola* twice in crows in March and April, *H. fungi* once in rabbit in April, *H. fungicola* upon six occasions in crows in March and April and in rabbits and rook and stoat in May, *H. gurgatina* once in rook in May, *H. marcida* in rabbit in February, *H. nigricornis* in jay in April and stoat in May, *H. orbata* in pigeon in May, *H. trinotata* thrice in crow and jay in April and stoat in May, *H. vestita* on dog in April, *H. vicina* on crow in March, and *H. xanthoptera* on rabbit in April. I am not perfectly sure that the *Oxypodæ* were actually taken in carrion, though I am of opinion that I found *O. lividipennis* in a pigeon in May, *O. opaca* on a crow in April together with *O. umbrata*; I am, however, quite sure that I beat *Microglossa pulla* from a hung-up stoat in the middle of May, 1901. Another of the occasional species is *Tachinus marginellus* in a dog in March, probably because all sheep's dung was too wet for its habitation. Very few species of *Philonthus* appear to constantly occur in dead animals, those least often met with being *P. ebeninus* once in hedgehog early in May, *P. succicola* in partridge in the middle of August, and *P. sanguinolentus* in rabbit in middle of May; twice only I have met with *P. fimetarius* in pigeon and crow in April and May, *P. politus* in mole and rat in June and July, 1893, *P. varians* in hedgehog on May 4th and 8th, *P. varius* in dog in April and rabbit in September, and lastly *P. umbratilis* in crow in April and cow at Lyndhurst in August. The only other kinds I consider occasional are the coprophagous genera *Aphodius* and *Onthophagus*, all of which (with the exception of *O. fracticornis* in dog in April and partridge in August) have occurred but once:—*O. ovalis* in rabbit in August, *A. tristis* in a cod's head in June, *A. erraticus* in rabbit in April, 1893, and *A. inquinatus* in rat in March.

4.—Among the genuine carrion beetles a few of the genera are, I believe, (a) never carnivorous, but act as final dissoluters to the ancient carcase. Of these *Trox sabulosus* has appeared twice in crow and rabbit in April, and *T. scaber* once in a rabbit (though often seen flying) in early June. *Necrobia rufipes* has only once turned up, in a scare crow early in August, though *N. violacea* has been taken on seven occasions in April, May, June, July and September in sheep, cat, owl, crab, calf, and in the New Forest in unidentified bones. The species of *Dermestes* demolish the skin, and *D. murinus* is probably the most common of all the beetles noted, having been observed upon no fewer than twenty-one occasions (of which thirteen were in April, four in May, two in August, and one each in March and

June) in moles nine times, crows thrice, rats twice, and once each in rabbit, weasel, stoat, pigeon, cod, "bird" and in Berks. on kestrel; *D. vulpinus* is much rarer and only four times observed, in August and September, in crows and a calf. The *Nitidulæ* and *Omositæ*, too, prefer the feast when the carcase has become desiccated, when *N. bipustulata* is always common from March to May, though found in no other month, on seventeen occasions in rats, moles, crows, hedgehog, pigeon, jay and in Berks. on kestrel; *N. 4-pustulata* is rarer and seems to affect the seashore where it has occurred in fish and a gull in July, as well as inland in pigeon in June and calf in September; *N. rufipes* has only occurred to me singly in dog, sheep, fish, calf and stoat in March, May, July and September, except early in June, 1902, when it was common in a horse-skin. Of the second genus, *Omosita colon* is slightly the commoner species (with twelve appearances against nine) and is found from April to August in moles, rats, rabbit, dogs, rook, owl, fish, horse and at Eastbourne in sheep's head; *O. discoidea* appears to extend from April only to June, in mole, rabbit, dogs, crows, hedgehog and horse. *Ptinus fur* is the only hair-eating species I have seen actually on carrion; one ♂ and four ♀♀ were beaten from suspended weasels at the end of March, 1894.

The foregoing enumeration leaves but thirty-seven species of (β) genuine flesh-eating burying beetles captured in the course of ten years. One is inclined to regret there is no comparative list of the same creatures in the old days of fat, sleek wolves and unharassed foxes, who only gutted half they killed; even a note on the subject by Mouffet in 1634 might have helped us to some comparative estimate of the destruction to these, our friends, wrought by remorseless civilization. The seven kinds of *Aleochara* that have been found were certainly in their element in carrion, especially *A. fuscipes*, which was noted on sixteen occasions, usually in April and May, though it extends thence to September 28th; it occurred four times in rats, five in rabbits, thrice in moles, and once in sparrow-hawk, hedgehog, pigeon and fish. *A. lanuginosa* put in but five appearances in March, thrice in April and in September, in rat, dog, rabbit and two crows; *A. nitida* has been slightly less common in crow in April, fish in July, "bird" in August and calf in September; while *A. succicola* was thrice seen in owl in April, crow in August and rabbit in September. The three remaining species are much rarer both here and in other situations; one *A. bipunctata* was in a "bird" early in August; *A. lata* in hedgehog in May and rat in September; and *A. morion* once in a rook at the beginning of May. Some species of *Tachinus*, *Creophilus*, *Leistotrophus* and *Staphylinus* must, I think, be regarded as true carrion feeders, though sometimes found in hotbeds, dung and decaying vegetable matter; at least *T. humeralis*, with three occurrences in rabbits, one in crow and one in pigeon in April and May, as well as *T. subterraneus* in mole, pigeon and two rabbits, should be placed here; the latter is found in February, April, June and September. *C. maxillosus* has six appearances, all in April and May, preferring larger animals, sheep and dog, though also sometimes in rats, rabbit and pigeon. *L. murinus* was common in a foal at Brockenhurst in May, 1895; I have taken it from hedgehog in the same month. *S. stercorarius* has only occurred once, in a rabbit in the middle of September. Only three *Philonthi* are of frequent occurrence, and of these *P. æneus* has appeared a dozen times, *P. cephalotes* six and *P. marginatus* thrice; the first is abundant in March and April and twice in September, four times in rats, twice each

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in rabbit, dog, hedgehog, once in sheep and once in crow; the second species is abroad during the same months and in August, in cow, dog, rat, rabbit, pigeon and owl; the last kind is found in hedgehog, crow and pigeon in April, May and September.

Four kinds of *Necrophorus* have occurred in carrion, and it is still a mystery to me what *N. respillo* feeds upon; the commonest kind is *N. humator* with eight appearances, four in April and two each in August and September, in rabbits thrice, mole, weasel, sparrow-hawk, crow and pigeon, nearly always when suspended. *N. mortuorum* has also been noted eight times from April to September, in mole, rabbit, jay, sparrow-hawk, twice in pigeon and thrice in hedgehog, with no preference for the keeper's trees. *N. ruspator* I have seen six times, but only from June 17th to September 23rd in rat, jay, sparrow-hawk, pigeon, gull and rabbit. *N. vestigator* is much more uncommon and has only occurred singly, four times in May, June and August in rat, mole, rabbit and "bird." In Suffolk, *Necrodes littoralis* has not occurred since 1862; but I once took it abundantly in a foal of the New Forest ponies in May. None of the rare carrion *Silpha* have fallen to my lot; *S. rugosa* is our commonest species with nineteen appearances varying from March to September, four times in moles, four in rabbits, once in slow-worm, twice in rats, once each in sparrow-hawk, hedgehog, sheep, pigeon, fish and thrice in crows; *S. sinuata* and *S. thoracica* have been equally common with eleven appearances apiece; but as regards individuals the former is far more prevalent, in moles thrice, crow once, rabbits four times, hedgehog twice and fish once; *S. thoracica* has been found in rabbits twice, crows four times, mole once, sparrow-hawk once and hedgehog twice; both are commonest in April. Eight kinds of *Cholera* have been noted, though four of these, *C. kirbyi* in crow in April, *C. fumata* in pigeon in May, *C. morio* in dog in April and *C. nigrita* in rabbit in September, have only put in a single appearance; *C. tristis*, noted seventeen times, seems the commonest species, abounding in November, January and February (not noted in June or August), in eight rabbits, four crows, and single weasels, rats, pigeons, cats and "bird." *C. chrysomeloides* is a good second, with thirteen appearances mainly in May, though a few were taken in November and February, in nine rabbits, two pigeons, a rat and a cat. *C. grandicollis* I have thrice seen, always in rabbits, in May and June and September. There are seven records of *C. watsoni*, in two rabbits, a rat, two pigeons, a crow and a "bird." Equally common is *Ptomophagus sericeus*, from March to May only, in three rabbits, a mole, two crows and on April 29th, 1895, investigating a dead earth worm.

The "mimic" beetles, *Hister* and *Saprinus*, are the last of the group; they are often seen abundantly, indeed, *H. cadaverinus* has put in thirteen appearances from April to August, in six rats, three rabbits, a hedgehog, cat, sparrow-hawk and fish; the only other *Hister* noted (four times) is *H. succicola*, from April to June, in rabbit, mole, pigeon and crow. *S. æneus* was thrice common in rabbits and a cod's head in May, June and August, and *S. rugifrons* once turned up in a hedgehog in the middle of May, though *S. nitidulus* is by far the most abundant of the genus, being always common, on four occasions in rabbits in May and September and once in a hedgehog.

Turning to the other Orders of insects, four kinds of HETEROPTERA have been secured:—*Tropicoris rufipes* on a suspended sparrow-hawk in the middle of August, *Acanthosoma hæmorrhoidale* and *A. interstinctum* in a crow's head towards the end of April, and *Derephysia foliacea* in a rabbit early in August. LEPIDOPTERA are represented by a single *Tinea tapetzella*, beaten from a suspended mole, whose fur perhaps it fancied, towards the end of September. The only NEUROPTERON is *Cvcilius pedicularius* in plenty from a calf in the same month (*cf.* Ent. Mo. Mag., 1899, p. 273). DIPTERA are far less commonly noticed than the mass of their larvæ in the carrion would warrant; I have only taken one *Borborus nitidus* in a crow in March, a dead *Hyetodesia sp.* in dog in April, one *Borborus pedestris* in the skeleton of another in April; an undetermined species of *Oscinis* commonly on a dog in June, and two more of the same genus on a suspended jay in April; a pair of *Blepharoptera ruficauda* in cop. in a suspended jay in the middle of April and three others (all dead) in a suspended hawk during the same month, together with *Themira putris*, ♀, and two small *Ephydridae*. Of those flies whose larvæ so beneficially consume carrion, I have taken a single *Calliphora erythrocephala* and *Hydrotæa irritans*, ♀, on a pigeon early in May; and once at Lyndhurst found a *Psychoda* swarming about a cow's head in a ditch. Few HYMENOPTERA are found in carrion; the commonest is a Braconid, *Alysia manducator*, which is parasitic upon both the Dipterous and Coleopterous larvæ (*cf.* Marshall, Bracon. d'Europ., ii, 377); I first took it on a foal at Brockenhurst in May and subsequently on a rabbit in June, also on a horse's shin bone and a cow's head in the same month. An Ichneumonid, *Atractodes bicolor*, which may be hyperparasitic on the last species (*cf.* Morley, Ichn. Brit., i, 291 et ii) was taken in a rabbit in September, 1895, in a cow's head at Lyndhurst in August and in a mole in June; its cousin, *A. gilvipes*, was once found in a rabbit early in June, 1903. A second kind of Braconid (? *Rhogas sp.*) was taken in the same kind of animal at the end of September, 1899; and a third, *Meteorus flator*, in a rabbit in November. I have once or twice noticed wasps (*Vespa vulgaris*) attracted to fish, and upon one occasion took four specimens of some *Proctotrypid* from a rabbit early in November.

All the above insects were taken, unless otherwise stated, in Suffolk, and it would be interesting to put upon record similar experiences of collectors in other parts of the country; in fact, one's own observations are far too meagre to form the basis of many facts, though it will, I think, be seen from the following table that the various classes into which I have divided the beetles are pretty evenly distributed, and the fourth of them by being bisected will show approximately the condition in which the carrion was found. Moreover it will be seen from what I have said that no beetle appears to have the least preference for any particular carcase, though the birds seem rather more attractive than the mammals (compare crow and rat in the table). It is necessary to add that I have paid not the least *special* attention to the subject, though, like every collector, I never pass carrion without at least a casual investigation of its tenants.

TABLE.

Pabulum.	Visits paid.	Spp. found	Specimens found	Class of spp. noted.				Other orders	
1. Hedgehog (<i>Erinaceus europæus</i> , L.) ..	3	16	59	...	...	3	4a	4b	
2. Mole (<i>Talpa europæa</i> , L.).....	20	17	161	1	2	3	4a	4b	{ <i>Hym.</i> <i>Lep.</i>
3. Weasel (<i>Putorius nivalis</i> , L.)	3	4	14	...	...	...	4a	4b	
4. Stoat (<i>Putorius erminea</i> , L.).....	2	7	13	...	2	3	4a	...	
5. Cat (<i>Felis domesticus</i> , L.).....	3	4	6	...	...	...	4a	4b	
6. Dog (<i>Canis familiaris</i> , L.)	10	22	131	1	2	3	4a	4b	<i>Dip.</i>
7. Mouse (<i>Mus sylvaticus</i> , Bel.)	1	1	1	1	...	...	...	...
8. Rat (<i>Mus decumanus</i> , Pal) ..	17	20	92	...	2	3	4a	4b	
9. Rabbit (<i>Lepus cuniculus</i> , L.)	35	46	334	1	2	3	4a	4b	{ <i>Hym.</i> <i>Het.</i>
10. Horse (<i>Equus caballus</i> , L.)	1	6	13	1	2	3	4a	...	<i>Hym.</i>
11. Foal (Do., immature).....	3	2	33	...	...	...	...	4b	<i>Hym.</i>
12. Cow (<i>Bos taurus</i> , L.).....	1	4	4	...	2	3	...	...	{ <i>Hym.</i> <i>Dip.</i>
13. Calf (Do., immature)	1	5	13	...	...	...	4a	4b	<i>Neur.</i>
14. Sheep (<i>Ovis aries</i> , L.)	4	6	15	...	...	...	4a	4b	
15. Lamb (Do., immature)	1	1	1	...	...	3	...	...
16. "Bones" .. .	2	1	9	...	...	...	4a	...	
17. Kestrel (<i>Falco tinnunculus</i> , L.).....	1	2	6	...	...	...	4a	...	
18. Sparrow-hawk (<i>Accipiter nisus</i> , L.)...	3	6	18	...	...	...	...	4b	{ <i>Dip.</i> <i>Het.</i>
19. Owl (<i>Strix flammea</i> , L.)	2	4	6	...	...	...	4a	4b	
20. Crow (<i>Corvus corone</i> , L.)	15	40	134	1	2	3	4a	4b	{ <i>Dip.</i> <i>Het.</i>
21. Rook (<i>Corvus frugilegus</i> , L.)	1	5	8	1	...	3	4a	4b	
22. Jay (<i>Garrulus glandarius</i> , L.).....	3	7	17	1	...	3	...	4b	<i>Dip.</i>
23. Pigeon (<i>Columba palumbus</i> , L.)	5	27	55	1	2	3	4a	4b	<i>Dip.</i>
24. Partridge (<i>Perdix cinerea</i> , Lath.) ...	1	2	2	...	...	3	...	...
25. Gull (<i>Larus canus</i> , L.)	1	3	3	1	...	...	4a	4b	
26. "Bird"	4	8	9	...	...	...	4a	4b	
27. Slow-worm (<i>Anguis fragilis</i> , L.)	1	1	3	...	...	...	...	4b	
28. Cod (<i>Morrhua vulgaris</i> , L.)	1	2	7	...	...	3	4a	4b	<i>Hym.</i>
29. "Fish"	2	8	9	...	...	...	4a	4b	<i>Hym.</i>
30. Crab (<i>Cancer pagurus</i> , L.)	1	1	1	...	...	...	4a	...	
31. Worm (<i>Lumbricus terrestris</i> , L.).....	1	1	1	...	...	...	...	4b	

Monks' Soham House, Suffolk :

November 13th, 1906.

APION (EXAPION) KIESENWETTERI, DESBR., A BRITISH INSECT.

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

A few months ago Mr. W. Holland, of Oxford, sent me for examination a single specimen of an *Apion*, taken by himself at Sandown, Isle of Wight, on August 4th, 1906, and suggested that it was probably a species new to the British list. As this insect agreed perfectly with two others from Chattenden, standing as *A. fuscirostre*, ♂, in my cabinet, I paid no further attention to the matter at the time. Subsequently, however, on seeing various others from the same Kentish locality, including both sexes, in Commander Walker's collection, I re-examined the whole of them, and soon found that they were perfectly distinct from *A. fuscirostre*. Herr J. Schilsky has now given me his opinion on the insect, and pronounces it to be *A. kiesenwetteri*, Desbr., a species new to our list and apparently rare on the continent, Bavaria and Hungary being the only recorded localities for it. [*cf.* Schilsky, in Küster's "Die Käfer Europa's," xxxix, Heft 11 (1902)].

The following diagnosis of the species is taken from this work :

A. nigrum, opacum, supra griseo pubescens, pectore lateribus densius albido-pubescente, pube elytrorum equali, antennarum basi pedibusque rufotestaceis, his genubus, tibiis apice tarsisque nigris, capite valde transverso, crebre punctato, oculis magnis modice prominulis, rostro subrecto, thoracis longitudine, basi fortiter dilatato-dentato, deinde cylindrico, tenui, nitido, antennis basi sitis, apicem versus nigricantibus, thorace subtransverso, lateribus rotundato-ampliato, confertim profundeque punctato, basi stria brevi insculpta, elytris ellipticis, striato-punctatis, interstitiis planis, subtiliter punctatis.—
Long. 2.1—2.6 mm.

Mas. : oculis magnis, elytris subparallelis, tarsorum posticorum articulo 1° intus dentiforme producto; funiculi articulis 3°—7° transversis.

Fem. : fronte latiore, elytris ovatis, funiculi articulis 2°—5° haud transversis, gracilioribus.

A. kiesenwetteri is of about the same size and shape as *A. semicittatum*, except that the prothorax is more rounded at the sides, and the rostrum is more slender and dentate on each side near the base. Compared with *A. fuscirostre* (as noted, in part, by Desbrochers in his original description*), it is smaller and less elongate; the rostrum is shorter; the prothorax is rounded at the sides, and more transverse; the elytra are not compressed at the sides; the fine vestiture of the upper surface (soon abraded) is closer, more uniformly distributed, and wholly white, and condensed into a short oblong

* Mittheil, Schweiz. ent. Ges., iii, p. 204 (1870).

patch at the base of the suture (the oblique streak running down from the shoulder being altogether absent), &c. From *A. genistæ* it may be known by the stronger rostral tooth, the more dilated prothorax, &c. *A. monticola*, Schilsky (for specimens of which I am indebted to Herr J. Schilsky and Dr. J. Daniel), and *A. difficile*, Herbst, are still more closely related forms, but as they are not found in England, it is not necessary to call further attention to them.

The present species is not uncommon at Chattenden, Kent, on *Genista tinctoria*. It was first taken there by myself on September 15th, 1872, and by Mr. Walker in the following year. He found it in numbers at the same locality on July 7th, 1894.* Four members of the genus have previously been recorded as attached to the same plant, viz., *genistæ*, *elongatulum*, *flavofemoratum*, and *difficile* (cf. Schilsky, *op. cit.*, xliii, p. cii).

Horsell, Woking :

February 18th, 1907.

OXYPODA METATARSALIS, THOMS., AS A NEW BRITISH SPECIES.

BY THE REV. H. S. GORHAM, F.Z.S.

While examining some siftings from a mole's nest at Mathon with Mr. Tomlin on January 21st last, I was struck by a few *Oxypoda* which had very much the appearance of *O. vittata*, but seemed rather fine examples if they were that species.

These are *O. metatarsalis*, Thomson (Skand. Col., ix, p. 247), an addition to the British List, unless they should prove to be identical with an example taken in Scotland by Dr. Sharp, and recorded by him as *O. longipes*. Considering the difference in locality and the peculiar habitat, this seems very doubtful.

O. metatarsalis is distinguished at once from both *O. vittata* and all the large species at the head of the genus by the structure of the tarsi, especially the hind tarsi. These in *O. metatarsalis* appear much longer than in the preceding species, owing to their second joint being not much shorter than the first; whereas in these species the first joint is three times longer than the second. Other differences exist: the antennæ are longer and thinner, the legs are more infuscate (in *O. vittata* they are clear yellow), the abdomen is quite black, except

* Recorded in Ent. Mo. Mag., xxx, p. 208, as *A. fuscirostre*.

at the tip. The colour of the elytra is more sharply defined, the vitta not being so oblique and of a deeper yellow tint (at least it is so in the few examples I have yet taken).

The parish of Mathon, at any rate the part of it where the moles' nests occurred, lies just in Herefordshire near West Malvern. The moles' runs were very abundant there, and this insect occurred in company with *Heterothops nigra* (*quadripunctula*, Brit. Cat.), of which several were found.

Higheroft, Malvern :

February 6th, 1907.

DESCRIPTION OF A SPECIES OF *LACCOBIUS* APPARENTLY NEW
TO SCIENCE.

BY THE REV. H. S. GORHAM, F.Z.S.

LACCOBIUS OBLONGUS, n. sp.

Oblongo-ovatus, niger; elytris testaceis, parum griseo-variegatis, confertim irregulariter seriatim punctatis; capite prothoraceque crebre punctatis, haud alutaceis, hoc lateribus late testaceis; pedibus pallidis, basi, praesertim anteriorum, infuscatis.

Long., 4 mm.

Closely allied to *L. nigriceps*, Thoms., from which it appears to differ in being more oblong and a little less convex, and by the series of punctures on the elytra being less irregular. In *L. nigriceps*, Th., these series often run into a constellation of punctures and are lost as a row, whereas in *L. oblongus* they usually maintain their integrity. The head is wholly black. Three or four specimens were captured by myself in Bottisham Fen, near Cambridge.

Dr. Joy, to whom I sent my specimens, informed me they were identical with the insect taken by him and Mr. Tomlin in Lundy Island, and which he has recorded as being the *sinuatus* of Motschulsky (following continental authors). It is to be observed, however, that Dr. Joy does not allude to Dr. Sharp's determination of *L. sinuatus*, and of the other species of this genus, in his note in the Ent. Mo. Mag. for 1884, p. 85, in which Dr. Sharp remarks that the determination of *L. sinuatus*, Mots., as synonymous with *L. nigriceps* of Thomson "is pretty certainly correct." For my own part I think the identification of either of these species with *sinuatus*, Mots., is problematical, and quite useless, as the characters of these nearly allied forms are not brought out by a reference to his description, which was probably drawn from a medley.

With regard to the *male* characters, I admit I cannot quite follow

the distinction given by Ganglbauer; in my series (of over thirty specimens of all species) the dilatation of the front tarsi seems to me very slight, and confined to the first joint; and the "bristles" on the femora to be represented by a short golden pubescence, to be seen, though in a less degree, in what I take to be the female examples. The punctuation of the elytra appears to me to be the most easily seen character. I have lately, by Mr. G. Lewis' kind permission, studied the types of the Japanese species of this genus described by Dr. Sharp. They are of the *L. minutus* type, *i. e.*, the punctures are strong, in distinct regular rows; there are none of the *alutaceus* type from that country. Indeed, *L. minutus* (auct.) seems to be the universally distributed form; the others to be more or less local in the Palæarctic region.

It is scarcely correct to say that the *sinuatus* of Motschulsky has long been identified with this species on "the continent," as the species itself has not long been discriminated. It must not be forgotten that Stephens (Ill. Mand. ii, 133) attempted to differentiate the species of *Laccobius* (*Hydrobius*) twenty years before Motschulsky, but relied too much on colour. Thomson, by his names, indicates the character he thought most striking or easily seized, as I have done for *L. oblongus*, but though the blackness of the head is a very true and usual character of *L. nigriceps*, it must not alone be depended upon. In examples I have there is a tendency to paleness on each side immediately in front of the eye, which in *L. minutus* (auct.) becomes a yellow line. The result appears to be that the punctuation of the upper surface combined with the form of the insect, and *secondarily* its colour, are the characters to be relied upon, if they are indeed to be distinguished as species (*cf.* Mulsant, *Palp.*, p. 129, 1844; Thoms., *Skand. Col.*, ii, 93; x, 310, 313; Sharp, *Ent. Mo. Mag.*, xxi, p. 85).

Higheroft, Malvern:

February 10th, 1907.

ALGERIAN MICROLEPIDOPTERA.

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

(Continued from page 10).

3539: 1.—SCYTHRIS MARIONELLA, *sp. n.*

Antennae minutely ciliate in the ♂, with moderate basal pecten; whitish ochreous at the base, glaucous beyond. *Palpi* pale ochreous; smooth, the terminal joint equal to the median; basal joint with projecting ochreous scales. *Haustellum* very long, scaled with ochreous at the base, naked, fuscous beyond. *Head* smooth,

bright pale ochreous. *Thorax* and tegulae cream-white. *Forewings* cream-white, a few glaucous scales before the apex, a small glaucous spot at the end of the long median cell and some glaucous scales in the outer half of the apical cilia; terminal cilia bright ochreous. *Exp. al.* 25 mm. *Hindwings* with a conspicuous elongate fenestrum below the base of the cell; shining, tawny grey, with paler tawny grey cilia. *Abdomen* ochreous, tawny grey at the base; underside pale ochreous. *Legs* whitish ochreous, the hind tarsi suffused with tawny grey.

Type, ♂ (88703). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara, 10.V.1903. Unique.

A single ♂ of this very distinct and conspicuous species taken at El-Kantara on May 10th by Mrs. Gwytherne-Williams, after whom I have named it in acknowledgment of the assistance she has frequently given me in entomological excursions. The species appears to be allied to *inertella*, Z., but the absence of the distinct spots, and the differently coloured cilia at once distinguish it. It must be very similar to *monochreella*, Rgt., but this is a much smaller species (*Exp. al.* 16 mm.).

384: 1.—ERIGETHES, *gn. n.*

(ἔριγηθής = very joyful).

Type, ♂ ♀, ERIGETHES STROBILACEI, Wlsm.

Antennae ($\frac{3}{2}$) shortly biciliate; basal joint with strong pecten. *Ocelli* absent. *Haustellum* long, scaled at the base. *Maxillary Palpi* short, porrect. *Labial Palpi* recurved, terminal joint not longer than median, smooth, acuminate, reaching about as high as the base of the antennae; median with a few rough scales beneath at its apex. *Head* clothed with long scales, ranging forward and covering the face. *Thorax* smooth. *Forewings* elongate, lanceolate, rather acute, the apex slightly bent down and subfalcate: *Neuration* 11 veins, 7 and 8 coincident, to costa; 6 and (7 + 8) stalked; rest separate, 3 subobsolete; 1 furcate at base. *Hindwings* narrower than the forewings, acutely lanceolate, apex slightly depressed: *Neuration* 8 veins, all separate; 5 about midway between 4 and 6, but slightly approximated basally to 4; at about half the length of the cell the radius bends up to the subcosta, becoming anastomosed with it for about half the remaining length of the cell, thence descending to the discoidal; media weak, furcate to 5 and 6 between which the discoidal is subobsolete. *Abdomen* moderate. *Legs*: hind tibiae slightly hairy above.

Allied to *Apostibes*, Wlsm., and *Scythris*, Hb., but differing from both and from any genus of the *Tineina* with which I am acquainted in the anastomosis at about half the cell-length of the radius and subcosta of the hindwings, in which respect it shows a tendency to approach the type of neuration of the *Pyrallidina*, although certainly not related to them. A somewhat analogous character is found in the ♂ of *Pammene*, Hb. (*Olethreutinae*).

3539: 1.—ERIGETHES STROBILACEI, *sp. n.*

Antennae yellowish white, annulate with pale olive-grey. *Palpi* whitish, shaded with olive-grey. *Head* whitish. *Thorax* dull yellowish white, mottled with pale olive-grey. *Forewings* yellowish white, speckled and mottled with olive-grey, becoming darker or more fuscous in certain spots; these are indistinctly separable from the profuse speckling which commences a little beyond the base, three are placed on the line of the fold at equal distances, the outer one being a little beyond the middle of the wing; there is also a small spot about the flexus, another beyond the end of the cell, and the speckling about the end of the termen is somewhat grouped, with intermediate pale spaces at and below the apex, it is also partly distributed through the pale whitish cinereous cilia. *Exp. al.* 10—13 mm. *Hindwings* very pale bronzy grey; cilia shining, pale bronzy cinereous. *Abdomen* olivaceous fuscous, anal tuft shining pale cinereous. *Legs* whitish, faintly banded with olive-grey.

Type, ♂ (96499); ♀ (96500). Mus. Wlsm.

Hab.: Biskra, 25.III—21.IV.1903; Hammam-es-Salahin, 16.III.—25.IV.1904, 25.III.—14.V.1903. Larva *Halocnemon strobilaceum*, 16.II. excl., 22.IV.1903 (96500). Thirty-two specimens.

The species is extremely abundant toward the latter end of March and in the beginning of April amongst *Halocnemon strobilaceum*, on which the larva feeds.

The larva was not described at the time, and having since failed to breed other specimens, I cannot be sure that larvae found abundantly in 1904 on the same plant belong truly to this species.

384: 2.—APOSTIBES, *gn. n.*

(*αποστῖβής* = solitary).

Type, ♂ ♀, APOSTIBES GRISEOLINEATA, Wlsm.

Antennae ($\frac{5}{5}$) ♂ shortly biciliate; basal joint enlarged and thickly clothed, with a well-developed pecten. *Ocelli* absent. *Haustellum* moderate, sealed. *Maxillary Palpi* short. *Labial Palpi* slender, smooth; terminal joint erect, shorter than median. *Head* and *Thorax* smooth. *Forewings* lanceolate, evenly tapering to an acute apex: *Neuration* 11 veins, 7 and 8 coincident, to costa; 6 and (7 + 8) stalked; the rest separate; 1 fureate at base. *Hindwings* ($\frac{5}{5}$) evenly attenuated to a somewhat less produced apex than in the forewings: *Neuration* 8 veins, all separate; 5 straight, midway between 4 and 6; discoidal angulated inward to media between 5 and 6, nearly obsolete between 6 and 7. *Abdomen* smooth. *Legs*: hind tibiae hairy.

Allied to *Scythris*, Hb., but differing in the veins of the hindwings being all separate, thus agreeing with the Australian species which Meyrick refers to *Scythris*.

It is possible that *Scythris* may present such variation of *neuration* within the same species, but until this has been ascertained it

seems better to eliminate species that can be separated by structure rather than to extend the generic definition to include species which differ from the type. The genera belonging to the *Elachistid* group of the *Hyponomeutidae* are in a plastic condition, and one of the difficulties in appreciating what the variation really means is, that such descriptions as "4 and 5 sometimes stalked or coincident" (Meyr. HB. Br. Lp., 685) do not inform us whether this variation occurs in the same species, or whether different species included in the genus differ in these respects. If the former, the generic description must obviously be extended, if the latter, the variation is, if not actually generic, tending to become so. It is really important that the actual nature of such variation should be exactly indicated in each case.

3539 : 2.—*APOSTIBES GRISEOLINEATA*, *sp. n.*

Antennae bone-grey, the basal joint paler. *Palpi* bone-whitish. *Head* and *Thorax* bone-grey. *Forewings* pale bone-whitish, shading to bone-grey towards the dorsum, this colour cut longitudinally by slender pale bone lines following the venation to the apex and termen; there is also a line along the middle of the cell, which, together with those coming from the base along its upper and lower margins, gives to the wing-surface an appearance of indistinct radiating and diverging lines running through a shady ground-colour which fades out along the costa; *cilia* bone-grey, with a slight brownish tinge. *Exp. al.* 14—17 mm. *Hindwings* rather rosy grey; *cilia* pale brownish cinereous. *Abdomen* bone-grey. *Legs* bone-whitish.

Type, ♂ (96485); ♀ (5832). Mus. Wlsm.

Hab.: Biskra, 9.III.—30.IV.1903 (*Wlsm.*); 1—2.V.1894 (*Eaton*); Hammam-es-Salahin, 19—15.IV.1904, 16—17.V.1903 (*Wlsm.*). Eleven specimens.

(*To be continued.*)

THE GROUSE-FLY, *ORNITHOMYIA LAGOPODIS*, *sp. n.*

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

I have always supposed that the grouse-fly was the same as the common bird-fly that one meets with occasionally in various parts of the country; but I have never till recently received specimens that I knew to come from the grouse. I was, therefore, very glad to take advantage of an offer made to us by Mrs. L. Duff Dunbar (by the intermediary of Dr. Jenkinson) to send us specimens from the grouse. On receiving a good series sent by her from Caithness, I was very much surprised to find them the same as a specimen I had myself

captured in Inverness-shire, and had considered to be a new species, and not *Ornithomyia avicularia*, the common bird-fly. Very soon after the reception of the Caithness specimens Mr. Shipley returned from Blair Atholl, in North Perthshire, where he had been making some investigations in connection with the grouse disease, and he handed over to me a small series of grouse-fly, which proved to be the same as those sent by Mrs. Duff Dunbar.

On investigation of the literature I find no record of the occurrence of any species of *Ornithomyia* on grouse other than *O. avicularia*, and I have, therefore, no hesitation in giving a name to the form that occurs in the northern parts of Scotland in connection with the peculiar bird, *Lagopus scoticus*.

ORNITHOMYIA LAGOPODIS, *sp. n.*

Supra nigricans, subtus pallide testacea, pedibus fusco-testaceis; pectore utrinque fusco-nigro-biplagiato. Long. corp., 5 mm.; expans. alarum, 11½ mm., long. ale sing., 5 mm. Hab., Scotia.

Smaller than *O. avicularia*, distinguished by its peculiar lurid blackish colour, without any trace of green even on the feet or legs; the rostrum is black, and the hairs of the body and appendages are shorter than in the better known form; on each side of the thoracic pleuron, between the front and middle legs, there is a very large dark patch extending as far towards the middle as the base of the front coxa, and divided into two parts by an oblique pallid line. The head is considerably smaller and narrower than that of *O. avicularia*, and has beneath a very large area of smoky colour on each side.

Mr. Collin has pointed out to me that the segments, or abscissæ, of the costa afford a good character; the relative lengths of the outer two being in *O. lagopodis* as 9—8, and in *C. avicularia* about 12 or 12½—8. The bristles on the scutellum are usually more numerous, as well as larger, in *O. avicularia*.

There is very little information as to the variation of *O. avicularia* in connection with the birds it dwells on, and great difference of opinion exists as to the value of species that have been proposed, but scarcely established. This subject has recently been discussed by Dr. Speiser, and I need not refer to it further than to say that Bezzi, in the recent catalogue of Palæartic *Diptera*, recognises *O. fringillina*, Curtis, as a distinct species, so that with *O. lagopodis* we have now in Britain three forms that can be fairly well discriminated. Mr. G. H. Verrall tells me that he thinks we have even a greater variety than this, but that he has not been able to progress with their discrimination for want of series of specimens and of information about them.

I do not know whether other *Ornithomyias* may be found in connection with *Lagopus scoticus*, though the point is of some interest. I believe, however, that *O. lagopodis* is not confined to the species (or race) *Lagopus scoticus*, but will be found to occur in Scandinavia on the willow grouse, *L. albus*; there being specimens in the British Museum of Natural History found on the willow grouse in Norway that are, I believe, *O. lagopodis*.

Mrs. Duff Dunbar informs me that the *Ornithomyia lagopodis* may be found freely in larders where freshly-killed grouse has been placed, and that after a short time they leave the birds and may be found on the windows. This fly will bite human beings.

All the British specimens of *O. lagopodis* I have seen come from the northern half of Scotland, and the fly occurs there apparently from June to October; the following being, however, all the records I can give:—

Nethy Bridge, end of June, 1906, by sweeping, one specimen, D. S.; Boat o'Garten, 28.VII.1902, Miss A. Allard, and 30.VII.1902, Dr. Jenkinson, one specimen each; Caithness, Mrs. L. Duff Dunbar, freely in September, rarely in October, 1906; Blair Atholl, in August and September, 1906, A. E. Shipley. In all, 26 specimens; the males in this series being much fewer than the females.

Cambridge: February 9th, 1907.

ON A REMARKABLE NEW EARWIG (*DERMATOPTERA*) FROM PORTUGUESE WEST AFRICA.

BY MALCOLM BURR, B.A., F.L.S., F.E.S.

DACNODES, *nov. gen.*

In familiam Pygidicranidarum locandum; antennæ 35-segmentatæ, segmentis cylindricis; caput depressum; pronotum planum; elytra aequæ desunt; mesonotum amplum, planum, humeris haud carinatis; metanotum amplum; pedes compressi; tarsi compressi, segmento primo clongato, secundo brevi, cylindrico; forcipis brachia robusta, valida.

Superficially closely resembles certain *Pygidicrana* in form, size, and uniform, but differs in the total absence of any rudiments of organs of flight. It is perhaps related to *Karschiella* and *Bormansia*, but lacks many of the remarkable characters of those genera, including the thickened antennæ.

DACNODES WELLMANI, *sp. n.*

Statura magna, robusta; colore (in speciminibus siccis) testaceo, atro-

variegato; antennæ graciles, 35-segmentatæ, cylindricæ; pronotum subquadratum, angulis rotundatis; mesonotum amplissimum; metanotum magnum, postice sinuatum; pedes compressi; abdomen valitum, læve; segmentum ultimum dorsale magnum, quadratum; forcipis brachia ♂ basi contigua, valida, triquetra, haud dentata, margine interno prope basin crenato, apicem versus attenuata, mucronata. ♂.

Long. corporis ♂ 23·5—28 mm.

„ forcipis ♂ 4—4·5 mm.

Large and powerful, almost smooth, excessively finely punctulate, shining, with a dense yellowish pubescence and numerous bristles.

Antennæ with 35 segments, all cylindrical; the first is long, the second quite short; the third about twice as long as the second; from 4 to 10 are short, and the rest longer; reddish-brown.

Head broad and flat; smooth, the sutures not very distinct; testaceous above, with a black border all round, and a black median stripe in the anterior part, and a small black spot just inside the eyes, which are large and black; under-surface of the head shining reddish.

Pronotum flat, subquadrate, but somewhat longer than broad, the angles all rounded; pro- and metazona scarcely differentiated; testaceous, with two very irregular black bands and black humeral markings.

Mesonotum very ample, a little longer and distinctly broader than the pronotum, the shoulders bent down over the pleuræ like elytra, but not keeled there and scarcely folded; testaceous, with black irregular markings, of which the main pattern is a pair of black bands, remote anteriorly, converging posteriorly, nearly meeting, and then suddenly diverging near the posterior margin.

Metanotum formed and coloured like the mesonotum, but posteriorly strongly sinuate.

Elytra and *wings* entirely absent.

Prosternum distinctly narrowed posteriorly.

Sternal plates and first few ventral plates all shining reddish-testaceous.

Femora and *tibiæ* compressed, testaceous, sometimes marbled with black.

Abdomen smooth, broadening gently towards the apex; first four segments yellowish, marked with black; then gradually darker, till the apical segments are all black.

Last dorsal segment large, square, very finely punctulate, with a median longitudinal sulcus; posterior border obtusely convex, depressed over the insertion of the forceps, and the outside angles produced to form a small angular projection.

Penultimate ventral segment very large, smooth, and shining; strongly convex in outline, and rounded apically, just showing a corner of the *last ventral segment* at the angles.

Pygidium not visible.

Forceps with the branches very stout, triquetrous, contiguous and broad at the base, not toothed, but strongly crenate on the inner margin near the base; about half way down attenuated, the apices fine and hooked, the right branch bent over the left.

♂. ♀ unknown.

Hab.: PORTUGUESE WEST AFRICA: Ochileso (about 250 miles to the interior of Benguella) at about 5000 feet.

Three males of this remarkable insect were very kindly sent to me for identification by Dr. F. C. Wellman, of Benguella, who forwarded them with the accompanying note:—"My attention was called to them by the fact that the blacks fear them and scramble out of their way in the same manner they avoid scorpions, centipedes, &c. They state that the creature 'bites at both ends' and is very poisonous." Mr. Wellman adds that he did not personally see any one bitten by one of them.*

The specimens arrived in alcohol, but even then the contrast between the deep black and the pale testaceous made them very striking in appearance; probably when fresh the bleached testaceous is a bright yellow. Superficially, in size, form and pattern, they resemble some of the larger Asiatic *Pygidicrana*, but a glance shows the entire absence of even rudiments of any organs of flight. They lack the thick antennæ of the *Karschiellidæ*, and do not resemble *Bormansia* in any respect except their winglessness; I have therefore felt obliged to erect a new genus for them.

Royal Societies' Club:
February 4th, 1907.

"*Heredity and Sexual Dimorphism in Abraxas grossulariata, var. varleyata*:"
a correction.—As is obvious from the wording of the note (Ent. Mo. Mag., January, 1907, p. 12), the first word of the heading should be "*Heredity*," not "*Hereditary*." The word was written rightly in the MS., and was also distinctly corrected in the proof copy, but for some reason the printer insisted on giving the wrong word.—G. T. PORRITT, Huddersfield: February, 1907.

Onthophilus sulcatus, F., in a mole's nest—Since the publication of Dr. Joy's paper on the species of *Coleoptera* found by him inhabiting the nests of moles (Ent. Mo. Mag., vol. xlii, p. 198) I have investigated some of the numerous nests on the Downs in my immediate vicinity. The most interesting species I have yet met with (in addition to *Heterothops nigra*, Kr., and *Quedius vexans*, Epp., which occur in almost every nest) are *Onthophilus sulcatus*, F., and *Aleochara spadicea*, Er.; of the former seven specimens occurred in the foulest nest I have yet unearthed, and three more in another close by. My experience of *Aleochara spadicea*, Er., differs from that of Dr. Joy as regards the number of specimens in a nest; he remarks that he has "never taken more than two in one nest," whereas my tally at present stands 1, 3, 7, 4, 1, and 3. All the nests in this locality appear to be made entirely of grass.—E. C. BEDWELL, Coulsdon, Surrey: February 6th, 1907.

* Cf. Ent. Mo. Mag., vol. xli, p. 223 (1905), as to the dread with which the white inhabitants of the Illawarra district near Sydney, N.S.W., regard the large earwig *Anisobasis colossæa*, Dohrn.—J. J. W.

Coleoptera in moles' nests in Surrey.—Acting on Dr. Joy's hint (Ent. Mo. Mag., xlii, pp. 198—202), my sons have recently dug up a number of moles' nests, both at Woking and Guildford, in search of *Coleoptera*. Altogether thirty nests have been opened: the first on January 21st and the last to-day, most of which contained *Coleoptera*, as well as many *Hystriehopsylla talpæ*. All the species enumerated by Dr. Joy under his Class A have been met with, and some others in addition. The following is a list of the beetles taken:—*Aleochara spadicea*, Er., fairly numerous in both localities, the largest number found in one nest being 13 (Woking). *Homalota paradoxa*, Rey, one specimen only, Guildford, January 30th; *H. analis*, Grav., Woking. *Heterothops nigra*, Kr., the commonest species in the nests in both localities. *Quedius nigrocæruleus*, Rey, two specimens only, Woking, February 2nd; *Q. vexans*, Epp., and *Q. longicornis*, Kr., in both localities, not rare, the last-mentioned being the commoner of the two at Guildford, as many as six occurring in one nest there; all three species were found in one nest at Woking on February 2nd. *Medon propinquus*, Bris, and *Oxytelus sculpturatus*, Grav., frequent in both localities, and evidently at home in the nests. *Leptinus testaceus*, Müll., sparingly, Woking. *Choleva angustata*, F., rarely, in both localities; *C. nigrita*, Er., one specimen, Guildford. *Lathridius nodifer*, Westw., Woking. As most of this collecting has been done during hard frosty weather, additions to the list may be expected during the coming spring.* The nests examined so far have been in marshy ground, and, with one or two exceptions, made of grass.—G. C. CHAMPION, Horsell, Woking: February 9th, 1907.

Coleoptera in Cumberland in 1906.—I did less collecting than usual during the past season, but was fortunate enough to meet with several species of interest, some few being now recorded for the first time from the county, such being indicated by an asterisk.

Agabus affinis, Pk.,* can now be definitely recorded as occurring in Cumberland; I took it in a boggy pond near Carlisle, from whence a number have been obtained in former seasons, but erroneously referred to *unguicularis*, Th. I have lately examined other undoubted *affinis* from various parts of the county, and have, as yet, failed to find a single specimen of *unguicularis*. *Hydroporus angustatus*, Sturm,* abounded in some fresh water pools on the fringe of Newton Regay Moss. On the sandy banks of the Irthing *Helophorus arvernicus*, Muls., was also to be had in plenty, with a few *Hydroporus septentrionalis*, Gyll., in the shallow back waters of the stream. On the few occasions when I tried for water beetles, they seemed to be abundant. In a cow-shed, early in the year, *Microglossa suturalis*, Sahlb., was very common, while in a similar shed on the same day *Heterothops prævia*, Er.,* was in just sufficient numbers to yield a nice series. Under bark occurred *Homalota cuspidata*, Er., *H. immersa*, Er., *Coryphium angusticolle*, Steph., and *Phlæocharis subtilissima*, Mann. In moss I met with *Calodera riparia*, Er.,* *Homalota exilis*, Er.,* *Philonthus micans*, Gr., *P. nigrita*, Nordm., *P. umbratilis*, Gr., and *P. cortivius*, Er.; a single *P. nigriventris*, Th., occurring in carrion. A few hours' steady work among ants' nests near Keswick in April met with a fair measure of success. No fewer than seven species of *Staphylinidæ* were added to the county list, viz.: *Notothecta anceps*, Er.,* *N. flavipes*, Er., *Thiasophila angu-*

* Five species of *Hister marginatus*, Er., have since been taken, on February 23rd, out of two nests near Woking.—G. C. C.

lata, Er.,* *Oxygoda formiceticola*, Märk.,* *Homalota parallela*, Mann.,* *Dinarda märkeli*, Kies.,* and *Leptacis formicetorum*, Märk.* Two additional *Clavicornis* also occurred, viz.: *Monotoma conicicollis*, Aubé* (fairly common), and *H. formicetorum*, Th.* (one only). *Homalota analis*, Gr., was very common in these nests, *H. circellaris*, Gr., less so. The only nest which produced *Myrmedonia humeralis*, Gr., was a discarded one, but a year or two ago I took a number in this locality in moss on the ground some short distance from active nests. On the sides of streams and ponds I took amongst others *Callicerus rigidicornis*, Er., *Homalota hepatica*, Er., *Myllæna infuscata*, Matth., *Stenus pusillus*, Er., *Lathrobium quadratum*, Pk., *Trogophleus falginosus*, Gr., and *Hygronoma dimidiata*, Gr. Among the *débris* under haystacks, and in hay sheds, I met with *Monotoma longicollis*, Gyll, *Mycetwa hirta*, Marsh., *Cryptophagus bicolor*, Sturm, *Atomaria munda*, Er.,* *A. nigripennis*, Pk.,* and *Cartodere ruficollis*, Marsh. *Atomaria umbrina*, Gyll., and *A. badia*, Er.,* were swept, the latter beneath fir trees. I beat a single *Corticaria fenestralis*, L.,* from birch. A few *Alexia pilifera*, Müll., were found in moss in a fir wood, also *Agathidium convexum*, Shp. *A. seminulum*, L.,* which I took some years ago but overlooked, is worth mentioning, as it does not appear to have been recorded hitherto from the north of England. At the roots of coarse grass a good find was *Neuraphes angulatus*, Mull.* which also is apparently new to the north of England. In rotting wood I secured *Euplectes piceus*, Mots.,* *Bibloporus bicolor*, Denny, and *Pteryx suturalis*, Heer. I noticed a few *Corymbites pectinicornis*, L., in the summer, also *Sericosomus brunneus*, L., and *Athous vittatus*, F., and *Haplocnemus impressus*, Marsh., was found under bark on a fallen oak.

The most interesting Longicorns to occur were *Acanthocinus ædilis*, L., probably introduced in timber, *Saperda scalaris*, L., and *Callidium violaceum*, L., of which I captured what is probably the second Cumberland example, the first being recorded from Eskdale by Canon Fowler (Ent. Mo. Mag., 1899, p. 292).

Amongst the weevils *Litodactylus leucogaster*, Marsh.,* *Eubrychius velatus*, Beck.,* and *Phytobius canaliculatus*, Fahr.,* were taken at Edenhall among aquatic plants washed up on the margins of a large pond. The last named species was very abundant. *Bagous claudicans*, Boh.,* occurred sparingly in the same way, *B. glabrirostris*, var. *nigritarsis*, Th.,* being swept on Newton Moss. Several *Apion's* were unusually common. I never went out without coming across *A. spencei*, Kirb., and *A. ebeninum*, Kirb., as well as, of course, other more generally common species of the genus. I swept a single *A. cerdo*, Gerst., from a rough hedge bank. Sweeping also produced *Hypera variabilis*, Hbst., *Tropiphorus obtusus*, Bond., &c. A good series of *Salpingus wratus*, Muls., was obtained by beating some partially burnt and blackened hawthorn and birch bushes. This species is, I believe, usually found under bark and in dead twigs. It is likely, however, that the bushes here mentioned were dead before being burnt, and the beetles already in possession. Later in the year I took a single specimen in another part of the county by evening sweeping.—F. H. DAY, 151, Goodwin Terrace, Carlisle: February 1st, 1907.

Notes on Oedemera virescens, Linn., and *Malachius barnevillei*, Puton.—The fact that these two species of beetles are at present only known as British from their occurrence, each in one locality in Norfolk, has made me anxious to further investi-

gate them in their respective haunts. This I have done during last summer with some amount of success.

Edemera virescens was originally taken by Mr. James Edwards and myself in a damp wood a few miles from Norwich on June 2nd, 1884, but at the time was passed over as *Æ. lurida*, Marsh., a species which appears to be almost absent from this part of Norfolk. It was not until 1903 (Ent. Mo. Mag., xxxix, p. 64) that Mr. Edwards was able to record it as a species new to Britain. Since that year I have paid several visits to the wood from which the beetles were originally obtained about the date they were originally taken, but a most careful search failed to reveal the insect. It was therefore with particular pleasure that on June 5th last I again met with it in the old locality. It appeared to be extremely local, and was found in one corner of the wood only. Even here it was not plentiful, and several hours' search produced twelve specimens only, nine ♂s and three ♀s. It occurred exclusively in the flowers of *Stellaria holostea*, in the bright sunshine. I did not find it in any other flowers, nor could I obtain any specimens by general sweeping.

Malachius barnevillei was originally taken by myself on June 21st, 1899, on the sandhills in the neighbourhood of Hunstanton. I did not again go to the district until June 26th last, when I paid a special visit to look for this insect. The weather was most favourable, and I met with the species on the exact spot I had taken it seven years before. This beetle was also extremely local, and all my captures were made on a strip of sandhill not twenty yards long. In this one spot it was not uncommon, and I took a good series, and could without difficulty have obtained more; but the colony was so restricted in its range that I feared to collect them too closely. Most of the specimens occurred in the flowers of *Convolvulus arvensis*, but a few were swept from the grass and rough herbage. When in the flowers they were generally found clasping the stamens, &c., showing the striped under-side of their bodies, under which circumstances they were not so easily seen as one would expect in the case of comparatively large and brilliant insects. Unlike most of the species of the genus the sexes are very difficult to distinguish, and it was not until I examined them at home that I found to my disappointment that almost the whole of the specimens were females. Perhaps I was a little late for the males, but when I took them in 1899 the females also predominated.

I can scarcely think but that these two species occur in other places, and I have little doubt that if suitable localities were investigated at the times and under the circumstances I have indicated that further captures of these most interesting species would be made.—H. J. THOLESS, Corfe, College Road, Norwich: *January 11th, 1907.*

Occurrence of Xanthia ocellaris, Bkh., at Norwich.—The capture by Mr. R. S. Smith of *X. ocellaris* in Norfolk (recorded by Mr. E. A. Atmore on p. 13 of this month's Ent. Mo. Mag.) reminded me of a *Xanthia* which I took in a garden at Norwich in September, 1903, and which at the time I was unable to determine, and put on one side for further investigation. This has now been done with the help of the Rev. A. Miles Moss, and I am pleased to be able to record that it is without doubt *Xanthia ocellaris*.—E. A. ATMORE, King's Lynn, Norfolk: *January, 1907.*

Occurrence in Britain of the typical form of Aristotelia stipella, Hb.—Of the typical form of *Aristotelia stipella*, Hb., which has a broad yellow fascia towards the base, a large triangular yellow spot on the dorsum just beyond the middle, and a still larger yellow costal spot rather before the apex of the fore-wing, Stainton [Ent. Mo. Mag., xxiii, 101 (1886)] wrote,—“ I do not seem to possess any British representative,” whilst in Meyrick’s *H.B. Brit. Lep.*, 574 (1895), we read,—“ Only the variety *naviferella* . . . occurs in Britain; the typical *stipella*, which has the yellow markings much more largely developed, is South European.” The object of this note is to call attention to the facts that the typical *stipella*, Hb., has since been proved to occur in Britain, and that the idea of its being confined to Southern Europe is, consequently, no longer tenable. In July, 1898, Mr. W. H. B. Fletcher took the type form commonly, together with a few examples of var. *naviferella*, Dup., amongst *Atriplex portulacoides* in Hayling Island, and, from larvæ subsequently found there, mining in the leaves of this plant, he bred a beautiful series, including both the type and the variety, in the following year, many of the specimens agreeing precisely with Hübner’s figure 138 (“*stipella*”). Mr. Fletcher’s interesting discovery has already been briefly recorded in the List of Hampshire *Lepidoptera* published, in 1900, in the Victoria History of Hampshire (where the locality happens to be entered as “near Havant”), but since the Lists of the Insecta cannot be obtained separately, and the Volume containing them is probably in the hands of but very few Lepidopterists, it seems advisable to make it more generally known.—EUSTACE K. BANKES, Norden, Corfe Castle: February 12th, 1907.

Steganoptycha rufimitrana, H.-S., bred from Euphorbia amygdaloides, L.—My friend, Mr. W. H. B. Fletcher, has kindly given me permission to put on record the following interesting, yet startling, facts. On August 2nd and 9th, 1884, he collected in Folkestone Warren, near the entrance, some larvæ of *Polychrosis euphorbiana*, Fr., on *Euphorbia amygdaloides*, and from the shoots of this plant then obtained he bred, in the course of that same month, two moths, which appear to him, to Lord Walsingham, and to myself, absolutely inseparable from *Steganoptycha rufimitrana*, H.-S., and each re-examination of them has only strengthened my previous conviction that they are genuine representatives of this very variable *Tortrix*, which is only known to feed upon certain species of *Pinus*, and has an extremely limited distribution in Britain. The posterior margin of the basal patch is, in the specimens in question, not acutely angulated near the middle, but experience in breeding *S. rufimitrana* has proved that individuals, precisely identical with these in this and in every other respect, occur by no means infrequently. It is certain that the two imagines bred by Mr. Fletcher must have been collected as pupæ, spun up on *Euphorbia amygdaloides*, and it is equally certain that there was no species of fir or pine growing anywhere near the spot. Presumably, therefore, the larvæ had fed upon this *Euphorbia*, for the only alternative is to suppose that two larvæ of *S. rufimitrana*, when full-fed, had wandered from some neighbouring plant: nothing else growing there, however, would appear any more likely to have afforded this species sustenance.—ID.

Hymenoptera Aculeata at Porthcawl, 1906.—During last season Col. Yerbury spent some time at Porthcawl, and amongst his numerous captures which with his

usual generosity he has handed over to me are the following, which are of interest either for their rarity or for the sake of the locality:—*Tiphia minuta*, V. de L., ♂ and ♀; *Pompilus rufipes*, L., ♀; *Salix parvulus*, Dhlb., ♀; *Tachytes unicolor*, Pz., ♀; *Psen bicolor*, Fab., ♂; *Psenulus pallipes*, Pz., ♂ 2; *Crabro vagus*, L., ♂; *C. tibialis*, Fab., ♂; *C. clavipes*, L., ♂; *C. styrius*, Kohl., ♂, ♀, I was very pleased to see more specimens of this species, *Odynerus trifasciatus*, Oliv., ♂; *Colletes marginata*, Sm., ♂; *Prosopis confusa*, Nyl., ♂; *P. brevicornis*, Nyl., ♀; *Andrena cineraria*, L., ♀; *A. nitida*, Fourc., ♀; *A. angustior*, K., ♀; *A. humilis*, Nyl., ♂, ♀, *Cælioxyx mandibularis*, Nyl., ♂, ♀, nice specimens of this rarity; *Megachile circumcincta*, Lep., ♂; *Osmia leaiana*, K., ♂; *Bombus sylvarum*, L., ♀. Of these the most noteworthy are *Tiphia minuta*, which is more or less rare in most places, *Crabro styrius*, which at present has only been found in a few localities, and was taken by Col. Yerbury at Portheawl also in 1904, and *Cælioxyx mandibularis*, ♂, this sex has only occurred twice in this country, Mr. G. Arnold having also taken it on the Wallasey sandhills. The female has been taken several times on the coast of Wales, Lancashire, and Cheshire.—EDWARD SAUNDERS, St. Ann's, Woking: February, 1907.

Hymenoptera Aculeata in West Suffolk and at Eastbourne.—Lieut.-Col. Nurse, of Timworth Hall, Bury St. Edmund's, who has collected *Hymenoptera* assiduously in West Suffolk, has asked me to prepare a list of those of his captures which I think should be recorded. Many of the species met with are of considerable rarity, and three are not mentioned in Mr. Morley's list of Suffolk *Hymenoptera*, but of these, one, *Halictus fulvicornis*, K., has probably been recorded under the old name of *subfasciatus*, which is now removed from our list, having been split up into *fulvicornis*, K., and *freygessneri*, Alf. The others, *Prosopis cornuta*, Smith, and *Andrena niveata*, Friese, are new to the list. The following are the rarer and more interesting among his captures:—*Pompilus minutulus*, Dhlb., 1 ♂, Tuddenham, vi. *Agenia hircana*, Fab., Tuddenham, Timworth, and Livermere, vi, vii. *Astutus stigma*, Pz., Tuddenham and West Stow, vi, vii. *Gorytes campestris*, L., 1 ♀, Timworth, vii. *Oxybelus mandibularis*, Dhlb., 1 ♂, Elvedon, vii. *O. mucronatus*, Fab., 1 ♂, Tuddenham, vii. *Crabro pubescens*, Shuck., ♂, ♀, Ampton, vi. *C. podagricus*, V. d. L., Timworth, vii and viii. *C. palmarius*, Schreb., very common on Bramble at Livermere, vii, Timworth, vii. *Odynerus antilope*, Pz., ♀, Ingham, vi. *Prosopis cornuta*, Sm., 1 ♀, Timworth, vii. *Halictus fulvicornis*, K., Timworth and Cavenham, viii. *H. prasinus*, Sm., 1 ♀, Tuddenham, vi. *Andrena bimaculata*, K., Ampton and Timworth, iv. *A. ambigua*, Perk. 1 ♀, Tuddenham, vi. *A. cetii*, Schr., 2 ♀, Cavenham, vii.05, and viii.06. *A. niveata*, Friese, Timworth, Tuddenham, and Ingham, vi to viii. At Eastbourne Col. Nurse had the good fortune to meet with *Halictus brevicornis*, Schk., finding it just about the same time as I found mine at Southbourne; he also took several of *H. puncticollis*, E. Saund. (Mor.?), a new locality for this far from common species.—ID.: January 27th, 1907.

Occurrence of Chrysopa dorsalis, Burm., in Norfolk.—Early last year I sent some *Neuroptera* to Dr. Cassal for determination, and some of these specimens were forwarded by him to Mr. K. J. Morton. Amongst them was one specimen of *Chrysopa dorsalis*, which I took near King's Lynn in June, 1904. Recognising the

species as one which I believed I had repeatedly seen during the last twenty years or more in a very restricted area near this town, I worked specially for it in June and July last year, and was fortunate enough to obtain a good series. Many of these specimens have since been submitted to Dr. Cassal and Mr. Morton, and have been returned by them as *C. dorsalis*. In the one restricted locality in which I obtained nearly all my specimens by beating Scotch fir trees, I did not find a single specimen of *C. perla*. In another promising locality some six or seven miles distant, I obtained two *C. dorsalis* (both, I believe, from Scotch fir), whereas *C. perla* simply swarmed in the old sallows and birches. A description of *C. dorsalis* is given by McLachlan in the Ent. Mo. Mag., vol. xxxvii, p. 39, when the species was added by him to the British list on the strength of a single specimen taken in 1900 at Oxshott, Surrey, by Mr. Beaumont. *C. dorsalis* is much like *C. perla*, as McLachlan states, and is liable to be confounded therewith, and at first I had some difficulty in separating the two species, but on further examination of a long series of both species, I now find little or no trouble. The black sub-costa and the broad unbroken black margin on either side of the pronotum of *C. dorsalis*, with other differences given by McLachlan in his description, will, I think, enable any one to distinguish between these two closely allied species. My thanks are due to Mr. Morton and Dr. Cassal for the assistance they have so kindly given me by determining this and other *Neuroptera* sent to them.—E. A. ATMORE, King's Lynn, Norfolk: *January 16th, 1907.*

Note on Nothochrysa capitata, F.—I had the good fortune to take a single specimen of this somewhat scarce insect in West Norfolk on June 8th, 1904, and another on June 7th, 1906. The first was obtained from Scotch, and the second from Spruce fir. It is strange that this conspicuous species should continue to be so uncommon with us. I have been on the look out for it for some years; indeed, ever since Mr. C. G. Barrett captured two specimens here some years ago, but I have never met with more than the two specimens which I now record.—ID.

Review.

WILLIAM JOHN BURCHELL: the materials of a Lecture delivered before the British Association in the Town Hall, Cape Town, August 17th, 1905: by EDWARD B. POULTON, D.Sc., M.A., F.R.S., &c., Hope Professor of Zoology in the University of Oxford. With a Portrait (Report of the British and South African Associations, 1905, vol. iii, pp. 57-110). London: Spottiswoode and Co., Ltd. 1907.

In this able and deeply interesting discourse, Prof. Poulton has done good service in reviving the almost forgotten memory of a man who was not only "one of the most learned and accomplished travellers of any age or country," but also an Entomological observer of a very high order. William John Burchell was born at Fulham in or about the year 1782, and was already an assiduous collector of British insects when he left England for St. Helena in 1805. In this remote oceanic island, made classic ground in later years by the researches of Wollaston, he found solace in his troubles in forming collections of the endemic plants and insects. The original example of the fine and very remarkable Carabid beetle, *Haplothorax burchelli*,

Wat., taken by him, still exists in perfect condition in the Oxford University Museum. Proceeding to Cape Town at the end of 1810 the next two years were occupied in his great and adventurous journey of 4500 miles in the wilds of South Africa, far beyond the limits of civilization in Cape Colony. The narrative of this expedition, "Travels in the Interior of South Africa" (2 vols 4to, Longmans, 1822 and 1824), is one of the classics of English travel, and is eminently worthy, in these days of cheap re-issues, of being made more accessible to the general reader. Many Natural History Notes of the highest value are embodied in this great work, and among them Prof. Poulton draws attention to one of singular interest to the student of "protective resemblance;" a large and sluggish Acridian grasshopper, *Methone andersoni*, Stål, was observed by Burchell associated with a small species of the genus of succulent plants, *Mesembryanthemum*, both plant and insect bearing a striking superficial resemblance to the small pebbles among which they were found. In those of his note books that still exist are numerous entries testifying to Burchell's exceptional powers of observation; among these, the notes on the close superficial resemblance of the Longicorn, *Amphidesmus analis*, to the Lycid beetles in company with which it was found, and that of *Promeces viridis*, another beetle of the same group, to a Fossorial wasp, are perhaps the earliest allusions to the now vast subject of Mimicry in Nature. In 1825, soon after the completion of his book, Burchell once more left England for South America, and after staying more than a year in Rio de Janeiro, set out on his second great expedition through the heart of Brazil, from Santos to Goyaz (being the first Englishman to visit the last named city), and down the great river Tocantins to Pará. It is much to be regretted that no narrative of this journey was ever published, but Burchell's remaining Brazilian note books, like those of his former travels, are full of valuable observations on the Natural History of this prolific region. As a single instance bearing on our Science we may cite his notes on the stridulation of Passalid and Prionid beetles, a habit until recently quite overlooked; and his observation of the same habit in a scorpion, of which no American species was known to have the power of making a noise, led to the discovery by Mr. Pocock in 1904 of an entirely new sound-producing organ in the group. After his return to England in 1830 Burchell lived in retirement at Fulham, occupied with the arrangement of his vast collections, until his sad death by his own hand in 1863, in his eighty-second year. His entomological collections, which even now are unapproached in the fulness and accuracy of the data attached to every specimen, form one of the chief treasures of the Hope Department of the Oxford University Museum, where they were deposited in 1865. An excellent reproduction of a rare etched portrait of the great traveller and naturalist forms an appropriate frontispiece to this valuable paper.

Obituary.

John Linnell, Jun..—The death of John Linnell in May last year has removed an Entomologist who for many years was a very active collector in the neighbourhood of Reigate and Redhill. The writer of this notice has often accompanied him on excursions in search of *Coleoptera*, and especially of the species which occur in sandpits, in which the locality is rich. The species of *Ilyobates*, *Lamprinus*, *Calli-*

cerus rigidicornis, *Tachinus elongatulus*, and other rare species, often rewarding our endeavours. His list of the species of *Coleoptera* taken in the Reigate district was published by the Holmesdale Natural History Society; the last part as far as the *Staphylinidæ*, was published in 1899. The carefulness of his work delayed the publication considerably, but the result is most complete and reliable. John Linnell was a good artist, taking after the genius of his celebrated father, and as a teacher he was most patient and painstaking. His collections are now in the hands of his nephew, Mr. A. H. Palmer, of Carn Towan, Sennen, Cornwall.—E. S.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *November 19th, 1906.*—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. L. Doncaster, of the University, Birmingham, and Mr. Hubert Langley, Marlborough House, Leamington, were elected Members of the Society.

Mr. E. C. Rossiter exhibited a box of *Lepidoptera* taken by himself at Brading, Isle of Wight, last August. The most interesting species was *Pyrausta flavalis*, Schiff., which occurred in hundreds; there were also *Acontia luctuosa*, Esp., *Agrotis vestigialis*, Rott., *Selidosema ericetaria*, Vill., *Acidalia marginepunctata*, Göze, &c. Mr. J. T. Fountain, a nice series of *Lycæna arion*, L., from Cornwall. Mr. G. H. Kenrick, four species of *Erycinidæ* from New Guinea, and pointed out the great difference which existed in general appearance between them and the more familiar American representatives of the family. Mr. W. Harrison, various *Noctuæ* bred from dug pupæ, including *Agrotis plecta*, L., which species, he said, had emerged in his breeding cages without any forcing. Mr. W. B. Collinge, living unnamed Hymenopterous parasites, some bred from larvæ of *Agrotis segetum*, Schiff., and others from the ova of *Smerinthus ocellatus*, L. Mr. A. H. Martineau, the galls made by the gall-fly *Xestophanes potentillæ* on *Potentilla reptans*. He said that they were only known in Devonshire so far as this country was concerned, and there he had found them in abundance. Mr. Hubert Langley, *Chrysoclista linneella*, Cl., from Leamington, where he had found it on the limes in the greatest abundance. So numerous were the moths, that on one occasion he counted fifty-seven on one tree trunk. He also showed *Zygæna loniceræ*, Esp., which is common at Southam, near Warwick.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, January 23rd, 1907.*

At the Annual Meeting of this Society it was announced that the following Officers and other Members of the Council had been elected for the Session 1907-8. 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.; Librarian, Mr. G. C. Champion, F.Z.S. Mr. G. J. Arrow, Mr. A. J. Chitty, M.A., Dr. T. A. Chapman, M.D., Mr. W. J. Kaye, Dr. G. B. Longstaff, M.D., Professor Raphael Meldola, F.R.S., Mr. F. Merrifield, Mr. G. A. K. Marshall, Mr. L. B. Prout, Mr. E. Saunders, F.R.S., Mr. R. Shelford, M.A., and Mr. G. H. Verrall.

The outgoing President, Mr. F. Merrifield, then delivered his address, in which he discussed some of the causes of the persistent abundance or scarcity, generally or locally, of species and varieties of insects, and the relative importance of the consumption of their food, and the attacks of their enemies. Reference was made to striking characters, that seemed of no biological importance, to habits and activities not directly concerned with nutrition or reproduction, and the manner in which they are affected by external conditions; and to structure and fixed habits indicating their ancestral history and affecting their present capabilities. — H. ROWLAND-BROWN, *Hon. Secretary*.

PROGRESSIVE MELANISM :

FURTHER NOTES ON *HASTULA HYERANA*, MILL.

BY T. A. CHAPMAN, M.D., F.Z.S.

(Continued from page 35).

PLATE II.

If we assume that Melanism is provided by Les Maurettes and resented by La Plage, and that the difficulty of intercrossing between the two localities is considerable, it seems that the proportions of melanic specimens in the two places is hardly so different as one would expect. It is probable, therefore, that the *hyerana* form is still not much less adapted to the Maurettes than *marginata*. As regards La Plage it must be remembered that the Costebelle locality is fairly extensive, and is nearly, if not quite, continuous with the La Plage locality, yet its conditions are very nearly the same as those of the Maurettes, and differ from those of La Plage proper in much the same way as do the Maurettes themselves; therefore, as regards the question of La Plage getting rid of the melanic *marginata*, the existence of a powerful traitor in the camp must be taken into account.

A census of moths at Costebelle would be very useful in further elucidating this, but it is not available.

Whether the different tendency as regards producing melanism in *H. hyerana*, between La Plage and the Maurettes, be as great as I suspect, or be merely moderate, it unquestionably exists. Some condition is found in the Maurettes that is absent, or, at any rate, much weaker at La Plage.

To reach this conclusion is a distinct advance in our knowledge. At present, I think, we can go very little further, but it may be well to survey the ground in front and make some sort of working hypothesis, if possible.

The typical habitat for *H. hyerana* is a more or less dry hill slope, which is pretty well burnt up when the moth emerges in August and September. The Asphodel itself, and most herbaceous material, is represented by dry and dead stems and leaves, and it is at once evident that the dominant influence on the colour of the moth will be very similar to that exercised by dead reeds on our "Wainscots" and other marsh insects; *H. hyerana*, as regards colour, might very well be one of these. At La Plage the habitat is not the actual shore, but open spaces amongst wooded sandhills, intervening between the beach and a marshy country within. This would afford very fair "Wainscot" coloration. The hill country at Costebelle and the Maurettes is different, the plants here also affect open spaces, but the open spaces are well grown up with a shrubby undergrowth of cistus, heath, lentisk, &c. I suggest, therefore, that here the moth finds a resting place on stems of various shrubs or amongst their leaves, most of them being evergreens, largely to the exclusion of the dead and dry grassy and herbaceous material, which it finds abundantly enough at La Plage, and almost exclusively at most of the habitats at Taormina, Capri, &c., where I have found it. At Capri, where the palest form occurs, there are no trees or shrubs anywhere near the locality in which I took the larvæ, and where the moths probably rest on dead Asphodel leaves, grass, &c., of the palest hay-colour.

I have asked Mr. Raine and Mr. Powell whether there is any recognised difference of climate between La Plage and the Maurettes. One would expect that there should be some of the nature one usually finds between the actual coast and hills five miles or so inland. Mr. Raine tells me that there is no "recognised difference in the climate of La Plage and Hyères, except that the air near the sea is said to be more exciting than that of Hyères. * * I think it is always cooler along the sea-shore than inland." Mr. Powell (Nov. 8th) says: "The Maurettes get a little more rain than La Plage, and rather more cloud; I cannot find any weather and temperature records of La Plage, but I have frequently known rain to fall over Hyères and the mountains behind, when none or very little has fallen at La Plage; at this time of year (the rainy season) both places get about the same amount. It is particularly in late spring and early summer that there is a difference; then the storms that form nearly every day over the high mountains to the north and north-west often spread down in our direction, giving cloud and sometimes rain or hail, but they very rarely extend to the sea-coast, at any rate, the coast of the

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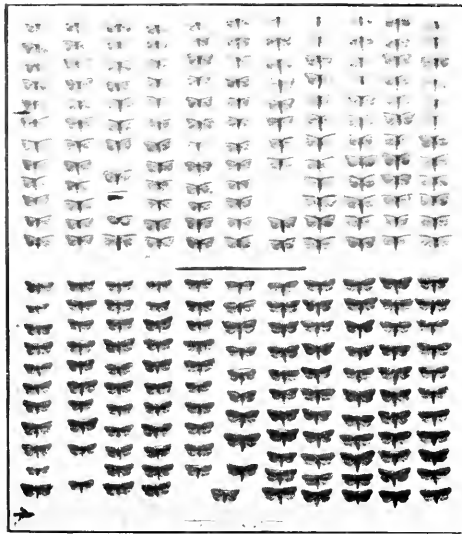
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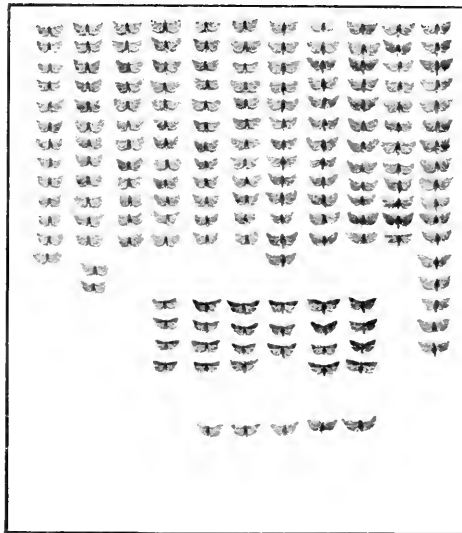
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Hastula hyerana hyerana } from hill 1 and coast 3
 ,, ,, *marginata* } 2 4

Rade d'Hyères. In July and August rain is very rare anywhere down here. As a rule we get a heavy storm at the end of August, but this year no rain fell between July 6th and October 11th, except a slight shower about September 20th."

The weather seems to be a negligible factor. When the moth emerges, high summer reigns in both localities. The storms of the end of August, breaking up the long summer drought, do not appreciably differ at the two localities; they may, however, make the dark stems of shrubs, &c., in the Maurettes temporarily darker. So far as climate goes, then, it is always a little cooler at La Plage, this should make La Plage specimens darker; there is more rain at Hyères, but this does not affect the period when the moth is out; I wondered if the August storm made the later emergences darker. I think the few earlier emergences are generally pale.

A census of 48 consecutive dark specimens showed that 54 pale ones emerged against the first 24, and 71 against the second, so that here the results are the other way. The moths emerge at all hours, but the mass about 6—8 p.m.; there is a second maximum about 8 a.m. I tabulated these for a time and found that the morning emergence showed 34 light to 9 dark, the evening 92 light to 39 dark; the difference is considerable, but I do not see what conclusion we can derive from it.

Taking note of Mr. Powell's report that the weather at Hyères usually remains fine and dry during August, but is usually broken by a thunderstorm about the end of the month, I have tabulated all the emergences of *hyerana* from the Maurettes, with a view to learn if there is any tendency for the darker moths to be more frequent later in the season. It must of course be remembered that these dates refer to moths at Reigate, not at Hyères. The figures are—

		PALE.		DARK.	
		♂	♀	♂	♀
Emerged	Aug. 14—31	6	16	6	7
"	Sept. 1—15	18	12	12	22
"	Sept. 16—30	31	19	26	23
"	Oct. 1—15	9	6	8	6
"	Oct. 16—31	6	4	2	5
		70	57	54	63

Taking the tabulation in another way, it appeared that of each form half had emerged at dates as below:—

$$\text{PALE...} \left\{ \begin{array}{l} \text{♂ ...Sept. 22...} \\ \text{♀ ... " 16...} \end{array} \right\} \text{Sept. 19.} \quad \text{DARK...} \left\{ \begin{array}{l} \text{♂ ...Sept. 19...} \\ \text{♀ ... " 17...} \end{array} \right\} \text{Sept. 18.}$$

There is, therefore, no difference to note between the two forms, but so far as there is any, it is the dark that is the earlier. As regards both it appears that the females emerge a day or two earlier than the males. It may also be deduced that the emergences do not apparently take place freely, until nature has been refreshed by the downfall that marks the late summer.

The photograph of the moths bred presents at a glance the proportions of the two forms reared from the larvæ from each of the localities. They show—

<i>H. hyerana hyerana. marginata.</i>			
Les Maurettes	128	118	246
La Plage	141	28	169
	269	146	415

In the large number bred in 1906 there is of course a larger number of varieties (aberrations) than I have met with before. In the first place ab. *alpha*, Mill., is represented by 38 specimens in the shore and by 36 in the hill group, being in each case about half the total number of male specimens of the pale type. It is altogether a male aberration, as no female specimen shows any definite indication of it. Of these 70 odd specimens about seven show the dark dash more markedly on one side than the other, two at least being typical on the one side, ab. *alpha* on the other. *Hyerana hyerana* with more or less dark dotting and shading are represented by about 14 from La Plage and 20 from Les Maures amongst ♂ specimens; these are often associated with the ab. *alpha* marking, but not by any means always, the commonest form is a dark shading between the veins, with scattered dark scales over the whole of the wing, none are of the definitely spotted form *nigro-punctata* from Taormina.

Amongst the females about 18 from La Plage show definite dark shading, but none of this form in any decided degree occurs among the females from Les Maurettes. This is somewhat curious, the males varying in the contrary proportions. The row of black dots along the inner margin is more or less associated with this darkening, but occurs separately, and is a purely ♀ variation.

As regards the dark males of type race, it is to be noted that the mass of the specimens had emerged at the end of October, but on November 23rd two males emerged, both these were very dark; on December 26th a ♂ emerged, again very dark, a further specimen emerged on 27th, a ♂ of an extremely dark form not previously met

with, the discal spot being a great broad dash reaching nearly to the base of the wing, with a broad black patch on the costa opposite it, much blackening of the wing beyond the discal spot, and a distinct black line on the fringe, where it occurs in *marginata* and *marginula*, a line however of black (not purple) scales. This line was also present in the specimen of the 26th. The only two specimens of the *hyerana* form in which I have met with it. These specimens were no doubt nearly two months in the pupa state owing to the colder weather, and to this more than anything else their extreme darkness may be due. Altogether 15 specimens emerged in November, December, and January, and of these 13 (10 *hyerana* and 3 *marginata*) were darker than any specimens among the whole 400 odd emerging up to end of October. One ♀ made a slight approach to being ab. *alpha*, as well as being very dark. There is one other remarkable specimen amongst the *hyerana* section, this is a ♂ specimen with rich orange tinting of no less than 26 mm. in expanse, the next largest I have (except one of 24 mm.) being under 23 mm., and the average less than 22 mm.; 26 mm. is about the expanse of the largest ♀ specimen, the average being well under 25 mm.

Turning to the *marginata* section. There is a remarkable difference between the hill and shore sections. I have classified 23 specimens from La Plage as *marginata* and 5 others as *marginula*, but in the Les Maures series 128 as *marginata* and 1 only as *marginula*. There is a much larger proportion of golden-orange forms amongst the *marginata* than was the case two years ago, but less perhaps than amongst those bred from eggs laid by them. There are all gradations between the orange and purple specimens, so that a strictly accurate census is impossible; but drawing the line as well as I can I should tabulate the *marginata* as under:—

	Les Maures.		La Plage.	
	♂	♀	♂	♀
Orange forms.....	19	26	2	3
Ordinary purple forms.....	32	32	10	8
Very dark, with fringe darkened in addition to marginal line..	2	6	—	—
	53	64	12	11

The discal spot is usually invisible in *marginata*, but it can be made out in some of the most orange specimens, and two of these are distinctly Millière's var. *alpha* so far as the spot is concerned.

EXPLANATION OF PLATE II.

To exhibit graphically the proportion of light (*hyerana*) and dark (*marginata*) specimens occurring at each of the two stations (hill and coast).

1. *H. hyerana hyerana* from hill.
2. *H. hyerana marginata* from hill.
3. *H. hyerana hyerana* from coast.
4. *H. hyerana marginata* from coast.

The one separate specimen in **2** and the 5 in **4** are *hyerana marginata* ab. *marginula*.

Betula, Reigate :

January, 1907.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (18).

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

BLENNOCAMPIDES = *MESONEURA* TO *PAREOPHORA*.

After the *Hoplocampides* we come, following Konow's arrangement, to the *Blennocampides*. And at this point it will be well to refer to my Table of Generic Characters (Ent. Mo. Mag., August, 1903) in order to correct certain errors and misprints, which might otherwise become troublesome as we proceed.

Page 191 (line 17).—After the words "in different cells," read (to meet the case of the *Dolerides*) "or else the humeral area is not petiolate."

Same page (lines 30 and 32).—For "gradually tapers to a point at apex," read "cultriform, broad at base and short, constricting rapidly to a sharp point at apex;" and for "suddenly acuminate at apex," read "elongate, tapering gradually towards the pointed apex." (I seem to have said just the reverse of what I intended!).

Same page, last line.—Here is an important omission, a genus having been overlooked. The line should be altered as follows:—

- "— Præsterna not defined (a) H. w. with a medial n. *Monophadnus*.
(b) H. w. without a medial n. 51."

Page 193, line 21.—"Tarsal" is a misprint for "dorsal."

The *Blennocampides* are divided by Konow into almost as many genera as the *Nematides*; few, however, of these genera contain any considerable number of British species, and several no more than one.

In all *Blennocampides* the humeral area of the fore-wing is "petiolate," and this character separates them from all other tribes

of the Sub-family *Teuthredinini*, except the *Nematides*. From most genera of this latter tribe they may be distinguished at a glance by the radial cell, which is always "divided." Some *Nematides*, however (*Dineura*, &c.), have also a "divided" radial cell; and from such we cannot separate the *Blennocampides* by characters of the fore-wings only, but by the absence of some other point essential to the definition of a true Nematid, *e. g.*, well-developed genæ, complete neuration in the hind-wing (humerus, cubital n. and medial n. all present), &c., for which see Ent. Mo. Mag., August, 1904, p. 176. Two of Konow's Blennocampid genera consist of insects which were formerly reckoned among the *Nematides*, and which still stand in our British lists as *Dineura*, spp. These are *Mesoneura* and *Pseudodineura*. The rest of the tribe is made up of species classed hitherto under three genera only (*Blennocampa*, *Fenusa*, and *Fenella*), but now broken up into no less than fourteen.

The coloration of Blennocampids is generally sombre, black or (very rarely) black and red, never green, nor ochreous, nor conspicuously variegated with yellow or white. Their form is usually stout and clumsy looking, and their movements in life rather slow and sluggish. When alarmed they often feign death, dropping to the ground or to the bottom of a collector's net and remaining motionless. While fresh their bodies are soft and plump; but after death they shrivel up and lose shape greatly, so that they seldom form attractive objects in a collection, either by their colours or their shapes. Their average length of body may be stated at from 4 to 6 mill., a few species reach to a length of 9 mill., and some are not above 2 mill. long, or even less. Naturally with old and shrivelled specimens it is difficult to take more than approximate measurements. The wings are broad, but weak, and liable to creasings and crumpings, which make a careful examination of their neuration rather troublesome work. Still, there is seldom much difficulty, after a little practice, in ascertaining the specific identity of a Blennocampid; provided it be so prepared as to be accessible all over to a lens. Carded specimens, of *Tomostethus* especially, are sometimes excessively troublesome, because their chief characters lie in those parts of the head and thorax which are rendered invisible by that mode of preparation.

By way of clearing the ground, before we attempt to tabulate the longer genera, it may be well to dispose of some containing only a single British species each, which *ought* therefore to be determin-

able by my Table of Generic Characters* alone, but as to which, notwithstanding, a few additional remarks may be of service to beginners.

MESONEURA, Htg.

Our only species is *opaca*, F. (= *Dineura verna*, C.). This insect, when once known, is easily recognised. It is fairly large for a Blennocampid, about 6—7 mm. long; black, with dull reddish-orange markings of variable extent—usually the pronotum, the side lobes of the mesonotum, the scutellum, a mark on the pleuræ, and more or less of at least the ventral surface of the abdomen, are of the latter colour. The neurulation is peculiar in several ways. In the fore-wing the nerve dividing the radial cell is nearly or quite interstitial with the second cubital n., and that again with the second medial (or "recurrent") n., so that the three form roughly a single nerve at right angles to the axis of the wing. Also the discoidal or basal n. strikes the subcosta not (as is usual in the Blennocampids) at or near the origin of the cubitus, but far before it. Again, whereas most of the tribe have at most *one* "closed cellule" (medial) in the hind-wing, and many have none at all, *Mesoneura* has *two* (cubital and medial). These latter characters are among those which have led authors since Hartig to treat the insect as a Nematid. But they belong also to the *Hoplocampides*; and the position of the eyes (almost touching the mandibles), and the form of the mandibles, associate our species much better with that group than with the *Nematides*. On the whole, therefore, Konow considers it to be an aberrant member of the Blennocampid tribe, linking the latter more or less to *Hoplocampa*,† and through that to *Selandria*, &c., with which we shall deal later.

PHYMATOCEROS, Dhb.

Konow has changed the last syllable of Dahlbom's generic name from *-a* to *-os*. The genus is very distinct, though containing only one species—the well-known *aterrima*, Klug. Alone of all Blennocampids this insect has the 3rd antennal joint distinctly shorter than the 4th, the antennæ are long, filiform, and ciliated—very unlike those of any other member of the tribe. It is about the largest of the *Blennocampides* (9 mm. long or so), deep black and shining, with

* See Ent. Mo. Mag., August, 1903, l. c.

† In p. 187 of his vol. iv Mr. Cameron gives what I think is a mistaken account of Konow's reasons for removing *Mesoneura* from the *Nematides* to the *Blennocampides*. The position of the tr. basal nerve in its front-wing would rather have induced him to leave it in the former tribe, of which, and *not* of the *Blennocampides*, this neurulation is characteristic. But finding that a similar neurulation occurred in the *Hoplocampides*, and that in other points of structure *Mesoneura* seemed nearer to these than to the *Nematides*, Konow felt himself justified in allowing the latter consideration to outweigh the former, and removed *Mesoneura* into the *Blennocampides*, *not because of but in spite of* its neurulation.

very dusky wings. The structure of the antennæ readily distinguishes it from anything with which it might otherwise be possible to confuse it.

RHADINOCEREA, KDW.

Our only species is *micans*, Kl. (not to be confounded with the *Blennocampa micans* of Cam., vol. i, which the author states in vol. iv to be a *Tomostethus*). It is superficially very like *P. aterrima*, having nearly the same size and quite the same funereal appearance (black body, dusky wings, &c.), but the antennæ are not ciliated, and their 3rd, 4th, and 5th joints are approximately equal. It differs also from *aterrima*, and from other similarly coloured *Blennocampid* spp. (e. g., *Tomostethus nigritus*, &c.) by having the eyes distinctly, though not very widely, remote from the bases of the mandibles.

I first found British specimens of this insect in Mr. McLachlan's collection, and afterwards one in my own (mixed with *aterrima*). The latter was taken here, *i. e.*, at Woking.

PAREOPHORA, KDW.

In this genus the eyes are very remote from the mandibles, and the claws are quite simple, not bifid or toothed, as in nearly all the *Blennocampides*. Our only species is *nigripes*, Kl. It is brightly coloured for a *Blennocampid*, and of slenderer build than is usual in that tribe, measuring about 5 mm. in length, and hardly more than 1 m. in breadth. The head and thorax are black, the abdomen pale red, and there is a closed (medial) cellule in the hind-wings. Superficially it resembles a much commoner British *Blennocampid*, *viz.*, *B. affinis*, Fall. (*assimilis*, C.). But in *affinis* the eyes are close to the mandibles, and the hind-wings have no closed medial cellule, so that the two insects ought not to be confounded; and we have no other British *Blennocampid* for which *nigripes* could possibly be mistaken.

(To be continued).

HYDRENA BRITTENI, SP. NOV., A NEW BRITISH BEETLE.

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

Some months ago Mr. Britten sent me several specimens of a *Hydræna* which he told me were regarded by the north country Coleopterists as *H. nigrita*, Germ., but they appeared to him to differ in several respects from the south country form of this species. At the time I only had in my collection specimens of this north country

form given to me by Dr. Chaster in 1902, but later I took the other form in South Devon, and on examining them saw at once that Mr. Britten was right in supposing that they were distinct species.

There can be no doubt that the southern one is the true *H. nigrita*, Germ. With regard to the other I have been at some pains in trying to find out to which of the European species it might belong, Herr Ganglbauer among others being unable to identify it for me, and I have come to the conclusion it has not yet been described. I have much pleasure in naming it after Mr. Britten, to whom the whole of the credit of its discovery is due, although he was not the first to capture it.

The following is a description of the species:—

Rather elongate, pitchy or reddish-brown, with head pitchy-black; head shining, somewhat diffusely and strongly punctured; antennæ reddish-testaceous, club darker; maxillary palpi reddish-testaceous, tip of the last joint black, differing in the sexes: in the ♂ the first and second joints are swollen at the apex, the third arcuate, gradually broader for three-quarters of its length and then abruptly cone-shaped to the tip, having a small smooth tubercle on the inner or convex side at the junction of these two parts; in the ♀ all the joints are simple, the last rather short, narrow, and broadest in the middle; thorax transverse, somewhat obsoletely impressed at sides and base, disc shining and diffusely punctured, punctuation thick near the margins; sides of thorax dilated in middle in a rounded obtuse angle, contracted in a straight line to base, post angles distinct, but obtuse, opposite 8th or 9th row of punctures on elytra; elytra sub-parallel, not dilated behind, broadest about middle, with nine or ten rows of closely set square punctures between the suture and humeral angle, sutural angles separately rounded; legs reddish-testaceous.

Long, $1\frac{1}{4}$ –2 mm.

H. brittini is most closely allied to *H. riparia*, Kug., but differs from it in being smaller and not quite so parallel-sided, in the shape of the thorax, and in the structure of the maxillary palpi of the ♂. In *H. riparia* the thorax is more strongly and evenly punctured throughout, the sides are more distinctly angled in the middle and more strongly contracted behind, being slightly sinuate just before the hind angles, which are very sharp and exactly right angles, and are opposite the 7th row of punctures on the elytra. The first two joints of the maxillary palpi in the ♂ *H. riparia* are simple, the last joint is not curved, but is gradually dilated for just over half its length and from thence gradually narrowed to the apex; in the ♀ the last joint is proportionally longer than in *H. brittini*, and is broadest nearer the apex than the base.

From *H. nigrita*, which it resembles in size, *H. brittini* may be distinguished by its distinctly more parallel form, lighter colour, less strongly and more diffusely punctured thorax, which is much less

strongly contracted behind. In *H. nigrita* the posterior angles of the thorax are right angles, and the last joint of the maxillary palpi is simple in both sexes. The curved last joint of the maxillary palpi in the ♂ *H. brittani* distinguishes this species from all the allied European members of the genus.

The specimens Mr. Britten has sent me are labelled Newton Moss, 30.5.05, Eadenhall, 13.5.05, Ballycastle (Tomlin). I believe it has been taken in several localities in the north of England and Ireland.

Bradfield, near Reading :

February 3rd, 1907.

Since writing the above Herr Ganglbauer has very kindly sent me specimens of *H. morio*, Kiesw. (a species taken no nearer here than Dalmatia), and suggests that *H. brittani* may be identical with this species. *H. morio* has the last joint of the maxillary palpi slightly curved in the ♂, but not to the same extent as in *H. brittani*, and the small tubercle on the inner side of this joint is further from the apex. The thorax is punctured as in *H. brittani*, but is more strongly narrowed behind, and the posterior angles are right angles. It is apparently a rather larger species.

H. brittani does not seem confined to the North of England and Ireland, as Mr. Champion has a specimen taken at Ranworth.

As the shape of the last joint of the maxillary palpi is so hard to describe accurately, I have thought it best to give a sketch of this joint in the males of the four species named above.

March 8th, 1907.

Hypocyptus ovulum, Heer, and *H. leviusculus*, Mann.—Having two specimens of *Hypocyptus* with dark antennæ, obviously belonging to two distinct species, and yet answering equally well to Fowler's description of *H. ovulum*, Heer, I sent them to Mons. Fauvel, together with several other specimens with dark antennæ, kindly lent me by friends, which they also had regarded as *H. ovulum*; he has identified all but one of the specimens sent as *H. leviusculus*, Mann., the exception being a specimen I took in a wine cellar here, as recorded in Ent. Mo. Mag., vol. xlii, p. 40.

It is evident, therefore, that the majority of specimens of *H. ovulum* recorded from Britain are really *H. læviusculus*. The mistake seems to have arisen from the fact that Fowler describes *H. læviusculus* as being rather a light coloured species, whereas in colour it appears to only differ from *H. ovulum* in having the elytra pitchy-black instead of quite black. I have not the original descriptions of the two species before me, but think it worth while giving the points of distinction I notice between the two species from the specimens kindly identified for me by Mons. Fauvel. In both the antennæ are dark-pitchy black, but in *H. ovulum* the club is much narrower and longer, the last joint being particularly thin and long. In *H. læviusculus* the thorax is distinctly but diffusely punctured, in *H. ovulum* it is almost impunctate. The elytra in *H. læviusculus* are obviously longer than the thorax, and are rather thickly and distinctly punctured and pubescent; in *H. ovulum* they are only as long as the thorax, very finely and diffusely punctured and more shining.—NORMAN H. JOY, Bradfield, near Reading: *January 10th*, 1907.

Further captures of Carphophilus sexpustulatus, F., and other beetles near Doncaster.—On the afternoon of February 28th, the weather being warm and genial, Dr. Corbett, his son, and myself, paid a visit to Wheatley Wood. Some much-weathered carcasses of hooded crows which had fallen from a "keeper's tree" attracted the attention of Dr. Corbett, and a little beating over a sheet of paper produced four specimens of the above-named rare insect; further assiduous beating by his son and myself resulting in our each obtaining two specimens more. The species has thus been taken in three localities near Doncaster, this latest locality being very near to Sandal Beat Wood, where Dr. Corbett took his first specimen in 1904, as noted in *Ent. Mo. Mag.*, vol. xlii, p. 179. Apparently the occurrence of *C. sexpustulatus* in carcasses has not been recorded, although its congener, *C. hemipterus*, L., has been found in such pabulum.

Amongst other species noted either on the move or in hibernation the following may be mentioned:—*Dermestes lardarius*, L., *D. murinus*, L., *Nitidula bipustulata*, L., *Necrobia violacea*, L., *Omosita discoidea*, F., in carcasses; *Silpha atrata*, L., and *Phyllotreta nemorum*, L., hibernating in rotten wood; *Tetratoma fungorum*, F., in profusion in fungi on an old birch tree; and *Rhizophagus bipustulatus*, F., under bark.—E. G. BAYFORD, 2, Rockingham Street, Barnsley: *Mar.*, 1907.

Medon castaneus, Grav., and other Coleoptera in moles' nests near Oxford.—Dr. Joy's very valuable notes on the *Coleoptera* associated with the mole, at p. 198 of our last volume, have induced me to devote some time (and no small amount of labour) to the investigation of the numerous moles' nests in the neighbourhood of this city. To the growing list of beetles already recorded from them, I have much pleasure in adding *Medon castaneus*, Grav. Of this rare species, already met with at large in the district (*Ent. Mo. Mag.*, vol. xli, p. 133), I found two specimens on March 2nd, in a nest made chiefly of beech leaves in very sandy soil on the summit of Shotover Hill, in company with a couple of *Hister marginatus*, Er.—another very welcome "find." My friend Mr. A. H. Hamm also took *Medon castaneus* on the same day, on sandy ground near Cowley, where, on the 9th, Mr. A. J. Chitty and I again succeeded in finding it, apparently quite "at home" in the nests. The

other mole's nest beetles taken here by Mr. Hamin, Mr. J. Collins, and myself, include *Aleochara spadicea*, Er., widely distributed and not rare, varying greatly in size and development; *Oxyptoda metatarsalis*, Thoms., and *Homalota paradoxa*, Rey, as yet rarely; *Quedius vexans*, Epp., fairly common, and *Q. longicornis*, Kr., more sparingly; *Oxytelus fairmairei*, Pand., taken not rarely by Mr. Collins; and *Heterothops nigra*, Kr., as usual the most abundant species in the nests—a large proportion of which, however, are here entirely untenanted by beetles. The giant flea, *Hystriehopsylla talpæ*, until recently so rarely met with, turns up constantly, often to the number of a dozen or more in a single nest, but it is by no means active, and is easily secured when wanted, or as easily avoided.—JAMES J. WALKER, Aorangi, Lonsdale Road, Summertown, Oxford: *March 18th, 1907.*

Aleochara maculata, Bris., near Oxford, and in Berkshire.—On March 16th I turned a bright and distinct-looking *Aleochara* out of a tuft of grass at the side of Hen Wood, about three miles from Oxford. This I at once suspected to be *A. maculata*, Bris., a suspicion which was confirmed on reaching home, when it was found to agree exactly with an unrecorded example of this rare species in my collection, taken by sweeping in a beech wood near Streatley, on May 6th, 1905.—ID.

Oxytelmus variolosus, Duft., at Darenth Wood.—A specimen of this species, captured by myself at Darenth Wood, Kent, on August 2nd, 1903, has been overlooked till recently, when Mr. Champion detected it amongst some *Coleoptera* he was looking over for me.—W. WEST, Lewisham: *March 18th, 1907.*

Noteworthy captures of Lepidoptera in North Sussex.—Among various *Lepidoptera* taken at East Grinstead, Sussex, during the last two seasons, by Miss A. D. Edwards, for whom I have had the pleasure of identifying them, the following rare or local species seem worthy of special mention:—*Sarothripus revayana*, Sc. (*undulana*, Hb.), one, in 1906; *Scoparia basistrigalis*, Knaggs, the only individual met with was an example, caught in 1905, of a handsome melanic aberration that is occasionally found with the typical form in other localities, and to which I hope to refer again shortly in a note on the variation of this species; *Ephestia semirufa* (Hw.?), Stn., a single specimen was captured in 1906; *Dichelia grotiana*, F., one, in 1905; *Cnephasia chrysantheana*, Dup., three were secured in 1905, and a similar number last year; *Cn. communana*, H.-S., one, in 1905; *Ephippiphora signatana*, Dgl., a solitary specimen was found among the captures made in 1905; *Tinea corticella*, Crt. (*emortuella*, Z.), one was taken in 1906; and *Eidophasia messingiella*, F. R., of which an example occurred in 1906.

Of the above, neither *E. semirufa* nor *Cn. communana* is included in the List of Sussex *Lepidoptera* published last year in the Victoria History of Sussex.

As regards *E. semirufa*, it seems impossible, without a sight of Haworth's type specimen, which I have failed to trace, to decide for certain whether his "*semirufa*," described in *Lep. Brit.*, 496 (1812), was merely a variety of *elatella*, Hb., or whether it was the unquestionably distinct but little-known species, captured by Miss Edwards, to which Stainton (*Man.*, ii, 168) applied the name *semirufa*, and in which the more oblique first line reaches the dorsum markedly further from the base

of the fore-wing than in *elutella*. The special characteristics of *semirufa*, Stn., which is extremely local, usually rare, and apparently confined to England, have been pointed out with more or less detail (though with some minor discrepancies, which are probably due, in great measure, to differences in the condition of the specimens examined) by Stainton (*l. c.*), by Barrett [Ent. Mo. Mag., xi, 270 (1875)], by Ragonot [Ent. Mo. Mag., xxii, 24 (1885)], and, most fully and reliably, by Dr. J. H. Wood [Ent. Mo. Mag., xxiv, 250-2 (1888)], who bred the insect from the egg, and contributed some valuable notes on its life-history. In spite of such an accumulation of evidence, this thoroughly distinct species is omitted from Meyrick's Handbook Brit. Lep. (1895), in which *semirufa*, Hw., is entered (whether correctly or incorrectly seems uncertain) as unquestionably identical with *elutella*, Hb.

It seems advisable to mention that the *Cnephasia* referred to above as *communana* is the excessively local species, with long and peculiarly narrow grey fore-wings, to which Barrett and Ragonot used to apply the name [*vide* Ent. Mo. Mag., xx, 243 (1884)]. I agree with them in this application of it, for the insect in question, which was the subject of an interesting note by Mr. A. Thurnall in Ent. Mo. Mag., ser. 2, xvi, 260 (1905), is probably the one from which Herrich-Schäffer's figure "114" was made, and we must assume that his figure "113," also named "*communana*" on the Plate, likewise represents this species, for the shape of the wings supports this idea, although I have never yet seen a specimen of it nearly so dark as that shown in the figure, in which the ground-colour is fuscous, and the grey hue is reduced to two costal and two dorsal, nearly opposite, spots. Such a form may, however, exist, in spite of the only pronounced melanic tendency, known to me, in British examples of *communana* being shown by the markings and not by the ground-colour; and although the posterior margin of the basal patch is strongly and acutely angulated in fig. 113, whereas the corresponding margin is hardly angulated in fig. 114, this by no means militates against the assumption that the figures represent the same insect under different forms, for this is a detail in which our *communana*, in common with various other *Cnephasiæ*, shows great individual variation. In Staudinger and Rebel's "Catalog," part ii, p. 92 (1901), *communana*, H.-S., is sunk as a synonym of *wahlbomiana*, L., but the *Cnephasia* in question, which we believe to be *communana*, H.-S., is certainly distinct from *wahlbomiana*, L. (unless every interpretation that I have seen of Linne's conception* is quite erroneous), and from some, and probably from every one, of the various other forms included by Rebel under the all-embracing term "*wahlbomiana*." Like *E. semirufa*, Stn., it is, unfortunately, omitted from Meyrick's "Handbook," where "*communana*, H.-S.," is merely entered as a doubtful synonym of *conspersana*, Dgl., which latter species, however, although extremely variable, is abundantly distinct in all its forms from the one under notice. Moreover, whereas *conspersana* appears in July and August, *communana*, of which both larva and food-plant seem to be unknown, should be sought for, as pointed out by Mr. Thurnall (*l. c.*), in the end of May and the beginning of June. The following characteristics of *communana* together render it so unlike all its British congeners that there is but little chance of its being confused with any of them:—(1) the shape of the fore-wing, which is remarkably narrow in comparison with its length, in both sexes, and has a very oblique termen; the largest of the thirteen ♂♂ before

* I have not as yet been able to consult the original notice of *wahlbomiana*, L., which was published in the tenth edition of Linne's "Systema Nature."—E. R. B.

me show an *al. exp.* of 22 mm., but the greatest breadth of any fore-wing, which, by itself, measures 10·12 mm. in length, is only 4 mm., while the smallest expand 19 mm., with a greatest breadth of 3·3 mm.; the four ♀♀ in my collection expand 18-19 mm.; (2) the uniform tone, in all ordinary specimens, of the medium grey ground-colour; (3) the narrowness of the fasciæ, which are also more or less clearly defined.—EUSTACE R. BANKES, Norden, Corfe Castle: *February 18th, 1907.*

Pupating habits of Aristotelia palustrella, Dgl.—In Ent. Mo. Mag., ser. 2, xvii, 145 (1906), I stated, with reference to my experience when rearing *Aristotelia palustrella*, Dgl., that in every instance the cocoon was made, not in the crown of the root where it is said, in Mr. Barrett's note in Ent. Mo. Mag., ser. 2, xv, 278 (1904), to be found as a rule, but in a chamber formed among the young leaves and stems that had sprouted therefrom after the shoot had been cut off, and had then died away. For "in every instance" I should have written "in every instance that has come under notice," and the statement, as it stands, requires modification. It correctly embodies the results of the original search that was made for the cocoons, which were by no means easy to find, but a recent and more thorough one, while clearly establishing the fact that the great majority of larvæ, out of about fifteen that spun up, had selected the site I mentioned, revealed the following exceptions. Two cocoons were ensconced in chambers formed inside the thickened bases of stems springing from the rootstocks of the food-plant, while two others were situated in the centres of the basal portions of small shoot-stems. Besides these, a single example was detected in a chamber hollowed out just beneath the bark of a *Rumex* stem, at 2½ inches from its base. The material so much utilized by my larvæ, when preparing for pupation, would never exist in normal wild plants, and it may well be that their desertion of the rootstocks, when full-fed, was largely due to these having become somewhat dry, and consequently tough for excavation.—ID.: *March 11th.*

Occurrence in Britain of the typical form of Aristotelia stipella, Hb.—Mr. Bankes' interesting note (p. 66, *ante*) has made me look at my series of this species, as I felt sure that I had bred the typical form commonly here from *Atriplex portulacoides*. I find that I have six well-marked specimens of the typical *stipella*, bred in June, 1891, from this plant on the shore of the Fleet Backwater here, and two labelled "bred apparently from *Althæa palustris*" (but doubtless from *Atriplex* gathered with it, or from individuals pupating in it) from the Fleet shore at Langton Herring, about three miles off, also in June, 1891. I have also one, slightly less clearly marked, taken here May 27th, 1887, and two of the *næviferella* form taken here and at Weymouth in 1889 and 1891, besides some from other localities.

To the best of my recollection the *stipella* form was the commonest amongst those which I bred from this neighbourhood.—NELSON M. RICHARDSON, Montevideo, Chickerell, near Weymouth: *March 12th, 1907.*

Hymenoptera Parasitica in West Suffolk and at Eastbourne.—In continuation of Mr. Saunders' Note (Ent. Mo. Mag., 1907, p. 67), I may say that Lieut.-Col. Nurse has been so good as to send me for determination some very interesting parasitic *Hymenoptera* from the districts there mentioned. The ICHNEUMONIDÆ

comprised *Microcryptus labralis*, Gr., a ♂ at Timworth, viii; *Acanthocryptus flagitator*, Gr., one ♀ from Fornham, 22.ix; ♀♀ of *Glyphicnemis vagabunda*, Gr., at Eastbourne, viii; a fine ♀ of the local *Aritranis carnifex*, Gr., from Tuddenham (where I have taken it sparingly myself), 18.vi.1906; two *Cryptus obscurus*, Gr., from Timworth; one *Pimpla scanica*, Vill., 17.iv, doubtless after hibernation; a couple of ♀♀ *P. turionellæ*, Linn., from Ampton and Timworth in iv; a ♂ *P. examiner*, Fab., from Timworth; both sexes of the abundant *Collyria calcitrator*, Gr., from Ampton, 30.v; a single ♀ of the uncommon *Mesoleius virgultorum*, Holmgr., from Ingham, 9.vi.06; a ♀ *Polyblastus pinguis*, Gr., from Tuddenham, 22.vi.06; ♀♀ of *Bassus latatorius*, Fab., and *Promethus sulcatus*, Gr., from Timworth; a ♀ *Exe-tastes guttatorius*, Gr., at Eastbourne, viii, with *Henicospilus merdarius*, Gr.; a ♂ *Paniscus testaceus*, Gr., at Bury St Edmunds, vi; two ♀♀ *Anilasta (Limmeria) ruficincta*, Gr., "from larvæ of *H. dipsacea* from Tuddenham, 2.viii.06," and from larvæ of *D. irregularis* from Tuddenham, emerged 3.viii.06"; a ♀ *Meloboris (Limmeria) crassicornis*, Holmgr., from Timworth, viii.05. Among the BRACONIDE were *Bracon minutator*, Fab., from Timworth, viii.05; *Microgaster globatus*, Linn., from Eastbourne, viii; *M. tibialis*, Nees, from Timworth; four ♂♂ of *Microplitis sordipes*, Nees, "from larvæ of *D. irregularis*, Tuddenham, 8 and 16.viii.06"; two ♂♂ of *Microdus tumidulus*, Nees, from Eastbourne, vii.00, and Timworth, viii.05; one ♀ *Macrocentrus marginator*, Nees, from Timworth; and *Alysia manducator*, Panz., from the same locality. CHALCIDS were represented by the uncommon *Chalcis minuta*, Linn., from Tuddenham, 26.vii.06; and the EVANIIDE by the curious and common ♀♀ of *Gasteruption javulator*, Linn.

Reverting to Mr. Saunders' Note (*l.c.*), it is well to put on record that *Andrena niveata*, Friese, was taken in Suffolk even before it was first recorded as British; since Mr. R. C. L. Perkins captured it at Brandon in May, 1899, and thought there was little doubt of its local frequency there. All the specimens recorded as *Halictus subfasciatus*, Nyl., in my "Hymenoptera of Suffolk" are referable to *H. fulvicornis*, Kirby.—CLAUDE MORLEY, Monks' Soham House, Suffolk: March 1st, 1907.

Diptera in Dumbarntonshire in 1906.—The year 1906 proved to be a good one for *Diptera* here, although other Orders were for the most part conspicuous by their absence. During the earlier months some good species were turned up, including *Blepharoptera modesta*, Mg., and *Helomyza flavifrons*, Ztt., both of which are new to the Clyde list. Among other additions to our list the following are perhaps the most notable: *Pulex goniocephalus*, Taschb., seven specimens from dead rabbits; *Trichopsylla gallinæ*, Schrk., from starlings' nests; *T. newsteadi*, Rothschild, from nests of grey wagtail; *Typhlopsylla agyrtes*, Heller, from nest of field mouse; *Lasioptera rubi*, Schrk., two specimens; *Sciara thomæ*, L., common in Murroch Glen, &c.; *Mycetophila lineola*, Mg., common; *Sceptonia nigra*, Mg., two specimens, in December; *Zygomylia notata*, Stan., scarce; *Allococtera pulchella*, Curt., one specimen at Bonhill; *Glaphyroptera fascipennis*, Mg., common; *Empheria compressa*, Wlk., rare; *Tetragoneura sylvatica*, Curt., scarce; *Sciophila marginata*, Mg., not uncommon; *Platyura atrata*, F., one specimen, evidently belonging to this species; *Bolitophila cinerea*, Mg., one specimen, at Bonhill, in November; *Scatopse flavicollis*, Mg., common; *S. albitarsis*, Ztt., rare; *S. halterata*, Mg., common; *S. brevicornis*, Mg., common; *Orphnephila testacea*, Ruthé., not uncommon

on the hills; *Chrysonotus bipunctatus*, Scop., one specimen, at Bonhill, in July; *Rhamphomyia gibba*, Flin., common; *Empis lucida*, Ztt., common on late shallows on the hills; *Edalia stigmatella*, Ztt., one specimen, at Bonhill; *(E. holmgreni)*, Ztt., common; *Heimerodromia oratoria*, Flin., scarce; *Thamnoderonia vocatoria*, Flin., scarce; *Chersodromia cursitans*, Ztt., not rare on the shore at Cardross; *Dolichopus phwopus*, Hal., two specimens identified as this by Mr. Verrall were taken in 1905 at Bonhill; *D. planitarsis*, Flin., one male taken on the hill above Murroch Glen in May; *Hypophyllus crinipes*, several in Murroch Glen in June; *Hercostomus germanus*, W., not rare; *Syntormon pumilus*, Mg., locally common; *S. monilis*, Wlk., occurring along with the last named; *Xiphandrium fasciatum*, Mg., one male; *X. brevicorne*, Curt., scarce; *Sympycnus venicosa*, Mg., not uncommon; *Aphrosylus ferox*, Hal., not uncommon at Cardross; *Platypeza furcata*, Flin., abundant on the under-sides of a large tree-growing fungus at Strathleven; *Chilosia proxima*, Ztt., not scarce; *Hyetodesia pallida*, F., not rare on tree trunks; *H. dispar*, Flin., one ♂ at Bonhill; *Mydwa nigritella*, Ztt., possibly not uncommon, but easily overlooked; *Spilogaster trigonalis*, Mg., not scarce; *S. quadrum*, F., common; *Trichopticus pulcher*, Mde., rare; *Hydrophoria anthomyia*, Rnd., scarce; *Mycophaga fungorum*, Deg., scarce; *Chortophila curvicauda*, Ztt., not uncommon on the hill in early summer; *C. sepia*, Mg., not rare; *C. billbergi*, Ztt., scarce; *Phorbia cilicrura*, Rnd., scarce; *Pegomyia betw*, Curt., one ♂, Bonhill; *Chilosia albitarsis*, Ztt., one ♂, Bonhill; *Azelia triquetra*, W., common; *A. aterrima*, Mg., one ♂ on fungi in autumn; *Ceratinostoma ostiorum*, Flin., common at Cardross; *Calopa pilipes*, Hal., Cardross; *Allophyla atricornis*, W., on fungi in August; *Eccoptomera longiseta*, one specimen at Bonhill; *Blepharoptera inscripta*, Mg., common; *Heteromyza oculata*, Flin., scarce; *H. atricornis*, Mg., scarce; *Tephrochlamys flavipes*, Ztt., one specimen at Bonhill; *Aedoparea buccata*, Flin., Cardross; *Sciomyza glabricula*, Flin., one specimen in Murroch Glen; *S. scutellaris*, two specimens at Strathleven; *Sapromyza longiseta*, scarce; *S. lupulina*, F., one specimen at Cardross; *Leucopis griseola*, Flin.; *Sphaerocera monilis*, Hal., two specimens; *S. subsultans*, F., common; *Limosina nivalis*, Hal., one specimen on fungi in December; *Conicera atra*, scarce; *Phora lugubris*, Mg., *P. thoracica*, Mg., scarce; *P. carinifrons*, Ztt., *P. lutea*, Mg., and *P. rufipes*, Mg., common. This list gives only a selection of the more interesting species met with, and only includes a few of those species that have not previously been recorded from the West of Scotland. Where no locality is mentioned, Bonhill is the place of capture. I have to thank the Hon. N. C. Rothschild for naming the *Pulicidae*, and also Mr. J. E. Collin for examining several of the Acalypterate *Muscidae* in the list given.—J. R. MALLOCH, Bonhill, Dumbartonshire: February, 1907.

Review.

ILLUSTRATIONS OF BRITISH BLOOD-SUCKING FLIES, WITH NOTES: by E. E. AUSTEN. Printed by Order of the Trustees of the British Museum, London, 1906.

The special importance that all blood-sucking Flies have acquired owing to the recent discoveries of their association with the causation and dissemination of

diseases, induced the Trustees of the British Museum to have prepared for exhibition in the North Hall of the Museum coloured drawings of many of the British blood-sucking species, and Professor Ray Lankester rightly considered that the sphere of usefulness of these drawings would be very materially increased if they were published in a convenient form. The result is a volume of 34 plates reproduced by the three-colour process from the drawings, carefully prepared by Mr. A. J. Engel Terzi, and 74 pages of letter-press, by E. E. Austen, Assistant in the Department of Zoology.

The drawings, more especially of the larger *Tabani*, *T. borinus*, *sudeticus*, and *autumnalis*, and some of the *Pupipara*, do great credit to the artist and to Messrs. Witherby and Co., the colour printers; but in several cases the predominance of a greenish tinge in the plate (a fault in the reproduction) spoils an otherwise excellent figure. It is a pity that in some cases the species should have been figured with the wings at rest overlapping the body, because it prevents a comparison of the abdominal and wing markings with allied species. As the introduction states that it is only intended to give a popular account of the insects, one does not look for or expect details of the characters by which the genera and species are recognised; but the more important characters are mentioned, and the distribution and date of appearance are given in considerable detail. The impression left upon one by an examination of the work is, that by its aid, very little difficulty should be experienced in naming the majority of the species, with the exception of those belonging to the genera *Ceratopogon*, *Culex*, and *Simulium*.

Obituary.

John Emmerson Robson.—It is with great regret we record the death, on February 28th last, at the ripe age of 74, of Mr. John E. Robson, of Hartlepool. For a very long period Mr. Robson has been known in the North of England as an ardent and successful Lepidopterist, and since his connection with the "Young Naturalist" (afterwards the "British Naturalist"), equally so throughout the country. Mr. Robson edited the "Young Naturalist" and "British Naturalist" for the fourteen years from 1879 to 1893, the first several years in connection with Mr. S. L. Mosley. The journal was very popular and did much good, and will long be remembered on account of the lively, but thoroughly good natured discussions between prominent Lepidopterists of the time on various Entomological problems. Mr. Robson also issued "A List of British *Lepidoptera* and their named Varieties"; and at the time of his death was engaged in the concluding part of "The *Lepidoptera* of Northumberland, Durham, and Newcastle-on-Tyne." He had been engaged on this work for some years, and three parts had already been issued, completing it to the end of the *Tortrices*, thus leaving only the *Tineina* and *Pterophorina* to be dealt with. Mr. Robson was an enthusiastic and genial companion, as we know from experience, and a charming correspondent. He had been a Fellow of the Entomological Society of London since 1890. Besides his business, and Entomological pursuits, Mr. Robson took great interest in Public work, especially Educational, and was formerly on the old School Board, and more recently on the Education Committee at Hartlepool. He was, too, until his death

a member of the Borough Council; and as illustrating the interest of his family in such matters, it may be mentioned that his father was Mayor of Hartlepool so long ago as 1855.—G. T. P.

Societies.

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

Mr. J. T. Fountain showed a beautifully varied series of *Hybernia defoliaria*, Cl. It included specimens, almost unicolorous, of a dark umber colour; others with the same dark umber colour as a ground colour with dark bands or bars, in some cases broad, dark, nearly black and sharply defined; then there were the usual light brown ones; the usual ones with light ground colour and cross-bars of various widths and intensity, including some the bars on which were nearly black, broad, and sharply defined. Mr. Hubert Langley, various *Lepidoptera* from near Leamington, including *Lymantria monacha*, L., which is not uncommon in one or two woods, *Boarmia roboraria*, Schiff., *Myelois cribrella*, Hbst. Mr. L. Doncaster made an appeal for help in connection with the Royal Society's enquiry into progressive melanism. Mr. W. E. Collinge showed an unknown Dipterous larva supposed to have caused damage to currant bushes, but which he believed to be carnivorous, and only accidentally associated with the currants; it had been seen by Mr. G. H. Verrall and Dr. Sharp, but seemed to them to belong to a previously unknown type of larva. Mr. G. T. Bethune-Baker, a beautiful series of *Pieride* belonging to the genus *Delias* from New Guinea and Australia, and including several new species.

February 28th, 1907.—Annual Meeting. The President in the Chair.

Mr. J. T. Fountain showed living *Pieris rapæ*, L., and *Larentia multistrigaria*, Haw., the former captured on the wing on February 15th, the latter bred. Mr. H. Willoughby Ellis, the following *Coleoptera*:—*Barynotus schönherri*, Zett., from Knowle, a species new to the Midland list; *Anchomenus puellus*, Dej., a species which he had taken several times in frozen reeds near Birmingham, but could get in no other way; and two or three specimens of a form of *Olisthopus rotundatus*, Pk., he had taken at Bewdley, which differed from the normal form in the much lesser proportional width of the thorax in relation to the elytra and also the more slender build of the whole insect—it looked quite a different species. Mr. G. T. Bethune-Baker, a box of gorgeous moths from New Guinea, chiefly belonging to the Geometrid genus *Milionia*, though others belonged to the *Agaristidæ*. They included several new species.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The usual Monthly Meeting of this Society was held in the Royal Institution, Colquhoun Street, Liverpool, on Monday, January 21st, 1907, Mr. W. MANSBRIDGE, Vice-President, in the Chair.

Mr. A. J. Wightman, of Reigate, was elected a Member of the Society.

A paper was read by Mr. F. N. Pierce, entitled "Notes on the Structure

of *Malacosoma* hybrid *schaufussi* (*M. castrensis* × *M. neustria*). The paper was admirably illustrated by microscope preparations of the insects named, as well as of *M. franconica*, shown by the aid of the micro-lantern. The author pointed out that, unlike the usual mixture of male and female genitalia obtaining in the case of hybrids, the sexes of *schaufussi* possessed unmixt organs proper to the respective sexes. From a consideration of the details of the structure of the hybrid moths they are seen to combine the distinguishing features of each of the parent species, though perhaps leaning more towards *neustria*. The scales also showed modifications, being intermediate in form and size between those of the parents from the same part of the wing. Mr. Fred. Birch gave a most interesting address upon his experiences in Trinidad when in quest of tropical *Lepidoptera*, with original observations upon the habits and peculiarities of the butterflies of the island. The following exhibits were made, viz.: by Mr. Oulton Harrison, an album of photographs of *Lepidoptera* in their various stages, taken by Mr. Hugh Main, of London; also on behalf of the Rev. T. B. Eddrup, of Horbury, melanic *Agrotis agathina* from the West Riding, *Bourmia repandata* from Horbury, and its variety *conrersaria* from Barmouth. The Hon. Secretary showed, on behalf of Mr. R. Hancock, of Birmingham, a number of photographs of *Lepidoptera*, and read a letter relating to the exhibit. By Mr. W. Mansbridge, a short series of *Triphæna comes*, var. *curtisii*, from Aberdeen, and a series of the chocolate form of *Hemerophila abruptaria* from the London area, together with examples of the type for comparison; also melanic specimens of *A. agathina* from Delamere for comparison with Mr. Eddrup's, more smoky in ground colour than the West Riding specimens. Mr. Oscar Whitaker, lantern slides of the exotic cockroaches *Blabera gigantea* and *B. marmorata* from the collection of Mr. E. J. B. Sopp.

February 18th, 1907.—Mr. W. MANSBRIDGE, Vice-President, in the Chair.

The Chairman communicated a paper entitled "*Micro-Lepidoptera* captured in Lancashire and Cheshire during 1906," and illustrated his remarks by specimens of all the moths referred to; there were no rare species among them, but about thirty additions to recent records were mentioned. In illustration of the *Tortricæ* of North Lancashire, Mr. C. H. Forsyth, of Lancaster, sent a box of some ninety species, collected mainly in the neighbourhood of Lancaster, including *Sciaphila penziana* from Avonside, *Conchylis alternana*, *Aphelia osseana*, *Grapholitha penkleriæna*, and *Dicrorampha saturnana* from Lancaster. This exhibit proved a very useful contribution to our records for the northern part of the county. Mr. Robert Adkin, of London, sent for exhibition a pair of the Tortricid moth, *Tortrix pronubana*, one of the most recent additions to the British list. Other exhibits were a series of beautiful water-colour drawings, illustrating protective coloration in butterflies and moths, by Mr. Newall, of New Brighton; and by Mr. Richardson, several cases of insects for educational purposes.—H. R. SWEETING and WM. MANSBRIDGE, Hon. Secs.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, January 24th, 1907.—Mr. R. ADKIN, F.E.S., President, in the Chair.

ANNUAL MEETING: The Treasurer's balance sheet was read, and showed that

the Society was satisfactory financially. The Council's report of the position and progress of the Society was then read, and showed that its position of usefulness was still maintained. The President then read his Annual Address, including in it remarks on the progress of Entomology generally during the past year. Votes of Thanks were unanimously passed to the retiring Officers and Council. The following is a list of those gentlemen elected to serve as Officers and Council for the ensuing year:—*President* R. Adkin, F.E.S. *Vice-Presidents*, W. J. Kaye, F.E.S., and H. Main, B.Sc., F.E.S. *Treasurer*, T. W. Hall, F.E.S. *Librarian*, A. W. Dods. *Curator*, W. West (Greenwich). *Hon. Secretaries*, Stanley Edwards, F.L.S., and Hy. J. Turner, F.E.S. *Council*, F. B. Carr, T. A. Chapman, M.D., F.Z.S., A. Harrison, F.L.S., A. L. Rayward, F.E.S., A. Sieh, F.E.S., R. South, F.E.S., and E. Step, F.L.S.

ORDINARY MEETING: Miss Margaret Fountaine, F.E.S., of West Hampstead, was elected a Member.

Messrs. Harrison and Main exhibited a series of *Boarmia repandata*, mainly from Isle of Man parents, with series from Cornwall, Delamere, and Isle of Lewis, and contributed notes on their occurrence and variation. The captured Isle of Man specimens were taken settling on rocks. Mr. Main, a living larva of *Charaxes jasius*, received from the South of France, and called attention to its wonderful coloration, shape, and to the fact that the curious mask of the head is shed as a whole.

Thursday, February 14th, 1907.—The President in the Chair.

Mr. Goulton exhibited a series of *Hybernia defoliaria*, bred from Ranmore Common larvæ, most of the imagines being dark and more or less uniform. Mr. Newman, pupæ of *Asteroscopus nubeculosa* of a transparent green colour, just like pupæ when first changed, and also spun-together tufts of reeds containing pupæ of *Meliana flammaea*. Mr. Rayward, a young living larva of *Strymon w-album*, which he had cut out of an egg in mid-January; it was still alive, although normally perfectly quiescent. Mr. Tutt noted that the species hibernated as a larva within the egg shell. Dr. Chapman, a large very brown *Callophrys rubi* from the Riviera, with antennæ brown beneath, and two examples of the same species set to show position of "tails" of the wings when resting. Mr. Adkin, a series of *Eubolia cervinata* reared from Eastbourne larvæ, and stated that the larvæ could only be found at night. Mr. Kaye, a long series of *Heliconius hydara*, sub sp. *columbina*, with a pair of *H. amaryllis*, sub sp. *rosina*, from Colombia to show the extraordinary colour resemblance of the two species. Mr. Harrison, for Mr. Mansbridge, a long series of *Agrotis ashworthii*, bred from North Wales larvæ, and read notes on the breeding, habits of the larvæ, and variation of the resultant imagines, of which about 24% were very dark. Mr. Hy. J. Turner read a paper entitled, "Our Authorities. An Introduction to Entomological Literature," illustrating his remarks by a number of volumes issued previously to 1800, exhibited by Messrs. Adkin, Edwards, Sieh, and himself. Miss Fountaine exhibited (1) the very local form of the summer brood of *Pieris napi*, var. *flavescens*, from Mödling, near Vienna; (2) *P. daptidice*, var. *bellidice*, from Aix-en-Provence, and ab. *raphani* from Algeria; (3) *P. chloridice* from Asia Minor; (4) *Anthocharis cardamines* and its allies, *A. gruneri* from Greece, *A. damone* from Syria, *A. euphenoides* from South France, *A. eupheno* from

Algeria, *A. belemia* and *A. falloui* from the desert district in Algeria, *A. pechi* and *A. charlonia* from South Algeria. *A. tagis*, var. *hellezina*, from Aix-en-Provence, and var. *insularis* from Corsica.

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

Mr. H. W. Barter and Mr. F. D. Coote, of Camberwell, were elected Members.

Dr. Chapman exhibited (1) a pupa of *Hastula hyerana* showing the jaws; (2) a specimen of *Capina alia* with a triple tarsus to the right hind leg; (3) a short series of *Iciopitilus carphodactylus*, a plume new to Britain, taken at Folkestone by Mr. Purdey; and (4) some fine varieties of *Peronea cristana*. Mr. South, an extremely pallid specimen of *Satyrus semele* taken near Canterbury. Mr. Lucas, specimens of *Hybernia leucophaearia* from Oxshott. Mr. Rayward, ova of a "thorn" laid in a row on a twig of blackthorn. Mr. Newman, cocoons of *Dicranura bicuspis* on birch bark overgrown with lichen from Tilgate Forest. Mr. Turner, *Coleoptera* from Waroona, West Australia. Mr. Adkin, long varied series of *Dianthæcia carpophaga* from the South Downs, and gave notes on them. A large number of lantern slides were exhibited by Messrs. Lucas, Main, West (Ashtead), Dennis and Tonge, illustrating life-histories, protective resemblance, egg capsules of *Blatta*, spp., ova of *Lepidoptera*, &c.—H. J. TURNER, Hon. Sec.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, February 6th, 1907.—Mr. C. O. WATERHOUSE, President, in the Chair.

The President announced that he had nominated Mr. Frederick Merrifield, Mr. Edward Saunders, F.R.S., F.L.S., and Mr. George Henry Verrall to be Vice-Presidents for the Session 1907-8.

Mr. Charles Kimberlin Brain, of 23, Burnside Road, Tamboers Kloof, Cape Colony; Mrs. Catherine Maria Moore, of Holmfild, Oakholme Road, Sheffield; and Mr. Alfred Ernest Tonge, of Aineroft, Reigate; were elected Fellows of the Society.

Mr. E. A. Cockayne brought for exhibition a collection of *Lepidoptera* made by him at Tongue, North Sutherlandshire, between June 30th and July 13th, 1906, comprising many species not hitherto reported from the county. It was noticeable that the several species showed little tendency to melanism. Dr. T. A. Chapman exhibited fifteen specimens of *Hastula hyerana*, Mill., to demonstrate how it may vary under the circumstances of late emergence. The majority of those he had last year emerged in August, September and October, to the number of over 400 specimens, in the pale (*hyerana*) and the dark (*marginata*) form. In November four pale and three dark specimens emerged; these are very decidedly darker than the darkest of the earlier emergences. Four specimens came out in December, all of them *hyerana*. Three of these were males, and were remarkably dark forms, like nothing amongst the preceding specimens. The effect of cold, he said, is to produce darkening as it appears to be the case in a majority of temperature experiments. Miss M. E. Fontaine, a number of Anthocharid and Melitæid butterflies from various localities in Europe, Asia Minor, and North Africa, showing a wide range of variation. The President, a female example of the genus *Dorylus*, sent to the

Museum from Mengo in Uganda. There were with it in the same tube one small and two large Workers, which he thought would probably be the means of identifying the species at some future time. The Workers closely resembled specimens in the Museum named *D. arcens*, which is said to be the same as *nigricans*. The Rev. F. E. Lowe, various aberrant forms of Swiss butterflies, including *Melanargia galatea*, ab. *fulvata*, Lowe, from Martigny; *Lycæna arion*, ab., from Pontresina, with the black spots on the under-side of the wings almost entirely absent, save one very large kidney-shaped, slightly tinged with white at the centre of each wing; and a pair of *Pieris napi*, var. *bryoniae*, taken in cop. at Caux, the ♂ not only suffused as in *bryoniae*, but also having the ♀ markings. Colonel Charles T. Bingham, the pupa of a Tineid moth, probably of the genus *Bisusitta*, from Upper Burmah, presenting with its surroundings a remarkable mimetic resemblance to the head and body of a small snake; and a case illustrating the curious habits of butterflies of the genera of *Gerydus* and *Allotinus*, which join with ants in attending *Aphidæ* for the sake of their sweet excretions. The Rev. F. D. Morice, a very remarkable gynandromorphous specimen from Silchester of the common fern-visiting Saw-fly, which, originally described by Fabricius as *Hylotoma cingulata*, was generally known afterwards as *Tenthredo cingulata*, and is now called—the generic name being Dahlbom's—*Strongylogaster cingulatus*, F., the dividing line between the ♂ and ♀ portions running longitudinally, not transversely, from end to end of the creature; a form stated by the President to be unique. Mr. Percy I. Lathy communicated "Notes on the Indo-Australian *Papilionidæ*," and Mr. Ernest A. Elliott and Mr. Claude Morley "On the Hymenopterous Parasites of *Coleoptera*."—H. ROWLAND-BROWN, *Hon. Secretary*.

SOME NOTES ON THE LEPIDOPTERA
OF THE "DALE COLLECTION" OF BRITISH INSECTS, NOW IN THE
OXFORD UNIVERSITY MUSEUM.

BY JAMES J. WALKER, M.A., R.N., F.L.S.

I.—RHOPALOCERA.

In the history of British Entomology during the second quarter of the nineteenth century, three names—those of James Francis Stephens, John Curtis, and James Charles Dale—stand pre-eminent; and the great collections of all Orders of our indigenous insects, formed by these pioneers of our Science, fortunately still exist in their entirety. One of these, that of John Curtis, is now at the Antipodes, and thus no longer within our reach, but Stephens's insects have long formed a valuable item in our National Collection; and within the last few months, the extensive collections commenced by the elder Dale in the opening years of the last century, and since his decease in 1872, continued and augmented by his son, have through the munificence of the last-named Entomologist, found a final and per-

manent resting-place, in which they will be accessible for study and examination by all workers who may desire to consult them. Under the will of the late Charles William Dale, the whole of the collections, as well as the entomological diaries and other records made by his father and himself, are bequeathed to the Delegates of the University Museum at Oxford, subject to the condition that they shall be permanently kept separate under the name of the "Dale Collections."

The value of this generous bequest can scarcely be over-estimated, as besides the personal and historical interest attached to very many of the specimens, some of which have been handed down from Haworth's and other classic collections, and the number of rare and now extinct British species, and of fine and remarkable varieties which they include, these collections formed the source whence Curtis derived a great part of the material used in his splendidly illustrated "British Entomology." They thus contain many of Curtis's "types;" and others of his species, which may be more or less open to doubt, may be verified by reference to the Dalean collections. The journals and records, which are continuously carried on from 1808—the first definite date in J. C. Dale's "Entomological Calendar," May 2nd, 1808, recording the capture of "*Pontia cardamines*" at Enborne, Berks—nearly up to the time of C. W. Dale's death early last year, form an entomological narrative of very great interest and value. The above-named MS. volume, indeed, takes us even further back in time, as Dale's "Calendar" is preceded by one on the same lines, compiled by him from the notes of the Rev. Charles Abbot, D.D., F.L.S., one of the Masters of Bedford Grammar School, in which the earliest entry bears date May 8th, 1798. Thus we have considerably over a hundred years of continuous entomological records embodied in these volumes, in which the date and other particulars of the capture, &c., of nearly every specimen in the collections has been entered, and the exact history, of at least every important insect, could be traced by its original possessors. It is, however, much to be regretted that, at any rate in the case of *Macro-Lepidoptera*, a large number of specimens bear no label of any kind, and thus they cannot be connected with the records with any degree of certainty.

Complete summaries of the species represented in the collections were drawn up by C. W. Dale after the death of his father, a separate volume being devoted to each of the larger Orders; the particulars relating to the *Lepidoptera* being entered in a copy of "The Lepi-

dopterist's Register, compiled by T. J. Carrington." This has proved of great service to me in preparing the following notes on the *Macro-Lepidoptera*, a task which I have undertaken at the suggestion of my friend Prof. E. B. Poulton, F.R.S., who now has the Dale Collections under his care. I have also found the two works by C. W. Dale "The History of Glanvilles Wootton, including its Zoology and Botany" (London, 1878) and "The History of our British Butterflies" (London, John Kempster and Co., 1900) of considerable assistance.

In these notes I have adhered to the nomenclature and sequence under which the insects now stand in the collection, and under which they will remain; but these names, if perhaps hardly "up to date," will at any rate be familiar to Entomologists. The abbreviations "J. C. D." and "C. W. D." refer to the labels attached to the specimens, in the handwriting of James Charles Dale and Charles William Dale respectively, though it must be said that in the case of the latter the MS. is not always very legible.

The *Rhopalocera*, as finally arranged by C. W. Dale, are represented by 1944 specimens, occupying 16 drawers in a 24-drawer cabinet of modern make, and include:—

Papilio podalirius, L.—One specimen in somewhat poor condition, without antennæ, but with the tails perfect. The label attached to the insect is as follows: "Clapham Park, wood, May, 1803? nr. Bedford. Dr. Abbot? Mus. Dr. Abbot" (J. C. D.). This corresponds with the entry in Dr. Abbot's "Entomological Calendar" as to the capture of this very doubtful British species in that locality.

P. machaon, L.—A series of 21 specimens, including specimens labelled, "Whittlesea Mere, Hunts., Aug. 7, 1820. B. Standish." "Larva found at Bardolph Fen, Norfolk, July 28th, 1819, turned to fly July 4, 1820, J. C. Dale." "Whittlesea Mere, Hunts., July 24, 1819, J. C. Dale." A fine, large, rather light-coloured ♀ is labelled, "Newlands Common, Glanvilles Wootton, Dorset, Aug. 17, 1815, J. C. Dale," and appears to be the last specimen taken in that locality, where it had previously occurred not rarely. Two examples, "Whittlesea Mere, 1821" (C. W. D.). A curious variety of the ♂, normal, except the right fore-wing, which is much bleached, the ground colour being of a pale dull ochreous tint, and the usual black markings replaced by light brownish-grey. "Bred by Mr. S. Fortescue, of Worcester Park, 1839. Larva from Wicken Fen." (J. C. D.). Three examples in moderate to poor condition, in two of which the yellow colour is greatly darkened, apparently by age, while the third and best may possibly be a dark variety. This has a label, "1893, Cooke, E. Coll., Pritchard, Reigate;" and another, "The whole 3 are specimens given me by C. R. Briggs" (C. W. D.).

Aporia crataegi, L.—A series of eleven good specimens, the first, on an enormous common pin, is labelled at side, "May, 1808, Glanvilles Wootton" (C. W. D.), another, "June 18, 1815, Glanvilles Wootton." There are also specimens from Herne Bay (one very small), the New Forest, Hereford, and Bridgend.

Pieris brassicae, L.—Nine examples of the var. *chariolea*, Steph.

P. rapæ, L.—2 ♂s, exceedingly small; 3 ♂s nearly immaculate, one entirely so; several very deeply cream-coloured ♀s, and one ♀ (Glanvilles Wootton, Oct., 1870) very broadly suffused with dark grey at the base of all the wings.

P. napi, L.—A varied series, including some fine dark Irish and Scotch specimens; 2 ♀s with all the markings exceedingly faint, and one small and well-marked ♀, with the left fore-wing rounded at the apex, so as to give the hind-margin a regularly semicircular outline.

P. daplidice, L.—Thirteen specimens stand under this name, of which, however, the first two are unquestionably ♂ examples of the South European *Euchloë belia*, F. The first of these, on a modern English gilt pin, has no label; the second is labelled "From J. G. Ross collection 1882, Brighton" (C. W. D.). ♀ very aged and shabby-looking ♀ example of *P. daplidice* is of peculiar interest, as it is possibly the oldest specimen extant of this, or of any British butterfly. The label, in C. W. Dale's handwriting, reads on one side "Given to Rev. Henry Burney by J. C. Dale, bought at his sale 1893 by C. W. Dale." On the other side "Bought of Latham, one of Petiver's, probably taken at Gamlingay." At the side is a printed label "1702, Cambridge. (Petiver's folio work "Papilionum Britannicæ Icones, Nomina, &c.," in which *P. daplidice* is figured, bears date 1717, and he died in the following year, so if the specimen be really one of his, the date is probably correct). A faded ♂, under-side, is labelled "Mus. Dr. Abbot, White Wood, Gamlingay, Camb. June 1803, Dr. Abbot" (J. C. D.), and another very aged-looking ♂ example "From R. Hinde of York. Taken at Dover." Five other examples hail from Dover, among them one fine ♀ (under-side) "Bred at Dover, Aug. 2, 1835," and another "Dover, Aug. 1835, A. Leplaistrier," one from Folkestone, one "Taken by a poor boy at Margate in 1859," and one ♂ "Taken at St. Leonards in 1859, brought to Kent by the birdstuffer from whom obtained."

Anthocharis cardamines, L.—Several very small ♂; one or two of this sex with the central black spot in the fore-wing evanescent, and one in which it is quite absent. One remarkable ♀, with an orange dash along the costa, and another in the dark apex of the right fore-wing. This is labelled "G. Baker, Burton-on-Trent," and was obtained by Mr. C. W. Dale in 1905 at the dispersal of the collection of the late Dr. P. B. Mason.

Leucophasia sinapis, L.—The series includes several specimens from Glanvilles Wootton, three quite immaculate examples from the New Forest, labelled at side "v. ♀ *erysimi*, Bdv.," and three labelled "v. *diniensis*, Boisd."

Gonepteryx rhœani, L.—Some deeply coloured ♀s, and one example apparently of this sex, broadly and irregularly suffused with orange-red at the margins of the fore-wings, and of the left hind-wing. This has, however, an unconvincing appearance, and suggests a "cyanide bottle" variety. It is labelled at the side "Wareham, 1902."

Colias edusa, L.—A very fine series of the ordinary form, and of var. *helice*, with three fine intermediate lemon-coloured forms. One of the *helice* has the dark border immaculate "From J. G. Ross coll., 1879" (C. W. D.). Three dwarf examples (2 ♂, 1 ♀, the latter with very dark border), resembling specimens of the late autumn brood which sometimes occurs here, are labelled "*Chrysothema*, Steph., Dover," and agree well with the figure of that form in Ill. Haust. I, pl. II, figs. 1, 2.

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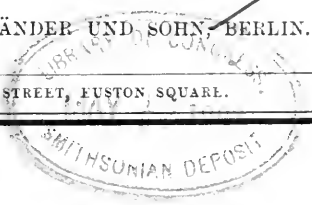
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Colias hyale, L.—Thirteen examples, but no noteworthy variations.

Arge galathea, L.—One ♂, with the ground-colour rather dark ochreous-yellow, perhaps due to age; one very dark example, corresponding closely with the South European var. *procida*, Hubn., on a large common black pin, labelled "From J. G. Ross, 1879" (C. W. D.). (There is a similar specimen, ex coll. Spilsbury, in the fine collection of British butterflies in the Oxford University Museum). An exceedingly beautiful and striking variety of the ♂, in fine condition; the fore-wings above being entirely deep black, except for the large basal and inner-marginal white spots, which are nearly normal, and the submarginal spots, which are much reduced. The basal spot and submarginal spots of the hind-wings differ but little from those of the ordinary form, but the broad central white band is obliterated to the middle of the wing by the black ground-colour, and its inner marginal portion is much suffused with black scales. The under-side of both wings is also strongly suffused with dark grey, except on the hind-margins, all the usual markings being smudged and nearly obliterated, and the ocelli on the hind-wings fairly distinct. Of this fine variety, which bears the label, "Dover, by Le Plaistrier, figured in London's Mag. 1832" (C. W. D.), there is a brief description by the Rev. W. T. Bree, as well as a beautiful and accurate woodcut representing the upper and under-sides, in "London's Magazine of Natural History," vol. V, p. 335, fig. 73 (1832).

Satyrus semele, L.—A fine and varied series of 42 examples, including one ♂ with no trace of the usual ocelli on either side, except a minute black dot at the apex of the fore-wings beneath; four very brightly-marked specimens, one ♀ especially so, approaching the S. European form *aristeus*, Bon., "Derry, 1889, Curzoi." Some pale but well-marked examples from Rannoch, and several under-sides from Cornwall (Bude and the Lizard), very like the finely-marked form found in the West of Ireland.

Satyrus ægeria, L.—One ♂ with the dark brown ground colour replaced by a rather pale sepia shade; one ♂ in poor condition, almost without markings above, "Goodman Sale, Stevens, 25 Nov., 1890" (C. W. D.), and a nearly similar ♂ example, but in better condition, "P. Bouchard, 1860" (C. W. D.).

Satyrus megæra, L.—Some very pale ♀ specimens, one from "Rev. F. O. Morris, Charmouth, July, 1831," and another labelled at side "var. *lyssa*, Bdv." (C. W. D.), and bearing a label "near Sandsfoot Castle, Ang., 1836, A. Pretor." This remarkable variety is above almost exactly like a small ♀ of *Pararge mera* var. *adrasta*, Hb; the under-side is that of rather pale but otherwise typical *megæra*.

Satyrus hyperanthus, L.—Six fine examples of the ab. *arete*, O., one of these from "Glanvilles Wootton, July, 1895" (C. W. D.), and two of the fine ♀ variety with the ocelli beneath enlarged and elongated (var. *lanceolata*, Shipp), labelled "Middlemarsh, Aug. 5th, 1816" (C. W. D.). Mr. C. W. Dale's register shows this specimen to have been taken by his father.

Satyrus janira, L.—An exceptionally fine series of varieties and aberrations, of which the following may be noted:

One ♂, almost uniform pale warm brown above, the sexual brand on fore-wings slightly darker, and the apical ocellus indicated on both sides by a white-pupilled light greyish-brown spot; the under-side of hind-wings pale fawn-colour. Labelled

"Newport, 1861." One ♂, similar to the preceding, but brighter and richer in colour, clear fawn or cinnamon-brown on both sides, with slightly darker sexual brand and apical ocellus. "Glanvilles Wootton, C. W. Dale, 1861" (C. W. D.), and at side "June 22, 1861." An old specimen of this form from Dover. Two fine ♂♂, rather pale brown above, with large symmetrical whitish blotches in fore and hind-wings, one having a dark transverse bar in the pale centre of the left fore-wing; this is labelled "Glanvilles Wootton, C. W. Dale, 1861" (C. W. D.), and dated June 2nd, 1861. Four ♂♂, unsymmetrically blotched with whitish-brown or bone-colour, and a ♂ from the Isle of Harris, having the fore-wings almost entirely dark-brown beneath. A ♀ from the same locality is very dark and rich-looking, the fulvous suffusion in fore-wings being singularly deep in tone. Of this sex, the finest variety is one entirely pale fawn-colour above, with the central fulvous blotch nearly normal. "C. Blomer, 1857" (C. W. D.), and at side, "Dartmoor." Another ♀ is normal except the right fore-wing, which is entirely pale whitish-brown or bone-colour, the apical ocellus just visible as a faintly darker shade, "Glanvilles Wootton, C. W. Dale, 1871"; and one "From Briggs coll., 1896 (C. W. D.), has in each fore-wing a large suffused pale fulvous blotch enclosing an elongate whitish spot below the cell, and the hind-wings largely and symmetrically suffused with whitish-brown above and below. Nearly all these fine varieties are in good condition.

Satyrus lithonus, L.—Two of each sex, with well-marked supplementary black spots in fore-wings, and in one, "Teignmouth," the lowermost spot is white-centred. A ♂ with the left fore-wing completely bleached except at the base, and a very fine ♀ aberration, in which the fulvous colour is replaced by bone-white, "From Rev. H. Burney's coll., 1893" (C. W. D.).

Chortobius pamphilus, L.—One ♂ strongly tinged with purplish-brown, and a beautiful example of the same sex, with the ground-colour clear pale ochreous-yellow without any fulvous tint, the margins cool grey, and the apical spot very dark and conspicuous. Labelled at side, "Langport." Two or three specimens with the ground-colour partially bleached, and others with the dark margins obsolete.

Erebia medea, W. V.—A fine series, but only one marked aberration, a very light-coloured ♀, "Forres, Salvage, 1890" (C. W. D.).

Erebia epiphron, Knoch.—Also well represented by series from Westmoreland and Perthshire, and including a very fine variety of the ♂, deep sooty or umber-brown on both surfaces, with no trace of fulvous anywhere, but with the ocelli of the fore-wings represented by black spots in elliptical pale greyish rings. "J. G. Ross, 1880" (C. W. D.).

Chortobius davus, F.—A very fine series of 66 examples, exhibiting the great range of variation for which this species is so remarkable, and including examples from North Wales, Cheshire, Lancashire, Yorkshire, Newcastle, Cumberland, Kilarney, Armagh, and Orkney.

Apatura iris, L.—A series of 23 specimens, some of which were taken by J. C. Dale at Enborne, Berks, in the early years of last century. A very fine ♂ var. *iole*, Schiff, in which, however, the right hind-wing is somewhat abbreviated. "From J. G. Ross coll., 1879" (C. W. D.), and a ♀ in fine order, in which the ground-colour is quite a light sepia-brown.

Limenitis silylla, L.—A very fine example, with the usual white bands faintly indicated by a few suffused grey blotches, "J. G. Ross coll., 1879" (C. W. D.), and another under-side of the same form, not so fine, "N. Forest, 1897." Both these are labelled at side "v. *obliterata*."

Vanessa cardui, L.—An exceedingly fine variety, in markings corresponding almost exactly with the lower figure "Painted Lady, var. 1," on page 64 of Newman's "British Butterflies"; indeed, the specimen may well be the identical one, formerly belonging to Mr. Ingall, from which the figure was drawn. It is on a rather ancient pin, but is in excellent condition, and is labelled "S. Stevens coll. 1900" (C. W. D.), and at the side, "New Forest."

Vanessa huntera, F.—A small and dull-looking specimen, in rather poor condition, of this well-known North American insect. It is labelled "Pembrokeshire, Capt. Blomer" (J. C. D.), and at the side, "Haverfordwest." The capture of this specimen is recorded by J. C. Dale in "London's Magazine of Natural History," vol. III, p. 332 (1830) as follows: "I beg to announce (should not Captain Blomer have previously given you the particulars) for the first time the capture of *Vanessa huntera* in Britain, by Captain Blomer, at Withybush, near Haverfordwest, South Wales (about ten miles from a seaport) in July or August, 1828; which was, till very lately, considered by him as a small and odd variety of *V. cardui* (or Painted Lady Butterfly), and which he has very handsomely added to my cabinet. Dr. Turton describes it as a native of North America (alone, I believe), from which place it might have been imported, but that remains to be proved, as I never yet heard of the importation of a *Papilio* in this way. . . ."

Vanessa antiopa, L.—Nine examples; one "From Latham, who had several brought to him about 1793—taken nr. London" (J. C. D.), also labelled at side, "Camberwell." This and a second specimen apparently from the same source, but with no label, are in good condition, considering their age. Two, rather old and faded, but still fairly good, "Kirkman's sale, 1847" (C. W. D.), and two "from J. G. Ross coll., 1882" (C. W. D.). Two old and much-faded specimens, one labelled "Barnsley" (C. W. D.), the second bearing a small triangular label with "Coley, sen." on one side, and "known to Weston, Yorks" on the other. The best example was "Caught by A. C. Jarman Frith at Lichfield, Aug. 30, 94."

Vanessa io, L.—Two examples (labelled at side "var. *Belisarius*, Obth.) with the ocellus on the hind-wings represented only by a large pale brown blotch. One of these bears a label "From Mr. Young of Hull, Feby., 1837" (J. C. D.) and on the other side, in different handwriting, "Took this, 1836, at Cottingham." Two with the rich chocolate-red ground-colour replaced by a peculiar madder-purple tint with a shade of grey, otherwise nearly normal; one of these is labelled "Bought of Pratt, sen., Brighton, 1872" (J. C. D.). A large but much faded specimen "Enborne, 1868" (J. C. D.).

Vanessa urticae, L.—Two very fine examples of the var. *ichnusoides*, De Selys; the first, which is unlabelled, is practically a black insect with a broad, somewhat triangular streak of orange-red occupying the centre of the fore-wings, and with only traces of the red band towards the inner margin of the hind-wings. The second, labelled "Mr. Ross, 1880, Cardiff" (C. W. D.), has all three costal black spots on

fore-wings fused into a long black blotch, and the black dorsal blotch much elongated towards the hind-margin, which is broadly dark, the submarginal blue spots being entirely absent; the hind-wings, except for a narrow pale hind-margin, are quite black. A very pale example, "Budleigh Salterton, May, 1863, E. R. Dale," and another, very old and in worn condition, with pale ochreous-brown ground-colour, "From Rev. H. Burney coll., 1893" (C. W. D.). One with the ground-colour pale madder-brown, the usual yellow costal spots of the same tint, "Newport, 1900."

Vanessa e-album, L.—A very fine variety, quite parallel with var. *ichnusoides* of *V. urticae*, having the two outer costal spots of fore-wing enlarged and confluent, the discal spots absent, and the hind-wings much suffused with black. This appears to have been taken by the Rev. F. O. Morris in 1810 at Retford, Notts. A ♀ is as pale above and beneath as the S. European *V. egea*, Cr. One specimen is labelled "Glanvilles Wootton, Oct., 1816," and another, a ♀, "I of W., 1860."

Vanessa polychloros, L.—One ♀, much suffused and irrorated with brownish, giving the insect a rather dull appearance, and with the usual black spots of the fore-wings replaced by dark brown. "From J. G. Ross coll." (C. W. D.).

Argynnis paphia, L.—Two ♂♂ from the New Forest, with pale blotches in the centre of all the wings; one ♂, rather crippled, much suffused with blackish towards the hind-margins. A very fine ♀ aberration, having the black markings (with the exception of the one nearest the base) in the cell, and the whole of the central spots of the fore-wings suffused into a large irregular black blotch. This butterfly, which is in wonderfully good preservation considering its age of over a century, bears two labels, "From Donovan's Colln., taken in 1804"; and "S. Stevens coll., 1900" (C. W. D.). An extraordinary aberration, recorded by the late Mr. J. Jenner Weir as having been taken in the New Forest by Charles Gulliver in 1880 (*Entom.*, vol. xiii., p. 206). In this specimen both gynandromorphism and dimorphism are combined, the left side being quite normal ♂, the right side ♀, with both wings, especially the fore-wing, a little crippled and reduced in size. The ground-colour of the fore-wing is rather pale olive-brown (as in some of the lighter examples of *valezina*), with a bright fulvous dash along the costa for about one-third of its length from the base. The hind-wing is longitudinally divided through the cell and along the fourth nervure into two sharply defined areas, the costal area being of the bright fulvous colour of the ♂, the inner marginal area being of normal *valezina* colour. The under-side, though exhibiting the corresponding sexual differences as above, otherwise departs but little from the normal type. Labelled "From J. G. Ross collection" (C. W. D.).

Argynnis adippe, L.—Two examples of the var. *cleodoxa*, Ochs., one old, on very old pin, but in good condition, without label; the other, "e mus. Dr. Abbot" (J. C. D.), and labelled also "Bedford" at side. Dr. Abbot's insects were purchased by J. C. Dale in 1817 (*cf.* London's Magazine of Natural History, vol. III, p. 333).

Argynnis aglaia, L.—One ♂ with the spots in cell enlarged, and the central area of fore-wings rather strongly suffused with black; labelled at side, "n. Bedford," and probably one of Dr. Abbot's specimens. A curious small, suffused-looking ♂, in rather poor condition, "*Arg. charlotta*, var. Blackpool, Aug., 1843,

J. G. E." It is not, however, of that distinct variety, of which there are two specimens in the collection, a fine ♂ under-side, "Mus. Dr. Abbot" (J. C. D.), and at side, "Bedford," and another not so well marked, "Peterborough." Perhaps the most singular variety in the entire collection, indeed, of any butterfly that I have ever seen, is a ♀ of full size and well-developed, but with the body much bloated, and presenting generally a diseased appearance. On the upper-side the whole of the black markings and suffusion are replaced by a very peculiar tint, difficult to describe exactly, but perhaps best expressed by the term, "pale leaden-fuscous"; the fulvous ground-colour being slightly paler than in the ordinary form, and the distribution of the two colours is normal. On the under-side, the fore-wings are nearly as above, and the hind-wings are pale uniform leaden-brown, with no trace whatever of green; the usual silver spots being present and normal, but rather dull. There is not a trace of black pigment in any part of the insect, which is in good condition, but a little damaged at the anal angle of both hind-wings. It is labelled "Dover, Leplaisrier" (J. C. D.), and is thus referred to by the Rev. W. T. Bree in London's Mag. Nat. History, vol. V (1832), p. 334, footnote †:— "A singular variety (of *A. aglavit*), pale buff-coloured, and with the black spots and markings very faint. It was taken, as I am informed, in a remarkably wet season. The specimen reminds me almost of some plant which, having grown in the dark, has in consequence produced its flowers nearly colourless."

Argynnis lathonia, L.—A series of 14 specimens; a ♀, "Mus. Dr. Abbot, White Wood, Gamlingay, Camb., June, 1803, Dr. Abbot" (J. C. D.), is fairly good; a rather poor specimen, "Halvergate, Norf., A. H. Haworth G. S.," is dated at side, "1818," and two good under-sides, "Birch Wood, B. Standish," bear the same date. A ♀ is "From Mr. Curtis," and two very good under-sides "Dover, Leplaisrier"; a better ♂, "Gray, Junior, Dover, 1880; others are "Dover, 1826," "Kirkman's sale, 1817," and "From J. G. Ross" (C. W. D.).

Argynnis euphrosyne, L.—A varied series, among them an old specimen with the basal black spots enlarged and confluent, and the marginal silver spots on the hind-wings beneath absent, "n. Bedford," probably one of Dr. Abbot's specimens. One with hind-wings and apex of fore-wings deeply suffused with olive-brown, "G. King, July 20/59." Two exceedingly fine dark varieties, "Taken near Colchester." The first is almost entirely dark rich brown on both sides, the black spots scarcely visible except on the hind-wings, in which each spot of the sub-marginal row stands in a dark fulvous ring. The silver spots on the under-side are normal, and stand out very brilliantly against the dark ground-colour. The second is even more singular, being above somewhat similar to the preceding, but more suffused with fulvous; on the under-side, the black basal spots on the right fore-wing are much enlarged and confluent. The basal half of the hind-wings is pale yellow, the marginal half red-brown; there is a large silvery longitudinal costal dash, and the central and marginal silvery spots are much enlarged, and the latter elongated towards the base of the wings.

(To be continued).

EXALEOCHARA: A GENUS OF COLEOPTERA NEW TO SCIENCE.

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

While recently examining some examples of the small Staphylinid, *Aleochara morion*, Grav. (*Baryodma morion*, Muls. et Rey), I was much surprised to find that their anterior tarsi were four-jointed only. To make sure on all points I forwarded a specimen to Mons. A. Fauvel, and asked his opinion on the matter. He has been good enough to reply to me as follows:—"Je suis de votre avis. Cet insecte n'a que 4 articles aux tarses antérieurs et ne peut rester dans le genre *Aleochara*. Il faudra sans doute en faire le type d'un nouveau genre."

From its tarsal formula (4-5-5) it is evident that the insect should not be classed with the *Aleocharina*, which are 5-jointed in all tarsi, whilst the minute accessory joint of the palpi renders its removal to the *Myrmedoniina* equally undesirable. It is apparently an intermediate form connecting the two tribes, and is therefore on that account extremely interesting. It would perhaps be better to allow the insect to rest for the time in its present position in our list, but to provide it with a new generic name. I propose *Exaleochara* as an appropriate word for that purpose, as it would be suggestive of the location of the insect; and, if the synoptical table including the genus be provided with an explanatory note, there should be no great difficulty to a student in working out the species.

"Morwell," Lipson Road, Plymouth:

April 15th, 1907.

ALEOCHARA DISCIPENNIS, MULS. AND REY: A BRITISH INSECT.

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

Some two years ago, at Mr. E. Saunders's request, I examined the *Staphylinidæ* in Dr. Capron's collection, and amongst other interesting species (*Aleochara maculata**, *Homalota rufotestacea*, *Quedius longicornis*, &c.) noted two specimens of an *Aleochara* strange to me as British. One of these was subsequently submitted to M. Fauvel, who pronounced it to be a small example of *A. discipennis*, Muls. and Rey. Dr. Capron's insects were mostly captured in the neighbourhood of Shiere, Surrey, but as no locality was attached to his specimens, it seemed inadvisable to record this particular species till further evidence

* A specimen of this species was captured on the wing at Guildford by my son on March 27th, whence I have previously recorded it.

could be adduced of a definite British habitat. This want has now been supplied by Mr. J. J. Walker, who found a somewhat immature example in sheep dung at Queendown Warren, near Chatham, on August 20th last.

A. discipennis may be briefly described as a small *A. fuscipes*, with the antennæ formed very much as in *A. lanuginosa*. The elytra are shorter than the prothorax, rufescent, with the sutural region and the sides infusate, much as in *Oxyptoda lividipennis* and its allies. The hind body is somewhat densely punctured towards the base and more sparsely so towards the apex, a character separating *A. discipennis* from all the forms of *A. succicola*. The elytral punctuation is finer and denser than in *A. lanuginosa*. *A. discipennis* is found in France, the Alps, Pyrenees, Tyrol, &c., and is apparently not rare. I have recorded it from Moneayo, North Spain.*

Horsell, Woking :

April, 1907.

ENICMUS FUNGICOLA, THOMS., A SPECIES OF COLEOPTERA
NEW TO BRITAIN.

BY E. A. NEWBERY.

The above interesting addition to the list is owing to the exertions of Mr. H. Britten, who has done so much good work among the beetles of Cumberland. Its nearest allies are *E. rugosus*, Herbst, and *E. testaceus*, Steph., from these it may be separated as follows:—

- I. Metasternum and 1st abdominal segment punctured more strongly on the sides.
- a. Body and elytra black; a longitudinal line impressed on the 1st ventral segment; average size smaller *E. rugosus*, Herbst.
 - aa. Elytra reddish-testaceous, with the body black; without impressed line on 1st ventral segment; average size larger *E. fungicola*, Thoms.
- II. Metasternum and 1st abdominal segment impunctate, but sometimes with very fine longitudinal wrinkles; upper surface entirely lighter or darker testaceous *E. testaceus*, Steph.

Some of the above distinctions are invisible in specimens carded in our usual manner, but as a rule the colour of the upper side is sufficient to separate them, *E. rugosus* being entirely black, *E. testaceus* entirely reddish, and *E. fungicola* black with reddish elytra. I have

* Trans. Ent. Soc. Lond., 1904, p. 89.

not thought it necessary to include *E. transversus*, Ol., in the above table, the shape of the thorax being quite different; while *E. minutus*, L., comes in another subgenus (*Conithassa*, Thoms.).

We have now as British all the European species in the subgenus *Enicmus*, *i. sp.*, except two from the Caucasus (*i. e. dubius*, Mann, and *mannerheimi*, Kolen.). Those who desire a detailed description of *E. fungicola* cannot do better than refer to M. Belon's "Lathridiens" (Lyons ed., p. 332). The insect has hitherto only been recorded from Scandinavia, Moravia, Silesia, and Transylvania.

Mr. Britten took the species in some small numbers in dry fungi on a tree at Edenhall, Cumberland, May 13th, 1906.

12, Churchill Road,
Dartmouth Park, N.W. :
April 12th, 1907.

[The insect recorded by me from Aviemore (Ent. Mo. Mag., xi, p. 64) under the name *Lathridius rugosus* must be referred to *E. fungicola*. Mr. Tomlin has also taken it at Cannock Chase.--G. C. C.].

EXARTEMA LATIFASCIANA, HW., AB. *VINEANA*, N. AB.

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

Of this exceedingly local and usually scarce *Tortrix*, more generally known in Britain as *Sericoris latifasciana*, Mr. A. C. Vine, some years ago, met with an interesting recurrent aberration which seems certainly worthy of a special name, and with which it affords me great pleasure to associate his own. It occurred, though very rarely, in Abbotts' Wood, Sussex, where the three examples that Mr. Vine generously gave me were taken by him in 1890 and 1891 from a single ash tree, which yielded him three or four others, together with the whole of the lengthy series of typical specimens that he then secured. This aberration differs from the type in that the conspicuous yellow fascia and the yellow markings of the fore-wing are obsolete, though the leaden-grey lines that accompany them remain, and are, except for a few pale flecks on the costa, the only markings on the deep fuscous ground-colour.

Two of my specimens have the cilia of the fore-wing uniformly dark fuscous, but in the third they are ochreous, blotched with dark fuscous, as in the type, with which, however, all three agree in having the palpi white and the crown of the head yellow. Whereas some authors, *e. g.*, Wilkinson, Stainton, and Meyrick, have described the fore-wings of *latifasciana* as yellow with fuscous markings, it seems

to me preferable, as the above diagnosis will show, to regard them as fuscous with yellow markings, but it is merely "a distinction without a difference." I have not at hand Haworth's original description of *latifasciana*, published in Trans. Ent. Soc. Lond., i, 337 (1810), but have little doubt that he took the latter view, and that the broad fascia that suggested the name is the *yellow* one: in any case, this was obviously so when he gave the name *aurofasciana* to this same species in Lep. Brit., 468 (1812), for it must be remembered that his *latifasciana* of Lep. Brit., 414, is *not* the *Portrix* under notice, but *Acella schalleriana*, L.

I learn from Mr. Vine that the latter half of July is the best time for the imagines of *E. latifasciana*, which fly, rather high, from about 4 to about 7 p. m. He used to watch for them as they approached the ash tree with a spinning flight and alighted on the bunches of old seeds, from which they were then beaten out and netted, but he failed to ascertain whence they came, and says that they certainly do not roost among the ash seeds, and that a large supply of these, collected in the hope of breeding the insect therefrom, only yielded *Argyrotoza conwayana*, Fb., in abundance. On the Continent the larva is found, in the spring, in galleries amongst moss on tree-trunks, but Mr. Vine tells me that there was very little moss on the trunk, and none at all on the exposed roots, of his extraordinarily productive ash tree.

Norden, Corfe Castle :

April 16th, 1907.

THE MIGRATION OF AQUATIC HEMIPTERA.

BY N. M. RICHARDSON, B.A.

On September 26th, 1904, Mrs. Richardson was standing by a small pond in one of our fields at about 11 a. m., when she noticed that there was something unusual going on amongst its inhabitants and called me to see it. The pond is a shallow one, never dry, like many of these field ponds, about seven or eight yards in diameter, and there is a similar slightly larger one on the other side of the hedge. It is a good deal shaded by trees, and the margin of it is soft mud. Numbers of "water-boatmen" (*Corixa geoffroyi*, Leach) were coming up out of the water to the edge of the pond, parts of the shore being often lined with a rank two or three deep. They mostly remained for a short time in the water, on the surface, within an inch or two of the shore, and as soon as the sun came out, which it did

at frequent intervals, began to fly away. Those which came on shore either crawled back or rose with difficulty. They generally took one or two turns in the air before they finally departed, and at times it looked as if a swarm of bees was flying about, their flight being not unlike that of bees, but rather slower. They finally flew off, rising to a considerable height, all in an easterly direction towards the Weymouth Backwater, about $1\frac{1}{2}$ miles distant, but whether that was their destination (it is brackish water) or not, it is impossible to say. The number that left the pond must have been very large, for the exodus lasted for certainly two hours and probably longer; it had quite ceased by 2.30 p.m., and I estimated the rate of departure as being often as many as from one to two hundred in a minute when the sun shone brightly. Some thousands must have left the pond altogether, far more than I should have imagined it contained. A great many fell a prey to the starlings which were hawking about in an unusual manner in considerable numbers at a little distance, in the line of flight of the insects. A few (perhaps 20 or 30) large water beetles (*Acilius sulcatus*, Linn.) came to the edge of the water and sat on sticks, &c., which projected above its surface, and some crawled up the mud, but we only saw four actually fly away, so that the migratory impulse did not seem to be so strong upon them as on the boatmen. I did not see any other insects migrating, unless it were one or two small beetles, but I am not sure about these.

Nothing unusual appeared to be going on in the adjacent pond to the west, which is generally well populated and also a permanent pond. There was hardly any wind, none at all being perceptible on the pond, but what there was came from the west, and it was a rather warm day for the season. Under ordinary circumstances one sees a few of the water-boatmen occasionally in the pond, but they never seem to be particularly numerous.

No further migration from this pond was observed until October 11th, when, between 11 and 12 in the morning, the day being warm and sunny, another smaller species of "water-boatman" (*Corixa fabricii*, Fieb.) was seen to be migrating in considerable numbers, though not to the same extent as the larger species in September. They continued until about 2 p.m., when the flight ceased. They did not swim to the edge of the pond like *Corixa geoffroyi*, but seemed to rise straight from the bottom and fly up from the surface of the water. They then circled round higher and higher until they were lost among the branches of the surrounding trees; but some, after taking a turn or two over the water, flew straight

away down the field in an easterly direction, the same as that taken by the larger species. Whilst the flight was going on a few of them paddled about on the surface in a sort of dance, but these did not seem to fly away like those which came straight up from the bottom of the pond. No migration of any sort was going on in other ponds in adjacent fields.

I have always understood that these small ponds were believed to be stocked with water-beetles (and I suppose any other winged water insects such as water-boatmen) by immigrants flying from other pieces of water, but I have not come across any account of a migration such as the present one, though it must surely be of not infrequent occurrence, and likely to be observed by those who keep their eyes open for such things.

Montevideo, Chickereil, near Weymouth :

April, 1907.

THE BRITISH PLECOPTERA (PERLIDÆ).

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

The following short sketch of our knowledge of the British *Plecoptera* has been suggested by some enquiries that have reached me, reminding me that a good deal of recent information concerning our species has never been noticed in any of the British Entomological publications. In the genus *Nemoura*, in particular, several changes and additions have to be recorded; but it may be of use to run over all the genera.

Dictyopteryx.—Two species appear in McLachlan's Catalogue of 1870: *microcephala* and *rectangula*. The latter, according to examples named for me by him, seems to be quite the same as what he called *microcephala*, the individuals referred to having merely a somewhat simpler neuration than is usual, and as far as I can say with certainty at present, only one species of *Dictyopteryx* (in the restricted sense) occurs in Britain. I have seen it in many examples from highland lakes and lowland rivers in Scotland, and from the Severn, the Kennet, and the Test in the South. All these British insects were at one time considered by Klapálek as *rectangula* and different from *microcephala*; but he now regards a South European insect as the true *rectangula*, and he has recently described our species as new under the name of

D. mortoni. The same form has been found in Germany. The form to which the name *microcephala* was applied has now been determined as *dispar*, Rambur, while *microcephala*, Pict., is the name reserved for a form in which the ♂ is full-winged.

The other British species included by Klapálek in *Dictyopteryx* is quite different, and has been placed by him in a separate sub-genus, *Dictyopterygella*. The species is *D. recta*, Kempny, which has been in British collections for the last forty years as a form of *Isogenus nubecula*. It is a most abundant insect at many Highland lakes, and is well known to most British Neuropterists.

Isogenus nubecula, Newm. — Common at some of the great European rivers, but I have never been able to obtain it from this country, although McLachlan had no doubt about its occurrence.

Perla.—This genus remains represented by three species: *maxima*, *marginata*, and *cephalotes*. Some doubt has been thrown on the existence of the second named species. McLachlan, however, knew it well, and was satisfied that he had seen it from Britain. It has never come my way.

Chloroperla.—Perhaps this genus is not yet thoroughly understood. But in the meantime *grammatica* is the only species that can be spoken of with certainty. There is no evidence that *C. rivulorum* occurs with us.

Isopteryx.—*I. burmeisteri* and *apicalis* as understood by Continental authors have not come before me from this country, and they are very doubtfully British. The two species that can be included with certainty are *tripunctata*, Scop., and *torrentium*, Pict.

Capnia holds *C. nigra*, Pict., and *atra*, Morton. A species recently described by Klapálek as *Capnia vidua* has the wings rather shortened in the ♀, and he has suggested that the Braemar specimens referred to by me (Trans. Ent. Soc. Lond., 1896, p. 59) may belong to *vidua*. This subject requires further investigation; but the material is not now accessible, and it would be also necessary to examine males.

Teniopteryx.—The species are *nebulosa*, Linn., *trifasciata*, Pict., and *risi*, Morton. It is necessary to mention that our *trifasciata* is somewhat different from the Continental species called by that name by Klapálek, who also refers *nebulosa* to a separate genus, *Nephelopteryx*.

Nemoura.—This genus has been divided by Kempny and Ris into several sub-genera, and the species are as follows:—

Sub-genus *Protonemura*, Kempny.

præcox, Morton.

meyeri, Pict.

Sub-genus *Amphinemura*, Ris.

cinerea (Oliv., Pict.), Morton.

**standfussi*, Ris. Distinguished from *cinerea* especially by a remarkable arrangement of dark spines on the appendages. Taken by me in Scotland many years ago, but I have not seen it recently.

Sub-genus *Nemura*, sens. str.

variegata, Oliv. et Auct.

**marginata* (Pict.). Klap. = *lateralis*, Mort., Trans. Ent. Soc. Lond., 1894, p. 564. I now agree that Klapálek's view is likely to be the more correct, and I have adopted it, as has also Dr. Ris in his valuable paper (Die Schweizerischen Arten der Perliden-Gattung *Nemura*. Mitt. Schweiz. Entom. Gess., Bd. 10, Heft 9). Occurs in Devon and Scotland, and probably elsewhere.

canbrica (Steph.), Mort.

avicularis, Mort.

Sub-genus *Nemurella*, Kempny.

inconspicua (Pict.), Mort. This name has been adopted by Ris, but not by Klapálek, who has called the species *pictetii*.

Leuctra.—I have already given notes on the British species. See vol. xxxviii, pp. 255–6. They are:—

geniculata, Steph.

klapáleki, Kempny.

fusciventris, Steph. ?

albida, Kempny.

hippopus, Kempny.

handlirschi, Kempny.

race or var. *inermis*, Kempny.

nigra (Oliv.), Klap.

13, Blackford Road, Edinburgh :

December 10th, 1906.

* Now formally recorded as British, I think, for the first time.

Stenus niveus, Faur., at Chobham.—Amongst a few *Coleoptera* found in *Sphagnum* at Chobham on April 1st, the following are worth noting:—*Stenus niveus*, Faur., *Homalota eremita*, Rye, and *H. fallaciosa*, Sharp. The *Stenus* was also found by me last year at the same locality, but was omitted from my note in the Ent. Mo. Mag., xlii. pp. 136, 137. It is evidently a perfectly good species, and occurs in some numbers in the *Sphagnum*, unaccompanied by *S. pallitarsis*, Steph. *H. eremita*, of which two specimens were taken, has not hitherto been recorded from so far south, though a familiar insect on the Scotch mountains.—G. C. CHAMPION, Horsell, Woking: April 15th, 1907.

Steganoptycha pygmeana in Surrey.—Although the late Mr. Weston, writing 27 years ago in the "Entomologist" (vol. xiii, 160), says, "It has, I believe, occurred sparingly in Surrey," I have not seen any allusion to its capture in this county since, nor does its name appear in the Victoria History of Surrey, published only five years ago; it may be of interest, then, to state that I met with it in some numbers in April last year flying round spruce firs in the bright sunshine. In two short visits I netted upwards of fifty specimens. I have not looked for it this month, owing to the low temperature and lack of sun up to the present, and a bright sunny day is absolutely necessary; no sun, no *pygmeana*! I hope to find the larva in July.—A. THURNALL, Thornton Heath: April 11th, 1907.

Xanthia ocellaris at Norwich: a correction.—The record of the occurrence of *Xanthia ocellaris* at Norwich, on page 65 of the current volume of this Magazine, has by mistake been attributed to Mr. E. A. Atmore, of King's Lynn, instead of to myself.—H. J. THOULESS, Corfe, College Road, Norwich: April 17th, 1907.

Psamotis pulveralis, Hb., in Sussex.—I took a specimen of this Pyralid on a street lamp in Bognor, Sussex, on August 8th last year; the insect has been kindly identified for me by Mr. W. H. B. Fletcher. Strangely enough from the situation of its capture, it is a female.—H. L. F. GUERMONPREZ, Dalkeith, Bognor: April 12th, 1907.

Nabis boops, Schüdt., in Sussex.—A specimen of this rare Hemipteron was swept up by me at Slindon on August 14th, 1905.—ID.

Notes on *Diptera* in Scotland, 1906.—My collecting last year was confined to districts which I had already worked, but a number of new species were obtained. In the following list those marked with an asterisk are new records from the Forth district.

At Polton, on June 2nd, I found *Homalomyia armata*,* Mg., ♂, *Pipiza luteitarsis*,* Ztt., ♀ (former records, as far as I can make out, are all from the South of England), and *Loxocera sylvatica*,* Mg., ♀; on June 9th, *Pipunculus confusus*,* Verr., 3 ♂♂; on August 6th, *Macrocera lutea*, Mg., both sexes, *Ptychoptera lacustris*,* Mg., ♂, *Beris geniculata*, Curt., ♀, *Tachydromia pectoralis*,* Flm., ♂, *Argyra atriceps*,* Lw., several of both sexes, *Azelia triquetra*,* W., ♂, *Sapromyza*

inusta,* Mg., ♀, *S. præusta*,* Fln., ♂ ♀, and *Micropeza lateralis*, Mg.; on September 20th, *Dynatosoma nigricoxa*,* Ztt., ♂, *Mycetophila lineola*,* Mg., 2 ♀ ♀, *M. Innata*,* Mg., ♂ ♀, *Sciophila fasciata*,* Ztt., ♀, *Macrocera stigma*,* Curt., ♀, and *Diadocidia ferruginosa*,* Mg., ♀.

From Musselburgh the following species may be recorded: *Oreogeton flavipes*,* Mg., in coitú, 30.VII.06, *Tachydromia cursitans*,* F., and *Sapromyza rorida** Fln., 24.VII.06, *Dolichopus pennatus*,* Mg., ♂ ♀, 30.VII.06, and on the same day *D. longicornis*,* Stan., ♂ ♀, in some numbers, also *Xanthochlorus ornatus*,* Hal., 2 ♂ ♂, *Azelia zetterstedti*,* Rnd., was common on *Umbelliferae*, 24.VII.06, and several examples of *Scatophaga maculipes*,* Ztt., and *Calobata cibaria*,* L., were taken, 5.VII.06. On my window I got *Lasiosoma hirtum*,* Mg., 2 ♂ ♂, 1 ♀, 1.VIII.06, *Bolitophila cinerea*, Mg., ♀, 28.X.06; and I may also mention *Culex pipiens*, L., 2 ♀ ♀, 19.XII.06, surely a late date. A fine specimen of *Syrphus guttatus*, Fln., ♂, occurred, 24.VI.06, and *Porphyrops riparia*, Mg., was common along the river banks; it was also common at Polton.

I re-visited Aberfoyle on August 20th, and remained till September 3rd. The weather was good, but flies were not quite up to the average as regards numbers, though my list of species is longer than on any previous visit. During the first week of our stay *Bibio pomonæ*, F., was in swarms. For miles over the hills they were to be seen in crowds flying over the bracken and heather, or clinging to the rocks, while every pool had its quota of dead or drowning individuals. During the previous summer a good sized plantation, chiefly oak, had been cut down, and on stumps remaining I found many flies, such as: *Micropalpus vulpinus*, Fln., common, *Trixa astroidea*, Desv., ♂, and *Paloptera usta*,* Mg., 2 ♀ ♀, 28.VIII.06. Sunning on leaves I got *Chilosia longula*,* Ztt., ♂, 25.VIII.06, *Syrphus cinctellus*, Ztt., several, *S. cinctus*,* Fln., 4 ♀ ♀, 23.VIII.06, *Xylota florum*, F., ♂, 1.IX.06, *Pyrophæna rosarum*, F., ♂, *Conops flavipes*,* L., ♂, 23.VIII.06, and *Loxocera albiseta*,* Schrk., ♂, 1.IX.06. *Pipunculus* was in some numbers, and on August 23rd I took in a very short time 18 ♂ ♂ and 1 ♀ of *campestris*, Ltr., and a beautiful ♂ of *xanthopus*,* Thoms. On the same day occurred also *Arctophila mussitans*, F., ♂, *Ischyrosyrphus glaucius*, L., 5 ♀ ♀, *Hylemyia flavipennis*, Fln., ♀, and *Morellia simplex*,* Lw., both sexes. On August 25th I took two fine ♀ ♀ of *Pachyrrhina imperialis*, Mg., and on the 28th, while near the top of Craigmore three *Tabanids* settled on my coat, but I caught only one, which proved to be a rather worn example of *Tabanus sudeticus*, Zlr., ♀. A number of *Hydrophorus borealis*,* Lw., were found at a small pool on August 27th, but as they never left the surface of the water they were difficult to catch, the net being soaked at each attempt. However, I managed to get about twenty specimens, including both sexes. Other *Dolichopodide* taken included *Argyra leucocephala*,* Mg., 2 ♂ ♂, 24.VIII.06, *Gynnopternus wrosus*,* Fln., a common species, *Hypophyllus obscurus*,* Fln., ♂, 23.VIII.06. *Dolichopus signatus*,* Mg., 1 ♂, 2 ♀ ♀, 23.VIII.06, *D. vitripennis*,* Mg., ♂ ♀, 2.IX.06, and *D. discifer*,* Stan., ♀, 24.VIII.06. On previous visits I have taken this species, earlier in the season, in some plenty. General sweeping produced *Elgiva lineata*,* Fln., ♂, 29.VIII.06, *Allophyla atricornis*,* Lw., ♂, 21.VIII.06, *Lepidomyia melanocephala*,* F., ♀, 21.VIII.06 (I am

indebted to Mr. Grimshaw for this identification), *Glaphyroptera fascipennis*,* Mg., ♀, I.IX.06, and *Erioptera flavescens*,* Mg., both sexes common.—A. E. J. CARTER, 4, West Holmes Gardens, Musselburgh: *March 19th, 1907.*

Reviews.

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. 1, pp. 479, plates XX. London: Elliot Stock. Berlin: Friedländer & Sohn. 1905-1906.

It is just fifty years since the late Mr. Stainton, at pp. 69-71 of his well-known "Manual," deplored our lack of knowledge of the life-history of many of our native butterflies—indeed, one might well say of nearly all, except the commonest and most familiar of our species. Following a suggestive list of questions as to our acquaintance with this subject, he goes on to say, "When these questions can be answered with reference to each species of our butterflies, we may then admit that their natural history *is* known; and it would then become practicable to write a good monograph of the group."

The vast amount of work devoted, since the above was written, to the study and investigation of the Palaearctic *Rhopalocera* from all points of view, has placed us in a position to answer Mr. Stainton's questions with regard to our relatively few species of butterflies in a manner far more complete and thorough than even he could at the time have foreseen: and the first portion of such a monograph as he contemplated is now presented to us as one of the volumes of Mr. Tutt's great work on the British *Lepidoptera*.

The writer of the volume now under review has long held a chief place among Entomological writers abroad as well as at home, and every advanced student of the Order is deeply sensible of his indebtedness to Mr. Tutt for the most complete and detailed, as well as the most scientific, treatise on the *Lepidoptera* of our islands that has appeared up to the present time. It is perhaps not necessary to state, in view of the careful and exhaustive method pursued by Mr. Tutt in dealing with his subject which is now so well known, that in the present volume, the first of several to be devoted to the consideration of our Butterflies, the amount of information relating to each species is almost overwhelming. Every available source, from the beginnings of Entomological literature to the current periodicals, has been ransacked for data and observations, and the assistance of a large and representative body of our leading workers in the Order *Lepidoptera* is gratefully acknowledged by Mr. Tutt.

The first eighty pages of the volume, which is uniform with its predecessors in the author's "British Lepidoptera," and of the same high quality as regards printing and general get-up, are devoted to a general consideration of the earlier stages of the group, so far as the ovum and larva are concerned. The author negatives the idea, still popular in some quarters, that the differences between "Butterflies" and "Moths" are of an essential and deep-seated character, and he treats the former as comprising two of the super-families of the "upright-egged

stirps" of the *Lepidoptera*, their closest relatives being found in such "moths" as the Castniids, Notodontids, Noctuids, &c. The chapters on the photographing of the eggs of butterflies, contributed by Mr. A. E. Tonge, and those on the methods to be employed in finding and obtaining the ova themselves, as well as the larvæ, are taken from Mr. Tutt's well-known "Practical Hints for the Field Lepidopterist," and will be read again in this connection with renewed interest. Even more valuable and suggestive are the two chapters (IX and X) entitled "The Association of Ants with Butterfly Larvæ," and "Carnivorous Habits of Butterfly Larvæ." Most of the known instances of ants attending on, protecting, and deriving nutriment from (one might almost say "milking") the larvæ of Lyænid butterflies relate to exotic, and especially to Oriental and Australian species; but a full account of the association of our little ant, *Formica flava*, with the long-sought larva of *Lycæna arion*, quite recently observed by Mr. F. W. Frohawk (Entom., vol. XXXVI, pp. 58-61), is given on pp. 36, 37. Chapters XII, "On the Silk-spinning Habit of Butterfly Larvæ," and XIII, "On the Coloration of Butterfly Larvæ," in which the subject is regarded from the standpoints of "cryptic" and "warning" coloration, are also of very great interest, especially from the evolutionary point of view. The external and internal structure of the butterfly larva is fully detailed in chapters VII and VIII, the interesting subjects of the æstivation and hibernation of the larva being postponed to a succeeding volume.

Turning now to the butterflies dealt with in this volume, the large scale on which the work is carried out admits of only ten species being included, namely, our eight "*Urbicolides*" or so-called "skippers" (Mr. Tutt omits all mention of the reported occurrence of *Hesperia alveus*, Hübn., in Norfolk) and our two "Coppers," *Rumicia (Chrysophanus) phlæas*, L., and the long-extinct *Chrysophanus dispar*, Haw. The general consideration of the superfamily "*Ruralides*," to which the two last-mentioned species, and our familiar "Hairstreaks" and "Blues," as well as our solitary representative of the great Erycinid group, *Hamearis (Nemeobius) lucina*, L., are now referred, and the historical summary of their arrangement by successive systematists from Linné onwards, occupies sixteen pages (298-314); while to *Rumicia phlæas* itself no fewer than eighty-four (330-414), many of them in small type, are devoted. The treatment of this species may be taken as a fair sample of the thorough manner in which the whole work is to be executed; and while it seems to us that a comprehensive scheme of tabulation of such details as the times of appearance, distribution at home and abroad, &c., would have facilitated reference in the case of this and the other species comprised in the volume, Lepidopterists, one and all, will be grateful to Mr. Tutt for having brought together so great a mass of interesting information on one of our most familiar and beautiful butterflies. The variation—climatic, seasonal, and geographical—of *Rumicia phlæas*, as of all the other species, is most fully worked out, and a large number of varieties and aberrations, more or less marked, are for the first time indicated and described. The minute and carefully arranged account of the various stages of the life-history (pp. 380-396) will be read with great interest, as will the very full summary of the history of *Chrysophanus dispar* as a British butterfly, and the story of its extinction (pp. 420-428). The life-history of this species has been for the first time completed by the study of the metamorphoses of the Continental form, *rutilus*, Wern.; and

those of *Thymelicus actæon* and *Urbicula comma* have also received their finishing details. Enough, however, has been said to show the value of this first instalment of Mr. Tutt's great work, which is indispensable to every serious student of the Order *Lepidoptera*. We would add that the twenty plates with which the volume is illustrated are reproduced in excellent style from first-rate photographs, and would especially call attention to the beautiful and life-like figures of *Hesperia matrona* in its natural attitudes, from photographs taken by Mr. Hugh Main, on plate XIX. A volume dealing with the remainder of the "*Ruralides*" is, we understand, well advanced in preparation, and will be published probably within the next twelve months, and this we shall be heartily glad to welcome.—J. J. W.

CATALOGUS COLEOPTERORUM EUROPE, CAUCASI ET ARMENIE ROSSICÆ: by Dr. L. v. HEYDEN, E. REITTER, and J. WEISE: edited by E. REITTER; Editio Secunda: Berlin, Paskau and Caen, 1906. Imp. 8vo, pp. 774.

Students of Palearctic *Coleoptera* will be pleased to see the new and revised edition of this very useful list. A comparison of the two editions shows the vast number of additions that have been made during the past fifteen years, and also that our knowledge of the European *Coleoptera* is by means exhausted. An innovation in the present list is the separate pagination of the two columns on every page, and the much larger size of the pages themselves. The system of classification adopted is also new, and one that will probably not commend itself to the purely British Coleopterist. The species are arranged under nine main groups:—(1) ADEPHAGA, for the families usually included under that name, plus the *Rhysodidae* and *Paussidae*; (2) POLYPHAGA, for the *Staphylinidae* (arranged in the reverse order, commencing with the *Piestidae*), and several of the families belonging to the Clavicorn series; (3) PALPICORNIA; (4) CANTHAROIDEA, for the Malacoderms, *Byturidae*, *Ostomidae*, *Sphaeritidae*, *Nitidulidae*, *Cucujidae*, *Cryptophagidae*, *Erotylidae*, *Phalacridae*, *Thoriidae*, *Lathridiidae*, *Mycetophagidae*, *Sphindidae*, *Cissidae*, *Colydiidae*, *Endomychidae*, *Coccinellidae*, &c.; (5) DASCILLOIDEA, for the *Helodidae*, *Dryopidae*, *Georyssidae*, *Heteroceridae*, *Dermestidae*, *Nosodendridae*, *Byrrhidae*, *Dascillidae*, and most of the Serricorn series; (6) HETEROMERA, commencing with the *Ædemeridae*, and ending with the *Tenebrionidae*; (7) PHYTOPHAGA, for the *Cerambycidae*, *Chrysomelida*, and *Lariidae* (*Bruchidae*); (8) RHYNCHOPHORA, commencing with the *Anthribidae*; (9) LAMELLICORNIA. This arrangement, it may be noted, is somewhat similar to that proposed by Dr. Sharp, in the Cambridge Natural History, vol. ii (1899), who divided the *Coleoptera* into six sections: (1) *Lamellicornia*; (2) *Adephaga*; (3) *Polymorpha*; (4) *Heteromera*; (5) *Phytophaga*; (6) *Rhynchophora*. Most of the species and varieties described by British authors seem to be noted, including such recent additions as *Evplectus tomlini* and *Dacne fowleri*, Joy, though at least one omission is obvious, viz., *Centhorrhynchus contractus*, Marsh., var. *pallipes*, Crotch (described in Fowler's *Coleoptera* of the British Islands), from Lundy Island. Two pre-occupied generic names are retained, viz., *Diglossa* and *Hylophilus*, though in each case there is another one available.

PRELIMINARY LIST OF COLEOPTERA OBSERVED IN THE NEIGHBOURHOOD OF OXFORD FROM 1819 TO 1907: compiled for the Ashmolean Natural History Society

of Oxfordshire, from all available records : by JAMES J. WALKER, Hon. M.A., R.N., F.L.S. : reprinted from the Ashmolean Natural History Society Report for 1906.

This list of beetles includes all those observed by the author during his residence at Oxford since the early part of 1904, supplemented by the captures of Messrs. W. Holland, A. H. Hamm, and J. Collins, of the Hope Department of the Oxford Museum. About 150 species noted by the Rev. F. W. Hope, between 1819 and 1822, while he was an undergraduate at Christ Church, have been traced (including detailed records of the capture of such doubtfully British forms as *Necrophorus germanicus* and *Platycerus caraboides*) and the captures of Prof. Westwood (including *Claviger testaceus* in 1838) have not been overlooked. The area covered is a radius of seven miles from the centre of the city, and altogether 1399 species are enumerated, about 42·5 per cent. of the total number known from the British Islands. The list can be compared with that of the Rochester district, six miles radius, published in 1899, by the same writer, in which 1615 species are recorded. For an inland midland district, Oxford, therefore, compares very favourably, and even there a certain number of forms usually associated with the coast have been found, *Harpalus anxius*, for instance, being a common insect at Tubney. In a supplementary note at the end of the list various species found in "mole's nests" are added, showing that this method of searching, first tried with success by Dr. Joy, is everywhere profitable.—G. C. C.

THE VICTORIA HISTORY OF THE COUNTIES OF ENGLAND ; A HISTORY OF YORKSHIRE ; Insects : edited by GEORGE T. PORRITT, F.L.S., &c. Pp. 80, folio. London : A. Constable & Co., Limited. 1907.

The section of the "Victoria History" relating to the Entomology of Yorkshire has been entrusted to the editorship of our colleague, Mr. G. T. Porritt. It is thus needless to say that the work has been well executed, especially as regards the *Lepidoptera*, *Neuroptera*, and *Orthoptera*, the orders that chiefly occupy his attention. The list of *Lepidoptera* in particular, with the full enumeration of localities, and the interesting annotations to nearly every species, appears to us to be quite the best that has yet appeared in the "History," and it is preceded by a concise but lucid and valuable account of the remarkable spread of melanism in Yorkshire moths, which has of late attracted so much attention. In all, 1,384 species, or 64·4 per cent. of our entire Lepidopterous fauna, are enumerated as having occurred in Yorkshire ; a number probably greater than in any other county of England, and no doubt due not so much to its extent and varied character as to the fact that, from the commencement of the study of our insects, it has always possessed a large and efficient band of hardworking collectors and observers. In the remaining Orders, the *Coleoptera*, by Messrs. E. G. Bayford and M. Lawson Thompson, shows a good total of 1,707 species, or 52 per cent. of the British beetle-fauna ; the water-beetles of the far-famed Askham Bog, and the wonderful captures by Messrs. Lawson and Wilkinson near Scarborough a generation ago, adding largely to the list of rarities. The lists of the *Hymenoptera* and *Diptera* are, on the other hand, very meagre, barely one-seventh of the total number of British species being enumerated in the former Order, and only two species of the

large group of *Chalcididae* are recorded from Yorkshire; while the *Hemiptera* are altogether omitted. The chief value of these "County Lists" of insects lies in the fact that they form an "up-to-date" summary of our knowledge (or our want of it) of the fauna of the districts dealt with, and that they indicate clearly the amount of work remaining to be done to make such knowledge complete; and in both these respects the present list is one of the most important that has yet appeared.

CATALOGUE OF BRITISH ORTHOPTERA, NEUROPTERA, AND TRICHOPTERA: by the late C. W. DALE, F.E.S. Revised and corrected. W. H. Harwood and Son, Colechester.

Mr. Harwood has been well advised in issuing this Catalogue, for such an one has been urgently wanted for many years. Although based on a series of Lists prepared by the late Mr. C. W. Dale, there is, we fancy, in some Orders, but little of the author's original lists left, for the arrangement and nomenclature of these insects have quite recently been so much altered, Mr. Harwood found it necessary to obtain the co-operation of specialists in the various Orders; and so the Lists stand largely as the work of Messrs. Malcolm Barr, F.L.S. (the *Orthoptera*); W. J. Lucas, F.E.S. (the *Odonata*); H. L. F. Guermouprez (the *Copeognatha*); and Kenneth J. Morton, F.E.S. (the remainder of the *Neuroptera* and the *Trichoptera*). No more competent authorities could have been selected, and in themselves they form a guarantee of the accuracy and completeness of the compilations. So recent are some of the names which have supplanted those more familiar to us, they sound quite strange to British ears, but there is no doubt they are correct, and will have to be generally adopted. We are glad to find that, as we have contended for many years it should, *Hemerobius quadrifasciatus* is at last to rank as a distinct species. We notice one or two errors in the names given as the authors of species; and the genus *Aceridium* is printed *Auridium*; but there is little else to which we cannot give the heartiest praise.—G. T. P.

Societies.

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

The Rev. C. Thornehill showed several interesting *Lepidoptera*: *Agrotis neglecta*, Hb., from Burnt Wood, N. Staffs., a specimen of the so-called yellow variety discovered there by Mr. F. C. Woodforde; *Cosmia paleacea*, Esp. (*fulvago*, Hb.), which emerged unlooked for in his breeding cage from amongst some N. Shropshire larvæ, and which he believed to be new to the County; a fine var. of *Helotropha leucostigma*, Hb. (*fibrosa*), which was taken at sugar in his own orchard at Whitchurch, Salop, and had been illustrated by Barrett; *Ephyra pendularia*, Ol., var. *subroseata*, from Burnt Wood; and *Ortholitha cervinata*, Schiff., a remarkable var. bred with others from N. Shropshire. Mr. G. H. Kenrick, a series of *Pyralidæ* chiefly from New Guinea, and side by side with them a series of moths belonging to

other families to which they bore a striking and unmistakable resemblance. The other moths were very various, both in relationship and pattern, and they were very conspicuous species, so that the resemblance was a striking fact, and pointed to either Batesian or Müllerian mimicry of a decided character. Mr. J. T. Fountain, a very fine exhibition case, which he had made and filled with an excellent representative series of *Lepidoptera*, with the idea of lending it to the Council Schools in order to interest the children in Entomology. Mr. G. T. Bethune-Baker, a long series of *Lycerna arion*, L., from many localities and in all its forms, and pointed out how dark many of the high Alpine forms were, and also that Cornish specimens were the brightest coloured of all. Mr. A. H. Martineau read a letter from the Rev. E. N. Bloomfield referring to his (Mr. Martineau's) exhibit of *Xestophanes potentillæ* on November 19th last, and pointing out that he was not quite correct in saying that it occurred in Devonshire only, as he had taken it at Battle, and near Guestling, in Sussex.—COLBRAN J. WAINWRIGHT, *Hon. Secretary*.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The usual Monthly Meeting of this Society was held in the Royal Institution, Colquitt Street, Liverpool, March 18th, Mr. W. MANSBRIDGE, F.E.S., Vice-President, in the Chair.

The Members heard with regret of the death of Mr. John Robson, of Hartlepool, an Honorary Member of the Society, and one who had taken considerable interest in its welfare.

Dr. W. Bell, J.P., gave a most interesting demonstration of his methods of larva preserving, and exhibited numerous beautiful examples of the art, some species being mounted upon preserved plants, others upon artificial foliage, many of the larvæ being accompanied by their respective imagines set in their characteristic resting attitudes. He also exhibited a specimen of *Plusia aurifera*, one of three captured in Cornwall by Mr. Moore; the insects remained unrecognised until recently; there are only two other records of this rare insect in Britain, viz., one now in the British Museum collection, and another in a Liverpool collection, formed by the late Mr. Robertson, of Limehouse, which is still in the possession of his family. Other exhibits were:—Fine varieties of *Arctia caja* by Mr. B. H. Crabtree, (1) with yellow hind-wings, (2) a chocolate form with nearly unicolorous fore-wings, (3) had all the dark markings of a dull ochreous buff colour, (4) a specimen with white fringes to the fore-wings, and reduced dark markings. Mr. Sopp, the cockroach, *Phoraspis leucogramma*, Perty, taken in the Liverpool docks, this being a Brazilian species not previously recorded as having occurred in Europe. Mr. W. A. Tyerman, a long and variable series of *Teniocampa opima*, bred from Wallasey ova; some very dark forms were included. Mr. W. Mansbridge showed a short series of *Zygæna minos* from Argyllshire, together with the Welsh form for comparison. A paper, by Mr. Robert Newstead, on the genus *Glossina* (Tsetse flies) and *Stomoxys*, was announced for the next meeting on April 15th.—H. R. SWEETING and W. MANSBRIDGE, *Hon. Secs.*

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

Mr. South exhibited the various named forms of *Nonagria geminipuncta*. Mr. Tonge, photographs of a ♀ *Hybernia marginaria*, and a ♂ *Phigalia pendaria*, both at rest on trunks, the former most inconspicuous, the latter very conspicuous; also the former insect set on the bark as taken. Mr. Newman, bred series of *Plusia bractea* from Aberdeen, and an example from Fermanagh. Mr. R. Adkin, series of *Hadena protea* from Rannoeh and South England, the former specimens being less green and much brighter. Mr. Turner, the named forms of *Pararge aera* from various continental localities, and read a note on the direction which the variation takes in this species, pointing out an extreme form of var. *adrasta* taken by him in the Pyrenees. Mr. Harrison, a series of the same species from Meiringen, including a very fine var. *triops*. Mr. Turner, a number of species taken in Switzerland by Mr. Harrison in 1906, including *Boletobia fuliginaria*, *Gnophos glaucinaria*, *G. pullata*, *Psodos quadrifaria*, *P. alpinata*, &c. Dr. Chapman, living specimens of *Thais polyxena* from the south of France. Mr. B. Adkin, specimens of the following species, being transition forms between the typical form and the named varieties: *Boarmia repandata*, *B. abietaria*, *Eupithecia venosata*, and *E. pulchellata*. Mr. Fremlin, a large number of specimens bred by him, during a series of experiments to show the effects of Physical and Chemical Agencies on Pupæ, and read a paper giving a summary of the results obtained.—HY. J. TURNER, *Hon. Sec.*

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, March 6th, 1907.*—
 Mr. C. O. WATERHOUSE, President, in the Chair.

Mr. John C. Moulton, of The Hall, Bradford-on-Avon, Wilts.; Mr. W. Schmassman, of 2, Kinnoul Villas, Freezywater, Waltham Cross; and Mr. R. J. Tillyard, B.A., The Grammar School, Sydney, New South Wales; were elected Fellows of the Society.

The President proposed the following resolution, which was seconded by Prof. E. B. Poulton, D.Sc., F.R.S., &c., and carried unanimously:—"That this Society, being informed that a proposal has been made that children in our schools be instructed to collect objects of Natural History for the purpose of exchanging them for similar objects collected by school-children in our Colonies, deprecates the adoption of any such system."

Prof. E. B. Poulton exhibited male specimens of the Danaine butterflies, *Amauris egiptea*, Cram., and *Limnas chrysippus*, L., collected at Ibadan, near Lagos. Mr. H. S. Gladstone, specimens showing that the scent-producing patch near the anal angle of the hind-wing had been eaten out on both sides—very cleanly and neatly in the case of the *Amauris*—although only a minute portion of any other part of the wing-surface had been attacked. The facts appeared to tell strongly against the view that specially protective (aposematic) substances are, as some have supposed, concentrated in the male scent-glands. Prof. Poulton, on behalf of Mr. G. F. Leigh, of Durban, a blown specimen of the larva of *Spiramiopsis comma*, Hampson, showing the two pairs of remarkable processes as well as the two eye-like

spots, one situated in front of the base of each posterior process. Dr. T. A. Chapman, several specimens sent for exhibition by Mr. W. Purdey, including *Leioptilus carphodactylus* taken by him near Folkestone, a species new to the British list; also some good varieties of *Acalla cristana* and a very dark *L. tephrodactylus*, looking at first sight very like *L. scarodactylus*. Dr. F. A. Dixey, specimens of *Teracolus achine*, Cram., and *Belenois severina*, Cram., bred and captured at Salisbury, Mashonaland. The exhibit showed that in both species the appearance of the wet season phase could be induced under artificial conditions in a brood that should normally have belonged to the dry season form. The specimens of *B. severina* also exemplified the effect of moisture alone as contrasted with moisture and heat. Mr. Selwyn Image, an aberration of *Odezia atrata*, Linn., taken by Dr. G. B. Longstaff at Mortehoe, N. Devon, on June 26th, 1906, displaying a general tendency to albinism. Mr. W. E. Sharp showed a small collection of *Coleoptera*, to illustrate the tendency of some species to micromorphism, and gave an account of the causes of which these small forms were the result. Mr. H. St. John Donisthorpe, a number of similarly stunted specimens, in further illustration of this characteristic. Mr. W. J. Kaye, a series of the genus *Heliconius*, arranged to show (1) how Herr Riffarth, in a paper published in 1901, entitled, "Die Gattung *Heliconius*," divided the genus into two main divisions by a secondary sexual character, viz.: Group I, in which the inner margin of fore-wing of ♂ on under-side is composed of smooth scales reaching the median nervure, and Group II, in which the smooth scales do not reach the median nervure by about a millimetre. The remarkable result of the application of these characters revealed the fact that in several instances what we had hitherto called one species was in reality two species, one belonging to Group I, the other to Group II. Thus, *Heliconius hydara* was found to embrace a sub-species of *H. amaryllis* in *euryades*, Riff., *H. xenoclea* included *H. batesi*, Riff., and *H. phyllis* included *H. nanna*. Mr. Hamilton Druce, a case of butterflies, illustrating the interesting Lycaenid genus *Mimacræa*, including two groups, the one mimicking the Danaïne, the other the Aëræine butterflies.

The following papers were communicated:—"The Life History of *Tetropium gabrieli*, Weise," illustrated by lantern slides, by Rev. G. A. Crawshay, M.A. "Some Teratological Specimens," illustrated by several exhibits, by Dr. T. A. Chapman, M.D., F.Z.S. "Entomology in North-West Spain," by T. A. Chapman, M.D., F.Z.S., and G. C. Champion, F.Z.S. "The Larva of *Collyris emarginatus*, Dej.," by Robert Shelford, M.A., F.L.S. "A Preliminary Revision of the *Forficulidæ* and *Chelisochidæ*," by Malcolm Burr, B.A., F.L.S. "Descriptions of some new Butterflies from Tropical Africa," by Hamilton H. Druce, F.Z.S. "A Catalogue of the Australian and Tasmanian *Byrrhidæ*, with descriptions of new Species," by Arthur M. Lea, F.E.S.

Wednesday, March 20th, 1907.—The President in the Chair.

Dr. Ernest Edward Octavius Croft, of 28, Hyde Terrace, Leeds; Mr. Felix M. Dames, of 12, Landgrafenstrasse, Berlin, W.; Mr. Thomas Frank Partridge Hoar, of Quex Lodge, West End Lane, Hampstead, N.W.; Professor Dr. A. Jacobi, Director of Zoology and Anthropology in the Ethnographical Museum of Dresden; and Mr. Harold J. White, of 42, Nevern Square, Kensington, S.W.; were elected Fellows of the Society.

It was announced that the Rev. F. D. Morice, M.A., and Professor E. B. Poulton, D.Sc., M.A., F.R.S., would represent the Society at the forthcoming celebrations at Upsala and Stockholm.

Dr. F. A. Dixey exhibited several species of *Phrissura* and *Mylothris*, illustrating the remarkable parallelism between different forms of the two genera, a correspondence believed by the exhibitor to have a mimetic significance, the mimicry being probably of the Mullerian kind.

The following papers were communicated:—"Studies in the *Tettigonia* (*Orthoptera*) in the Oxford Museum," by Joseph L. Hancock, M.D., F.E.S. "A List of the *Coleoptera* of the Maltese Islands," by Malcolm Cameron, M.B., R.N., and Dr. A. Carnana Gatto. "The Life History of *Spindasis lokita*, Horsf.," by John C. W. Kershaw. "On the Egg Cases and Early Stages of some South Chinese *Cassidæ*," by John C. W. Kershaw and Frederick Muir. "A Life History of *Tesseratoma papillosa*, Thunb.," by John C. W. Kershaw, with "Notes on the Stridulating Organ and Stink Glands," by Frederick M. Muir. "The Vinegar Fly (*Drosophila funebris*)," by Ernest E. Unwin, communicated by Professor L. C. Miall, F.R.S. "On the Structure and Life History of the Holly Fly," by Professor Louis Compton Miall, F.R.S., and T. H. Taylor; and a "Note on *Xanthorhœ ferrugata*, Clerck, and the Mendelian Hypothesis," by Leonard Domester, M.A., F.E.S.

Wednesday, April 10th, 1907.—The President in the Chair.

Mr. Sydney R. Ashby, of 119, Greenvale Road, Eltham Park, Kent; Mr. Arthur Bulleid, F.S.A., of the Old Vicarage, Midsomer Norton, Somerset; Mr. Bernard H. D. Harrison, of Claremont, Ashleigh Road, Barnstaple; and Mr. Charles Fielding Johnson, of Mayfield, Binnington Crescent, Stockport; were elected Fellows of the Society.

The decease was announced of Mr. John Emmerson Robson.

Dr. F. A. Dixey exhibited specimens of *Pierina* belonging to the genera *Tera-colus* and *Huphina*. The exhibit was intended to illustrate the fact that in species of which the wet-season phases were very distinct from each other, the corresponding dry-season phases often could only be discriminated with difficulty. Mr. G. C. Champion, on behalf of Mr. J. Edwards, a few forms of the genus *Osphya*, together with certain other species occurring at the same time and place, and which, having regard to gait and appearance, resemble them more or less closely. It was not suggested that these resemblances were protective. Attention was also drawn to one important function of the hind-legs of the male, namely, to secure him in position at the time of pairing. Mr. H. J. Carter, a microscopic slide prepared to demonstrate that the antennæ in certain species of the genus *Trachyscelis* have eleven joints, and not ten as hitherto described.

The following papers were communicated:—" *Odonata* collected by Lieut.-Col. Nurse, chiefly in North-Western India," by Mr. Kenneth J. Morton. "The Life-History of *Cydimon (Urania) leilus*," by L. Guppy, Jun., communicated by Mr. W. J. Kaye, which was followed by a discussion on the migration, habits, and classification of the species.—H. ROWLAND-BROWNS, *Hon. Secretary*.

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ON THE ELATERID GENERA *HYPNOIDUS*, STEPH.,
AND *CRYPTOHYPNUS*, ESCH.

BY C. J. GAHAN, M.A., F.E.S.

The species of *Elateridæ* that were included in the genus *Hypnoidus* in the first edition of Reitter's "Catalogus Coleopterorum Europæ" are, in the last edition, rightly ranged under two different genera. These genera are easily distinguishable by an important difference in the structure of the acetabula of the middle coxæ. In one, the mesothoracic epimera extend to the acetabula and take part in their external boundary; in the other genus they are completely shut off from the acetabula, owing to the meeting together of the lateral parts of the meso- and meta-sternum. This distinguishing character was first used by C. G. Thomson, then by Schiödte, and its value has since been recognised by Champion, Horn, Reitter and others. But what I wish more particularly to point out is that, with the single exception of Schiödte, these authors have applied the generic names *Hypnoidus* and *Cryptohypnus* in a way almost exactly the reverse of that in which they were used by Stephens, who in this matter holds priority.

When Stephens founded the genus *Hypnoidus* (Ill. Brit. Ent., Mand. iii, p. 260, 1830) he arranged the species in two sections. In the first section he placed *H. riparius*, Fab.; the second section including *agricola*, Zett., *quadripustulatus*, Fab., *dermestoides*, Herbst, and *pulchellus*, Linn. *H. riparius*, Fab., ought therefore to be regarded as the type of *Hypnoidus*, Steph. Any doubt as to this should be removed by a consideration of Stephens' subsequent procedure. In his "Manual of British Coleoptera," p. 180 (1839), he raised his two sections to the rank of genera, characterising the first under the name of *Hypolithus*, Esch., and the second as *Cryptohypnus*, Esch.; so that here, for the first time, the two genera are separated and the name *Cryptohypnus* is given a definite application, being restricted to those species which Stephens placed in his second section. It is evident also that he dropped *Hypnoidus* as a synonym of the earlier described *Hypolithus*, Esch., not knowing that the latter name was pre-occupied and could not be used. Schiödte adopted the same names as Stephens for these two genera; and, except that *Hypnoidus* must replace *Hypolithus*, this is the course which, in my opinion, ought to be followed.

In accordance with this view, the two genera and the British species may be arranged as follows:—

Acetabula of middle coxæ not extending to epimera...genus *CRYPTOHYPNUS*, Esch.

Acetabula of middle coxæ extending to epimera, *HYPNOIDUS*, Steph.

Genus *CRYPTOHYPNUS*, Esch.

A. Pronotum punctulate and glossy, never granulate or rugulose.

a. Antennæ longer than half the body; elytra unicolorous, black.

1. *maritimus*, Curtis.

a'. Antennæ shorter than half the body; elytra usually having four yellow spots

2. *quadripustulatus*, Fab.

B. Pronotum rugulose or granulate, in greater part dull.

b. Pronotum as broad at least as long, less strongly granulate behind than in front

3. *dermestoides*, Fab.

b'. Pronotum longer than broad; wholly rugulose except sometimes along a median raised line.

c. Size smaller; hind angles of pronotum more or less distinctly divergent

4. *pulchellus*, L.

c'. Size larger; hind angles of pronotum convergent....

5. *sabulicola*, Boh.

Genus *HYPNOIDUS*, Steph.

Only one British species known

1. *riparius*, Fab.

I have omitted *C. meridionalis*, Lap., from the above list, since its record as a British species (Ent. Mo. Mag., 1898, p. 207) is dependent on a single specimen taken at Pegwell Bay, which, as Mr. Champion suggested, may have been accidentally introduced. It is to be noticed also that I treat *C. sabulicola*, Boh., as a species distinct from *pulchellus*, Linn., notwithstanding that M. H. du Buysson (Faune Gallo-Rhenane, Elatérides, p. 236) and Herr Reitter (Cat. Col. Europe, &c., 2nd edit.) consider them to be the same, believing apparently that *sabulicola* was founded upon female examples of *pulchellus*. Until an opportunity was afforded me of seeing and examining a series of those specimens of *sabulicola* that were taken by Dr. Sharp at Thornhill in Dumfriesshire (*vide* Ent. Mo. Mag. 1868, p. 100) I had accepted M. du Buysson's view, and had arranged the British Museum specimens accordingly. I found, however, that the distinguishing characters for *sabulicola* given by Thomson and Sharp are as clearly marked in the male as in the female; all the specimens agree in having the hind angles of the pronotum slightly convergent. Through the kindness of Mr. J. E. Black and Prof. T. Hudson Beare I have seen several of the specimens of *C. pulchellus* taken by them in Inverness-shire (*vide* Ent. Mo. Mag., 1906, p. 155). These specimens, which undoubtedly belong to the true *C. pulchellus*, Linn., are distinctly smaller on the average than those of *sabulicola*, and in all of them the hind angles of the pronotum are divergent. The difference in the shape of the hind angles of the pronotum appears to me, therefore, to be not sexual but specific. There is certainly no sexual difference in the form of the hind angles in

sabulicola, and such slight variation as may be noticed in *pulehellus* seems to me to be individual and not sexual. Assuming that *sabulicola*, Boh., is a distinct species, it will be found that this insect is not confined to the Northern countries of Europe, but extends even to the South of France, and has been confused with *pulehellus* by Candèze and other authors.

I ought to mention that M. du Buysson (Faune Gallo-Rhenane, Elatérides) treats *Cryptohypnus*, Esch., as a section only of the genus *Hypnoidus*, Steph., but he appears to have adopted this course through what is certainly a wrong interpretation of the structure of the middle coxal cavities in *Aretapila*, Cand., which he treats also as a section intermediate between *Hypnoidus* and *Cryptohypnus*.

British Museum, Cromwell Road, S.W. :
May, 1907.

ON *MELANOTUS RUFIPES*, HERBST, AND *M. CASTANIPES*, PAYK.

BY E. A. NEWBERY.

Melanotus castanipes was first brought forward as new to Britain by Mr. E. W. Janson (Ent. Ann., 1856, 85: *Cratonychus castanipes*, Payk.) on the strength of specimens taken by Mr. Foxcroft at Rannoeh. The same insect was subsequently recorded by Mr. E. C. Rye and other collectors from this locality.

Having long had my doubts as to the specific value of these two so-called species, and Mr. O. E. Janson having very kindly placed at my disposal some of Foxcroft's and Rye's original examples, I sent them to M. Bedel for his opinion, together with the common *M. rufipes* taken at Highgate, and a very short parallel sided female belonging to Mr. Kidson-Taylor. M. Bedel's opinion is short but conclusive; he says: "On réunit actuellement *castanipes* à *rufipes*, mais il y a 2 formes; la vôtre me paraît bien *castanipes*." The last edition (1906) of the European Catalogue confirms this synonymy.

When we consider that the common insect known to us as *rufipes* is called *castanipes* on the continent, and that probably specimens of the Rannoeh insect sent for confirmation were returned as *castanipes*, it is not difficult to imagine how the error first arose.

M. rufipes is very variable in size, and the male is more elongate and less parallel than the female. It may also be remarked that when the insect is taken by sweeping it is much darker in colour than those dug out of stumps, which have never been exposed to the light.

12, Churchill Road, Dartmouth Park, N.W. :
May 2nd, 1907.

ARENA OCTAVII, FAUV., ON DAWLISH WARREN.

BY PHILIP DE LA GARDE, R.N., F.E.S.

In the course of setting some *Phytosus balticus* taken on Dawlish Warren on April 10th, I came across an insect which at once struck me as being a stranger, and, on account of its similarity to *P. balticus*, probably *Arena octavii*. Mr. E. A. Newbery, who has kindly examined the specimen for me, is able to pronounce it as undoubtedly that species.

On this particular day scarcely any beetles were to be found among the ordinary dead seaweed at high-tide mark, and I had gradually worked up the beach to the line of an abnormal spring-tide of ten days past before meeting with the usual number—possibly some heavy rain during the previous night had driven them to the caked senn and refuse as providing better shelter—but the nature of the then habitat was more or less on a par with the Ilfracombe record of 1891 for *Arena* “in a dead gull on the shore.” (Ent. Mo. Mag., xxviii, 160).

Prior to this 1891 capture by Mr. Tait, one specimen was taken on Chesil Beach by Mr. Blatch in 1883, and now Mr. Attle reports (Ent. Rec., xix, 94) having taken one at Llanbedr, Merioneth, in September last.

As I believe no description of this species has ever appeared in English, it may be opportune to give the chief points of distinction from *P. balticus* in tabular form:—

<i>Arena octavii</i> , Fauv.	<i>Phytosus balticus</i> , Kr.
Head with distinct shallow punctures which are obsolete on a central space.	Head with very indistinct punctures, which are sometimes obsolete.
Antennæ—third joint pear-shaped, half as long as second.	Antennæ—third joint almost globular, one-third or one-fourth length of second.
Maxillary palpi—somewhat strongly enlarged from base to apex.	Maxillary palpi—much more elongate and linear.
Thorax—transverse, only a little narrowed behind.	Thorax—as broad as long, distinctly narrowed behind.
Elytra—very little shorter than thorax; insect winged.	Elytra—much shorter than thorax; wings scale-like, rudimentary.
Abdomen—black, except apex; scarcely dilated; shiny.	Abdomen—always red at base; dilated at apex; dull, at least, at apex.
Anterior tibiae with long, outstanding bristly hairs, which are scarcely spines.	Anterior tibiae with spines for digging.
Average size—shorter.	Average size—longer.

“Teignview,” Christow, near Exeter:

May 4th, 1907.

ALGERIAN MICROLEPIDOPTERA.

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

(Continued from page 58).

COLEOPHORA, Hb.

3679 : 1.—COLEOPHORA ARGENTIFIMBRATA, *sp. n.*

Antennae whitish, bronzy at the base. *Palpi* smooth, porrect; whitish. *Head* shining bronzy. *Thorax* coppery bronze. *Forewings* bright, shining, coppery bronze; costal cilia pale silvery bronze, the dorsal and terminal cilia bronzy grey. *Exp. al.* 15–16 mm. *Hindwings* pale leaden grey; cilia bronzy grey. *Abdomen* dark leaden grey. *Legs* bronzy grey.

Type, ♂ (8303); ♀ (97590). Mus. Wlsm.

Hab.: ALGERIA—Hamman-es-Salahin, 18.III.1895 (*Eaton*); 25.III.1903, 14.III—2.IV.1904 (*Wlsm.*). Forty-one specimens.

Two specimens were taken by Mr. Eaton "in a dry torrent bed, a little to the right and just beyond the reed-encircled pond about one kilomètre S.W. of Hamman es-Salahin," and I searched for the species very diligently in the same locality but only succeeded in taking one much worn ♂ at light in 1903. In 1904 I found it the commonest insect in the place, and set thirty-eight specimens,—cases subsequently collected on *Trifolium sp.* must undoubtedly belong to this species, although unfortunately I did not breed it.

3700 : 1.—COLEOPHORA SUBCASTANEA, *sp. n.*

Antennae steel-grey, yellowish ochreous towards the base; without tuft. *Palpi* long, porrect, extending nearly twice the length of the head beyond it, closely clothed with hair-like scales to the apex; ochreous. *Head* and *Thorax* light yellow-ochreous. *Forewings* light yellow-ochreous, blending toward the apex with pale chestnut, by which the venation is indistinctly marked on the outer half of the wing; cilia brownish ochreous. *Exp. al.* 14–17 mm. *Hindwings* pale grey; cilia pale brownish grey. *Abdomen* greyish fuscous. *Legs* pale ochreous.

Type, ♀ (96521); ♂ (96524). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 15.III—15.IV.1903; Hamman-es-Salahin, 9.IV.1904. Eleven specimens.

A few specimens taken near the race-course, on recently cultivated land, now run to waste, among low herbaceous growth. Larva not discovered. Quite a distinct species, perhaps most nearly allied to *stefanii*, Joann.

3712 : 1.—COLEOPHORA MICROXANTHA, *sp. n.*

Antennae snow-white; not tufted, but slightly thickened at the base. *Palpi* smooth, without projecting scales beneath; white. *Head* white. *Thorax* pale lemon-yellow; tegulae white. *Forewings* narrow, pointed; lemon-yellow, with two

silvery white streaks, one along the fold reaching to one-third, one along the outer half of the cell, the costa very narrowly white throughout; costal cilia white, apical cilia with a short black streak running through them, beneath which they are silvery white, changing to brownish grey along the dorsum. *Exp. al.* 7-8 mm. *Hindwings* very pale brownish grey; cilia still paler. *Abdomen* silvery, with a greyish tinge. *Legs* white.

Type, ♂ (96528); ♀ (96968). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 11-26.III.1903 (*Wlsm.*); 27-31.III.1895 (*Eaton*); Hammam-es-Salabin, 3-23.IV.1904 (*Wlsm.*). Sixteen specimens.

This pretty little species, which is perhaps most nearly allied to *albicosta*, Dp., though quite distinct, seems to be somewhat widely distributed, but occurs only in patches. It evidently takes shelter in various plants, but I have found it only by smoking the almost bare ground near the dry Oueds.

3715: I.—COLEOPHORA EUPRETA, *sp. n.*

Antennae white; with a short aborted basal tuft. *Palpi*, *Head* and *Thorax* white. *Forewings* pale bronzy brown, a narrow silvery white streak running along the costa and including the costal cilia to the apex; a rather broader silvery white streak from the base, following the upper edge of the fold and running through the cilia below the apex, but not actually touching the dorsum, slightly attenuated from near the end of the fold outward; a shorter white streak from the base follows the dorsum to nearly half the wing-length; cilia very pale brownish ochreous. *Exp. al.* 13-14 mm. *Hindwings* rosy grey; cilia very pale brownish ochreous. *Abdomen* yellowish. *Legs* white.

Type, ♂ (96526). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 21.III-11.IV.1903. Four specimens.

A slender, distinctly marked species in which the silver streaks are clearly defined by the gradually widening band of the pale brownish ground-colour, which becomes slightly attenuated to the apex on the outer fourth of the wing, the lower band of the same colour gradually narrowing to the dorsum from near the base.

It is allied to *helianthemella*, Mill. (3689), and *bilineella*, H.-S. (3715), but the median silvery streak is uniformly wider than in my specimens of those species, and the dark ground-colour is very decidedly paler than in either of them. It is of the size of *helianthemella*, therefore somewhat larger than *bilineella*, but I am not aware that these species have ever been critically compared. I have bred the former from *Cistus monspeliensis*, and Millière recorded it from *Helianthemum tuberaria*, neither of which plants occur at Biskra.

Heinemann omitted to give the food-plant of *bilinecella*, but Ragonot made a MS. note in his copy of Staudinger and Wocke's Catalog that it fed on *Helianthemum vulgare*. There are at least two species of *Helianthemum* at, or near, Biskra on which I have had occasion to search very persistently for other larvae, and had there been a *Coleophora* case upon them I could not have failed to observe it.

3721 : 1.—*COLEOPHORA HIPPODROMICA*, *sp. n.*

Antennae white, with distinct black annulations; a short hoary grey tuft on the basal joint. *Palpi* short, dependent; hoary whitish. *Head* greyish white. *Thorax* olivaceous fawn, with a narrow white streak along the outer edge of the tegulae. *Forewings* olivaceous ochreous, fading to greyish ochreous along the dorsum, with a line of a few indistinct fuscous scales above the outer end of the fold; the costa from the base is narrowly pure white to about two-fifths, where the white band is rather abruptly dilated to twice its width and so continued to above the apex; the cilia at the apex are fawn-grey, a short slender white streak running through them immediately below the apex, dorsal cilia pale brownish grey. *Exp. al.* 11—12 mm. *Hindwings* shining, pale steel-grey; cilia pale brownish grey. *Abdomen* dusky cinereous. *Legs* whitish.

Type, ♂ (96525); ♀ (97578). Mus. Wism.

Hab.: ALGERIA—Biskra, 17.III—9.IV.1903; Hammam-es-Salahin. Larva *Astragalus gombo*, 10.III., excl. 13.IV.1904; 23.IV.1904. Four specimens.

The somewhat abrupt dilatation outwardly of the white costal band renders this species distinct; it is nearest to *trientella*, Chr. (3721), which however is easily separable by the dense clothing of the antennae toward the base, and by the more uniform tint of the darker portion of the wing-surface, which in *hippodromica* is distinctly paler dorsally. The type was taken on a very windy day on the hills overlooking the Hippodrome, or new race-course, at Biskra, but the bred specimen is from Hammam-es-Salahin. I bred this species from a very obscure-looking case on *Astragalus gombo*, apparently formed from the end of a young leaf. It was accidentally taken among leaves gathered to feed other larvae and observed only when crawling up the bottle. Further search among the same plants (which grow on the plains but not on the hillsides) was quite fruitless, and even when the moth was bred I had the utmost difficulty in recovering the case from among the leaves to which it had become attached.

3776 : 1.—*COLEOPHORA ACANTHYLLIDIS*, *sp. n.*

Antennae white; basal joint with a long tuft of yellowish scales. *Palpi* white, with a few projecting scales at the end of the median joint. *Head* and *Thorax* white. *Forewings* yellowish, with a rather wide silvery white band along the costa

from about one-third, tapering to a point in the cilia above the apex; a second silvery white streak from the base running along the fold and rather suddenly attenuated beyond its middle; a third, much shorter streak, between the points of the other two, running to the termen below the apex, there is also a silvery spot at the flexus; a greyish brown streak follows the lower edge of the silvery costal band, attenuated to an acute point from the apex inward toward the base—this is dusted with a scattered overflow of yellowish scales from the space below it; cilia at the apex brownish, below it yellowish, along the termen pale brownish grey. *Exp. al.* 14–16 mm. *Hindwings* iridescent, shining, dark grey; cilia brownish cinereous. *Abdomen* yellowish white. *Legs* white.

Type, ♀ (96602); ♂ (14032). Mus. Wlsm.

Hab.: ALGERIA—Biskra, Larva *Acanthyllis tragacanthoides*, 24.XII.1896, excl. 1897 (*Eaton*); Hammam-es-Salabin. Larva 19.IV., excl. 25.VI.1903 (*Wlsm.*); 11.IV.1904 (*Wlsm.*). Three specimens.

Allied to *echinella*, Stgr. (3776), and *cartilaginella*, Chr. (3767), but the white costal streak shows no yellow intermediate space between itself and the costa as in *cartilaginella*. It is of a yellow colour (less yellow-ochre than *echinella*), and the short intermediate silvery streak is straight, not bent as in *echinella* and *cartilaginella*, moreover, the silvery white dorsal streak does not extend beyond the flexus.

The case carries two lateral, semitransparent, thin, shell-like shields at the apex in which two dark spots are visible, giving the appearance of eyes in a swelled head; with this exception the case is brownish ochreous, smooth, polished, and very slightly wavy, sometimes widening upward from a scarcely oblique mouth with the apex recurved, or hook-like, when the shields which conceal it are removed.

3820 : 1.—COLEOPHORA ARGENTONIVEA, *sp. n.*

Antennae silvery white; with a long projecting white tuft at the base. *Palpi* short, slender, smooth, porrect; white. *Head* and *Thorax* silvery white. *Forewings* shining silvery white, without markings; cilia the same; underside dull reddish grey, the costa, apex, and cilia white. *Exp. al.* 20 mm. *Hindwings* pale brownish grey, distinctly white along the middle and on the basal half of the dorsum; cilia white; underside white, shaded with reddish grey towards the base. *Abdomen* yellowish white, with a double row of blackish spots on the four median segments. *Legs* shining white.

Type, ♂ (8669). Mus. Wlsm.

Hab.: ALGERIA—Le Tarf, 2.VII.1896 (*Eaton*). Two specimens, taken on "rough pasture near the school; after sunset till 7 p.m., among *Cynara cardunculus*" (*Etn.*).

The rather streaky whitened appearance of the upper side of the

hindwings, as well as the colouring of both wings on the underside, enables this to be somewhat easily distinguished from other unicolorous white species.

3866 : L.—*COLEOPHORA PRAECIPUA*, *sp. n.*

Antennae white, very faintly annulate; with a rather short brownish white tuft on the basal joint. *Palpi* white, with slightly projecting scales at the end of the median joint beneath. *Head* brownish white. *Thorax* white, with a brownish streak along the middle posteriorly. *Forewings* with the costa pure white throughout, this white band gradually widening outward from the base to the apex, its lower edge clearly defined by a dark chocolate-brown streak from near the base, gradually narrowing outward, its outer extremity broken into scattered scales before and at the apex of the wing; below this streak the wing-surface may be described as ashy grey, with a slight brownish tinge above the fold but not below it, a line of black scales, more or less separated from each other, running from the base below the fold as far as its outer extremity on the dorsum; cilia on the costa white, below the apex pale brownish cinereous. *Exp. al.* 18—20 mm. *Hindwings* shining, pale slaty grey; cilia brownish cinereous. *Abdomen* shining greyish. *Legs* very pale greyish, unspotted.

Type, ♀ (96529); ♂ (96530). Mus. Wlsm.

Hab.: ALGERIA — Biskra, 11-20.III.1903; Hammam-es-Salahin, 9-17.IV.1904. Four specimens.

Perhaps most nearly allied to *directella*, Z. (3866), but at once distinguished by the conspicuous dark chocolate-brown streak below the white costal band. A conspicuous and most distinct species of which unfortunately I could only secure four specimens.

3904 : L.—*COLEOPHORA POECILELLA*, *sp. n.*

Antennae and *Palpi* dull white. *Head* dull white, slightly stained with ochreous above. *Thorax* pale fawn-ochreous. *Forewings* pale fawn-ochreous to two-thirds of their width from the dorsum; dull white along the costa, minutely dusted throughout with blackish scales; cilia pale fawn-ochreous. *Exp. al.* 13—14 mm. *Hindwings* pale grey; cilia very pale ochreous. *Abdomen* and *Legs* dull whitish.

Type, ♂ (96495); ♀ (96498). Mus. Wlsm.

Hab.: ALGERIA—Hammam-es-Salahin. Larva *Suaeda vermiculata*, 2.IV, excl. 5.IV—6.V., 28.X.1903; 2-10.IV.1904; Biskra 3.IV.1903. Twelve specimens.

Bred from larvae feeding in an elongate, cylindrical, brownish, or grey, case on *Suaeda vermiculata*; these emerged during April and May, but a single belated specimen was bred on the 28th October, 1903. Two specimens were captured in 1904. Most nearly allied to *laripennella*, Zett. (3904).

(To be continued).

SOME NOTES ON THE LEPIDOPTERA
OF THE "DALE COLLECTION" OF BRITISH INSECTS, NOW IN THE
OXFORD UNIVERSITY MUSEUM.

BY JAMES J. WALKER, M.A., R.N., F.L.S.

(Continued from page 101).

Argynnis dia, L.—One under-side (apparently ♂) in fairly good order, but slightly worn; it is set low down on a rather old English pin. The label on one side is "Kirkman's sale, 1817," and on the other side is a note in C. W. Dale's handwriting, nearly illegible, but the name "Weaver" can be traced; a label at the side, "Warwickshire." This is probably one of the specimens reputed to have been taken by Richard Weaver at Sutton Park, near Birmingham, about 1830, which were recorded and figured by the Rev. W. T. Bree in "London's Mag. Nat. Hist.," vol. V, pp. 750-1 (1832). J. C. Dale also records Weaver's captures of *A. dia* in "The Naturalist," vol. I, p. 115 (Groombridge, 1838), and gives on Plate IV a fairly good coloured figure of the under-side.

Argynnis selene, L.—A fine variety, in which the usual fulvous tint on both sides is entirely replaced by clear ochreous-white or bone-colour. "From J. G. Ross, 1879." (C. W. D.).

Melitaea athalia, Bork.—A very varied series, including the beautiful example of the var. *pyronia*, Hub. (*eos*, Haw.), which is figured on Plate IV, fig. 1, 2, of Stephens's "Illustrations." It is still in excellent preservation, and is labelled "Eos, Mr. Howard," and in C. W. Dale's hand-writing "Taken in 1802, Haworth Coll., Stevens Coll.," and at side "1803, Surrey." Another closely similar specimen (under-side) is rather more sharply marked above, and paler on the under-surface, "S. Stevens Coll. 1900" (C. W. D.), and at side "Eos, Haw. var." Other examples from the collection of the late Mr. S. Stevens have the hind-wings greatly darkened, and one has a broad central dark band on fore-wings; and an extremely fine variety, from the same source, is almost uniformly dark brown above, the submarginal row of fulvous spots, and a few faint indications of the basal spots of fore-wing, alone remaining. A large pale example is labelled "*Dietynna*, Haw.," and another curious-looking light form (very old) is labelled "From T. Cooke, Feb. or Mar., 1864" (J. C. D.), and at side "*tessellata*, Pct., var.," it agrees with the insect thus named, figured in Ill. Haust., plate V, fig. 1, 2.

Melitaea cinxia, L.—Another good and variable series; a large specimen with very pale ground-colour labelled "Folkestone" at side.

Melitaea artemis, Fab.—The series of this species includes examples from Glamvilles Wootton, Malvern, Penarth, Carlisle, Ramoch, Pitcaule, Aberdeen, Westmeath, Galway, &c.; there are four specimens of the var. *pravelara*, and seven of the var. *hibernica*, Birchall. A nice variety with the base of hind-wings broadly black is labelled "G. King, July 20.59" (J. C. D.). The two finest varieties are described by Mr. J. C. Dale, with good woodcut figures of the upper and under-sides, in London's Mag. Nat. Hist., vol. vi, p. 378 (1833). The first (fig. 47a, 48a), a ♀, has the hind-wing black, with a large fulvous blotch at the base, and the submarginal black spots in fulvous rings, the under-side being much suffused with dusky; it is labelled "Enborne, Berks., June 15th, 1813, Mr. St. Maur?."

The second (fig. 47b, 48b), also ♀, is suffused all over with dark brown, the sub-marginal band of the hind-wings only being clear; it is labelled at side "South Wales; var. *signifera*," and is stated by Mr. J. C. Dale (*l. c.*) to have been taken by Captain Blomer at Haverfordwest.

Thecla betulae, L.—A good series from Essex, Glanvilles Wootton, &c. *T. pruni*, L. Sixteen fine examples from Monk's Wood. *T. w-album*, Hubn. One with the W mark at anal angle of hind-wings obliterated. *T. queucus*, L. Two examples with the ocellus at anal angle of hind-wings without central black dot.

Thecla rubi, L.—A ♀ in very fine condition, curiously bleached, the hind-margins of all the wings quite pale brown.

Chrysophanus chryseis, F.—Three examples of this reputed British species, one ♂ labelled "Woodside, Epping, from Stephens, fr. Dr. Leach" (J. C. D.).

Chrysophanus virgureus, L.—Represented by eight examples, mostly in only fair condition. A rather worn ♀, on an old-fashioned English pin which has been cut off below the insect, is labelled "E. L. Capei-Cure on Cromer, Aug 26, 1878, see Entom., v. XIII, 45" (C. W. D.). Five ♂ specimens are labelled—"Mus. Blom." (J. C. D.); "From Stephens" (J. C. D.); "Huntingdonshire, from Dr. Leach," at side "Yaxley"; "Griesbach Collection" (C. W. D.); "Haworth Sale 1824" (C. W. D.), the two latter being under-sides. Two ♀'s also bear the same label as the last mentioned, one having a label "Isle of Ely" at the side.

Chrysophanus hippothoe, L.—Four examples; one ♂ in very bad order, and one ♀, rather better, are labelled "from Latham" (J. C. D.). A ♂ has a large triangular label with "*Hippothoe*" on one side, and on the other "Mus. Haworth, Faversham, Kent" (C. W. D.), and a ♂ under-side, "Haworth's Sale, 1824" (C. W. D.).

Chrysophanus dispar, Haw.—The Dalcian Collection contains one of the finest series extant of this now extinct British butterfly, numbering 26 specimens, 11 of which are ♂ and 15 ♀, one of the former and two of the latter sex being set to show the under-side. They are for the most part in excellent order, though a few antennae are broken. Unfortunately very few bear any data; a ♀ is labelled "Whittlesea Mere, July, 1819," another (under-side) "Whittlesea Mere, July 8, 1833," and a third "Bred on June 23, 1814" (C. W. D.). Variation in size is very considerable; the smallest ♂ (measured as set, with the wings only slightly sloping) expands only 31 mm., and another is only a little larger, while the finest ♂ is 52 mm. in expanse. The smallest ♀ is 35 mm., and the largest 52 mm. across the wings. Two ♀'s are much suffused with copper-red on the basal area of the hind-wings, and another is much irrorated with black scales, and has the black spots very large. The gem of the whole collection is an almost entirely black ♀, the central area of the fore-wings, to the end of the cell, suffused with copper-red, on which the two basal black spots show up distinctly; the transverse submarginal band of black spots being just visible, but almost lost in the black suffusion. The hind-wings and under-side of this magnificent aberration are nearly normal. It is labelled "From Simmonds" (J. C. D.).

Chrysophanus phleas, L.—A large and very varied series, including a very fine example of the silvery ab. *schmidtii*, Gerh., "From W. & D., 1899" (C. W. D.); a ♂ from Glanvilles Wootton has the right fore-wing and a worn ♀ the left fore-

wing, of the "*schmidtii*" colour. A very fine variety with the usual black spots very faint, and the disc of fore-wings, and submarginal band of hind-wings, a peculiar pale buff colour with only a slight coppery tint. A fine ♀ has the ground dull copper, whitish towards the anal angle of fore-wings, and another of the same sex is light dull brown with hardly any metallic tinge, but the black spots large and clear. Two specimens have the submarginal copper band of hind-wings reduced to one or two elongate dashes, and a curious-looking ♂ lacks the submarginal black spots on fore-wings. Several approach the dark ab. *cleus*, F., and one is a very well marked example of that form.

Polyommatus alsus, L.—One or two from Dover, almost immaculate beneath.

Lycæna bellica, L.—Two examples; a ♂ in fair condition, but badly set, "From J. G. Ross, 1882, who had it from boy who took it in Devonshire" (C. W. D.), "Dartmouth" at side. Another ♂, under-side, in fair condition, on a large common pin, "Elton, Trin. Coll., Camb.;" "Andover" at side.

Polyommatus acis, W. V.—A very fine series of 19 specimens, including several from Glanvilles Wootton. One ♂ "From J. G. Ross, 1878" (C. W. D.), is labelled at side "Cardiff." A fine ♂ has the ocelli on under-side very conspicuous, enlarged and somewhat elongated, and in another ♂ they are almost absent.

Polyommatus arion, L.—Fifteen specimens, chiefly from Barnwell Wold and Langport, Somerset. Two have the black spots on upper-side nearly obsolete, and in another way they are much enlarged and elongated.

"*Polyommatus alcon*, Steph., var."—Under this name is a specimen set to show the under-side, very old, but quite good, except that the abdomen is missing. On a triangular label is "*Alcon*, Hub., 263, W. J.," and at side "n. Bedford." The reference in C. W. Dale's "Register" is "var. *alcon*, Steph., from Mr. Haworth, H. Jones, Cliefden, Bucks." Whatever the origin of the specimen, it is almost certainly not a variety of *arion*, but agrees in every particular with specimens of *Lycæna alcon*, F., in the Oxford Museum and in my own collection. Cf. Stephens, Ill. Haust. I, p. 68.

Lycæna argiades, Pall.—A pair in good order; the ♂ has a circular ticket, "Dr. Marsh, 1874, Whatley"; the ♀, "Whatley, Somerset," at side. These would appear to be the specimens recorded by the Rev. J. Seymour St. John, in "Entomologist," vol. xviii, p. 292 (1885).

Polyommatus dorylas, Hübn.—One ♂, set to show the under-side, in fine condition, on a modern English pin leaning very much forward as is the practice with many English Lepidopterists. The label is very illegible, but appears to read "Burney's Sale, 1833, from Cooke, Zoologist, 8102" (C. W. D.). At p. 8402 of the "Zoologist" is a note from Henry Doubleday, dated January 12th, 1863, as follows:—"Mr. Cooke, of Oxford Street, recently detected two specimens of this species among a number of *Adonis* taken in England which he had purchased. One of these I have seen and it is certainly *L. dorylas*, and now that attention has been called to it, the insect will probably be met with in the coming summer." Mr. Dale's specimen is in all respects identical with *Lycæna hylas*, Esp. (= *dorylas*, Hübn.), of which species a specimen, "caught at Dover on 7th September, 1902," was exhibited by Mr. Sloper at the meeting of the Entomological Society of London on October 15th of the same year (Proc. Ent. Soc., 1902, p. xxxii). The

butterfly, long ago well figured by Lewin ("The Insects of Great Britain . . .," tab. 37, fig. 5, 6; 4to; 1795), and noted by him as taken on a chalk hill at Dartford, Kent, is in my opinion certainly *L. hylas*, and not, as it has sometimes been considered, an aberration of *L. bellargus* (cf. also H. Doubleday, *Zoologist*, p. 8167). It is just possible that, as in the case of *Lampides botica*, stray examples of *L. hylas* sometimes find their way to this country.

Polyommatus corydon, L.—The exceedingly fine series of 88 specimens of this species includes 2 ♂♂ of a light leaden-grey tint above, with hardly a trace of blue; one ♂ with entirely light hind-margins (var. *foolieri*, South, Entom., xxxiii, p. 104, plate III, fig. 4, 5), and another of the same sex, suffused above with black almost to the end of the cell. Two fine specimens of the ♀ ab. *syngrapha*, Adv., one "from Meek, 1887" (C. W. D.), and the other "Newmarket." Several streaked under-sides of both sexes, and others with the ocelli on hind-wings more or less obsolete; but the finest is a ♀, normal above, but beneath of a pale and very peculiar clear greenish-white tint, slightly rayed along the nervures of the hind-wing with brown. All the usual ocelli are absent, except the discoidal lunule and the submarginal row of the fore-wings, and two costal spots near base of hind-wings; the marginal orange lunules are well marked on the hind-wings, are well marked and surmounted by faint black crescents, and the hind-margins of all the wings are brown, regularly interrupted by white spots between the nervures. This magnificent aberration is labelled "From J. G. Ross, 1880" (C. W. D.).

Polyommatus adonis, F.—Several examples with the ocelli of hind-wings beneath, except the discoidal lunule, obsolete or nearly so; and seven more or less blue ♀'s labelled at side "*ceronus*, Esp.," one very striking, but somewhat crippled.

Polyommatus icarus, Rott.—This species is represented by no fewer than 107 specimens from numerous localities, those from Sligo, Orkney, and Armagh being very fine and brilliant. Of aberrations, the most striking is a ♀, quite ordinary on the upper-side, but beneath modified much in the same manner as the remarkable *P. corydon* above described; the ground colour being clear whitish slightly rayed with brown on the hind-wings, the discoidal lunules of the fore-wings, and the submarginal series of orange spots with their surmounting black lunules very clearly and distinctly marked, but otherwise almost immaculate. This fine form was taken by J. C. Dale in Dorsetshire, on August 5th, 1826, and is labelled at side "Aug., 1826, Buckland." Another ♀, in which the outer row of ocelli on the fore-wings is elongated into strong black streaks, is labelled "Harwood, Colchester, 1899" (C. W. D.). There is a fine ♂ of a beautiful pale lavender-purple tint above, labelled "G. King, 1859" (J. C. D.), and at side "*Labiensus*, Jermyn"; and a very handsome ♀, "Glanvilles Wootton, June, 1888" (C. W. D.), is very dark above, the outer third of the hind-wings light lavender-blue with submarginal black spots, the apex of the fore-wings also broadly blue.

Polyommatus astrarche, Bergstr.—Two of var. *alloës*, Hübn. (one from Castle Eden Dene), quite immaculate above; a ♀ from Langport, Somerset, with clear white black-centred spot in cell above, "taken by Edward Paul, Esq.," is recorded by J. C. Dale in the "*Naturalist*," vol. i, p. 16. There are 21 examples of the var. *salmaeis*, Steph., and 23 of var. *artaxerxes*, Fab.

Polyommatus agon, Bork.—A very fine gynandromorphous example, the right

side being ♂ and the left side ♀, the sexual differences being equally well marked on the under-side, is "From J. G. Ross Coll." (C. W. D.). Two specimens are labelled "Dover," one a curious small pale lavender-blue ♂, the other, of the same sex, very pale beneath with all the markings obsolescent. Another old ♂, probably from Haworth's Collection, taken near Holt, Norfolk, and labelled "*maritimus*" at side, is very dark beneath, with the ocelli of the fore-wings much elongated.

Nemeobius lucina, L.—The series includes several examples from Glauvilles Wootton.

Syrichthus alveolus, Hübn.—There are no fewer than fifteen examples of the ab. *lucas*, Meig. (also labelled "*Larateres*, Haw., var."), some of which are exceedingly fine. Three are labelled respectively "Meek, Standish Cabinet, 1830"; "Bedell Cabinet (J. C. D.)," and "Elton, Trin. Coll., Cam., 1894." A very dark example, with the white spots much reduced, "var. from J. G. Ross" (C. W. D.).

Steropes paniscus, Fab.—A good series from Monk's Wood, Hunts., and "Castor Hauglands, near Peterborough."

Pamphila comma, L.—One very light-coloured ♂, not labelled.

Pamphila linea, Fab.—A fine ♂ aberration, in which the fulvous ground-colour is entirely replaced by whitish-ochreous or bone-colour. "J. Williamson, Folkestone."

Pamphila lineola, O.—A fine series from Leigh, Essex.

Pamphila acteon, Rott.—This butterfly, discovered as a British species by J. C. Dale at Durdle Door, Dorsetshire, on August 15th, 1832 (C. W. Dale, "History of Our British Butterflies," p. 219), is represented by a good series from Swanage, Lulworth, and the "Burning Cliff," Dorsetshire.

Ercata.—On page 96, lines 26 and 27 from top, for "brought to Kent by the birdstuffer," read, "brought to Kent, the birdstuffer." Page 97, line 17 from top, page 99, line 14 from top, page 100, line 5 from bottom, and page 101, line 16 from top, for "London's," read "London's."

"Aorangi," Lonsdale Road,
Summertown, Oxford:
April 9th, 1907.

(To be continued).

Hydræna britteni, Joy, from Central France.—Immediately after the description of this insect was published (Ent. Mo. Mag., vol. xliii, p. 79), I received a ♂ specimen of a *Hydræna* from Capt. Sainte Claire Deville, of Bouges, with a note suggesting that it answered perfectly to the diagnosis of *H. britteni*, and I am pleased to be able to confirm this identification. Capt. Deville has kindly sent me the following most interesting particulars of its capture. "The insects" (he possesses more ♀ ♀) "were taken in April and July, 1905, in the bed of a small stream which is very cold, being at about 750 metres altitude, in the neighbourhood of Arleuf. This place is among the granite mountains of Morvan, 6 kilom. to the east of Château-Chinon. I have noticed that the mountain fauna of the centre of France is very similar to the British fauna, and as to that of our Western coasts, it is absolutely identical."—NORMAN H. JOY, Bradfield, near Reading: April 28th, 1907.

Ptinella britannica, Matth., and other rare *Trichopterygidae*.—I had for long been hoping to find time to visit the Natural History Museum and compare some interesting-looking *Trichopterygidae* with the types in the Matthews collection. These types I found in splendid condition, and I had no difficulty in identifying the following rare species in my collection :—

Ptinella britannica, Matth.—Matthews described this species from a single specimen, and, considering what a distinct form it is, he was quite justified in doing so. It has not been recorded from the British Isles since, but has occurred very rarely on the Continent. Matthews' specimen was taken on the back of a slug at Weston, in Oxfordshire. I possess only one example, which I took when carefully sifting a mole's nest from this neighbourhood in March last year. I have very little doubt that this was quite an accidental find in such a situation. I remember when digging up the nest that I tore off a piece of bark from an old root quite a foot beneath the surface of the ground; it was behind this that the beetle was most probably hiding. If this is its natural habitat its apparent great rarity is easily accounted for.

Euryptilium saxonicum, Gillm.—In the Ent. Mo. Mag., vol. xxxix, p. 253, I recorded *Ptilium marginatum*, Aubé, as having been taken by myself in the New Forest by sweeping short grass in the evening. This specimen I now find is *Euryptilium saxonicum*, Gillm., a species not recorded before from Hampshire, or, indeed, from England. Mr. Tomlin also took a specimen last year in Sherwood Forest.

Ptilium rugulosum, All., is the commonest member of its genus in this neighbourhood! I have taken it in abundance in hedge clippings, &c. I see in the catalogue of Heyden, Reitter and Weise (1891) this insect is regarded as a variety of *P. kunzei*, Heer. It is quite evident that these Coleopterists had not seen a specimen of the species, as it is very distinct from *P. kunzei* in shape, sculpture, and length and colour of antennæ; it is more closely related to *P. spencei*, All.

Baocerara variolosa, Muls.—I took one specimen of this rare and very distinct species on a window here in June last year.—ID.

Rhizophagus ceruleipennis, Sahlb., &c., at Woking.—The very fine hot weather during the past three days has brought out a number of *Coleoptera*, and various interesting species have again been taken on the wing towards sunset, several of which are new to the district. The following are noteworthy: *Rhizophagus ceruleipennis*, Sahlb.,* one specimen, captured with my hat, May 12th; *Deleaster dichrous*, Grav., not rare, on three successive evenings in the same spot; *Ptinus germanus*, F., one male, May 10th; *Stilicis fragilis*, Grav., one specimen, May 12th; *Tomicus laricis*, F., *Helobia imperialis*, L., both in numbers, *Hylesinus vittatus*, F., and *Nyleborus saxeseni*, Ratz.—G. C. CHAMPION, Horsell, Woking: May 13th, 1907.

Asemum striatum, L., at Chobham.—On April 1st the larva of *Asemum striatum* (recognised at once by the two spines at the anal extremity of the body,

* Mr. Bagnall has recently recorded the capture of a single specimen of this rare species at Gidside, and Dr. Sharp has, I believe, captured another in the New Forest.

as figured by Dr. Sharp in *Trans. Ent. Soc.*, 1905, plate 9) was found at Chobham in various charred sappy pine stumps. The stumps were again examined on April 8th, and several pupæ extracted and brought home. These pupæ were placed in sections of bamboo-cane, and placed in a tin, and forgotten! But on opening the tin, about three weeks later, though the contents had suffered from mould, two crippled *Asemum*s were found, sufficient to establish the identity of the insect, and its presence in this portion of Surrey. The same stumps harboured many specimens of *Ips 4-guttata*, F., *I. 4-punctata*, Herbst, and a single *Coccinellus constrictus*, Gyll.—ID.

Hydrochus nitidicollis, Muls., in the River Teign.—Amongst flood rubbish in the River Teign here a week ago I took one example of this species, which was recently added (*Ent. Rec.*, xviii, 133) to the British list by Mr. Donisthorpe.—PULIP DE LA GARDE, "Teignview," Christow, near Exeter: *May Ath*, 1907.

Bembidium 4-pustulatum, Dej., and *Platystethus alutaceus*, Th., at Sittingbourne.—In September last, while working the marshy ground at the back of Old Milton, Sittingbourne, I obtained three of the rare *B. 4-pustulatum*, and eight *P. alutaceus*, which Mr. Newbery has very kindly identified for me.—ID.

Occurrence of Cartodere argus, Reitt., in Britain.—A single living specimen of the above European beetle was taken a few years ago at a wholesale druggist's in London. Until recently it has done duty in my collection for *C. filiformis*, Gyll., but having seen the true *filiformis* it was evident that the two were different species. M. Bedel has been good enough to name the insect as above. The specimen in question is probably not indigenous, but as it may be mixed with *C. filiformis* in other collections, it appears worthy of notice. It can be readily separated from both *C. filiformis* and *C. filum* by its large prominent eyes.—E. A. NEWBERY, 12, Churchill Road, Dartmouth Park, N.W.: *May 2nd*, 1907.

Lathrobium lœvipenne, Heer.—In view of Canon Fowler's reference to this species on page 30 of the current volume, it may be well to place on record that my collection contains two males, which have been authenticated by Mr. W. E. Sharp, who introduced the species to the British list. One of these is from Cannock Chase (ex coll. Blatch), and as Mr. Blatch had it labelled *L. rufipenne*, Gyll., it seems probable that all his localities for the latter insect are referable to *L. lœvipenne*, Heer. I can vouch for the occurrence of *L. lœvipenne* at Lewisham, Gosfield, and in the Manchester district.—J. R. LE B. TOMLIN, Stoveley, Reading: *May*, 1907.

Cis punctulatus, Gyll., in England.—Records of this *Cis* have, I believe, hitherto been exclusively Scotch. It will be of interest therefore to note its capture in Cumberland, the precise locality being Orton Woods to the west of Carlisle, where it has occurred in some abundance this spring. It was obtained under and in the chinks of bark on a fallen Scotch fir upon which a *Polyporus* was growing

freely. Associated with the *Cis* were a number of other bark species, such as *Homalota cuspidata*, *H. immersa*, *Phloeopora reptans*, &c. — F. H. DAY, 151, Gordon Terrace, Carlisle: *May*, 1907.

Enicmus fungicola, Thoms.—With regard to this interesting species, introduced to our list by Mr. Newbery in last month's Ent. Mo. Mag. (pp. 103-104), I should put on record the capture of a specimen by myself so long ago as May 19th, 1901, from a fungus growing on an ash tree near Langwathby, in the Eden valley. This locality is about two miles from Edenhall, where Mr. Britten met with his little colony in 1906. My specimen was accidentally overlooked until Mr. Britten gave me some of his a little while ago.—ID.

Ceuthorrhynchus pilosellus, Gyll., &c., near Oxford.—On May 11th, I found a single example of the apparently very rare weevil, *Ceuthorrhynchus pilosellus*, Gyll., in a small sandpit at the edge of a wood near Tubney; at the time of capture I mistook it for the common *C. marginalis*, Payk., and did not realize my good fortune until my bottle was turned out at home. *Rhinomacer attelaboides*, F., a species which is evidently extending its range southward, occurred singly by sweeping under some well-grown Scotch firs; and the capture, among many other local species already recorded from Tubney, of *Homalota testaceipes*, Heer, *Megaronus cingulatus*, Mann., *Trachys pumila*, Ill., *Phytæcia cylindrica*, L., *Longitarsus agilis*, Rye, *Brachytarsus varius*, F., *Miarus plantarum*, Germ. (not rare), *Ceuthorrhynchidius chevrolati*, Bris., *Hylesinus oleiperda*, F., &c., testifies to the excellence of the day as well as to that of the locality.—JAMES J. WALKER, Aorangi, Lonsdale Road, Summertown, Oxford: *May* 16th, 1907.

Paltodora striatella, Hb., in East Devon.—Among some *Lepidoptera* recently received for identification from Dr. A. Sharpin I was greatly interested to find two specimens of *Paltodora striatella*, Hb., which, together with a third, were secured by him in East Devon during August last. The distribution of this species in Britain, where it appears to be very local and decidedly scarce, is given in Meyrick's Handbook Brit. Lep., p. 572 (1895), as "Kent to Hants and Cambridge," but it had been previously recorded from outside the area thus indicated, for, in Lep. Dors., p. 54 (1886), the late Mr. C. W. Dale chronicled the capture by himself of "a couple" of examples—a correction of the "single specimen only" entered in his Hist. Glan. Woot., p. 225 (1878)—at Glanvilles Wootton, Dorset, on August 3rd, 1870. But, to the best of my belief, *P. striatella*, of which the larva lives at first in the flower-heads, and afterwards in the stems, of tansy (*Tanacetum vulgare*, L.), had never been found so far west as Devonshire until Dr. Sharpin took it there last summer, and his specimens are certainly the only modern ones among the few British individuals that have come under my notice. It will be seen from Staudinger and Rebel's "Catalog" that this species is the *tanacetella* of Schranck, Rössler, and von Heinemann, while the *striatella* of these last two authors, and of Herrich-Schäffer, is quite distinct from the subject of this note. The larva of *P. anthemidella*, Wek. (*striatella*, H.-S., Rössl., Hein.), has been recorded as feeding on *Anthemis cotula*, *A. tinctoria*, and *Chrysanthemum corymbosum*, on the continent, but the insect is not known to occur in this country.—EUSTACE R. BANKES, Norden, Corfe Castle: *May* 14th, 1907.

Review.

CATALOGUS COLEOPTERORUM EUROPE, &c. : Editio Secunda.

In the review of this work, *ante* p. 114, a mistake was made that requires correction. The *Coleoptera* are placed under nine groups as stated, but group (2) should be named *Staphylinoidea*, and the term POLYPHAGA made to include groups 2-9 inclusive, equivalent to the section ADEPHAGA. The heading for the *Adephaga* is given an entire page, and families only are included under it, while that for the POLYPHAGA is given as a headline, and each of the eight groups placed under it are divided up into families as well. The want of uniformity in the system of arrangement is very apt to mislead at first sight, hence this explanatory note.—G. C. C.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *April 15th, 1907.*—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. E. C. Rossiter showed *Terniacampa* bred from dug pupæ from Wyre Forest, amongst them being specimens of *incerta*, which approached *stabilis* so nearly that he was uncertain to which species to assign them. Mr. Hubert Langley, various *Lepidoptera* from the neighbourhood of Leamington, including *Sarothripus revayana*, Sc., taken on sallow bloom and new to Warwickshire, and dark forms of *Hybernia marginaria*, Bich., ♀, *H. leucophaaria*, Schiff., and *Chimabacche fugella*, F. Mr. J. T. Fountain, a large number of *Lepidoptera* taken this year, including live *Biston strataria*, Hufn., taken the same day at Sutton, *Panolis griseovariegata*, Goetz, fine specimens from Sutton; *Vanessa polychloros* and *Polygonia c-album* from Wye Valley, &c. He remarked upon the extraordinary resemblance of the *Panolis* to tufts of fir cone, with which the ground was plentifully strewn, by birds or squirrels, and amongst which they were taken. Mr. L. Doncaster, the specimens of *Angerona prunaria*, L., reared by him in the course of breeding experiments upon the species, the results of which he explained. Mr. G. T. Bethune-Baker, a series of the magnificent butterflies belonging to the Morphine genus *Tenaris* from New Guinea. Mr. Colbran J. Wainwright, *Lepidoptera* taken locally by Mr. W. H. Hardaleer, and including *Noctua castanea* (*neglecta*) from Sutton; *Hadena trifolii* (*chenopodii*) from Handsworth, &c. Mr. G. H. Kenrich remarked that the *castanea* were neither of the southern grey form, nor the northern reddish form, but of an intermediate light brownish colour, and that he had taken similar specimens at Wyre Forest.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: This the concluding Meeting of the Session, was held at the Royal Institution, Colquitt Street, Liverpool, Monday, April 15th, Mr. W. MANSBRIDGE, Vice-President, in the Chair.

Mr. Robert Newstead, Lecturer on Economic Entomology and Parasitology at the Liverpool University, delivered a lecture upon *Stomoxys* and the Tse-tse flies (*Glossina*), among the latter being the insects which produce sleeping sickness. The lecturer described the life-history and development of these most interesting flies, giving particulars of their habits and distribution, as well as the structural characters available for classification.

The life-history of *Stomoxys* remained unknown until worked out by the lecturer partly upon captive specimens, verified by his discovery, at Rossett last year, of the fly in every stage. The flies were found laying their eggs upon heating grass mowings, and feeding upon the warm decomposing grass, were embryos in all stages of development.

The mouth parts, which form the biting organ, were very fully described and illustrated by blackboard drawings and microscopic preparations of these, in many respects, remarkable flies. Specimens of eight out of nine known species of the *Glossinæ* were exhibited by the lecturer, together with preserved larvæ and pupæ.

Mr. Joseph Collins, of Oxford, sent for exhibition a box of *Coleoptera* and *Diptera* taken from moles' nests in the vicinity of Oxford, and contributed notes. Working on lines suggested by the researches of Dr. Joy, of Reading, Mr. Collins found the following species, all of which were shown, viz.: *Quedius vexans*, common; *Q. longicornis*, a short series, much rarer than *vexans*; *Aleochara spadicea*, fairly common; *A. succicola*; *Heterothops nigra*, common; *Oxygoda spectabilis*, not common; *O. metatarsalis*, in two localities, a nice series; *Homalota paradoxa*; *Oxytelus fairmairei*; *O. sculpturatus*; *Melou castaneus*; *M. propinquus*; DIPTERA: *Hystriehopsylla talpæ*, the mole flea. Mr. W. A. Tyerman exhibited a long bred series of *Taniocampa gothica*, which had fed on lilac, and preserved larvæ of *Odontopera bidentata* showing protective resemblance to the lichen commonly found on birch bark. Mr. Oscar Whittaker, living examples of *Plea minutissima*.—
H. R. SWETING and WM. MANSBRIDGE, *Hon. Secs.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Saturday, March 23rd, 1907.

A Meeting was held at the British Museum, Natural History. Dr. Bowdler Sharp conducted those present over that portion of the Museum devoted to the Study Collections of Birds and Birds' Eggs, showing and commenting on many choice and beautiful specimens. Subsequently other galleries were visited.

Thursday, March 28th, 1907.—Mr. R. ADKIN, President, in the Chair.

Mr. Main exhibited specimens of the Mole Flea, *Hystriehopsylla talpæ*. On behalf of Mr. Alderson, specimens of *Musca domestica*, bred from maggots expelled from the intestines of a child. This was said to be the first time that the species had been properly identified, although similar occurrences had been reported. Mr. Adkin, several series of *Anhocelis rufina* from various localities; those from Rannoch being the most richly coloured. Mr. Montgomery reported *Pieris napi* as flying in mid-March, and Mr. Newman, *P. napi*, *P. rapæ*, and *Vaucsa atalanta* as being common in South Devonshire.

Thursday, April 11th, 1907.—The President in the Chair.

Mr. South exhibited preserved larvæ at different instars of *Gastropacha quercifolia* and *Epicnaptera ilicifolia*, and discussed the orange markings present on the 2nd and 3rd segments; also a cocoon of the latter species and of *Laelia cænosa*. Mr. Tonge, photographs of the cocoons of *Dicranura bicuspis* among lichen, and of a larva of *Charaxes jasius* showing the peculiar formation of the head. Mr. West,

the rare Coleopteron, *Oxycheilus variolosus*, from Darenth Wood, in August, 1903. The species is rare on the Continent. Mr. Newman, a long bred series of *Polygonia c-album*, representative of some 700 showing but trivial variation. Mr. B. Adkin, a handless form of *Anaitis plagiata*, a *Eupithecia punctilata* with only two transverse lines, with nice forms of *Comptogramma bilineata* and other species. Mr. Kaye, a bred series of *Daphnis nerii* from Dalmatia. Mr. Adkin, a series of *Cymatophora duplaris* from Rannoch, and contributed notes on the two very distinct forms. Mr. Adkin made some remarks upon insects attacked by verdigris; a discussion ensued, Messrs. Montgomery, Kaye, South, and others taking part. Mr. Turner, the butterfly-like moth, *Synemon parthenoides*, the sexually dimorphic *Heteronympha merope*, and other insects from Western Australia. Mr. Rayward read notes on the curious relations he had observed between ants (*Formica flava*) and the larva of *Polyommatus icarus*, and gave details of his experiments.

Thursday, April 25th, 1907.—The President in the Chair.

Mr. Newman exhibited a branch of birch, upon the twigs of which were about a thousand ova of *Dimorpha versicolora*, laid by females sieved around it. Mr. Main, some small Scorpions, the larva of a Mantis, and an example of the large locust, *Acridium egyptium*, L., all living, and sent him from Hyères by Dr. Chapman. Mr. Sich, the ova of *Lithocolletis concomitella*, a species closely allied to the more common *L. pomifoliella*.—HY. J. TURNER, Hon. Sec.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, May 1st, 1907.—MR. C. O. WATERHOUSE, President, in the Chair.

M. Alexandre Bonnet, of 36^{bis}, Boulevard Bineau, Neuilly-sur-Seine, Seine, France; Mr. Henry Murray Giles, of Perth, Western Australia; Mr. Arthur Leslie Raywood, of Colebrooke, Park Lane, Wallington, Surrey; and Mr. Yeend Duer, of Tokyo, Japan; were elected Fellows of the Society.

The decease was announced of the Rev. William Henry Heale, M.A.

Mr. O. E. Janson exhibited a small collection of *Coleoptera* made by him in Iceland in July, 1906, comprising thirty-nine species, of which some were previously unrecorded as inhabiting that island. Mr. J. A. Clark, living larvæ of *Otiorrhynchus sulcatus* feeding on the roots of ferns. Commander J. J. Walker, living specimens of *Oxythyrea stictica*, L., *Epicometis hirtella*, L., and *Anthaxia parallela*, Lap., taken by Dr. T. A. Chapman at St. Maxime, S. France. Dr. F. A. Dixey, specimens of seven different forms of the variable female of *Leuceronia argia*, Fabr., showing that each form stood in mimetic relation with a separate model, also exhibited. The President, some *Coleoptera* collected in Pahang by Mr. H. C. Robinson and recently received at the Natural History Museum. The series contained some interesting cases of mimicry between beetles of widely separated groups. Dr. G. B. Longstaff, living specimens of the Elaterid *Pyrophorus noctilucus*, Linn., brought from Trinidad by Dr. F. L. J. M. de Verteuil, R.N. Mr. H. St. J. Donisthorpe, on behalf of Prof. T. Hudson Beare and himself, specimens of *Quedius riparius*, Keil., and *Trypodendron quercus*, Eich., taken by them at Porlock, Somersetshire, on April 16th and 17th; also *Hydrovatus clypealis*, Shp., taken by them on April 14th, at Worle, near Weston-super-Mare. Mr. Donisthorpe

also showed the larva and pupa of a Dipterou of the genus *Microdon*, taken in a nest of *Formica fusca* at Porlock last month. Mr. R. Shelford, a specimen of the curious parasitic Orthopterous insect *Hemimerus talpoides*, Walk., from Portuguese Guinea; and read a note on "A Case of Homeotic Variation in a Cockroach."—
H. ROWLAND-BROWNS, *Hon. Sec.*

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTUREDINIDÆ, &c. (19).

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

BLENNOCAMPIDÆ (continued)—*PERICLISTA* TO *BLENNOCAMPA*.

In two more genera of the *BleNNocampidæ*, as in those with which we have just been dealing (*Rhadinoceræa*, &c.) the eyes are noticeably remote from the mandibles ("genæ distinctæ"). These are *Periclista*, Knw., and *Ardis*, Knw., and of each we have (I believe) two British species

PERICLISTA, KONOW.

The ♂♂ of this genus are unmistakable, being the only *BleNNocampidæ* with "continuous external neuration" (*Ent. Mo. Mag.*, March, 1903, p. 53). The ♀♀ do not possess this character, but they have another very distinctive one in the outline of the saw-sheath, viewed laterally, with its short but sharp triangular apex (Fig. 11, *infra*), and one of the two species can be recognised at once by its coloration.

Our two species are *melanocephala*, F., and *lineolata*, Kl. I do not remember to have personally met with the latter as a British insect; but it is no doubt Mr. Cameron's *lineolata* (recorded from Worcester and Scotland), though it is strange that in giving the characters of the ♂ he says nothing about its peculiar neuration.

Melanocephala has the abdomen reddish in both sexes, in *lineolata* it is black. *Melanocephala* differs from all our other *BleNNocampidæ* in having both the thorax and the abdomen mostly red above. In all other cases either both or one of them is black. *Melanocephala* ♂ follows the general rule, its red coloration being confined to the abdomen.

Both in *melanocephala* and in *lineolata* the body is a little longer and considerably broader than in *Parcophora*. I make its measurements average about 6 mill. × 2 mill. (in dried specimens).

ARDIS, KONOW.

In *Ardis* the genæ, though quite "distinct," are considerably shorter than in *Periclista* and *Pareophora*. The ♀ saw-sheath is produced into a long sharp "muero," which is very unlike the blunt apex of *Pareophora*



a. apex of saw-sheath in *Ardis sulcata* ♀.
 b. " " " *Periclista uclatacephala* ♀.
 c. " " " *Pareophora nigripes* ♀.
elista. (See Figure 11).

Our two species, *bipunctata*, Kl., and *sulcata*, Cam., are both black-bodied, and in both—but more conspicuously in *sulcata*—there is a peculiar impression or furrow on the head, following the posterior margin of each eye. The pronotum and tegulae are black in *sulcata*, partly pale in *bipunctata*. The latter has also much more white upon the legs, and the 2nd cubital seems to be (generally, at least) much longer and not so high as compared with the 3rd, a character noticed by Mr. Cameron in distinguishing *bipunctata* from *P. lineolata*. But whether it can always be relied upon to separate *bipunctata* from *sulcata* I cannot say without more material than lies before me.

There is a third species of *Ardis* on the Continent, viz., *plana*, Kl. (= *sericans*, Htg.), in which the head is not furrowed behind the eyes, and the body (especially on the ventral side and towards the apex of the abdomen) is clothed with a noticeable, though fine, pubescence. Mr. Cameron describes in Vol. I a *Blechnocampa sericans* as British, and particularly mentions the latter character as distinguishing it. But in Vol. IV he states that his *sericans* is a *Monophadnus*, and identical with Klug's "*elongata*" (? *elongatula*, Kl.). Of the latter species I have only foreign specimens, which have, as Klug says, "abdomen apice sericeo-micante"; but the character is even more distinct in my specimens of "*plana*" (also foreigners). It is very likely that the true "*plana* = *sericans*" exists in this country; but in the absence of records I naturally cannot "list" it.

We come now to the short-checked *Blechnocampides*, and I commence with the very distinct and uniform genus *Tomostethus*, Knw., consisting of short and sturdy-looking species, with short stout antennæ, whose 3rd joint occupies nearly a quarter of their entire length, and exhibiting very strongly the character of "præsterna discretæ" (Ent. Mo. Mag., May, 1903, p. 115, Fig. 9), whence their generic name *Tomostethus*, i. e., "cloven-breasted." The furrow which thus separates the "præsterna" from the rest of the breast must not be confounded with the division between the pro- and mesosternum which is to be found in all genera. It lies behind the latter, and is a mere "depression," though a deep one, not a "fissure"

of the chitin. The front femora appear to fit into it, when the insect draws its legs together, as it usually does when captured. Hence there is sometimes a difficulty in seeing the character in specimens not prepared with a view to displaying it; but, if the front legs are pulled well out of the way, it is very noticeable indeed, when the insect is looked at upside-down. "Carding," naturally, altogether conceals it.

In all species of *Tomostethus* the wings are more or less dusky; the legs are mainly black in some species, in others they are more or less widely yellowish. But the most important characters are those which lie in the structure of the head, though unfortunately it is often very difficult to see them without special preparation of the specimens. In practice one has generally to rely on venuration, size, and colour-differences.

Konow enumerates in his papers on the European Blennocampids (Vienna, 1886) six species of *Tomostethus*, and I possess British specimens of all six. The following Table is founded on his; but I add certain characters which I have found helpful, and explain at greater length others which he states somewhat briefly, so that a beginner might not realize his meaning. I have also brought the nomenclature up to date by information received from his later writings on the subject, and mentioned in brackets the name given to certain species in Mr. Cameron's Monograph. (*Gagathinus* and *funereus* do not seem to be mentioned in that work either under those names or others).

SYNOPTIC TABLE OF BRITISH *TOMOSTETHUS* SPP.

1. Tempora without distinct margin separating them from the occiput.....2.
- Tempora with a sharp margin separating at least their lower part from the occiput. (This margin runs from near the base of the mandible [behind it] upwards towards the hind corner of the vertical area)4.
2. Discoidal n. and 1 medial n. in fore-wing not parallel. Hind-wing with an enclosed medial cell. Large black species. Legs black. (Superficially resembling *P. aterrima* and *R. micans*, but a little smaller) ...*nigratus*, F.
- Discoidal n. and 1 medial n. parallel3.
3. Hind-wing without enclosed medial cell. Legs mostly black. (Like the last sp., but smaller)*fuliginosus*, Schr.
- Hind-wing with enclosed medial cell. Legs mostly yellow*funereus*, Kl.
4. Tempora with margin distinct only in its lower part. Body (except the legs in part) entirely black*gagathinus*, Kl.

- Tempora distinctly margined almost up to the vertex. Body (except in one variety) partly red5.
5. Hind-wings without enclosed medial cell. Abdomen black.
- (a) Thorax mostly red*dubius*, Gm. (typical form).
(— *ephippium*, C.).
- (b) Thorax black.....*dubius*, Gm., var. *nigrans*, Kw.
(? = *brachycera*, C., Vol. IV).
- Hind-wings with enclosed medial cell. Abdomen and legs for the most part red, thorax black. (A larger species than the last)*luteiventris*, Kl.
(= *fuscipennis*, C.).

I have already recorded British captures of *T. funereus* and *T. gagathinus* in the Ent. Mo. Mag. (Jan., 1901). The former I received from the late Mr. Beaumont, the latter from the Rev. A. Thornley. The variety of *dubius* with black thorax (*nigrans*, Kw.) has been sent to me by several correspondents, among them Mr. R. C. L. Perkins, and I have also examples taken by Dr. Capron. I notice that in all my specimens of this form, and likewise in those of the typical *dubius*, the horny spot which is usual, if not universal, in the 2nd cubital cell of other *Tomostethus* species is wanting; and as Mr. Cameron characterizes a *Tomostethus* which he formerly called *micans*, but now *brachycera*, by the absence of this spot, it occurs to me that *brachycera*, C., and var. *nigrans*, Kw., may perhaps be identical. But as I have not seen the type of *brachycera*, and do not know whether the presence or absence of such a spot can really be relied upon as a good specific character, I only throw this out as a suggestion.

BLENNOCAMPA, Htg.

Next to *Tomostethus* in his Catalogue Konow places the genus to which he restricts the name of *Blennocampa*—a name applied by previous authors to the whole of the present group. This genus, as he now defines it, consists of those *Blennocampides* which combine the following characters: short cheeks, no distinct præsterna, 3rd antennal joint longer than 4th, 1st cubital nerve in fore-wing distinct, discoidal n. and 1st basal n. sub-parallel, and no enclosed medial cell in the hind-wing. Of *Blennocampa* as thus defined, I know six British species, which appear to be all common insects, and which can be separated from one another without much difficulty as follows:—

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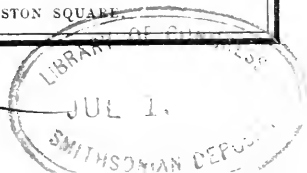
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SYNOPTIC TABLE OF BRITISH *BLENNOCAMPA* spp.

1. Abdomen reddish *assimilis*, Fall.
 — black 2.
2. Third antennal joint at least half as long again as the fourth 3.
 — " " " only slightly longer than the fourth 4.
3. Small (3-4 mill. long). Hind tibiæ and tarsi whitish *pusilla*, Kl.
 — Large (about 6 mill. long). Hind tibiæ largely, and tarsi, black ...
alternipes, Kl.
 (= *cinereipes*, C.).
4. Tegulæ white. Antennæ particularly long and slender *tenuicornis*, Kl.
(= *alchemillæ*, C.).
 — Tegulæ black. Antennæ ordinary 5.
5. Hind tibiæ mostly black *geniculata*, Steph.
(= *alternipes*, C.)
 — Hind tibiæ white *subcana*, Zadd.

Assimilis is one of our prettiest and most common *Blennocampa* species. I have an impression, which I regret that I have not time to verify before this paper goes to press, that Konow now calls it by another name (? *affinis*, Fall.), but it is still called *assimilis* in his Catalogue of 1890, and I may be labouring under some misconception on the subject.

Geniculata, Steph., is not to be confounded with the *geniculata* of Mr. Cameron's Monograph, to which we shall come later in discussing *Monophadnus*.

Thomson and Cameron separate from *subcana* a form which they call *subserrata*, but Konow appears not to admit it as a distinct species, and I am not acquainted with it myself, even as a variety, so I cannot introduce it into my Table. (According to Mr. Cameron it differs from *subcana* in having the tegulæ and edge of pronotum white, and from *alchemillæ* [= *tenuicornis*] in the structure of its antennæ).

Konow formerly included in his *Blennocampa*, for which he has now formed a new genus, *Scolioneura*, in consequence of a difference in the venation of their fore-wings, the discoidal n. and 1st medial n. being not sub-parallel, but convergent. The genus has three British representatives; but I must defer consideration of them to another paper, in which I hope to deal with the remaining genera of the *Blennocampides*.

(To be continued).

A NEW EUROPEAN SPECIES OF *PTEROPHORIDÆ*.

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

In August, 1900, I spent a fortnight at Saas-Fée, in the Valais, Switzerland, and in a former volume (*Ent. Mo. Mag.*, xxxviii, 217) I described a new Pterophorid then obtained, *Platyptilia leucorrhyncha*. I have now discovered that I possess another new species of *Pterophoridae* taken on the same occasion.

STENOPTILIA ZALOCROSSA, *n. sp.*

♂ ♀. 18—21 mm. Head and thorax light brownish-ochreous sprinkled with white, with a white line above eyes. Palpi pale brownish-ochreous, upper and lower edges white. Antennæ grey. Abdomen pale brownish-ochreous, with a white line on each side of back, and two beneath. Legs pale brownish-ochreous externally, white internally. Fore-wings cleft from about $\frac{1}{4}$, segments moderately broad, tolerably acute, termen straight, very oblique; light brownish-ochreous, paler along dorsum, more or less sprinkled with whitish, and strewn with blackish scales about fold and in disc posteriorly, tending to indicate longitudinal streaks; a small roundish spot of blackish irroration in disc at $\frac{1}{3}$, and one at base of cleft; cilia light brownish-ochreous mixed with whitish towards base, white on costa towards middle of first segment, with a dark fuscous basal dot at apex of second segment, another less marked below it, and sometimes one at lower angle of both segments. Hind-wings cleft firstly from below middle, secondly from $\frac{1}{3}$, first segment moderately dilated, pointed, second moderate, long-pointed, acute, third slender; grey, sprinkled with dark grey; cilia grey.

Saas-Fée, 6,000—7,000 feet, in August; four specimens, on an open mountain-slope, covered with various flowers; the species would probably be attached to a gentian or allied plant. Exceedingly similar to *S. bipunctidactyla*, but easily and certainly distinguished by the patch of white costal cilia; the apex of the first segment of fore-wings also appears more acutely pointed, the cilia more produced and longer at apex, and the costa of this segment obviously less arched. *S. zophodactyla* is distinguished from it by possessing three blackish dots at the base of the terminal cilia of the first segment of fore-wings (as well as three on the second segment); the central dot of these three is not possessed by any nearly allied species of the genus except *zophodactyla*, and is a reliable test for that species. *S. zalocrossa* is so like these two species that perhaps other Alpine collectors may find they have it mixed with one or other of them, but I have no doubt of its distinctness.

S. zophodactyla is a very widely distributed species, occurring in India and Australia as well as Europe; *canalis*, Walk., is a synonym of it, and *Doxosteres*, Meyr., founded on this species but based on

abnormality or error, is a synonym of *Stenoptilia*. I recently received a series from the Khasi Hills, Assam, and these led to my making the investigations which have resulted in the present note.

Thornhanger, Marlborough :

May 22nd, 1907.

ALGERIAN MICROLEPIDOPTERA.

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

(Continued from page 129).

HYPONOMEUTIDAE.

3722 : L.—COLEOPHORA PROTECTA, *sp. n.*

Antennae white, very distinctly annulated with black; clothed with yellowish white hair-scales at the base. *Palpi* projecting the length of the head beyond it; white. *Head* white. *Thorax* yellowish white. *Forewings* lemon-ochreous, gradually shading to bright yellowish brown above the fold, this colour intensified toward the apex; costa narrowly snow-white throughout, rather more widely along the costal cilia; cilia pale rosy grey. *Exp. al.*, 10–12 mm. *Hindwings* rosy grey; cilia pale brownish grey. *Abdomen* ochreous. *Legs* whitish.

Type, ♂ (97706); ♀ (97660). Mus. Wlsm.

Hab. : ALGERIA—Biskra, Larva *Acanthyllis tragacanthoides*, XII–II, excl. 4–11.III.1897 (*Eaton*); 28.II–21.IV.1903 (*Wlsm.*); Hammam-es-Salahin, Larvae 15.I, excl. 11.III–24.IV.1904; 2–24. IV.1904; 14.V.1903 (*Wlsm.*); El-Kantara, 23.V.1903 (*Wlsm.*). Twenty-seven specimens.

The case, formed of leaflets of *Acanthyllis tragacanthoides*, is yellowish white, and is fixed obliquely to the food-plant, which is somewhat irregular in shape, with successive layers of the leaf folded round it, and is conspicuous only when after feeding it attaches itself to the long naked thorns which protect the plant against all animals, including camels.

3765 : L.—COLEOPHORA PRINCIPIELLA, *sp. n.*

Antennae stone-white, faintly annulate with fuscous. *Palpi* porrect, divergent, stone-white; the median joint streaked externally with brownish ochreous, a scale-tuft projecting at its apex nearly as far as the end of the terminal. *Head* and *Thorax* pale stone-grey. *Forewings* rather bright brownish ochreous, the costa narrowly pale whitish ochreous throughout, a short streak of the same along the outer half of the cell, and another below the basal half of the fold, the dorsum also narrowly whitish ochreous; the dorsal streak is slightly furcate at its apex; cilia pale brownish ochraceous. *Exp. al.*, 11–12 mm. *Hindwings* dull reddish grey; cilia the same, but paler. *Abdomen* leaden grey above, stone-white beneath, laterally, and dividing the segments; anal tuft stone-white. *Legs* pale cinereous.

Type, ♂ (8536). Mus. Wlsm.

Hab.: ALGERIA—Bône, 6-20.IV.1896, "just above the Moslem cemetery," and "behind the French cemetery, among the scrub" (*Eaton*). Seven specimens.

An inconspicuous species, but I am quite unable to identify it under any hitherto published description, it is perhaps most nearly allied to *congeriella*, Stgr.

3815: I.—COLEOPHORA AEGYPTIACAE, *sp. n.*

Antennae dull whitish, faintly barred with fawn-grey; the basal joint with a very long tuft. *Palpi* slender, porrect, stretching half the length of the head beyond it; whitish. *Head* and *Thorax* stone-whitish. *Forewings* dull stone-whitish, with fawn-grey lines following the venation and somewhat clearly indicating the margins of the cell; costal and apical cilia stone-white, tornal cilia fawn-greyish. *Exp. al.*, 10-11 mm. *Hindwings* pale grey; cilia pale brownish grey. *Abdomen* stone-white, with a double series of elongate fuscous spots down the middle. *Legs* stone-white.

Type, ♂ (97702). Mus. Wlsm.

Hab.: ALGERIA—Hammam-es-Salahin, 2-12.IV.1904. Larva *Salvia aegyptiaca*, III-IV, excl. 21.IV.1904. Thirteen specimens.

I have long been acquainted with this inconspicuous species in its larval state. My attention was first called to it by Mr. Eaton, but I had great difficulty in rearing it. The case is formed of a single long leaflet of the food-plant, mined and hollowed-out for the reception of the larva. It retains the form of the leaf, the anterior opening being scarcely oblique, the corrugated edges of the long pale brown case being more conspicuous toward the top than along the middle, the pale mid-rib of the leaf being visible throughout. I took eight specimens on April 24th, together with several cases from which the type emerged the same day.

3886: I.—COLEOPHORA GYMNOCARPELLA, *sp. n.*

Antennae whitish cinereous, annulate with fuscous. *Palpi* short, scarcely projecting beyond the head; whitish cinereous. *Head* and *Thorax* whitish cinereous, sprinkled with fuscous. *Forewings* whitish cinereous, sparsely sprinkled with fuscous scales, and with a slight greyish fuscous suffusion at the base, gradually diluted outward, leaving the costa narrowly free and of the pale ground-colour throughout; cilia pale brownish grey, whitish cinereous on the costa and at the apex. *Exp. al.*, 8-9 mm. *Hindwings* slightly shining, pale greyish; cilia pale brownish grey. *Abdomen* greyish fuscous. *Legs* pale greyish.

Type, ♂ (97707). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 12.II-7.III.1894 (*Eaton*); 12.III.

1903, I.IV.1904 (*Wlsm.*); Hammam-es-Salahin, 11.III—10.IV.1904, Larva, *Gymnocarpon fruticosum*, 17.IV, excl. 28.IV.1904 (*Wlsm.*). Nine specimens.

A single specimen was bred from a larva found feeding on leaves of *Gymnocarpon fruticosum* at Hammam-es-Salahin on April 17th, 1904. The case is short, cylindrical, and thickly covered with minute grains of sand; the mouth is slightly oblique, the opposite end being pinched up in a triangular form, which is however concealed by the sand-grains. The only bred specimen emerged on April 28th; it is a small, obscure species, and the cases are very difficult to observe.

ERETMOCERA, Z.

3403 : 1.—ERETMOCERA MICROBARBARA, *sp. n.*

Antennae fuscous. *Palpi* dirty whitish. *Head* fuscous. *Thorax* bronzy brownish fuscous. *Forewings* brownish fuscous, sprinkled and mottled with pale greyish ochreous, which has a tendency to form an irregular fascia before the middle and an oblique transverse band before the apex, more distinctly visible on the costa than below it; a few long greyish ochreous scales project into the brownish fuscous cilia, but the amount of such scaling there and on the wing-surface is variable. *Exp. al.*, 10 mm. *Hindwings* slightly paler than the forewings, pale brownish fuscous, with darker brownish fuscous cilia. *Abdomen* pinkish ochreous, slightly shaded with fuscous; the anal tuft blackish. *Legs* blackish, with white annulations.

Type, ♂ (8323). Mus. Wlsm.

Hab.: ALGERIA—Biskra, "borders of Oued Biskra, in the neighbourhood of railway kilomètre 199. Beaten from flowers of *Tamarix brachystylis*, 10–11.30 a.m.," 9.V.1895 (*Eaton*); "by the Route de Tourgout, opposite the Jardin Landon, on *Ammi visnaga*," 15.V.1897 (*Eaton*); "by the Aqueduct, near Fort St. Germaine and the brick-kiln, on *Ammi visnaga* umbels. Common," 19.V.1897 (*Eaton*). Seven specimens.

A much smaller species than *medinella*, Stgr., which is its only near ally in the genus. It may be distinguished by its more ochreous, less reddish abdomen, and by the somewhat less distinct pale markings on the forewings, but the general colouring is extremely similar.

3403 : 2.—ERETMOCERA NOMADICA, *sp. n.*

Antennae black. *Palpi* lead-grey, with blackish scales along the terminal joint beneath. *Head* bronzy brownish, with a few reddish scales round the neck. *Thorax* black, sprinkled with brown-grey scales. *Forewings* black, sprinkled with brown-grey scales, a pale pinkish ochreous spot on the costa at three-fourths from the base; cilia brownish grey: underside shining, rosy grey, the rosy tinge more especially visible along the costa; cilia dark brownish grey, contrasting strongly with the pale, shining, wing-surface. *Exp. al.*, 12 mm. *Hindwings* shining,

pale grey, with a slight rosy tinge outwardly; cilia brown-grey: underside shining, pale rosy grey; cilia pale brownish grey, rosy-tinged at their base, except at the wing-apex. *Abdomen* red, shaded with black across the base, with a black band on the antepenultimate segment; anal tuft ochreous: underside throughout, shining, deep purplish black, an ochreous spot on either side below the middle. *Legs* deep purplish black, the hind tarsi with three or four whitish bands, one at the base of each of the anterior joints.

Type, ♂ (97701). Mus. Wlsm.

Hab.: ALGERIA—Hammam-es-Salahin, 31.I.1904. Unique.

The species is separable from *medinella*, Stgr., by the black band on the underside of the fore-wings at the base of the cilia; it is larger than *microbarbara*, and more distinctly coloured.

A single male was beaten from some low plants of *Limoniastrum* and *Suaeda*, growing on sandy ground, on a very windy day, and the most persistent search did not enable me to secure another specimen.

405.—STAGMATOPHORA.

3613 : 3.—STAGMATOPHORA THAUMATELLA, *sp. n.*

Antennae white, annulate with dark bronzy fuscous. *Palpi* slender, smooth; white. *Head* and face yellowish white. *Thorax* dark, shining, bronzy fuscous. *Forewings* dark, shining, bronzy fuscous, blending to brighter copper-colour toward the dorsum, with three conspicuous yellowish white costal patches, one near the base, one in the middle and a larger one before the apex; of these the first reaches nearly to the fold where it is abruptly cut off, the second is shorter and somewhat triangular, the third elongate and extending through the costal cilia; contingent to each of these and extending nearly to the dorsum are patches of golden metallic scales, the first two tending outward from the lower extremity of the corresponding costal patch, the third directed inward to the dorsum; there are also a few golden scales at the extreme apex; cilia pale brassy grey. *Exp. al.* 10—15 mm. *Hindwings* very pale bluish grey; cilia pale brassy emereous. *Abdomen* bronzy fuscous. *Legs* white, with two bronzy bands outside the tibiae.

Type, ♀ (88960) : ♂ (88956). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 24.II—30.IV.1903; Hammam-es-Salahin, 11.III—13.IV.1904. Twenty specimens.

Not uncommon at light during the month of April.

This species greatly resembles *sumptuosella*, Ld., in the size and distribution of its markings, but it is rather smaller, and can be immediately distinguished by its much paler hind wings, and equally by their pale cilia.

TORTRICIDAE.

265.—ANCYLIS, Hb.

2280 : 1.—ANCYLIS SOPHRONIELLA, *sp. n.*

Antennae smoky fuscous above, except at the base; dirty whitish at the base and beneath. *Palpi* short, brushy; white. *Head* brownish white. *Thorax*

smoky grey; tegulae white. *Forewings* creamy white, with a series of short, oblique, black costal streaks lengthening outward and alternating on the outer half of the wing with about five pairs of slender, white, geminated streaks, beyond the last of which is a white costal spot above the black falcate apex, whose shape is emphasised by the cilia beneath it being clear white, while those at the extreme apex are black; from the base a dark fuscous patch runs along the dorsum, rising above the fold and thus occupying more than half the wing-width, it reaches to half the length of the wing, and has there a tendency to become diffused and drawn out into lines of scales along the veins, blending with the leaden grey colouring which continues thence to the termen and around the apex, hiding also the points of the white costal geminations; about the end of the cell are other lines of fuscous scaling, one of which is angulated downward, forming a continuous pattern with those below it, and assisting the gradual blending of the white ground-colour with the leaden grey shading; terminal cilia white. *Exp. al.*, 23 mm. *Hindwings* and cilia rather shining, pale brownish grey, a narrow shade-line running through the cilia near their base. *Abdomen* pale brownish grey. *Legs* white, with black tarsal annulations.

Type, ♂ (97704); ♀ (97705). Mus. Wlsm.

Hab.: ALGERIA—Hammam-es-Salahin, 15.IV.1904; Constantine, 5.V.1904. Two specimens.

Hindwings with 3 and 4 stalked, and therefore agreeing with *lactana*, F. (the type of the genus *Ancylis*), to which species it is most nearly allied.

ANCYLOPERA, Stph. (= § *Epicharis*, Hb.; = † *Anchylopera*, Stph.), type *lundana*, F., should be used for Meyrick's Section A, of *Ancylis* "3 and 4 of Hindwings coincident," and to it should be referred 2262 *sparulana*, Stgr.; 2263 *derasana*, Hb.; 2264 *lundana*, F.; 2265 *paludana*, Brt.; 2265: 1 *mandarina*, Wlsm.; 2266 *myrtillana*, Tr.; 2267 *siculana*, Hb.; 2267: 1 *argenticiliana*, Wlsm.; and the American species 5240 *nubeculana*, Clms.; 5241 *subaequana*, Z.; 5242 *discigerana*, Wkr.; 5243 *semiorana*, Z.; 5246 *spiraefoliana*, Clms.; 5247 *laciniata*, Z.; 5248 *burgessiana*, Z.; 5249 *dubiana*, Clms.; 5253 *angulifasciana*, Z.; and 5254 *platanana*, Clms.

I am unable to refer to 5244 *murtfeldtiana*, Riley; 5257 *cornifoliana*, Riley; 5264 *cometana*, Wlsm.; 5265 *loricana*, Grt.; and 5267 *kincaidiana*, Frnld., but the remaining species enumerated in Dyar's List and in Staudinger and Rebel's Catalog belong truly to ANCYLIS, Hb., as also 2272: 1 *latipennis*, Wlsm.; and 2278: 1 *pulehra*, Btl.

TINEIDAE.

GRACILARIA, Hw.

4047: 1.—GRACILARIA CORUSCANS, *sp. n.*

Antennae yellowish, dotted above with fuscous; with a reddish brown pecten at the base. *Palpi* yellowish, smeared with reddish brown. *Maxillaries* porrect,

half as long as the labials. *Head* and face yellow, reddish-brown at the sides. *Thorax* reddish brown with purplish iridescence. *Forewings* reddish brown, with a yellowish triangular blotch on the middle of the costa, its apex obtusely truncate above the fold, the whole wing shining in certain lights with very bright purple iridescence; the cilia around the apex reddish brown corresponding to the wing colour, those along the dorsum inclining to greyish ochreous. *Exp. al.*, 11–13 mm. *Hindwings* dark grey; cilia rosy grey. *Abdomen* dark grey. *Legs* greyish, the two anterior pairs with dark purplish brown femora.

Type, ♂ (88786). Mus. Wlsm.

Hab.: ALGERIA—Hammam-es-Salahin. Larva, *Rhus dioica*, III–IV, excl. 12.III–7.V.1903; 21.IV.1904. Five specimens.

The cones made by the larvae were found in March and April, the moths emerging at the end of that month, the specimen described was bred April 24th, 1903.

Allied to *fribergensis*, Fritzsche, and *braccatella*, Stgr.

474.—MYRMECOZELA, Z.

4642: 1.—MYRMECOZELA DIACONA, *sp. n.*

Antennae pale fawn-ochreous. *Palpi* roughly clothed beneath, with short projecting terminal joint, scarcely extending beyond the head; brownish ochreous. *Head* pale ochreous. *Thorax* smooth, whitish ochreous. *Forewings* elongate, narrow, rounded at the apex; pale whitish ochreous, the neuration more or less clearly marked out with lines of fawn-brown, some disconnected dots of black sealing along the central portion of the fold, and sometimes a few black scales on the upper edge of the cell near the base, with small spots of the same around the apex and termen at the base of the cilia which are pale fawn on their basal half, becoming fawn-white speckled with brown on their outer half. *Exp. al.* 22–33 mm. *Hindwings* broader than the forewings, with depressed, obtusely rounded apex; shining, pale pearly grey; cilia pearly whitish. *Abdomen* dark grey, anal tuft pale fawn-ochreous. *Legs* pale fawn-ochreous.

Type, ♀ (88929); ♂ (88946). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 20.III.1895 (*Eaton*), 1.III–16.IV. 1903 (*Wlsm.*); Hammam-es-Salahin, 7–18.IV.1903, 31.I–21.IV.1904 (*Wlsm.*). Forty-five specimens.

The majority of these specimens, taken at light at Biskra and Hammam-es-Salahin in March and April, are ♀ ♀, and have the habit, even when apparently dead on the setting boards, of ejecting a considerable mass of most delicate fluff from the body—this is so fine that it has been found impossible to preserve it in connection with any specimen. It is obviously a covering for the eggs sometimes found deposited within it, but at present I know nothing of the larva or its habits. The species came freely to light in the town of Biskra as well as in the desert at Hammam-es-Salahin, but the first specimen

received was sent me by the Rev. A. E. Eaton in 1895. It seems remarkable that so distinct and conspicuous a species should not have been previously observed or described.

479. — NEMATOIS, Hb.

4693 : 1. — NEMATOIS ALGERIENSIS, *sp. n.*

Antennae dark purplish on the basal third, white beyond. *Palpi* black, with a loose brush of golden yellow hairs projecting below and in front. *Head* ♂ blackish in front of the eyes, with a bright golden yellow fringe behind them; ♀ head and face bright orange-yellow. *Thorax* dark purplish, tegulae shining golden bronzy. *Forewings* ♂ shining golden bronzy, shaded with cupreous beyond the middle; a creamy whitish patch on the costa before the outer fourth, with a smaller one on the dorsum a little before it, a patch of golden bronzy scales lying at the outer and lower edge of the outer patch where the wing is otherwise cupreous; cilia golden bronzy along their base, shining pale golden yellowish beyond. *Exp. al.* 21—22 mm. *Hindwings* ♂ deep purple; cilia yellowish white, with a dark bronzy line along their base: ♀ cilia rich cupreous at their base, dark bronzy beyond it. *Abdomen* ♂ black: ♀ pale golden yellow. *Legs* ♂ hind tibiae with long blackish hairs at their base, becoming pale yellowish posteriorly; hind tarsi pale yellowish, smeared with blackish; ♀ pale golden yellow.

Type, ♂ (96517); ♀ (5892). Mus. Wlsm.

Hab.: ALGERIA—El-Guerrah, 27.V.1903 (*Wlsm.*); Constantine, 7.VI.1895, 11.VI.1894 (*Eaton*). Seven specimens.

I first received this species from Mr. Eaton from Constantine, taken in June, 1894, and was at once struck by the difference in the colour of the hindwings in the ♂ and by the yellow abdomen in the ♀, which give it a very distinct appearance from that of *latvillellus*, F. I met with it myself on May 27th when waiting for a train at El-Guerrah (the junction for Biskra and Algiers) a little to the south of Constantine.

Mr. Eaton met with this species commonly on M'cid and on the top of Mansourah, at the edge of the forest, on *Scabiosa maritima*, L., and made the following notes:—"Oviposition observed on the 14th June, 1894, about 2 p.m. The moth when laying eggs stands usually on the outside of the capitule sideways or head upwards (but sometimes on the top of the capitule) and thrusts the nude part of the ovipositor cautiously between the involuclcs of the florets. The egg is usually placed outside the floret, at the summit of one of the furrows between the hairy ridges on the base of the fruit: but one egg was found inside a floret, lodged securely between the involucl and the sheath of the calyx. Larvae as well as eggs were found in the capitules examined,—some of them being plentifully

stocked with them. Egg .027 by .013 inch, smooth and whitish; the pyriform egg figured, newly laid, was identified by comparison with one that was hatching, and the larva issuing from the latter agreed with older larvae in the capitules having the form characteristic in the family to the best of my recollection of figures." (*Eaton*, 5893: 1894).

PROTOLEPIDOPTERA.

MICROPTERYGINA.

MICROPTERYX, Hb.

4765: 1.—MICROPTERYX CYANEOCHRYSA, *sp. n.*

Antennae and *Palpi* black. *Head* bright golden yellow. *Thorax* purple. *Forewings* rich shining bluish purple, with transverse bands of bright golden yellow; there is a blue-purple patch at the base of the costa, another at the base below the fold; thence a broad golden yellow band reaches to about one-third, broader on the dorsum than on the costa, its outer edge somewhat indented below the costa; the succeeding space is shining bright blue, with the purple ground showing through it, its outer edge clearly defined by the straight median band of golden yellow which succeeds it; thence again comes a broad triangular blue patch, broad on the costa and gradually narrowed to the dorsum; the third golden band beyond it being placed obliquely inward from the costa before the purple apex and termen; cilia bronzy grey. *Exp. al.* 8 mm. *Hindwings* fuscous, with purplish reflections, more strongly tinged with purple towards the apex; cilia dark bronzy grey. *Abdomen* blackish. *Legs* very dark bronzy grey.

Type, ♀ (96512). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara. H.V.1903. Unique.

A very distinct and beautiful species.

(*To be continued*).

SOME NOTES ON THE LEPIDOPTERA OF THE "DALE COLLECTION" OF BRITISH INSECTS, NOW IN THE OXFORD UNIVERSITY MUSEUM.

BY JAMES J. WALKER, M.A., R.N., F.L.S.

(*Continued from page 134*).

II.—HETEROCERA.

The British moths in the Dale collections are contained in five cabinets and part of a sixth, and occupy 120 full-sized drawers. Almost every species on our list is more or less fully represented, in most instances by extensive series, and as in the case of the *Rhopalocera* already dealt with in the preceding pages of this volume, the number of fine and remarkable aberrations, and of specimens of

historical interest, is very large. The rare Sphinges in particular are exceptionally well represented, and among these are what are without doubt the first authentically recorded British examples of *Charocampa nerii* and *C. celerio*.

SPHINGINA.

Zygena exulans, Hoch.—A fine series from Braemar. *Z. meliloti*, Esp.—Also well represented, and including a fine confluent form.

Z. lunigeræ, Esp.—One example of the var. *eboraci*, Prest, from Castle Eden; three fine varieties with the crimson spots on fore-wings confluent into a large blotch, one of them labelled "Warwick, from H. D., 158" (J. C. D.).

Z. trifolii, Esp.—One fine yellow aberration (labelled *lutescens*, Tutt), "Mr. Christy, Emsworth, Hants, 1895" (C. W. D.); several very fine examples with confluent spots, and one, labelled at side "*arabi*, Hubn.," with the central crimson spots of fore-wings much reduced in size, "W. Head, Scarborough, 1906" (C. W. D.).

Z. flitpendular, L.—Of this abundant species there is a large and varied series including two fine yellow forms (*cerinus*, Robson) from "Winchester, C. Goddard, 1875"; two fine confluent aberrations with the basal and central crimson spots fused into a large blotch, the finest from "W. Head, Scarborough, 1904" (C. W. D.); and another with the same data, in which the crimson colour is replaced by pale orange-red. A magnificent melanic form (var. *chrysanthemi*, Esp.), obtained by C. W. Dale at the sale of Dr. Mason's collection in 1905, and bearing a type-written label "BEWDLEY, T. NOWERS" (*recte* "Nowers"). In this beautiful aberration the whole of the usual crimson colour is replaced by very dark madder-brown, the spots distinctly visible on the lustrous blackish-green ground colour of the fore-wings. An even more remarkable aberration is of full size and well developed, but the whole of the dark-green scales of the fore-wings are absent, these wings being transparent horn-colour with narrow blackish costal margin; the usual dark border of hind-wings, and all the fringes are pale grey; all the crimson markings, and the body, being normal, and the under-side being modified nearly as above. This specimen was taken by Dr. R. C. R. Jordan, and is labelled "Cliffs, Teignmo., June 12/44," presumably in his handwriting.

Smerinthus ocellatus, L.—The series includes an example of the hybrid between this species and *S. populi* (labelled var. *hybridus*, Westw.). The characters of this insect are decidedly ♂, and in general appearance it much more closely approximates to *ocellatus* than to *populi*. It was obtained by J. C. Dale from Mr. H. House, of Bristol, in 1840. (*Cf.* Trans. Ent. Soc., vol. III, pp. 193-202 (1842).)

S. populi, L.—A curious small ♂, almost unicolorous pale brown, the usual red blotch on hind-wings absent. "From B. Standish, Walworth, Kent" (C. W. D.).

S. tilix, L.—A varied series, including several specimens with the central band on fore-wings reduced, in one ♀ hardly traceable, the insect being of a nearly unicolorous pale red-brown tint; "Meek, 1880" (C. W. D.). Another rather striking ♀ specimen is nearly uniform light olive-brown, with the central band well marked, and of a full orange-brown colour; labelled at side "Doncaster."

Acherontia atropos, L., and *Sphinx convolvuli*, L.—Full series of both species, but none of special interest, historical or otherwise.

Sphinx pinastri, L.—Eight examples; a ♂ in very fair condition, "From Dr. Leach, F.R.S., taken near Edinburgh" (J. C. D.), and at side, "Rivelston Wood, near Edinburgh, Mr. Wilson, 1818." (Cf. Stephens, Ill., *Haust.* I, p. 122.) Two ♀'s, both worn, "Bought at Stevens's, 1893, Rev. H. Burney's collection" (C. W. D.); another ♀, in fair condition but badly set, "Honble. Miss Lushington, Surrey" (C. W. D.), and a better specimen of the same sex, "Aldeburgh, 1884, 21 March (?)" (C. W. D.); while a ♂ in excellent condition is labelled "Aldeburgh, Suffolk (illegible) from Mr. Ross' coll., 1888" (C. W. D.).

Deilephila euphorbiae, L.—Also represented by eight examples, six of which are from the old locality of Braunton Burrows, North Devon. These include a ♂, "Devon, Baruple., Mr. Raddon" (J. C. D.); another ♂, very strongly tinged with rose-colour, "Bred by Raddon, Braunton Burrows, F. Standish bt." (C. W. D.); two ♂, "Bred by the late Mr. Raddon. The larvæ taken on the sandhills at Braunton near Barnstaple"; a ♂, "Rev. Windsor Hambrough collection. Given to him by Mr. A. R. Raddon the son"; and another ♂, in rather poor order and apparently worn from flying, "Barnstable, Mr. Raddon," and at side, "1815." Of more recent specimens, a very good ♀ is labelled "Taken in the Isle of Man, sitting on dead sea weed, July 15th, 1868, by Chas. S. Dewhurst"; and another ♀, from the collection of the Rev. J. Seymour St. John, bears a printed label evidently cut out of a sale catalogue, "*D. euphorbiae* bred from larvæ taken at New Quay in 1889, with cocoon and pupa case (*Ent. vols. xxiii*, 18, 319, and *xxvi*, 311)."

D. galii, W. V.—Nine specimens; two rather small ♂ from "J. G. Ross' coll., 1888" (C. W. D.); a fine large example of the same sex, "From Rev. H. Burney's collection, 1893" (C. W. D.), "Birkenhead" at side. A ♀ with printed label, "bred by Mr. Leather, Liskeard," and another, "Birkenhead, J. T. Carrington, 1873" (C. W. D.). Two ♀'s, "Mus. Spry," "Middlesex" at side, and "Dr. Knaggs's coll., bred by Syme." A finely coloured ♀, "bought of Mr. Reade, Doncaster, 1837" (J. C. D.), and a very large but worn example of this sex, expanding as set 3 inches 3 lines (= 82 mm.), "Deal from J. G. Ross' coll., 1888" (C. W. D.).

D. lineata, Fab. (*livorica*, Esp.).—Eight examples; a ♀ labelled "Mus. Dr. Abbot" is in very good condition considering its great age. (Cf. Stephens, Ill., *Haust.* I, p. 127.) Two rather worn examples, both ♀, "From collection of Mr. Edmonds of Worcester" (C. W. D.). A very good ♂, on a large ordinary pin, "From J. B. Hodgkinson, Deer, 1869. Taken at Workington by B. Martin"; another ♂, somewhat worn, "Thornford, nr. Sherborne, Mar. 28, 1862." A very good ♀, "Taken in Devonshire at Plympton. Capture recorded in Science Gossip for 1869." Respecting this specimen the captor, Mr. F. A. Ramsey, writes (*Science Gossip*, March, 1868, p. 65): "Suspecting one of my two specimens (taken last season) to be a female, I kept it alive some time; it laid a small number of eggs, and died. I think about thirteen of the eggs hatched; I placed them on a growing vine in an airy box; some of them grew to about 1¼ inch in length, but all ultimately died." Two other ♀'s in good order, one Feby. 2nd, 1861, near Torquay, Geo. King, in *Intell.*, p. 155" (*Ent. Weekly Intelligence*, vol. IX), and one, very fine, "Taken by E. R. Dale, Gl. Wootton, Dorset, Aug. 22, 1870."

Cherocampa nerii, L.—The collection contains five examples of this rare

visitor to our islands. Of these, the most interesting is a ♂, a little faded in colour, but otherwise in good condition with the exception of a small piece out of the apex of each fore-wing, and the top of the head rubbed bare. It is labelled "Taken at Dover by Mr. Leplastrier" (C. W. D.), with a printed label at side, "Dover, Mr. Le Plaistrier, Sept., 1828." The latter date is almost certainly erroneous as regards the year, as the first record of the capture of the imago of *C. nerii* in our islands appears in the "Entomological Magazine" for 1833 (vol. I, p. 525) as follows:—"Discovery of *Sphinx Nerii* in England. Sir,—Another addition has been made to our visiting *Sphingidae* by the capture of the splendid *Deilephila* (may I call it?) *Nerii* at Dover about ten days since. From the state of the specimen, which I have this day examined, it must have been very recently disclosed, the tips of its wings and the top of its head alone being slightly injured by its captor, a lady residing in the above town. * * * J. F. Stephens, Sept. 16th, 1833." The specimen now under consideration is slightly damaged in precisely the same manner as above described. It seems also reasonable to suppose that it was from this example that the beautiful figure in Curtis' "British Entomology," plate 626, was drawn. Curtis (*l. c.* fol. 626, p. 1) at the time this plate was published (January, 1837) apparently knew of only two British-taken *C. nerii*, one of which was in the cabinet of his fellow-worker, J. C. Dale, and was presumably lent to him for the purpose of being figured. This figure, although more fully and richly coloured than the moth is now after the lapse of nearly three-quarters of a century, agrees with it in a remarkable and convincing manner in all the minute details of the markings; and though Curtis states (*l. c.* fol. 626, p. 2), "The fine specimen of the moth, which is a female, Mr. Leplastrier informed me was taken by a poor man the latter end of September, 1834, near the pier at Dover, and was brought to him alive," the antennæ in the figure, which are very faithfully represented, are obviously those of a ♂. It therefore appears to me that these two somewhat discrepant records refer to the capture at Dover of a single specimen of *C. nerii* which came into the hands of the well-known collector Mr. Leplastrier, and from him passed to J. C. Dale; and that this, the first example of this beautiful moth known to have been taken in Britain, has thus been handed down to our time.

The other four specimens of *C. nerii* in the collection are labelled as follows:—One ♂, old but perfect, "Honble. Miss Lushington, Sussex" (C. W. D.); a ♂, in very good order, has two labels in C. W. Dale's handwriting, "Taken at Eastbourne by a small boy from Bayswater, about 9.30 in the evening circling round a very brilliant light. From the Bayswater Chronicle of Sept. 27th, 1884," and "R. Alfred, Eastbourne, Sept. 21st, 1884, Cat. n. 17—333." One ♀, very richly coloured, but slightly rubbed on the thorax and with one antenna missing, the body being not very neatly stuffed with cotton-wool, "From the colleen. of late Dr. Hunter, died 1892," at side "Hartlepool"; and a very fine ♀ on a modern black pin, "*Cherocampa nerii*, captured at Poplar, 20th Sept., 1888."

C. celerio, L.—Seven examples; of these a ♂, in surprisingly good condition, considering its evident age, is without doubt the first recorded British specimen. Its label, in the same style and handwriting as those on many other insects originally in A. H. Haworth's collection, and presumably written by him, is "Celerio, Bunhill Fields, Fen." Stephens (Ill., *Haust.* I, p. 128) says, "The first

recorded specimen of the perfect insect was taken flying in Bunhill-fields burying-ground so long ago as July, 1779; and the specimen now exists in a high state of preservation in Mr. Haworth's cabinet, having been purchased by him at the dispersion of that of Mr. Francillon." A rather worn ♂, "Taken at St. Leonard's, Sussex, 1866," and another ♂, slightly rubbed, "Taken by a woman at Glanvilles Wootton on Sept. 12th, 1885" (C. W. D.). A very old specimen of the same sex is labelled "*Celerio*, Brighton, J. G. Children, Esq." A ♀ in capital order, "Taken by a boy at Teignmouth, 1880, had from Mrs. Vernon Wollaston" (C. W. D.), and another ♀, not so good, "Taken by P. C. Lloyd at Bognor, Sussex, August, 1885."

C. elpenor, L.—A curious ♂, in which the usual rose-colour is entirely replaced by olive-brown, "Gl. Wootton, C. W. Dale, bred 1871" (C. W. D.).

Sesia asiliformis, W. V.—Seven examples; one ♂, "Ashford, Kent, from Dr. Harper's coll. Briggs coll., 1891" (C. W. D.); one ♀, "Epping Forest, Mus. M. & M., 1810"; one ♀, "Hanson's Sale at Puttick, &c., 22 Novr., 1889," and another of the same sex, much damaged by verdigris, "From J. F. Stephens" (C. W. D.), and at side, "Colney Hatch, Middlesex."

S. chrysidiformis, Esp., and *S. musciformis*, Vew.—Good series of both species, from Folkestone and Cornwall respectively.

S. allantiformis, Newm.—Of this "Clearwing," until very lately so rare in our collections, there are seven specimens. A ♂ in good order, "Greenhithe, Kent, Meek, 1878, for £1 10s., taken by James Briant" (C. W. D.); a ♂, "Briggs coll., '96, from Standish cabinet" (C. W. D.). A very nice ♂, "Gl. Wootton, Aug. 23, 1902" (C. W. D.), recorded in Entom., vol xxxv, p. 286; in which note Mr. C. W. Dale withdraws his record (Entom., vol. xxvii, p. 245) of *S. conopiformis* as a British species, this having been introduced on a ♀ specimen labelled "Brockenhurst, C. Gulliver, July 19, 1891." A very good ♀, "J. G. Ross coll., 1900"; another ♀, "Swancombe, T. Sivey, 1877, Briggs sale, 1896, for £3" (C. W. D.), and a small example of the same sex, "N. F., Gulliver, 1902" (C. W. D.).

S. culiciformis, L.—Two orange-banded examples, labelled at side, "*v. Thynæformis*, Zell.," one of them "From Davis, Dartford" (C. W. D.).

S. sphegiformis, Schiff.—A good series from Tilgate Forest.

S. scoliiformis, Hubn.—Four examples from Ramoeh, and four from Llan-gollen; one of the latter labelled "N. Cooke, July 13, 1862."

(To be continued).

Rhizophagus caruleipennis, Sahlb., in *Deron*.—A single specimen of this rarity occurred in flood rubbish from the River Teign at Christow on May 4th. Fortunately the insect happened to be lying "right side up" among the *débris* or in all probability I should have passed it over as an oat.—PHILIP DE LA GARDE, "Teignview," Christow, near Exeter: June 4th, 1907.

Plusia moneta, Fab., in the Oxford district.—This very beautiful moth is evidently now well established in the neighbourhood of Oxford. Several specimens of the

imago were taken last year at light, &c., in the city, and in June I reared a very fine example from a larva casually taken in my own garden; unfortunately I did not look for the larvæ until it was too late, but several empty cocoons were found there in the autumn. During May this year at least two dozen young larvæ were met with on a couple of plants of monkshood (*Aconitum napellus*), planted in my garden when I first came to Oxford in the hope of attracting the *Plusia*; and about the middle of the month, almost any number, nearly all of quite small size, might have been taken in a bed of the same plant, in a nursery garden to which I have access. They had caused a good deal of damage by feeding in the crowns of the plants, and thereby destroying the young spikes of flowers; some of the species of *Delphinium* in the same garden were also attacked, but only in one or two instances. Cocoons of *P. moneta* are still to be found by diligent search among these plants, despite the fact that they have been "raided" by several of the Oxford Lepidopterists. I have also noticed the larvæ on *Aconitum* in cottage gardens at Bletchingdon, about seven miles from Oxford.—JAMES J. WALKER, "Aorangi," Lonsdale Road, Summertown, Oxford: June 15th, 1907.

Hymenoptera at Redhill in 1906.—The following are a few notes of captures at Redhill last season. *Prenolepis longicornis*, Ltr., this active introduced species was common about several shops at Linkfield Corner; *Myrmosa melanocephala*, F., Redhill Common and Reigate Heath; *Tiphia femorata*, F., ♀ (two), burrowing in a sandy bank, Redhill Common; *Gorytes bicinctus*, Rossi (two), sunning on raspberry leaves, July 23rd and 24th; *Nysson dimidiatus*, Tur., among grass in sandy places, Redhill Common; *Odynerus trimarginatus*, Zett., ♀, on raspberry; *Andrena bimaculata*, K., five ♀, two ♀, one ♀ entering burrow with pollen, July 8th, Redhill Common; *A. fuscipex*, K., common on *Erica*; *A. cingulata*, F., ♀ (two), Reigate; *A. wilkella*, K., Redhill; *Cilissa hæmorrhoidalis*, F., fairly common, females about burrows, males in harebells; *Panurgus calcaratus*, Scop., common; *Chelostoma campanularum*, K., in harebells and Canterbury bells; *Megachile maritima*, F., abundant on Redhill Common, visiting *Rubus*, *Erica*, and *Lotus corniculatus*; *M. circumcincta*, Lep., sparingly; *M. argentata*, F., a small colony on Redhill Common, visiting *Lotus*; *Osmia spinulosa*, K., common, Reigate Hills; *Anthidium manicatum*, L., on *Ballota nigra* and *Stachys sylvatica*; *Anthophora foveata*, Pz. (three), and *Scropoda bimaculata*, Pz. (three), both sparingly on *Ballota nigra*.—G. E. FRISBY, 47, Windmill Street, Gravesend: June, 1907.

A few Irish Ichneumonidæ.—So little attention has been paid to the parasitic *Hymenoptera* of Ireland since Haliday's time that it may be of interest to put on record some captures recently effected by the Rev. W. F. Johnson, of Acton, near Poyntzpass, in Co. Armagh, as extending his own records in the "Irish Naturalist," 1904, pp. 255-6, and those I mentioned in *l. c.*, 1903, p. 68. Most of the following specimens were found in moss during the winter, and all of them are females. *Ichneumon latrator*, Fab., in moss, 19.xi.04 (with one var. *means*, Gr.), at Poyntzpass, and on 14.xii.05 (including two var. *means* and one of the intermediate vars. mentioned by me at "Ichneumonologia Britannica," i, 119), at Summer Hill, Fermanagh—common upon both occasions; and one in moss at Poyntzpass, 8.iii.06.

I. subquadratus, Thoms., three at Summer Hill with the above, 14.xii.05. *I. terminatorius*, Grav., two at Edentubber in the mountains at Co. Louth, 5.iv.06, in moss; this species appears commoner in Ireland than with us. *I. extensorius*, Linn., found commonly both with the last and at Poyntzpass. *I. gracilentus*, Wesm., one at Summer Hill, 14.xii.05. "*I. albiger*" (cf. Ichm. Brit., i, 138), several at Summer Hill, 14.xii.05, and Poyntzpass, 5.vi.06. *I. insidiosus*, Wesm., one at Summer Hill, 14.xii.05. *Phorogenes planifrons*, Wesm., two at Poyntzpass, one of which was in moss on 8.iii.06. *P. infirmus*, Wesm., one in moss at Edentubber in the mountains of Co. Louth 5.iv.06. *P. rusticatus*, Wesm., one specimen of this uncommon species at Poyntzpass. *Centeterus opprimator*, Grav., one at Poyntzpass, 17.ii.06, in moss. *Microcryptus galactinus*, Grav., the first indigenous female I have seen of this species, was taken in moss at Poyntzpass, 10.xi.04. *M. nigrocinctus*, Grav., four in moss at Poyntzpass, 17.ii.04, 10.xi.04, and Jan., 1906; and one at Summer Hill, Fermanagh, 14.xii.05. *Cryptus tuberculatus*, Grav., one at Poyntzpass in July, 1906. *Pimpla turionellæ*, Linn., one at Rosses Point, Sligo, in June, 1905. *P. oculatoria*, Fab., one in a furze hedge at Poyntzpass, among spiders, 24.iv.07. A ♂ and two ♀♀ of the Braconid, *Cælinus gracilis*, Hal., originally described from Ireland, were also taken on the sandhills at Emiscrone in Co. Sligo, in August, 1904.—CLAUDE MORLEY, Monks' Soham House, Suffolk: May 15th, 1907.

*Note on the life-history of Mycetanus bipunctatus, Flu. (Sepsidæ).—*On Mar. 17th, 1907, on the Gog Hills, near Cambridge, I found three larvæ of this fly in an old bird's nest. The part in which they were was composed entirely of hairs; and I never observed the larvæ leave the small portion of the nest in which I carried them away. They were whitish translucent maggots, in general appearance much like miniature blowfly larvæ; broader posteriorly, much narrowed anteriorly. The main tracheæ were plainly visible through the integument, also the dark chitinous head-skeleton, which appeared very similar to that of the blowfly larva. They pupated in the hairs late in April, the pupæ being of a warm light brown colour. The flies emerged May 10th and 13th, 2 ♀♀ and 1 ♂. Being ignorant of the fact that very little was known as to the life-history, I unfortunately gave the larvæ very little observation.—HUGH SCOTT, Cambridge: June, 1907.

*Hypophyllus crinipes, Stroy., in the Forth District.—*On page 87 of the current volume of this Magazine Mr. Malloch records the capture of this Dipteron last June from Murroch Glen in the West of Scotland, but he does not mention that the species is an addition to the British list. I am glad to be able to record it from the East of Scotland, as I have an undoubted ♂ taken here on June 24th, 1905, and also two ♀♀, which I believe belong to the same species, taken here on June 17th and 19th, 1904. I had set them aside for further examination, and on showing them to Mr. Grimshaw he confirmed my identification.

The ♂ characters are well marked: front metatarsus longer than the tibia, and bearing inside a row of hairs, long at the base, gradually becoming shorter, and, according to Schiner, "auf der mitte ganz auf hören," but in my specimen continued well past the middle of the joint; the last joint of the front tarsi is only slightly

dilated, and the third joint of the antennæ is short, and not elongated as in the other British species of the genus; the first joint of the arista also is much shorter. I have quite recently recorded *H. obscurellus*, Flin., from the Forth District.—A. E. J. CARTER, 4, West Holmes Gardens, Musselburgh: *June 3rd*, 1907.

[This species was also taken by Dr. J. H. Wood in Stoke Wood, Herefordshire, on June 18th, 1906.—G. H. VERRALL].

Correction of Locality.—In my paper on the genus *Imma*, published in the Transactions of the Entomological Society of London for 1906, I described a species as *Loxotrochis sepias* from a specimen in the British Museum Collection, stating its locality as Espiritu Santo, New Hebrides; I have since been informed by Sir George Hampson that I misinterpreted the label, and that the real locality is the province of Espiritu Santo in Brazil.—E. MEYRICK, Thornhanger, Marlborough: *May 22nd*, 1907.

Review.

A NATURAL HISTORY OF THE BRITISH LEPIDOPTERA: by J. W. TUTT, F.E.S. Vol. V. 8vo, pp. xiii, 558. London: Swan, Sonnenschein and Co. 1906.

Following closely on the first volume of Mr. Tutt's "Natural History of the British Butterflies," noticed on p. 112 of the current volume of this Magazine, we have to welcome another instalment of his great and comprehensive treatise on our indigenous *Lepidoptera*.

This volume, the fifth in order of the series, is devoted to the consideration of those delicate and highly interesting insects known familiarly as "Plume Moths"—*Alucitides*, as our author styles them—of which nineteen species, comprising the "Agdistid" and "Platyptiliid" branches of the Plume Moths, and including, roughly, two-thirds of the species known to occur in our Islands, are dealt with in Mr. Tutt's usual thorough and exhaustive manner. It may indeed fairly be said that the present volume, embodying as it does the outcome of continuous research and accumulation of material from all sources during the last twenty years, fully equals, if indeed it does not excel, any of its predecessors in original and scientific treatment of its subject.

A very comprehensive and detailed historical account, from the time of Linné to the present day, of the two superfamilies into which the "Plumes" are divided by the author—the *Agdistides*, represented in Britain only by the well-known *Adactylus benneti*, and the *Alucitides*, comprising all the rest of our species—is followed by a general consideration of the biological characters of the group as a whole. Especial weight is given to the excellent work of Zeller and O. Hofmann in this connection; and the discussion of the phylogeny and the still somewhat uncertain relationship of the Plume Moths to the other great sections of the Order *Lepidoptera* will be found very suggestive and interesting. We would call special attention to the carefully drawn-up and elaborate table, facing p. 106, by Dr. Chapman and Mr. Bacot, of the characters of nearly every species occurring in our Islands in its last larval instar.

The life-history of each species dealt with is considered at full length from all available sources, and incidentally a large amount of valuable information is given respecting allied forms to ours, not found in Britain. Among so much that is interesting, we would select for particular notice the very detailed account in all its stages of our curious salt-marsh frequenting species *Adactylus bennetii*; and, perhaps most remarkable of all, Dr. Chapman's most valuable researches into the life-history of *Buckleria (Trichoptilus) paludum*, first given in Trans. Ent. Soc., London, 1906, pp. 133—153, the excellent coloured plate illustrating this memoir being reproduced here. The assistance of Mr. Bacot, Dr. Chapman, Mr. Eustace Bankes, Mr. A. Sieh, and other well-known Entomologists, especially the two first-named, who have collaborated with Mr. Tutt in working out this difficult group of moths, receives full and grateful recognition.

The two preliminary chapters of the volume (pp. 1—67), are devoted to the consideration of the important questions of "Hybridisation" and "Mongrelisation" for the results of the interbreeding of different forms of the same species) in the *Lepidoptera*. An immense mass of most valuable and interesting material, amounting to an exhaustive summary of all that has been written on these subjects, is contained in these chapters, and is brought "up to date" by an "Addendum" (pp. 536—543), a *resumé* of the most recently published memoirs on the subject of hybridisation.

We understand that a large amount of material dealing with the Alucitid branch of the "Plume" phylum has been brought together in readiness for a forthcoming volume of the work; and when this appears, Lepidopterists will be in possession of a standard book of reference on these most interesting moths, equal in scientific value to any work of the kind that has yet been accomplished by any student of the Order.

Obituary.

Frederic Moore, D.Sc., A.L.S., died at his residence, 17, Maple Road, Penge, after a short illness, on May 10th, at the ripe age of 77 years, and was buried on the 15th at Elmer's End Cemetery; the Entomological Society of London, of which he had been a Fellow for more than half-a-century (he having been elected as long ago as 1853), being represented at his funeral by the President, Mr. C. O. Waterhouse, Col. Swinhoe, Mr. W. L. Distant, and other well-known Entomologists. Dr. Moore may be regarded as the father of Indian Lepidopterists; his knowledge of the butterflies and moths of that vast region was unequalled, and his industry and devotion to the science that he loved was untiring, and remained unabated to the very end of his long life. Among his numerous entomological memoirs, chiefly on Indian and Eastern *Lepidoptera*, three great works stand pre-eminent; the earliest being "A Catalogue of the Lepidopterous Insects in the Museum of the Hon. East India Company" (in conjunction with the late Dr. Thomas Horsfield, 1857-59), which may be said to constitute the foundation of our knowledge of the subject; "Descriptions of New Indian Lepidopterous Insects (*Heterocera*) in the Collection of the late W. S. Atkinson" (1879-88), and the very valuable "Lepidoptera of Ceylon (1881-87). His last great undertaking, the "*Lepidoptera*

India," was begun in 1890, and is still incomplete, the portion relating to the *Lycenidae* and *Hesperidae* not having been commenced when death overtook him. As, however, he had accumulated all the material necessary for the completion of his task, it is to be hoped that some competent Entomologist may be found to undertake this highly important and desirable piece of scientific work. Dr. Moore was first attached to the Staff of the Museum of the East India Company under his colleague Dr. Horsfield in 1848, and retained the office of Assistant Curator until, on the transfer of the collections to the British Museum in 1879, he was retired on a pension. The very extensive collection of butterflies and moths accumulated by him during his long life, which contains nearly all the types of the species he described, has been fortunately secured for the National Collection. A genial, upright, and kind-hearted man, he was always ready to place his collections and his vast knowledge at the disposal of any genuine worker, and his death leaves a blank among the leading Entomologists of the world that will not be readily filled. We are much indebted to his friend, Colonel Charles Swinhoe, for his kind assistance in drawing up this obituary notice.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, May 9th, 1907*, Mr. R. ADKIN, F.E.S., President, in the Chair.

Mr. Goulton exhibited a long bred series of *Hibernia marginaria* (*progenaria*) from Wimbledon. Mr. Newman, a brood of living larvæ of *Aporia crataegi*, from Kentish ova, nearly full-fed. Mr. Kaye, living larvæ of *Oporina croceago* from Gomshall. Mr. Tonge, bred specimens of *Eupithecia consignata* from Hayling Island. Mr. Main, lantern slides showing the metamorphoses of *Charaxes jasius*. Mr. Tonge, lantern slides showing the ova of various *Lepidoptera* and numerous instances of protective coloration.—HY. J. TURNER, *Hon. Sec.*

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, June 5th, 1907.*—Mr. C. O. WATERHOUSE, President, in the Chair.

Mr. C. N. Hughes, of Knightstone, Cobham; Mr. Albert Ernest McClure Kelly, Assistant Entomologist to the Department of Agriculture, Natal; and Mr. M. G. Muklie, of Hyderabad, Sind, India, and Cambridge University; were elected Fellows of the Society.

The decease was announced of Dr. Frederic Moore, D.Sc., A.L.S., F.Z.S., the "father" of Indian Entomology, and one of the oldest Fellows of the Society, and of Mr. C. J. Watkins.

The President read a communication from the Rev. F. D. Morice, M.A., the Society's delegate to the celebrations in honour of the bicentenary celebrations at Upsala and Stockholm, announcing that he had delivered the two addresses, and also that he had experienced much kindness and hospitality at both places.

A vote of thanks was unanimously accorded to Mr. Morice for his services in presenting, and in assisting the President in the preparation of the Address, and it was resolved to publish the same in the Society's Proceedings.

The President read a letter received from Dr. Karl Jordan, F.E.S., of the Museum, Tring, asking the support of the Society for an International Congress of Entomology.

A resolution, cordially approving the Congress, and offering the support and co-operation of the Society, was carried unanimously.

Dr. T. A. Chapman exhibited a living example of *Leioptilus carphodactylus*, Hb., one of the first bred British specimens. Mr. H. St. J. Ponisthorpe, a specimen of *Microdon mutabilis*, with the empty pupa-case, bred from a larva taken in the nest of *Formica fusca* at Porlock, April, 1907; also ♂♂ and ♀♀ of *Klediotoma myrmecophila*, n. sp., bred last month from a nest of *Lasius fuliginosus* found at Wellington College in March, 1907. He said that this species of parasitic *Cynipidæ*, which was new to science, had been named by Professor Dr. J. J. Kieffer. Mr. M. Jacoby, examples of small Phytophagous beetles from Australia, new to science, of the family *Clythridæ*, including *Leasia australis*, Jac. Professor E. B. Poulton, F.R.S., read a note on the significance of some secondary sexual characters in butterflies. Mr. A. J. Chitty exhibited the types of three species of *Proctotrupidæ* described by Westwood, but entirely overlooked by subsequent authors. Mr. E. E. Austen, examples of an African fly, parasitic in the larval stage on human beings and animals—a true *Muscid*—about the identity of which there is considerable confusion among the various authors. Dr. F. A. Dixey and Dr. G. B. Longstaff contributed a report of their joint entomological observations made in South Africa during the visit of the British Association in 1905, and gave a brief account of some of the points dealt with.—H. ROWLAND-BROWN, *Hon. Sec.*

NOTES ON THE GENUS *CRYPTOPHAGUS*, WITH A TABLE OF THE SPECIES.

BY ARTHUR J. CHITTY, M.A., F.E.S.

Having recently had to work out for the purposes of my collection a table of the British *Cryptophagi* from the characters given in Ganglbauer's work on the *Coleoptera* of Middle Europe, it has occurred to me it might prove useful to others. The main divisions used by British collectors appear to me to be based on very difficult characters, and I have often been unable to satisfy myself with sufficient certainty that the beetle I was trying to name did not belong to some group other than that to which I had at the outset referred it. Ganglbauer depends neither on the callose prominences on the thorax nor on the presence or absence of a basal fold before the scutellum, and his table appears to me to group the insects in a satisfactory manner. No doubt there are difficulties, whatever

table is used, and the species require to be known individually; and in preparing this for publication I have become painfully conscious that there is a great deal more work to be done in the genus than I have time to accomplish. Notwithstanding the late Mr. Rye's well-known dictum*, a microscope, with a 1" objective at least, is an almost indispensable adjunct in naming these insects correctly, and a Zeiss binocular, with its stereoscopic effect, is likely to be found even better.

Some of the characters here given will at first sight appear difficult to a reader, but with the insects before them most of the characters will be readily appreciated. I have been able to procure Continental specimens of such of the species included as are not otherwise represented in my collection, except *fuscicornis*, which is very rare on the Continent, and doubtfully British. My obligations to Herr Ganglbauer are obvious; without his magnificent work this paper would not have been attempted; and I may say the same of Canon Fowler's "Coleoptera of the British Isles," though my table differs from that given by him. I am also much indebted to Herr Reitter's second edition of the European catalogue—a splendid work.

The genus *Micrambe* has often been treated as part of the genus *Cryptophagus* (see Cox, Handbook Brit. Col., vol. i, p. 468), so it may be useful to give the distinctions here; they are:—

- 1—Penultimate tarsal joints slighter but hardly shorter than the preceding; posterior tarsi of the ♂, 4-jointed *CRYPTOPHAGUS*.
 2—Penultimate tarsal joints much smaller than the preceding *MICRAMBE*.

TABLE OF THE SPECIES OF *CRYPTOPHAGUS*.

- I—Elytra with the pubescence entirely decumbent, without longer outstanding hairs.
 i—Eyes with tolerably fine facets. Antennæ stouter, the 7th joint not or hardly longer than broad.
 1—The thickened part of the anterior angles of the thorax (callosities) occupying a fourth or fifth of the sides.
 A—The lateral tooth of the thorax in or near the middle of the side.
 a—Antennæ with a two-jointed elub *pubescens*, Sturm.
 b—Antennæ with a three-jointed elub.
 a*—Elytra closely but not strongly punctured, puncturation almost the same at apex as at base *validus*, Kraatz.
 b*—Elytra becoming much more finely punctured at apex.

* "But when the collector finds that he needs a compound microscope to separate species, it is the firm opinion of the present writer that that collector had better take to some other pursuit than studying *Coleoptera*."—E. C. Rye in "Science Gossip," 1873, p. 149.

- a*†—Thorax almost as long as broad, with strongly thickened anterior angles, and the sides almost straight with an obsolete middle tooth *funatus*, Gyll.
- b*†—Thorax strongly transverse, with less strongly thickened anterior angles and a distinct middle tooth.
- aa*--Thorax with sides more or less strongly margined.
- *—Elytra with the punctures at base as strong as those of the thorax, but more widely separated; colour uniform reddish.
- †—Average size larger; punctures finer, hair longer...
badius, Sturm.
- ††—Average size smaller; punctures coarser, hair shorter and more sparing *fuscicornis*, Sturm.
- ** - Elytra with the puncturation at base decidedly or at least perceptibly finer than that of the thorax.
- †—Antennæ stout; colour ferruginous, the elytra sometimes with a black patch at the suture spreading out towards the sides; often, however, entirely ferruginous; usually the largest species, but occasionally quite small...
populi, Payk.
- ††—Antennæ less stout; elytra dark, with a reddish-brown base or entirely ferruginous or brownish-yellow.
- ‡—Smaller, sides of thorax more angled at the central tooth, which is distinct; elytra shorter in proportion to thorax; pubescence shorter..... *scenicus*, L.
- ‡†—Larger, thorax less angled at the central tooth, which is small; elytra longer in proportion to thorax; pubescence longer; colour ferruginous...
subfumatus, Kr.
- bb*—Sides of thorax very feebly margined, the whole insect parallel-sided..... *cylindrus*, Kiesw. (*parallelus*, Thoms.).
- B—The lateral tooth of the thorax well before the middle of the side.
- a*—Shorter and broader, thorax strongly margined at sides...
saginitus, Sturm.
- b*—Narrower and slighter, thorax less strongly margined...
dentatus, Hbst.
- 2—The thickened part of the anterior angles of the thorax occupying only a sixth or seventh of the sides.
- A—The lateral tooth of the thorax before the middle of the sides, very indistinct *scutellatus*, Newm. (*bicolor*, Sturm.).
- B—The lateral tooth of the thorax in the middle of the sides, distinct.
- a*—Shorter, more convex, puncturation stronger; thorax more parallel sided, lateral tooth smaller *unbratus*, Er. (*ruficornis*, Reitt.).
- b*—Longer and slighter, puncturation weaker; thorax more contracted behind, lateral tooth stronger..... *distingendus*, Sturm.
- ii—Eyes with larger facets; antennæ somewhat slender, especially joints 6, 7 and 8, and 5th and 7th joints longer than broad; anterior angles of thorax redexed and produced into a large hook-shaped tooth... *acutangulus*, Gyll.

II—Elytra with longer, more erect outstanding hairs, in addition to the more or less decumbent pubescence.

i—Anterior angles of thorax with a tooth, which may however be blunt; lateral tooth in or behind middle of sides of thorax.

1—Anterior tibiae produced externally into a distinct tooth; upper surface strongly punctured and setose *lycoepardi*, Herbst.

2—Anterior tibiae not so produced; upper surface less strongly punctured.

A—Eyes with large facets; elytra longer, finely and closely punctured; between the long and somewhat decumbent pubescence are a few outstanding long and less decumbent hairs arranged in rows...
cellaris, Scop.

B—Eyes with facets normal (but not so small as in Section I.i.); elytra shorter, more coarsely punctured, with less close decumbent pubescence; outstanding hairs not in rows, except in *affinis*, in which species they are easily abraded.

a—Elytra and thorax strongly and evenly punctured, thorax almost square, colour wholly or in part dark *ruficornis*, Steph.

b—Elytra and thorax not so punctured, thorax transverse, colour ferruginous.

a*—The thickened part of the anterior angles of the thorax occupying a sixth of the sides, and prolonged behind into a sharp tooth; thorax nearly one and a half times as broad as long.

a†—Elytra with the punctures at base about three times as far apart from one another as are those on the thorax, pubescence longer and more abundant *punctipennis*, Bris.

b†—Elytra with the punctures at base hardly less coarse than those of thorax, pubescence less abundant and not so long...
pilosus, Gyll.

b*—The thickened part of the anterior angles of the thorax occupying a fourth or fifth of the sides, and blunt or feebly toothed behind, outstanding hairs in rows, thorax about twice as broad as long *affinis*, Sturm.

ii—Anterior angles of thorax not produced into a tooth; lateral tooth before, or at any rate not behind, middle of thorax (but the character is difficult to appreciate); sides of thorax strongly margined.

1—Short and broad, very coarsely punctured..... *setulosus*, Sturm.

2—Somewhat elongate, much more finely punctured *schmidti*, Sturm.

For a table of the genus *Micrambe* see Fowler's "British *Coleoptera*," vol. iii, p. 327.

I have nothing to add except to confirm the statement of Canon Fowler that *M. vini*, Panz., is sometimes taken on low-growing firs.

I add a few notes on the genus *Cryptophagus*.

In working the first half of the table above, it is best to separate *C. acutangulus* first. The large size of the facets of the eyes is

readily seen with even a strong lens (see also *cellaris*). This character, combined with the hook-shaped tooth at the anterior angles of the thorax, the close, even pubescence and the slender central joints (6, 7 and 8) of the antennæ, makes identification easy. The insect occurs in all sorts of places. I have a specimen from the District Railway, and others from Welbeck Street. It is the *C. uncinatus* of Stephens (Ill. Mand., iii, 75). *C. waterhousei* of Rye, described Ent. Mo. Mag., vol. iii, p. 101, is a monstrosity of the species, and is apparently the *C. heydeni* of Reitter (Revis., 36).

C. pubescens.—The two-jointed club prevents any mistake as to the insect. Its inclusion in the table under L. A. is, however, convenient as helping to explain these characters. The insect occurs chiefly in wasps' nests in September and October, I believe all over the Kingdom.

C. fumatus is a large species with a small thorax. My specimen from Forres was originally named for me (*C. dentatus*), but besides being much larger it has the elytra less parallel-sided and wider proportionately to the thorax.

C. badius.—The very transverse thorax with a decided furrow or basal fold, and the tooth in the middle of the side, and the distinct puncturation towards the base of the elytra, are the best characters. I have it from Sevenoaks. Mr. Newbery tells me he has taken it freely in his London garden. He has pointed out to me that the callosities of the front angles of the thorax are cup-shaped.

C. fuscicornis I have never seen. The characters are taken from the description in Ganglbauer.

C. populi is to be known by its stout antennæ. Sometimes, and apparently on the Continent normally, there is a dark common patch on the elytra, usually wanting in English specimens. Mr. G. C. Champion tells me that among the specimens taken by him at Farnham, below the burrows, of *Colletes daviesana* (and not in them, as mentioned in Fowler), there occurred a number of small light specimens which would have been extremely difficult to identify had they occurred without the usual form. I have apparently one of these small specimens from South Wales. The antennæ are, however, I think unmistakable, but the club appears to vary a little, possibly according to sex.

C. scanicus (= *humeralis*, Steph., Ill. Mand., iii, p. 74) occurs everywhere in rubbish, fungi, &c. It apparently has two forms, one with the elytra dark with a reddish-brown base, and the other ferru-

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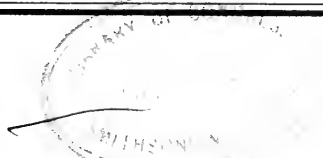
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ginous; this latter form has caused considerable difficulty with collectors, but it may readily be known if compared with the normal form, with which it entirely agrees in shape and puncturation. It is generally known as the ab. *patruelis* of Sturm.

C. validus and *C. subfumatus*.—There has been great confusion both in England and on the Continent as to these species. It is difficult to say how it arose, as the main points of Kraatz's descriptions are clear and agree with the types which I have seen since the table was in type. Some of the first-determined British specimens of *C. validus*, which has, however, been taken on very few occasions here, were named by Rye as *C. fumatus* (see Fowler, Col. of Brit. Is., vol. iii, p. 323), and several of the old collections will probably be found to have the insect under this name. Another insect, which is undoubtedly *C. validus*, was named by Rye as *C. subfumatus*, and this is the specimen mentioned in Fowler as in Mr. Champion's collection. *C. validus* is a large, broad, rather dark insect, something like *C. populi* when viewed from a distance, with fine close puncturation, the callosities of the front of the thorax very little developed, only a small tooth in middle of sides, and with close rather long golden pubescence, the elytra somewhat parallel-sided, and the legs long, with the tibiæ widened towards the apex. I have received it from the Continent under the name *C. subfumatus*, so that I do not feel at all sure that Ganglbauer has not inverted the two species. Fowler's description is, however, perfectly correct. Any one who has any doubt as to the insect has only to see the specimen in the Power Collection at the British Museum. I do not think that after seeing an example of the right insect confusion is possible. *C. subfumatus* appears also to be British; it was in the Power Collection mixed with var. *patruelis*, but has now been separated. Mr. Champion has also specimens which must, I think, belong here. It usually has long elytra, but a specimen from the Continent sent me as *C. validus*, and another from Huntingfield, which appear undoubtedly to belong to the insect, do not show the character in a marked degree. The distinction from *C. scanicus* given in my table will do, whether intended by Ganglbauer to apply to the insect or to *C. validus*, if the character as to the central tooth of the thorax is omitted. The table would be perhaps more satisfactory if, besides this omission, there were substituted on page 320:—

*a**—A large, broad, and usually dark insect, with the antennæ normal (not particularly stout), and the thickened part of the anterior angles of the thorax little developed*validus*, Kraatz (? Ganglb.).

*b**—Insect not as *a**.

C. cylindrus is distinct from all the British species by reason of its parallel form. It occurs under bark of pine (*Pinus sylvestris*) in the North of Scotland. I have never taken it; my specimens were captured by Mr. G. C. Champion.

C. saginatus and *C. dentatus* may be known from the other species of the first main group by having the tooth before the middle of the side of the thorax. The callosities of the anterior angles, though occupying a good fifth of the side, are very little developed. The two species can hardly be confused with one another. *C. saginatus* has the elytra more oval and the sides of the thorax more rounded than has *C. dentatus*, which is a more parallel-sided and longer insect, with rather stout antennae. A very small form of *C. dentatus* occasionally occurs. Mr. Newbery has one which is apparently immature, and was named before it came to him *C. fuscicornis*. I have two almost black forms from a granary in Holborn, possibly these are the ab. *niger*, Bris.

C. umbratus and *C. distinguendus*.—These are two much smaller insects, which appear not to vary much in size. The small lateral space occupied by the thoracic callosities at once distinguishes them from the previously mentioned species. They are very like one another; for distinctions see Fowler's British *Colcoptera*, vol. iii pp. 319 and 322, but I must confess that some of the specimens which I have seen appear to me to be intermediate. *C. umbratus* appears to be quite rare. I have one from Huntingfield and another from Foxhall, near Ipswich. *C. distinguendus* is not uncommon in granaries. There is said to be a black form of the insect.

C. scutellatus = *bicolor*.—This, the smallest species of the genus, might be confused with the two last-mentioned insects, but the lateral tooth of the thorax is very indistinct, and the callosities of the front angles are but little developed. Newman, in Ent. Mag., ii, 202, gives the wrong size 1 line, but the description has generally been accepted as applying to the insect. In Stephens' collection, under the name *scutellatus*, is an example of the species, but it is mixed with a specimen of *acutangulus* and another of *saginatus*.

The rough hair of the insects comprised in the second division is best seen under a microscope. In *C. cellaris* and *C. affinis* the outstanding hairs are in rows, and in *C. cellaris* the callosities of the front angles of the thorax, which vary considerably in shape, appear

more turned towards the front of the insect than in other species. Many of the species have four callosities on the surface of the thorax, but these are not always visible, and it is better not to rely on this character. The eye facets of this section appear to me usually larger than those of the other, so that character is not so satisfactory for *C. cellaris* as it is for *C. acutangulus*.

I do not feel sure whether *C. punctipennis* is really distinct from *C. pilosus*. It is, in my experience, the commoner insect of the two, but I may draw the line of distinction at the wrong place. In the British Museum there is a specimen in which the punctures are not only far apart, but also much larger. If *punctipennis* ought to have the punctures larger as well as further apart, my insects and most of those standing in British collections as *punctipennis* are really *pilosus*. In *C. setulosus* the joints of the club of the antennæ are more widely separated than in the other species, and the elytra are shorter and the pubescence is very rough. *C. schmidti* and *ruficornis*, on the other hand, are very distinct. I have no British representative of the former. *C. ruficornis* I have from a faggot heap on the hill above Streatley, Berks.; the specimen in Stephens' collection (presumably the type) is pale coloured. The species is not included in the last European Catalogue except as a possible synonym of *lycoepardi*, which is absurd; it is only mentioned by Ganglbauer in a note, in which he says that Stephens' name is not a synonym of *umbratus*, but that the insect referred to appears to be more like *lycoepardi*, in which he is right, as it undoubtedly belongs to the group with outstanding hairs; but there is a great difference between being "more like" and being synonymous with. It has a sharp tooth behind the callosities of the thorax. I know of no other European species to which it can possibly be referred. In connection with the above article, I have particularly to thank Mr. G. C. Champion for valuable suggestions and help, Mr. Newbery for kindly checking most of the table with me with actual specimens, Mr. E. Saunders for going through his collection with me and for the loan of specimens, and Mr. Arrow, of the British Museum, for obtaining for me Kraatz's types, without which I should have fallen into error, and for comparing specimens for me.

27, Hereford Square, S.W. :

June 18th, 1907.

HYDRENA LONGIOR, REY, AND OCHTHEBIUS VIRIDIS, PEYRON,
ADDITIONS TO THE BRITISH LIST OF COLEOPTERA.

BY E. A. NEWBERRY.

With a view to a short revision of the British *Palpicornia* I have recently been in correspondence with M. le Capitaine Sainte Claire Deville, and am greatly indebted to him for much valuable information and assistance. As a first result of this, I am bringing forward the two above-named species. It is at present uncertain if they are absolutely new to our lists, or whether they should replace *Hydrena angustata*, Sturm, and *Ochthebius marginipallens*, Latr., respectively.

I must refer the student to Rey's *Palpicornia*, 2nd edit., Lyons, 1884, for detailed descriptions of the two species. I propose here only to give such characters as will separate them from their near allies.

HYDRENA LONGIOR, Rey.

This insect comes in the sub-division in which the elytra have 8 or 9 rows of punctures between the suture and the humeral angle. It may be separated from *H. riparia*, Kug., and *nigrita*, Germ., by its more parallel and elongate form; it has, however, considerable resemblance to some forms of *riparia*, which is on the average a larger insect, with differently formed posterior tibiae in the male. The only species for which *H. longior* is likely to be mistaken is *H. angustata*, Sturm. The following characters will separate these two species:—

- A.—Thorax very distinctly and rather sharply angled in middle of sides; elytra with striae regular to apex, interstices narrow; male with intermediate tibiae toothed on inner side, and posterior tibiae dilated angularly at inner apical third..... *H. longior*, Rey.
- AA.—Thorax obtusely angled in middle of sides; elytra with striae less regular, becoming confused before apex; interstices less narrow; male with intermediate and posterior tibiae simple..... *H. angustata*, Sturm.

Hydrena angustata is smaller on the average than *H. longior*, with the disc of the thorax almost impunctate. M. Ste. Claire Deville has very kindly furnished me with French examples, but I have seen no British specimens.

H. longior has occurred on several occasions in some of the tributary ditches of the Lymington River, near Brockenhurst. Mr. de la Garde has taken it at Christow, near Exeter, and the specimens from Polmont, Glasgow, standing as *H. angustata* in the Power collection must also be referred to *H. longior*, Rey.

OCUTHEBIUS VIRIDIS, Peyron, = *O. obscurus*, Dejean, Rey, &c.
O. margipallens var. B, Muls., Fairm., &c.; *pusillus*, Steph.?

This insect comes in the group in which the thorax has two transverse impressions and an indistinct central furrow, but is without lateral semicolon-like impressions. The British species in this group may be distinguished as follows:—

A.—Posterior angles of thorax broadly excised, filled with a broad membrane; size very small; length 1 mm. *O. exaratus*, Muls.

AA.—Posterior angles of thorax narrowly excised, membrane narrow.

a.—Metasternum smooth and shining in the middle (palpi dark; raised parts of the thorax shining and punctured); size very small; length 1 mm. *O. margipallens*, Latr.

aa.—Metasternum entirely dull, alutaceous.

b.—Thorax very dull bronze, entirely alutaceous; palpi dark; size very small; length 1 mm. *O. viridis*, Peyr.

bb.—Thorax shining bronze on the raised parts, which are punctured but not alutaceous; palpi pale; size larger; length $1\frac{1}{2}$ — $1\frac{3}{4}$ mm.
O. marinus, Payk.

I have specimens of *O. viridis* in my collection taken by Mr. W. H. Bennett at Pett, Sussex, which have been named by M. Sainte Claire Deville. The specimens standing as *O. margipallens* in the Power collection labelled "Rainham" must be referred to *O. viridis*, and possibly also those from Gravesend.

It should be remarked that the description of *H. angustata* in "Fowler's British Coleoptera" applies much better to that species than to *H. longior*, while his description of *O. margipallens* is much more applicable to *O. viridis*.

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

July 16th, 1907.

A NEW BRITISH EARWIG?

BY MALCOLM BURR, F.L.S., F.G.S., F.E.S.

In the Ent. Record, vol. xv, p. 254, 1903, I recorded two female specimens of *Forficula auricularia*, Linn., taken in horse-dung at Compton Bay, near Freshwater, in the Isle of Wight. These two specimens are remarkable in that the wings are abortive and the elytra are truncate.

I have since examined these specimens again, and have compared them with fresh examples of females of *Forficula decipiens*, Gén , from Italy, and I can find no difference.

Unfortunately, there is not much difference between the females of these two species, and it is not possible to decide this question definitely without seeing the males.

The male of *E. decipiens* agrees in structure generally with that of *E. auricularia*: the pygidium is similar, and the forceps only differ in the presence or absence of the median tooth at the end of the dilated part; this is present in *E. auricularia* and absent in *E. decipiens*; the forceps and pygidium of the females of these species do not differ.

In size and colour the two are alike, except that *E. decipiens* is somewhat paler, the head and pronotum being especially lighter.

The antennæ of *E. auricularia* usually have 14 segments; those of *E. decipiens* have 12; my two females from Compton have 13.

The pronotum of *E. auricularia* has the posterior margin gently rounded; in *E. decipiens* it is almost straight; in my Compton Bay specimens, it is not so straight as in typical *E. decipiens*, but not so rounded as in *E. auricularia*.

In *E. decipiens* the elytra are not only very distinctly shorter in proportion than in *E. auricularia*, but sharply truncate at the ends; in *E. auricularia* they are almost sinuate at the ends. In the form of the elytra, these specimens from Compton agree exactly and entirely with *E. decipiens*, and there are no traces whatever of wings, thus also agreeing with *E. decipiens*.

The pitting of the abdomen seems to me to be a trifle stronger in *E. decipiens* than in *E. auricularia*, and in this the Compton specimens agree with *E. decipiens*; I do not, however, put much faith in this, as it is only a question of degree, and the eye may see what the mind wishes to discover.

Now, in colour and in the form of the elytra and absence of wings, these specimens agree perfectly with *E. decipiens*; in the form of the pronotum and antennæ they approach rather to this species than to *E. auricularia*. It will therefore be asked, what is the objection to calling them *E. decipiens*? The objection is this, that *E. decipiens* is a meridional insect. The situation of these Compton Bay specimens, in a pile of horse-dung on the coast of the Isle of Wight, far from towns and farther still from a port, points to a natural occurrence, and this species has not yet been recorded as a traveller like *Apterygida arachidis*, *Anisolabis annulipes*, and to a less extent, *E. auricularia*. It is therefore highly improbable that *E. decipiens* should be a native of England. It is a common insect in

the south of France, in Italy, in Spain and in Dalmatia; in Central Europe it has been recorded from Mont Cenis. It is therefore hardly to be expected in this country.

Had these specimens been taken in the south of Europe I should have named them *E. decipiens* without a moment's hesitation. They were crawling freely about in the dung, but though both sexes of typical *E. auricularia* were abundant, I failed to find a male of the wingless form.

The riddle is intensely interesting, and it cannot be cleared up without discovery of the male. I appeal therefore to entomologists to keep a sharp look out for what appears to be the common earwig without wings, for it would be most satisfactory to add a good and indigenous species to our British list, which is rather meagre in this respect.

Sibertswold, near Dover:

July 15th, 1907.

SOME NEW AFRICAN SIPHONAPTERA.

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

PLATE III.

The species here described were obtained by Baron Maurice de Rothschild on his expedition through Abyssinia and East Africa.

1. CTENOCEPHALUS ROSMARUS, *sp. nov.* (figs. 1 and 2).

The head bears anteriorly at the genal edge one long curved spine and sometimes a second smaller one. The prothorax has a comb of 14 spines. The thoracic and abdominal tergites bear each one row of bristles. On the inside of the hind coxa there is an irregular row of from 7 to 9 short stout spines, the hind femur bearing on the same side a series of 6 to 8 bristles.

The genitalia of the male resemble those of *C. erinacei*. There is a large hairy flap, slightly curved downwards, and beneath it a short triangular process bearing bristles. There are no hairs above the stigma of the eighth abdominal tergite of the female, but the apical edge of this sclerite is densely hairy, there being also on the side a number of bristles.

Tchalenko, East Africa, off *Hyrax abyssinicus*.

LISTROPSYLLA, *gen. nov.*

Frons with a large spade-shaped tubercle. Eye small. Behind the same a bristle-like spine. No genal comb. The labial palpus consists of 4 segments. Pronotum with a comb containing more than 25 spines. Mesonotum with thin subapical spines. No apical spines on metanotum, but there are such spines on the first five abdominal tergites.

Type: agrippinæ, Rothschild (1902, described as a *Ceratophyllus*).

2. LISTROPSYLLA DOLOSUS, *sp. nov.*

Differs from *L. agrippinæ* as follows:—There are on the pronotum two rows of

bristles and a comb of 27 spines. The mesonotum is densely hairy from the base to the postmedian row of long bristles. There are three rows of bristles on the abdominal tergites, the first four tergites bearing also an apical comb of short spines. This comb consists of 22 spines on the first tergite, and of 2 on the fourth. The hind femur bears 4 bristles subventrally before the apex.

Kikuyu Escarpment, British East Africa; no host given.

3. CTENOPHTHALMUS ENGIS, *sp. nov.* (fig. 3).

The metathoracic epimerum bears 6 bristles. The first abdominal tergite has 3 rows of bristles, while the other tergites bear 2 rows. The most ventral bristle of the postmedian row is placed beneath the stigma. The seventh sternite is sinuate, the lobe situated above the sinus being obliquely excised. On the eighth tergite there are no hairs above the stigma, while there are 6 bristles at the apical edge and 5 or 6 near the ventral edge.

Closely allied to *C. triodontus*, Rothsch. (1907) and *C. ansorgei*, id. (1907), (figs. 4 and 5).

Addis Abeba and Bourka, Abyssinia, off a rat.

EXPLANATION OF PLATE III.

1. *Ctenocephalus rosmarus*, head of ♀.
2. ,, ,, ninth tergite, ♂.
3. *Ctenophthalmus engis*, seventh sternite and eighth segment, ♀.
4. ,, *triodontus*, seventh sternite, ♀.
5. ,, *ansorgei*, seventh sternite, ♀.

Tring Park, Tring:

July, 1907.

A RARE BRITISH FUNGUS-MIDGE (*CEROPLATUS LINEATUS*, FABR.) RE-DISCOVERED IN LONDON.

BY E. E. AUSTEN.

This morning a male of the above species was taken by my boy-attendant, C. Hill, on the window of the *Diptera* Room here. *C. lineatus* is a large, dark-coloured species, with yellow, brown-striped thorax and conspicuously blotched wings; the specimen which is the subject of this note measures $9\frac{1}{2}$ millimetres in length. In Mr. Verrall's "List of British Diptera," 2nd edition (1901), p. 10, *C. lineatus* appears in italics as requiring confirmation. On turning to Fabricius's original description of the species ("Systema Entomologiae," 1775, p. 754) I find the following sentence: "Habitat in Anglia: capt. in *Mus. Brit.*, d. 21 Jun." In Walker's "Insecta Britannica.—Diptera," vol. iii (1856), p. 67, the species (under the name *Platygura lineata*) is recorded as "Rare. In the British Museum"; and the Old Collection of British *Diptera* still contains half a dozen faded specimens of the species, all of which, however, like the rest of that collection, are without locality-labels. Con-

tinental Dipterists agree in characterising *C. lineatus* as "rare," or "very rare" (according to Van der Wulp it has been taken from time to time at the Hague, from June to September, "indoors"); and, so far as I am aware, no precise record of its capture in the British Islands has appeared since Fabricius's day. That entomological history should repeat itself in this way after an interval of 132 years is therefore worthy of special notice, and the fact that the National Natural History Collections are now housed at South Kensington instead of at Bloomsbury, as formerly, makes the coincidence, if possible, still more remarkable.

British Museum (Natural History),
Cromwell Road, London, S.W. :
June 27th, 1907.

DESCRIPTIONS OF NEW SPECIES OF *STAGMATOPHORA*, H.S.
(*LEPIDOPTERA* : *TINEINA*).

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

The species here described have necessitated the study of a natural group in the genus *Stagmatophora*, and it seems desirable to publish the results arrived at in the form of a separate paper.

HYPONOMEUTIDAE.

STAGMATOPHORA, H.S.

The following tabulation is confined to species allied to *serratella*, Tr., and *sumptuosella*, Ldr.

- | | | | |
|---|---|---|---|
| 1 | { | With three continuous defined transverse fasciae | 2. |
| | { | With three broken fasciae, or irregular lines of spots | 3. |
| 2 | { | With short white basal streak along fold | = 3612.— <i>fulguritella</i> , Rgt. |
| | { | Without white basal streak | = 3611.— <i>trivivella</i> , Stgr. |
| 3 | { | With three large equally conspicuous whitish costal spots | 4. |
| | { | With basal spot less conspicuous than those beyond it | 5. |
| 4 | { | Palpi white, unspotted; hindwings whitish...
..... | = 3163 : 3.— <i>thaumatella</i> , Wlsm. |
| | { | Palpi white, with spots; hindwings brownish grey...
..... | = 3613.— <i>sumptuosella</i> , Ldr. |
| 5 | { | Palpi with one distinct spot on terminal joint | 6. |
| | { | Palpi with two distinct spots on terminal joint...= 3613 : 2.— <i>beata</i> , Wlsm. | |
| 6 | { | Median fascia bulging outwards | 7. |
| | { | Median fascia not bulging outwards | = 3613 : 1.— <i>teuerii</i> , Wlsm. |
| 7 | { | Outer costal spot pure white, conspicuous | = 3610.— <i>serratella</i> , Tr. |
| | { | Outer costal spot much mixed with gold, narrow, inverted...
..... | = 3610 : 1.— <i>sareptensis</i> , Wlsm. |

3610 : I.—STAGMATOPHORA SAREPTENSIS, *sp. n.*

Antennae dark bronzy brown, with four or five white annulations before the apex. *Palpi* white, terminal joint with a conspicuous dark ring before the apex. *Head* and face white. *Thorax* dark bronzy brown. *Forewings* bronzy brown, with three white costal streaks, each terminating in pale golden metallic scaling, the first, near the base, pointing obliquely outward; the second, about the middle, also oblique; the third, as far from the second as is the first, slightly inverted; from the dorsum arise three corresponding, straighter, pale golden metallic bars, the first reaching to the fold and almost touching the apex of the first costal streak; the second crossing the fold and scarcely preceding the medio-costal streak; the third preceding the outer costal streak, but sometimes touching it at its inner point; a patch of similar pale golden scales lies at the apex, and one or two are visible at the base of the tornal cilia; cilia greyish brown. *Exp. al.* 16–17 mm. *Hindwings* grey; cilia paler, greyish brown. *Abdomen* shining, pale brownish. *Legs* alternately barred with white and bronzy brown.

Type, ♂ (Christoph Coll.). Mus. Wlsm.

Hab.: S.E. RUSSIA—Sarepta, 15–25.VIII.1866, 18.VIII.1870 (*Christoph*); Kasikoparan, 24.VII.1883 (*Christoph*). Ten specimens.

This species has been included in various collections with such series as are supposed to represent *Stagmatophora serratella*, Tr., but it is somewhat larger and differs from *serratella* in the much stronger and coarser palpi, and in the much narrower preapical white costal spot.

In the Zeller Collection there are only three specimens of the smaller form, one of which also comes from Sarepta, but is not the species above described. In the Hofmann Collection there are five specimens of the smaller species and only two *sareptensis*. In the Christoph Collection all are *sareptensis*, but labelled "*serratella*."

3613.—STAGMATOPHORA SUMPTUOSELLA, Ldr.

Elachista sumptuosella, Ldr. Verh. ZB. Ver. Wien V (1855), 234, Pl. V. 9 (1855)¹. *Stagmatophora sumptuosella*, Stgr.-Wk. Cat. Lp. Eur., 124, No. 2282 (1861)²; 321, No. 2623 (1871)³; Stgr. Hor. Soc. Ent. Ross, XV, 385–6 (1880)⁴; Hrtm. MT. Münch. Ent. Ver. IV, 47, No. 2623 (1880)⁵; Stgr.-Rbl. Cat. Lp. Pal. II, No. 3613 (1901)⁶.

Hab.: ASIATIC TURKEY—KHUDAVENDEKIAR, BRUSSA, VI¹; SIVAS, ADASIA, VI⁴; HALEB, Sbar Devesy (*Nat. Coll.* 1893); MESOPOTAMIA (*Stgr.*); SYRIA^{1–6}, Beyrout¹

A fine species with large equidistant and approximately similar white costal spots, and two distinct dark rings on the terminal joint of the palpi. It is very like *beata*, Wlsm., but has the basal and median costal spots much larger than in that species.

3613 : I.—STAGMATOPHORA TEUCRII, *sp. n.*

Antennae black. *Palpi* rather stout, reaching above the crown, median joint densely clothed, terminal joint as long as the median, comparatively smooth; milk-white, a short black shade around the base of the median, and a black ring a little before the apex of the terminal joint. *Head* milk-white. *Thorax* black. *Forewings* bronzy black, with three white costal patches, the first narrow, tending obliquely outward at one-sixth from the base, becoming pale golden a little below the costa, and slightly overlapping the fold at its lower extremity; the second on the middle of the costa, wider and shorter than the first, somewhat triangular, becoming pale golden toward the apex, which is slightly bent outward on the upper edge of the cell—beneath it is an opposite pale golden spot, scarcely separated from the dorsum; the third white patch, at the commencement of the costal cilia, is yet wider than the others, cuneiform, with its point directed inward and showing a few pale golden scales at its apex, where it nearly touches an irregular, upright, patch of golden scales arising from the dorsum; a small pale golden spot lies at the extreme apex of the wing; cilia smoky blackish, becoming paler and more brownish on the dorsum; the whole wing-surface is coarsely scaled, with a tendency to raised scaling towards the base on the dorsum—the pale gold metallic scales shine very brilliantly. *Exp. at.* 22 mm. *Hindwings* shining, leaden grey; cilia brownish grey. *Abdomen* pale brownish ochreous at the base above, more silvery at the sides, broadly banded behind and beneath with dark greyish fuscous. *Legs* creamy white; with greyish fuscous bands on the hind tibiae and on the basal joint of the tarsi, a few scales only on the distal joints; the anterior and median legs much more distinctly dark-banded.

Type, ♀ (14029). Mus. Wlsm.

Larva rather stout, tapering to either extremity; white, without markings. Head black; pronotal plates olivaceous greyish, darkened along the edges of the suture and posteriorly; thoracic legs dark olivaceous greyish, with two whitish annulations; anal plate whitish. Long. 11 mm.

Type, Larva (88264: Tangier, 3.VIII.1902, *Wlsm.*). Mus. Wlsm.

Hab.: MOROCCO—Tangier. Larva in galls, *Teucrium fruticans*, II—VIII (*Wlsm.*), VIII, excl. 25.IX—26.X.1903 (*Faucher*). SPAIN—CADIZ: Chiclana (*Wlsm.*); GIBRALTAR (*Wlsm.*). Two specimens.

In 1901, when collecting at Chiclana in the south of Andalusia, I observed some elongate galls on the woody stems and branches of *Teucrium fruticans*. They were not abundant, and all that I opened contained either empty pupa-cases, or the remains of parasites which had destroyed the larvae, nor was I able to discover at that time any freshly made galls. Meeting with the same shrub in the following year in the neighbourhood of Tangier, in Morocco, I collected a considerable number of galls, many of which contained living larvae, although the majority, for the most part on the old wood, were occupied by mere remnants as before, and the percentage of those

destroyed by parasites was very large. I collected these galls at intervals from February to the beginning of June, when the larvae appeared, so far as I could judge, to be full-fed, and it was a great disappointment to me that during the following months they did not produce a single specimen of the perfect insect. At the beginning of 1903 I again met with the same galls at Gibraltar, and determined to pay a special visit to the place on my return from Algeria in June, when again I collected a good supply and brought them to England; from these nothing was produced, and on examination the larvae were found more or less shrivelled, although some were yet alive in August. I then wrote to Mons. H. Vaucher, a resident at Tangier, to whom I had shown the galls collected in the previous year, asking him to send me some. After much unsuccessful search he rediscovered them and sent me three galls, which I received on August 28th, 1903 with the ultimate result that on September 25th a perfect specimen appeared to set my mind at rest as to the mystery which surrounded these obviously unknown larvae. A crippled ♀ subsequently emerged on October 26th.

This species is considerably larger than *Stigmatophora sumptuosella*, Ldr., and has the subterminal white costal spot considerably larger than the two preceding spots; moreover, it shows no second dark ring on the terminal joint of the palpi.

3613 : 2.—STAGMATOPHORA BEATA, *sp. n.*

Antennae blackish, with whitish annulations, one of which, at the outer end of the basal joint, is more conspicuous than the others. *Palpi* reaching above the crown; white, with a blackish ring at the base, a faint bronzy ring near the apex of the median, and two black rings around the terminal joint. *Head* milk-white. *Thorax* bronzy black. *Forewings* bronzy black, with three white costal patches; the first, narrow, oblique, at about one-sixth, connected at its apex with an outwardly-curved series of three patches of bright golden raised scales, one above the fold, the other two below it; the second white patch, scarcely wider than the first, is also connected with patches of raised bright scales, the first extending beyond its apex, the others nearer to the base, confluent, and reaching to the dorsum; the third white patch, in the commencement of the costal cilia, is wider and more conspicuous than the others, and is not connected at its apex with the patch of raised golden scales, which slightly precedes it on the dorsum; there is a small golden spot at the extreme apex; cilia smoky blackish, becoming paler and more brown on the dorsum. *Exp. al.* 20 mm. *Hindwings* shining, pale leaden grey; cilia brownish grey. *Abdomen* brownish ochreous toward the base, greyish fuscous posteriorly, the segments indicated by whitish lines. *Legs* dark smoky fuscous, banded with white at all the joints and at the origin of the spurs.

Type, ♂ (88702). Mus. Wlsm.

Hab.: ALGERIA—Hamman-es-Salahin, 17.V.1903. A single specimen taken at light.

This species differs from *teucii*, Wism., in the much more conspicuous and richly golden scaling, which is also considerably raised, and in the more annulated legs and palpi. It may be well to observe also that *Teucium fruticans* does not occur anywhere near Biskra, and I have searched vainly for galls on the smaller species of *Teucium* which is found there. There is at present no clue to its life-history.

Merton Hall, Thetford:

July, 1907.

EPIBLEMA COSTIPUNCTANA, HAW., AN ABERRATION OF
E. TRIGEMINANA, STEPH.

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

In Ent. Mo. Mag., x. 37-8 (1873), the late Mr. C. G. Barrett expressed the belief that *Tortrix costipunctana*, Haw. [Lep. Brit., 443 (1812)], was distinct from all our other recognised species. This opinion was founded upon a specimen standing as *costipunctana* in the Doubleday collection, agreeing "most accurately with Haworth's description," which Barrett translated.

Sorely puzzled for long about Haworth's insect, I succeeded in solving the mystery eleven years ago, when I found in the J. F. Stephens collection in the British Museum a moth, on the pin of which was a reversed label bearing "*costipunctana*" in Haworth's own writing. This proved the individual to be Haworth's original type specimen, and it was forthwith indicated as such. The moth, which is a male, somewhat broken, was standing by itself in the space allotted to the name *costipunctana*, and in succession to *trigeminana*, and is, in my opinion, undoubtedly an aberrant form of *trigeminana*. It follows, therefore, that the name *costipunctana*, Haw., must be substituted for that of *trigeminana*, Steph., and the synonymy, as worked out by Mr. J. Hartley Durrant and myself, is as follows:—

EPIBLEMA COSTIPUNCTANA, HAW.

Tortrix costipunctana, Haw., Lep. Brit., 443, No. 156 (1812); *Grapholitha pierretana*, Dup., Noct. vi, p. 566, pl. 266, fig. 3 (1834); *Spilonota trigeminana*, Steph., Cat. ii, 174, No. 6908 (1829); [? *Spilonota costipunctana*, Stph., Cat. ii, 174, No. 6910 (1829)]; *Pædisca brunnichiana*, Dup., ix, 253, 9, p. 358 (1834); *Spilonota trigeminana*,

Stph., Ill., iv, 94, No. 10, Pl. 37, f. 3 (1834); [? *Spilonota costipunctana*, Stph., Ill., iv., 95, No. 12 (1834)]; *Spilonota argyrana*, Stph., Ill., iv, 95, No. 13 (1834); *Ephippiphora hepaticana*, var. *pæcilana*, Gn., Ind., 43 (1845); *Pædisca pæcilana*, H.-S., Schmet. Eur., f. 226, iv, 241 (1849); *Spilonota trigeminana*, Wood, Ind. Ent., Pl. 31, f. 905, p. 137 (1839); [? *Spilonota costipunctana*, Wood, Ind. Ent., Pl. 31, f. 907, p. 137 (1839)]; *Spilonota argyrana*, Wood, Ind. Ent., Pl. 31, f. 908, p. 137 (1839); (*Pædisca*) *confusana*, H.-S., Schmet. Eur., vi., 161 (1856); (*Pædisca*) *hepaticana*, H.-S., Tort., fig. 223 (1849); *Halonota trigeminana*, Wlk., Brit. Tort., 94, No. 2 (1859); *Halonota trigeminana*, Stn., Man., ii, 211 (1859); *Grapholitha confusana*, Hein., Schmet. Deutsch., Tort., 147 (1863); *Grapholitha pæcilana*, Hein., Schmet. Deutsch., Tort., 152-3, No. 269 (1863); *Grapholitha confusana*, Hein., Cat. Lep. Eur., 253, No. 1054 (1871); *Grapholitha trigeminana*, Hein., Cat. Lep. Eur., 255, No. 1101 (1871); *Halonota costipunctana*, Brt., Ent. Mo. Mag., x, 37-8 (1873); *Grapholitha confusana*, Frey, Lep. Schweiz, 313 (1880); *Grapholitha trigeminana*, Frey, Lep. Schweiz, 316 (1880); *Ephippiphora trigeminana*, Weston, Entom., xiii, 132 (1880); *Pædisca trigeminana*, Snell., Vlind. Ned., Microlep., 330-1, No. 50 (1882); *Ephippiphora trigeminana*, South, Syn. L. Br. Lep., 26 (1884); *Grapholitha confusana*, Shgn., Kleinschmet. d. M. Brand., 322, No. 46 (1886); *Grapholitha confusana*, Rag., Ann. Soc. Ent. Fr., lxxiii, 212, No. 1054 (1894); *Epiblema costipunctana*, Meyr., HB. Br. Lep., 495 (1895); *Epiblema trigeminana*, Meyr., HB. Br. Lep., 495-6, No. 15 (1895); Stgr. and Rbl., Cat., 117, No. 2103 (1901); *Halonota trigeminana*, Brt., Lep. Br. Is., xi, 150-2, Pl. 189, 3-3a (1906).

This species, the larva of which, as is well known, feeds in the rootstocks of *Senecio jacobaea*, normally has, on the posterior half of the costa of the fore-wing, eight short narrow white streaks, arranged in four pairs, the two streaks of each pair being separated from one another by a narrow dark brown streak, and each pair being separated from the next by a dark brown bar. In Haworth's type specimen of *costipunctana*, however, the white costal streaks are broader; the narrow dark streak that separates the two white streaks of each pair does not disappear, but the dark bar between each two pairs is itself reduced to a streak. Hence the white streaks have quite lost the appearance of being arranged together in pairs, and are seen as eight separate white costal streaks or spots, alternating with seven dark ones, these latter representing the four dark streaks that normally separate the streaks of each pair, together with the three dark bars

that ordinarily separate the four pairs from one another. In all other respects the specimen, which had both fore-wings symmetrical in markings, is perfectly normal, though rather undersized.

Haworth (*l.c.*) says of *costipunctana* that it occurs in Norfolk but is very uncommon, while Stephens (Ill., Haust., iv, 95) says of it, "Rare: occasionally found in July near London, and in Norfolk, and I possess a specimen which was found near Edinburgh." As already stated, there was, in 1896, only one specimen, viz., Haworth's original Norfolk individual, standing under the name "*costipunctana*" in the collection, but it was impossible to tell what specimens Stephens had placed under this name, for Dr. Butler then informed me that the collection, though founded on that of Stephens, had been completely re-arranged - it was not known by whom - since Stephens' time. Probably Wood's figure of *costipunctana* (Ind. Ent., Pl. 31, fig. 907) was taken from a specimen standing under this name in the Stephens collection, and presumably it is intended to represent an abnormally small and pale male of *costipunctana*, Hw.

Haworth gives the *alar. exp.* of *costipunctana* as 6^{'''}, and Stephens gives it as 6½^{'''}, while the latter gives *trigeminana* as expanding 10^{'''}! This last measurement is obviously incorrect, for Stephens himself says (Ill., iv, 94) that he has only seen *one* specimen of *trigeminana*: this must therefore be the one figured on the Plate (*op. cit.*, Pl. 37, fig. 3), but the natural size, given below the enlarged figure, shows that the *alar. exp.* of the individual was only 7½^{'''}, which is about the usual expanse of a good-sized example of the species. Haworth's type specimen, set as it is with the wings drooping, would, if perfect, expand fully 6^{'''}, and would be exactly the same size as a small typical specimen that stood in the series of "*trigeminana*" just before it, and as one or two specimens in my own series.

The identity of the moth standing as *costipunctana* in the Doubleday collection, and referred to by Barrett (*l.c.*), is beside the question of nomenclature. I find, however, that when looking through the collection some years ago, I made a note to the effect that the specimen, which is pale and very worn, may safely be referred to "*trigeminana*"; I made no entry about the arrangement of the costal markings, but since Barrett says that the individual agrees most accurately with Haworth's description, I infer that they are similar to those in Haworth's type specimen.

In the well-known "Catalog" by Staudinger and Wocke, and elsewhere, the name *costipunctana*, which is omitted from Staudinger

and Rebel's Catalog, was incorrectly adopted for the species generally known as *gullicolana*, Z., but which, as shown by Ragonot, in Ann. Soc. Ent. France, lxiii, 219 (1894), ought to be called *albuginana*, Gn. *E. albuginana* has also been erroneously called "*obscurana*" by Wilkinson, Stainton, and others, but *obscurana* is the species described by Herrich-Schäffer as *ravulana*. I have often seen, in the National collection, Stephens' original type specimen of *obscurana*, and it is unquestionably identical with *ravulana*, H.-S., as stated by Mr. W. Warren in Ent. Mo. Mag., xxiv, 8 (1887).

Norden, Corfe Castle ;

July 4th, 1907.

Dorytomus tremulae, Payk., *Sp.*, near Guildford.—Amongst a few *Coleoptera* taken recently near Guildford, the following are noteworthy:—*Dorytomus tremulae*, Payk., sparingly, on *Populus alba*, in company with *D. tortrix*, L., and *D. costirostris*, Gyll.; the first mentioned insect, the male of which was not represented in my collection, is apparently not rare in the district, though I had not previously seen it alive. It is perhaps new to Surrey. *Phyllodecta cavifrons*, Th., *Zeugophora subspinosa*, F., and *Psallus rotermundi*, Schlz., also occurred on the same trees. *Hister marginatus*, Er., three specimens, in a rabbits' burrow, July 13th. *Atherophagus silaceus*, Herbst, by sweeping, on same date. *Strangalia quadrifasciata*, L., in rotten beech. *Amara infima*, Duft., and *Harpalus discoidens*, F., at Blackheath, May 20th. *Rhyncolus ater*, L., in dead pine, Hurt Wood, in company with *Rhagium bifasciatum*, F. (including some interesting vars.), May 20th. *Cryphalus abietis*, Ratz., *Xyleborus saxeseni*, Ratz., *Hylesinus vittatus*, F., *Atomaria badia*, Er., &c., on the wing, in pine wood, March 30th. *Nitidula rufipes*, L., in dead bird. *Microglossa pulla*, Gyll., in sand pit.*—G. C. CHAMPION, Horsell, Woking: July 16th, 1907.

Epurva oblonga, Herbst, at Chobham.—About a fortnight ago I found two specimens (♂ ♀) of an *Epurva* at Chobham, under pine bark, so like *E. suturalis*, Reitt. (treated as a var. of *E. thoracica*, Tourn., in the new edition of the European Catalogue), that they seemed at first sight to belong to that species. They are, however, a form of *E. oblonga*, Herbst, with the suture of the clytra similarly infuscate. *E. suturalis* has the antennal club entirely testaceous, and the prothorax a little more rounded at the sides, otherwise the two species are very much alike. *E. oblonga* has not previously been seen by me in this district, though the allied *E. pusilla*, Herbst, is common at times under sappy pine bark. I also have a specimen of *E. oblonga* with a dark suture from the Manchester district.—ID.

Agapanthia lineatocollis, Don., at Oxford.—On June 21st, and again on June 27th, I met with this beautiful Longicorn not uncommonly in a wet wooded valley in Oxfordshire, less than four miles distant from the centre of the city of Oxford.

* This species has recently been taken by my son at Woking in a great tit's nest.

The first specimens were found on what is no doubt its usual food-plant in this country, the Marsh Thistle, *Cnicus palustris*; but the majority were taken on the Hemp Agrimony, *Eupatorium cannabinum*, basking on the leaves in the sunshine (when there was any!) or hiding beneath them when the sun was obscured. Canon Fowler's remarks on the peculiar odour emitted by this beetle (*Ent. Mo. Mag.*, vol. xxii, p. 61, and "British Coleoptera," vol. iv, p. 251) are very appropriate, as to me the smell exactly resembles that of a smouldering candle made of coconut stearine; the stridulatory powers of the insect (*l. c.*) are also very noticeable. *Agapanthia lineatocollis* is not, however, new to Oxfordshire, there being an old record from Weston-on-the-Green, no doubt by the Rev. A. Matthews (Fowler, *Brit. Coleop.*, vol. iv, p. 251). The very local *Eubria palustris* was also taken rarely by me in the same place as the *Agapanthia*.—JAMES J. WALKER, Brockenhurst: *July 17th, 1907.*

Ceroplastus lineatus, F., taken at Lyndhurst.—A specimen of this fly, which hitherto has been regarded as doubtfully British, was found in my cottage on July 8th. It answers to Walker's *Platyura lineata*, F., var. B.—FREDK. C. ADAMS, Fern Cottage, Lyndhurst: *July 22nd, 1907.*

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *June 3rd, 1907.*—MR. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. E. C. Rossiter again showed a long series of *Tæniocampæ*, bred from pupæ dug near or between Langley Green and Wyre Forest, to show how the species merged into one another; a long series of *incerta*, Hufn., at one end, closely resembling those of *munda*, Esp., at the other end, were with difficulty separated from specimens of *stabilis*, Vew.; *stabilis* again merged into *gracilis*, F., and there were specimens on each boundary line about which he found it difficult to decide. Mr. H. Langley showed dark specimens of *Tephrosia histortata*, Gocz., from Princesthorpe, where 60% of the specimens seen were dark; curiously, the first to appear were the darkest. The darkest of all were taken on April 20th, and none but dark ones were seen till late in May, when the lighter ones began to appear. Mr. Colbran J. Wainwright, a number of pieces of amber well filled with insects. Mr. G. T. Bethune-Baker, a cocoon of *Saturaia pavonia*, L., with two distinct openings; there was, however, only one pupa inside, and the cocoon was of quite normal size. He also showed, on behalf of Mr. G. H. Kenrick, a series of *Spilosoma mendica*, Cl., var. *rustica*, Hb., bred from a female captured in the south of Ireland; they all came true to the parent form; also other bred insects. Likewise a number of species of *Spilosoma* and *Phragmatobia* from various European localities for comparison with Mr. Kenrick's var. *rustica*. Mr. Chadwick, a visitor, various interesting aberrations: *Semiothisa (Macaria) liturata*, Cl., a specimen from Oakley Wood apparently of the dark Delamere form, with dark hind marginal band, and general dark colour; a very fine dark *Chrysopehanus phleas*, L., from near Claverdon, with broad hind marginal and apical band, which monopolised most of the dark markings bearing only two spots on each fore-wing; on the hind-wings only a narrowish submarginal band of the ground colour was left; the

ground colour was a fine dark coppery-red, and the insect altogether was darker than Barrett's darkest; amongst other aberrations shown was a *Spilosoma lubricipeda*, L., with pinkish border to the wings.—COLERAN J. WAINWRIGHT, *Hon. Sec.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, May 23rd, 1907, Mr. R. ADKIN, F.E.S., President, in the Chair.

Mr. Brown exhibited (1) varieties of *Trachea piniperda* from Oxshott; in some the red markings were dominant and in others the green; (2) a dark *Agrotis exclamations* from Folkestone; and (3) a very light *A. puta* from Deal. Mr. Ashby, a long series of the beetle, *Thanasimus formicarius*, from Oxshott, where it had occurred commonly.

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

Mr. West, of Greenwich, the rare Coleopteron *Triplax lacordairei* and the uncommon Hemipteron *Vertusia rhombea*, both from Darenth. Mr. Tonge, a living larva of *Issoria latona*, reared from an ovum sent from Hyères, by Dr. Chapman. Mr. Hy. J. Turner, a specimen of *Tinea cloacella* just taken in Greenwich Park, and the living larvæ of *Coleophora discordella*, sent by Mr. Wilkinson, of Workington. Dr. Chapman, (1) living larvæ of *Catocampa exoleta*, and remarked on their curious custom of feeding on the stale food-plant; and (2) varieties of *Papilio machaon*, in one of which the costa of the fore-wings was much more arched than usual towards the apex, and in the other the black inner line of the dark submarginal band was wanting and the black basal circle of the ocellus was absent. Several species of larvæ were noted as having the same habit as *C. exoleta*, and in their final instars voluntarily changing their pupulum.

Thursday, June 27th.—The President in the Chair.

Mr. Sieh reported he had just seen a living specimen of *Amphydasis betularia* in Montagu Street, W. Mr. R. Adkin exhibited specimens of *Hesperia malwa*, var. *taras*, from near Hailsham. Mr. West (Greenwich), three rare species of *Coleoptera* from Darenth Wood, viz.:—*Cryptocephalus 6-punctatus*, *Apoderus coryli*, and *Byctiscus betuleti*. Mr. Carr, the remarkable pupa of *Hylophila bicolorana*, which was taken during the Society's Field Meeting at Fetcham Common. Mr. Schooling, (1) a variety of *Euchelia jacobææ* having the apical spot united with the submarginal blotch; (2) a variety of *Bapta temerata* having the two dark costal markings closely approximated; and (3) short bred series of *Melanthia albicillata* and *Boarmia abietaria*. Mr. Main reported that in the Isle of Wight he had met with a few *Melitæa cinxia*, and had obtained ova. *Cupido minima* and *Agriades bellargus* were also flying. He noted the ♀s of the latter species as being unusually blue. A discussion took place as to the green tinge apparent in many white *Lepidoptera* for a short time after emergence. Mr. Adkin reported that he had just bred *Tortrix pronubana*, and thus proved it to be double brooded. Probably it was continuously brooded in its usual habitat. Mr. Adkin then gave a short account of the Congress of the S.E. Union of Scientific Societies, held at Woolwich from June 12th to 15th.—HY. J. TURNER, *Hon. Sec.*

ALGERIAN MICROLEPIDOPTERA.

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

(Continued from page 154).

TINEIDAE.

SETOMORPHINAE.

Forewings with veins 7 and 8 stalked out of 9.

- | | |
|---|--|
| 1 | { Forewings with 2 and 3 stalked = HAPSIFERA, Z.
{ Forewings with 2 and 3 separate 2. |
| 2 | |
| 2 | { Forewings with 3 and 4 stalked (♀), or coincident (♂) 3.
{ Forewings with 3 and 4 separate 5. |
| 3 | |
| 3 | { Forewings with 5 and 6 stalked = APOTOMIA, Dietz.
{ Forewings with 5 and 6 separate 4. |
| 4 | |
| 4 | { Hindwings with 5 and 6 stalked = SETOMORPHA, Z.
{ Hindwings with 5 and 6 separate = EPHEGIS, Dietz. |
| 5 | |
| 5 | { Antennae of ♂ biciliate = HYPOPLESIA, Busck.
{ Antennae of ♂ simple = EUPLOCERA, Rgt. |
| | |

449 : 1 (= 457).—EUPLOCERA, Rgt.

EUPLOCERA, Rgt., Bull. Soc. Ent. Fr., 1895, p. civ ; Stgr-Wk., Cat. Lp. Pal., II, 231, No. 457 (1901).

Antennae (1), simple ; basal joint pectinate. *Labial Palpi* porrect, median joint thickly and compactly clothed beneath ; terminal joint suberect, about as long as the median, obtuse. *Maxillary Palpi* and *Haustellum* obsolete. *Head* and face roughly scaled. *Thorax* moderately smooth. *Forewings* elongate, obtusely pointed, coarsely scaled : *neuration* 12 veins ; 7 and 8 stalked out of 9, 7 to costa ; 2, 3, and 4 separate. *Hindwings* broader than the forewings, tapering to a slightly obtuse apex ; cilia $\frac{2}{3}$: *neuration* 8 veins, all separate. *Abdomen* smooth. *Legs*, hind tibiae thickly clothed.

Agreeing with *Setomorpha*, Z., and *Hapsifera*, Z., in having 7 and 8 of the forewings stalked out of 9 ; it is, however, a simpler form with vein 3 separate. *Hapsifera* has 2 and 3 of the forewings stalked, while *Setomorpha* has 3 and 4 of the forewings stalked in the ♀, but coincident in the ♂, and in the hindwings 3 and 4 are approximate in the ♀, but coincident in the ♂. I am unacquainted with *Hypoplesia*, Busek (= § *Paraplesia*, Dietz), of which the *neuration* of the hindwings is not described, but it differs in having biciliate antennae.

4494 : 2.—EUPLOCERA MACULATA, *sp. n.*

Antennae pale ochreous. *Palpi* pale ochreous, the terminal blackish at its base and before its apex. *Head* and *Thorax* pale ochreous, the latter with some sprinkling

of umber-brown scales. *Forewings* pale ochreous, with umber-brown maculations throughout, indicating no pattern, but tending to form two fasciae, one before, the other beyond the middle, and noticeable in a series of seven or eight spots extending along the costa to the apex, the ante-apical spot tending to become connected with others at the torus; cilia pale ochreous. *Exp. al.*, 14 mm. *Hindwings* shining, pale greyish, with a slight ochreous tinge; cilia pale ochreous. *Abdomen* pale ochreous, somewhat shaded with dull leaden grey above. *Legs* pale ochreous.

Type, ♂ (96510). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara, 25 V.1903 (*Wlsm.*); Philippeville (*Mus. Joannis* and *Wlsm.*). Three specimens.

I have a figure (155S:1895) taken from the type of *multigit-tella*, Rgt., which shows that in that species the black scales and spots do not tend to assume the form of fasciae converging towards the dorsum, which, although ill-defined, are traceable in *maculata*.

TINEINAE.

459: 1.—ELATOBIA, H.-S.

n. sym. = ABACOBIA, Dietz: = DIETZIA, Busck.

Type, *Tinea fuliginosella*, Z. (H.-S., 1853).

ELATOBIA, H.-S., SB. Schm. Eur., V, 7, 22: VI Pl. X, 10-12 (1853): V, 78 (1854).

1 (Type) *fuliginosella*, Z.

ABACOBIA, Dietz, Tr. Am. Ent. Soc., XXX, 22, 29-30, 92, Pl. V, 1, VI, 9 (1905). 1 (Type) *fuliginosella*, Z. (= *carbonella*, Dietz).

DIETZIA, Busck, Pr. U.-S., XXX, 735 (1906).

Busck proposed the neonym DIETZIA in lieu of ABACOBIA, Dietz, which he regarded as homonymous with ABACOBIVS, Lacordaire (1866), *Coleoptera*. Opinions may differ as to the validity or invalidity of ABACOBIA, Dietz, but this we need not discuss here, for in 1853 Herrich-Schäffer proposed the geneonym ELATOBIA with the type *fuliginosella*, Z.

ELATOBIA is omitted by Scudder and by Waterhouse.

4539: 9.—ELATOBIA FULIGINOSELLA, Z.

n. sym. = *martinella*, Wkr.; = *carbonella*, Dietz.

Tinea fuliginosella, Z., Isis, 1846, 273, No. 18¹: Lin. Ent., VI, 150-1 (1852)². *Elatobia fuliginosella*, H.-S., SB. Schm. Eur., VI, expl., Pl. X, p. v: V, Pl. 83, 637 (1853): V, 78 (1854)³. *Tinea fuliginosella*, Stgr.-Wk., Cat. Lp. Eur., 106, No. 1232 (1861)⁴; Wkr. Cat. Lp. B. M., XXVIII, 468, No. 28 (1863)⁵. *Tinea martinella*, Wkr.,

Cat. Lp. B. M., XXVIII, 472, No. 59 (1863) ⁶. *Tinea fuliginosella*, Hum., Schm. Deutsch. Tin., 53, No. 52 (1870) ⁷; Stgr.-Wk., Cat. Lp. Eur., 270, No. 1402 (1871) ⁸; Nlkn., Lp. Fn. Estl.-Liv.-Kur., 483 (1871) ⁹; Kltub. Pfluz-Feinde Ins., 603, No. 195 (1874) ¹⁰; Hum. Schm. Deutsch. Tin., Tab., 15 (1876) ¹¹; Hrtm., MT. Münch. Ent. Ver., III, 199, No. 1402 (1879) ¹²; [Pcyr., Cat. Lp. Alsace (2 edn., Fettig), 88 (1882) ¹³?]; Srhgn., Kleinschm. M.-Brndbg., 147, No. 26 (1886) ¹⁴; Lfy., Ann. Soc. Ent. Fr. LIV (6, s., V:1885), 409-10 (1886) ¹⁵; [Reutti, Lp. Fn. Baden (2 edn.), 302 (1898) ¹⁶?]; Stgr.-Rbl., Cat. Lp. Pal. II, 238, No. 4578 (1901) ¹⁷. *Tinea martinella*, Dyar, Bull., U.-S. Nat. Mus., 52, 573, No. 6529 (1902) ¹⁸. *Abacobia carbonella*, Dietz, Tr. Am. Ent. Soc., XXXI, 30, 92, Pl. V, 1, VI, 9 (1905) ¹⁹. *Tinea martinella*, Dietz, Tr. Am. Ent. Soc., XXXI, 89 (1905) ²⁰.

Types ♂ ♀: *fuliginosella*, Z., ♀ (Mus. Wlsm.); *martinella*, Wkr., ♂ (Mus. Br.); *carbonella*, Dietz, ♂ (Mus. Dietz; HP., ♂, ♀, Mus. Wlsm.).

Hab.: EUROPE ^{1-5, 7-17} — LIVONIA ^{1-3, 8-9, 14, 17}; GERMANY ^{2-3, 7-8, 10, 14, 17} — Berlin ^{2, 14}; Breslau ²; Frankfurt ¹⁰; Prussia ³; Silesia ^{7, 14}; [? *Alsace* (*Matzenheim*) V — VII ^{13, 16}]. ALPS ⁷. TYROL ¹⁷. FRANCE ¹⁵ — S. France (*Stgr.*: Mus. Wlsm.). ALGERIA — Biskra, 21.IV.1903 (*Wlsm.*). CANADA ^{6, 18, 20} — HUDSON'S BAY — St. Martin's Falls (Albany River) ^{6, 20}. UNITED STATES ¹⁹ — PENNSYLVANIA ¹⁹ — Hazleton ¹⁹. COLORADO — Loveland, VII.1891 (*W. G. Smith*: Mus. Wlsm.). Larva — in bark *Pinus maritima*, II — III ¹⁵; in dead leaves *Betula*, VII — VIII, bib. ^{10, 14}. Imago — VI ^{1, 3, 9, 15}; VII ⁷.

Under a microscope the maxillary palpi are found to be folded and the haustellum present, but short.

The stalking of veins 5 and 6 of the hindwings, together with the rather widely separated, slightly curved labial palpi, clothed with spreading bristly hairs, will enable this genus to be recognised.

466.—TINEA, L.

4570 : L.—TINEA MEDIA, *sp. n.*

Antennae whitish ochreous, annulated with umber-brown. *Palpi* whitish ochreous, dusted with brown. *Maxillaries* folded. *Head* and *Thorax* whitish ochreous. *Forewings* whitish ochreous, profusely dusted with dark umber-brown scaling, which tends to become aggregated in a scarcely oblique central fascia, terminating at the outer end of the fold, and in a patch, or half-fascia, descending from the costa at three-fourths; it is somewhat profuse also about the termen, as well as

at the basal third; cilia whitish ochreous, also slightly dusted. *Exp. al.*, 7—8 mm. *Hindwings* and cilia shining, pale pearly grey. *Abdomen* and *Legs* whitish ochreous.

Type, ♂ (89928). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara, 18-25.V.1903. Six specimens.
Intermediate between *confusella*, H.-S., and *hedemanni*, Rbl.

4571 : 1.—TINEA NIGROPLUVIELLA, *sp. n.*

Antennae $\frac{3}{5}$, pale brownish fuscous. *Palpi* short, slender, dependent; pale ochreous. *Maxillaries* folded. *Head* rough; bright ochreous. *Thorax* bright ochreous. *Forewings* bright ochreous, with a number of coal-black dots scattered about the wing-surface, these sometimes more or less confluent transversely, but forming no indication of any pattern; they are evenly distributed and somewhat variable in number in different specimens, a slender series of very minute ones lying along the base of the paler ochreous cilia. *Exp. al.*, 8—9 mm. *Hindwings* (1), shining, greyish white; cilia white, slightly tinged with ochreous. *Abdomen* and *Legs* pale ochreous.

Type, ♂ (97544). Mus. Wlsm.

Hab.: ALGERIA—Hamman-es-Salahin, 3-24.IV.1904. Sixteen specimens.

Allied to *granulatella*, H.-S.; a good series taken by smoking an isolated and much dwarfed plant of *Retama monosperma* on the open desert.

4593 : 1.—TINEA GERATOCOMA, *sp. n.*

Antennae simple; dark greyish fuscous. *Palpi* dependent, sparsely bristled; dark fuscous externally, whitish on their inner sides, except for a fuscous band, occupying the basal two-thirds of the rather flattened, short terminal joint. *Maxillaries* folded. *Head* rough, hoary white. *Thorax* dark purplish fuscous. *Forewings* dark purplish fuscous, rather shining, with a few scattered whitish scales from the end of the cell to the middle of the termen; cilia brownish cinereous, thickly sprinkled with purplish fuscous; underside uniformly shining, iridescent, bronzy purplish. *Exp. al.*, 15 mm. *Hindwings* ($\frac{3}{4}$), bronzy towards the base, blending to purplish outward, with some pale lilac scales distributed narrowly along the margins on the outer half of the wing and across the pointed apex. *Abdomen* bronzy fuscous. *Legs* fuscous, with pale cinereous tarsal annulations.

Type, ♂ (97734). Mus. Wlsm.

Hab.: ALGERIA—Philippeville, 4.V.1904. Unique.

This species may be distinguished from *haasi*, Rbl., by its blacker and more elongate forewings, its somewhat narrower hindwings, its darker antennae, and especially by its *white*, not yellowish, head, only slightly tinged with yellowish on the face. The palpi are comparatively naked, and white on their inner sides.

4595 : I.—TINEA PUNCTIGERA, *sp. n.*

Antennae moderately stout, nearly as long as the forewings; pale yellowish brown. *Palpi* dependent; pale yellowish brown, the median joint with two or three small bristles, terminal equally slender and about the same length. *Martillaries* moderate, bent. *Head* ochreous. *Thorax* pale yellowish brown. *Forewings* shining, pale yellowish brown, with pale fuscous spots; one at the base of the costa diffused downwards to the fold, one near the flexus below the fold, one in the fold a little before half the wing-length, one on the disc above and scarcely beyond it, one on the middle of the costa in line with the last two, and one at the end of the cell sometimes partly reduplicated; cilia also shining and slightly paler than the forewings. *Exp. al.*, 11–16 mm. *Hindwings* and cilia shining, pale whitish grey. *Abdomen* ochreous. *Legs* pale brownish ochreous.

Type, ♂ (96508); ♀ (8483). Mus. Wlsm.

Hab.: ALGERIA—Constantine, 20.XI.1895 (*Eaton*); Hammam-es-Salahin, 17.V.1903 (*Wlsm.*). Sixteen specimens.

This species is nearly allied to *liguriella*, Mill., but differs in the absence of black speckling on the wing-surface and of the distinctly blackish scale-spots, as well as of the strong shade at the base of the costa. The cilia of the hindwings are also rather whitish than ochreous, but the shining, oily, appearance of the forewing is more especially noticeable, in strong contrast to the rather coarse scaling of *liguriella*, in which the hindwings are also narrower.

I only met with a single specimen at Hammam-es-Salahin, but Mr. Eaton writes, "In the Mahomedan cemetery; abundant from sunset onwards, flying about open, newly dug grass, alighting on the sides of the pits and on the clods thrown out of them, and running in and out of the crevices. A few occurred on the boundary bank of the enclosure, but none were seen on the adjoining unenclosed slopes of pasture or fallow ground."

471.—TINEOLA, H.-S.

4621 : 9.—TINEOLA AUTOCHTHONES, *sp. n.*

Antennae longer than the forewings; shining mouse-grey. *Palpi* pale brownish ochreous; depressed, slender, moderately smooth. *Head* very rough; pale ochreous. *Thorax* pale brownish ochreous. *Forewings* narrow, pointed; pale brownish ochreous, sparsely sprinkled with rust-brown scales and spotted with rust-brown; the first spot is near the base of the costa, a pair of similar spots obliquely placed about the middle of the wing, the one near the dorsum further removed from the base than the one above it; a fourth spot touches the costa at two-thirds, the apex and termen being thickly sprinkled with rust-brown before the pale brownish ochreous cilia. *Exp. al.*, 9 mm. *Hindwings* dark greyish fuscous. *Abdomen* brownish fuscous. *Legs* pale ochreous, with fuscous hair-scales on the tibiae, and some fuscous rings around the tarsi.

Type, ♂ (96511). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara, 20-23.V.1903. Two specimens.

4627 : 1.—TINEOLA PAEPALELLA, *sp. n.*

Antennae yellowish white, annulate with fuscous. *Palpi* porrect, sparsely bristled beneath; yellowish white above, fuscous beneath. *Head* yellowish white. *Thorax* griseous. *Forewings* yellowish white, sprinkled with greyish fuscous scales, more noticeably along the basal half of the costa, along the cell tending to form a spot at its outer end, and about the apex; this dusting is in some specimens almost obsolete, or confined to the apical area; cilia whitish, sparsely sprinkled with fuscous, with a line of fuscous scales running through them. *Exp. al.*, 16-17 mm. *Hindwings* (1), slightly iridescent, shining, greyish white, a little clouded towards the apex; cilia slightly paler. *Abdomen* greyish. *Legs* whitish ochreous, the tarsi sometimes faintly touched with grey.

Type, ♂ (97000); ♀ (97316). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 13.III.1903; Hamman-es-Salahin, 3-15 IV.1904. Nine specimens.

A variety of this species, of which two specimens were taken at the same time and place as the type, and two others a few days later, differs in no respect, except in its paler, more ochreous colour, and in the correspondingly slightly paler hindwings.

474.—MYRMECOZELA, *Z.*

4612 : 2.—MYRMECOZELA DESERTICOLA, *sp. n.*

Antennae ♂, slightly biserrate; sandy ochraceous. *Palpi* porrect to a little beyond the rough clothing of the face, not deflexed, terminal joint short, median densely clothed beneath; pale sandy ochraceous. *Head* and *Thorax* pale sandy ochraceous. *Forewings* elongate, subovate, the costa evenly arched; pale sandy ochraceous, with a few fawn-ochreous scales along the base of the costa, below the fold, and tending to indicate the neuriation about the end of the cell; a more or less conspicuous fuscous spot lies on the fold at half the wing-length, a few groups of scales of the same colour being visible along the dorsum, between the costa and the upper margin of the cell, and about the termen—these are evidently variable in number and distribution; cilia scarcely paler than the wings, slightly dusted. *Exp. al.* ♀ 17-19, ♂ 22 mm. *Hindwings* broader than the forewings, tapering upward from the middle to a slightly depressed, obtusely pointed apex; pale, shining, whitish ochreous; cilia the same. *Abdomen* and *Legs* pale sandy ochraceous.

Type, ♂ (97736); ♀ (96995). Mus. Wlsm.

Hab.: ALGERIA—Hamman-es-Salahin, X.1904 (*Courteaux*); 18.I.1906 (*Wlsm.*). Three specimens.

This species reminds one greatly of *diacona*, Wlsm., but differs

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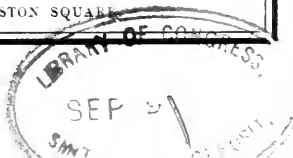
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in the more distinctly rounded costa, in the comparative absence of terminal marking, and in the strong plical spot at half the wing-length.

The only specimen I met with myself was taken on January 18th, two others being given to me by my hostess Madame Courteaux who had collected them in October, 1903. It is probably an autumnal species, and certainly very rare at other times.

466.—TINEA, L.

4571 : L.—TINEA FRUSTIGERELLA, *sp. n.*

Antennae pale ochreous, with slender fuscous bars above. *Palpi* dependent, sparsely bristled, slender; pale ochreous, with a fuscous band around the terminal joint. *Maxillaries* folded. *Head* pale ochreous, a few rust-brown scales between the antennae. *Thorax* pale ochreous, with slight fuscous speckling. *Forewings* narrow, elongate, with obtusely depressed apex; pale ochreous, speckled with smoky fuscous scales, which tend to form four small groups along the outer half of the costa, and another at the apex, while before the middle of the wing they are aggregated in closely packed transverse striae from costa to lower edge of cell; a few of these smoky scales are also visible around the apex on the underside of the wing; there is a slight rust-brown shade along the fold. *Exp. at.* 12—13 mm. *Hindwings* pale creamy ochreous; cilia creamy whitish. *Abdomen* ochreous, shaded with fawn-brown above. *Legs* pale ochreous, the tarsi faintly banded with brown dusting.

Type, ♂ (97321); ♀ (97323). Mus. Wlsm.

Hab : ALGERIA—Hamman-es-Salahin, 10-30.III.1907. Three specimens.

TORTRICIDAE.

TORTRICODES, Gn.

= § *OPORINIA*, Hb.; = **CHEIMATOPHILA*, HS. (nec. Stph.);
n. syn. = *OXYPTERON*, Stgr.

Type 1. *Tinea tortricella*, Hb. (Stph.).

§ *OPORINIA*, Hb. Verz. Schm. 387 (1826).

Invalid through homonymy with *OPORINIA*, Hb. Verz. 321-2
(ante 1826) *Lep.*

TORTRICODES, Gn. Ann. Soc. Ent. Fr. XIV (2.s.III : 1845). 305
(1845); Ind. Meth. 67 (1845); Stph. List Br. An. B.M. X. Lp.
69-70 (1852).

**CHEIMATOPHILA*, HS. (nec. Stph.); Ldr.; Hnm.; Stgr-Wk.;
Stgr-Rbl. Cat. Lp. Pal. II. 93, No. 231 (1901).

The type of *CHEIMATOPHILA*, Stph. is *mixtana*, Hb.; the usage of this geneonym by Herrich-Schäffer and others is therefore erroneous.

Type 2. *Oxypteron impar*, Stgr. (Stgr. 1870).

OXYPTERON, Stgr. Berl. Ent. Zts. XIV. 276-7 (1870); Stgr-Wk. Cat. Lp. Eur. 241, No. 107 (1871); Stgr-Rbl. Cat. Lp. Pal. II. 93, No. 232 (1901).

The discovery of additional species shows that the structural characters of *Oxypteron impar*, Stgr., when compared with those of *Tortricodes tortricella*, Hb., are insufficient to justify generic separation.

1639 : 1.—*TORTRICODES POLITA*, *sp. n.*

Antennae greyish fuscous. *Palpi* projecting half the length of the head beyond it; fuscous. *Head* and *Thorax* fuscous. *Forewings* sharply pointed, the very oblique termen scarcely sinuate; uniformly bronzy fuscous, in some specimens varying to a yellower or more brassy tint, but always more or less shining; there is a pale band along the costa from the base, occupying the whole space above the cell, but attenuate outward and terminating at about three-fifths, this streak is distinctly paler than the ground-colour; cilia bronzy fuscous, with a slight shade-line running through them near their base. *Exp. al.*, 16-21 mm. *Hindwings* fuscous; cilia shining, cinereous. *Abdomen* fuscous. *Legs* bronzy.

Type, ♂ (97737). Mus. Wlsm.

Hab.: ALGERIA—Philippeville, 16.X.1905. Four specimens.

A larger species than *chapmani*, and easily recognised by the invariable broad pale streak from the base of the costa. The ♀ is at present unknown.

1639 : 2.—*TORTRICODES EREMICA*, *sp. n.*

Antennae brownish cinereous, banded above with fuscous. *Palpi* not projecting beyond the head; brownish fuscous. *Head* and *Thorax* brownish ochraceous. *Forewings* sharply pointed, but the termen not sinuate; whitish cinereous, overflowed from base to middle, and partially beyond the middle to the apex, with pale bluish grey, sometimes tending to greyish fuscous; the costa paler from base to middle, and some intermediate patches, notably one before the tornus, and one adjacent to the termen, pale ochreous, a few ochreous scales also about the fold, this ochreous colour being accompanied by a few minute dots of black scales, which (as in *chapmani*) appear to be fugitive; cilia pale cinereous, with a slender shade-line near their base. *Exp. al.* 11-13 mm. *Hindwings* pale greyish fuscous; cilia pale cinereous, a darker shade-line near their base. *Abdomen* greyish fuscous. *Legs* pale cinereous.

Type, ♂ (97516). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 28 II.1894 (*Eaton*); Hammam-es-Salabin, 18.I.1906, 5-15.III.1904 (*Wlsm.*). Nineteen specimens.

This species differs from *chapmani* in its uniformly smaller size, in its paler hindwings, and in the whiter, less ochreous colouring of the forewings, which are also much less sprinkled with black dots. It occurred not uncommonly at Hammam-es-Salabin, but is difficult

to dislodge. I succeeded in smoking a good series of specimens from detached low shrubby plants on the two small hills near the hotel, but was unable to associate it with any particular food-plant and unfortunately did not secure a ♀.

1639 : 3.—*TORTRICODES CHAPMANI*, *sp. n.*

Antennae minutely setulose in the ♂; greyish fuscous. *Palpi* short, scarcely projecting beyond the head, median joint moderately clothed, terminal joint short, depressed, not roughened; pale greyish fuscous. *Head* greyish fuscous. *Thorax* bone-ochreous, shaded with fuscous. *Forewings* elongate, lanceolate, slightly bulged on the costa near the base and beyond the middle, apex acute, scarcely depressed, termen slightly sinuate, very oblique, tornus almost obsolete; bone-whitish, smeared with ochraceous, sometimes intensified in a transverse fascia beyond the middle (especially in the ♀); sparsely sprinkled throughout with easily detached, slightly raised black scales, these have a tendency to indicate the line of the post-median fascia, as well as an oblique subterminal line; cilia bone-ochreous, with two faint shade-lines running through them. *Exp. al.* ♀ 11—14, ♂ 14 mm. *Hindwings* slightly broader than the forewings, apex somewhat acute and depressed, termen strongly sinuate; grey; cilia whitish cinereous, sometimes with a faint shade-line near the base. *Abdomen* grey, tending to bone-ochreous posteriorly, where it is somewhat roughened above. *Legs* bone-whitish.

Type, ♂ (71933); ♀ (71934) *Sicily*. Mus. Wlsm.

Hab.: SICILY—Monte Venere, 2900 ft, Taormina, Larva, flowers of *Anemone*, b.IV., excl., 19.VIII—15.IX.1905 (*Chapman*). ALGERIA—Constantine, 30.X—8.XI.1894, 2.XI.1895 (*Eaton*). Twenty-nine specimens.

The species is variable in the degree to which the pale ground-colour, always more apparent along the middle of the wing, is obscured by the ochreous, or even sometimes dull glaucous, shading. It differs from *impar*, Stgr., and *tortricella*, Hb., in its uniformly smaller size, in its sharper and more pointed forewings, and in its much darker hindwings. I am indebted to Dr. Chapman for eighteen specimens bred from flowers of *Anemone*, at Taormina (Sicily) in August and September 1905. I received also eleven specimens from the Rev. A. E. Eaton, taken on M'Cid in November 1894 and 1895, with the note that "The moth is common among withered herbage here and there on parts of the slopes that are not cultivated, and rests with its head upwards. Its colour harmonizes well with that of the dead stems and leaves. Failed to ascertain whether it is attached to *Atractylis gummifera* (a dwarf or sessile thistle) or on an abundant *Ornithogalum*, or smaller herbs; but I am inclined to give the *Atractylis* the benefit of the doubt—with the *Ornithogalum* second."

(*To be continued*).

ADDITIONS TO THE LIST OF BRITISH *HEMIPTERA-HETEROPTERA*
SINCE 1892.

BY EDWARD SAUNDERS, F.R.S., &c.

I propose here to collect together the various species of the above suborder which have been recorded as occurring in this country since the appearance of "The *Hemiptera-Heteroptera* of the British Islands," and also to indicate the various changes in synonymy which are necessary to bring our nomenclature more or less in line with that of the continental authorities. In the *Capside* I have not adopted all the very closely allied genera which figure in the Continental lists; for although these in a very extensive fauna such as that of the Palearctic region, where the number of species in each genus would otherwise be inconveniently large, are useful and almost necessary, in a limited fauna like ours the more comprehensive genera are less puzzling. I have accordingly in many cases treated these as subgenera, otherwise I have adhered as much as possible to the nomenclature given in Dr. Puton's "Catalogue des Hémiptères de la faune paléarctique," 1899.

SCUTELLERINA.

Corimelana, White = *Thyreocoris*, Schr.

Eurygaster nigra, F. = *E. nigrocucullata*, Goeze.

CYDNINA.

Cydnus flavicornis, Fab. (Ent. Mo. Mag., xxxv, p. 155, *Æthus*).

A single specimen of this very interesting addition to our list was found in the Isle of Wight at Freshwater by Mr. W. Holland, of Oxford, in July, 1895, and there is no record of its subsequent occurrence.

As a genus, *Cydnus* may be known at once from any of its British allies by the spinose margins of the head. *C. flavicornis* is about the size of a *Geotomus punctulatus*, but much more convex, and the long hairs which fringe the edges of the pronotum and elytra distinguish it easily.

PENTATOMINA.

Sciocoris cursitans, Fab. = *S. terreus*, Schrank.

Pentatoma fuscispina, Boh. = *Carpocoris purpuripennis*, de G.

„ *baccarum*, L. = *Dolycoris baccarum*, de G.

„ *juniperina*, L. = *Chlorochroa juniperina*, L.

„ *prasina*, L. = *Palomena prasina*, L.

Tropicoris rufipes, L. = *Pentatoma rufipes*, L.

Strachia, Hahn. = *Eurydema*, Lap.

„ *festiva*, auct., nec. L. = *dominulus*, Scop.

ASOPINA

Asopus, Burm. = *Rhacognathus*, Fieb.

Podisus, H.-S. = *Troilus*, Stål.

ACANTHOSOMINA.

Acanthosoma dentatum, de G. = *A. interstinctum*, L.

„ *interstinctum*, Reut. = *Elasmotethus griseus*, L.

Elasmotethus ferrugatus, F. (Ent. Mo. Mag., xxxvi, p. 131).

This species was recorded in 1900 by Mr. W. E. Sharp from a specimen taken by Mr. E. J. Burgess Sopp at Bangor, N. Wales, in July; since then it has been taken by Mr. G. Pullen on raspberry in a garden on the outskirts of Derby in June, 1904, who very kindly presented me with the specimen (*cf.* Ent. Mo. Mag., xl, p. 38).

It is a very distinct species, somewhat resembling *E. griseus*, L., but with the angles of the pronotum produced into strong black spines.

Acanthosoma tristriatum, F. = *Cyphostethus tristriatus*, F.

COREINA.

Gonocerus venator, F. = *G. acuteangulatus*, Goeze.

Pseudophlæus waltlii, H.-S. (Ent. Mo. Mag., xxxviii, p. 80).

Introduced by Mr. H. J. Thouless, who took it "while searching at the roots of grass in a very dry place" at West Walton, Norfolk.

It closely resembles *falleni*, from which however it can be distinguished by the form of the 3rd joint of the antennæ, which is slightly widened and black at the apex, the scutellum is carinated at the apex only, and the antennary tubercles are pointed instead of being obtuse.

STENOCEPHALINA.

Stenocephalus neglectus, H.-S. = *S. albipes*, F.

CORIZINA.

Corizus capitatus, F. = *C. subrufus*, Gmel.

Corizus hyalinus, F. (Ent. Mo. Mag., xxxix, p. 294).

The late Mr. A. Beaumont was the first to introduce this species to our list, he took a single example in a marshy place near Gosfield, in Essex; since then Mr. H. J. Thouless has recorded it from Norwich (*cf.* Ent. Mo. Mag., xl, p. 16); these are the only two records that I know of its capture in our Islands.

It is a very distinct species, and can be distinguished from its allies by the narrowly raised, impunctate, anterior margin of the pronotum, on which character Stål founded a new genus for it (*Liorhysus*), which is now considered by Puton to be a subgenus of *Corizus*; beyond this subgeneric character it may be known by its very long pellucid membrane, the long apical joint of the antennæ, which is much longer than the 3rd, by the curiously rounded apex of the abdomen, and by the

pattern of the back as seen through the membrane; the apical segment has a pale, central, parallel-sided line, extending from the apex, with a black stripe on each side of it, whereas in our other species the centre is black and the line bordering it pale.

BERYTINA.

Metacanthus punctipes, Germ. = *M. elegans*, Curt.

APIANINA.

Plociomercus, Fieb. = *Pamera*, Say.

Stygnum, Fieb. = *Stygnocoris*, D. and S.

„ *arenarius*, Hahn. = *fuliginus*, Fourc.

Peritrechus luniger, Schill. = *P. sylvestris*, F.

Aphanus rolandri = *Calyptomotus rolandri*, L.

„ *pedestris*, Pz. = *albo-acuminatus*, Goeze.

Beosus luscus, F. = *B. maritimus*, Scop.

Scolopostethus neglectus, Edw. = *S. thomsoni*, Rent.

Notochilus contractus, D. and S. = *N. hamulatus*, Thoms.

Drymus pilicornis, Saund. = *D. latus*, D. and S.

„ *pilicornis*, M. and R. (Ent. Mo. Mag., xl, p. 275).

We are indebted to Mr. E. A. Butler for the introduction of this species, and for the above corrections consequently necessary in our synonymy.

It differs from the *pilicornis* of our books in being smaller (3–3½ mm.), in having the anterior tibiae of the ♂ much curved and not so abruptly dilated at the apex, in having the anterior femora of both sexes with one large and five or six minute teeth, in having the abdomen beneath shining and quite smooth without scattered wrinkles, its basal segments with a few scattered but distinct hairs, and the apical margin of the 4th segment without a fringe of hairs.

TINGIDINA.

Dictyonota crassicornis, Fall. = *D. tricornis*, Schr.

Monanthia costata, Fieb. = *M. fabricii*, Stål.

GERRIDINA.

Gerris costæ, H.-S. = *G. lateralis*, Schum., var. *costæ*.

EMESINA.

Ploiaria auct. = *Ploiariodes*, Buch White.

Ploiariodes bærensprungi, Dohrn. (Ent. Mo. Mag., xxxiv, p. 217).

Recorded by Mr. Champion from Esher, "beaten from a stack of cut pine branches," August 30th, 1874, and from the New Forest, June, 1894.

It is, as Mr. Champion points out, readily recognisable by the erect black spine at the centre of the base of the pronotum; this rises immediately in front of the

narrow white basal margin, and looked at sideways, somewhat resembles the thorn of a briar, its point slightly inclined forwards, in other respects it closely resembles *P. culiciformis*.

REDUVINA.

Nabis brevipennis, Hahn. = *N. apterus*, Fab.

„ *brevis*, Scholtz (Ent. Mo. Mag., xxxvi, p. 227, and xxxviii, p. 269).

Taken by sweeping on somewhat marshy ground along the canal between Byfleet and Weybridge.

The smallest species of the *rugosus* group, differing from both that species and *ericetorum* in the shorter front femora; in colour it is of a darker grey than *rugosus*, with the nerves of the elytra widely margined with fuscous grey, it is darker, often nearly black underneath, and the transverse black bars of the front femora beneath are much more pronounced; in this it resembles *ericetorum*, but it shows no tendency to become rufescent. The form of the genital style of the ♂ is quite distinct from that of the other species; its blade is wider in proportion to its length, and has a more convex upper margin, which rises from the stipes in a nearly straight line; in *ericetorum* there is a shoulder just above the stipes, followed by a slight sinuation; in both the apex is mucronate; in *rugosus* there is neither shoulder nor sinuation, but the blade is comparatively narrow and the apical mucro is scarcely developed.

SALDINA.

Salda morio, D. & S. Saund. (*Muelleri*, Gn.) = *S. oculata*, Müll.

„ *morio*, Zett. (Ent. Mo. Mag., xxxi, p. 236).

I gave the distinguishing characters of these two species in this Magazine as quoted above.

Morio may be known from *oculata* by the very shining surface, looking almost as if it had been burnished, the puncturation of the elytra being obsolete or almost so; eyes in the ♂, looked at from in front, although large, not or scarcely wider than the face between them, pronotum narrower, more constricted in front, its sides straighter.

On the moors near Buxton, June, 1889.

Salda setulosa, Put. (Ent. Mo. Mag., xl, p. 276).

Introduced by Mr. E. A. Butler, on a single example taken at Poole Harbour in flood refuse in August, 1904.

It resembles *opacula*, Zett., but differs from it in having the upper surface clothed with long, upright, blackish hairs, and the pale markings of the face much obscured, the second antennal joint is longer than in *opacula*, and is black at the base and apex.

CIMICINA.

Anthocoris sylvestris, F. = *A. nemorum*, L.

Xylocoridca brevipennis, Rent. (Ent. Mo. Mag., xxxiv, p. 251).

This new genus and species to our list was discovered by Mr. Claude Morley under hawthorn bark in Richmond Park, on March 2nd, 1898.

It may be known from *Xylocoris* generically by the shorter 1st and longer 2nd joints of its rostrum, by the long 4th joint of the antennæ, which is much longer than the very short 3rd joint, by the eyes being further from the anterior margin of the pronotum, and by its abbreviated elytra.

It is an elongate insect, flat, very shining and black, with the exception of the dull, slightly paler elytra; eyes about equidistant in position between the apex of the face and the margin of the pronotum; 2nd joint of the antennæ pale and slightly thickened, dusky at the apex; pronotum narrow, apical constriction slight, lateral margins emarginated, slightly reflexed and curved, posterior angles acute, base widely emarginate; elytra about as long as the pronotum and half the head, dull; embolium shining, clothed with a sparse suberect pilosity, membrane reduced to a mere strip; abdomen considerably wider than the elytra, suboval; legs with the femora blackish-brown, tibiæ slightly paler. Long., 2.5 mm.

CAPSINA.

Myrmecoris gracilis, Sahlb. (Ent. Mo. Mag., xxxix, p. 269).

This interesting and striking addition to our fauna was captured by Mr. E. A. Butler at Fleet, in Hampshire, on heathy ground, not far from a nest of *Lasius niger*.

Myrmecoris may be known generically from *Pithanus*, the only British genus which at all resembles it, by the elongate thorax, which is nearly as long as the abdomen, exhibiting the portion of the mesonotum in front of the scutellum, by the longer face, which is longer than its width across the eyes, and by the less swollen basal joint of the antennæ, as well as by having its thorax strongly constricted in the middle and its abdomen at the base.

It is a narrow black insect, much resembling an ant in form by the large head and by the constrictions of the thorax and abdomen as mentioned above; legs and antennæ pale piceous, the latter darker on the apical half; elytra whitish at the base and apex; abdomen with the sides of the connexivum triangularly spotted with white at the joints of the segments; tibiæ with very fine inconspicuous hair-like spines on their inner side. Long., 4—5 mm.

Megalocerea longicornis, Fall. = *M. linearis*, Fues.

„ (*Trigonotylus*) *brevipes*, Jak. (Ent. Mo. Mag., xxix, p. 110).

Introduced by Dr. O. M. Reuter on specimens taken by him on Culbin Sands, near Forres, on *Psamma arenaria*. Mr. Butler also met with it at Lowestoft; it is the variety which is mentioned in "*Hemiptera* of the British Islands," but which has since been raised to the rank of a species.

According to Reuter's table (*loc. cit.*) it differs from *rusticornis* in being wider, with the antennæ paler and finely pilose, and having the 2nd joint almost longer

than the 3rd and 4th together, the 3rd about two-fifths or nearly one-third shorter than the 2nd, the 4th one-third the length of the 3rd, and the 1st joint of the tarsi slightly shorter than the 2nd and 3rd together.

Calocoris striatellus, F. = *C. ochromelas*, Gmel.

„ *chenopodii*, Fall. = *C. lineolatus*, Goeze.

„ *marginellus*, F. = *C. M. flavum*, Goeze.

Oncognathus, Fieb. = *Stenotus*, Jak.

Zygimus, Saund. = *Camptozygum*, Reut.

Pæciloscytus vulneratus, Wolff. (Ent. Mo. Mag., xxxiv, p. 15).

First recorded by Mr. Thouless from Yarmouth in 1897, where he took a few specimens on the sandbills on *Galium verum* in September.

It is very distinct from *P. unifasciatus*, being considerably smaller, paler, and greenish-grey, the pronotum with a few darker markings, and the elytra nearly unicolorous, with a bright red spot and a black line on the outer margin of the otherwise white eunus.

Capsus lanarius, L. = *C. ruber*, L.

Globiceps cruciatus, Reut. = *G. flavomaculatus*, F.

„ *flavomaculatus*, Reut. and Saund. = *selectus*, D. and S.

Macrocoleus, Fieb. = *Megalocoleus*, Reut.

Psallus sanguineus, F. = *P. roseus*, F.

Plagiognathus viridulus, Fall. = *P. chrysanthemi*, Wolff.

„ (*Agalliaestes*) *evanescens*, Boh. (Ent. Mo. Mag., xxx, p. 254).

The late Mr. A. Beaumont first called attention to this species; he took a few specimens amongst *Sedum* at Colwyn Bay in August, 1890.

It is quite distinct from our other species in its uniform brown colour; it somewhat resembles *P. wilkinsoni*, but it differs from that in being rather broader, by its duller surface, the coarser, yellowish-white pubescence and the black antennæ; from *saltitans* its pubescence and dull surface, its unspotted elytra, and longer 3rd and 4th joints of the antennæ will distinguish it at once.

CORIXINA.

Corixa atomaria, Fieb. = *C. affinis*, Leach.

„ *selecta*, Fieb. (Ent. Mo. Mag., xxx, p. 101).

Mr. Jas. Edwards introduced this species on specimens from coast marshes in Norfolk; it is very distinct structurally, but probably overlooked on account of its close general resemblance to *lugubris*.

♂. Differs from that of *lugubris* in having a strong transverse keel across the forehead, situated considerably above the lower margin of the eyes, with a well defined deep transverse impression above it, which emphasizes the keel; the entire

frons below the keel is excavated. In *Ingubris* the keel is feeble, and situated on a level with the lower margin of the eyes, the impression above it is large and shallow, and the excavation on the frons feeble and less extensive. The ♀ of *selecta* may be known by the long central keel of the pronotum, which is quite half as long as the pronotum itself, whereas in *Ingubris* it is not more than a quarter as long.

Corixa saundersi, Kirkaldy (Ent. Mo. Mag., xxxv, p. 3).

This species was described from three or four specimens taken by myself on Chobham Common; as they are at present out of my hands, I can only quote from Kirkaldy's article (*loc. cit.*).

"Differs from *nigrolineata* in being more feebly rastrate on the corium, and by the form of the metaxyphus, from *fossarum* by the longer pronotum and greater number of pronotal transverse lines, and by the form of the metaxyphus; as regards the ♂ the new species is separable from *nigrolineata* by the form of the strigil and of the frontal fovea, and from *fossarum* by the form of the palæ and of the strigil."

Of the metaxyphus he says, "very short, triangular, subequilateral;" of the strigil, "very large, oblong, oval, length twice as great as breadth, composed of four (? five) irregular, sinuately-margined rows of striae."

Corixa fabricii, Fieb. = *C. nigrolineata*, Fieb.

„ *cojnata*, D. and S. (*ucc.* Fieb.) = *C. caledonica*, Kirk.

„ *germari*, Fieb. (*intricata*, D. and S.).

This species I regarded as a var. of *carinata*, Sahlb., but now treat it as distinct, in conformity with the views of others.

Sigara, Leach = *Microuecta*, Kirk.

„ *scholtzi*, Fieb. = *meridionalis*, Costa.

St. Ann's, Woking:

August 3rd, 1907.

NOTES ON THE GENUS *PEZOMACHUS*, IN MORLEY'S "BRITISH ICHNEUMONS."*

BY E. A. ELLIOTT, F.E.S.

There can be no doubt that Professor Förster made too many species of this genus by giving specific value to trivial variations, but I think that Mr. Morley has gone rather too far in the opposite direction.

The development of the basal costa of the petiolar area in this genus, upon which Förster founds his two great divisions, certainly

**Cf.* Ichneumonologia Britannica, vol. ii, 1907 (Keys, Whimble Street, Plymouth). By Claude Morley, F.E.S., &c.

depends largely upon nourishment in the larval stage; and the same may be said, in a less degree, of the scutellum. It will however, be noticed that in those species where the female always has a distinct scutellum the male is almost always winged. In some cases, *e. g.*, *P. nigritus* and *P. anthracinus*, the male appears to be dimorphic. *P. attentus* and *P. transfuga* I hold to be distinct species: in the former the abdominal pubescence is apically diffuse, the antennæ basally red, apically infusate, and the basal abdominal segment entirely red; in *transfuga* the pubescence is equally dense throughout, the antennæ have the scape black or brown, the apex red, and the basal segment has distinct dark lateral margins, interrupted by the rufous spiracles.

I differ from Mr. Morley in considering the density of the abdominal pubescence a constant character and of specific value. *P. intermedius* and *P. furax*: according to Förster the difference between these consists in the latter having the petiolar area nearly vertical instead of oblique, and more elongate antennæ. Without seeing the original specimens, it is not possible to decide whether these details are sufficient to separate them.

P. carnifex: it is unfortunate that this name has priority, as the insect described under it is not especially typical—*rufulus* would be preferable, both as a type and a more appropriate name. The species is very variable both in size and in colour; it certainly includes the seven varieties in Mr. Morley's first section. As above noted, I consider the dense apical pubescence of the abdomen a specific character, and I would group Section II as a good species under the name *unicolor*. Possibly the form *lanquidus*, having the meta-longer than the meso-thorax and shorter antennæ, may prove distinct.

P. corruptor and *faunus*: I am of opinion that these are two species. It is a most difficult case, as the differences, though plain enough when the two insects are placed side by side, are almost hopeless to describe in words. The males, *P. insidiosus* and *dysalotus*, are correctly assigned to *P. corruptor*, and *P. conveniens* to *P. faunus*, of which *P. xenoctonus* is certainly a synonym.

P. dubitator is probably distinct, having a high, oblique petiolar area, a proportionately longer fifth antennal joint and dense apical pubescence. The specimen from near Norwich, to which Mr. Morley refers, is probably *faunus*, as the apical pubescence was especially stated to be diffuse.

P. fasciatus: it appears that the rather unsatisfactory name "*melanocephalus*" claims priority; it is, however, a case in which the present very distinctive name ought not to be superseded.

It is probably only by breeding that the known species of male and female can be correctly paired; but it would be of great utility and interest if one could procure details of the experiments which form the basis of Thomson's pairings in his "Opuscula Entomologia," where the descriptions are far too brief to be of much use. We are sure that Mr. Morley's new tabulation of this intricate genus, on the comparative length of the antennal joints, gives the species the most natural sequence, and is much the most easy to follow that has yet been enunciated; in its practice one can distinctly see outlines of his proposed subgenera.

16, Belsize Grove, Hampstead:

August, 1907.

GLYPHIPTERYX THRASONELLA, Scop., AB. *NITENS*, N. AB.

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

This beautiful aberration differs from the typical form in having the terminal portion of the fore-wing more or less completely occupied by a large brightly-metallic iridescent blotch, which embraces, to a greater or less extent, the metallic streaks and spots that usually adorn the wing posteriorly. The blotch may obviously vary somewhat in the colours it displays, just as do the typical costal streaks and tornal spots, but in the three individuals before me, which are all males, the principal hues to be seen are gold, blue, green, and violet, each of which appears to prevail in some portion of the blotch, though they merge into one another.

That ab. *nitens*, of which my earliest capture was made in a wet withybed near Bloxworth, E. Dorset, on May 30th, 1905, is a recurrent form is clear from the fact that I took, in the same heath-bog near here, one example of it on July 8th, 1905, and another on July 15th of this year, and doubtless special work for it, which has not yet been attempted, would have yielded others. It is the opposite extreme from ab. *cladiella*, Stn., in which the typical metallic streaks are obsolete.

Norden, Corfe Castle:

July 25th, 1907.

ON A SPECIES OF *SIMPLICARIA* APPARENTLY DISTINCT FROM
S. SEMISTRIATA, FAB.

BY THE REV. H. S. GORHAM, F.Z.S.

In my collection are two specimens of a *Simplocaria* which, while they differ from *S. semistriata*, and are probably the insect referred by Stephens (Ill. Brit. Ent., Mand. iii, p. 140) to the *Byrrhus picipes* of Olivier, cannot I think be the *B. picipes* of Gyllenhall. He simply copied the diagnosis of the last-mentioned author, and evidently noticed the discrepancy, for whereas Gyllenhall says *B. picipes* is half as long again but not wider than *B. semistriata* (and Erichson, under *S. metallica*, corroborates this characteristic), Stephens modifies it in his description into "as long, but not so broad;" and this is the case in the insect to which I now call attention.

The two specimens agree in being rather smaller than *S. semistriata*, darker in colour, and more particularly in having all the striæ deeper, and continued to, or near to, the apex of the elytra. Thomson (Skand. Col., iv, p. 218), makes no remark on the greater length of the insect; but all these authors agree in describing *S. metallica* (which they consider as identical with the *B. picipes* of Olivier) as a larger species than *S. semistriata*, whereas my two specimens are smaller. At the same time they are, I think, to be referred to a distinct species.

The conclusion I come to is, that there are two species of *Simplocaria* in England, but that the smaller and more deeply striate insect cannot be identified with any described form, at any rate till the type of Olivier's *Byrrhus picipes* has been compared with my specimens. One of these was taken by me in the Forest of Wyre, in Shropshire; I am not certain of the locality of the other.

Higheroft, Malvern :

August 17th, 1907.

COLEOPTERA IN THE NEW FOREST IN JULY, 1907.

BY JAMES J. WALKER, M.A., R.N., F.L.S.

Although July is usually regarded as by no means the best month for beetles, in the New Forest at any rate, the results of my last visit to Brockenhurst from the 3rd to the 24th compare so well with those of two not unsuccessful expeditions made in 1905 and 1906 at an earlier period in the year, that I am tempted to give a list of the chief species of *Coleoptera* met with during these three weeks.

In the Forest as elsewhere, the effects on insect life of the long continuance of cold and ungenial weather so characteristic of the present season, was only too evident; and for the first week of my stay, little else could be done except to hunt everywhere for timber in workable condition, very little of which is to be found now-a-days, though sufficiently productive whenever met with. The apparent absence of insects of all Orders—with the exception of the inevitable bloodthirsty *Diptera*—was most striking, especially as regards the *Lepidoptera*, and only one or two forlorn-looking specimens of the most ordinary butterflies were to be seen in the course of a long day's march. The fine bright weather which set in about the 10th of the month wrought a most welcome change, and enabled me to meet with *Anthaxia*, *Agrilus viridis*, and other sun-loving *Coleoptera*, though it was evidently almost too late in the season for these, as it certainly was for most of the Longicorns, the only one of this group met with at all plentifully being the common *Strangalia armata*. Collectors, too, began to put in an appearance, along with some of the more characteristic Forest butterflies, such as *Limenitis sibylla*, *Argynnis paphia* and *alippe*, &c., though these latter were only beginning to be fairly common when I left; *A. selene* being then still on the wing and in good condition.

The following species of *Coleoptera* (some of which were also taken by Mr. A. J. Chitty and Mr. G. C. Champion, who were with me part of the time) occurred to me:—

Trechus seculis, in wet *Sphagnum*; *Hydræna* sp. (probably *longior*, Rey) and *nigrita*, taken rather freely, especially the first, in the gravelly beds of streams; *Aleochara enniventorum*, in rabbit burrows, and *A. mycetophaga*, in a fungus. *Atemeles emarginatus*, in a sand-pit; *Lamprinus saginatus*, under a log with *Formica fusca*; *Tachinus bipustulatus*, at a *Cossus* oak; *Megacronus cingulatus*, among decayed wood, *Quedius ventralis*, under beech bark, *Q. cruentus* var. *virens*, at *Cossus* oak, with *Homalium rufipes* var. *nigrum*, Grav.; *Q. xanthopus*, under very rotten beech bark with *Philonthus splendidulus*. *Pæderus caligatus*, running about in a wet place; *Phlæocharis subtilissima*, among dead sticks.

Agathidium nigripenne, under bark; *Liodes orbicularis*, rather freely among smuff-like fungus, with its usual attendants *Enicmus testaceus*, *Aspidophorus*, *Sphindus*, &c. *Anisotoma nigrita* sparingly, *A. parvula* and *Colon serripes* rarely, by evening sweeping. *Scydmænus exilis*, *Euthia schauini*, *Bythinus curtisi*, and *B. puncticollis*, among decayed wood and dead leaves; *Trichonyx sulcicollis*, one example among rubbish at the foot of a decaying beech (Mr. Champion took a specimen after I left). *Hyperaspis reppensis*, by sweeping; *Dacne humeralis*, under beech bark; *Colydium elongatum*, one under the bark of a large fresh beech log; *Gnathonus nannetensis*, by sweeping; *Plegaderus dissectus*, not rare in very rotten

beech, but more sparingly than on previous occasions. *Epurva 10-guttata*, a few at a *Cossus* oak; *Thymalus limbatus*, sparingly under bark, along with its curious larva. *Ephistemus globosus*, by evening sweeping; *Diplocelus fagi*, rarely, and *Mycetophagus piceus*, a few, in "red-rotten" oak, also *Tiresias serra* with its larva; *M. quadriguttatus*, in numbers among dead leaves and wood-dust in a hollow beech. *Elmis volkmari* and *Limnius troglodytes* in the beds of streams, the latter plentifully.

Anthaxia nitidula, about half a dozen on rose and bramble flowers; *Agrilus viridis*, rare, on old sallows and stunted oaks; *A. laticornis*, by sweeping. *Trachys troglodytes*, two examples, on July 11th and 13th respectively, by sweeping in a little swamp. *Throsus carinifrons*, rather commonly by evening sweeping; *Melasis luprestoides*, on old hawthorn, and *Microrrhagus pygmaeus*, in very rotten beech. *Elater lythropterus*, one only, under beech bark; *E. elongatulus*, not rare by sweeping, this species is apparently much more common and generally distributed than it was a few years ago. *Athöus rhombeus*, two or three dug out of rotten beech by Mr. Champion when with me.

Dasytes niger, rarely, in flowers; *Lymexylon navale*, one ♀ on July 22nd, flying about a dead standing oak; *Xyletinus ater*, one in dead but sound oak timber; *Dorcatoma chrysomelina*, fairly common in two decaying oak trees, one of which yielded a few dead but serviceable specimens of *Anitys rubens*. *Anoplodera sexguttata*, on umbels; *Leptura scutellata*, not uncommon, walking about on dead timber as usual. *Chrysomela varians*, sparingly on *Hypericum*, and *Melasoma populi*, abundant in all its stages on dwarf willow.

Cistela ceramboides, a fine ♀ among fragments of rotten oak wood; *Mycetochares bipustulata*, under birch bark; *Eryx ater*, at the foot of a decayed beech with *Tetratoma fungorum*; *Clinocera undulata*, sparingly on dead timber; *Conopalpus testaceus*, by sweeping, also on dead beech; *Anisoxya fuscula*, one among dead leaves, &c. *Phlaotrya rufipes*, under rotten beech bark; *Salpingus wratus*, by sweeping; *Scraptia fuscula*, one ♂ example in dry "red-rotten" oak, with *Xylophilus oculatus* not rarely, the latter also to be obtained by heating the adjacent foliage; *Tomoxia biguttata*, settling on dead beech timber.

Sitones cambrius, on *Lotus major*; *Orchestes iota*, fairly common on *Myrica gale*; *Tychius 5-punctatus*, locally not rare on *Lathyrus macrorrhizus* (perhaps better known as *Orobans tuberosus*), but much more sparingly than at a somewhat earlier period last year; *Nanophyes gracilis*, by sweeping in a wet place; *Phytobius waltoni*, common on *Polygonum*, and *P. quadrinodosus*, rather sparingly by sweeping in the plantations. *Cryphalus abietis*, by evening sweeping, and *Xyleborus saeseni*, in decayed beech.

A visit to Lymington on July 18th produced, besides several species of *Coleoptera* characteristic of the "Salterns," a series of my old Harwich acquaintance, *Codiosoma spadix*, dug out of an elm skirting-board washed by the sea at every high tide.

"Aorangi," Lonsdale Road,
Summertown, Oxford:
August 6th, 1907.

Medon dilutus, Er., in the New Forest.—On July 15th I had the good fortune to meet with a single example of this apparently very rare Staphylinid, running on the bark at the foot of a *Cossus*-infested oak in Frame Wood, near Brockenhurst. Mr. G. C. Champion kindly identified the beetle for me.—JAMES J. WALKER, Oxford: August 6th, 1907.

Coleoptera at Royston Heath, &c.—On July 14th, the first really warm summer's day this year, I noticed *Homaloptia ruricola*, F., in the greatest abundance on Royston Heath, Herts. The black variety was also fairly plentiful. In the New Forest on May 25th, I took *Anthaxia nitidula*, L., on the Whitethorn near Lyndhurst, also two specimens of *Ischnomera sanguinicollis*, F. On June 17th I captured a specimen of *Apion semivittatum*, Gyll., at Deal, on the sandhills. I did not recognise the species at the time, or might possibly have taken more. I should be interested to know whether it has occurred since Mr. Walton took it at Margate.—G. E. BRYANT, Fir Grove, Esher: July 20th, 1907.

Ochthebius margipallens, Latr., and *O. viridis*, Peyr.—In my note on the above in last month's Ent. Mo. Mag., I expressed a doubt as to whether both these species occurred in Britain. I am now able to state that Dr. Power took *O. margipallens* in numbers at Hanwell, Middlesex, that there are several specimens in the late G. R. Waterhouse's collection, and that probably the species is as widely distributed as *viridis*, Peyr. I have now critically examined the specimens from Gravesend standing as *margipallens* in the Power collection, and find them to be *viridis*, Peyr. It is still doubtful whether *Hydrana angustata*, Sturm, is British; all the specimens hitherto sent to me as *angustata*, coming from such widely distant counties as Cumberland, Devon, Hants, and Sussex are undoubtedly *longior*, Rey.—E. A. NEWBERRY, 12, Churchill Road, N.W.: August 16th, 1907.

Sesia vespiformis at Woking.—On July 28th of this year I took a specimen of this rare species, which had settled on a carpet in the back yard of this house. It was first noticed by our cook, who called me to look at it. Not realizing at first that it was a moth, I had no idea of its rarity, and I rather damaged the front wings in boxing it, rubbing off some of the black scales from them. There are numerous black poplar trees in the neighbourhood, one of which almost overhangs the yard.—C. F. SAUNDERS, St. Ann's, Woking: August 20th, 1907.

Enarmonia ratzeburgiana, Rtz., bred from *Picea morinda*.—On June 29th, 1905, I noticed, in Lord Eustace Cecil's grounds at Lytchett Heath House, East Dorset, traces of a larva that had been feeding, not uncommonly, on the shoots of a single ornamental fir tree in precisely the same manner as does that of *Enarmonia ratzeburgiana* on spruce fir, but it was then clearly too late for any larvæ. On May 27th last I closely searched this individual tree, within a few yards of which stood a spruce fir, and found feeding on it two larvæ, one of which duly pupated, and yielded a specimen of *E. ratzeburgiana*, Rtz., on June 29th. Growing in the same grounds were three other examples of this same fir, recently identified for me at Kew as *Picea morinda*, a native of the Himalayan Mountains, but these were

searched in vain for larvæ. It seems natural to suppose that *E. ratzeburgiana* was originally introduced into that spot with the spruce tree in question, and had strayed from it to the *P. morinda*, but, strangely enough, I failed to find even a single larva of it on the spruce!—EUSTACE R. BANKES, Norden, Corfe Castle: July 10th, 1907.

Evetria buoliana, Schiff., feeding on *Pinus pinaster*.—Sorhagen [Kleinschmet. d. M. Brand., 92 (1886)], in addition to *Pinus sylvestris*, gives *P. picea*, *abies*, *larix*, *strobus*, *insignis*, *nigricans*, and *benthamiana*, as food-plants of *Evetria* (*Retinia*) *buoliana*, Schiff., but I have never seen *Pinus pinaster* so recorded, nor had I ever observed the larva on any pine or fir except *P. sylvestris* until 1902. In that year, however, I bred, on July 19th, a small but perfect female of *E. buoliana* from a larva found, on June 28th, inside an irregularly-shaped ball of resin, about 9 mm. long by 7 mm. broad, on a twig of *P. pinaster*. The bud, which should have produced a shoot that spring, had never started growth, owing to a space in the wood of the previous year's shoot immediately below it having been hollowed out by the larva, though the contents of the bud itself were intact. The resinous ball was fastened to the side of the previous year's shoot and to the bases of three or four of the green leaves, and exactly resembled, in miniature, the ball of resin in which the full-fed larva of *E. resinana* is found: firmly attached to its exterior was a pinaster male catkin. On my breaking away part of the ball, the larva at once set to work, and made good the breach with a tough wall of smooth white silk. It pupated inside the chamber, and emergence took place through the upper part of the silken wall, adhering to the outside of which was a collection of frass that the larva had extruded. A similar resinous domicile found on the same tree three days previously was untenanted.

It seems strange that the parent female should have cared to oviposit on this old pinaster, which stands alone, for there is a large plantation of Scotch fir within about 100 yards of it on the S.W. side, and many young pinasters within some 50 yards in the same direction: perhaps she was carried thither by a strong wind, a continuance of which may have prevented her from retracing her course. With reference to the imaginal habits, it may be mentioned that, on July 23rd, 1902, I beat out of Scotch fir, and secured, a pair of *E. buoliana*, whilst *in cop.*, at about 7.30 p.m.

The above observations refer solely to *E. buoliana*, Schiff., and not to *E. pinicolana*, Dbld., which has been sunk, erroneously in my opinion, as a variety of the former, both by Meyrick [H.B. Br. Lep., 470 (1895)], and by Staudinger and Rebel [Cat., pp. 102-3, No. 1851 (1901)]. *E. pinicolana*, Dbld., which averages rather larger than its ally, has the costa of the fore-wing more arched, the silvery markings distinctly whiter and far more clearly defined and conspicuous, and the ground-colour much more uniform throughout than *buoliana*, in which this last is paler, and more suffused with orange, anteriorly than posteriorly. The nature and constancy of these differences, and the entire absence of any intermediate forms, would, I believe, convince any one, who could compare together lengthy series of both insects, that they are specifically distinct, and a close acquaintance, such as I have enjoyed, with both in nature would certainly render "assurance doubly sure."

These opportunities being denied to Continental entomologists, owing to the fact that the latter form, as indicated by Staudinger and Rebel (*op. cit.*, p. 103), has only been found in Britain, the practically unanimous verdict of experienced British Lepidopterists, both past and present, that *pinicolana*, Dbl., is not conspecific with *buoliana*, Schiff., should surely find acceptance with them. If any specialist will kindly undertake to compare the genitalia, which may perhaps also present marked differences, I will gladly supply him with plenty of individuals of both these species.—EUSTACE R. BANKES, Norden, Corfe Castle: *July 25th*, 1907.

P.S.—Since the above was set up in type, Lord Walsingham has kindly informed me that besides the species mentioned by Sorhagen, *Pinus maritima* and *pumilio* have been chronicled by Hartmann [MT. Münch. Ent. Ver., III, 181, No. 921 (1879)], and *austriaca* and *excelsa* by Barrett [Lp. Br. Is., XI, 33-4 (1907)], as foodplants of *E. buoliana*. *P. maritima* being synonymous with *P. pinaster*, the latter, under its later name, is already in the list of recorded food-plants.—E. R. B.: *August 16th*, 1907.

Note on the life-history of Tortricodes chapmani, Wlsm.—The larvæ were abundant in the first week in April on the top of Monte Venere (2900 ft.) at Taormina in the flowers of *Anemone (stellata?*, apparently the species that is common on the Riviera, with numerous narrow violet sepals). This anemone was only met with at this one station. The larvæ were pale and fleshy (no description taken), they bent the sepals over, like several *Cnephasias* do with *Chrysanthemum* flowers, and ate all parts of the flower. The pupa has usual *Tortrix* characters, it has a strong "beak," no face prominence as *torticella* has, and differs very materially in its anal armature, having an antero-lateral spine (one on either side), and a terminal (dorsal) flattish process ending in a sharp spine at each lateral angle; the anterior ones are somewhat hooked, suitable for holding the pupa back, or in actual backward movement.—T. A. CHAPMAN, Betula, Reigate: *August 16th*, 1907.

Meessia richardsoni, Wlsm.; n. syn. = *Tinea *vinculella*, Wlsm. Ent. Mo. Mag. XXXVI. 176 (1900), nec. HS. (LEP: TIN.).—The statement that "*vinculella*, HS., DOES occur in England *teste* a good Dorsetshire specimen in Bankes' Coll." for which I am responsible, under the above reference, was a quotation from my MS. notes made in 1895. The specimen was not before me in 1900 when I described *richardsoni*. Mr. Bankes has now again submitted to me the single specimen referred to [Wlsm. Det. 5027: MS. 322 (1895)], and writes as follows:—"Ever since your paper was published I have been meaning to submit this individual to you in the hope of convincing you that it is really *richardsoni*, and not *vinculella*, and that the latter does not, to our knowledge, occur in Britain. It is *the actual specimen* upon which your note, at the bottom of p. 176 (Ent. Mo. Mag. XXXVI), retaining *vinculella*, H.S., as a British species was founded, and is the only British reputed *vinculella* in existence. The notes quoted in your paper were made after we had together examined various specimens, and our views then quite coincided. But not long afterwards I reared a long series of *T. richardsoni* from larvae collected in the identical spot of ground where the individual in question was taken, and, on thus

getting to know it in all its variations, I at once saw that my supposed *vinculella* was merely *richardsoni*, from some of my bred examples of which it is absolutely inseparable. Had I known that you were intending to publish anything on the subject, I should, of course, have told you of this change of opinion." (*Bankes*, i. 1., 15.VIII.1907). I must now admit the error, and express my entire concurrence with Mr. Bankes' opinion.—WALSINGHAM, Merton Hall, Thetford: Aug. 17th, 1907.

Pompilus sanguinolentus in Surrey.—I should be glad to briefly record the occurrence of this Aculeate, which has been, up to the present, only known as British by one ♀ taken in the New Forest in July, 1900, by Dr. Sharp. The specimen now recorded is a ♂, and was taken August 1st, 1907. I shall hope to add a further note at a later date.—C. H. MORTIMER, Wigmore, Holmwood, Surrey: August 4th, 1907.

[Mr. Mortimer may well be congratulated on having discovered this rarity in a fresh British locality; although he at once recognised the species himself, he has since shown it to me, and very liberally added it to my collection.—E. SAUNDERS].

Obituary.

John Harrison.—The north of England has lost a well known Lepidopterist in the death of Mr. John Harrison, of Barnsley, which took place on July 11th last. Mr. Harrison was 73 years of age, and was out of doors on July 5th, when he seems to have caught a chill, which developed into pleurisy and pneumonia with fatal result in less than a week. For a very long period he was an active and enthusiastic collector, devoting his energies chiefly to the woods of his native county; and often have we enjoyed outings with him in Edlington, Dunford Bridge, and other woods. He was one of the five founders of the Barnsley Naturalists' Society in 1867, a local Society which is now one of the most flourishing in South Yorkshire. He was elected a Fellow of the Entomological Society of London in 1889.—G. T. P.

Society.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, July 11th, 1907, Mr. R. ADKIN, F.E.S., President, in the Chair.

Mr. Waterer, Brockley, was elected a Member.

Mr. Rayward exhibited fine bred specimens of *Agriades bellargus* and *Polyommatus icarus*, and commented upon their size and brilliancy in spite of the fact that ants were almost constantly in attendance upon the larvæ. Mr. H. Moore, specimens of *Euchelia jacobææ* from the Dunkirk sand dunes, one of which was exceedingly pale, and a Cricket from Lisbon. Mr. Gibb, the "Simplex" net, frame, and stick. Mr. Sich, cocoons of *Cedestis farinatella*, a Lepidopteron whose larva lives in the needles of Scotch fir. Mr. Newman, (1) a gynandromorphous specimen of *Amorpha populi*; (2) bred series of *Melitea aurinia* from Kent and Ireland; (3) a bred series of *M. cinxia*; (4) a *Smerinthus ocellatus* with extreme develop-

ment of the pink colour of the fore-wings; (5) bred specimens of *Dicranura bicuspis* from Tilgate; (6) a selection of under-sides of *Polyommatus icarus* from North Kent; (7) pupæ and full-grown larvæ of *Argynnis paphia* and *A. adippe*; (8) living larvæ of *Agriades eorydon*; (9) bred specimens of *Cucullia gnaphalii*; and (10) very fine and extremely varied series of *Boarmia repandata* from Leigh Woods, Torquay, Epsom, and North Kent, including extreme var. *conversaria* and melanic forms.—HY. J. TURNER, *Hon. Sec.*

SPANISH AND MOORISH MICROLEPIDOPTERA.

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

[Continued from Vol. XI., p. 8 (1904)].

GELECHIIDAE.

322 : 1—ANAPHAULA, Wlsm.

ANAPHAULA, Wlsm. Ent. Mo. Mag. XL. 268-9 (1904).

Type, Gelechia gaditella, Stgr. (Wlsm., 1904).

Antennae scarcely exceeding half the wing-length, slightly serrate; basal joint without pecten or shield of scales. *Maxillary Palpi* drooping, short. *Labial Palpi* smooth, median joint slightly thickened, not roughly clothed; terminal joint moderately stout, not sharply acuminate. *Haustellum* moderate. *Head* smooth, with long, curved, flattened scales meeting over the face. *Thorax* smooth. *Forewings* short, obtusely lanceolate, rather coarsely scaled: *neuration* 12 veins; 7 and 8 stalked, to costa, almost comate with 9; 2 to 6 remote; discoidal subobsolete between 5 and 6. *Hindwings* with the apex strongly produced, termen almost erect to 5, then rounded, dorsum straight; cilia 2½: *neuration* 8 veins; 3 and 4 remote, but discoidal absent between 4 and 5; 5 continued to base as media, discoidal absent between 5 and 6; 6 and 7 remote, but approximating towards base. *Abdomen* not flattened. *Legs*, hind tibiae clothed with long loose hairs.

This genus, which was established when describing PROACTICA, [Ent. Mo. Mag. XL. 268-9 (1904)] belongs to the *Aristotelia* section of the *Gelechiidae*. It is allied to *Colopteryx*, Hfm., which is derived from a form similar to *Anaphaula*, by coincidence of 7 and 8 of the forewings, but most nearly allied to *Proactica*, from which it differs in the absence of clothing on the basal joint of the antennae and in the discoidal being subobsolete between 5 and 6 in the forewings and absent between 4 and 6 in the hindwings.

The *neuration* of APATETRIS, Stgr., is not described, and I am unacquainted with the genus which is placed next to *Colopteryx* in Staudinger and Rebel's Catalog (and may not be structurally distinct from *Anaphaula*, but this can only be determined when the *neuration* of *Apatetris* is made known).

2903 : 1.—ANAPHAULA GADITELLA, Stgr.

Gelechia gaditella, Stgr. Stett. Ent. Ztg. XX. 243, No. 91 (1859)¹; Stgr.-Wk. Cat. Lp. Eur. 115, No. 1713 (1861)²; Stn. Tin. S-Ent. 141, 150, No. 30, 334 (1869)³. *Doryphora?* *gaditella*, Stgr.-Wk. Cat. Lp. Eur. 298, No. 2039 (1871)⁴; Hrtm. MT. Münch. Ent. Ver. IV. 23, No. 2039 (1880)⁵. *Gelechia (Lita) gaditella*, Stgr.-Rbl. Cat. Lp. Pal. II. 147, No. 2658 (1901)⁶. *Gelechia gaditella*, Wlsm. Ent. Mo. Mag. XXXIX. 182-3 (1903)⁷.

Hab. : SPAIN (ANDALUSIA)¹ 7. CADIZ — Cadiz, 29.I.1858, 1. 2. 5; 28.I.1902, 14-15.V.1902. Larva, *Atriplex halimus*, 14.V., excl. 1.VI.1902 (*Wlsm.*).

The larva mines and eats the small leaves of *Atriplex halimus*.

348.—SYMMOCA, Hb.

3030 : 1.—SYMMOCA PETROGENES, *sp. n.*

Antennae $\frac{5}{6}$, rather wide and flattened; black. *Palpi* slender, porrect, reaching more than the length of the head beyond it, median joint moderately and smoothly scaled, terminal joint at least as long as the median, slender; white, a few black scales on the outer side of the median, the extreme apex of the terminal also black. *Head* roughly clothed; pure white. *Thorax* white, faintly sprinkled with fuscous. *Forewings* moderately broad, short, obtuse; chalky white, sparsely sprinkled with mixed ferruginous and black scales; there are three narrow, black, costal patches, the first somewhat elongate, at the base, with a small semidetached spot beneath it; the second, shorter, at one-third, with a detached, partly ferruginous, spot beneath it; the third, beyond the middle, with a partly ferruginous spot beneath it at the end of the cell, blending with a diffused patch of black scaling which reaches the dorsum before the tornus; the termen, together with the white cilia, lightly sprinkled with black and some ferruginous scales. *Exp. al.* 11 mm. *Hindwings* 1; brownish grey; cilia paler, with a slight ochreous tinge along their base. *Abdomen* brownish grey. *Legs* very pale brownish grey, the tarsi smeared with fuscous externally.

Type, ♂ (90075). Mus. Wlsm.

Hab. : GIBRALTAR, 3.VI.1903. Two specimens.

Intermediate between *signatella*, Hb., and *nigromaculella*, Rgt., from the former it differs conspicuously in the absence of a strong antemedian oblique detached streak crossing the fold, this is reduced to a small spot; it also differs noticeably in the spot at the base of the costa being somewhat produced outward along the costa, rather than being limited to the extreme base, and in the consequently much shorter distance between this and the second costal spot, moreover, although there are a few ferruginous scales, there is no suffusion of

that colour on the cell. The hindwings are also somewhat paler. From *nigromaculella* it may be separated by its markings being less intensely black, and less produced across the wing towards the dorsum, and from both species it can be separated by its much smaller size.

OECOPHORIDAE.

369.—DEPRESSARIA, Hw.

= SIGANOROSIS, Wlgrn. (Forewings with 2 and 3 separate).

3297 : 1.—DEPRESSARIA CUPRINELLA, sp. n.

Antennae greyish fuscous. *Palpi* pale ochreous, tending to form two darker transverse bands on the hirsute median joint, the terminal joint also darkened at the base. *Head* and *Thorax* pale ochreous, the latter clouded anteriorly with fuscous, and with a fuscous spot behind. *Forewings* rather narrow, pale cinereous, varying to very pale ochreous, clouded irregularly with greyish fuscous; below the fold a fuscous patch is diffused and dilated outward, with sometimes a small spot at the base of the costa above it; in the costal shading three fuscous spots are faintly indicated, one before, one at, and one beyond the middle; these are more or less connected, the first two with outwardly oblique shade-bands, including such indication of the discal spots as can be seen in the more or less general suffusion; the outer costal spot is scarcely separated from a broader, outwardly angulate shade-band, more or less separated from the apical and terminal shading preceding the pale cinereous cilia, which are sprinkled, or suffused, with greyish fuscous. *Exp. al.* 16—18 mm. *Hindwings* rather shining, pale greyish cinereous; cilia pale cinereous, with a slight brownish tinge. *Abdomen* brownish cinereous. *Legs* pale brownish cinereous.

Type, ♂ (86859); ♀ (86860). Mus. Wlsm.

Hab.: SPAIN — MALAGA — El-Chorro, 5.I.1901: SEVILLA — Coria-del-Rio, 10.XII.1900; Alcalar, 12.XII.1900: CADIZ—Chiclana, 25.II.1901. MOROCCO—Tangier, 13.IV.1901, 14.IV—18.V.1902. Twenty-three specimens.

In some varieties the paler portions of the wing develop a distinctly reddish suffusion, especially towards the base of the costa, and this is also noticeable on the head and anterior portion of the thorax, also on the bands of the anterior tarsi. In the darker varieties the subfasciate appearance is obliterated in the general suffusion.

I have fourteen specimens from Coria-del-Rio (near Seville), three from Chiclana, two from Alcalar (also near Seville), one from El-Chorro (near Malaga), and three from Tangier, all of which appear to belong undoubtedly to the same species.

The only specimens in my collection, not taken by myself, which can reasonably be compared with *cuprinella*, and which may possibly

be that species, although more material might enable me to separate them, are two (5250-1) received from the late M. Ragonot in 1894, bred from larvae on an Umbellifer; one (13283) received from M. l'Abbé J. de Joannis, taken at St. Charles (near Algiers); and one (in the Zeller Collection) received from Standfuss, from Palermo. I will not commit myself so far as to say that they are certainly identical with the species here described, which is certainly not the same as *marcella*, Rbl., for a Cotype of which I am indebted to Dr. Rebel, who has expressed himself (*i.l.*, 22.11.1903), as of the same opinion.

I met with *marcella* at Grosseto, in Tuscany, on May 4th, 1893, flying in very great abundance under a rough hedge (85535-6); and a single specimen (in the Zeller Collection) received from Mann, from Brussa, is the same.

In *marcidella* the outer shade-band before the apex is not indented by an angular projection of the pale ground-colour at its inner edge, and has a curved rather than an angulated appearance, moreover such indication of dark transverse bands as are to be found in it are straighter and more direct, *i.e.*, not only less oblique, but less irregular. It is also uniformly smaller in size so far as I can judge.

BLASTOBASIDAE.

350 : 1.—TECMERIUM, *gn. n.*

(τεκμήριον = a sure sign).

Type, *Blastobasis anthophaga*, Stgr. (= *stacchadella*, Cnst.).

Antennae serrate, ♂ biciliate (1), not excavate; basal joint with a broad conchoidal shield of scales, scarcely divided into a pecten beneath. *Maxillary Palpi* short. *Labial Palpi* recurved to the vertex, closely clothed; terminal joint shorter than median. *Haustellum* moderate. *Forewings* elongate, costa straight to beyond end of cell, thence depressed to the obtusely pointed apex; dorsum convex, with a slight indentation on vein 1c (not apparent unless denuded): *neuration* 11 veins (7 and 8 coincident, to costa); 10 from near end of cell, closely approximate to 9; with costal stigma from end of 12 to a little beyond the subobsolete termination of 11; from beyond the origin of 11, at middle of cell, the cell is filled with a thickening similar to the stigma, this thickening is also slightly noticeable between radius and 11, and between cubitus and 1c (= fold); cell very long, cubitus approximating to radius towards base and forming a narrow neck, beyond which it bulges downward; the internal veins are hardly traceable, being absorbed in the thickening of the membrane; 6 almost straight, 4 and 5 slightly arched; 3 short, almost connate with 4; 2 weak, short, almost upright; the shortening of veins 2 and 3 is caused by the almost angular indentation of the margin at vein 1c. *Hindwings* broadest towards the base, the costa slightly sinuate before middle, apex slightly depressed, dorsum flattened, termen oblique; cilia 1½: *neuration* 8 veins; 6 and 7 remote,

nearly parallel; 8 obliquely out of radius before one-third, running parallel with and scarcely separate from costa to about three-fourths; at about midway between its termination and the end of the cell vein 8 is slightly indented from the costa, and from the angle thus formed it is connected by an oblique transverse bar to vein 7 at a little beyond the end of the cell; 4 and 5 stalked, connate with (or out of) 3; median continuous with 6. *Abdomen* short, somewhat flattened. *Legs*, hind tibiae hairy.

[N.B.—The actual type of this genus is *Symmoca staechadella*, Cnst.; described from specimens from the South of France.]

This genus, having veins 4 and 5 of the hindwings stalked, belongs to the group comprising *Aurimobasis*, Wlsm., *Valentinia*, Wlsm., and *Iconisma*, Wlsm. The two latter genera differ from it in having vein 3 of the hindwings separate, and a pecten on the basal joint of the antennae, while *Tecmerium* differs from all three in the coincidence of veins 7 and 8 of the forewings.

The persistence of a cross-vein between 7 and 8 of the hindwings is interesting, and reminds one of *Martyringia*, Busek, and *Azinis*, Wkr.

When describing the genus *Iconisma* (Pr. Z. Soc. Lond., 1897, 96) I remarked that "so far as neuration is concerned, the European species *Blastobasis anthophaga*, Stgr., should be placed in this genus," and when pointing out that *anthophaga*, Stgr., = *staechadella*, Cnst. [Ent. Mo. Mag. XXXVII. 182-3 (1901)], I still placed it there with a "?." Had I not now taken the further precaution (more than ever proved necessary by this illustration) of carefully denuding the wings and studying them under the microscope, rather than merely with benzine and a pocket lens, I should have been quite satisfied to leave it there, associating with it my new species *spermophagia*, merely, as heretofore, noticing the discrepancy, from the type, in its antennae; but I now recognise its even nearer alliance to *Aurimobasis*.

3051 : L.—TECMERIUM ANTHOPHAGUM, Stgr.

= *STAECHADELLA*, Cnst.⁸

Blastobasis anthophaga, Stgr. Berl. Ent. Zts. XIV. 319, No. 102 (1870)¹; Stgr-Wk. Cat. Lp. Eur. 309, No. 2304 (1871)²; Mill. Cat. Lp. Alp-Mar. 347 (1875)³; Hrtm. MT. Münch. Ent. Ver. IV. 33, No. 2304 (1880)⁴. *Symmoca staechadella*, Cnst. Ann. Soc. Ent. Fr. LIII (6.s. IV : 1884). 260-1, Pl. X. 23 (1885)⁵; Stgr-Rbl. Cat. Lp. Pal. II. 163, No. 3045 (1901)⁶. *Blastobasis anthophaga*, Stgr-Rbl. Cat. Lp. Pal. II. 163, No. 3057 (1901)⁷. *Iconisma* ? *anthophaga*, Wlsm. Ent. Mo. Mag. XXXVII. 182-3 (1901)⁸.

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3051 : 2.—TECNERIUM SPERMOPHAGIA, *sp. n.*

= *Blastobasis sp. ? (ex Phlomis)*, *Wlsm. Ent. Mo. Mag. XXXVII. 234, 237 (1901)*.

Antennae and *Palpi* brownish grey. *Head* and *Thorax* pale cinereous, dusted with brownish grey. *Forewings* whitish cinereous, profusely dusted with brownish grey, especially along the costa and toward the apex, where it tends to follow the lines of the neuration; a discal spot scarcely before the middle is faintly indicated, as is also a slight upright tornal spot; cilia brownish cinereous. *Exp. al.* 14—17 mm. *Hindwings* shining, pale brownish grey; cilia brownish cinereous. *Abdomen* brownish cinereous. *Legs* pale brownish cinereous.

Type, ♂ (97965); ♀ (97966). *Mus. Wlsm.*

Hab. : SPAIN — CADIZ — Chiclana, Larva in seed-whorls of *Phlomis purpurea*, 25.II, excl. 2-18.IV, 14.VI, 18.VIII.1901. Twelve specimens.

An obscure species, having much the appearance of a *Blastobasis* of the *phycidella*, Z., type, but its neuration and the structure of the antennae at once distinguish it. It agrees with *Tecnerium anthophaga*, Stgr., in the coincidence of veins 7 and 8 of the forewings, but differs in having 4 and 5 stalked, connate with 3, and the margin is scarcely impressed on vein 1^c; in the hindwings the neuration is as in *anthophaga*, but there is no cross-vein between 7 and 8, and the discoidal is subobsolete. The palpi also are shorter and scarcely recurved.

Several specimens were bred from seed-whorls of *Phlomis purpurea*, collected owing to the presence of larvae of *Phalonia moribundana*, Stgr.; I also bred a single specimen (97976) from among rubbish on *Thymus sp. ?*, but this may perhaps be accounted for by mere accidental mixture in my bottles.

In *Ent. Mo. Mag. XXXVII. 182-3 (1901)* I published my reasons, apparently good and sufficient, for regarding *Symmoca staechadella*, Cnst., as a synonym of *Blastobasis anthophaga*, Stgr., referring to the specimen (S. France, 6827) which I had purposely obtained from Staudinger with a view to decide this point. My Spanish collection naturally caused me to refer again to Staudinger's

original description, which, although it might be taken to apply perhaps almost equally well to *staechadella*, Cust., or to *spermophagia*, Wlsm., appears to point in some particulars rather to the latter than to the former. It is worthy of remark that the original description is the only direct reference to Spanish specimens of *anthophaga*, which is not even included in Seebold's list of Spanish species [Iris XI, 291-322 (1898)]—all other references are to French specimens, or mere citations of the original reference. If Dr Staudinger is responsible for the error, or his representatives have been issuing another species under his name, any correction should follow from the same quarter, and I deliberately publish the above name for my Spanish species, feeding as it does on a different plant, to show that I do not venture to accense so high an authority, upon the quite insufficient evidence before me, of either intentionally, or unintentionally, misleading Millière, Ragonot, and myself.

3051 : 3.—TECMERIUM ROSMARINELLUM, Wlsm.

Iconisma ? *anthophaga*, Stgr. + *rosmarinella*, Wlsm. Ent. Mo. Mag. XXXVII. 183-4 (1901) ¹.

Hab. : S. FRANCE—Beaulieu. Larva, *Rosmarinus officinalis*, 30.IV., excl. 2-17.VIII.1890.

The recognition of the distinctness of this new genus induces me now to regard as a good species the small *rosmarinella*, originally described as a variety of *anthophaga*, Stgr. In its smaller size and in its almost unicolourous wing-surface it more nearly resembles *spermophagia*, with which it also agrees in its shorter and porrect, rather than recurved palpi. I should therefore place it next this species observing that it is separated from both by its much smaller size (*Exp. al.* barely 12 mm.).

3051 : 4.—TECMERIUM ? MNEMOSYNELLUM, Mill.

Blastobasis mnemosynella, Mill. Cat. Lp. Alp. Mar. 346-7 (1875) ¹. Stgr-Rbl. Cat. Lp. Pal. II. 163, No. 3053 (1901) ².

Hab. : S. FRANCE ^{1, 2}—Cannes, VIII ¹.

It is possible that *mnemosynella*, Mill., of which little is known, should also be placed here, but if so it is more nearly related (by the description of the palpi) to *anthophaga*, than to *rosmarinella* which it resembles in its reduced size.

(To be continued).

IN RE **THIODIA MARITIMA**, WSTWD. [LEP. TIN.],

VERSUS $\left\{ \begin{array}{c} \text{EPIBLEMA CANDIDULANA,} \\ \text{AND} \\ \text{SEMASIA WIMMERANA,} \end{array} \right\}$ STGR-RBL. CAT.

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

257.—**THIODIA**, Hb.

= **SEMASIA**, Hb., Stgr-Rbl. ; = **CYDIA**, Hb., Meyr. ; = **THIODIA**, Hb., Stph., Wlsm., Frnld.

2042 : 1.—**THIODIA MARITIMA**, Wstwd.

= *maritima* (Dale MS.), Wstwd. ; *maritima* (Dale MS.), Dbld. ; = **wimmerana*, Dbld., Steph., Wilk. (*nec* Tr.) ; [? = **lacteana*, Steph. (*nec* Tr.)] ; = *candidulana*, Brt. (? Nlkn.).

Carpocapsa — (*sp. n.*), Dgl. Ent. I. 384 (1842) ¹. *Carpocapsa* *maritima*, Wstwd. Br. Moths II. 138, no. 19 (1844) ². *Catoptria wimmerana*, Dbld. List 26 (1849) ³. *Grapholita wimmerana*, Stph. List Br. An. BM. X. Lp. 62, no. 6 (1852) ⁴. [? *Grapholita lacteana*, (Tr. ?), Stph. List Br. An. BM. X. Lp. 62, no. 7 (1852) ⁵]. *Carpocapsa* *maritima*, Wstwd. Br. Moths (n. ed.) II. 138, no. 19 (1854) ⁶. *Grapholitha wimmerana*, Wstwd. Br. Moths (n. ed.) II. Synopsis p. xi (1854) ⁷. *Catoptria wimmerana*, Stn. Ent. Ann. 1855. 33 (1854) ⁸; (2 ed.) 55 (1855) ⁸. *Grapholita wimmerana*, Wilk. Br. Tort. 243-4, no. 6 (1859) ⁹; Stn. Mn. Br. B. & M. II. 253, 254, 463, no. 1146 (1859) ¹⁰. *Catoptria wimmerana*, Dbld. Syn. List Br. Lp. 25 (1859) ¹¹. [? *Pacdisca lacteana*, Wkr. Cat. Lp. BM. XXVII. 253, no. 6 (1863) ¹²]. *Grapholita wimmerana*, Wkr. Cat. Lp. BM. XXVII. 263, no. 8 (1863) ¹³. *Catoptria wimmerana*, Morris NH. Br. Moths III. 205. Pl. 94.6 (1868) ¹⁴. [? *Grapholitha candidulana*, Nlkn. Lp. Fu. Est-Liv-Kur. II. 413-5, no. 269 (1870) ¹⁵. *Grapholitha* (*Pacdisca*) *candidulana*, Stgr-Wk. Cat. Lp. Eur. 252, no. 1037 (1871) ¹⁶]. *Catoptria* *maritima*, Dbld. Syn. List Br. Lp. [*teste*, Brt. ¹⁸] (1873). *Grapholita candidulana* (*wimmerana*, Wilk.) Brt. Ent. Mo. Mag. XI. 14-15 (1874) ¹⁸. [*Grapholitha candidulana*, Hrtm. MT. Münch. Ent. Ver. III. 185, no. 1037 (1879) ¹⁹; Büttn. Stett. Ent. Ztg. XLI. 413, no. 1037 (1880) ²⁰; Srbgn. Kleinschm. M-Brndbgn.

105, no. 180 (1886)²¹]. *Catoptria candidulana*, Brt. Ent. Mo. Mag. XXIV. 221 (1888)²²; Tr. Nfk. Nat. Soc. IV. 695 (1889)²³. *Grapholitha candidulana*, Rgt. Ann. Soc. Ent. Fr. LXIII (1894), 211, no. 1037 (1894)²⁴. *Cydia candidulana*, Meyr. HB. Br. Lp. 486, no. 13 (1895)²⁵. *Epiblema candidulana*, Stgr-Rbl. Cat. Lp. Pal. II. 116, no. 2080 (1901)²⁶. *Grapholitha candidulana*, Brt. Lp. Br. Is. XI. 212-4, no. 5, Pl. 497. 5, 5^a (1906)²⁷.

Hab.: ENGLAND^{1-14, 17-18, 22-27}—Essex (St. Osyth)^{1-2, 6-10, 11, 25}; Kent (Gravesend)^{9-10, 14, 25}; Sussex²⁷; Suffolk²⁷; Norfolk (King's Lynn)^{23, 27}. [[?] LIVONIA^{15-16, 21, 26-7}; [?] GERMANY^{15-16, 20-21, 26-7}]. Larva—fl. *Artemisia maritima*, IX—(h)^{22-3, 25, 27}; [[?] *Artemisia absinthium*²⁰⁻²¹; *A. vulgaris*²⁰⁻²¹]. Imago, VII. 1, 9-10, 11-15, 20-1, 25, 27.

In July 1842 Douglas captured some specimens of a *Tortrix* at St. Osyth (Essex) which he recorded as *Carpocapsa* —— (*sp. n.*) allied to *pupillana* [Ent. I. 384 (1842)], and in 1844 Westwood (Br. Moths II. 138) described the species as new under the name *Carpocapsa maritima* (Dale MSS.). On the last page of the first edition of Doubleday's List (published in November 1849) the same species is identified as *Catoptria wimmerana*, Tr., under which name it is also recorded by Stephens in the British Museum List (1852), and, quoting from this List, Westwood in the Synopsis to the second edition of his British Moths (p. xi) sunk *maritima* as a synonym of *wimmerana*, Tr. In this he was followed by Stainton, Wilkinson and others.

About 1870 some doubt seems to have arisen as to the correct application of the name *wimmerana* to our English species, and in the last Supplement to his List (1873), Doubleday revived Dale's MS. name *maritimana* which he had formerly used as a synonym. Writing of "*Grapholita wimmerana*, Wilk.," Barrett [Ent. Mo. Mag. XI. 14-15 (1874)] states that he should have followed Doubleday in substituting for this Dale's MS. name *maritimana*, but he chooses *candidulana*, Nlkn., as the earliest name, adding "there being no figure or description published of *maritimana*, Dale." In this he was obviously misled by Doubleday and by Stephens, who had both overlooked Westwood's description of *maritima*, which name must undoubtedly be accepted in lieu of "*wimmerana*, Wilk." (*nee* Tr.). In identifying our British specimens as *candidulana*, Nlkn., Barrett was influenced by the reception of exponents of that species from Zeller, and found "that the paler specimens of our insect agree

precisely with types of *candidulana*, Nolek.,” adding “Some examples taken by Mr. Howard Vaughan are nearly white. It is very possible that this variety may have been called *lacteana*, Tr., by Stephens.” I have not seen Howard Vaughan’s specimens, but I have pale varieties, and have carefully compared them with a German series. Although I am not prepared at present to discuss the points of difference, it seems to be somewhat doubtful whether they have been properly united. One character by which I have not yet failed to distinguish specimens taken in England is to be found on the under-side of the costa, on the apical third of the forewings, where *candidulana*, Nlkn., possesses about three pairs of short, stumpy, and sometimes indistinct, white streaks—in *maritima*, Wstwd., these are also present, but, especially toward the apex, more produced and attenuated.

For the present I should not propose conclusively to eliminate *candidulana*, Nlkn., from the synonymy; at the same time we must discount the British references to “*lacteana*, Treit.?” [Stph. List. Br. An. BM. X. Lp. 62, no. 7 (1852); Wkr. Cat. Lp. XXVII. 253, no. 6 (1863)] relating to a single specimen in the British Museum, which Stainton [Ent. Ann. 1855, 33 (1854): (2 ed.) 55 (1855)] believed to be *wimmerana* [i.e., *maritima*], and Doubleday [List 25 (1859, &c.)] regarded as a variety of *pupillana*, L.

In Staudinger and Wocke’s Catalog [1252, no. 1037 (1871)], *candidulana*, Nlkn., is placed in *Grapholitha*, Tr. (B. *Paedisca*, Ldr.), characterised by the presence of the costal fold in the ♂, although in Noleken’s (then recent) description of “*candidulana*, Hnm., in lit.” we read “Der Mangel des Flügelumschlags trennt *Candidulana* zwar auf den ersten Blick, aber nur in männlichen Geschlechte, von *Albidulana* und *Laeteana*,” nor did Staudinger and Rebel discover the mistake, for they refer it [Cat. Lp. Pal. II. 116, no. 2080 (1901)] to *Epiblema*, Hb., Meyr., a genus consisting of species possessing a costal fold. Wilkinson, Barrett, Meyrick, and other British authors following these, have rightly recognised that *maritima*, Wstwd., did not possess this character, and have classified it accordingly. It properly belongs, with the true *candidulana*, Nlkn., to the genus *Thiodia*, Hb., of which the type is *citrana*, Hb.

We are now left with the question—What is the true “*Grapholitha wimmerana*, Tr.”? Referring to the Zeller Collection we find two blocks labelled “*wimmerana*,” the first consisting of three specimens, one of these being a specially labelled exponent from Kinder-

mann, "*wimmerana*, Kdm.," which Zeller testifies, by another label, to agree with "*wimmerana*, Tr. 10, 3. 111; HS. 4, 246, f 309; Hum. p. 170." We must accept this as the true *wimmerana*, Tr., Treitschke having received his specimen, with the same name, also from Kindermann. Zeller's second specimen, a small ♂, is from Fischer von Röslerstamm, labelled "*wimmerana*, Fünf. FR.688," and with these he places a third ♂, from Sarepta, Christoph, 7.V.1859, which agrees with a series in Christoph's Collection,—these doubtless are the topotypes of "Srp." in Staudinger's Catalog. With the exception of a slightly different arrangement of the white costal marks towards the apex (probably somewhat variable), there seems to be no sufficient reason for separating these Sarepta specimens from *wimmerana*, but it certainly is noticeable that these marks do not taper to fine points (as described by Treitschke), but converge upon each other before losing anything of their width, and the first and fourth from the apex are usually joined at their points, enclosing a space in which are three shorter ones; moreover the hindwings are paler.

The second block consists of three specimens of *maritima*, Wstwd., one sent by Barrett, as "*wimmerana*," in 1871, the others by Doubleday, as "*wimmerana*?", in 1874. Zeller did not actually place these with his *wimmerana*, still less did he put them near *candidulana*, Nlkn., but we must admit that these are not the pale variety which has more justifiably been compared with that species.

Hofmann's Collection contains as "*wimmerana*" three specimens only, two from Herrich-Schäffer's Collection, agreeing with his fig. 309, and perhaps not materially disagreeing with Treitschke's description, but in spite of Zeller's opinion to the contrary, as stated on his label referred to above, all three (and probably also the figure) are unquestionably *incana*, Z.

Duponchel [HN. Lp. Fr. Sppl. IV. 185-6, no. 364. Pl. 66. 1 (1842)] states that he received a specimen from Fischer von Röslerstamm, and that the species had not been found anywhere but in Hungary, where it was discovered by Kindermann: his figure (66.1) ♀, therefore represents another of the original specimens. The clue to the locality is to be found on the label of Zeller's second specimen, where "Fünf." evidently refers to Fünfkirchen (= Pécs), on the west side of the Danube (about 100 miles south of Buda-Pesth, where Kindermann resided).

PHALACRUS HYBRIDUS, FLACH, AN ADDITION TO THE LIST OF
BRITISH *COLEOPTERA*, WITH A REVISION
OF THE BRITISH SPECIES OF *PHALACRUS*, PAYKULL.

BY E. A. NEWBERY.

The genus *Phalacrus* has received very little attention in this country for many years. In 1888 Dr. Karl Flach published a revision of the *Phalacridæ* (Best. Tab., Heft. xvii, Brünn), but it does not appear that Canon Fowler had seen this work, since in his "British Coleoptera" (Vol. iii, p. 148), published a year after, he uses the characters given in Cox's "Handbook" of 1874 almost without alteration. In 1892 M. Guillebeau essayed a revision of the group. While giving great credit to Dr. Flach for the excellent characters for classification which he had brought forward, he ignores the most valuable of them all—*i.e.*, the "alutation" of the upper surface—for no better reason than that it requires the use of a compound microscope, an indispensable aid, which, in his desire to popularize the subject, he mistakenly rejects. He relies chiefly on the form and convexity of the body, the depth of the dorsal striae, and some other less important characters, with the result that, although he has done a certain amount of good work, he has greatly multiplied species—so called—many of which have been very properly reduced to varieties or synonyms in the last (1906) European Catalogue.

The principal characters which Dr. Flach uses for classification are the presence or absence of the basal border of the thorax, the alutation of the upper surface and the shape of the body. The size of several of the species is very variable, so much so as to suggest a possible subsequent subdivision into more species, if good and constant characters can be found. At present I have only been able to find good characters for five British species, and have been compelled to reject *P. humberti*, Rye, and *P. brisouti*, Rye, for the want of these characters in the original descriptions. I have not, however, seen Rye's types, but the fact that these two so called species are recorded from Britain only, goes far to confirm my doubts as to their specific or even varietal value.

Before examining the specimens with a one inch objective, they should be cleaned with chloroform, which will be found much better for this purpose than benzine.

The following table will serve to separate the British species:—

A.—Thorax bordered in front of scutellum.

I.—Elytra alutaceous throughout.

a.—Thorax not alutaceous.

Size $1\frac{1}{2}$ to $3\frac{1}{4}$ mm. *P. hybridus*, Flach (v. *confusus*, Guill.).

For details see Flach's diagnosis.

aa.—Thorax similarly alutaceous to elytra.

b.—Last joint of antennæ slender, nearly three times as long as broad; form of body broader and more convex; alutation finer; punctuation of interstices of elytra not in rows. $1\frac{1}{2}$ to 3 mm...

P. corruseus, Pz.

bb.—Last joint of antennæ stout, about twice as long as broad; form of body narrow elliptical, less convex; alutation coarser; interstices of elytra with rows of punctures. $1\frac{1}{2}$ to 2 mm....

P. caricis, Sturm.

II.—Elytra not alutaceous, except sometimes at extreme apex, dorsal interstices with a single row of large punctures on the inner side of each stria; thorax not alutaceous. $1\frac{1}{4}$ to $1\frac{3}{8}$ mm. *P. substriatus*, Gyll.

AA.—Thorax not bordered in front of scutellum.

(Thorax not alutaceous; elytra feebly so).

c.—Form short, broad, and convex; legs and antennæ sometimes reddish.

2 mm. *P. championi*, Guill.

brunnipes, Rye, nec. Bris.

c.—Form longish oval, somewhat narrowed behind, resembling *Olibrus*

flavicornis, Sturm. $2\frac{1}{4}$ to 3 mm. [*P. brunnipes*, Bris.].

Phalacrus hybridus, Flach. The following is Flach's diagnosis:—

Rotundato-ovalis, Phal. grossi fere statura, inter hunc et *P. corruseus intermedius*, thorace sat dense subtiliter punctulato, interstitiis glabris, stria marginali posteriore media distincta, lateribus deficiente; elytris retrorsum vix angustatus, subtiliter reticulatis; strix seriesque dorsales subtilissimæ; interstitio suturali levè elevato, serie punctorum 4--5 majorum, ceteris vage obsolete punctulatis; antennarum clava articulo II præcedentibus duobus longiore, suam latitudinem duplo longitudine superante. Long. 3--4 mm. Patr. Transsylvania.

I am unable to say with any certainty whether our insect is the var. *confusus*, Guill., or not, owing to M. Guillebeau's vague and indefinite description; but *confusus* being a common French form, it would seem to be most probable. It appears to be chiefly a coast species here, Deal, Sandwich, Bognor, Southend, Erith, Felixstowe, Sheppey. There are two specimens in the Power Collection labelled "Lewisham."

P. corruseus, Pz.—The differences between this common and widely distributed species are so well indicated in the above diagnosis of *hybridus* that nothing more is needed. Like the latter species, or at all events the var. *confusus*, it varies extremely in size, and as small narrow specimens are liable to be taken for *caricis*, I have given several points of distinction in the table. *P. humberti*, Rye, and *brisouti*, Rye, appear to be forms of this species.

P. earicis, Sturm.—The somewhat flat elliptical form will at once distinguish this species, which is sometimes of a brown colour. Found on *Carex* rather commonly.

P. substriatus, Gyll.—A very short convex insect, which appears to be rare. I know of no recent captures.

P. championi, Guill.—Allied in form to both *substriatus* and small specimens of *hybridus*, but can be separated from the former by its finely alutaceous elytra, and from both by the absence of the border in front of the scutellum. It differs from *brunnipes*, Bris., which does not appear to be British, by its smaller size, shorter and more convex form, and finer rows of elytral punctures. The abdominal segments are narrowly ferruginous according to M. Guillebeau. Most of the known specimens are from Sheerness, but there are some in the Power Collection labelled "Madingley" (a wood near Cambridge).

I am very much indebted to Mr. E. A. Waterhouse for calling my attention to the confusion existing in this genus, and for furnishing me with a large number of specimens for examination.

12, Churchill Road,
Dartmouth Park, N.W.
August 19th, 1907.

CRYPTOPHAGUS SUBDEPRESSUS, GYLL., A NEW BRITISH
BEEBLE.

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

On August 4th last, when beating young fir trees near Strathpeffer, Ross, I captured two specimens of a *Cryptophagus* which I at once recognised as being new to me on account of their very closely punctured and dull appearance. I had little difficulty in identifying them from Herr Ganglbauer's work on the *Coleoptera* of Middle Europe as *C. subdepressus*, Gyll., and have since confirmed this by comparing them with specimens kindly lent to me by Capt. Deville. In general shape and size *C. subdepressus* somewhat closely resembles *C. scanicus*, L., but differs from it in several important particulars. The punctuation is much thicker, and the apex of the elytra is nearly as strongly punctured as the base. The pubescence is shorter and finer. The thorax is much more narrowly margined, and the callosities at the anterior angles are smaller. The lateral tooth is in the middle of the sides, and is small. Ganglbauer classes it with *C. validus*,

Kraatz, on account of the punctuation of the apex of the elytra, but *C. validus* is a much larger species with thicker antennæ, and with a more distinct transverse impression at the base of the thorax. According to Ganglbauer *C. subdepressus* is found rarely on "Nadelholz" and bushes; Capt. Deville tells me that it is taken in France in the mountains by beating the lower branches of fir trees, especially *Picea excelsa*, and that it has spread to the plains with the plantations of pines, where it is taken in company with *Micrambe abietis*, Payk.

Mr. Chitty is to be congratulated on his notes on the genus *Cryptophagus*, and I have found them very useful. *C. scanicus* v. *patruelis*, Sturm, is certainly the form that gives rise to the greatest confusion, as it varies a good deal in breadth and other particulars. *C. umbratus*, Er., I have by no means found the rarity that Mr. Chitty describes it, as I take it not uncommonly here in dry fungi and wood mould. *C. distinguendus*, Sturm, I have only taken in Reading in a warehouse. All my specimens of *C. umbratus* have the thorax dark as in *C. scutellatus*, Newm.

Bradfield :

September 14th, 1907.

DESCRIPTION OF A NEW SPECIES OF *STENOSTOMA* FROM
MALTA.

BY MALCOLM CAMERON, M.B., R.N.. F.E.S.

STENOSTOMA MELITENSE, n. sp.

Narrow, elongate, metallic-green, very finely pubescent with grey.

Head elongate, including eyes only slightly wider than thorax, very finely wrinkled, not punctured.

Antennæ and *palpi* testaceous.

Thorax longer than broad, cylindrical, slightly impressed before scutellum, finely wrinkled transversely, giving it somewhat the silky appearance seen in *Malachius flabellatus*, Friv. *Legs* clear testaceous, *tarsi* infusate.

Elytra broader than thorax at the shoulders, gradually contracted posteriorly, finely but rugosely punctured, with three longitudinal nervures on each, the first very indistinct.

Length, 6 mm.

I tabulate the differences between the species :—

S. cæruleum, Pet.—Size larger (10 mm.), more robust. Antennæ testaceous to the middle of the fourth joint, the remainder dark. Head and thorax with scattered superficial punctuation, the latter contracted anteriorly. Elytra coarsely and rugosely punctured. More pubescent.

S. melitense, mihi. — Size smaller (6 mm.), less robust. Antennæ entirely testaceous. Head and thorax finely wrinkled, not punctured, the latter cylindrical. Elytra finely and rugosely punctured. Less pubescent.

S. melitense was taken at Wied al Juicna, in June, on flowers of *Scolymus*.

R. N. Hospital, Chatham :

August 6th, 1907.

[There are specimens of *S. melitense* from Corsica (Ajaccio) and Sicily in my collection.—G. C. C.]

LEPIDOPTERA AT ELECTRIC LIGHT AT HERCULESBAD,
HUNGARY.

BY A. H. JONES, F. E. S.

During a visit to Herculesbad, from June 15th to 25th last, I had a good opportunity of working the electric light. Some of the nights were extremely favourable, and moths came in considerable numbers. Three species of butterflies were visitors.

The following is a list, and it will be observed that a good proportion of the species are represented in our British list:—

Melitæa athalia, Esp.; *Thecla ilicis*, Esp.; *Zephyrus quercûs*, Esp.; *Smerinthus quercûs*, Esp., occasional specimens; *Hyloicus pinastri*, Esp., one example; *Deilephila euphorbiæ*, Esp., one example; *Metopsilus porcellus*, Esp.; *Cerura furcula*, Esp.; *Dicranura vinula*, Esp., not uncommon; *Spatalia argentina*, Schiff., occasionally; *Pterostoma palpina*, Esp.; *Dasychira pudibunda*, Esp., not uncommon; *Stilpnotia salicis*, Esp., common; *Malacosoma neustria*, Esp., common; *Odonestis pruni*, Esp., common; var. *montana*, this dark form was not rare; *Acrionicta pontica*, Stgr., occasionally; *Agrotis patris*, Esp.; *A. segetum*, Esp.; *Mamestra genistæ*, Hb., several; *Miana bicoloria*, ab. *furuncula*, Hb.; *Leucania l-album*, Esp., several; *Eutelia adulariæ*, Hb.; *Anarta funebris*, Hb.; *Abrostola tripartita*, Hufn. (*urticæ*, Hb.); *Grammodes algira*, Esp.; *Ædia funesta*, Esp., not uncommon; *Catocala nymphagoga*, Esp.; *Habrosyne derasa*, Esp., occasionally; *Geometra vernaria*, Hb.; *Acidalia remutaria*, Hb., common; *A. decersaria*, ab. *difflata*, H.-S., not uncommon; *Anaitis plagiata*, Hb.; *Larentia dotata*; *Ennomos erosaria*, Hb.; *Angerona prunaria*, occasionally; *Semiothisa liturata*, Hb.; *Boarmia repandata*, Esp.; *B. roboraria*, Schiff., rather common; *B. consortaria*, Esp., rather common; *Hylophila bicolorana*; *Spilosoma lubricipeda*, Esp.; *Arctia villica*, Esp., frequently; *Callimorpha dominula*, Esp., frequently; *Mitochondria miniata*, not uncommon; *Lithosia complana*, very common; *Cochlidion limacodes*, Esp. (*testudo*, Schiff.), both males and females somewhat common; *Cossus ligniperda*, a frequent visitor; *Zeuzera pyrina* (*æsculi*, Esp.), occasional specimens.

Shrublands, Eltkam :

August 22nd, 1907.

PHORA GRACILIS, A NEW SPECIES BELONGING TO BECKER'S
GROUP I.

BY JOHN H. WOOD, M.B.

This very distinct species, of which at present only the female has been obtained, will come next to *unispinosa*, Ztt., with which it agrees in having but two scutellar bristles and in the incrassated second thick vein of the female. It is a particularly long and slender insect, hence its name.

♀. Thorax and abdomen black, the former shining and narrow, the latter dull, long and slender; frons highly glossy and scarcely broader than long, palpi black and of the usual form; wings dark grey, especially in the course of the thin veins which stand out conspicuously, costa barely to middle of wing, otherwise venation and fringe as in *unispinosa*; legs long and slender, dark brown or blackish, knees yellow and front coxæ pale yellow, a single small spine in upper third of middle tibiæ and a still smaller one at the tip on the outer side, none on fore and hind tibiæ.

Long., 2-2½ mm.

The only species with which it can possibly be confounded is *unispinosa*; but at the same time the points of distinction are many and obvious, such as the narrow and glossy frons, the black palpi (in *unispinosa* they are of a clear yellow), the dark wings, and the colour and armature of the legs. Four examples have been taken, always in late autumn, from September to November, in the years 1905, 6 and 7. Three were obtained by sweeping under high trees in Stoke Wood, and the fourth was boxed whilst running up a beech trunk in the park adjoining.

The following alterations will be necessary in the table (vol. xvii, p. 193):—

19.—Halteres black or blackish.

a. Legs moderately stout and yellow; spines on all the tibiæ...

unispinosa, Ztt.

b. Legs long and slender, dark brown; no spines on fore and hind tibiæ...

gracilis, n. sp.

20.—Halteres whitish (*nudipalpis*), or yellow (*autumnalis*).

As the question of distribution is always of some interest, I may mention that since the publication of my former notes on the subject two out of the four British species, which had not then occurred in Herefordshire, have now turned up in the county, and in my own home district too. They are *carinifrons* and *femorata*. The former seems not uncommon in the autumn, and is usually found in wet places; but the latter is scarce, four only having been taken, the dates ranging from April 24th to July 7th.

Tarrington, Hereford:

September, 1907.

NOTE ON THE COUPLING OF *EMPIS BOREALIS*.

BY MILBURN HOWLETT.

During a recent visit to the Highlands I noticed how frequently the female of *Empis borealis* was feeding during the act of copulation. This peculiarity of Empids has often been commented on, but without, as far as I know, anything more than a casual connection between the two acts being inferred. Bearing in mind Professor Poulton's recent work on the diet of Empids, I caught during one afternoon five pairs of *E. borealis in cop.*, and found that all the females, without exception, were engaged on a meal, while of a dozen females caught alone none had prey. Rain put a stop to further observations that day, but on the next opportunity (June 11th) I revisited the same spot, as it seemed to be a favourite trysting-place, meaning to try to see whether the male habitually took advantage of the moment when the female, engaged with prey, could not conveniently repel his advances. I took two pairs *in cop.*, and, as before, both the females had prey; a flying lone male also had prey, but did not seem to be eating it. The sun having made its appearance, some of the flies could now be seen dancing about the lower branches of some firs by the side of a little burn, some eight or nine feet from the ground; soon another, carrying prey, joined them, and flew up and down below the dancers in a provocative manner. After a few moments one of these latter responded, and, after a second's struggle in mid-air while they coupled, the pair flew slowly off and settled on some low heather bushes near by, the female sucking the prey. I had taken it for granted that the dancers were males, and the solitary prey-bearing visitor a female who had been pounced on as she passed, but on returning to the firs it was soon apparent that the dancers were *all females*, for as the sun passed behind a cloud they settled down on the ends of the fir-twigs, where they could be inspected at leisure, and it was, besides, not difficult to distinguish the sexes even when on the wing. When next the sun came out and the dance began again, another prey-bearing visitor came up, and exactly the same programme was gone through as on the previous occasion. A third visitor was caught just as copulation was apparently about to take place, and this proved to be a male carrying a delicate Neuropteran (*Chloroperla*, sp.) not only alive and un wounded, but in strikingly good condition, quite fit for a cabinet specimen.

Thus it appeared that the male brought up a choice specimen, which he transferred to the female during their brief aerial struggle

(the details of this struggle I could not make out), and that she enjoyed it while copulation was in progress.

It was soon quite evident that this was the normal course of events. In all, six "visitors" were caught just before copulation would apparently have taken place; all were males and all bore living prey in notably good condition (A seventh, also a male with live prey, was caught on June 14th). In the case of four pairs, caught as soon as possible (five seconds or less) after coupling, the prey was a little crumpled and was in the possession of the female, while with seven other pairs caught at varying intervals (up to nearly ten minutes) after coupling the condition of the prey naturally got progressively worse the longer the female had enjoyed it, its last state being a crumpled ball of shrivelled remains. Altogether fourteen females were seen at this spot, and in eleven cases copulation was observed to take place as described, while three females failed to obtain partners and finally gave up the dance altogether at about 5.30 p.m. In no case was a female ever in possession of prey until supplied with it by her swain, nor did two or three Perlids, which came within very easy range, appear to have any particular interest for the dancers, who made no effort to seize them.

On June 14th, during a dull and gusty interval, I saw a male lying close among some grass, and on inspection found that he was clasping a Perlid. After about twenty minutes the wind dropped and the sky cleared a little, and the self-denying male, who had refrained from gratifying his appetite all this time, at once made for the fir trees (about thirty yards away), still carrying his burden. I was able to keep within a short distance of him, and had the satisfaction of seeing him pair with one of two females who were dancing at the time. I caught the pair a few seconds after coupling, and found the Perlid in possession of the female.

On June 15th I took a male sitting among grass holding an undamaged Bibionid (*Bibio varipes*).

During copulation, after a short flight (generally of not more than twenty yards), the male usually hung by the front pair of legs to a twig or blade of grass, supporting thus the whole weight of himself and partner; the middle legs clasped the thorax of the female, while the hind pair of tarsi supported the prey in position beneath her proboscis, the apical part of the femora meanwhile firmly compressing her upturned abdomen.

The hind legs of the female hung idle, while with the two front pairs she manipulated the prey, kneading it as one who sucks an

orange dry, and every now and again turning it about to insert her beak in a fresh spot.

The insects victimized were as follows:—

- June 9th.—From 5 pairs *in cop.*; 3 Perlids, 2 *Bibio varipes*.
 „ 11th.— „ 6 visiting ♂'s; 5 Perlids, 1 Ephemericid.
 „ 11th.— „ 11 ♀'s *in cop.*; 6 Perlids, 4 Ephemericids, 1 Tipulid.
 „ 14th.— „ 1 visiting ♂; 1 Perlid.
 „ 14th.— „ 1 ♀ *in cop.*; 1 Perlid.
 „ 15th.— „ 1 ♂ sitting on grass; 1 *Bibio varipes*.

It is unlikely that the male makes this offering at the shrine of his divinity from purely altruistic motives; it may be that the prey functions as a kind of adventitious “sexual adornment,”* or as a bribe to secure his personal safety, while on the other hand it appears not unlikely that various suggestions with regard to *Culicidæ*, *Tabanidæ*, and other blood-sucking flies, anent the existence of some definite physiological connection between the ingestion of animal juices and the process of reproduction, may ultimately be found to have some bearing on the case.

In this species (*E. borealis*) pairing seemed not to occur later than 6 o'clock, but about sunset (9—9.45 p.m.) I found *Hilara maura* in a dancing crowd (in which both sexes were present) ten to fifteen feet above the surface of the burn. They were too high for the net, but every now and then an individual could be seen flying with a jerky undulating motion, when one of those above would fly down to it and copulation would ensue (this reminding one much of the motions of *E. borealis* prior to coupling). The pair then, instead of settling, proceeded with steady level flight along the course of the burn, about ten feet from the surface, and by standing in mid-stream I was able, during three evenings, to catch thirty-three pairs. From twenty-six of these I took prey, and this was in possession of the female in all those cases (about half the total number) in which it had not been relinquished before I was able to determine the owner. Out of several males, captured when flying casually about (not in the dance), four had prey, but only in one case was it un wounded, the other three having evidently been sucked.

As I could not succeed in catching any of the males just as copulation appeared imminent, I was unable to arrive at any definite conclusions regarding the disposal of the prey in this species. On

* Aldrich and Turley, in their account of the “Balloon-Making Empid,” say that the female is attracted by the size of the balloon carried by the male; that the balloon frequently contains an insect, but that balloon and (presumably) insect are dropped as soon as copulation takes place.

subsequent examination of the prey, however, it was seen that of the thirty victims, twenty-six from females† (?) *in cop.* and four from lone males, twenty-two were more or less completely enveloped in a fine veil or shroud-like web of silky threads. If, as is supposed, this web be carried only by the males, it would seem that some of the females must have been feeding on insects caught by members of the opposite sex, and in the absence of fuller information we may take it that this indicates at least the possibility of a parallelism, in essentials if not in detail, between the coupling habits of *Hilara maura* and of *Empis borealis*.

The thirty victims of *H. maura* mentioned above consisted of seven Simuliids (*Simulium latipes*) and twenty-three small Chironomids.

Wymondham, Norfolk :

September, 1907.

FORFICULÆ SPECIES NOVA.

AUCTORE

ANDREA SEMENOV TIAN-SHANSKY.

FORFICULA BURRIANA, A. SEMENOV, *sp. n.*

F. vicaria, Sem. (1902) proxime affinis simillimaque, sed capite subtiliter alutaceo, vertice subbifoveatim impresso (semperne?), pronoto minore, imprimis angustiore, squamis alarum paulo brevius patentibus, forcipe ♂ eraribus toto dimidio apicali minus fortiter attenuatis, supra fortiter, infra paulo levius longitudinaliter sulcatis, ante basin brevius coherentibus, ejus partis margine interno minus acute denticulato, ad ipsam basin fortiter obliquato, denticulo marginis interioris ante partem dilatatam basalem sito, paulo obtusiore, angulum fere rectum efficiente; antennis, pedibus, pronoti basi lateribusque, elytris, alarum squamis, forcipis parte dilatata basali præter marginum internum perpalpide stramineis.

Long., ♂, tot. 13.1 mm., forcipis, 2.2, lat. abdom., 3 mm.

China: prov. Kan-ssu, pr. oppidum Lan-tshou (W. Filehner!).

Solum specimen ♂ mihi ab amico M. Burr, ejus in honorem speciem nominavi, benevole communicatum (sub. No. 207/06) (coll. M. Burr).

St. Petersburg, Vass. Ostr. 8 lin., 39.

[NOTE.—This is one of two males taken by Lieut. Filehner in his expedition to China; the *Dermatoptera* were determined by me, and the account will appear in the work dealing with the Filehner expedition, which is shortly to be published by E. S. Mittler und Sohn, of Berlin. The specimens were originally determined as *F. vicaria*, Sem., and are there recorded under that name, but I have recently submitted one to M. A.-P. Semenov Tian-Shansky, who has compared it with his

† Definitely seen in fifteen cases only.

original type of *E. vicaria*, from Korea, with the result that he considers it a distinct and hitherto undescribed species allied to *E. vicaria*. There is a pair in my collection, and a pair in the Berlin Museum. The female resembles the male, but is a trifle darker in colour; the same impressions are present on the head, and the forceps are of course simple.—MALCOLM BURR, Sibertswold, near Dover: August 31st, 1907].

ANTHOCORIS LIMBATUS, FIEB., AN ADDITION TO THE BRITISH
HEMIPTERA.

BY HUGH A. SAUNDERS, B.A.

While staying with my father, Mr. Edward Saunders, at Woking in the early part of September, I was fortunate enough to discover this novelty to the British list.

Having only just began to collect *Hemiptera*, I was very careful to take nearly every specimen of *Anthocoris* that I could find, owing to my inability to distinguish the various species apart. Among those brought back one afternoon were specimens of *A. nemorum*, *A. nemoralis*, *A. confusus*, *A. gallarum-ulmi*, and what subsequently turned out to be two males of *A. limbatus*. As I knew that these must have come from some sallows I had been beating along the canal near Woodham, I went over the same ground again a few days later, and was able to locate the exact bush and obtain a few more specimens, but only two were females.

A curious fact is that, although the branches of the willow bushes were very much intermingled, I could only beat *A. limbatus* from the branches of one particular bush.

43, Waldegrave Road, Upper Norwood :

September 16th, 1907.

[This little species can be recognised at once from *Anthocoris sylvestris*, F., its nearest ally, which it resembles in the entirely shining hemelytra, by the broadly testaceous base of the thorax. It is also much smaller, and has the thorax posteriorly more emarginate and its sides converging more gradually to the apical margin.—E. S.

Eumicrus rufus, Müll., &c., near Guildford.—Since the publication of my note on the capture of various *Coleoptera* near Guildford (*antea* p. 184), the following species have been taken in the same district:—*Eumicrus rufus*, Müll., eight specimens, and *Sphindus dubius*, Gyll., in abundance, from an old beech stump; *Agathidium confusum*, Bris., four specimens, and *Cis alni*, Gyll., from fungus on a dead oak bough.—GEO. C. CHAMPION, Horsell, Woking: August, 1907.

Cryptophagus cylindrus, Kies., at Chobham.—I am pleased to be able to record the capture of two specimens of this species in Surrey, the first British examples from south of the Tweed. They were found under bark of pine logs, in company with *Hypophloeus linearis*, F., *Epurva oblonga*, Herbst, and *E. pusilla*, Ill.—ID.

Cartodere elongata, Curt., &c., from the North of England.—Yesterday I had the pleasure of taking a single specimen of the above beetle from a mould fungus growing on a log of Scotch pine infested by *Trypodendron lineatum*, Ol., which my friend Mr. Gillanders of Alwrick, with whom I was staying, was rearing. At the same time we found a dead example of *Hypophloeus bicolor*, Ol., another addition to our county's fauna. We spent some time watching and searching the *Trypodendron* logs for the parasitic beetles, *Epurva angustula*, Er., and *Acrulia inflata*, Gyll., without success. *E. angustula* has been met with again in the Derwent Valley, in fungus with *Triplax bicolor* at Gibside, growing on a beech infested with *Trypodendron domesticum*.

I should perhaps mention that Mr. Gillanders has discovered *Trypodendron lineatum* in profusion in spruce, at Lytham, near Belford, and in Scotch pine at Countess Park, North Tyne; *Tomicus acuminatus*, Gyll., which I have already recorded from the neighbouring County of Durham, also in numbers, Beanley Wood, Northumberland, July, 1906; whilst Mr. A. C. Forbes has taken *Cryphalus abietis*, Ratz, in Douglas fir from Cockle Park, Northumberland; all of which, as well as many other Scolytids, will be fully dealt with in Mr. Gillanders' forthcoming work on Forest Entomology,* a work which will fill a want that has long been felt by many classes of Economic Naturalists, and cannot fail to interest the general reader.

The *Cryphalus tiliv*, Panz., recorded in my paper on Introduced Beetles (Ent. Mo. Mag., vol. xlii, p. 37) I now learn was taken by Mr. Gardner at birch sap, Egglestone-in-Teesdale.—RICHARD S. BAGNALL, The Groves, Winlaton-on-Tyne: September 9th, 1907.

Enicmus fungicola, Th., from the County of Durham.—Some time ago I noticed a species of *Enicmus* in my friend Mr. Gardner's collection labelled "*rugosus*, Herbst," but which differed from the true *rugosus* in the colour of the elytra which were ferruginous-red instead of black. I had the opportunity of examining one closely this evening; the raised keel of the prosternum between the anterior coxæ, the chief character of *Enicmus*, i. sp., was very distinct, and also the strong punctuation of the metasternum and first abdominal segment, but the first ventral segment was simple, and there is no doubt that it is really *E. fungicola*, Th., the species brought forward as British by Mr. Newbery in May, 1907 (Ent. Mo. Mag., ser. 2, xviii, p. 103). Mr. Gardner's short series of this insect was taken by himself from a tree fungus at Egglestone-in-Teesdale.—ID.

Heoticius serratus, Gyll., from Scotland.—As so very few specimens of this rare beetle have been taken in Britain, it is worth while recording its occurrence at Arrochar, Loch Long, where I took an example in July, 1906.—ID.

Hypera tigrina, Boh., at St. Margaret's Bay.—Before starting for my summer

* "Forest Entomology." Demy 8vo, 300 illustrations. Blackwood and Sons, Edinburgh.

holidays at St. Margaret's Bay I made a careful list of beetles I intended to search for, one of them being *Hypera tigrina*. I am glad to say I found it in fair numbers on the wild carrot (*Daucus carota*) growing at the foot of the chalk cliffs on the northern side of the bay. I took my first specimen on August 25th, and it was still to be found, though in scantier numbers, when I left on September 5th. Messrs. Donisthorpe and Chitty came over, and each secured a good series of the insect, which, judging from the requests I have had for specimens, must be rare in our collections.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: *September 16th, 1907.*

Apion semivittatum, Gyll., at St. Margaret's Bay.—In the September issue of this Magazine (p. 208) Mr. G. E. Bryant records the capture of a specimen of this species on the Deal Sandhills on June 17th last, and asks if there is any record of the capture of this insect since it was taken by Mr. Walton, over 60 years ago, at Margate. The answer is yes; it was swept up by Messrs. Chitty and Tomlin in 1905 on the Deal Sandhills. I included this insect therefore in my holiday list, and began at once to search for its food-plant, *Mercurialis annua*. Mr. Donisthorpe, who was spending his holidays at Deal, was also on the look out for it. I was lucky enough soon to find the plant, and got the insect at once in scanty numbers, and Mr. Donisthorpe immediately afterwards discovered both plant and insect at Deal and in greater numbers. The plant is apparently very fond of old potato gardens, but it is then usually unproductive; plants growing by the sides of hedges, and even on the shore, were much more productive of the beetle. I was able to verify what Canon Fowler says of its life-history, by finding a specimen in the pupal state in a knot of a very large plant growing in a garden in the village. The species evidently makes its appearance in the perfect state in the autumn; it was getting more common when I came away on September 3rd, and it required a lot of work to get specimens when it was first discovered on August 26th.—ID.

Rediscovery of Myelois cirrigerella in Wilts.—In vol. xi, p. 237, of this Magazine I recorded the original capture of several specimens of this species at Ramsbury, Wilts., in 1874. I am not aware that it has been taken by any one else in the interval, and have often puzzled myself in vain with endeavours to guess a possible origin for those specimens. Judge, then, my surprise when my own son, E. E. Meyrick, now a boy at Marlborough College, brought to me for identification a very fresh example of *Myelois cirrigerella* on July 20th, beaten out from a larch tree in Savernake Forest, about two miles from Marlborough. This locality is about five miles from the original one, and of a totally different nature, and as there are few plants common to the two, and those only such as are also very common throughout Britain, the question of the food-plant is still very puzzling. There are two or three possible clues which I purpose to follow; but I should certainly be glad of a little more light. However, I think it is now established that the species has undoubtedly been existing in the neighbourhood all these years, and we ought to be able to solve the problem presently.—E. MEYRICK, Thornhanger, Marlborough: *Aug. 19th, 1907.*

Occurrence of Gelechia strelicicella, H.-S., in the Highlands.—While at Aviemore for a few days in June, 1905, I observed several specimens of a *Gelechia* among heather that had been burnt the previous year, which appeared to be unknown to me. It

was flying in company with *G. solutella* and *G. ericetella*, though much more sparingly. I referred it to the authorities of the Oxford Museum, who returned it as probably a northern variety of *G. sequax*. In January of this year I asked the opinion of Mr. Eustace R. Bankes, who in due course pronounced it to be *Gelechia streliciella*. During the last days of June this year I was again at Aviemore, and revisited the locality in the hope of finding it again. The weather was so unfavourable that only nine specimens were secured, though I have reason to believe that the species is not very uncommon in suitable situations in that locality. It lies very close, and cannot be disturbed except during sunshine, when it flies with great rapidity, just over the herbage, for a few yards, and then rests on the ground, where, owing to its closely rolled wings, it is far from easy to see it. Its time of emergence is about the middle of June.—C. T. CRUTTWELL, Ewelme Rectory, Wallingford: July 27th, 1907.

Gelechia streliciella, H.-S., in Britain.—This *Gelechia*, under the name "*strelitziella*, H.-S." (recte "*strelitziella*, Hein." = *streliciella*, H.-S.), was added to the British List by Stainton in Ent. Ann., 1872, p. 123, but in Ent. Mo. Mag., Ser. 2, iv, pp. 213-14 (1893), I showed that it must be removed therefrom, the addition having been based upon an erroneous identification, and there being then no proof that the insect had ever occurred in the United Kingdom. It has, therefore, afforded me especial pleasure to have recently had the opportunity, fourteen years after the publication of my previous note, of identifying Canon Cruttwell's Scottish *Gelechia* as the true *streliciella*, H.-S. Seeing that the two specimens of it, that reached me in his box of "*determinanda*," were not referable to any recognised British species, and being unable at the time to compare them with any good continental collection, I forwarded them for Lord Walsingham's opinion. In his absence abroad, Mr. J. Hartley Durrant, when returning them, kindly enclosed an undoubted example of *streliciella*, H.-S., from the Zeller collection, as being probably identical with them, and this I found to be certainly the case.

Gelechia fumatella, Dgl., which has been erroneously sunk by Meyrick [HB Br. Lep., 601 (1895)] as conspecific with *distinctella*, Z., and upon which I hope to contribute some notes later on, is the British species most closely resembling *streliciella*, but may with certainty be distinguished from it by the very conspicuous white dots or dashes that accompany the black stigmata, and by the colour of the fascia and of the other pale markings, which are brownish-buff instead of white. As *streliciella* has been confused with *sequax*, I may mention that the former is easily separated from the latter by its rather larger size and longer and narrower fore-wings, by its head, which is grey instead of white, by its much less marbled appearance, due to the white markings being much narrower and less clearly-defined and conspicuous, and by the number, size, and position of the three black stigmata.

The life-histories of both *G. fumatella* and *streliciella* seem to be entirely unknown, but whereas all the widely-separated localities known to me for the former are on sandy coasts, the latter appears, both in Scotland and on the continent, to frequent inland heaths, &c.

It seems advisable to mention that Canon Cruttwell's earliest captures of *G. streliciella* were recorded by him as "*G. sequax*, a very fine form," in Ent. Mo. Mag., Ser. 2, xvi, 259 (1905), which reference must be included in any attempt to

work out the full synonymy of the species. Unfortunately three species of *Gelechia* recorded in Canon Cruftwell's note (*i.e.*) viz., "*sequax*," "*ericetella*," and "*proximella*," are omitted from the Special Index (erroneously headed "General Index") to the volume in question, though the fourth, viz., "*solutella*," is included therein! —EUSTACE R. BANKES, Norden, Corfe Castle: August 24th, 1907.

Tortrix semialbana at Doncaster. —A few days ago Mr. L. S. Brady, of Sheffield, sent me on for confirmation of his own determination a very well marked and fine specimen of *Tortrix semialbana* which he had taken on August 4th last in Edlington Woods, Doncaster. The capture is exceedingly interesting, as hitherto the species has only been recorded from the South of England, and then very locally; indeed, of late years it seems only to have occurred at Folkestone. —GEO. T. PORRITT, Edgerton, Huddersfield: September 3rd, 1907.

Lygæus equestris, Linn., at St. Margaret's Bay. —While spending my holidays at St. Margaret's Bay I was busy sweeping the wild flowers on the cliffs close to the Granville Hotel on a hot sunny still day (August 29th), when my wife who was with me called out "here is a beautiful bug sitting on a flowering umbel;" hurrying up I was greatly rejoiced to find I was the lucky captor of a specimen of the above rare bug. Mr. Saunders, in his "*Hemiptera-Heteroptera of the British Islands*," p. 69, records only three captures (there is a more recent one from the Isle of Sheppey), and says that it is probably only an "occasional visitant." I may say that while I was in the locality the wind was never a favourable one for insects crossing from the Continent to our islands. —T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: September 16th, 1907.

[The Sheppey specimen referred to was taken on September 22nd, 1906, by my friend Lieut. J. J. Jacobs, R.E., and kindly given to me by him. It was found, I believe, on a flower head of *Centaurea nigra*. —J. J. W.]

Identification of Salix notatulus ♀. —Having recently been successful in finding several of both sexes of this *Aculeate* in company, I think I can settle the vexed question as to the correct ♀ for the well known and very distinct ♂. The ♀ bears all the characters assigned to it in Mr. Edward Saunders' work, with the exception that in all my specimens the cubital nervure runs to the apex of the forewing as in *exaltatus*. The clear eye-spot on this wing will prevent confusion with *parvulus*, and the black legs with *obtusiventris*. The two insects with which *notatulus* ♀ might be confounded are *exaltatus* and *pusillus*. In both the latter the penultimate joint of the anterior tarsus is longer than wide (in *exaltatus* twice as long), and the anterior coxæ and prosternum bear a row of long pale recurved hairs: whereas in *notatulus* the tarsal joint is transverse, the anterior coxæ bear one or two very short hairs, and the prosternum is entirely glabrous. Mr. Saunders has also directed my attention to the fact that *notatulus* ♀ looks blacker than any other ♀s of the genus owing to the absence of the fine golden pubescence that occurs on the head and thorax of all the latter. —C. H. MORTIMER, Holmwood: September, 1907.

Osmia parietina in Wales. —A ♀ of this species (which was re-discovered at Crickieith in 1900 by Mr. Nevinson) and which I have been at a loss to classify since

I took it in July, 1905, has just been identified by Mr. Edward Saunders. It occurred at Aberdovey. As I have not heard of its occurrence quite so far south, it may be of sufficient interest to record.—ID.: *September, 1907.*

Ceratina cyanea at Redhill.—From a number of bramble stems collected last winter on Redhill Common, and which mostly produced *Pemphredon lethifer*, and Ichneumons, a single specimen of *Ceratina cyanea*, ♀, emerged during the third week in May. As it is, I believe, a new locality for the insect, it may be worth recording.—G. E. FRISBY, 47, Windmill Street, Gravesend: *September 3rd. 1907.*

Review.

“INDIAN INSECT PESTS:” by H. MAXWELL LEFROY, M.A., F.Z.S., F.E.S., Imperial Entomologist. Pp 318. Office of the Superintendent of Government Printing. Calcutta. 1906.

To quote from the introduction written by Mr. F. G. Sly, Officiating Inspector-General of Agriculture in India, this book is a remarkable “testimony to the strenuous efforts made during the past three years” by the Imperial Entomologist, Mr. Maxwell Lefroy. Designed to assist planters, students, and those interested in agricultural matters in India, it represents for many of these the first-fruits of entomological research in their country, judiciously peptonized and served up in a manner often suggestive and always lucid and accurate.

Our own country is comparatively so little affected by insect pests that it affords a very misleading standard by which to judge of the requirements of tropical lands, but even the average Englishman would probably consider that a single entomologist might have his work cut out to deal worthily with the pests of a country like India, with an area of one and a half million square miles, a great part of which is under cultivation. To those acquainted with the nature of the work the idea that such an almost pathetically isolated individual could successfully cope with so huge a task would probably appeal only in its humorous aspect, and it may come as a surprise to them to hear that the Entomological staff of the Department of Agriculture, on whom devolves the onerous duties connected with a thorough study of Indian insect pests, does actually consist of but one Entomologist, with one European and a few native assistants.

We understand that another Entomologist will shortly be appointed, but until the Indian Government can see its way to establishing Entomological Stations in each province, all working in collaboration with the staff at head-quarters, it is impossible that the country can reap the benefits which an adequate organization would confer. In the introduction previously referred to, Mr. Sly expresses himself as hopeful that such a scheme may be carried out in the near future, and it is greatly to be hoped that such a development so obviously needed may not be long delayed. Neither India nor its insects are uniform, and an accurate knowledge of local conditions in Madras cannot be obtained by studying those in Bengal or Bombay. The necessity of this close study of local conditions is rightly emphasized by Mr. Lefroy, and its importance in so diversified a country as India should need but little demonstration.

The opening chapters of the book treat in general fashion of the structure, food, life-history, form, and classification of insects. This is followed by an interesting and essentially practical account of the origin of pests, and of those preventive and remedial measures which have been found to be most generally applicable in India. The main body of the book is occupied by a detailed treatment of a large number of pests which affect many of the staple crops of the country, including also chapters on grain insects, cattle pests, and beneficial insects, the whole representing an immense amount of careful and systematic observation. Most of the pests are figured in more than one stage, and in very many cases the whole life-history has been worked out. Wherever possible means of combating the insects are advised or suggested, and useful directions for the preparation of various insecticides are given in an appendix, while modifications in methods of cultivation are in many instances recommended. A second appendix gives full and clear instructions for collecting and preserving insects.

In view of the extraordinarily low price (two shillings) at which the Government has issued the book, severe criticism of the three hundred and fifty illustrations (mostly half-tone) would be out of place. They are nearly all the work of Indian artists, and while the great majority are clear and well executed, a lack of experience in drawing for process is now and then apparent.

Only those who have some experience of India can appreciate the difficulties involved in the production of such a work as this, and Mr. Lefroy may be congratulated on the way in which he has overcome them. To the public, for whom the book is primarily intended, it will form a trustworthy guide towards dealing intelligently with many of their insect enemies, while the amount of original work and observation embodied in its pages will afford a most valuable basis for more extended and detailed investigation.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *July 1st, 1907.*—Mr. R. S. SEARLE in the Chair.

Mr. Hubert Langley reported finding *Stauropus fagi*, L., in Princethorpe Woods, near Leamington, on June 15th and 22nd last, these being the first certain records in the county; also at the same place he had taken *Larentia silacea*, Hb., *Boarmia roboraria*, Schiff., and *Lymantia monacha*, L.; likewise a series of males of *Dasychira pudibunda* which he took in the same locality, he said they were quite abundant on the wing at the time. Mr. R. S. Searle showed bred *Cherocampa elpenor*, L., from Wicken, together with a Hymenopterous parasite, probably *Proichneumon laminatorius*. Mr. J. T. Fountain, another ichneumon which he had bred also from *C. elpenor*, one of the large red species; also a bred series of *Angerona prunaria*, including all its forms. Mr. Langley, a number of cocoons of a Hymenopterous parasite bred from larvæ of *Geometra papilionaria*; he said that although a number of the larvæ of the parasite had emerged from the larva of *papilionaria*, the latter had continued to feed for some time before it collapsed and died.—COLBRAN J. WAINWRIGHT, *Hon. Secretary.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, July 25th, 1907,* Mr. R. ADKIN, F.E.S., President, in the Chair.

Mr. Newman exhibited a long bred series of *Aretia villica* from larvæ collected

in North Kent, and including a number of asymmetrical forms with aberrant markings. Mr. R. Adkin, the Coleopteron *Anobium paniceum*, which had been found destructive to sample packets of tobacco. Mr. Sieh, a specimen of *Tortrix pronubana* taken in his garden at Chiswick. Mr. South, a short series of *Abraxa sylvata*, including some curiously clouded forms. Mr. West (Greenwich), three rare species of *Hemiptera* from the New Forest, *Eysarcoris xneus*, *Corizus maculatus* and *Lopus gothicus*. Mr. Step, photographs of *Lepidoptera* at rest, taken during the Field Meeting of the Society at Box Hill. Mr. Clark, an unusually pink form of *Amorpha populi*.

Thursday, August 8th.—The President in the Chair.

Mr. South exhibited a hybrid specimen of *Malacosoma*, *M. castrensis* and *M. neustria*, and read notes. Mr. Montgomery, a bred specimen of *Toxocampa cracca* from Cornwall. Mr. Newman, an exceptionally pink form of *Saturnia carpinii*, a very dark example of *Smerinthus ocellatus*, a dark bred *Arctia caja*, living larvæ of *Ennomos autumnaria* from Dover, and a cocoon of *Anthrocera filipendule* from which the pupa had been extracted by birds. Mr. Goulton, a female of the sawfly, *Sirex gigas*, from Sutton. Mr. Sieh, the egg-shells, mines, cocoon and imago of *Cemistoma labruella* from Chiswick.

Thursday, August 22nd.—The President in the Chair.

Mr. Harrison exhibited series of *Hyria muricata (auroraria)* from Wicken and the New Forest, and made remarks on the variation of the species. Mr. Tonge, the living larva of *Saturnia pyri* from continental ova, and larvæ of *Dipterygia scabriuscula* from ova laid by a ♀ taken at Reigate. Mr. Newman, a larva of *Dicranura bicuspis* from Tilgate Forest, and pointed out the difference from *D. bifida*. Mr. Turner, specimens from West Australia, including (1) *Delias aganippe*, a brilliant Pierid, *Lycenesthes inous*, a "Blue," *Apina callisto*, a Noctuid moth, the Pyralæ *Mecyna polygonalis*, and the two Tineids, *Cryptolechia atreola* and *Tinea clathrata*; (2) three cases of a large species of Psychid, *Æceticus* sp.?, made of short twigs, with a number of parasites of the genus *Bassus*, which had emerged from one case; (3) examples of the *Coccus* ♂s called the "Paradise Fly"; (4) a series of the ♂s of the conspicuous beetle *Rhipidoceera femorata*, with beautifully developed antennæ; (5) a specimen of *Helvus perforatus*, a Tenebrionid with curiously developed margins to the thorax and elytra; and (6) a *Gordius* worm extracted from the abdomen of an *Erebia ligea*, taken on the Rigi, Switzerland, on August 29th. Mr. Moore, numerous species of *Lepidoptera* taken during a short trip to Wimeroux, and read notes on the exhibits, which included *Anthrocera trifolii*, *Melanargia galathea*, and *A. meliloti*. Dr. Chapman, a specimen of *Lycæna eumedon* from Gavarnie, Pyrenees, apparently an extreme form of the ab. *subradiata* and a specimen of *L. argus (xygon)* with unusually well marked spot variation on the underside. Mr. Rayward, living larvæ of *Cucullia lychnitis*, and remarked on a curious colour difference between larvæ captured and those reared from ova in captivity. Mr. Turner, larvæ of *C. verbasci* and *C. lychnitis*, and pointed out the difference in markings, he also showed a specimen of the large mud wasp, *Sceliphron lætus*, with its nest, from West Australia. Mr. R. Adkin, specimens of *Eupithecia dodoneata* from Eastbourne taken on the cliff, and commenting on their occurrence so far from the nearest oak trees, suggested that their food-plant had been the evergreen oak, which grew somewhat near where they were taken; he also showed a series of *E. oblongata*, bred from flower heads of *Centaurea* at Eastbourne. Mr. Sieh, cases of *Coleophora albicosta* found on a furze bush in Surrey, and also the larvæ of *Pararge mæra* from ova, and feeding on *Poa annua*, but only in the early morning and in the evening.—H. J. TURNER, Hon. Secretary.

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FIRST NOTES ON THE LEPIDOPTERA OF LUNDY ISLAND.

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

The very interesting observations by Mr. Norman H. Joy* on the *Coleoptera* of this lonely mass of granite suggest that some account of its *Lepidoptera* should be published.

Thirty years ago Mr. John R. Chanter † printed a list of 47 Butterflies and Moths noted on the island by the present lord of the manor, the Rev. Hudson G. Heaven, a gentleman who modestly disclaims being a skilled Entomologist.

Since the publication of Mr. Chanter's book I have myself paid seven or eight visits to the island, but most of these have been limited to the very short calls permitted to visitors by the excursion steamers. One or other of these visits have been in company with Dr. F. A. Dixey, Mr. A. L. Onslow, Mr. F. R. D. Onslow, and Mr. Clinton Maund.

As a result, I have confirmed 14 of Mr. Heaven's species, and added 46 not noted by him, thus leaving 33 species that require confirmation; of these, at least 24 are such as one might well expect to meet with, but a few are decidedly startling.

The following list comprises 93 species, and includes all Mr. Heaven's species, which are indicated by his initials. Where I have not myself seen the insect the name is included in square brackets. Those marked with an asterisk are in my Mortehoe list.

Lithosia caniola, Hübn. Common at light, 1907. Two found by Mr. F. R. D. Onslow at rest on grass by day. This would appear to be a new locality for this local cliff-loving species; it was first taken in South Devon, and the late Mr. Barrett found it in Pembrokeshire.

**Phragmatobia fuliginosa*, Linn. One at light, August 26th, 1907; another by Mr. F. R. D. Onslow flying in the sun.

*[*Arctia villica*, Linn. One seen by Mr. A. L. Onslow].—*[*A. caja*, Linn. H. G. H.].

**Polia lichenea*, Hübn. One at light.

*[*Harmodia nana*, Rott. (*consersa*, Esp.). One taken at light by Mr. F. R. D. Onslow, 1907].

Melanchnra cespitis*, Fabr. One at light.—M. serena*, Fabr. One at light.—**M. pisi*, Linn. A larva.

*[*Agrotis segetum*, Schiff. H. G. H.].—**A. ypsilon*, Rott. (*suffusa*, Hübn.). One at light.—**A. lunigera*, Stph. Several very fine specimens at light, 1907.—*[*A. obelisca*, Hübn. One taken at light by Mr. F. R. D. Onslow, 1907].

* Entomologist's Monthly Magazine, 1906, vol. xvii, pp. 1-5; *ibid.*, 1907, vol. xviii, pp. 27-29.

† *Lundy Island, a Monograph, Descriptive and Historical*. Cassell, Petter and Galpin. Preface dated 1877.

—**A. strigula*, Thunb. (*porphyrea*, Hübn.). Two dead examples found on the ground.—**A. prouba*, Linn. H. G. II.].—**A. canthographa*, Fabr. Very common flying at dusk; a few at light.

**Luperina testacea*, Hübn. At light.

**Caradrina matura*, Hufn. (*cytherea*, Fabr.). Two specimens at light.

*[*Metachrostis muralis*, Forst. (*glandifera*, Hübn.). H. G. II. A species that I expected to find, but so far have not met with].

Acronycta rubeis, Linn. Three larvæ on various visits. It is curious that I have not found this conspicuous caterpillar at Mortehoe.

**Plusia gamma*, Linn. Also H. G. II.

Tephroclystis oblongata*, Thunb. (*centaureata*, Fabr.). One at light.—T. nanata*, Hübn. A very fine large specimen on a rock.

**Pleuyria sociata*, Bork. (*subtristata*, Haw.). Mr. F. R. D. Onslow.

[*Eustronia associata*, Bork. (*dotata*, Guen.; *spinachiata*, Haw.). H. G. II. This species is recorded by Barrett from South Devon and Exmoor; also from Glamorganshire. It is, however, not unlikely that it has been confounded with *E. dotata*, Linn. (*pyraliata*, Fabr.), which Barrett says is generally distributed in Devon, and occurs also in Glamorganshire and Pembrokeshire, and which I have several times taken at Mortehoe].

Hydriomena ocellata*, Linn.—H. truncata*, Hufn. (f. *immanata*, Haw.). One kicked up from heather.—**H. bilineata*, Linn.

Xanthorhöz limitata*, Scop. (*mensuearia*, Schiff.).—X. spadiuearia*, Bork. (*ferrugaria*, Haw.).—**X. fluctuata*, Linn.

**Eois bisetata*, Hufn.

**Leptomeris marginepunctata*, Goeze (*promutata*, Guen.). A fine specimen at rest on a wall, 1903; another at light, 1907.

*[*Opisthographis luteolata*, Linn. (*eratycgata*, Linn.). H. G. II.].

[*Synopsis abruptaria*, Thunb. H. G. II.].

**Abraxas grossulariata*, Linn. Dr. Dixey; also H. G. II.

[*Ennomos alniaria*, Linn. (*liliaria*, Bork.; *cauaria*, Hübn. H. G. II. Recorded by Barrett from Glamorganshire, also from Dartmoor].

**Gonodontis elinguaris*, Linn. A specimen taken by Mr. F. R. D. Onslow at rest on a low plant.

*[*Macroglossa stellatarum*, Linn. H. G. II.].

*[*Sphinx convolvuli*, Linn. H. G. II.].

*[*Acherontia atropos*, Linn. H. G. II.].

*[*Smerinthus populi*, Linn. H. G. II. There is nothing very surprising in the occurrence of these four *Sphingidæ*].

[*Notodonta dromedarius*, Linn. H. G. II. This species is recorded by Barrett as occurring at Barnstaple and on Dartmoor, also near Swansea].

*[*Phalera bucephala*, Linn. H. G. II.].

Salurnia pavonia, Schiff. H. G. II. Mr. Clinton Maund took a young larva, August 26th, 1907.

[*Endromis versicolora*, Linn. H. G. II. In the Victoria History of Devon Mr. Barrett says, on the authority of Ed. Parfitt, that a single specimen has been taken at Barnstaple. It is not easy to see how Mr. Heaven could have failed to identify this correctly, supposing that he actually caught the insect and compared it with a figure. But it seems a strange locality for the moth].

**Lasiocampa quercis*, Linn. Also H. G. H.

**Eriogaster rubi*, Linn. The young larvæ common, 1907. Curiously enough, this species is *not* recorded by Mr. Heaven.

[*Clisiocampa castrensis*, Linn. H. G. H. Mr. Barrett quotes old records for the mouth of the Exe, but does not give Wales as a locality. It seems reasonable to assume that Mr. Heaven has made a mistake, and that the insect which he saw was really *C. neustria*, Linn., a species that is common both in Devon and South Wales].

*[*Argynnis euphrosyne*, Linn. H. G. H.].—*[*A. selene*, Schiff. H. G. H.].

[*Melitæa athalia*, Rott. H. G. H. This seems an unlikely locality, but the butterfly is well known as a denizen of Dartmoor, and Mr. Barrett recorded it from Barnstaple (where Mr. G. F. Mathew used to take it commonly years ago) and Instow, places almost in sight of the island].

[*Vanessa c-album*, Linn. H. G. H. This occurs in Wales (and possibly Somerset); but the late Mr. Barrett did not notice it in the Victoria History of Devon].—*V. urticae*, Linn. Also H. G. H.—*[*V. polychloros*, Linn. H. G. H.].—*[*V. io*, Linn. H. G. H.].—*[*V. atalanta*, Linn. Also H. G. H.].—*[*V. cardui*, Linn. Also H. G. H.].

**Satyrus semele*, Linn. Rather common; curiously it is not mentioned by Mr. Heaven.

*[*Epinephela tithonus*, Linn. H. G. H.] —*[*E. janira*, Linn. Also H. G. H.].

**Cænonympha pamphilus*, Linn. Also H. G. H.

**Chrysophanus phlæas*, Linn. Also H. G. H.—*[*C. astrarche*, Bergstr. (*agestis*, Hübn.). H. G. H.].

**Lycæna icarus*, Rott. (*alexis*, Hübn.). Also H. G. H.

*[*Colias edusa*, Fabr. H. G. H.].

*[*Gonepteryx rhamni*, Linn. H. G. H.].

*[*Euchloë cardamines*, Linn. H. G. H.].

**Pieris napi*, Linn. Also H. G. H.—*[*P. rapæ*, Linn. H. G. H.].—*P. brassicæ*, Linn. Also H. G. H.

Crambus pratellus*, Linn.—C. culmellus*, Linn.—**C. perlellus*, Scop.—**C. geniculeus*, Haw. Rather common.

Hydrocampa nymphæata, Linn. A single specimen taken by Mr. F. R. D. Onslow.

Scoparia frequentella*, Staint. On rocks.—S. dubitalis*, Hübn. (*pyralella*, Hübn.).

[*Platyptilia ochrodactyla*, Hübn. H. G. H. Recorded by Mr. Barrett for Glamorganshire and Pembrokeshire, but not for Devon].

[*Pterophorus pilodactylus*, Curt. H. G. H. Mr. Barrett gives no locality nearer than Somerset. It is quite possible that Mr. Heaven may have confounded this and the preceding with commoner Plumes].

*[*Orneodes hexadactyla*, Linn. (*polydactyla*, Hübn.). H. G. H.].

**Zygæna filipendulæ*, Linn. Abundant. Also in Mr. Heaven's list.—[*Z. trifolii*, Esp. H. G. H. As Mr. Barrett gives Barnstaple and Bideford, as well as Wales, this record seems likely enough].

**Bactra lanceolana*, Hübn. Among rushes.

**Eucosma lacunana*, Dup.

**Hemimene petiverella*, Linn. Taken by Dr. Dixey in 1898.

**Laspeyresia ulicetana*, Haw. Abundant flying over the dwarf gorse, *Ulex gallii*, Planch.

**Acala aspersana*, Hüb. One.

**Euzanthis augustana*, Treits. The large June form.

Trochilium musciforme, View. (*philanthiformis*, Lasp). Mr. A. L. Onslow secured a specimen among Thrift, *Armeria maritima*, Willd., June 27th. 1902. I was with him when he took another near Moorwinstow, May 31st. 1905. I have often searched the Thrift about Morte Point and Baggy Point, but hitherto in vain.

**Depressaria costosa*, Haw. A fine specimen of the dark-veined variety kicked up, August 26th, 1907.

**Elachista cynipicavella*, Hüb.

[*Heptalus hectus*, Linn. H. G. H. A very likely locality; Barrett gives Barnstaple and Lynton].

It will be observed that of the 33 species in Mr. Heaven's list that I have not yet been able to confirm, 21 have been taken by me at Morte-hoe; moreover, out of the 16 species recorded by me, but not by Mr. Heaven, as many as 11 are in my Morte-hoe list.

Twitcheh, Morte-hoe:

September 16th, 1907.

GELECHIA SOLUTELLA, Z., AB. *CRUTTWELLI*, N. AB.

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

This albinic form has the fore-wings greyish-white, only darkened, just here and there, by a few fuscous scales. The extreme base, however, is fuscous, powdered with greyish-white, and the usual black stigmata are present, and are rendered exceptionally conspicuous by the paleness of the ground-colour. The specimen before me resembles the type in the colour of the head, thorax, hind-wings, and abdomen.

Of this grand aberration, which I have much pleasure in naming after Canon C. T. Cruttwell, the only example that I have seen was included amongst other *Lepidoptera* recently received from him for identification. It is a very large male, with a wing expanse of 19.5 mm., and in fine condition, and differs so greatly in appearance from the typical *Gelechia solutella*, Z., that it might well be mistaken for a totally distinct species, but I have no doubt whatever that it represents an extreme form of this insect, which is already known to be sometimes lightly dusted with greyish-white.

The individual in question was taken at Aviemore, Inverness-shire, by Canon Cruttwell during the past summer, and since a similar

one was seen by him there, though unfortunately it was not secured, it is probable that *ab. cruttwelli* occurs in that locality regularly but very sparingly.

Norden, Corfe Castle:
September 5th, 1907.

IDIOCERUS SCURRA, GERM.: A SPECIES OF *HOMOPTERA* NEW
TO THE BRITISH LIST.

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

I am glad to be able to announce the addition of this fine species to the list of British *Homoptera*. During the latter part of September I took a number of specimens on some Lombardy poplars growing on a piece of waste land adjoining my garden. Mature examples of both sexes were found, but some specimens were still nymphs even at so late a date. *I. scurra* is pretty generally distributed in the Palaearctic province, having been recorded from almost all the countries of the continent, except Scandinavia, as well as from the Caucasus, Turkestan, and Tunis. It is said to occur on *Salix* and *Populus* from April to October. It is easily distinguished from our other British exponents of the genus by its strongly rugose fore-parts. The ♀ is also a larger and more robust insect. The antennæ of the ♂ lack the oval plate which characterises so many species of the genus. In the list of species *I. scurra* is placed at the head of the genus. The following description will enable the species to be recognised:—

Crown, frons and pronotum in both sexes strongly rugose transversely.

♂ dirty brownish-yellow, with a variable amount of black markings. Frons with an irregular dark streak between the eyes, which, however, is often indistinct. Scutellum with a black triangle in each basal angle, and a forked black spot between them. Veins of the elytra sometimes marked with black streaks at irregular intervals, often almost concolorous. The transverse vein sometimes makes with the adjacent parts of the brachial and the lower branch of the cubital a distinct black H. Apex of the anal vein white. Abdomen black above, yellowish beneath. Legs pale, tibiae outwardly with a black stripe.

♀ of a uniform rust-brown colour, without black markings. Traces of irregular yellowish spots on the pronotum. Apex of anal vein white. Abdomen above black, beneath pale yellow. Other varieties of coloration are described from continental specimens, but mine are all as above. Length, $6\frac{1}{2}$ — $7\frac{1}{2}$ mm.

Hab.: Lombardy poplar, Crouch End, London.

I have to thank Mr. James Edwards for kindly confirming my identification of this species.

56, Cecile Park, Crouch End, N.:
October 8th, 1907.

DESCRIPTION OF A NEW GENUS AND SPECIES OF *CICADIDÆ*
FROM SOUTH AFRICA.

BY W. L. DISTANT. F. E. S.

Subfam. TIBICUNINÆ.

Division *MELAMPSALTARIA*.*BUYISA*, *gen. nov.*

♂. Vertex transverse, longer than front, with three longitudinal furrows, including eyes a little broader than pronotum; head beneath broadly transverse between eyes, the face prominent, subglobose; pronotum about as long as vertex and front together, the lateral margins nearly straight, the posterior angles moderately produced outwardly; mesonotum longer than pronotum, its disc moderately convex; abdomen as long as space between the apex of head and base of cruciform elevation; tympana entirely exposed; opercula transverse, not meeting medially nor extending beyond the base of abdomen; abdomen beneath with the lateral margins laminately produced and strongly deflected, the basal segment prominent; rostrum reaching the intermediate coxæ; tegmina short and broad, only about twice as long as broad, costal margin arched, a little sinuate near base, bases of lower vein to radial area and upper vein to lower ulnar area fused, apical areas short, broad, and only seven in number; wings with five apical areas.

Allied to *Pauropsalta* by the wings possessing five apical areas, but differing from all the other allied genera of *Melampsaltaria* by the tegmina, which possess only seven short, broad, apical areas.

BUYISA UMTATA, *sp. n.*

♂. Body above black; vertex with a longitudinal ochraceous spot between the ocelli, which are red; pronotum with the lateral and posterior margins and a central longitudinal line obscurely ochraceous; mesonotum with two central longitudinal fasciæ, its lateral margins, the angles of the cruciform elevation and the basal margin of the metanotum ochraceous; abdomen above with the segmental margins greyish pilose, the lateral areas of the segmental margins and two spots on both the apical segment and the anal appendage, testaceous; body beneath and legs pale ochraceous; face excluding basal spot and lateral margins, space between face and eyes, spots to coxæ, streaks to femora, apex of rostrum, metasternum, and a central longitudinal fascia to abdomen, black; extreme lateral margins of abdomen reddish-ochraceous; tegmina and wings hyaline, the venation mostly ochraceous, tegmina with the costal area ochraceous, the post-costal vein black.

Long. excl. tegm. ♂, 10 mm. Exp. tegm. 25 mm.

Hab.: South Africa: Transkei, Buntingville near Umtata (Miss F. Barrett, Brit. Mus.).

The type of this species was collected by Miss Barrett, and presented to the Museum by the late C. G. Barrett.

Steine House, Selhurst Road,
South Norwood, S. E. :
October 9th, 1907.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (20).

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

BLENNOCAMPIDÆ (continued) = SCOLIONEURA TO FENELLA.

SCOLIONEURA, KHW.

The three species of *Scolioneura* known to me as British are *nana*, Kl., *betuleti*, Kl., and *vicina*, KHW. *Nana* is easily distinguished by its white tegulae and edges of pronotum, its black and white legs (the hind femora entirely black), and by a dusky band, which in fresh specimens at least is tolerably distinct, crossing the wings from the stigma downwards. It is also a rather smaller species than the other two. In *betuleti* and *vicina* the tegulae are black, the legs (including the hind femora) are testaceous, and the wings unbanded. These two latter species are certainly very similar, and are probably mixed in most collections, but the wings in *vicina* are clear hyaline, while they are slightly but distinctly brownish in *betuleti*. The antennæ also look more slender in *vicina*. The latter is probably the species described by Stephens as *Sclandria tenuicornis*, which cannot be the *tenuicornis* of Klug, but I am unable to identify it in Mr. Cameron's work, unless it is included in his *Bl. betuleti*.

ENTODECTA, KHW.

Of this genus I have one British specimen from North Wales, which has been determined for me by Herr Konow as *pumilus*, Kl. It is a very small black insect with whitish legs and tegulae, and much resembles a *Fenusa*—having the division between the 1st and 2nd cubital cells practically obliterated as in that genus—but the cubitus itself is quite normal, not bent at a sharp angle as is the case with genuine *Fenusa* spp. (See my Table of Generic Characters.) Mr. Cameron describes several species under *Fenusa* which are unknown to me, and perhaps this may be among them. But the synonymy of these small Blennocampids is a subject with which I am not prepared to grapple, and I therefore refrain from offering conjectures which might only make confusion worse confounded.

MONOPHADNUS, Htg.

This genus (omitted from my Table of Generic Characters by an oversight for which I have already apologized) contains such of the Blennocampids as combine the following characters: (*a*) cheeks very short, (*b*) 1st cubital n. distinct, (*c*) two median (recurrent) nn. received in different cells, (*d*) no separate "præsterna," and (*e*) hind-wings

with one enclosed medial cell. The species are of medium size (about 5—6 mill. long.), and the only three known to me for certain as British are all black-bodied insects. The most common of these is probably *albipes*, but none of them are rare.

SYNOPTIC TABLE OF BRITISH *MONOPHADNUS* spp.

1. Fourth joint of antennæ about half as long as the third. Radial n. in fore-wing remote from 3rd cubital n. (Legs white and black, with black hind femora) *albipes*, Guél.
- Fourth joint of ant. quite two-thirds of the length of the third. Radial n. in fore-wing nearly or quite interstitial 2.
2. Pronotum, tegule, and at least the greater part of the hind tibiæ black...
..... *geniculatus*, Htg.
- Pronotum, tegule, and hind tibiæ yellowish *ruferuris*, Brullé.

These species are all described under the same names by Mr. Cameron. The *geniculatus* of Htg. (*B. geniculata*, C.) is not to be confounded with *geniculata*, Steph. The latter is Mr. Cameron's *B. alternipes*, and is not a *Monophadnus*, but a true *Blennocampa*. See my last paper.

PSEUDODINEURA, Knw.

This genus was established by Konow in 1885 for the reception of certain species previously classed as Nematids, but excluded from that group as he defines it, by their short checks, and by the imperfect development of a "humerus" in the hind-wing. The only British species known to me is *fuscula*, Kl., of which I have specimens from Dr. Capron's collection determined for me by Konow, but there are probably others belonging to it among the species referred by Mr. Cameron to *Dineura*. The latter author's *Dineura despecta* is, perhaps, but according to Konow, "not certainly," identical with *fuscula*: it seems not to be the *despecta* of Htg., which belongs to Konow's genus *Mesoneura*.

KALIOSYSPHINGA, Tischb.

The species referred by Konow to this genus form a part of those included by Cameron in *Fenusa*. I possess British specimens of three species, viz.: *ulmi*, Sundev., *dohrni*, Tischb., and *melanopoda*, Cam. (= *nigricans*, Thoms.), but will defer their tabulation till the end of the present paper. The generic characters of *Kaliosysphinga* have been given already—it differs from *Fenusa* (*sec.* Knw.) in two points of neururation, in the fore-wing the humeral area has a deceptive appearance of being "contracted," and in the hind-wing the "humerus" (as in *Pseudodineura*) is imperfectly developed or even entirely wanting.

FENUSA, Leach.

I only know for certain two British species of this genus. Mr.

Cameron gives eight, but, as has been said above, his *Fenusa* includes the species referred by Konow to *Kaliosysphinga*. My two are *pygmaea*, Kl. (from coll. Capron), and *nigricans*, Kl. (= *betulae*, C., ?), given to me by Mr. McLachlan. See the Table following.

FENELLA, Westw.

I have several specimens of one species, which has been determined for me by Herr Konow as *nigrita*. *Fenella westwoodi*, C., is unknown to me, and Konow has remarked that the description does not show why the author refers it to *Fenella* rather than to *Fenusa*.

The above four genera, though amply distinguished by the characters pointed out by Konow, consist of species which are superficially very similar, and I believe it will be most convenient for my readers if I tabulate such of the insects included in them as are known to me together. They are all very small and dark insects, with black bodies, and a length which seldom exceeds and often falls considerably short of 3 mill. Most, if not all, are leaf-miners; and I believe they are generally pretty common, though I have not often come across them in my own collecting—probably because I hardly ever “sweep.” All the species tabulated have been determined for me by Herr Konow; so that, though my list is no doubt very imperfect, it can be relied upon as accurate so far as it goes.

SYNOPTIC TABLE OF BRITISH PSEUDODINEURA, FENUSA, &c.

1. Hind-wing with two closed cells (cubital and medial), but no “humerus” (genus *Pseudodineura*, Knw.). The only species known to me for certain as British is *Pseudodineura fuscula*, Kl.
- Hind-wing with no closed cubital or medial cell..... 2.
2. Hind-wing without humerus. Fore-wing with humerus approaching so closely to the brachius that the humeral area, though really “petiolate,” appears “contracted” (genus *Kaliosysphinga*, Tischb.) 3.
- Hind-wing with humerus. Fore-wing with its humeral area simply “petiolate,” no appearance of being “contracted” 5.
3. Radial n. received in front of the second cubital n. *Kal. ulmi*, Sundw.
- Radial n. received beyond the second cubital n. 4.
4. Fourth antennal joint scarcely longer and a little thinner than the second, the third longer by quite a half than the fourth *K. dohrni*, Tischb.
- Fourth antennal joint evidently longer and almost thicker than the second, the third hardly longer by a half than the fourth. A slightly larger species than the last, and with darker wings *K. melanopoda*, Cam.
5. Antennæ with more than 10 joints *Fenella nigrita*, Westw.
- Antennæ with 9 or 10 joints (genus *Fenusa*, Leach) 6.
6. Smaller. Legs white and black, with black hind femora..... *F. pygmaea*, Kl.
- Larger. Legs, including the hind femora, yellowish..... *F. nigricans*, Kl.

(To be continued).

A note on the habits of Choleva watsoni, Spence.—This evening I captured on a window what I thought might be a large *Colou*, but it turned out to be *Choleva watsoni*, Spence. When examining it in the bottle with a low-power lens, I was fortunate enough to observe it in the act of cleaning itself. This proved to be such an interesting process that I watched it for some time on several occasions. The beetle cleans the whole of its upper surface (except the head and the extreme apex of the elytra) with the middle tibiae and tarsi, each tarsus passing a little over the median line. It first "licks" one front tarsus for a short time; it then rubs this tarsus over the inner surface of the middle tibia and tarsus of the same side. The middle tibia is then turned up right over the back from behind forwards so that the inner or concave surface of the tibia and the inner edge of the tarsus come into contact with the back, the tibia matching perfectly the convexity of the elytra. The leg is then moved forwards and backwards, reaching almost to the apex of the elytra, and as far forward as the anterior edge of the thorax, which is moved slightly over to that side. One would hardly have supposed this latter position possible, and it certainly looks a wonderful acrobatic performance. The apex of the elytra is cleaned by the hind tibiae after the "saliva" has been carefully rubbed on to them from the middle tibiae. The head is cleaned by the anterior tarsi, whether the dorsal or palmar surface I could not ascertain for certain, but I believe the former. Sometimes the beetle appears to lick the middle tarsi, but I am not certain of this. On examination under the microscope I find the inner aspect of the middle tibiae is very densely pubescent.—NORMAN H. JOY, Bradford, Berks: October 1st, 1907.

Cryptophagus subdepressus, Gyll., sp. n. in Surrey.—To the locality for *C. subdepressus*—introduced as British by Dr. Joy in the last No. of this Magazine, on two examples captured by himself in Ross-shire on August 14th last—I can add Woking, one specimen taken on the wing, amongst pines, on August 20th 1905, and Guildford, two specimens, beaten from spruce firs, on August 5th last. During the present month (October) Mr. J. J. Walker and I have obtained several others on the same trees near Guildford. As noted by Dr. Joy, the species is mainly recognisable by the very dense fine puncturation of the elytra. Thomson compares *C. subdepressus* with *Micrambe abietis*, Payk., on account of its slender legs and short fine pubescence, and the two examples taken by myself on August 5th were supposed to be that insect at the time of capture. These same spruce firs have also yielded *C. dentatus*, Herbst, *Micrambe vini*, Panz., *Melanophthalma similata*, Gyll., sparingly, and *M. gibbosa*, Herbst, and *M. fuscula*, Hum., commonly, *Dromius meridionalis*, Dej., *D. A-maculatus*, L., *D. A-notatus*, Panz., and *D. melanocephalus*, Dej., *Cryphalus abietis*, Ratz., *Cardiastethus fasciventris*, Garb., *Microphysa pselaphiformis*, Curt., and *M. elegantula*, Baer., *Podisus luridus*, F., *Acanthosoma hvmorrhoidale*, L., and *Jassus mixtus*, F. The various specimens referred to *M. similata* are separable from *M. fuscula* by their smaller size, less transverse, more coarsely punctate prothorax, and coarsely punctate-striate elytra, with the alternate interstices raised towards the base; and from *M. gibbosa* by the deep fovea on the prothorax, &c. Among the *Coleoptera* observed at Woking since the publication of my last note (*ante*, p. 135), the following are worth recording:—*Rhizophagus caroleipennis*, Sahlb., another specimen, taken on the wing, by my son, on May 27th, on the same

spot where the first was captured on May 12th; *Abdera bifasciata*, Marsh., one specimen, on August 1st, swept up under an oak; *Anchomenus versutus*, Gyll., in numbers in August, seen for the first time here; *Stenus incrassatus*, Er., not rare; *Aerognathus mandibularis*, Gyll., very rarely this season, there having been but few suitable evenings for it to take flight.—G. C. CHAMPION, Horsell, Woking: *October 14th*, 1907.

Ocypus cyaneus, Payk., in Scotland.—I captured a fine male of this rare species when collecting with my friend Dr. David Sharp, near Grantown-on-Spey, in June of this year. A few days later Canon Cruttwell and Dr. Sharp took *Bradycellus placidus*, Gyll., not uncommonly in the same locality. *O. cyaneus* is, I believe, new to Scotland.—THOS. G. BISHOP, Beattock House, Beattock, N.B.: *Oct. 11th*, 1907.

Coleoptera in North Wales.—Some notes on a few days' collecting in North Wales last June may be of interest to Coleopterists. The weather throughout my stay was very cold and wet, and insects generally were very scarce, but partly to make up for this, several good things turned up. Most of my time was spent in the neighbourhood of Barmouth. There is a good stretch of high sandhills here, and *Cicindela maritima* Dej., is quite common in one or two places. A dead specimen of *Ægialia rufa*, F., also occurred, along with *Dyschorius nitidus*, Dej., and *Bledius atricapillus*, Germ. An old gull's wing produced, among other things, what I think must have been *Arena octavii*, Fauv., but as both specimens were carried off by the terrific gale blowing at the time, I cannot say definitely whether it was this species or not. Mr. Atlee has a record from this district (*Ent. Rec.*, xix, 94). *Cassida sanguinolenta*, F., was swept from a ditch bordering the sandhills, and *Phyllotreta sinuata*, Steph., from waste herbage by the side of the road. There are some extensive woods along the base of the hills a mile or two inland, and from thistles growing in a very marshy spot in one of these woods I got a number of *Larinus carlinae*, Ol., most of them were, however, very worn. *Calosoma inquisitor*, L., occurred near by; *Melasoma xneum*, L., was common on alders growing on the banks of a mountain torrent; *Clythra 4-punctata*, L., and *Apoderus coryli*, L., occurred on hazel; and one of my most welcome finds, *Cryptocephalus bipunctatus*, var. *lineola*, F., was taken on the outskirts of the wood. *Donacia impressa*, Pk., was fairly abundant on some tall grass, but was very local, all the specimens I saw being within a length of a few yards. *Chrysomela fastuosa*, Scop., occurred near the same place. The hills behind the woods rise to an elevation of some 2500 feet. *Carabus glabratus*, Pk., is to be found in several localities here, usually running among the heather during the daytime, and in 1904 I took in the same district two specimens of *C. violaceus*, var. *exasperatus*, Duft. *Phyllopertha horticola*, L., was in swarms everywhere, from halfway up the hills right down to the shore; I could have taken any number of it. A day on Snowdon produced very little besides *Megaconus inclivans*, Gr., from under a stone not very far from the summit.—P. H. JACKSON, "Dumfries," 112, Balham Park Road, S.W.: *October 1st*, 1907.

Coleoptera in the Highlands.—During the month of June this year I was in Scotland, and able to get some collecting, first at Braemar and afterwards at

Aviemore. Considering the ungenial character of the season, and the almost total absence of bright sunshine, the results obtained were far from unsatisfactory, except that the insects were individually not numerous, even usually common species being scantily represented. The specimens have been submitted to the inspection of Commander Walker and Mr. W. Holland, to whose great kindness I am indebted for the determination of several puzzling forms. I subjoin a list of the principal captures in the hope that it may interest the readers of the Magazine. (A = Aviemore; B = Braemar).

Elaphrus lapponicus, *Miscodera arctica*, *Amara alpina*, *Notiophilus aquaticus*, *Cyclus rostratus*, *Patrobis assimilis*, all on the highest slope of Mount Marrone, at nearly 3000 feet elevation. *Bradycellus cognatus*, *harpalinus*, and *similis*, *Patrobis excavatus*, *Amara bifrons* and *aulica*, *Colathus melanocephalus*, v. *nubigena*, and *C. micropterus*, on the lower slopes of the same mountain, close to Braemar. By the river side, *Amphigyanus piceus*, *Bembidium andree* (*anglicanum*, Sharp), *atroceruleum*, *nitidulum*, and *bruxellense*, *Haliptus fulvus*, *Hydroporus obscurus* and *umbrosus*, *Agabus sturmi*, *Platambus maculatus* (v. *immaculatus*), *Gyrinus natator*, a very conspicuous and beautiful form, and *G. minutus*, and *Ptilodrus melanocephalus*. Among the fir trees, *Tachinus elongatus*, *Quedius brevicornis*? and *ranthopus*, and *Quedionuchus levigatus*, *Rhizophagus dispar* and *parallelocollis*, *Sinodendron cylindricum*, and several larvæ from which I have since bred *Rhagium inquisitor*. On the pathways at Braemar, *Silpha nigrata*, a large dark brown variety which seems peculiar to Scotland, *Choleva tristis*; and among brushwood, *Limonium cylindricum*, *Telephorus obscurus*, *paludosus*, and *pellucidus*, *Rhagonycha limbata* and *elongata*, *Helodes marginata*, *Zengophora turneri* (on aspen). Besides these, the following deserve notice:—*Geodromicus nigrata*, B., *Lesteva sharpi*, B., *Philonthus proximus*, A., *P. carbonarius*, A., *Cryptohypnus maritimus* and *dermes-toides*, A., *Melanotus rufipes* and var. *castanipes*, (very large), A., *Corymbites quercus*, B., *C. impressus*, A., *Pogonocherus fascicularis*, A., *Tetratomo ancora*, A., *Clinocara tetratoma*, B., *Salpingus castaneus*, A., *Anaspis flava* and *rufilabris*, A., *Rhinomacer attelaboides* and *Maglalis duplicata*, both on stacked fir logs, together with commoner species. *Otiorrhynchus murus* and *muscorum*, A., *O. septentrionis* and *monticola* at both localities; *Pisodes pini* and *notatus*, A., *Tychius venustus* with *Apion striatum* and *Phytodecta olivacea* on flowers of broom, A., *Pityogenes quadridens*, A., *Miarus plantarum*, B. I have been surprised to find some of the above species so far north; and, as my experience was the same with regard to several *Micro-Lepidoptera*, I cannot help thinking that more complete local lists for the northern parts of our island would reveal a much more general distribution of many genera and species than is commonly recognised. Though neither Braemar nor Aviemore are probably as rich in this Order as Nethy Bridge, it is evident from the above record, which represents a fortnight at each locality, that there is abundant material for an assiduous Coleopterist.* I noted the number of species observed during the whole period, and found it 199.—C. T. CRUTWELL, Ewelme Rectory, Wallingford, Berks.: September 30th, 1907.

Hydræna longior, Rey, in North Wales.—In view of the recent introduction of this species to the British list by Mr. Newbery, it may be of interest to record

its occurrence at Llanberis. I find I took a male there several years ago, probably from the wet moss in the river near the waterfall. This sex can readily be distinguished by the very distinct angular dilatation of the posterior tibiæ; the female I should imagine it would be rather difficult to separate from some forms of *H. riparia*, Kug.—W. E. SHARP, South Norwood: *October 6th, 1907.*

Coleoptera in Surrey and Hants.—Among my captures during the past spring and summer—and to some extent making up for a very poor season's work—are: *Odontæus mobilicornis*, F.; this specimen caused great consternation at a tennis party at Woking by alighting on a fair player; luckily for me a friend (who knows my "eccentricity") captured the insect and presented it to me. *Hallomenus humeralis*, Panz., this I took as it was running on a cement path in my garden. *Cynopsis fissirostris*, Walt., this I obtained by sweeping at Lyndhurst in June. When at Lyndhurst Mr. Tate, Jun., gave me a specimen of *Pissodes notatus*, F., in splendid condition, which he had taken in the Forest. *Callidium variable*, L., a very small specimen was obtained at Petersfield.—LEWIS F. BARTON, The Retreat, Guildford Road, Woking: *September 26th, 1907.*

Peritrechus gracilicornis, Put., and other Hemiptera and Coleoptera in the Isle of Wight.—Whilst collecting Hemiptera in the Isle of Wight during the first fortnight in August, I had the good fortune to find a specimen of *Peritrechus gracilicornis*, Put., on Pan Down, near Newport. The insect might easily be passed over in the field as *P. geniculatus*, as the differences are mainly comparative, the chief being the somewhat larger size and the thinner antennæ of *gracilicornis*. This capture is interesting as being the second British record of the species, the only other being by the late Mr. Douglas many years ago at Hastings. Other interesting species which occurred to me were *Sehirus morio*, L., several larvæ in a gravel pit on St. George's Down, near Newport; *Neides tipularius*, L., in the same place; *Nabis hoops*, Schiödte, under heath in Parkhurst Forest; *Brachysteles parvicornis*, Cost., running on the damp ground amongst scantily growing rushes at Totland Bay; *Calocoris seticornis*, F., several by sweeping long grass, &c., on the cliffs of Sandown Bay; *C. ticinensis*, Mey., in Rookley Wilderness. On examining a number of specimens of *Orthotylus marginalis*, Reut., chiefly from the neighbourhood of Freshwater, I find that the ♂ of this species has the basal joint of the antennæ dark at the base, and sometimes almost entirely infusate. Mr. Edward Saunders, whose attention I called to this, has asked me to point out the necessary modification that must be made in the description of this species in his "Hemipt.-Heteropt. of Brit. Is.," where it is stated that the basal joint is pale in both sexes: this should apply only to the ♀.

Amongst the Homoptera the most interesting were *Oliarus leporinus*, L., in a salt marsh at Yarmouth; *Cicuis scotti*, Edw., Sandown Bay; *Ledra aurita*, L., a very young larva in Parkhurst Forest; *Pediopsis nanus*, H.-S., and *Stictocoris preysleri*, H.-S., on Freshwater Down; *Deltocephalus striifrons*, Kb., on Pan Down. In the salt marshes at Yarmouth I also found a number of specimens of a doubtful *Athysanus*, which is near *obsoletus*, Kb., but differs from inland examples of that species in having a longer and more pointed crown, and a differently marked frons. This form is ill under investigation by Mr. Jas. Edwards.

Amongst *Coleoptera* the most interesting captures were *Drypta dentata*, Ross., by sweeping long grass on the cliffs of Sandown Bay, and *Aphanisticus emarginatus*, F., by sweeping rushes in Parkhurst Forest, the locality where Mr. Donisthorpe originally discovered the species.—E. A. BUTLER, 56, Cecile Park, Crouch End: October 5th, 1907.

Formica exsecta, Nyl., in the Isle of Wight.—While collecting *Hemiptera* in Parkhurst Forest, I. W., I took occasionally a number of red-headed ants, without paying particular attention to them at the time, but hoping that *F. sanguinea* might be amongst them. On reaching home and examining them with the aid of books and collections, I was delighted to find amongst them a ♂ of *Formica exsecta*, Nyl. This is a new locality for this rare species, which has previously been recorded only from Bourne-mouth and a few other places in the South of England. I have to thank Mr. Edward Saunders for kindly confirming my identification.—ID.

Lepidoptera from street lamps, &c., at Guildford and Woking.—My brother and I have spent much of our spare time this year in searching the street lamps for *Lepidoptera* at Guildford and Woking. The former place was worked more thoroughly, but only during the day, and among the species secured there many are worth mentioning. The *Pseudo-Bombyces* were particularly well represented, the following having been found in or on the lamps:—*Dieranura fureula*, L., and *D. bifida*, Hb., one of each, *D. vinula*, L., fairly common; *Pterostoma palpina*, L., several; *Lophopteryx comelina*, L., rare; *Notodonta dietwa*, L., almost abundant, *N. dietwoides*, Esp., one of each sex, *N. ziczac*, L., *N. trepida*, Esp., singly, *N. chaonia*, Hb., three ♂♂, two ♀♀; *Phalera bucephala*, L., was of course common, whilst of *Pygæra curtula*, L., only two were obtained. In addition to these one *Notodonta dromedarius*, L., and two *N. trimacula*, Esp., were found by friends on the same lamps. Other species which were captured in this way are *Agrotis cinerea*, Hb., fairly common, as many as three in one lamp, between May 29th and June 18th; *Aleucis pictaria*, Curt., one specimen on April 15th; *Aplecta tineta*, Brahm., *Xanthia gilvago*, Esp., several, and a fine variety of *Catocala nupta*, L., with the red of the hind-wings replaced by dark lilac-brown. At Woking one specimen each of *Notodonta trepida*, *N. chaonia*, and *N. dietwoides* were taken at the lamps. *Eunomos fuscantaria*, Haw., both sexes in about equal numbers, and *E. alniaria*, L., only males, were fairly common in both localities.

Of the species obtained by other methods the following perhaps are noteworthy: *Cirrhædia xerampelina*, Hb., two on ash trunks drying their wings, and several dead ones in the lamps, Guildford; *Dianthæcia nana*, Rott., in some numbers on a fence near a dense growth of *Silene inflata*, Guildford; *Geometra papilionaria*, L., and *Eupithecia debilitata*, Hb. (which is not included in Mr. Goss's list for Surrey), both bred, the first mentioned from Woking, the latter from near Guildford; *Xanthia aurago*, F., on ivy bloom with *X. gilvago*, Esp., Guildford; *Toxocampa pastinum*, Tr., one at Horsley, with plenty of *Lycæna minima*, Fuess., and *Nemobius lucina*, L.; and finally, one *Tethea retusa*, L., on the canal bank at Woking.—H. G. CHAMPION, Horsell, Woking: October 19th, 1907.

Capture of *Orthosia ocellaris*, Bork, and other species at Cambridge, &c.—A specimen of *Orthosia ocellaris*, Bork., was taken by me on a street lamp in Cambridge on September 16th last. Some of the following records may also be of interest:—*Aporophyla nigra*, Hw., on a Cambridge street lamp, 25.9.07; I have not heard of this species being taken here before, though *A. lutulenta* is somewhat common. *Orthosia gilrago*, Esp., this species has been very abundant this autumn in Cambridge and district; one night a friend and I counted over 70 at light, there being no less than ten in and on one lamp. *Heliolithis dipsacea*, L., one at light at Cambridge in July; one at light, Wicken Fen, August 9th. *Hadena ophiogramma*, Esp., one at Shelford, near Cambridge, 20.6.06. *Deilephila lineata*, F., one at Shelford, 3.8.05, hovering over lavender. *Stauropus fagi*, L., an imago at rest on palings, Gog Magog Hills, 5.7.07; a few larvæ can be found most years, but I have not heard of the perfect insect being taken here before. *Homansosoma sinuella*, F., I find this species quite common on the chalk all over the district; why is it reputed to be a coast species? *Evergestia extimalis*, Se., two specimens at light, Cambridge, during July. *Paumene ochsenheimeriana*, Z., Devil's Ditch, near Newmarket, May, 1905, Cambridge, June, 1906. *Parasia neuropterella*, Z., Barton Hills, Beds., 22.8.07. *Aristotelia lucidella*, Stph., swarmed in one corner of large lake in Epping Forest, 2.8.07. *Mompha stephensi*, St., Richmond Park, 5.9.07. *Nepticula fulgens*, St., Shelford, Cambridge. *Ochsenheimeria vacuella*, F. R., common on the oak trunks in Richmond Park, 5.9.07; most of the specimens were in bad condition.

Mr. A. J. Wilmott, of St. John's College, Cambridge, asks me to mention also the following:—*Orthosia xerampelina*, Hb., ten at light, Cambridge, during September. *Senta maritima*, Tausch, one at light, Cambridge, August, 1907. *Spilodes palealis*, Schiff., same as last species. *Chrysoelista linneella*, Cl., locally common at Cambridge this year.—F. W. EDWARDS, Penwith, Hills Road, Cambridge: October 6th, 1907.

Lepidoptera in Glenshian, Inverness-shire, in July, 1907.—Having in previous years seen moths in abundance at Glenshian, between Fort William and Malsig, Inverness-shire, I was induced to take Mr. A. Noakes with me this year, who gave me valuable assistance at light and sugar; and having enlisted my chauffeur in our cause, we took long motor drives at night to the various hillside woods between the first two-named places, and with the aid of the strong acetylene motor lamps worked amongst the trees; many moths followed the light to the road, where they were duly captured.

The first ten days of July were so wet that very few butterflies were seen; and judging by the bareness of Lochailort, and what the natives told us, it is not a good locality for them. We were surprised at the number of moths found. The one that gave the most trouble to catch was *Chelonia plantaginis*. We landed from the yacht on Goat Island, on the afternoon of July 21st, and saw some half-dozen darting about at a great pace in the sunshine, too fast to see what they were: we took eight that afternoon, and two days later about twenty specimens.

Thecla rubi was just over on our first day's visit, only a few very ragged specimens were taken. *Pieris napi* was fairly plentiful, of *P. brassicae* and *nape* only a few, *Aryzannis selene* plentiful, *A. aglaia* many, but most difficult to capture;

amongst those taken was one very fine variety of the ♀: *Vanessa urticae* very plentiful in larval state, *Epinephle janira* in large quantities, many males almost black; *E. hyperanthus*, *Chortobius davus* and *C. pamphilus*, *Pararge megara* and *Polyommatus icarus* were the only other butterflies taken; we saw one "Skipper."

Zygena jilipendula, *Halias prasinana*, *Nemeophila russula*, *Clelonia plantaginis*, on Goat Island only. On the 15th the first *Phragmatobia fuliginosa* appeared, *Arctia lubricipeda* and *A. menthastris* several, with two of the var. *ochracea* of the latter, *Hepialus humuli* were very plentiful, *H. hectus*, *vellela*, and *sybrius* only a few. *Diaphora mendica*, *Lophopteryx camelina* and *Leiocampa dictya* only one of each. *Lasiocampa quercus* and *Odonestis potatoaria*, only a few worn specimens.

On the 5th we took the first *Thyrtira batis* at sugar; on later dates the same was taken at sugar and light; at which we also took *Acronycta leporina*, *A. menyanthidis*, *A. psi*, *A. rumicis*, *Leucania pulorina*, *Xylophasia lithoxylea*, *X. hepatica*, *Mamestra persicaria*, *Apamea basilinea*, *Agrotis strigula*, *Noctua plecta*, *N. ditrapezium*, *N. brunnea*, *N. festiva*, *Triphena comes*, var. *curtisii*, *Nenia typica*, *Amphipyra tragopogonis*, *Euplexia lucipara*, *Hulena dentina*, *H. adusta*, *H. oleracea*, *H. dissimilis*, *H. pisi*, *H. rectilinea*, *H. thalassina*, *H. chenopodii*, *Cucullia umbratica*, *Plusia r-aureum*, *Caradrina quadripunctata*, var. *cubicularis*, *Habrostola tripartita*, *Rusina tenebrosa*, *Hydrelia unca*, *Cymatophora or.*, *Cerastis vaccinii*. Many of the *Noctuae* are much darker specimens than are found in the south of England.

Amongst the *Geometrae*, *Metrocampa margaritata* was the most plentiful, many beautiful specimens were taken; *Geometra papilionaria*, about a dozen in the most lovely condition, these were taken about the 20th; *Rumia crategata*, *Amphidusys betularia*, and *Crocallis linguaria*, only a very few. On one hillside on the Fort William road, far away from any garden or cottage, *Aburax grossulariata* came to light in quantities. This was the only place where we saw this insect.

Campogramma bilineata, in quantity and great variety, especially on Goat Island. *Cidara fulvata*, *C. immanata*, *Bupalus piniaria*, *Boarmia repandata*, *Zonosoma porata*, *Asthenia sylvata*, *Cabera pusaria*, *Larentia olivata*, *Acidalia aver-sata*, *A. fumata*, *Hypsipetes sordidata*, *Anaitis plagiata*, *Selidosema ericetaria*, *Venusia cambricaria*, *Emmelesia albulata*, *Fidonia atomaria*, *Melanthia cellata*, *Melanippe montanata*, *M. tristata*, *Eupithecia pimpinellata*, *Enychia octomaculata*, *Botys fuscalis*, *Hydrocampa nymphicata*.

We did not collect many of the *Pyrales* or *Micro-Lepidoptera*.—JAMES J. JOICEY and A. NOAKES, 62, Finchley Road, N.W.: October 1st, 1907.

Micro-Lepidoptera in the Highlands.—After an interval of two years I spent my annual holiday in June among the Grampians, first at Braemar and then at Aviemore, in the hope of doing something among the *Micro-Lepidoptera*. My experiences of the weather were no less unfavourable than those of workers in the south. During four weeks we had not a single day with three consecutive hours of sunshine, and for most of the time a leaden sky and a persistent cold drizzle made collecting a truly vexatious enjoyment. The lateness of the season, however, enabled me to see one or two interesting insects, which would otherwise have been over, *e.g.*, *Anarta melanopa* and *Fidonia carbonaria*, both on the bare

summit of a mountain nearly 3000 feet in height, flying over the stones and scanty lichen, in a keen wind, which seemed to have no terrors for these hardy moths. Lower down *Hadena glauca* was found sparingly on posts, whenever the sun appeared, and one specimen of *Hyppa rectilinea*. *Eupithecia indigata* occurred among the firs, and *satyrata*, *nanata*, and *vulgata* among the heather and bushy scrub. *Platypteryx lacertula*, *Demas coryli*, and *Lobophora hexapterata* were beaten out of birch and alder, and *Filonia piniaria* and *atomaria* were in profusion. I was surprised, on June 16th, to see two specimens of *Chelonia russula* flying at a considerable elevation at Braemar.

The following list of *Micro-Lepidoptera* from the same place, which, with that of those from Aviemore, has been kindly verified and corrected by Mr. Eustace Bankes, may prove of some interest:—*Antithesia sororeulana*, *Stigmonota coniferana*, *Cnephasia politana*, *Gelechia æthiops*, *solutella*, and *atrella*, *Incurvaria pectinea*, *Ornixbetule*, *Gracilaria auroguttella*, *Argyresthia brockeella* (unicolorous aberration), *Ocnerosstoma piniariella*, *Coleophora murinaipennella*, *Lithocolletis spinolella*, *Nepticula woolthopiella*, *Micropteryx purpurella* and *allionella*.

On June 22nd I moved on to Aviemore, where several interesting species were obtained:—*Antithesia sororeulana* and *sauciana* var. *staintoniiana* (two specimens), *Phlæodes tetraquetrana*, *Coccyx splendidulana*, *cosmophorana*, and *distinctana*, *Stigmonota cognatana*, *Eriopsela quadrana*, *Retinia pinivorana* and *resinella*, *Opudia funebrana*, *Euchromia mygindana* and *arbutella*, *Coccyx nemorivaga* and *vacciniana*. Among the *Tineina*, *Micropteryx allionella*, *Gelechia solutella* (among them a fine hoary-grey variety, of which two were seen, and one taken), *strelliciella*, *politella*, *longicornis*, *proximella*, *ericetella*, *notatella*, and *similis* var. *confinis*, *Ornix loganella* and *betule*, *Coleophora juncicolella*, *Lithocolletis spinolella*, and one much wasted *Nepticula woolthopiella* (?). The list is a scanty one, owing to the weather; but besides the fact of its including *G. strelliciella*, H.-S., Mr. Bankes informs me that four specimens of a *Coleophora*, three of which were taken among *Vaccinium oxycoccos*, are probably *C. marginatella*, H.-S., a species hitherto unknown in Britain. With the exception of the commonest species, all these insects required careful looking for, and individual examples were few and far between, so that I was unable to procure a full series of any of the rarer kinds, but hope another year to remedy this defect.—C. T. CRUTTWELL, Ewelme Rectory, Wallingford: September, 1907.

Coleophora marginatella, H.-S. (?), in Scotland.—Among the many noteworthy species and varieties of Scottish *Lepidoptera* that I have lately had the pleasure of examining for Canon Cruttwell, a *Coleophora*, of which he secured, in June last, one example amongst mixed herbage at Braemar, Aberdeenshire, and three others amongst *Vaccinium oxycoccos*, at Aviemore, in the county of Inverness, is certainly second to none in interest. Realizing that it was distinct from all the species in the British list, and being unable to reconcile it with any *Coleophora* described by the continental authors at hand, I forwarded the specimens to Lord Walsingham, who, after a vain search in his own collection and in those of Zeller and Hofmann, found that they agreed well with the figure and description of *C. marginatella*, which was

described by Herrich-Schäffer [Syst. Bear. Schmet. Eur., v, Pl. 89, f. 683 (1854), p. 238 (1856)], from a single individual taken in the Breisgau (Baden) and received from Reutti. He therefore returned them as probably referable to *marginatella*, H.-S., but in the absence of undoubted exponents of the latter for comparison, the question, unfortunately, cannot be definitely settled at present.

In Staudinger and Rebel's "Catalog" (No. 712), the latter author, following Heinemann and Wocke [Schmet. Deutsch. u. d. Schweiz, Tin., 557, No. 863 (1876)], entered *C. marginatella*, H.-S., as synonymous with *C. albicostella*, Dup., but Lord Walsingham informs me that for some time past he has been aware that these two species are distinct.

The following description that I recently made from Canon Cruttwell's four examples of this Scottish *Coleophora*, of which the sexes are alike in colour, may be of interest to those who study the *Tineina*:—

Exp. al., 12—14 mm.

Antennæ white, conspicuously ringed with fuscous; basal joint somewhat thickened, greyish-brown. *Palpi* externally greyish-brown, internally whitish. *Head* and *thorax* greyish-brown. *Fore-wings* narrow, silky greyish-brown, with the anterior two-thirds of the costa conspicuously and rather broadly white. *Hind-wings* satiny dark grey. *Abdomen* dark grey.—EUSTACE R. BANKES, *September 21st, 1907.*

Tortrix semialbana, Gn., in *Argyleshire*.—A note in Ent. Mo. Mag., October, 1907, p. 237, by Mr. Porritt on this species, reminds me that I took *T. semialbana* in July, 1857, near Lochgoilhead, Argyleshire. I have a note that specimens were sent to Henry Doubleday on August 17th, and to R. F. Logan on August 21st, in that year. My own examples may still be seen in the Hereford Free Library and Museum.—T. A. CHAPMAN, *Betula, Reigate: October, 1907.*

Gyposoma incarnana, Haw., *ab. alnetana*, Gn., near *Folkestone*.—In July last I captured a remarkably dark specimen of *Gyposoma incarnana*, Haw., *ab. alnetana*, Gn., at Eltham Park, near Folkestone. As I was at the time unable to satisfactorily identify the specimen in question, I submitted it to Dr. Rebel in Vienna, who states that the insect in question is undoubtedly *ab. alnetana*. Dr. Rebel writes me as follows:—"The example, which is a male and very large, measuring 14 mm. in expanse, is exceptionally dark, and shows but an extremely faint resemblance to the type. The fore-wings have the first white fascia entirely darkened by scales of a leaden greyish hue, while on the termen the white is entirely absent. The ocellus is very broad, and outlined on both sides with scales of a metallic leaden colour. The costa beyond the middle and the apex are ferruginous, the hind-wings and their cilia as well as the abdomen are very dark grey. The frons is whitish-grey, and the antennæ white ringed."—W. PURDEY, 129, *Sea View Terrace, Folkestone: October, 1907.*

Aculeate Hymenoptera at Holmwood, Surrey.—When recording in the September Ent. Mo. Mag. the second occurrence in Great Britain (after an interval

of seven years) of *Pompilus sanguinolentus*, I was rash enough to express the hope of adding a further note on the species at a later date. I have, however, been unable to discover the insect again despite an exhaustive search. The only Aculeate of marked rarity that has occurred here this season (apart from those recorded in past years) has been a single ♂ of *Crabro gonager*. *Prosopis cornuta* and *dilatata* have been out in fair numbers, and seem to frequent quite a large variety of flowers, though curiously enough I have never yet found either on those of the bramble, which is given in Mr. Saunders' work as a favourite. Before the *Achillea* was in flower, both species were to be found on Marguerite daisies; later, on *Achillea*, and then in turn on *Stellaria graminea* and *Achillea ptarmica*. *Ceratina* turned up again, but only a single ♀. *Stelis aterrima* (♀) I took on *Lotus corniculatus*, and is the first of the species (or genus) I have seen on a flower of any sort.—C. H. MORTIMER, Holmwood: September, 1907.

[Since writing the above I have been interested to find *Crabro pauzeri* here in an old sandpit. I recorded a large colony of it from Streatham in 1894, and since then have not seen it again, though I have looked carefully for it every year].

Aculeate Hymenoptera at Swanage, Dorset.—During a ten days' visit to Swanage, last June, one or two interesting *Aculeates* turned up, but the weather was of the worst for collecting. It is sixteen years since I recorded the rare *Andrena proxima* from this locality, and I was interested to find it again in profusion in its old haunt—a narrow cleft in the cliff, which it seems to have scrupulously adhered to, since there was no sign of it elsewhere. ♀s of *Methoca ichneumonides* were also numerous on a small patch of cliff barely thirty yards in length. *Osmia spinulosa* I met here for the first time, and also the rarer *leucomelana*. This genus is not, I think, generally credited with being a flower-loving one, yet both occurred on buttereup and dandelion; while, in addition, I found *leucomelana* visiting daisy, and *spinulosa* thistle. I was glad to get a good series of one of the rare *Nyssons*, *N. interruptus*, the species being quite plentiful during the very rare glimpses of sunshine. With the exception of *Andrena lucens* and a ♂ and two ♀s of *Prosopis dilatata* I saw nothing worthy of mention.—ID.: September, 1907.

Wasps killing Hive Bees.—During last August I witnessed three occurrences of this. In the first instance a wasp settled on the ground near me, bearing a dead hive bee, recently killed, and still moving. The wasp itself I failed to secure, but it was either *Vespa germanica* or *vulgaris*: in both the other cases it was *vulgaris*. In the first of these I captured the wasp as it flew off with the deceased bee. In the second there were two wasps, one joining in the fight after it had been progressing for some time. I disturbed this discussion rather too soon, as having netted the wasps, I found the bee bitten in two halves between thorax and abdomen. It would have been interesting to know whether this had been done on purpose to allow each visitor a share of the spoil. In both the latter instances the wasp was the aggressor.—ID.: September, 1907.

Macrocentrus marginator, Nees.—I had the pleasure of receiving from Mr. W. A. Rollason of Truro, *Macrocentrus marginator* on April 30th last, which he had bred that day from some currant stems in which *Sesia tipuliformis* larvae were feeding. This parasite has been bred from different species of *Sesia*; Marshall, however, does not mention it having been bred in England from *S. tipuliformis*, but that it had been on the continent.—G. C. BIGSELL, Saltash: October 13th, 1907.

Rare Orthoptera near Dover.—I am pleased to be able to record the capture of numbers of *Apterygida albipennis*, Meg., and also of *Decticus ferrucivorus*, Linn., at Stonehall Farm, near Lydden, near Dover.—MALCOLM BURR, Sibertswold, near Dover: September 25th, 1907.

Reviews.

"BUTTERFLIES OF HONGKONG AND SOUTH-EAST CHINA:" by J. C. KERSHAW, F.Z.S., F.E.S. Parts I-VI. Ho, pp. 181, plates I-XIV and Ia-Va. Kelly and Walsh, Limited; Hongkong, Shanghai, Singapore and Yokohama. London; R. H. Porter.

Our knowledge of the Diurnal *Lepidoptera* of the Chinese Empire, almost a negligible quantity a few years ago, may now be said to compare favourably with that of most parts of the world of equal extent. This increase is due, in the first place, to the late Mr. J. H. Leech's great and sumptuous work, "Butterflies from China, Japan and Corea;" and the work now under review forms another substantial contribution. Mr. Kershaw may be congratulated on the success with which he has dealt with the butterfly-fauna of a most interesting district, which if it be not as rich as that of some other tropical regions (mainly through its being the seat of a dense and industrious population, before whom nearly every vestige of forest vegetation has long ago disappeared), yet includes many fine and showy species as well as a few peculiar forms of these insects. 113 species of butterflies are recorded as having been met with at Hongkong and Macao, and on the adjoining mainland of South-East China, as against about 120 observed by the writer of the present notice during part of two years (1892 and 1893) on the island of Hongkong alone. The additional species include the migratory American *Anosia (Danais) archippus*, which has at last followed its food-plant across the whole width of the North Pacific Ocean. No new species are described, nor indeed are any detailed descriptions of the perfect insects given; but all except a very few are figured by the three-colour process from the author's drawings. While all the plates may be pronounced good, some of them, as Plate VIII, including most of the *Lycenidae*, and Plates IX and X, containing the *Pieridae* and some of the *Papilios*, attain a high degree of merit. The supplementary plates of the larvæ and pupæ are also excellent examples of colour-printing as executed in Japan, though a few of the figures are somewhat lacking in detail. The

most valuable part of the work in our opinion consists in the careful descriptions of the earlier stages of a large proportion of the species, in many cases unknown up to the present; and in the bionomic notes and observations on the habits of the perfect insects, which amply testify to Mr. Kershaw's powers as an observer. We may refer to the account of the very singular life-history of the Lycenid species, *Gerydus chinensis* and *Spindasis lobita*, and their association with ants in their earlier stages, first detailed in Trans. Ent. Soc. Lond., 1905 and 1907, and here reproduced, as being of special interest. The work is written in a clear, though not severely scientific style (synonymy, for instance, being almost entirely omitted), and the "General Notes" appended to each part make very pleasant reading, and include much interesting information as to the region dealt with.

"AUSTRALIAN INSECTS:" by WALTER W. FROGGATT, F.L.S., Government Entomologist, New South Wales. 8vo, pp. 449, with 37 plates containing 270 figures, also 180 text-blocks. Sydney: William Brooks and Co., Limited, 17, Castlereagh Street. 1907.

Of all the great divisions of the earth's surface the Island-Continent of Australia presents us with an insect-fauna which is certainly the most isolated and peculiar of any of the same extent (except perhaps in respect to one principal group, the Diurnal *Lepidoptera*), and ranks amongst the richest of them all. Our knowledge of its infinitely varied forms of insect life dates from the time when Fabricius described the insects brought home from its shores by Sir Joseph Banks and the naturalists who accompanied Captain Cook on his first memorable voyage. Until quite recently, however, little has been written about the actual life-history of the insects of Australia, and the descriptions of a large proportion of the earlier known species—often inadequate without reference to the types—are embodied in rare, costly, and not readily accessible works in many languages, and in the publications of learned societies. The want of a book treating of the insect fauna of the region as a whole, has been much felt by the large and enthusiastic body of Entomological workers that of late years has arisen in Australia, and this want Mr. Froggatt has endeavoured to supply in the present work. His chief difficulty—which he has effectually surmounted—has been to write in a sufficiently popular style to interest the general reader as well as the beginner in the study of Entomology, without sacrificing the requirements of the more advanced student of the science. Following the classification adopted by Dr. Sharp in his well-known volumes on "Insects" in the "Cambridge Natural History," with slight modifications, the author, we note with satisfaction, treats the so-called "neglected Orders" with fully adequate detail. Indeed, some of the most interesting sections of the book are those devoted to the Termites (here regarded as belonging to the Order *Orthoptera*,

pp. 20-28), the *Heimerobiidae* (pp. 57-66), the *Cicadidae* (pp. 346-354), and the *Coccidae* (pp. 371-387). As might be expected, Mr. Froggatt deals with his subject largely from the bionomic and economic side, and it is from the latter point of view that the book will be found of especial value in Australia, the numerous and destructive insect pests of that region being fully illustrated and described. The Entomologist in the "Old Country" and elsewhere will, on the other hand, find a great deal to interest him in the account of the varied forms—many of them unrivalled in beauty and singularity of structure by those of any other part of the world—of the *Coleoptera*, *Lepidoptera*, *Hymenoptera*, and *Orthoptera* of Australia. The numerous plates are on the whole exceedingly well executed, and some of them, especially those representing the "Giant," and "Meridional" Termite mounds of North Australia, the large and grotesque forms of *Orthoptera*, and the beautiful beetles of the Buprestid genus *Stigmodera*, are very striking. We could, however, have wished that, instead of the showy but not very characteristic butterflies figured in Plate I (one of them being our old friend *Auosia archippus*), some of the beautiful *Satyridae* and *Lycenidae* peculiar to Australia had been delineated. The text-figures, some of which have previously appeared in illustration of papers by the author in the "Agricultural Gazette of New South Wales," are also very good, several of them, representing *Coleoptera* on an enlarged scale, being among the best of their kind we have seen. Useful hints as to collecting and preserving, an interesting account of the chief collections of Australian insects in their own country and elsewhere, a list of the principal publications dealing with Australian Entomology, and a full index, conclude this interesting and valuable contribution to the list of Entomological works. The printing, paper, and general "get-up" of the book leave little to be desired, and we notice only a few misprints or other inaccuracies; indeed, almost the only statement which strikes us as open to question is that on pp. 238-9, as to the frequent occurrence of the larva of that strictly Palearctic hawk-moth, our familiar *Sphinx ligustri*, in Australian gardens.—J. J. W.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
 Thursday, September 12th, 1907—Mr. HUGH MAIN, B.Sc., Vice-President, in the Chair.

Mr. South exhibited specimens of *Lithosia caniola*, bred from larvæ fed upon lettuce, which they would only eat when in a decaying condition. Mr. Newman, a few bred specimens of *Eugonia autumnaria*, including two very beautiful dark forms, the result of a pairing of the unique form bred last year with a typical form. He also showed varieties of *Aglais urticae*, including forms with black hind-wings, rayed hind-wings, and with discal spots almost obsolete. Mr. Goulton, living larvæ of *Bankia argentula*, and a series of *Anticlea badiata* showing much variation in the transverse banding and general coloration. Mr. Harrison, imagines of the same species from Wicken, together with living larvæ. Mr. Sich, imagines and ova of

Trifurcula immundella from Surrey, and read notes on the habits of the imagines and larvæ, and giving the characteristics of the ova. Dr. Chapman, bred specimens of *Arctia fasciata*, from ova obtained by him in Spain. Mr. Main, a long series of photographs of the life-history of *Charaxes jasius*. Mr. South, a specimen of *Agriades corydon* ab. *syngrapha*, from Wiltshire. Mr. Tutt read a paper, "Egg-laying of the Brentluds" (*Rhopalocera*), and a considerable discussion took place.

Thursday, September 26th, 1907.—Mr. HUGH MAIN, B.Sc., Vice-President, in the Chair.

Dr. G. C. Hodgson, of Red Hill, was elected a Member.

Mr. Tonge exhibited a living larva of *Cucullia asteris* from Sussex, and showed some stereographic views he had made of insects at rest. Mr. Ashby, series of *Donacia crassipes* from the New Forest, *D. clavipes* from Wicken, and *Harmonia curtisii* from Gravesend. Miss Fountaine, both sexes of the two broods of *Pieris ergane*, the spring specimens from Montenegro, and the autumn from Heregovina. Mr. Newman, a very large number of varieties and forms of the various species of *Lepidoptera* bred and captured by him during the present season. Mr. Simmons, a series of *Hemerophila abruptaria* bred by him from a dark wild ♀ crossed with a bred typical ♂, including a very fine gynandrous example, the left side the ordinary ♀ colour, while the right side had the very dark form of ♂ characters. Messrs. Harrison and Main, a portion of a brood of *Acidalia aversata*, all of which followed the colour and markings of banded parents. Mr. Gadge, a fine variety of *Abraxa grossulariata*, with mere remnants of the usual black markings, captured on Denmark Hill. Mr. Goulton, a bred series of *Euchloë cartamines* of unusual size, particularly the ♂s. Mr. Main, ova of *Pararge egeria*, in situ on grass, and living larvæ of *Phorodesma smaragdaria*. Mr. Coote, (1) living larvæ of *Celastrina argiolus* on ivy berries from Eastbourne; (2) a specimen of *Agriades corydon* var. *obsoleta* from Eastbourne. Mr. Turner, series of *Parnassius delius* and *Colias palæno* taken in the Engadine in August. Mr. Sich, (1) *Tineola biselliella*, bred specimens of large size, the larvæ fed on red cloth; (2) *Borkhausenia pseudospretella* from larvæ found in flax seed by Mr. W. West. Dr. Chapman, (1) *Plebeius argus* (*cegon*), uniformly dark on the upper side; and (2) larvæ of *Clymene peloteriaria* with imagines from Gavarnie, with specimens of *C. niveatu* from Carinthia for comparison.—HY. J. TURNER, Hon. Secretary.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, October 2nd, 1907.—Mr. C. O. WATERHOUSE, President, in the Chair.

Mr. W. Perrins, Junior, of Davenham, Malvern, and Mr. Frank Milburn Howlett, of the Agricultural Department, Pusa, Bengal, India, were elected Fellows of the Society.

The Rev. F. D. Morice gave an account of his reception as the representative of the Society, and of the celebrations of the University of Upsala, and of the Academy of Science at Stockholm, at which he was present.

Commander J. J. Walker showed living specimens of the Heteromorous beetle *Sitaris uncalis*, first rediscovered at Oxford by Mr. A. H. Hamm, of the Oxford University Museum in 1903, and found rather freely during September, 1906 and 1907, on old stone walls in the vicinity of Oxford inhabited by the Mason Bee, *Podalirius (Anthophora) pilipes*, on which it is parasitic in its early stages. Mr. G. T. Porritt, black specimens of both sexes of *Fidonia atomaria* from the Harden Moss Moors, Huddersfield, illustrating the melanic tendency of *Lepidoptera* in the district. Mr. H. St. J. Donisthorpe, *Apion semivittatum* taken on *Mercurialis annua* in plenty at Deal in August and September, 1907; *Megalitis duplicata* from Nethy Bridge in July, 1907; *Formica sanguinea* from Aviemore and Nethy Bridge, the first record for Scotland; and *Piezostethus fornicetorum*, taken with *Formica rufa* at Rannoch, in July: a species which has not been found in Scotland since Dr. Buchanan White first captured it in 1874. Mr. A. H. Jones, a case of butterflies taken this year at Hereulesbad, South Hungary, including specimens of *Erebia melas* from the Domogled, which bore a remarkable resemblance to *Erebia allecto* var. *nicholli*, Oberth., from Campiglio, and *Erebia leibneri*, Oberth., also shown for comparison by Mr. H. Rowland-Brown. Mr. Jones also exhibited examples of *Cheysophanus dispar* var. *rutilus*, and *C. alceiphron* from the neighbourhood of Buda-Pesth; both species of great size and brilliant colouring. Dr. F. A. Dixey, specimens from Uganda of the African Pierine genus *Mylothris*, showing an almost complete gradation between *Mylothris chloris*, Fabr., and *M. agathina*, Cram. Mr. M. Jacoby, several fine forms *L. bellargus* of the ab. *ceronus* taken this autumn at Folkestone, as well as one example of the ab. *cinnaides*, Stgr. Mr. Norman Joy, a specimen of the rare beetle *Cryptophagus sublepressus*, Gyll., taken near Garva, Ross, on August 4th, last. Mr. W. J. Lucas, on behalf of Mr. Nicholson and Mr. Summers, two specimens of *Deilephila euphorbie* bred by them from larvae found in Kew Gardens. He also exhibited several examples of insects which had seized their prey, with the remains of the victims *in situ*. Mr. H. M. Edelsten, specimens of (1) *Sesia andrenaformis*, bred from pupæ taken in Bedfordshire and Kent, and (2) Ova of *Nonagria cannae*, *in situ*, illustrating the remarkable methods of oviposition of the species. Mr. A. Harrison and Mr. H. Main, four broods from females of *Pieris napi*, var. *bryoniae*, captured on the Kleine Seheidegg Pass, Switzerland, in July, 1906, showing a wide tendency to variation. Prof. T. Hudson Beare, a specimen of the rare bug, *Lygus equestris*, L., from St. Margaret's Bay. There are only four previous records of its capture in this country: Bath, 1837; Devizes, 1864; Dover, 1886; Sheppey, 1906. He also showed specimens of *Hypera tigrina*, Boh., taken in some numbers on the wild carrot from the same locality; a very local insect, which seems to be confined to the S.E. corner of England; and specimens of *Apion semivittatum*, Gyll., taken during the same period at St. Margaret's Bay off plants of *Mercurialis annua*. Col. Charles Swinhoe read a paper on "The Species of *Hesperidae* from the Indo-Malayan and African Regions, described by Herr Plötz, with descriptions of some new Species." Lieut.-Col. Manders, "The Butterflies of Mauritius and Bourbon." Dr. T. A. Chapman, "The Hibernating Habit of the Lepidopterous Genus *Marasmarcha*," and exhibited specimens to illustrate his remarks.—H. ROWLAND BROWN, *Hon. Secretary*.

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An examination of the type of *Tinea merdella*, Z., which was figured by Herrich-Schäffer (Tin. 635), shows that it cannot be the same species as **merdella*, Stn., &c., which has been sunk by Meyrick and others as a synonym of *Tinea pellionella*, L. The type, collected at Constantinople by Löwe, is still the unique exponent of the species. A most careful examination under a microscope has failed to reveal the slightest trace of maxillary palpi or haustellum. The genus *Tineola*, HS., is found to possess short, but not folded, maxillaries, but in spite of this objection I would suggest that it should be referred, at least provisionally, to *Tineola*, rather than to *Myrmecozela*, Z., which differs conspicuously in the median joint of the palpi being densely clothed with projecting scales, rather than sparsely bristled. Herrich-Schäffer's figure emphasises the difference in marking which should also at once serve to separate *merdella*, Z., from the British species (**merdella*, Stn.; nec Z.). The outer spot, so far as I can judge, invariably single among our British specimens, is distinctly reduplicated in the figure, as in the type; moreover the inner spots, represented in English specimens as a pair, equidistant from the base, but not reaching the dorsum, are, in the true *merdella*, better described as one spot, with a diffused streak of similar dark scales arising from the dorsum below and nearly reaching it. This also is well shown in the figure, but is rather more clearly defined than in the specimen itself. My British Collection contains a good series of **merdella*, Stn., from various sources, including some from Hodgkinson, Douglas, and Mason; certainly these are all true *Tineae* with folded maxillaries. The presumption at least is that the true *merdella* does not occur in England, but this is of course open to correction in the event of any one finding in his cabinet a British specimen, resembling that which has been so-called in our collections, but without folded maxillary palpi.

We are left to consider whether the species, erroneously referred to *merdella* by Stainton, has or has not been described. It cannot be *pallescentella*, Stn. (= *nigrifoldella*, Grgsn.). It cannot be **flavescentella*, Stn. (nec Hw.), which is the ochreous and distinctly irrorated form of *fuscipunctella*, Hw., as obviously suggested by Doubleday (Syn. List 27). It cannot be *dubiella*, Stn., which Stainton himself (Ent. Ann. 1874. 3) was unable to separate from *pellionella*, L.,

because this is described as having all the wings darker (especially the hindwings) than *pellionella* itself, and as having only the discoidal spot (no others). The only description, founded on British specimens, with which it can be compared is that of *flavescentella*, Hw., Stph. (*nee* Stn.), and with this it is quite in agreement, noticeably as to "punctis obsoletissimis," and "costa basi absque atra."

There is however another description from which I am at present unable to separate it, viz :—that of *Tinea tristigmatella*, Costa [Fn. Nap. Lp. Tinea 20-1, no. 20 Pl. IV. 8 (1836)]. Costa's figure does not give the idea conveyed by his description, chiefly on account of the use of gold or other metallic colouring, which his artists habitually employed to represent a shining surface, but, with this exception, there is nothing to prevent it from fairly agreeing with the insect before us. In England the species with which we are dealing has been confused with *merdella*, and it is at least a curious coincidence that the first description by Zeller (Isis 1847. 808-9) of the specimen which he subsequently [Lin. Ent. VI. 162-3 (1852)] separated as *merdella*, was a comparative description referring to differences between it and *tristigmatella*, Costa, these being precisely the differences which we now recognise as separating *merdella*, Z., from **merdella*, Stn., and therefore, unless any one able to refer to Costa's type, can point out in what it differs from **merdella*, Stn. (*nee* Z.), as figured by Morris [NH. Br. Moths IV. 24. Pl. 99. 14 (1870)], this species should sink as a synonym of *flavescentella*, Hw. Sixty years have passed since Zeller wrote, and *tristigmatella*, Costa, has disappeared from the European lists, but it must certainly be resuscitated, if only as a synonym. With regard to the larva, Morris writes (*l. c.* 24), that "It feeds on grain," after mentioning that the moth occurs in "wool-stores." It is probable that the grain-feeder he referred to was *fuscipunctella*, Hw., for Horton [Ent. Wk. Int. VI. 109-110 (1859)] gives a very carefully detailed account of the case-bearing larva of the species identified by Stainton as *merdella*, and as it fed on an old pen-wiper, this is consistent with its occurrence in wool-warehouses.

The best account however is by Lafaury [Ann. Soc. Ent. Fr. LIV (6 s. V: 1885), 410-11 (1886)], who shows conclusively that it cannot be a mere variety of *pellionella*, L. (with the larva of which he was also well acquainted), although, like it, this also feeds on old woollen fabrics, making a somewhat similar case.

The synonymy of *flavescentella*, Hw. (= **merdella*, Stn.), *Tineola merdella*, Z. (*nee* Stn.), and other species of *Tinea* studied in this

connection (some not recorded in Stgr-Wk Cat, or Stgr-Rbl. Cat.), is as follows:—

4583.—*TINEA FUSCIPUNCTELLA*, Hw.

= **flavescentella*, Stn. (nec. Hw.).

Tinea fuscipunctella, Stn. Syst. Cat. Br. Tin-Pter. 8, no. 26 (1849)¹. *Tinea spretella* (*flavescentella*, Benth.), Stn. Syst. Cat. Br. Tin-Pter. 8, no. 27 (1849)². *Tinea flavescentella*, Stn. Sppl. Cat. Br. Tin-Pter. 2, no. 41 (1851)³; Ins. Br. Lp-Tin. 34, no. 22 (1854)⁴; Dbld. Syn. List Br. Lp. 27 (1859)⁵; Stu. Mn. Br. B. & M. II. 293, 466, no. 1266 (1859)⁶. *Tinea fuscipunctella*, Morris, NH. Br. Moths IV. 22-3. Pl. 99. 9 (1870)⁷. *Tinea flavescentella*, Morris NH. Br. Moths IV. 23. Pl. 99. 10 (1870)⁸. *Tinea fuscipunctella*, Merrin Lp. Cal. (2 ed.). 101, 115, 133, 147, 157, 176, 242 (1875)⁹. *Tinea flavescentella*, Merrin Lp. Cal. (2 ed.). 242 (1875)¹⁰. *Tinea fuscipunctella*, Hrtm. MT. Münch. Ent. Ver. III. 199, no. 1404 (1879)¹¹.

Hab.: ENGLAND¹⁻¹¹—nr. London^{6, 8, 10}; nr. Sheffield¹.

Larva in spun tube¹¹, on dried fruit¹¹; dried peas, &c.,¹¹; on all kinds of waste substances⁹; offal¹¹; birds' nests¹¹; meal-worm workings¹¹; VII—VIII^{9, 11}, IX—V¹¹. *Imago* V¹¹, VI^{7, 9, 10}, VII^{9, 11}, VIII¹¹, IX^{7, 9, 11}, X¹¹.

4584.—*TINEA PELLIONELLA*, L.

Tinea pellionella, Morris, NH. Br. Moths IV. 22. Pl. 99. 7 (1870)¹; Hrtm. MT. Münch. Ent. Ver. III. 199, no. 1405 (1879)²; Merrin Lp. Cal. (2 ed.). 31, 55, 82, 101, 133, 157, 179, 191, 242 (1875)³.

Larva in case on furs², feathers¹⁻³, swallows' nests², stuffed birds², woollens², cloths^{1, 3}, carpets³. VIII—III², IV—V²⁻³. VI³. *Imago* II—V¹, VI—VII¹⁻³, VIII—X¹⁻², XI¹.

Hab.: ENGLAND, &c.

Experience shows that it is not advisable to regard as mere synonyms species that have been described, or figured, but which cannot be easily recognised. I prefer to call attention in this case to the two following names given to species, regarded as new, by Gregson (who was a very observant collector), in the hope that those who have the opportunity may endeavour to discover the grounds on which he separated them from the already named species in our collections.

4584 : 1.—TINEA DUBIELLA, Stn.

[*dubiella*, Grgsn., MS.]

Tinea dubiella, Stn. Ent. Wk. Int. VI. 183 (1859)¹; Ent. Ann. 1860, 128, 133-4 (1859)²; Stgr-Wk. Cat. Lp. Eur. 107, no. 1236 (1861)³; Morris NH. Br. Moths IV. 22. Pl. 99. 8 (1870)⁴; Stgr-Wk. Cat. Lp. Eur. 270, no. 1107 (1871)⁵; Stn. Ent. Ann. 1874. 3 (1874)⁶; Merrin Lp. Cal. (2 ed.). 242 (1875)⁷; Hrtm. MT. Münch. Ent. Ver. III. 199, no. 1407 (1879)⁸.

Hab. : ENGLAND (Liverpool) ¹⁻⁸.

Larva in case (like *pellionella*), on insect remains ¹. *Imago* VI ^{1, 2, 4}, VII ⁴.

4584 : 2.—TINEA FUSCESCENTELLA, MORRIS.

[*fuscescentella*, Grgsn., MS.; Stn., LN.]

Tinea fuscescentella [Stn. Ent. Ann. 1860. 128, 134 (1859)¹ LN.]; Morris NH. Br. Moths IV. 21. Pl. 99. 6 (1870)²; Stgr-Wk. Cat. Lp. Eur. 270, no. 1409 (1871)³; Hrtm. MT. Münch. Ent. Ver. III. 199, no. 1409 (1879)⁴.

Hab. : ENGLAND (Liverpool) ¹⁻⁴.

Larva in old birds' nests ². *Imago* VI—VII ².

4584 : 1.—TINEA FLAVESCENTELLA, Hw.

n. syn. = **merdella*, Stn. (*nee* Z.); = *tristigmatella*, Costa.

Tinea flavescentella, Hw. Lp. Br. 564, no. 10 (1828)¹; Stph. Syst. Cat. Br. Ins. II. 224, no. 7538 (1829)²; Crt. Guide Br. Ins. 187, no. 1033 : 12 (1831)³; Stph. Ill. Br. Ent. Haust. IV. 346, no. 9 (1834)⁴; Crt. Guide Br. Ins. 214, no. 1033 : 8 (1837)⁵; Wd. Ind. Ent. 225. Pl. 49. 1558 (1839)⁶. *Tinea tristigmatella*, Costa Fn. Nap. Lp. *Tinea* 20-1, no. 20, Pl. IV. 8 (1836)⁷; Z. Isis 1846. 808, no. 21⁸. *Tinea flavescentella*, Stn. Syst. Cat. Br. Tin-Pter. 8, no. 31 (1849)⁹. *Tinea tristigmatella*, Hdreth. Lp. Eur. Cat. Meth. (3 ed.). 79, no. 97 (1851)¹⁰; *Tinea flavescentella*, Stn. List Br. An. BM. XVI. Lp. 15, no. 22—*dele* "Sta." (1854)¹¹. *Tinea merdella*, Cooke Ent. Wk. Int. I. 125 (1856)¹²; Stn. Ent. Ann. 1857. 102-3 (1856)¹³; Stn. Mn. Br. B. & M. II. 293, 466, no. 1264 (1859)¹⁴; Horton Ent. Wk. Int. VI. 109-10 (1859)¹⁵; Dbld. Syn. List Br. Lp. 27 (1859)¹⁶. *Tinea flavescentella*, Stgr-Wk. Cat. Lp. Eur. 107, no. 1239—*dele* "Stt." (1861)¹⁷. *Tinea merdella*, Dbld. Syst. Cat. Br. Lp. 27 (1866)¹⁸. *Tinea tristigmatella*, Stn. Tin. S.-Eur. 267 (1869)¹⁹. *Tinea merdella*, Morris NH. Br. Moths IV. 24. Pl. 99. 14 (1870)²⁰. *Tinea flavescentella*, Stgr-Wk. Cat. Lp. Eur. 270, no. 1412—*dele* "Stt." (1871)²¹.

Tinea merdella, Stn. Ent. Ann. 1874. 3²²; Merrin Lp. Cal. (2 ed.). 101, 133, 185, 193, 242 (1875)²³. *Tinea flavescentella*, Hrtm. MT. Münch. Ent. Ver. III. 199, no. 1412 (1879)²⁴. *Tinea tristigmatella*, Curo Bull. Soc. Ent. It XIV. 11 (1882)²⁵. *Tinea flavescentella*, Lfy. Ann. Soc. Ent. Fr. LIV (6 s. V: 1885), 410-11 (1866)²⁶.

[= *pellionella*, Meyr.; Stgr.-Wk. -partim.]

Hab.: ENGLAND^{1-6, 9, 11-18, 20-21} — Hr. London¹⁻⁶; Liverpool^{12-14, 20, 22}; Manchester^{11, 20}; Darlington²³; Worcester¹⁵. [? FRANCE²⁶]. SPAIN — GRANADA — Granada, S.VI.1901 (*Wlsm.*). ITALY^{7-8, 10, 19, 25} — Naples^{7-8, 19, 25}.

Larva in cases, on wool, X²⁶ — e. II¹⁵, excl. VI^{15, 26}; on furs X — XI²³. [*Imago* in "wool-stores." — "It feeds on grain"!²⁰], *Imago* — VI^{4, 6, 20, 23}, VI^{12, 23}.

4588.—TINEA PALLESCENTECLA, Stn.

= *nigrifoldella*, Grgsn.

Tinea pallescentecla, Stn. Sppl. Cat. Br. Tin-Pter. 2, no. 43 (1851)¹; Ins. Br. Lp-Tin. 34, no. 21 (1854)²; List. Br. Ann. BM. XVI. Lp. 15, no. 21 (1854)³. *Tinea nigrifoldella*, Grgsn. Zool. XIV. 5295-6 (1856)⁴. *Tinea pallescentecla*, Stn. Ent. Ann. 1857. 122 (1856)⁵; Dbld. Syn. List Br. Lp. 27 (1859)⁶; Stn. Mn. Br. B. & M., 393, 466, no. 1265 (1859)⁷; Morris NH. Br. Moths, IV. 23, Pl. 99. 12 (1870)⁸. *Tinea nigrifoldella*, Morris NH. Br. Moths IV. 23. Pl. 99. 12 (1870)⁹. *Tinea pallescentecla*, Eales Ent. Mo. Mag. VIII. 209-10 (1872)¹⁰; Stn. Ent. Ann. 1874. 3¹¹; Merrin Lp. Cal. (2 ed.). 55, 82, 133, 157, 179, 191, 242 (1875)¹²; Hrtm. MT. Münch. Ent. Ver. III. 199, no. 1408 (1879)¹³; Rbl. VII. Z-B. Ges Wien Abh. XXXIX (1889). 303-4, no. 13. Pl. VIII. 7 (1889)¹⁴.

Hab.: ENGLAND¹⁻¹⁴ — Liverpool^{1, 2, 4, 5, 7, 9, 11}; Manchester⁷⁻⁸; Birkenhead⁷⁻⁸; York⁷⁻⁸; South Shields¹⁰; London, 30.VI.1906 (*Wlsm.*), Green Park, 4.VII.1887 (*Drnt.*); Norfolk (Merton) 26.V.1903, 29.VIII.1903 (*Drnt.*). AUSTRIA¹⁴ — Ganzen¹⁴, Sara-jevo¹⁴. GERMANY¹⁴ — Stettin¹⁴.

Larva on grain^{5, 7-8, 11, 14}; in cadav., desiccated cat^{10, 14}; in rabbit, hare, and cat skins (in warehouses and poulterers' shops)¹²; wool¹³. V-VI¹², VII-XII¹⁰. *Imago* V, VI; VII^{7, 8, 9, 10, 12}, VIII⁷⁻¹⁰, IX^{9-10, 12}, X^{10, 12, 14}, XI-XII¹⁰.

TINEOLA, H.-S.

4622: 1.—TINEOLA MERDELLA, Z.

Tinea tristigmatella, Csta. + var., Z. Isis 1847. 808-9. *Tinea*

merdella, Z. Lin. Ent. VI. 162-3, no. 29 (1852); HS. SB. Eur. V. 72, no. 51 (1853); Pl. 83, 535 (1853); Stgr.-Wk. Cat. Lp. Eur. 107, no. 1242 (1861); 270, no. 1416 (1871); Hrtm. MT. Münch. Ent. Ver. III. 199, no. 1416, *dele* "Attika" (1879).

Hab.: TURKEY—Constantinople.

Type, ♂, Mus. Wlsm.

TINEOLA (?) sp. (?)

Tinea sp. (nr. *merdella*), Stgr. Hor. Soc. Ent. Ross. VII. 230, no. 712 (1871). *Tinea merdella*, Hrtm. MT. Münch. Ent. Ver. III. 199, no. 1416—*partim*, nec Z. (1879).

Hab.: GREECE—Attica.

Merton Hall, Thetford:

October, 1907.

FURTHER NOTES ON LEPIDOPTERA OBSERVED AT MORTEHOE,
NORTH DEVON.*

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

In the four years which have elapsed since the publication of the second edition of my list of Morteheo *Lepidoptera* the following additional species have come to light. It will be noticed that in most cases only single specimens have been met with.

Tephroclystis venosata, Fabr. A single example, 1905.—*T. albipunctata*, Haw. A young larva on *Angelica sylvestris*, September, 1907.

Eois subsericeata, Haw. A single specimen, 1906.

Apocheima pedaria, Fabr. (*pilosaria*, Hübn.), a larva.

Deilephila porcellus, Linn. Three larvæ taken at Woolacombe by Mr. H. G. Champion, 1907.—*D. elpenor*, Linn. Several larvæ on *Epilobium montanum* in the garden, 1904.—*D. galii*, Rott. A larva at Woolacombe found by Mr. H. G. Champion, September 3rd, 1907.

Acherontia atropos, Linn. Mr. Hector Wimbush took a moth at Woolacombe, 1903.

Homæosoma binævella, Hübn. A single specimen at Vention, just beyond the parish boundary, July 1st, 1906.

Galleria mellonella, Linn. Several specimens in the house, August, 1907. There are two nests of bees in the woodwork.

Phlyctænia fuscalis, Schiff. One, 1906.

Scoparia angustea, Steph. (*coarctata*, Zell.). Single specimens; at ivy-bloom 1904; on a rock, 1907; at light, 1907.

* See Ent. Mo. Mag. 2nd Series, vol. xvi, p. 69.

Evergestis extimolis, Scop. (*margaritalis*, Schiff.). A specimen at Vention, just outside Mortehoe parish, July 1st, 1906.

Cydia nigromaculana, Haw. Taken on same day and at same place as last, common among Ragwort.

Lipoptycha saturnana, Guen. Common among Tansy, June 6th, 1906.

Pammene rheediella, Clerck. One beaten from hawthorn, 1906.

Acalla ferrugana, Treits. Two by beating hedges, 1904.—*A. aspersana*, Hübner. Two, 1907.

Phalonia enicana, Dbl. Very scarce; two among thistles, June 18th, 1906.

Trypanus cossus, Linn. (*ligniperda*, Fabr.). A larva seen by Mr. A. L. Onslow crawling on the road, near Pool, October 1st, 1906.

Gelechia mulinella, Zell. Common by beating gorse.

Depressaria purpurea, Haw. One beaten out of a haystack, September 8th, 1907.

Crostoma costella, Fabr. One beaten from Ilex, Twitcheh, August 17th, 1907.

Plutella annulatella, Curt. One at light in the house, September 25th, 1904.

Tinea pellionella, Linn. In the house, 1907.

Eriocephala thunbergella, Fabr. Two specimens about hazel, May 15th and 17th, 1905.—*E. aruncella*, Scop. The form *seppella*, Fabr. Abundant at Twitcheh, 1906, by sweeping.—*E. calthella*, Linn. A specimen at Twitcheh, 1905; several by sweeping at Bennett's Mouth, 1906.

Twitcheh, Mortehoe, R.S.O.:

October 13th, 1907.

CRYPTOPHAGUS PALLIDUS, STURM; A NEW BRITISH BEETLE.

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

I have the pleasure of recording another British species of the genus *Cryptophagus*, viz., *C. pallidus*, Sturm, but it is entirely due to Mr. Britten's critical eye that the species can be added to the list. He sent me for examination several supposed specimens of *C. dentatus*, Herbst, and suggested that they could hardly all belong to this species. I had little difficulty in identifying the majority of them from Ganglbauer's "Die Käfer von Mitteleuropa" as *C. pallidus*, and this diagnosis has been confirmed by Capt. Deville, who has kindly given me continental specimens.

According to Ganglbauer this species is very closely allied to *C. dentatus*, but is generally rather smaller, with the thorax narrower in proportion to the elytra, the "callosities" distinctly less developed, and the elytra shorter, and I may add, slightly less parallel-sided. Erichson regarded it as synonymous with *C. dentatus*, but Ganglbauer says he finds the distinguishing characters quite constant in a long

series, and remarks that *C. pallidus* is taken on flowers, not under bark, &c.

It is almost certainly mixed with *C. dentatus* in our collections, although I do not possess it myself. Mr. Britten's specimens were taken amongst dead leaves near Lowther Castle, Westmoreland, in December, 1900, and at Great Salkeld on various dates since 1901.

Bradfield, Berks. :

November 10th, 1907.

COLEOPTERA AT AVIEMORE AT EASTER.

BY PROF. T. HUDSON BEARE, B.Sc., F.R.S.E., F.E.S.

The weather in Edinburgh during the days preceding Easter was so magnificent that I decided to carry out a long-cherished plan and have a few days' collecting in the Highlands in the early spring.

We left for Aviemore by an early train on Friday, March 29th, and returned early on Tuesday, April 2nd. Except for a short spell of cloudy atmosphere on the 30th, the weather was perfect, the rather intense heat of the sun shining from cloudless skies being tempered by a gentle breeze. The Cairngorms and other mountains were still covered all over their higher slopes with snow, and the panorama from the terrace of the hotel in the early morning was quite alpine in character.

On Easter Monday we walked out to Loch Morlich, just at the foot of the Cairngorms, and took an open air lunch on its shores, the brilliant sunshine, the clear waters of the loch sparkling in the sun's rays, the dark masses of firs and pines which stretched from the further shore of the loch away up the lower slopes of the mountains, and the snow covered peaks standing out sharp and clear in an atmosphere of surpassing clearness and purity, made up a picture that will remain a treasure of memory for many a long year. If any British entomologist wants to enjoy the delights of a Swiss holiday within the confines of his own country, I would advise him to take the chance of the first fine Easter and go off to Aviemore for a week.

Naturally my collecting was entirely confined to searching under the bark of fir stumps and fallen trees—I was lucky enough to come across two or three of these overthrown trees in perfect condition for beetles; and secondly, to an examination of two or three of the only too numerous nests of *Formica rufa*.

In these nests the following species were taken, all of them being abundant :—

Oxyptoda formicicola, Märk., *O. hemorrhoida*, Sahl., *Notothecta anceps*, Er., *Homalota parallela*, Mann., *Leptaenus formicetorum*, Märk.

On the afternoon of the day of our arrival a splendid male *Astynomus artilis*, L., was captured in the timber yard at Inverdrarie, where there was a large amount of newly sawn up timber from Scotch firs which had been felled during the preceding season in the Rothiemurchus Forest; this specimen flew in from the forest, and settled on a pile of planks, just when we were examining them for beetles; we were not lucky enough to get any other specimen of the species, but it was sufficiently remarkable to find this insect flying about at such an extremely early date as March 29th. As I have taken its pupæ from under bark in Rothiemurchus Forest in July, it is probable that the beetle hibernates under bark in the perfect state, and emerges on the first fine day in spring. Under chips around the stumps of felled trees, and walking over the stumps, were numbers of *Pissodes pini*, L., *Hyllobius abietis*, L., and *Ips quadripustulatus*, L.; while *Rhizophagus depressus*, F., *Pissodes notatus*, F., and *Scymnus suturalis*, Thunb., occurred more sparingly. Under bark of stumps and fallen fir trees I secured a good series of *Nudobius lentus*, Gr., and *Rhagium indagator*, F., was very common.

The following were taken more sparingly in the same habitat:—*Quedius xanthopus*, Er., *Rhyncholus ater*, L., *Pytho depressus*, L. (large numbers of its curious larvæ were seen), *Dendrophagus crenatus*, Pk., *Acidota crenata*, F., *Phileopora reptans*, Gr., and last, but by no means least, *Homalium monilicorne*, Gyll.

A casual specimen of *Aphodius nemoralis*, Er., was found crawling on the road, but though searched for in its pabulum no further specimen was obtained.

As one of the objects of the journey was to get in a considerable amount of walking exercise, I had no time to work moss, or possibly the above list might have been considerably extended.

10, Regent Terrace, Edinburgh:

November, 1907.

ON TWO ICHNEUMONIDÆ NEW TO THE BRITISH FAUNA.

BY CLAUDE MORLEY, F.E.S., &c.

In view of the forthcoming publication of a new Natural History of the Isle of Wight, edited by Mr. Frank Morey, of Newport, it will be well to place upon record my capture there of two species not hitherto established as British.

MESOSTENUS TRANSFUGA, Grav.

Mesostenus transfuga, Gr., Ichn. Eur., ii, 752; Thoms., Op. Ent., v, 516; Schm., Op. Ichn., 573, ♂ ♀. *M. albinotatus*, var. 1, Taschen. Zeits. Ges. Nat., 1865, 110. *Stenaræus transfuga*, Thoms., Op. Ent., xxi, 2381, ♂ ♀.

This species is perhaps not altogether new to our fauna, since it

stands in Desvignes' "Catalogue of British Ichneumonidæ in the collection of the British Museum" of 1856. But the Rev. T. A. Marshall, in his Catalogues of 1870 and 1872, follows Taschenberg's erroneous synonymy of *M. transfuga* as a variety of *M. albinotatus*, Grav. Thomson in 1873 showed its specific right, and consequently I omitted it from the synonymy of the latter species in my "Ichneumonologia Britannica," ii (1907), p. 263. Possibly it may be *M. albinotatus*, of which nothing definite in this country is known, that should be omitted, although judging from its continental distribution it is as likely to occur with us as *M. transfuga*; this I have stated at *lib. cit.* 264.

From *M. albinotatus* it is easily distinguished by the lack of lateral prominences at the base of the petiole, by the posteriorly broader head, the finely punctate frons, and the white ♂ pronotum.

I beat a single ♂ from the undergrowth in Norton Wood, near Yarmouth, June 20th, 1907.

ADELOGNATHUS BREVICORNIS, Holmgr.

Adelognathus brevicornis, Holmgr. Sv. Ak. Handl., 1855, p. 197, ♂ ♀.

This small Tryphonid appears to have been noticed by no one since its description by A. E. Holmgren from "Uplandia ad Holmiam et in Dalecarlia (Cl. Boheman); in Lapponia meridionali, passim." It differs from his *A. palli[di]pes*, which Bridgman records under the name *A. chrysopygus*, Grav. (*cf.* Thoms., *Op. Ent.*, ix, 879), from Earham (Trans. Norfolk Soc., 1893, p. 627) with no note of its novelty as British, in its stout antennæ, which are hardly longer than the head and thorax, and gradually become incrassate towards their apices.

A single ♀ was found in my sweep net in Marvell Copse, near Newport, on June 25th, 1907.

Monks' Soham House, Suffolk :

October 16th, 1907.

Chrysomela marginata, L., on *Arthur's Seat*.—In vol. xii, 1st series, p. 135, of this Magazine, Mr. Forbes stated that this species occurred not uncommonly on Arthur's Seat in a very restricted locality. Every summer since I came to Edinburgh in 1901 I have searched carefully for this insect, but it was not until 1906 that I at length found a few. The first specimens (two) were taken on June 28th, and by July 15th I had secured a small series; after that date the insect was not

to be found. They all occurred under small stones lying on the short turf which covers the hill side in the locality indicated by Mr. Forbes. This summer, hoping to secure specimens for friends, most of whom seemed to be in want of this species, I climbed the hill on several occasions but failed to find a single specimen; possibly the heavy rains and the bitterly cold weather of May were fatal to it.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: *November, 1907.*

Is Teretrius picipes, F., parasitic on Lyctus canaliculatus, F., as well as on L. brunneus, Steph.?—Whilst passing by an old fence at Ashted, Surrey, late one afternoon in June, 1905, I detected a specimen of this rare little Histerid beetle sitting on a rail. A careful examination of both sides of the remainder of the fence, which was swarming with *Lyctus canaliculatus, F.*, did not, however, disclose another example of the *Teretrius*, and although I bottled a long selected series of the *Lyctus*, I could not discover *Lyctus brunneus, Steph.*, among them. Mentioning my capture to other Coleopterists, I gathered that they considered my specimen a chance or stray one, the reasons advanced being either the absence of *L. brunneus*, or that I had overlooked it. Wishing to investigate the matter further, I last June made another investigation of the fence in question, and was pleased to obtain seven specimens of the *Teretrius*; but the most exhaustive search again failed to bring *L. brunneus, Steph.*, to light. *L. canaliculatus* was, however, present, but in sadly diminished numbers, this being probably as much due to atmospheric conditions as to the ravages of the *Teretrius*.—E. C. BEDWELL, The Grove, Coulsdon, Surrey: *October 15th, 1907.*

Additional Suffolk Coleoptera.—A visit to Lowestoft last Easter resulted in the discovery of two species not hitherto recorded for the county, viz., *Euconus hirticollis*, Ill., and *Trechus micros*, Herbst. A single specimen of the former occurred in very wet *Sphagnum* at Flixton, and two specimens of the latter I was surprised to find in a mole's nest on the marshes at Barnby; they were in the actual nest itself, not merely in the cracks in the mound nor in the burrows as one might expect.

Other species of interest found in moles' nests were, *Oxyptoda longipes*, Muls. (= *metatarsalis*, Thoms.), which was far from uncommon, *Quedius longicornis*, Kr. (2), *Q. vexans*, Epp., *Heterothops nigra*, Kr., *Aleochara spadicea*, Er., *Homalota paradoxa*, Rey, *Choleva spadicea*, Sturm, and *Bythinus securiger*, Reich.—ID.

Ocyptus cyaneus, Payk., in Scotland.—In the last No. of this Magazine (*anteà*, p. 251) Mr. T. G. Bishop records *Ocyptus cyaneus* from Scotland, and states it is its first record from thence; Colonel Yerbury, however, took the species at Nairn, N.B., a few years back.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: *December 12th, 1907.*

Cryptophagus subdepressus, Gyll., from Cumberland.—Among some *Cryptophagi* sent to me for identification by Mr. Britten I find there are three specimens of the above species, taken as long ago as May 20th, 1900, at Great Salkeld, on branches of Scotch fir.—NORMAN H. JOY, Bradfield: *November 10th, 1907.*

The food-plant of Apion filirostre, Kirby.—As far as I can discover the food-plant of this species has never been definitely ascertained. This summer it occurred to me on several occasions on *Medicago lupulina*, fairly commonly, near Westhild in Herefordshire. Since writing this note I have heard from Mr. H. Dollman that he has quite independently made the same discovery at Ditchling, Sussex.—J. R. LE B. TOMLIN, Stoneley, Reading: November 5th, 1907.

Farther experiments in the breeding of Abraxas grossulariata, var. varleyata.—In the Ent. Mo. Mag. of January this year, p. 12, I detailed the results of a pairing of *Abraxas grossulariata* var. *varleyata*, the imagines from the brood being all *varleyata*. Suffice it to say that the produce again this year from pure pairings from those moths showed no trace of anything but *varleyata*. But now I have to relate a curious experience. In the 1906 brood of larvæ were several which were evidently weak and grew slowly, some of them eventually dying; one, however, managed to pupate when still small, but a considerable time after the others had spun up, and in due time produced a belated and very small female. I had been anxious to obtain a pairing between *varleyata* and a wild typical moth, but as the indoor fed larvæ had produced moths a month before the wild ones were out, I had up to this time been quite unable to do it. After keeping this last female alive, however, for some ten days, I bred a very ordinary male from wild larvæ, with which the small *varleyata* ♀ at once paired. She had only strength enough to deposit about a score eggs, and then at once died. From these few eggs seventeen larvæ were got safely through the winter, but in the early spring two were lost, and when full grown I accidentally killed a very large one, which would undoubtedly have produced a ♀ moth. From the fourteen pupæ as many perfect insects were bred, the nine males all emerging first, followed by the five females. All as regards markings were of the ordinary type of the species, but one (a ♂) had a very pretty yellow ground colour. Of *varleyata* there was not the slightest trace in any specimen, which seems extraordinary when one considers that the tendency of *varleyata* to produce its own form is so strong, that even in a pairing of the first generation no trace of any other form is produced. I may add, too, that the fourteen specimens were exceptionally large, half as big again as the ♂ parent, and probably three times the size of the diminutive female parent. No doubt the result will be regarded by those who believe in Mendelism as further evidence of the theory; a theory, however, in which, so far as *Lepidoptera* are concerned, I have little faith myself, because this is, I think, the only one of my scores of experiments with many species which has supported it, the results usually having been directly opposite. I am willing to admit that in most of my experiments the respective parents had all come from the same localities, where there was perhaps the possibility of their *ancestors* having influenced the progeny; whereas, in the case just detailed, the larva which produced the ♂ *grossulariata* I brought from Bampton, on the Yorkshire coast, where in all probability *varleyata* never has occurred, and where indeed the species seems very constant to type. I am, of course, continuing the experiments, and hope to record further results next year.—GEO. T. PORRITT, Edgerton, Huddersfield: October 18th, 1907.

Heriades truncorum, Linn., near Cobham, Surrey.—I am glad to be able to

record the capture of *Heriades truncorum*, Linn., in some numbers in this district. The insect has always been considered a great rarity in England, and the authentic records have hitherto been very few, as Mr. Morice has already remarked in Ent. Mo. Mag., vol. xvii, 2nd series, p. 214. Our first specimen was a ♀, captured on ragwort flowers in my garden by my wife on July 20th, a ♂ being taken on the same flower on August 3rd. This led to a close inspection of all likely posts and stakes in the neighbouring hedgerows, with the result that on August 1th we found a large number circling round an old post (elm wood) after the manner of *C. florissomme*, Linn. From that date onwards we took several more either on posts or on ragwort flowers, up to September 11th, when some females were seen still working at their burrows.

With reference to the observation made by M. Fertou in Corsica (see Mr. Morice's note, Ent. Mo. Mag., vol. xvii, 2nd series, p. 214), as to the collecting of resin by *H. truncorum*, Linn., one of my specimens was taken with a ball or lump of resin adhering to the jaws. It seems probable that the resin may be used in the construction of the cells, but I hope to have an opportunity of further studying this point. I may mention that ragwort is the only flower on which I observed this species.

As Mr. Morice remarks, it is indeed extraordinary that this bee has been overlooked in this district for so many years.—E. G. B. NEVINSON, Morland, Cobham, Surrey: *October, 1907.*

Review.

"THE INSECT HUNTER'S COMPANION:" by the Rev. JOSEPH GREENE, M.A. Being Instructions for Collecting and Preserving Butterflies, Moths, Beetles, Bees, Flies, &c. Revised and extended by A. B. FARN. Fifth Edition. London: West, Newman and Co. 1907.

We are glad to see a new and well got-up edition of this unpretentious but eminently useful little book, which has probably been in the hands of every beginner in the study of our British Insects, and is still read with pleasure and interest by many more advanced workers. The editor has, wisely we think, left as far as possible untouched the information so clearly and pleasantly given by the lamented author; the well-known chapter on "pupa-digging" remains as it was first published in the "Zoologist" more than half-a-century ago. A curious slip in the "Chapter on *Coleoptera*" (p. 113) which has persisted throughout all the previous editions, may account for the beetles, pinned through the *left* elytron, which are occasionally met with in collections.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *September 23rd, 1907.*—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. G. H. Kenrick exhibited various *Lepidoptera* from Wicken Fen collected by himself during a recent brief visit. Amongst others were *Erastria argentula*,

Hb., which, a local collector told him, was not native to the Fen, but had been introduced there by himself; there were also *Phragmataecia castaneæ*, Hb., *Meliana flammea*, Curt., *Pyrausta ciliialis*, Hb., &c. Mr. Hubert Langley, various *Lepidoptera* taken by himself at Princethorpe Wood, in South Warwickshire, during the second week in July last; there was a long series of *Boarmia roboraria*, a species hitherto little known as a Warwickshire insect but which proved to be quite common in this locality; they were taken chiefly at light, to which the males came freely between 10.45 and 11.30 p.m.; other species were *Aplecta prasina*, F., a very dark specimen; *Habrosyne derasu*, L., *Euchloris pustulata*, Hufn. (*bajularia*, Schiff.), *Cidaria silacea*, Hb., &c. Mr. L. Doneaster, a very interesting bred series of *Abroaxas grossulariata*, L., bred and arranged in illustration of the Mendelian hypothesis. The experiments had been made with var. *flavofasciata* (*lacticolor*, Raynor). He said that in nature the variety occurs only in the female sex. The results of the experiments, whilst according generally with the required Mendelian proportions, were curiously complicated with the sex question; for although in the second generation = cross \times cross, the proportions were 3 to 1, yet the males were all the dominant form, *i.e.*, the type, and the females half and half; whilst still more curious is the crosses of cross \times var. pure gave with σ cross \times pure ♀ var. result, half and half to each sex; and with σ pure var. (obtained during the experiments) \times ♀ cross, result, all males type, *i.e.*, dominant, and all females var., *i.e.*, recessive. Mr. G. T. Bethune-Baker, a number of Turkestan *Arctias* as follows: a large and beautiful series of *A. intercalaris*, Ev., with extreme light and dark forms; a few *A. erschoffi*, Alph., with var. *issyka*, Std., and a long series of *A. glaphyra*, Er., var. *manni*, Alph.; he pointed out how much some of the *manni* resembled *erschoffi* type, and said that he believed they would prove to be forms of one species, though he thought it possible that var. *issyka* might perhaps be distinct. Mr. H. Langley, the two specimens of *Stauropus fagi*, L., already referred to as having been found at Princethorpe this year.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, October 24th, 1907.—MR. R. ADKIN, F.E.S., President, in the Chair.

Dr. Chapman exhibited a specimen of *Dasychira pudibunda* from the Pyrenees measuring $2\frac{3}{4}$ ins. in expanse. Mr. Moore, *Hipparchia semele* showing considerable variation in ground colour on the under-sides, and a small race of *Enodia hyperanthus*, both from Dunkirk sand-dunes, together with an example of *Danaüs plexippus* from Moose Jaw, Winnipeg. Mr. Lucas, the specimens of *Hyles euphorbiæ* bred recently from pupæ found in Kew Gardens. Mr. Tonge, *Eugonia fuscantaria* taken by him at Red Hill on his way to the meeting. Mr. L. W. Newman, (1) a series of *Polia xanthomista* var. *nigrocincta* bred from N. Cornwall ova; (2) ova of *Ennomos fuscantaria* and *Cirrhædia xerampelina in situ* on ash twigs; and (3) a long series of *E. autumnaria*, including a number of very fine bred dark brown forms. Mr. Priske, a series of *Necrophorus mortuorum* and an exceptionally large *Lucanus ceruus*. Mr. Adkin, a series of *Hyponomeuta cognatellus* reared from an *Euonymus* shrub in his garden, and contributed notes; he also showed ova of *Tortrix pronubana*. Dr. Hodgson, a *Theretra porcellus*, brilliantly coloured on the

right side, while the left was only faintly coloured, and also a varied series of ♂ and ♀ *Polyommatus icarus* from Kent, Surrey, and Sussex. Dr. Fremlin, two fine varieties of *Aglais urticae* of the same race as those previously shown by Mr. Newman. Mr. McArthur, spiders with their snare and prey, mounted between two sheets of glass. Mr. Turner, a series of *Colias phicomone* from the Engadine, and a number of *Lepidoptera* from Guethary, Caunterets, and Gavarnie, including some extreme forms of *Pararge mœra*. Messrs. West, Tonge, Main, Dennis, and Lucas, a considerable number of lantern slides.

Correction September 12th. *Agriades corydon* ab. *syngrapha* was from Surrey, not Wiltshire.—HY. J. TURNER, Hon. Sec.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 16th, 1907.*—Mr. C. O. WATERHOUSE, President, in the Chair.

Mr. P. H. Jackson was elected a Fellow of the Society.

Mr. A. H. Jones exhibited a series of *Pieris napi* var. *bryoniae*, from comparatively low altitudes, taken in June last at Peszer, near Buda-Pesth, showing a wide range of variation. Mr. W. J. Lucas, for Mr. M. Burr, examples of *Apterygida albipennis*, discovered by him near Dover this year; and a ♂ specimen of *D. verrucivorus*—an inhabitant of Scandinavia—from the same locality taken by Mr. Burr. It is about as large as *Locusta viridissima*, but looks quite different, characters in the elytra and head preventing it even being placed in the same genus. Mr. H. Champion, a specimen of the rare Orthopteron *Platycleis roeselii*, Hagenb., ♀, taken September 13th, 1907, near Herne Bay, and Mr. E. W. Champion, an aberrant specimen of *S. sanguineum*, ♂, from Epping Forest, suggesting relationship with certain *Orthoptera*. Mr. Lucas also showed two examples of *Calopteryx virgo* from the New Forest showing failure in pigment. Mr. W. J. Kaye, specimens of *Callicore aurelia*, Guén., together with a photograph of its larva, showing the remarkable branch-like horns rising out of the head. The whole life cycle is but nineteen days. The Rev. F. D. Morice, side by side, a normal ♂ specimen of the *Anthidium manicatum*, L. (the "Hoop-shaver Bee" of Gilbert White's "Natural History of Selborne"), and a monstrosity or malformation of the same insect, given to him as a curiosity by M. Vachal, of Argentat, Corrèze. He also sent round a photograph of the two insects magnified, or rather of their abdomens, that being the part in which the malformation appears, and described the nature of it. Dr. T. A. Chapman said this malformation had clearly no causation in any larval injury, but dated from an early period of embryonic life. The President, a living ant, a species of *Camponotus*, which had been found by Mr. Watson at Kew, in a pseudobulb of an orchis (probably a *Bulbophyllum*) from the Gold Coast. The bulb was much excavated, but it had no opening by which the ant could have entered. He also exhibited a large wasp from German E. Africa (a *Salix* allied to *dedjax*) with a spider, a *Mygale* rather larger than itself, but which it had captured and was carrying off. Lt.-Col. Neville Manders, a melanic variety of *Hestina nama*, captured near Darjeeling; and a monstrosity of *Papilio krishna* from Sikkim, in which the wings on the right side were much larger than those on the left. Mr. H. Main, the larva of a Hymenopterous parasite of *Pygæra bucephala*, of great size comparatively to its host.

The President announced that the Council had decided in favour of holding a *Conversazione* at some date next year to be fixed by a Committee of Fellows elected for the purpose of organization, &c.

Wednesday, November 6th, 1907.—MR. E. SAUNDERS, F.R.S., Vice-President, in the Chair.

Mr. G. Arnold, University of Liverpool; Mr. H. Frederick D. Bartlett, of 113, Richmond Park Road, Bournemouth; Mr. John Claude Fortescue Fryer, B.A., of The Priory, Chatteris; Mr. C. W. Howard, of the Acting Government, Transvaal; Mr. Charles H. Mortimer, of Wigmore, Holmwood; Mr. R. F. H. Rosenberg, of 57, Haverstock Hill, London, N.W.; Mr. Harold Baker Sly, of Brackley Knoll Road, Sidcup, Kent; and Mr. Clement H. Pead, of Johannesburg and St. Leonard's Road, Bexhill-on-Sea; were elected Fellows of the Society.

Mr. A. H. Jones exhibited a specimen of the Longicorn beetle *Acanthoecinus xidilis*, L., a well-known species found in Gray's Inn Road. Dr. F. A. Dixey, ♂ and ♀ specimens of a new *Pinacopteryx*, discovered by Mr. S. A. Neave in Northern Rhodesia; the ♀ resembled that of *P. rubrobasalis*, but the ♂ was quite distinct; both sexes of *P. rubrobasalis* and the female sex of Mr. Neave's species were mimics of *Mylothris agathina*. Mr. W. G. Sheldon, a series of *Limenitis populi* and ab. *tremula* with intermediate forms taken this year at Laon, and a series of *Chrysophanus hippothoe* from the same region, the females displaying a wide range of variation for so restricted a locality as that in which they were captured. Mr. G. C. Champion, a fully developed example of *Mesovelia furcata*, M. and R., from Slapton, South Devon, and *Thamnotrizon cinereus* from Lynmouth, North Devon. Mr. A. Harrison and Mr. Hugh Main, a case of *Aptecta nebulosa*, arranged to show the great range of variation of this species in Delamere Forest; with series from Epping Forest, North Cornwall, and the New Forest, for comparison; the Cornish and New Forest insects were of the light grey colour which is the prevailing form in the West and South of England, with the exception of the neighbourhood of London, where a dark grey form is found, as shown in the series from Epping Forest; the Delamere Forest insects ranged from a rather light colour to a melanic form, with intermediates showing a complete gradation from one form to the other. Mr. R. S. Mitford, two ♂ specimens of *Cryptocephalus bipunctatus*, taken by him at Niton in the Isle of Wight, in July, 1907, while sweeping the grass on the slopes of the Undercliff; of the two forms of varieties well known on the Continent neither had hitherto been found in Britain; he also showed *Paracymus vneus*, captured on the North Essex coast in June, 1898, establishing its claim to be regarded as a British Beetle; an example of the very rare *Lathrobium rufipeune*, taken by him at Niton, Isle of Wight, in July, 1906; a specimen of the rare *Ceuthorrhynchus viduatus*, taken by him at Brading, Isle of Wight, in July, 1907; and a specimen of *Cis dentatus*, taken by him at Sandown, Isle of Wight, in July, 1906.

Mr. J. E. Collin communicated a paper "On a large series of *Nycteribiidae* (parasitic *Diptera*) from Ceylon." Dr. G. B. Longstaff then read a paper "On some Butterflies taken in Jamaica." and a paper "On some Butterflies of Tobago," exhibiting a number of examples taken by himself in both localities to illustrate his remarks.—H. ROWLAND-BROWN, Hon. Sec.

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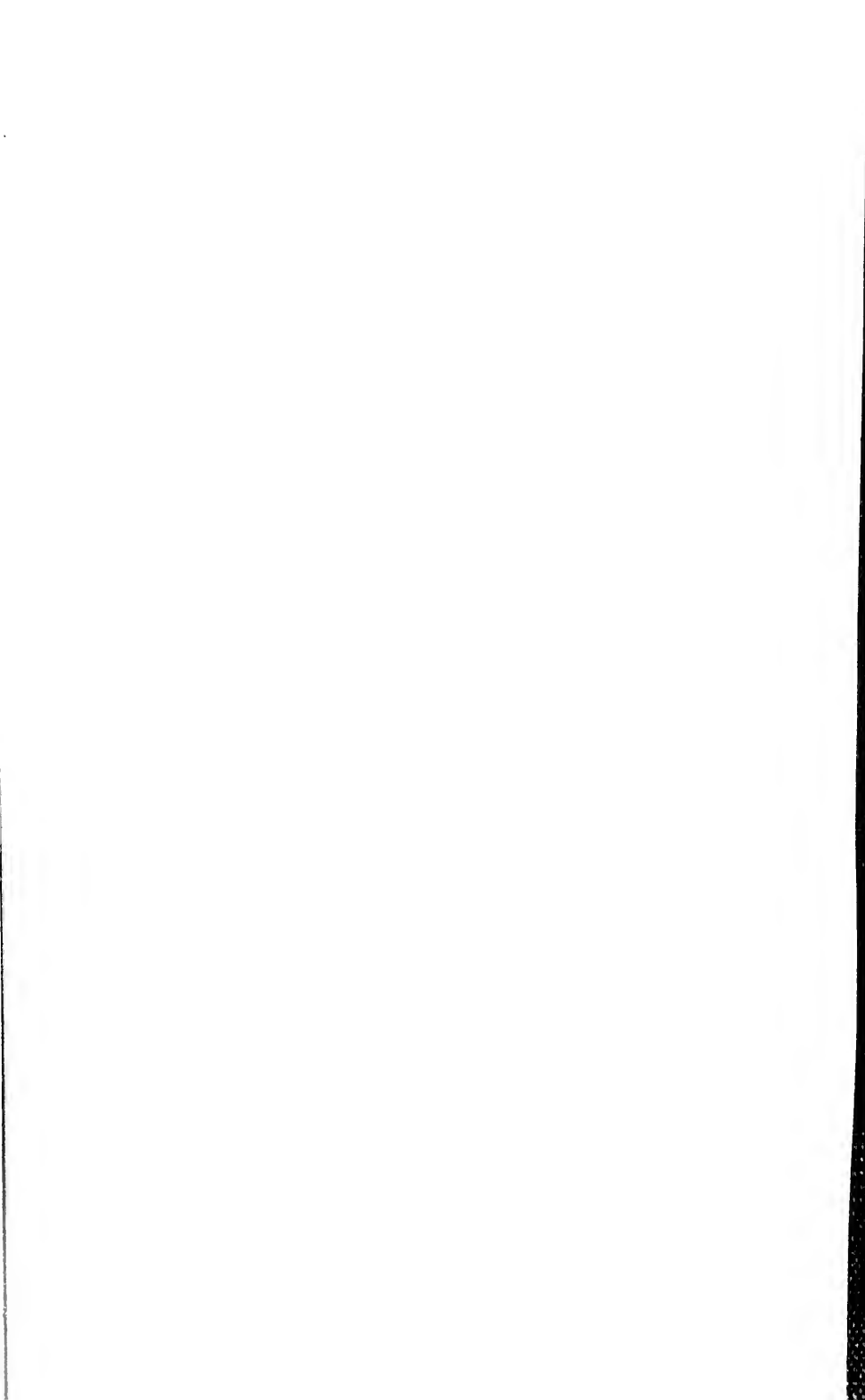
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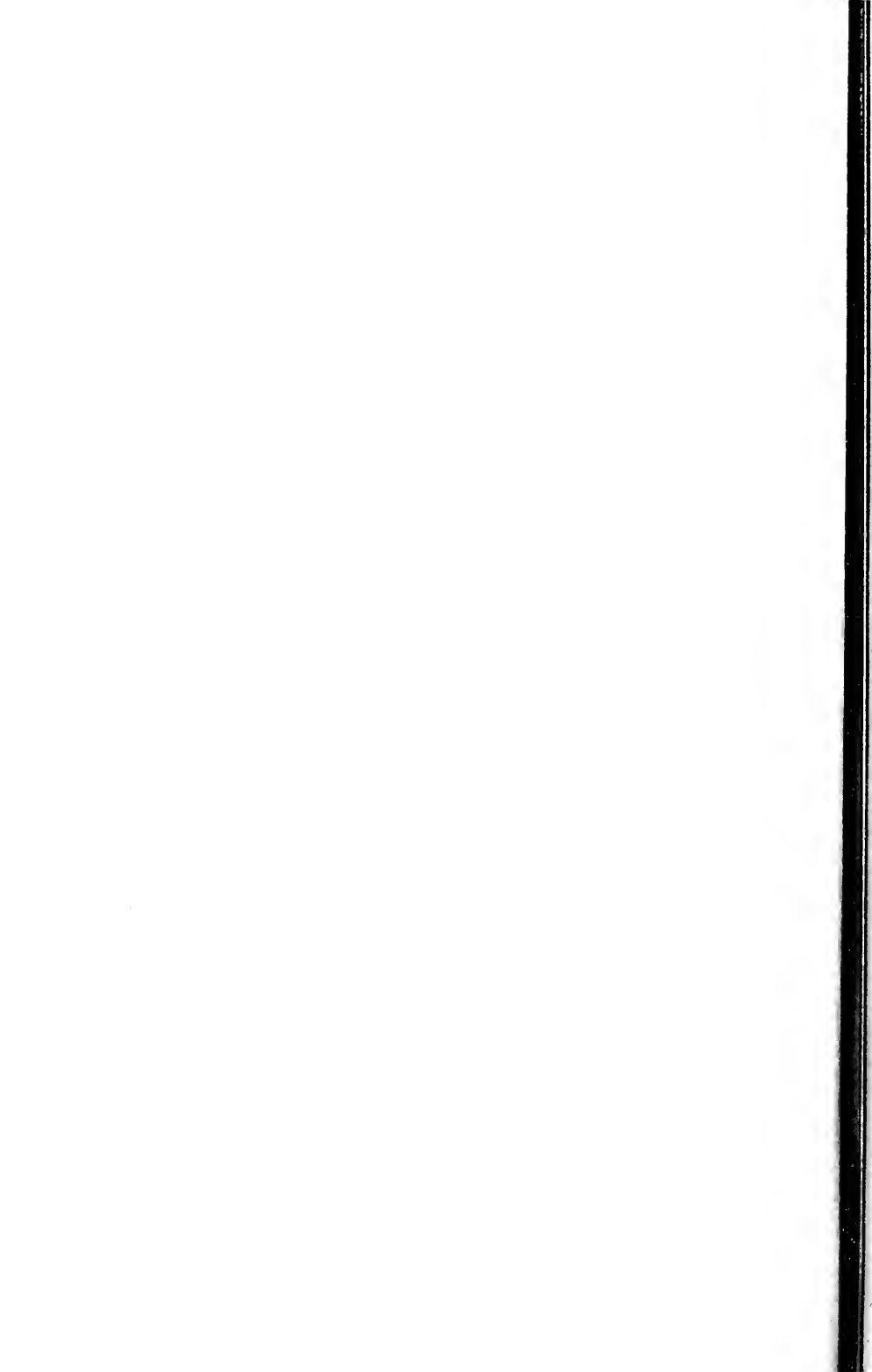
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