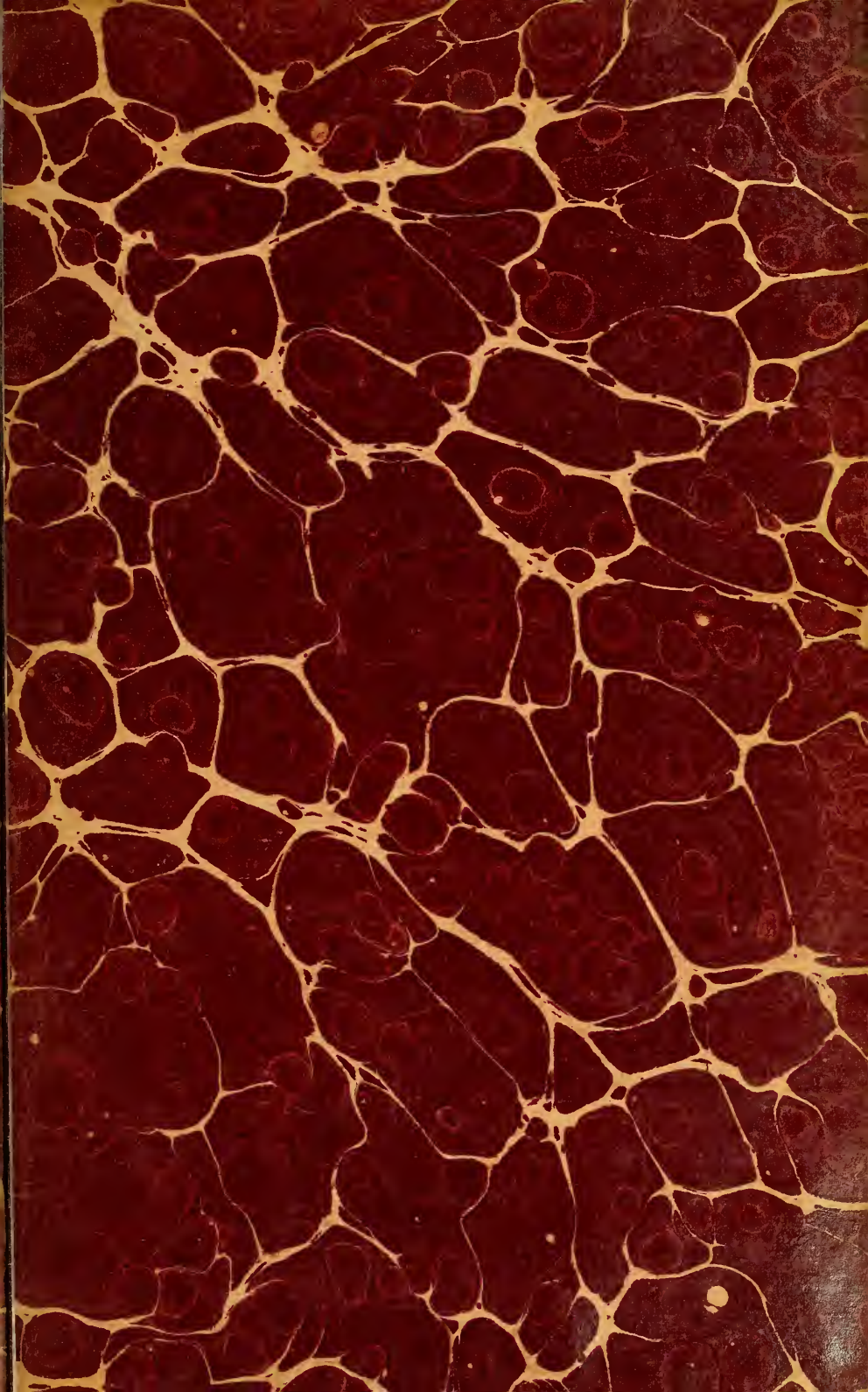


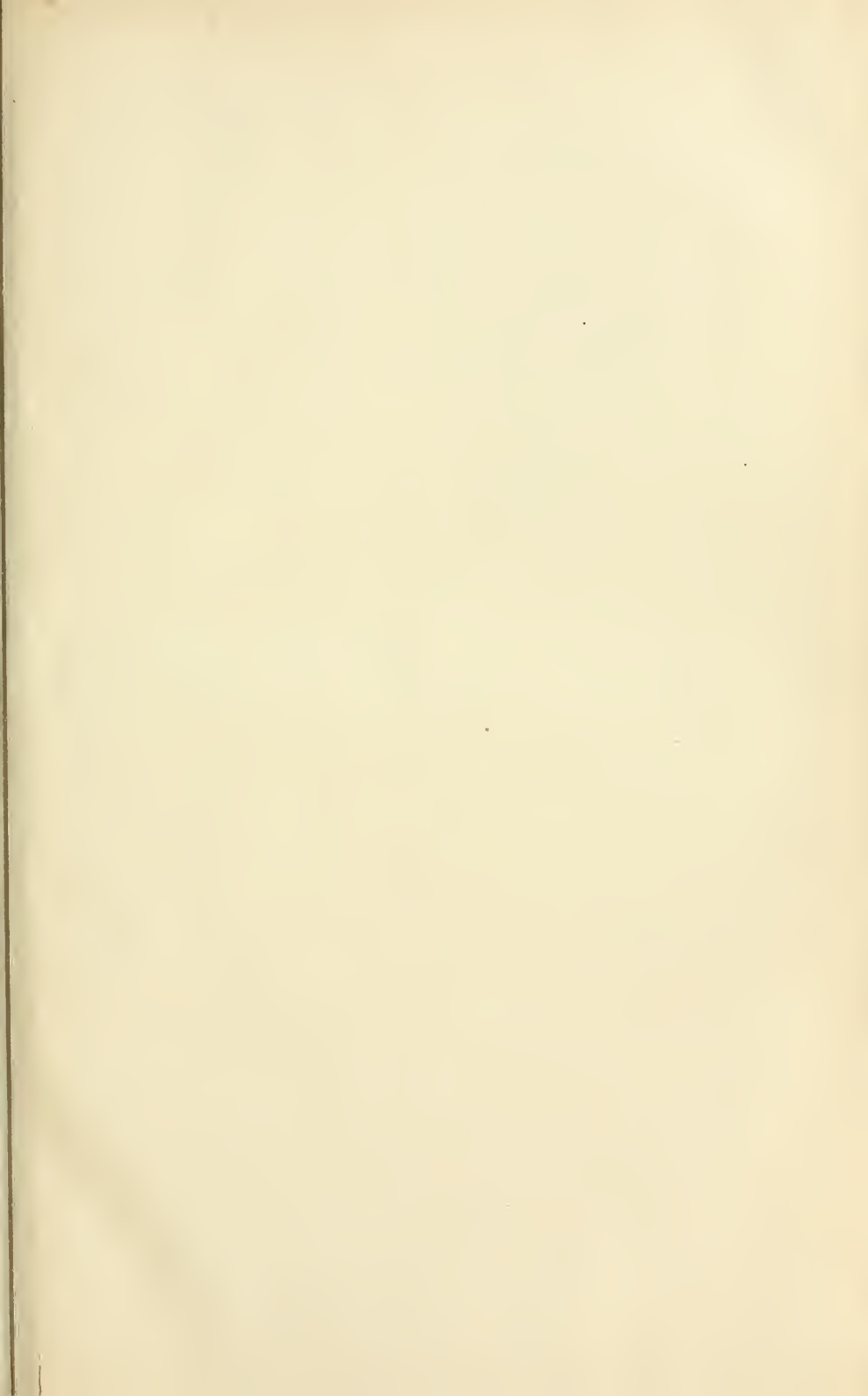


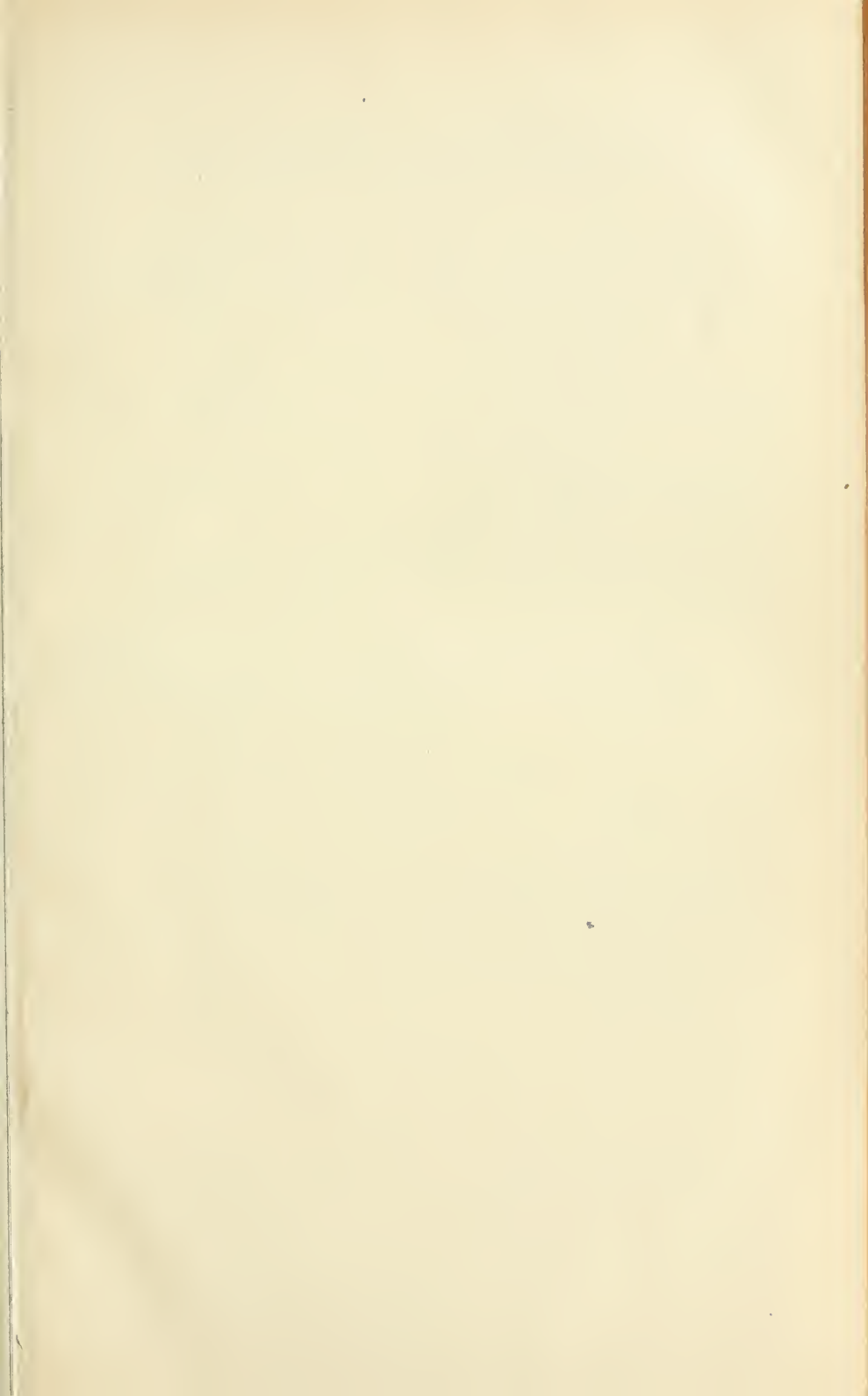
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THE

ENTOMOLOGIST'S MONTHLY MAGAZINE:

CONDUCTED BY

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LORD WALSHINGHAM, M.A., LL.D., F.R.S., &c.

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“ We are encouraged to study more completely every detail and every anomaly in the distribution of living things, in the firm conviction that by so doing we shall obtain a fuller and clearer insight into the course of Nature, and with increased confidence that the ‘mighty maze’ of Being we see everywhere around us is ‘not without a plan.’ ”

A. R. Wallace.

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- Plate 1.—Some interesting British Insects (II), (see pp. 1—3).
 „ II.—*Drepanepteryx phalænoides*, L., and *Drepana lacertinaria*, L.
 (see pp. 54—62).
 „ III.—*Ceratopsyllus franciscanus*, sp. nov. (see p. 88).
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 „ V.—Genitalia of *Monopis rusticella*, Hb., and *M. weaverella*, Scott
 (see pp. 221—228).
 „ VI.—*Limosina equitans*, Collin, and *L. sacra*, Mg. (see pp. 276—279).
 Portrait.—Edward Saunders, F.R.S. (see pp. 49—53).

ERRATA.

- Page 39, line 23 from top for "*Vespa austriaca* ♂," read "*Vespa austriaca* ♀."
 „ 92, „ 10 „ bottom, for "and 9 of them," read "and 9 of the then."
 „ 93, „ 7 „ top, for "almost anywhere," read "almost everywhere."
 „ 127, „ 27 „ „ „ "*Bishofia*" read "*Bischofia*."
 „ 143, „ 15 „ „ „ "*Cænosia*," read "*Cænosia*."
 „ 144, „ 21, 23 „ „ „ "*Ceuthorrhynchideus*" read "*Ceuthorrhynchidius*."
 „ 147, „ 13 „ bottom, for "*Hippolion*," read "*Hippotion*."
 „ 208, „ 4 „ „ for "*Valescura*, Portugal," read "*Valescure*, S. France."
 „ 230, „ 10 „ „ „ "*Aléochairires*," read "*Aléochairaires*."
 The whole of page 124 should come in on page 125 between lines 7 and 8 from the bottom.

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MONTHLY MAGAZINE.

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—
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[VOL. XLVI.]

—
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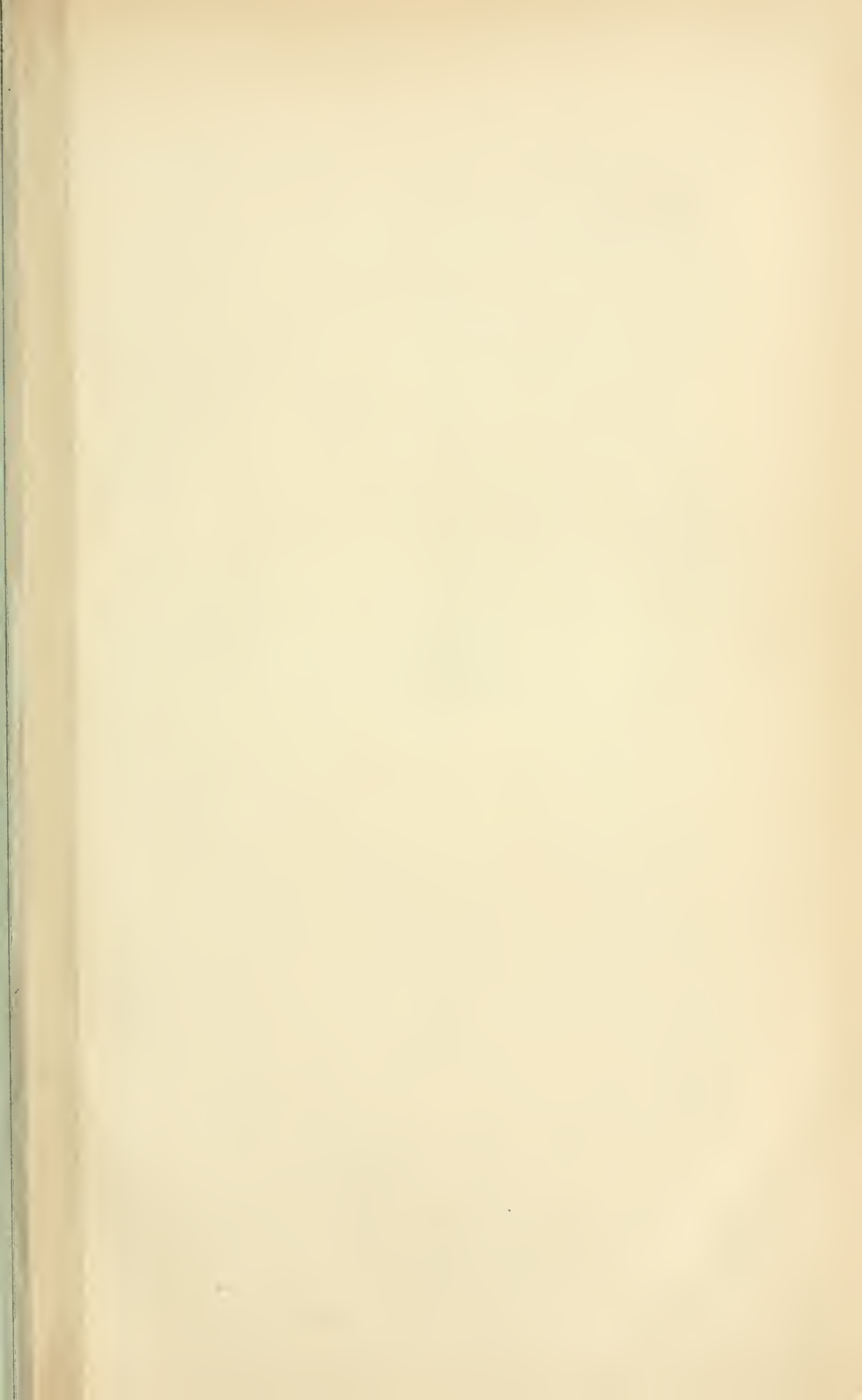
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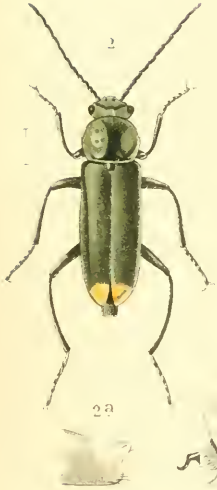
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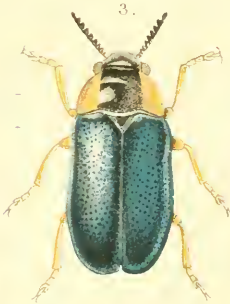
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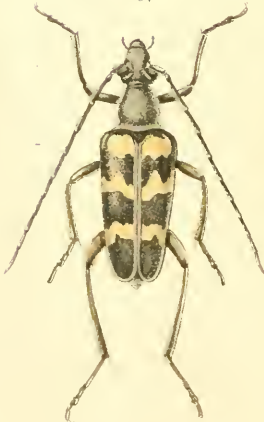


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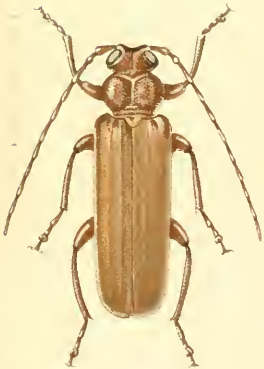


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SOME INTERESTING BRITISH INSECTS.

THE
ENTOMOLOGISTS
MONTHLY MAGAZINE:

SECOND SERIES—VOL. XXI.

[VOLUME XLVI].

SOME INTERESTING BRITISH INSECTS (II).*

BY G. C. CHAMPION, F.Z.S., AND R. W. LLOYD, F.E.S.

(PLATE I).

We now give figures of one species of *Aculeate Hymenoptera* and six of *Coleoptera*, in continuation of those shown on Plate III of the last volume of this Magazine.

Fig. 1—*Odynerus herrichii*, Saussure, ♀.—This handsome wasp was first taken by Mr. Rothney, at Stowborough Heath, Dorset, in 1878. Mr. Dale subsequently captured a ♂ in the Isle of Purbeck, and the Rev. O. Pickard-Cambridge recorded one from Bloxworth Heath, near Wareham. These were the only known British examples till 1908, when Mr. C. H. Mortimer discovered a large colony of it near Swanage, and since then it has been found abundantly in the same locality, both by him and by Mr. E. B. Nevinson. The insect belongs to the section *Leionotus* of *Odynerus* and was originally described by F. Smith under the specific name *basalis*, but as Smith's name was already in use for another species of the same genus, that of Saussure, *herrichii*, must be adopted. All the known British localities for it are in the same county, Dorset. The species is figured in Saunders' "British *Aculeate Hymenoptera*," under the name of *O. basalis*, on plate 20, fig. 6, but this drawing seems to have been made from a discoloured badly-set example. The present figure is taken from a specimen kindly lent by Mr. Nevinson.

Figs. 2, 2a, b, ♂—*Malachius vulneratus*, Ab.—This insect is the *M. spinosus*, Er., of the catalogues of G. R. Waterhouse (1858), and Rye (1866), but the species does not appear in our later lists, nor

* Cf. Ent. Mo. Mag., xlv, pp. 196, 197 (Sept. 1909).

is it mentioned in Fowler's "British *Coleoptera*." In 1905 (Ent. Mo. Mag., xli, p. 66), it was again introduced as British, and the ♂ described, under the same name, *spinuosus*, Er.: but shortly afterwards (*op. cit.*, pp. 88, 89), this identification was found to be incorrect, and the name changed to *M. vulneratus*, Ab. All the specimens were from the same locality, Sheerness, Isle of Sheppey, where it was taken by Mr. Waterhouse on June 29th, 1856 (Ent. Mo. Mag., xliv, p. 207), by Dr. Power on June 11th, 1859 (Ent. Mo. Mag., xli, p. 234), by Mr. Champion on June 6th, 1869, and by Mr. J. J. Walker about July, 1894. The first British male was captured in 1869. The species appears to be extremely local on the Continent, but it has been found in abundance by M. Bedel at Arronville, Seine et Oise, near Paris. Abeille de Perrins' description of *M. vulneratus* was published in 1900, in a periodical few entomologists have seen. The females of the species of this genus are often difficult to determine, but the ♂ characters of most of these are of a very peculiar nature, those of *M. vulneratus* are shown on the accompanying Plate, figs. 2a, 2b.

Fig. 3—*Gynandrophthalma affinis*, Hellw.—A remarkably distinct Clythrid, first taken by Mr. W. Holland, on June 18th, 1899, in Wychwood Forest, near Witney, Oxford [Ent. Mo. Mag., xxxviii, p. 281 (1902)]. As noted by the Rev. W. W. Fowler, it bears a superficial resemblance to *Gastrophysa polygoni*. The insect has since been found in numbers on hazel by Mr. Holland at the same locality [Ent. Mo. Mag., xxxix, p. 202 (1903)], and many collectors are indebted to him for the opportunity of seeing it alive. It has been found on sallow in some continental localities.

Fig. 4, 4a—*Otiorrhynchus auropunctatus*, Gyll.—This species, introduced as British in 1895 (Ent. Mo. Mag., xxxi, p. 133), has been captured in various localities in Ireland. It is locally abundant near the coast, on hedges of hawthorn, ash, and privet, chiefly in the Counties of Dublin, Meath, and Louth. The first recorded specimen was taken in 1900, at Culmore, Derry, by Mr. C. W. Buckle. A full account of its distribution, &c., will be found in Messrs. Johnson and Halbert's "List of the Beetles of Ireland" (1902). It is one of the most interesting Irish insects, the known continental localities for it being the Auvergne and the Eastern Pyrenees.

Fig. 5—*Criocephalus rusticus*, Dej.—In Dr. Sharp's paper on the genus *Criocephalus* (Trans. Ent. Soc. Lond., 1905, pp. 145—164),

this species was stated to have recently been discovered by Col. Yerbury at Nethy Bridge, Inverness-shire. Since then it has been bred in considerable quantity from larvæ found in the large pines at the same locality, by both Dr. Sharp and Mr. Bishop, who have also taken a few specimens at large. The more deeply cleft third tarsal joint distinguishes it from the very closely allied *C. ferus*, Muls., an insect found on pines during recent years in the New Forest, and in August and September last near Woking (Ent. Mo. Mag., xlv, pp. 247, 249).

Fig. 6.—*Pachyta sexmaculata*, L., ♂.—This species was introduced into our list in 1877 [Ent. Mo. Mag., xiv, pp. 92, 93], on the authority of two specimens, captured by Mrs. King in the Rothiemurchus Forest, at Aviemore, Inverness-shire. During recent years it has been taken in some numbers at Nethy Bridge, by Col. Yerbury, Dr. Sharp, Mr. Bishop, and others, and again at Aviemore by Mr. Evans in 1893, and by Mr. King in 1903. In the series taken by Dr. Sharp in 1909 there are several examples with the angulated yellow elytral fasciæ reduced to scattered spots. Fully developed males have a conspicuous triangular tooth on the inner edge of the posterior tibiæ, beyond the middle, but in the specimen figured (one of those taken in 1877) this tooth is so small that it was not noticed by our artist when he drew the plate. *P. sexmaculata* is a widely distributed Holarctic beetle living upon pines, but it is apparently a rare boreal insect in Europe.

Fig. 7.—*Tetropium gabrieli*, Weise, var. *crawshayi*, Sharp, ♀.—This Longicorn beetle was described by Dr. Sharp in 1905 as a distinct species, from a large number of specimens reared from larch, at Leighton Buzzard, by the Rev. G. A. Crawshay. Subsequent investigation by the last-named gentleman has shown that *T. crawshayi* is simply a variety of *T. gabrieli*, with reddish tibiæ and tarsi and black femora. Mr. Crawshay has given a full and interesting account of its life-history, distribution,* &c., in the Trans. Ent. Soc., London, 1907, pp. 183—212, pls. xv—xx. In the wild state he says it is exclusively attached to *Larix europæa*. The insect is likely to become destructive to larch plantations, as it is evidently spreading in the midland and southern counties.

December, 1909.

* Amongst the British localities quoted by him, one of those from Surrey, Betchworth, is misprinted "Bletchworth," and Enfield is given as in "Surrey," instead of Middlesex.

OXYTELUS SAULCYI, PAND., A NEW BRITISH BEETLE FROM
MOLES' NESTS.

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

Resembles *O. fairmairei*, Pand., in having the anterior tibiae excavated at the apex; the fore parts are slightly more coarsely sculptured; the hind body is alutaceous, and very finely and diffusely punctured (in *O. fairmairei* this part is not alutaceous, but is strongly and closely punctured); in the ♂ the sixth ventral segment has the hind border produced in the centre into a small square plate, at the base of which is a well marked tubercle, and the seventh is broadly emarginate. L. 1.7—2 mm.

All my so-called *O. fairmairei* from moles' nests, taken at Bradfield, Berks, really belong to this insect, and I have little doubt that other records of *O. fairmairei* from moles' nests are incorrect. The latter species appears to inhabit dung, and is sometimes taken in moss and on the wing. I have also taken *O. saulcyi* in flood refuse.

Bradfield: Nov., 1909.

ON THE BRITISH SPECIES OF PHÆDON.

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

Weise in his great work on the European *Chrysomelidæ*, completed in 1893, but so far as *Phædon* is concerned published in 1884, treated our British *P. concinnus*, Steph., as a variety of *P. armoracivæ*, and emphasises his view by remarking that under no circumstances can it be considered a distinct species (Ins. Deutschl. vi, p. 548). Eight years later Bedel treated the subject (Faune Col. Seine, v, p. 153) and recognised *P. concinnus* as a distinct species. Notwithstanding this, in the recent catalogue of European *Coleoptera*, *P. concinnus* stands as a mere variety of *P. armoracivæ*. As this difference of opinion between the highest authorities is very unsatisfactory, I have thought it desirable to investigate the matter again for my own satisfaction. The result leaves me in no doubt whatever as to the validity of *P. concinnus*. Further than this, I am surprised to find that another species, viz., *P. tumidulus* possesses characters that must relegate it to a distinct genus, which I propose to call *Paraphædon*.

PARAPHÆDON, *gen. n.*

Linea metasternali externe antrorsum curvata; elytra humeris, cumque mesosterno antice, ad receptionem femoris profunde impressis; prosternum in medio carinatum.

It is very curious that these striking external features should have hitherto escaped observation, but we must recollect that *Paraphædon*

tumidulus is very little known on the Continent, being confined to the western portion of Europe and Algeria. As regards its distribution in this country I may say that the species is fairly common in Scotland, but is apparently rarer in England, though it has been taken in numbers at Mickleham, &c. It used to occur at Hammersmith, and I have found it at Lyndhurst and in the Isle of Wight. Its food-plant is *Heracleum*, a common *Umbellifer*.

PHÆDON.

In this genus the metasternal line is elongate and is turned backwards externally and meets the episternal suture nearer the hind-margin than to the front; there is no cavity for the reception of the intermediate femora, and the prosternum is not carinate. Although the species are at first sight very similar, yet I find that we have undoubtedly three and that they were quite correctly distinguished by Bedel. They have also been diagnosed by Fowler (Brit. Col. iv, p. 316), still there are other characters not mentioned by these authors, and I may therefore be excused for some repetition.

P. ARMORACIÆ.

Usually larger than the other members of the genus and of a dark steel-blue colour, with a prominent shoulder to the elytra, which is always limited on the scutellar side by a well-marked depression; the joints of the club of the antennæ are broad and short, 7—10 being distinctly transverse, and there is no trace of any red colour on the under-sides of the basal joints; the sculpture of the elytra is strong, all the striæ being well-marked, and the interstitial punctuation is quite distinct; on the under-side the margin of the terminal plate is pale red, and the ventral plates and the breast exhibit a peculiar silky smoothness, with the punctuation comparatively little developed. The variation is but slight.

P. CONCINNUS.

Rather smaller, narrower and more convex than *P. armoraciæ*, with the humeral callus somewhat less marked, and the serial punctuation of the elytra more shallow; the antennæ are always quite black, and are not quite so broad as in *P. armoraciæ*; on the under-side there is no red colour on the terminal plate, the surface generally is more punctate, and the metasternum is shorter than in *P. armoraciæ*.

The colour is usually bright green or golden-green, but this occasionally varies, and specimens may be found of a violet-green or cupreous colour, but none are of the colour of *P. armoraciæ*. In *P. concinnus* both upper and under-surface exhibit a peculiar faint strigosity, which has led to the species being sometimes described as finely rugose. There is but little variation except in colour. The violet individuals are a good deal like *P. cochleariæ*, and

this has caused some entomologists to doubt whether *P. concinnus* is truly distinct therefrom. The cupreous form I have seen only in Mr. Champion's collection (Christchurch).

P. COCHLEARIÆ.

In this species the humeral callus is indistinct; the first and second joints of the antennæ are obscurely marked with red beneath, and the club is comparatively slender; the tips of the tibiæ are usually red beneath; and there is only a very slight red pigmentation of the hind margin of the last ventral plate. This common insect is more variable than the allied forms. It is generally of a bright bluish-green colour, but dark violet specimens occur. *P. cochleariæ* is usually smaller, narrower, and more convex than *P. armoraciæ*, but broad and less convex examples occur, which at first sight greatly resemble the latter, but these may be certainly distinguished by the comparatively indistinct humeral callus.

The three species also show differences in the form of the ædeagus. In *P. concinnus* the apical portion is longer than in the other species, more curved, but parallel-sided. In *P. armoraciæ* this part is narrowed towards the tip, while in *P. cochleariæ* the apical part is only about half as long as it is in *P. concinnus*.

Brockenhurst:

December 18th, 1909.

NOTES ON SOME COLEOPTERA FOUND AT BARTON-ON-SEA, HAMPSHIRE.

BY C. F. SELOUS, M.B., M.R.C.S., L.R.C.P.

As this locality is not very well known, it may be as well to explain that Barton is situated on the Hampshire Coast, almost immediately opposite the Needles of the Isle of Wight. In collecting in this district my attention has been principally directed to the undercliff, and, though some interesting captures have been made, yet, considering the extent and varied character of the ground, the insect-fauna on the whole is disappointing. Of insects, however, large numbers must be destroyed annually, particularly during the winter months, owing to the continual subsidences which are taking place. Thus I have been frequently disappointed by the destruction of some choice hunting-ground, and the spot which one year teemed with some species of beetles may be almost barren next year owing to the complete alteration in the character of the ground, a marshy spot becoming quite dry or *vice versa*.

Acupalpus flavicollis, Sturm.—This is one of the commonest beetles on the undercliff. By grubbing at any spot where the ground is moderately damp at

the roots of grass, sedge, &c., it may be found in profusion at any time from early spring until late autumn, and is easily caught as its movements are decidedly sluggish. It may be readily differentiated from the allied species, *A. dorsalis*, F., by the absence of a dorsal pore on the third elytral interstice. Fowler gives the Isle of Wight and Lymington Salterns as localities for this insect, and mentions it as local and rare.

Drypta dentata, Rossi.—Of this beautiful Carabid I have obtained two specimens, the first on January 21st, 1909, hibernating at the roots of a tuft of reeds on the undercliff, and the second on June 6th, 1909, running on a foot-path in the sun about thirty yards from the same spot.

Alianta incana, Er.—The stems of the reed-mace (*Typha*), which grows abundantly on the marshy spots on the undercliff, are very frequently mined by a Lepidopterous larva (*Nonagriia typhæ*?), the larva itself of course occupying but a small fraction of the total space of its tunnel. Most of these galleries that I have opened have contained, besides the larva and its frass, specimens of *A. incana*, from five or six to twenty or more in number in each burrow. In five cases in which the larva for some reason had taken its departure, *A. incana* was also absent, although the frass was quite moist and the burrow seemed in every way suitable for this guest in spite of the absence of the host. I hope to obtain further light on this curious companionship. Though "in the stems of reeds" is given usually as the habitat of this insect, I have not seen any mention of their living together with a caterpillar in these galleries.

Colan serripes, Sahlb.—This was a most surprising capture in the summer of this year whilst grubbing at the roots of sedge, grass, &c., on a damp spot on the undercliff. That the occurrence of the species in this situation was not an accidental one was proved by the fact that eight specimens in all were taken, two on June 25th and six more on July 12th following. They were running about the ground on a sandy spot at the extreme edge of the undercliff where the vegetation was rather thinly distributed. All of them were taken in the morning on an area which an ordinary table-cloth would cover, and I have not as yet found any elsewhere nor taken them whilst sweeping on the undercliff. I cannot find any mention of a similar method of capture of *C. serripes*, all the records I have searched giving "evening sweeping" only.* Mr. Philip de la Garde, however (*Ent. Mo. Mag.*, April, 1909, p. 88), records the capture of *C. viennense* with a water-net out of a brook, so I may mention that a streamlet of water ran down the undercliff within a couple of yards of where *C. serripes* was obtained.

Syncalypta setigera, Ill.—Two specimens of this insect have been taken beneath small stones on the drier grassy parts of the undercliff. They are exceedingly difficult to see, owing to their small size, their shape, and colour, and the persistence with which they feign death, and I have no doubt they are much more common than seems to be the case. This species it appears has only before been recorded from Scotland (see *Ent. Mo. Mag.*, Dec., 1871, p. 151), so this is a new record for England, but there is little doubt that it must occur

* The five specimens of *Colan brunneum* recorded by me (*Ent. Mo. Mag.*, vii, p. 137) as having been taken out of a tuft of grass at Wicken Fen in July, 1870, were really *C. serripes*. Mr. J. J. Walker has also taken *C. serripes* in tufts of grass in early spring at Wood Eaton, Oxon.—G. C. C.

in intermediate districts. Probably specimens exist in collections as *S. striatopunctata*, Steff. (= *S. hirsuta*, Sharp), since the two species are very much alike. The most striking differences are:—

Elytral setæ longer, paler, scarcely or not at all clubbed: *S. striatopunctata*, Steff. (= *hirsuta*, Sharp). Elytral setæ shorter, darker, and distinctly though slightly clubbed: *S. setigera*, Ill.

Mr. E. A. Newbery very kindly presented me with a specimen of *S. striatopunctata*, and the setal differences between this and my own captures are very well marked. The best way to see these distinctions I have found is to look sideways at the beetle through one's lens in the evening with a bright artificial light, such as a candle flame, as a background. The outlines of the individual setæ are beautifully defined by this method.

Heterocerus fuscus, Kies.—This insect occurs very commonly on the undercliff, either flying in the sunshine or issuing out of its burrows in sandy or muddy patches near streamlets when alarmed by the tread of the collector. The legs of *H. fuscus* are said by Fowler to be "black or pitchy-black, with tarsi and sometimes femora lighter," but in my series the colour is very variable, being as quoted at one end, and at the other being light reddish, with the tibiae perhaps a trifle darker, with all intermediate gradations. Here again is perhaps a new locality, as Fowler states that he knows of no other than the Isle of Wight.

Pissodes notatus, F.—Forty or more specimens of this weevil were taken in January, 1909, hibernating in the crevices of the bark of some fir trees growing in a clump about a quarter of a mile inland. This capture is of interest in point of view of Fowler's note of its occurrence, which is as follows:—"very local and not common. I have a strong idea that it has been taken in some numbers near Bournemouth, but cannot find any record." As Barton-on-Sea is situated within ten miles of Bournemouth, as the crow—or beetle—flies, it has not apparently deserted its old locality. Mr. G. C. Champion, however (*Ent. Mo. Mag.*, Nov., 1909, p. 247), states that it is fairly common in the Woking district and it is doubtless spreading in the South of England. He tells me that it has also been found not uncommonly in the New Forest and near Dorchester.

In conclusion, my best thanks are due to Mr. E. A. Newbery for the unwearyed kindness with which he has assisted me not only in the identification of my specimens but in every other way also.

Agra, Barton Court Avenue,
New Milton, Hants.:
November, 1909.

CEMIOSTOMA SUSINELLA, H.-S., A TINEID NEW TO THE BRITISH LIST, IN SCOTLAND.

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

As a set-off against the numerous disappointments that one had to endure during the past season, as a result of the scarcity of *Lepidoptera* and the extremely unfavourable weather, it is gratifying to be able to record that one's captures include an addition to the list of

British *Tineidæ* in the shape of *Cemiostoma susinella*, H.-S. Of this species I secured two most beautiful individuals amongst its food-plant, aspen, at Aviemore, Inverness-shire, the first being taken on June 17th last, and the other two days later. A comparison of these with the notices by Herrich-Schäffer in *Schmet. Eur.*, v, 342 (1855), and by Stainton in *Nat. Hist. Tin.*, i, 288—289 (1855), and with the fine and lengthy series in the Stainton continental collection, has established their identity beyond all question. The insect was remarkably scarce, and exceedingly difficult to capture, for the aspen bushes, in the very restricted spot where it occurred, were growing crowded amongst a number of young birches which rendered the use of the net either difficult or impossible. My two specimens were, to the best of my belief, the only ones that I saw, but on one occasion my wife, when collecting among these same bushes, noticed just a few minute white moths, which, although they were not secured, can only have been *susinella*, for, in spite of constant work in that spot, no insect that could possibly be mistaken for it has been met with there.

Susinella is referable to that section of the genus *Cemiostoma* whereof the members have white fore-wings. It may, however, be readily distinguished from all its congeners by the characteristics mentioned in the following description published by Stainton (*loc. cit.*):—"Anterior wings white, with a pale yellow spot on the costa beyond the middle, *continued to the anal angle*, and a second spot before the apex; a black spot with a violet pupil above the anal angle, and *two* fuscous streaks in the cilia pointing upwards." In my Aviemore specimens, which show an *alar. exp.* of 6.75 mm., the markings of the fore-wing are stronger in colour, and consequently more conspicuous, than in Stainton's continental exponents, the first yellow costal spot being very distinctly margined on both sides, and the second on its anterior side, with dark fuscous.

On the continent, and presumably in Britain also, *susinella* is double-brooded, the imagines of the first generation appearing in June, and those of the second in August. The larva mines the leaves of *Populus tremula* (aspen) in July, and again in September.

In *Stgr. & Rbl., Cat.*, ii, p. 218, No. 4227 (1901), Rebel gives the species under notice as occurring in Central Europe (except England*), Northern and Western Russia, Sweden, and Mauretania (*teste* Meyrick).

Norden, Corfe Castle :
November 6th, 1909.

* Instead of "Angl.," Rebel should have written "Brit.," which, as explained by himself (*op. cit.*, i, p. xxvii), signifies "Great Britain with Ireland," for, until I met with it last June *C. susinella* was not known to have ever occurred in any part of the British Isles.—E. R. B.

ON FOUR ADDITIONS TO THE LIST OF BRITISH HYMENOPTERA.

BY EDWARD SAUNDERS, F.R.S., &c.

PEMPHREDON MORIO, Fab. (E. Saund., Hym. Acul., &c.).

This species has been split up by Thomson into two, which he has called *clypealis* and *carinatus*; as we have certainly both of these in this country, I will give their characteristics. Unfortunately they are both rare in Britain. If we drop the name *morio* altogether, as it seems quite uncertain which of the two is Fabricius's species, then one of Thomson's will have to take the name *anthracinus*, Smith, but at the present moment Smith's type is not available for examination, so I must keep to the names given by Thomson. The two species may be distinguished thus:—

CLYPEALIS, Thoms.

Clypeus emarginate, the emargination bearing a distinct tooth in the centre in the ♀; a slight production only in the ♂; ventral segments 3 to 5 in the ♂ bearing strong fringes of very fine golden hairs; frontal tubercle in the ♀ narrower and less developed than in *carinatus*. Thomson also points out that in *carinatus* the apical ventral segment in the ♀ is more strongly punctured and carinated at the apex, but this character is hard to see and not very well developed.

Of this species I have females from Shuckard's Collection, and Mr. Morice took several males at Downside, near Cobham, on June 29th, 1900, and Mr. Nevinson has a ♂ from Bude, taken in June, 1891.

CARINATUS, Thoms.

Clypeal emargination simple in both sexes; ventral segments in the ♂ not densely fringed; frontal tubercle more developed and thicker; the females which I have seen tend to be larger than in *clypealis*.

I have two ♂ and a ♀ from Shuckard's Collection, both sexes from the late A. Beaumont, bred from an old stump in his garden, and females from Bury St. Edmunds, taken by Mr. W. H. Tuck. Mr. Morice also has it from Mr. Beaumont. Mr. Nevinson has taken the ♀ at Cobham and Oxshott, and has a ♀ specimen from Colchester.

DIODONTUS FRIESEI, Kohl.

This species is very closely allied to *minutus*, and like it has the mandibles flavous, but *frisci* differs in the form of the metatarsi of the intermediate legs of the ♂; these in *minutus* are suddenly enlarged near the apex; in this species the metatarsi are curved and slightly but gradually widened towards the apex showing no sudden enlargement. Another character given by Kohl, and noticeable in the specimens I have from Egypt taken by Mr. Morice, which

may be considered as co-types, is the finer reticulation of the pronotum and its sparser puncturation in both sexes. This I fail to see in the British specimens; the intermediate tarsi of the ♂, however, agree so exactly with those of Kohl's species that I feel little doubt that they are identical. I have only seen one British ♀ that I can refer to *friesei*, and even that I do with doubt; but the mesonotum is more finely reticulated between the punctures, and the punctures are certainly more remote than in the ordinary ♀ of *minutus*; still these characters are not so evident as in the *friesei* from Egypt.

Of this species I have males from Shuckard's Collection, and recently Mr. Silverlock has taken a male at Oxshott, and another male and the female mentioned above labelled "Oxshott or Woking." I have taken males in Jersey, but not on this side of the water.

HALICTUS ARNOLDI, n. sp.

This little species is closely allied to *H. minutissimus*, but may be known at once in both sexes by the broader face.

♂. Face nearly as broad as long; antennal joints shorter than in *minutissimus*; scarcely, if at all, longer than wide; mandibles dark, picuous, paler at the base; puncturation of the mesonotum slightly sparser than in *minutissimus*; propodeum more narrowed posteriorly, and more shining on its declivous part, this in *minutissimus* being rather densely punctured. Abdomen much less strongly punctured than in that species; legs black, tarsi very dark piceous.

♀. Face broader than long; thorax and mesonotum together much shorter and rounder than in *minutissimus*; mesonotum less strongly punctured; angles of pronotum not produced; lateral longitudinal impressions much less strongly marked; wings not clouded; propodeum much more finely sculptured, its basal area scarcely rougher than the rest. In *minutissimus* the area is very distinct and finely rugulose. The abdomen has the basal segment sparsely punctured all over, and the following segments are closely and finely punctured. In *minutissimus* the basal segment is almost without punctures, except for a few near the apex; size of *minutissimus*.

Hellingly, near Eastbourne: 3 ♂, 1 ♀, 14.viii.08.

This is really a very distinct species. I sent both sexes to Herr J. Alfken, of Bremen, who quite agrees with me that it is undescribed. I have named it in honour of Mr. George Arnold, its captor, who has done excellent work with our British *Aculeates*. He has very kindly presented the type specimens to me.

DUFOUREA HALICTULA, Nyl.

A ♀ of this interesting addition to our fauna was discovered by Mr. O. C. Silverlock in the large sandpit on Woking Heath, a locality which has been worked constantly by numerous Hymenopterists. It must be exceedingly rare, as although it is a small insignificant species,

it could not have escaped the notice of either Mr. Morice, Mr. Nevinson, or myself. Its congener, *D. vulgaris*, has such a peculiar flight that on the only occasion when I met with it I recognised it immediately.

D. halictula may be known at once from *vulgaris* by its smaller size, duller surface, more halictiform shape, and strongly punctured mesonotum and abdomen. It greatly resembles a small *Halictus*, from which its wings with only two submarginal cells will easily distinguish it. There are rare instances when a *Halictus* has only two submarginals in each wing, but they are so rare that they need hardly be considered; in such rare cases the long tongue of *Dufourea* will distinguish it at once. The ζ is particularly like a small *Halictus*, but the structure of its antennæ will distinguish it. They have not got the short transverse joints at the base of the flagellum as in that genus, the face is rounder, and the clypeus is entirely black.

4, Lansdowne, Bognor:

December 18th, 1909.

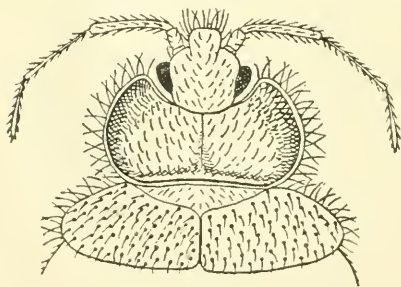
DESCRIPTION OF A NEW BAT-BUG FROM BRITISH COLUMBIA.

BY DR. G. HORVATH.

The Hon. N. Charles Rothschild kindly sent me for examination six specimens of a bug found on October 20th, 1903, on the bat *Myotis longicrus*, at Okanagan Landing, British Columbia, by Mr. Allan Brooks. This bug is a true *Clinocoris*, Fall. (*Cimex*, Latr., nec Linn.), and represents a new species which I describe as follows:—

CLINOCORIS PILOSELLUS, *n. sp.*

Fusco-ferrugineus; capite, pronoto et elytris pilis ochraceis semierectis, minus brevibus parce obsitis; capite transverso, superne obsolete punctato,



clypeo apicem versus leviter dilatato; antennis pilosulis, articulo tertio articulo secundo longitudine æquali et quam articulo quarto $\frac{1}{2}$ longiore; pronoto disco obsolete et remote, versus latera autem sat dense punctato, transverso, ante medium latissimo, latitudine sua maxima longitudine media plus quam duplo majore, basi longitudine circiter duplo latiore, apice sat profunde sinuato lateribus

a basi antrorsum sensim late explanatis, fortiter arcuatis, angustissime reflexis et sat longe ciliatis, ciliis his latitudine oculi longioribus, angulis anticis antrorsum lobato-productis et medium oculorum subattingentibus; scutello valde transverso, fusco, obsolete punctulato; elytris rudimentariis sat remote distincteque punctatis, margine apicali recto, versus latera autem

rotundato, commissura scutello distincte longiore, margine costali dense et sat longe ciliato; abdomine late ovato, dense subtilissimeque punctulato et breviter pilosulo, apice longius et densius setuloso. ciliis marginalibus ciliis pronoti et elytrorum distincte brevioribus; pedibus crassiusculis, femoribus subtus haud sulcatis. ♂. ♀. Long. corp. $3\frac{1}{2}$ — $4\frac{1}{4}$. Lat. pronoti $1\frac{1}{4}$ — $1\frac{1}{2}$; abdominis $2\frac{1}{4}$ — $2\frac{3}{4}$ millim.

This species belongs, as may be easily recognised by the widely dilated sides of the pronotum, to the group which includes *Clinocoris lectularius*, L. It differs from that insect by its smaller size, by the body being clothed with longer hairs and provided with less dense punctuation, the very narrowly but distinctly reflexed margins of the pronotum, the shorter and darker scutellum, the more thickened legs, and especially by the different shape of the elytra. The rudimentary elytra have the commissural (inner) margin straight and longer than the scutellum; their apical margin is nearly straight, but much rounded towards the exterior angles. The pronotum is less emarginated at the apex and its marginal cilia are longer than the breadth of the insect's eye.

Budapest, Hungarian National Museum:

November, 1909.

CHLORIONA DORSATA, Edw., AN ADDITION TO THE LIST OF
BRITISH *HOMOPTERA*.

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

Three species of *Chloriona* have hitherto been recognised as British. I am now able to add a fourth, viz., *C. dorsata*, Edw., of which I have taken both sexes in some numbers in Epping Forest. Like the other members of the genus, it lives on reeds, and so far as my present experience goes, it occurs only at one pond. Mr. Edwards' description of the ♂, taken from two specimens from "Haute Savoie," is given in Ent. Mo. Mag., xxxiv, p. 59, and I reproduce it below for convenience of reference. At the time the description was made, the ♀ was not known. I have therefore added a description of it. Usually the ♀♀ of this genus are difficult to distinguish from one another, but that of *C. dorsata* may readily be recognised by the dark ring at the extremity of the abdomen, which does not occur in either of our other British species. The description of the macropterous ♀ is taken from the only specimen I possess.

CHLORIONA DORSATA, Edw.

"♂. Abdomen above black, the sides narrowly yellow. Pygofer yellow,

a little darker above, the upper notch wide, rounded triangular, reaching from side to side of the segment, and extending cephalad almost to the hind margin of the last dorsal segment, the lower notch angular, with straight sides, and a small, almost semicircular, excavation in the middle; viewed from the side the hind margin passes obliquely and almost in a straight line from the hind margin of the last dorsal segment to the commencement of the lower notch. Contents of the genital aperture brownish-yellow. Anal tube with the aperture transversely elliptic, its lower edge much widened and produced on each side into a large, blunt, triangular tooth, the teeth proper nearly straight and directed almost horizontally cephalad. Genital aperture (or mouth of the pygofer) somewhat triangular, with widely rounded angles. Styles gradually narrowed from base to apex, nearly straight, their apices obliquely truncate, with the upper and lower angles produced into a sharp triangular tooth. Scutellum with a black sub-triangular patch on each side beyond the side keels. Otherwise like *C. glaucescens*."

♀. *Brachypterous form*. Bright green, and without a trace of the dark triangles on scutellum which characterize the ♂. Much like *C. glaucescens* ♀, but with face broader between the keels, and with the hind margin of the terminal segment of the abdomen always black, this dark rim being sometimes interrupted in the middle of the upper surface. Occasionally there is a broad but ill-defined fuscous band just within the hind margin of each dorsal abdominal segment, and two or three dark dots on the sides of each. Length, 4 mm.

Macropterous form. Scutellum rather more than twice as long as pronotum, yellowish, with dark triangles indicated, though not so distinct as in the ♂. Elytra one-third longer than abdomen, hyaline, slightly yellowish. Abdomen above dark brown with extreme margins of segments yellow, beneath yellowish white. Length, 5 mm.

Hab.: On reeds in a pond, Epping Forest, June and July.

I have to thank Mr. Edwards for kindly confirming my identification of this species.

56, Cecile Park, Crouch End, N:

Nov. 30th, 1909.

Ischnomera sanguinicollis, F., and other beetles in the New Forest.—At the beginning of June I had a few days' collecting in the New Forest; the weather, however, was wet and cold for nearly the whole time, and only one day could have been characterised as really favourable. I managed, however, to beat a small series of *Ischnomera sanguinicollis* off the more or less bedraggled hawthorn bloom; probably during the preceding week, which was hot and fine, it had been fairly abundant in the locality; *I. cærulea* was common, as also was *Corymbites tessellatus*, and *Grammoptera præusta*, but the latter was very local; under bark of an old, wet, decaying stump I found two pupæ of *Althous rhombeus*, from which I afterwards bred the perfect beetles; among other things may be mentioned single specimens of *Elater lythropterus*,

E. pomonæ, *Pogonochærus hispidus* and *Rhynchites pubescens*; *Orsodacna lineola*, *Myctochares bipustulata*, *Apion genistæ*, and *Tillus elongatus* also occurred, as well as a good many commoner insects. During a short stay at Seaford in August I found *Orchestes pratensis*, *Gymnetron labilis*, and a single specimen of *Meligethes bidentatus*.—W. W. FOWLER, Earley Vicarage, Reading: November 15th, 1909.

Rediscovery of Macronychus quadrituberculatus, Müll.—This species was originally taken in 1864 by Mr. J. T. Harris of Burton-on-Trent, in the River Dove, and occurred freely there for several years. I cannot ascertain when it was last taken in this locality, but in recent years a good many collectors have visited the place invariably without result. At the present time the Dove is almost choked with weeds, but the water is fairly clear and not sluggish. This, I gather from Mr. Champion, was very much the character of the stream when *Macronychus* was taken, so that there is no reason to suppose that the insect has been exterminated or driven away by a change in the habitat. I had at one time thought that this might be the case owing to the very different conditions under which it lives in Herefordshire. I discovered it last September in the River Temc, living under large stones, which were either slightly covered with *Confervæ*, or perfectly clean with occasional cases of Phryganeid (?) larvæ adhering to them. The water was absolutely clear with hardly any weed, and the river shallowed to a swift-flowing rapid with a sandy bottom and large stones projecting above the water. *Macronychus* usually sits with its legs flattened out at full length, adhering to the stone. It walks awkwardly and clumsily, appearing to drag itself along. I also noticed it amongst *Confervæ* with its legs tightly drawn in so that the knees were high above the back.—J. R. LE B. TOMLIN, "Stoneley," Reading: November 16th, 1909.

New localities for Laccobius scutellaris, Mots.—For this species, introduced by Dr. Sharp in the October No. of the Magazine, I can now give two additional localities. I took a single specimen in company with *L. sinuatus*, Mots., and *L. nigriceps*, Th., at the end of September, in the River Tavy, near Horrabridge, and in November I found it sparingly in a sphagnum pool near Newbury on two occasions. The species is easily recognisable, even in the field, by its dark colour and oblong form.—ID.: November 18th, 1909.

Coleoptera in Devonshire.—On October 10th some specimens of *Mononychus pseudacori* emerged from seed pods of *Iris pseudacorus*, which I had picked up in Devonshire, near Lyme Regis, Dorset. I believe that this beetle has not been recorded from Devonshire for many years. I should also like to know whether *Corymbites cupreus* has been found in this part of England, as I found it commonly in June, 1901, at Okehampton; the variety *æarginosus* also occurred.—L. M. BUCKNILL, Bitterne, Hants.: November, 1909.

A note on some inhabitants of a Badger's nest.—On September 2nd last I was present at the digging out of a badger's earth on the Aston Hall Estate,

Dutton, Cheshire. The bed or nest was at the end of a burrow 24 feet from the surface. On careful examination the nest yielded the following species of *Coleoptera* and *Diptera*:—

COLEOPTERA: *Queelius vexans*, 2 specimens; *Q. mesomelinus*, 1; *Aleochara succicola*, 1; *Homalota fungi*, 2; *Cryptophagus distinguendus*, 2; *Liosoma ovalatum*, 1. The last named had probably wandered into the nest accidentally. I have the nest still enclosed in a biscuit tin with several larvæ of *Coleoptera* alive and hope to breed them out.

DIPTERA: The flies have been submitted to Mr. G. H. Verrall, who determines them as belonging to two species of the genus *Sciara*. There was also present a specimen of *Cricotopus bicinctus*, which Mr. Verrall thinks would have no connection with the badger.—G. A. DUNLOP, Municipal Museum, Warrington: November 23rd, 1909.

Rhopalomesites tardyi, Curt., in Lancashire.—In August last I captured a female specimen of *Rhopalomesites tardyi* at Bardsea, on Morecambe Bay, 3½ miles from Ulverston. The insect was taken when sweeping long grass under beech trees and was the only one found. Mr. Jas. Dutton tells me that it is a new record for Lancashire.—JAS. ARMSTRONG, 74, Legh Street, Warrington: November 23rd, 1909.

Platystethus alutaceus, Thoms., and other additions to the Isle of Wight list of *Coleoptera*.—A fine specimen of the above insect was found by my friend Mr. John Taylor, of Sandown, in the marshes near that place in May last. This insect, brought forward as British by Mr. Champion in 1897 (*Ent. Mo. Mag.*, xxxiii, p. 98) appears to have comparatively few recorded localities. In addition to those given by him (*loc. cit.*), eight specimens were taken by Mr. de la Garde in the marshes near Sittingbourne in September, 1906 (*Ent. Mo. Mag.*, xliii, p. 136); one by Mr. E. Saunders at Chobham in 1878 (*Ent. Mo. Mag.*, xxxiv, p. 232); several by Mr. J. J. Walker at Oxford in 1908 (*Ent. Mo. Mag.*, xlv, p. 136), and commonly by Mr. Champion in 1909 at Woking (*Ent. Mo. Mag.*, xlv, p. 258). I know of no other notices of its capture. Although given as a var. of *P. cornutus*, Grav., in the last (1906) European Catalogue, *P. alutaceus* appears to be a good and distinct species, with many constant characters to separate it from *P. cornutus*.

Other additions to the list of *Coleoptera* recently published in Morey's "Guide to the Natural History of the Isle of Wight" are: *Oculea castanea*, Er., *Tachinus marginellus*, F., *Cercyon quisquilius*, L., *Ephistemus globulus*, Waltl, and *Microcara livida*, F.—E. A. NEWBERY, 13, Oppidan's Road, N.W., November 13th, 1909.

[*P. alutaceus* was found by me not rarely in flood-rubbish at Brockenhurst last June.—J. J. W.]

Leistus montanus, Steph., on Skiddaw.—The Transactions of the Carlisle Natural History Society for 1909 state that *Leistus montanus*, Steph., has not been taken recently on Skiddaw. I am, therefore, pleased to be able to record

that on August 5th last I took eight specimens of this rare beetle under stones on Skiddaw summit. They were fairly abundant, and only lack of time prevented the capture of a large number. My identification has been confirmed, with his usual kindness, by Mr. E. A. Newbery. *Nebria gyllenhali*, Sch., swarmed in the same place.—GEO. B. WALSH, 6, Lancaster Road, Linthorpe, Middlesborough: October 26th, 1909.

Note on Evetria sylvestrana, Curt.—Mr. Thurnall's note [Ent. Mo. Mag., Ser. 2, xx, 260 (1909)] unfortunately does not afford the clear proof, that seems to me desirable, of the attachment of *Evetria sylvestrana* to *Pinus pinca*. My friend quotes the late Mr. W. Machin as having told him that he had bred this species from larvæ "feeding in the shoots of the 'stone pine'—*Pinus picca*," but this statement, as published, contains in itself a direct contradiction, for the "stone pine" is **not** "*Pinus picca*," but *P. pinca*. This fact, therefore, completely destroys the value that would otherwise attach to Mr. Machin's information, and one cannot even guess which species of pine yielded him the larvæ in question, seeing that *both* the "stone pine" and "*Pinus picca*" have, as stated in my notes (Ent. Mo. Mag., Ser. 2, xx, p. 226), been recorded as food-plants of *E. sylvestrana*. It may be as well to mention that the "common silver fir" is no longer called *Pinus picca*, but now bears the name *Abies pectinata*.—EUSTACE R. BANKES, Norden, Corfe Castle: November 13th, 1909.

Late emergence of Cerura bienspis, Bkh.—Seeing that the usual time for the imago of *Cerura bienspis* is May or the earlier half of June, it seems worth recording the fact that a few Sussex pupæ in my possession yielded five moths during the past season, four of which appeared July 1st—8th, while the fifth, a fine female, did not emerge until August 1st. All the cocoons were kept together throughout, in a cold larder in this house until May 21st, and from then until the middle of July in fireless rooms in the Scottish Highlands, where wintry conditions frequently prevailed. The abnormally cold weather was probably responsible for the non-appearance of any of the imagines until July, but it seems surprising that the laggard female should have emerged so long after her companions, and that she should have failed to respond to the three really hot days that immediately followed my return to the south of England on July 16th.—ID.: November 15th, 1909.

Homæosoma cretacella, Rössl. (senecionis, Vaughan): a disclaimer.—In the course of his notice of *Homæosoma cretacella* in Lep. Brit. Isl., x, 46 (1905), the late Mr. C. G. Barrett wrote as follows:—"Mr. Eustace Bankes has reared it from larvæ found, in Scotland, in the flowers of tansy;" but, as I have never yet had the good fortune to see this local species alive in any stage, this assertion is clearly incorrect. It is doubtless based on my remarks (*in litt.*) that were published by Mr. Tutt in Ent. Rec., i, 326 (1891), or on my note that appeared in Ent. Rec., ii, 42 (1891), in which I stated that, to my certain knowledge, the larvæ feed in seed-heads of tansy, as well as of ragwort, in Scotland. A reference, however, to my statements will show that these contain

no suggestion whatever that I had possessed larvæ feeding in heads of tansy, or had reared any imagines therefrom, and, as a matter of fact, the "two friends" alluded to in Ent. Rec., i, 326, as having obtained the larvæ in tansy in Scotland, were Messrs. S. T. Ellison and W. Herd, then residing in Perth and its neighbourhood. My only share in the matter was the identification of some of the perfect insects, the first, an unusually large and well-marked one, being submitted to me, curiously enough, because the gentlemen just named doubted the accuracy of Mr. C. G. Barrett's determination of it as *H. binævella*! After Mr. Tutt (Ent. Rec., i, 326, foot-note) had called in question my statement about tansy as a food-plant, it was Mr. Ellison who informed me that ragwort was certainly not known as "tansy" in the Perth district, and that, as he had previously told me (*in litt.*) the larvæ there fed in heads of both these plants, the former being "*Senecio jacobææ*" and the latter "*Tanacetum vulgare*." A reference to my correspondence with Mr. Ellison shows that, whereas Mr. Herd found the larvæ fairly plentiful, as a rule, in both food-plants, he himself usually found them more sparingly. In various seasons a few imagines had been bred by them, but I never heard whether my suggestion that the seed-heads should be kept out of doors produced improved results, as should have been the case. In Ent. Rec., i, 326, Mr. Tutt reproduces my statement (*in litt.*) to him that "Two friends of mine who obtain the larvæ in tansy heads in Scotland, find them scarce, which looks as if they are no more inclined to be gregarious than *nimbella*." When writing this, I was under the false impression that both Mr. Ellison and Mr. Herd had only found the larvæ very sparingly in the Perth district.—*Id.*: November 15th, 1909.

The Host of Hedychrîdium coriaceum, Dhb.—Two years ago I recorded in this Magazine the occurrence of *Hedychrîdium coriaceum* in the New Forest, in company with *Crabro albilabris*, Fab. At that time the species was new to me, and as I was anxious to secure all the specimens I could see, I did not pay sufficient attention to its habits to be able to say with any certainty that it was parasitic on *Crabro albilabris*, although I saw it enter the burrows of that Fossor.

Mr. Morice expressed a doubt as to its being parasitic on a *Crabro*, as our other three species, *H. roseum*, *H. ardens*, and *H. integrum*, are parasitic on such very different sections of the *Sphegidæ*.

I therefore determined to pay some attention to the matter this August, and my friend Mr. Hamm did the same. Although we are not able to furnish the absolute proof, viz., by breeding, that this Fossor is the host, yet the additional evidence obtained points that way.

This Chrysid is found in a very limited area on a sandy and gravelly path some two hundred yards long. At the time this Chrysid is about, the following species are found burrowing in the ruts and sides of the path. *Psen bicolor*, *Crabro albilabris*, *Halictus leucozonius*, *minutissimus*, and *tumulorum* and *Panurgus calcaratus* and *ursinus*.

The last two species and the *Halicti*, except *minutissimus*, are far too large to be the host of this small Chrysid, and need not be considered.

H. coriaceum was not plentiful, but Mr. Hamm and I spent some hours on

several days watching it. It is not easy to see this restless and minute insect while on the wing. It seldom stays for long in one place, but whenever we saw it settle, we waited to see the burrow it entered, which was then marked with a piece of straw. Several of these drew blank, as after a long wait no other insect entered. Seven other marked burrows gave definite results, for in each case a ♀ *Crabro albilabris* returned and entered, some with prey. The ground was so hard that we could not dig out the burrows and get at their contents. But as all the burrows visited by *H. coriaceum* belonged to *Crabro albilabris*, and not to the other small *Aculeates* mentioned above, it is very probable that *C. albilabris* is the host. There is a disparity in size between the two, but not more than that between *Hedychridium roseum* and its host *Astata boops*.—G. ARNOLD, University, Liverpool: November 15th, 1909.

Crabro aphidum, Lep., in the New Forest.—A ♀ of this rare species was taken on a flower head of an umbelliferous plant, in July this year, near Brockenhurst. The yellow markings of the thorax are entirely wanting, but Mr. Saunders kindly examined it and confirmed the determination.

Owing to the absence of the yellow markings on the thorax, it looks exceedingly like a ♀ *C. palmarius*, but, under a lens, the excavated 6th dorsal valve distinguishes it at once.—ID.: November 17th, 1909.

Note on the geographical distribution of certain Trichoptera.—In the current number of the Ent. Mo. Mag., xlv, p. 239, Mr. Morton, referring to the Trichopterous Family *Calamoceratidæ*, mentions its occurrence in the Iberian Peninsula. McLachlan, shortly before his death, while I was in Algeria, asked me to figure some details of *Trichoptera*, and express an opinion as to the systematic position of a single ♂ fly labelled, "Nicolajefsk, Amur, 16, vii." I determined this to be a representative of the *Calamoceratidæ*,—a view which he at first questioned, but finally adopted. I still possess one of its maxillary palpi, which I mounted in Canada balsam as a microscopical preparation. My drawings of details of this insect, together with others of New Zealand *Trichoptera* (a *Helicopsyche* among them), were probably consigned to the waste-paper basket after McLachlan's death. I sent him all the "*Neuroptera*" obtained by me in Algeria. His illness prevented him from describing several novelties, and from recording my latest captures. One of these was the Trichopteron, *Chimarra marginata*, found at a cool stream near Hammam Meskoutine.—ALFRED E. EATON, West House, Symondsbury, Bridport: October 23rd, 1909.

Review.

CHARLES DARWIN AND THE ORIGIN OF SPECIES: Addresses, &c., in America and England in the year of the two Anniversaries. By EDWARD BAGNALL POULTON, D.Sc., M.A., F.R.S., &c., &c., Hope Professor of Zoology in the University of Oxford. London: Longmans, Green & Co., 39, Paternoster Row: November 24th, 1909.

The centenary year of the birth of Charles Darwin has in due course produced a large number of important memoirs bearing upon the life and work of the author of the "Origin of Species," and Professor Poulton's very valuable contribution to the Darwinian literature of 1909 appears happily and most appropriately on the fiftieth anniversary of the publication of that epoch-making work. As one of the chief modern exponents of the theory of Natural Selection, the learned Professor has taken a leading part in the celebrations in honour of the great Naturalist, whom all Entomologists may well claim as one of themselves. The addresses delivered by him on these occasions to representative gatherings of scientific men at home and in America, are brought together in a very convenient and attractive form in this volume, which is appropriately dedicated to Darwin's now venerable fellow-worker Dr. A. R. Wallace. The first two addresses, which were delivered on the opening day of the centenary year before the American Association for the Advancement of Science at Boston, are devoted to a masterly *resumé* of the history and progress of the theory of Evolution during the half-century which has elapsed since the appearance of the "Origin," and to the influence of Darwin's commanding intellect and character in helping to achieve the vast transformation of scientific thought during that interval of time. Section V is reproduced from the Cambridge Centenary volume "Darwin and Modern Science" and is entitled "The Value of Colour in the Struggle for Life." Here we have Professor Poulton at his best, in dealing with a subject which appeals specially to Entomologists, and one that he has made his own. In this most interesting essay due weight is given to the observations of the great naturalist-traveller W. J. Burchell—a worthy predecessor of Charles Darwin—on the cryptic and mimetic resemblances of insects and plants in South Africa and Brazil; and it is noteworthy that Burchell was present at the historic meeting of the Linnean Society on July 1st, 1858, when the Darwin-Wallace essay was read. "Mimicry in North American Butterflies," which forms the subject of the next section, is of even more direct interest to Entomologists as indicating an exceedingly fruitful line of research, and will be new to many of them, though it has been in part anticipated by the author's memoir in *Trans. Ent. Soc. Lond.*, 1908, pp. 447-488. *Danaïda (Anosia) plexippus* is here shown on convincing evidence to have been originally a native of tropical Asia, where its nearest allies still exist; and the account of the effects of its comparatively recent invasion of the American Continent on the indigenous forms of *Limenitis*, resulting in the case of *L. archippus* in one of the most perfect examples of mimicry known, adds still further interest to the history of perhaps the most remarkable of all butterflies. An almost equally striking case, here set forth in detail, is that of the influence of *Pharmacophagus (Papilio) philenor*, probably an intruder into North America from the South, on members of the plastic genus *Limenitis* as well as on other *Papilionidæ* with which it has come in contact. The final section, which many will think justifies in itself the appearance of the book, embodies a series of nineteen letters, hitherto unpublished, from Charles Darwin to the veteran Entomologist Mr. Roland Trimen, between the years 1863 and 1871; and these, with another letter to the Rev. F. W. Hope of date 1837 (pp. 202-3), published for the first time in Section V, are a most valuable and characteristic addition to the correspondence of our great Naturalist as given to the world.—J. J. W.

Obituary.

Prof. Dr. Gustav Kraatz, Ph.D., one of the foremost Coleopterists of our time, died on November 2nd last, in Berlin, at the age of 78. He had been practically blind for several years and knew that the end was rapidly approaching. Born in Berlin in 1831, Kraatz had the good fortune to become personally acquainted while he was still very young with entomologists of such standing as Schaum and Erichson. His inclination for collecting and studying minute *Coleoptera* soon brought him to the front. At the age of 18 he published his first paper, on the *Myrmecophilous* beetles he had collected in the neighbourhood of Berlin, and other papers soon followed. The work which brought Kraatz lasting fame was the second volume of Erichson's "Naturgeschichte der Insecten Deutschlands." This volume, entirely written by him, deals with the *Staphylinidae* and is frequently consulted even at the present day. However, Kraatz's interest in *Coleoptera* was very wide. He has done extensive work in nearly all the families of beetles represented in Europe. Amongst the exotic forms he was most interested in the *Lamellicornia*, particularly *Cetoniinae*, of which he has described a large number of species. As there was hardly any one in Berlin who specially dealt in natural history publications at about the middle of the last century, Kraatz, with keen insight, seized the many opportunities he had of buying rare books, and thus amassed a very valuable collection of entomological literature.

In October, 1856, Kraatz founded, in connection with Stein, Schaum, Kiesenwetter, Redtenbacher, and many other entomologists, the Berliner Entomologische Gesellschaft, which, in 1881, owing to internal quarrels, split up into two societies, Kraatz and his adherents seceding and forming the Deutsche Ent. Gesellschaft.

Kraatz was never married, and his apartments gradually became actual storerooms for books and insects, among which he has worked as long as his eyesight lasted. Even when his sight had become so bad that he could scarcely distinguish species of large size, he could not tear himself away from what had been his life-work. A few years ago, however, he recognised that he had to give in, and made arrangements to have his collection and library transferred to another building where they could be sorted and stored. He became thus the founder of the first purely entomological museum, the Deutsches Entomologisches National Museum, to which many other entomologists have bequeathed their collections. The very considerable fortune which Kraatz possessed on his death has also been left by him to that institution, whose permanency is thereby amply assured.

In 1905 the Prussian Government honoured Kraatz by bestowing on him the title Professor, in recognition of his services to Entomology.

In 1906 the Deutsche Ent. Gesellschaft published a special Kraatz Jubilee number containing a biography of his life, a complete list of his 1393 entomological papers, an excellent portrait, &c. In the list of Fellows of the Entomological Society of London Kraatz's name appears from 1876-1907.

The body has been cremated at Hamburg, and the urn containing the

ashes will be placed in the Ent. Nat. Museum on the cabinet of *Staphylinidæ*, in accordance with a wish expressed by the deceased shortly before his death.—K. J.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—The first Meeting of the Session 1909—1910 was held at the Royal Institution, Liverpool, on Monday, October 18th, 1909, Mr. C. E. STOTT, Vice-President, in the Chair.

This being the Annual Exhibition Meeting there was a very good attendance, including a number of visitors.

Mr. B. H. Crabtree, Manchester, exhibited *Lepidoptera*, including the following species:—*Tæniocampa incerta*, *T. miniosa*, *T. munda*, and *Pachnobia leucographa*, from Lakeside, Windermere; a varied series of *Odonestis potatoria* from Berkshire; a series of *Arctia caia*, showing the usual range of minor variation, *Vanessa urticae* approaching var. *ichnusa*, and *Endromis versicolor* from Aviemore; *Dianthæcia carpophaga*, pale forms from Brighton; *Acronycta aceris* from Sandown, Isle of Wight; *Cucullia asteris* from the London district, and *Phorodesma smaragdaria* from Essex. Major Woodforde, of Market Drayton, *Zonosoma pendularia* var. *subroseata*, and a new variety of the same species like *subroseata*, but with the pink area ochreous, which he had bred this year for the first time. Mr. George Arnold, a number of species of *Hymenoptera*, among them being *Crabro aphidum* and *Formicoxenus nitidulus*, the latter out of nests of *P. rufa* from the New Forest. Mr. F. N. Pierce, on behalf of Mr. Baxter, of St. Anne's, the *Luperina* allied to *L. testacea*, and supposed to be *L. nickertii*.* This species, only two specimens of which have been previously taken in Britain, both by Mr. Baxter at St. Anne's, has occurred again this year, about a dozen specimens having been captured. Mr. Pierce also exhibited microscopic slides of the genitalia, showing the characters he relied upon for differentiating the new moth from *L. testacea*; the same Member also had *Abraxas grossulariata* var. *flavofasciata* from Wallasey; *Orygia gonostigma* and *Lycæna argiolus* from Essex; *Tryphæna comes* from Isle of Eigg, and other local species. Mr. W. Mansbridge, a long series of *Boarmia repandata* var. *nigra* from Knowsley; *Melitæa aurinia* from Barmouth, and a series of *Eupithecia valerianata* from Delamere Forest, this being the first record for Cheshire. Mr. C. E. Raven, a box of *Lepidoptera* from Rye, Kent, including a varied series of *Mesotype virgata*, *Aplecta nebulosa* var. *robsoni* from Delamere, and *Gnophos obscuratus* var. *fasciatus* from Folkestone. Dr. Timme, a box of *Ichneumonidæ*. Mr. H. S. Leigh, of Manchester, a box of *Tachinidæ*, and contributed notes on the exhibit. Mr. Robert Tait, junr., two drawers of *Lepidoptera*, the result of the season's work, which included *Aplecta nebulosa* var. *robsoni* from Delamere; *Polia chi* var. *olivacea* from Huddersfield; *Agrotis agathina* from North Wales; *A. ashworthii*, very light and very dark forms, from North Wales; *Cucullia verbasci*, bred from larvæ found in 1907; *Cymatophora ridens* from New Forest larvæ; *Eupithecia pumilata* from North Wales; and various species from the South of England, among them *Moma orion* from Abbott's Wood.—H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secretaries*.

* This insect has since been determined as a form of *Luperino guenei*, Dbl., and has been named by Mr. South as var. *baxteri* (Entom., December, 1909).—G. T. P.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
October 28th, 1909.—Mr. A. SICH, President, in the Chair.

Mr. Percy Bright, of Bournemouth, and Mr. G. Bowen, of Kingston-on-Thames, were elected Members.

Mr. Tonge exhibited living larvæ of *Pharetra rumicis* from Hatfield, feeding on sallow. Mr. South, a series of *Hylophila prasinana*, bred, from Scarborough, in some of which a brilliant red coloration had developed. Mr. West (Greenwich), specimens of the Homopteron *Idiocerus aurulentus*, from Blackheath; it had only once before been taken in Britain. Mr. Newman, series of *Agrotis cinerea* from Kent, Lewes, and Brighton; the Sussex races were much the smaller. Mr. R. Adkin, a ♀ of *Ocneria dispar* taken at rest on an elm trunk at Eastbourne, and read notes on the unusual occurrence; he also showed a series of *Scopula decrepitalis* taken near Ramnoch in June last. Mr. Buckstone recorded the finding of *Noctua xanthographa* ♂ and *Luperina testacea* ♀ in cop, on September 27th. Mr. Edwards exhibited a number of *Cicadidæ* from South America. Mr. Sich, for Mr. Green, the new British species recently recorded, *Depressaria putridella*. Mr. Step communicated the Report of the Field Meeting held at Oxshott on October 9th. Mr. R. Adkin read a Report of the Meeting of the Delegates of Societies affiliated to the British Association. Mr. Andrews read a paper on "*Diptera*."

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, November 17th, 1909.—
Dr. F. A. DIXEY, M.A., M.D., President, in the Chair.

Mr. H. Rowland-Brown, one of the Secretaries, announced that the Council had nominated the following Fellows to act as Officers, and to serve on the Council of the Society for the Session 1910-11:—*President*, Dr. Frederick Augustus Dixey, M.A., M.D.; *Treasurer*, Mr. Albert Hugh Jones; *Secretaries*, Mr. H. Rowland-Brown, M.A., and Commander James J. Walker, M.A.; *Librarian*, Mr. George Charles Champion, F.Z.S.; and as other Members of the Council, Professor T. Hudson Beare, F.R.S.E., Mr. G. T. Bethune-Baker, F.L.S., Dr. Malcolm Burr, D.Sc., F.L.S., F.Z.S., Mr. H. St. J. Donisthorpe, F.Z.S., Mr. Albert Harrison, F.L.S., F.C.S., Mr. Selwyn Image, M.A., Dr. Karl Jordan, Ph.D., Mr. Hugh Main, B.Sc., Mr. Alfred Sich, Mr. Henry Jerome Turner, Mr. Rowland E. Turner, and Mr. James W. Tutt.

Mr. Gilbert E. Bryant, of the Grove, Esher, Surrey, and Mr. Alfred Tetley, M.A., of Avenue Road, Scarborough, were elected Fellows of the Society.

The decease of Prof. Dr. Gustav Kraatz, of Berlin, was announced, and Dr. Karl Jordan gave a short account of the services rendered to entomological science by the deceased gentleman, who was for many years a Fellow of the Society.

Mr. H. Eltringham exhibited a case of butterflies from African localities, to show that the species described as *Acræa aurivillei* is the ♀ of *A. aleiope*, and to illustrate the mimetic relations between the *Acræa*, and the two species of *Planema* and a species of *Mimacræa* included in the exhibit. The Rev. F. D.

Morice, a case of *Aculeate Hymenoptera*, representing many different groups visiting a solitary tree of *Ochrademus baccatus*, Del., in the neighbourhood of Jericho. They showed a remarkable similarity in point of colour, &c., and neither plant nor insects, in most cases, were to be found elsewhere in the region. Mr. A. H. Jones, a few butterflies collected during last summer at Formia, near Naples, including *Melanargia arge*, probably the most northerly limit of the species; fine forms of *Hipparchia semele*, *Satyrus stalinus*, *Melitæa parthenic*, and *Lampides boeticus*; also various *Lycænidæ* presenting little, if any, difference from the types found in the Swiss Alps. Mr. H. J. Turner, an example of *Melitæa didyma* in which the greater portion of the black pigment had more or less failed to develop, captured at Zermatt on August 3rd, 1909; a specimen of *Brenthis euphrosyne*, taken in the same locality on July 31st, the spots composing the submarginal line being well developed, and most of them elongated towards the base; a specimen of *Polyommatus damon*, in which there was no trace of the transverse row of eye-spots on the under-side of the forewings, the discoidal spot only being present, taken near Aigle on July 29th; and two series of *Melitæa parthenic*, with var. ? *varia*, the first taken on the Riffel-alp on August 1st, and the second up the Valley of the Zmutt, Zermatt, on July 31st. Mr. A. Sich, a pair of *Depressaria putridella*, Schiff., bred from larvæ taken last June at Whitstable, Kent, of which species the first British examples were taken in the larval state by Mr. E. D. Green in 1906; also a pair of *Coleophora chalcogrammella*, Zell., taken last August in Richmond Park, Surrey, apparently not hitherto taken in Britain further south than Suffolk. Mr. H. M. Edelsten, a bred series of *Nonagria neurica*, Hb. (*edelsteni*) from Sussex, including two new aberrations, for which he suggested the names of *rufescens* and *fusca*; he mentioned that, so far as he was aware, these two forms had not been previously noted on the Continent; he also showed ova and pupa *in situ*, with photographs by Mr. Hugh Main to illustrate the life-history of the species. Mr. W. G. Sheldon, a case containing several species of *Pieridæ* taken by him this year at Herculesbad; he drew attention to those labelled as *Pieris rapæ*, suggesting that some of them might be *P. ergane* and *P. manni*, to which respectively they have a remarkable resemblance superficially. Mr. W. J. Lucas, two imagines and a larva of the finest of our *Neuroptera*, *Planipennia*, *Osmylus chrysops*, taken by Dr. D. Sharp near Queen's Bower in the New Forest. The larva pierces and sucks dry some small animals, but its life-history is not well known. Dr. G. B. Longstaff, a teratological specimen of a Carabid beetle from Ceylon (*Omphra*, Latr., sp.). The middle femur of the right side was dilated, at the distal end, bearing at its anterior angle two supplementary tibiæ coherent at the base; the rudimentary tarsi were also adherent. Mr. A. W. Baco, two boxes containing pupal cases of *Aglais urticæ* collected by Mr. Hugh Main in one locality. Those taken from the food-plant were yellowish-white; those taken from the cage in which the larvæ pupated were quite black, thus demonstrating the effect of surroundings upon the pupal coloration. Dr. T. A. Chapman read a paper "On *Callophrys aris*, a Palearctic Butterfly new to Science."—

H. ROWLAND BROWN, *Hon. Secretary.*

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

The Coloured Plate issued last September having been so much appreciated by our readers, another (devoted to *Hymenoptera* and *Coleoptera*) is given with the present number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also. Another Plate is in course of preparation, and it will be presented during the year 1910.

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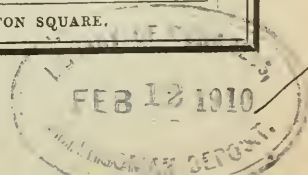
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A FURTHER NOTE ON THE GENUS *COLON*.

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

In the Ent. Mo. Mag., vol. xlv, pp. 38, 39, I gave an account of the capture of nineteen specimens of *Colon*, on June 5th, 1907, by constantly sweeping for about two hours a ride of long rough grass, about 100 yards in length, at the border of a wood. The species captured were *C. viennense*, *C. serripes*, *C. zebei*, and *C. brunneum*. The spring and early summer of 1908 were very unfavourable for *Colons*, and I had few opportunities to hunt this same spot, but I added *C. angulare* (two specimens) to the list, and also took *C. latum* within 40 yards of the same place. In 1908 I think I visited the locality on two occasions only, and the *Colons* taken, besides a few *C. brunneum*, were three or four *C. dentipes*. As I was not able to wander far from home, nearly all my collecting that year was confined to a small copse quite close by, where I have for several years in succession taken a few specimens of *Colon*. After a good deal of hard work on several days a fair number of examples were netted, including single specimens of *C. angulare* and *C. denticulatum*. I found to my surprise that I took very few specimens in the grassy rides in the wood which seemed most suitable for *Colons*, but that most of them occurred outside the wood, where it was separated from a sainfoin field by a very narrow strip of long coarse grass. The sainfoin has been cultivated here for about eight years, and is now a good deal choked with grass and weeds.

I noticed that most of the specimens were captured in a comparatively small area, so on July 2nd, a fine hot day, I swept most carefully over this area, making only one stroke with the net and then examining it, until I had taken a *Colon*. I stopped at this spot and watched, and very soon saw another settle on a blade of grass and drop. I then knelt on the ground looking towards this spot and the sun and captured twenty specimens (seven or eight *C. serripes*, the rest *C. brunneum*) on the wing in a little over half-an-hour. This was at about 7 p.m. After a little practice I could easily distinguish the *Colons* from other beetles, as they look conspicuously brown on the wing. As a rule the flight is quite slow and steady, but is at times much more rapid and erratic. I occasionally saw one rise from the ground, but most were taken as they were flying just over the tops of the high grasses, or about to settle in front of me. The area over which all these twenty and the subsequent specimens were taken was only 6 ft. by 4 ft., and was about 8 ft. from the edge of the wood. It

appeared to resemble exactly the remainder of the field in its neighbourhood. The next afternoon was cloudy, but warm. I started watching at about 5.30 p.m., after having cut out two small pieces of turf from the centre of the above area about 8 inches square by 4 inches deep. The soil was light, but gravelly, with a large number of stones in it. These pieces of turf I examined carefully and eventually placed in a small shed with only one window, hoping that if any *Colons* hatched out they would fly to this window; but this experiment was a failure. As the sun was not shining on the day in question I could not see the *Colons* against the grass, and I found I could only catch sight of them against the sky-line by lying on my side and looking over the area described. In this way I took thirteen specimens on the wing, but probably many were overlooked, as a strong wind was blowing. Of these, two proved to be *C. viennense*, a species I had never taken near this wood before, four or five were *C. serripes*, and the rest *C. brunneum*. On July 4th I started watching at about 6 p.m., when it was again warm, but cloudy. This necessitated me lying on my side as on the 3rd. However, I soon had to give this up, as my left elbow and hip were so tender from contact with the hard ground the day before! Fortunately the sun came out and I took five *C. viennense*, one *C. serripes*, and nine *C. brunneum*. I watched two individuals settle on blades of grass, and saw them running about at the roots of grass, but did not see them make any attempt to burrow into the ground, nor was I able on any occasion to find a specimen by examining the roots of the grass, but of course I did not care to disturb the ground to any great extent. I do not believe that the *Colons* were emerging from the ground, as I saw very few rise from it, and these might have been individuals just recently settled. They appeared to come from some distance away, but were always flying low. I did not catch any obviously immature specimens, nor did I see any *in cop*. Males slightly predominated over females. I should have stated that on several occasions I swept the grass in other parts of the wood and near this special area or "Colony," as a facetious friend of mine suggested it should be called, and rarely took a *Colon*.

The weather completely broke up on July 4th. On July 11th, in spite of the absence of sun and a strong wind, I took two *Colons* on the wing at the same place, and a few other specimens on such days up to August 3rd. Unfortunately on the only two suitable days during this period I was unable to collect beetles. On Sept. 19th, a beautiful fine warm evening, although I watched for a long time I did not see a single *Colon*. It is very hard to frame any theory on

these curious observations. This "assembling" seems to me to be comparable with the "assembling" of *Ægialia rufa*, the cause of which, however, is not known. One would suppose that the "assembling" of the *Colons* must have some connection either with the procuring of food or with some sexual instinct, in the latter case, certainly not only the laying of eggs as males as well as females occur. The two most remarkable features of the phenomenon are (1) the very small area over which it took place, at the most 6 ft. by 4 ft. (2), the fact that three species occurred commonly, and this seems almost to exclude any pure sexual theory. I took the *C. angulare* and *C. denticulatum* very near and possibly on this spot, but it was before I had discovered its productiveness. It seems to be well known on the Continent that various species of *Colon* are taken in company in somewhat restricted localities, and I have recognised this for some years here. It will be interesting now to ascertain whether in these localities we cannot find one or more small areas where the *Colons* are specially congregating. Czwalina (Deutsch ent. Zeitschr., 1884, p. 265) suggests that *Colons* feed on fungi growing at the decaying roots of trees, which have been cut down, as he states that they are generally taken in such places. Weise and Kraatz, in appendices to his paper, refute this theory, and I think my experience here related finally disproves it.

In reference to my former note on the genus *Colon*, I must add the following observations :

C. barnevillei, I now agree, is a small undeveloped form of *C. zebei*.

The ♀ of *C. angulare* may easily be distinguished from the same sex of *C. brunneum* by the much narrower eighth joint of the antennæ, and by its longer thorax.

Bradfield: Nov., 1909.

CREPIDODERA IMPRESSA, FABR., A MEDITERRANEAN BEETLE
IN ENGLAND.

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

Crepidodera impressa, Fabr., is closely allied to *C. transversa*, but is rather larger and darker in colour; it is more shining, and has a shorter thorax, the transverse depression on which is remarkably deep. It may be readily distinguished by the punctuation of the elytra of the male: this consists of series of fine depressions, augmented by other punctures placed quite near; hence the internal series appears double; the interstices between the series are broad and definite. The

female of *C. transversa* exhibits a similar scheme of elytral punctuation, but in that insect the punctures are larger, and in the male sex are very confused.

This species was discovered by my friend Mr. C. G. Lamb at Hayling Island, in September last, and I judge from his account that it is thoroughly littoral in habit, the specimens having been found on a spot covered by the sea at high tides.

The latest monographer of the Palæarctic *Crepidodera*, Dr. J. Daniel, states (Münch. Kol. Zeitschr. ii, p. 247) that *C. impressa* is a Mediterranean insect, but that he has seen one specimen of it from Moritzburg, near Dresden, and another from Gerebencz, in Hungary. Neither of them seems to be authentic as to locality. Bedel (Faune Col. Seine, v, p. 178) merely alludes to the species in a foot-note, as it has not been found in France. Weise (Ins. Deutschl. vi, p. 703) says of *C. impressa*, "on pastures along the shores of the Mediterranean, not rare: in our country I know only of specimens collected by Prof. Schreiber, near Görz. They have a stronger punctuation of the elytra than the North African and South European examples." It is probable that near Görz refers to a spot on the shores of the Gulf of Trieste.

My conclusion is that the species is one of the sea-shore, and that it is probable that it occurs along the Western Coasts of France. I have already mentioned my suspicion that the specimens said to have been found in Central Europe are erroneous as to either locality or determination. I may mention that I have not been able to see a foreign example of the species, and that most of the books say that the lateral margin of the thorax is finer in *C. impressa* than it is in *C. transversa*. This is not so in the Hayling Island examples. I have, however, very little doubt as to their being the Mediterranean species.

Brockenhurst:

January 11th, 1910.

GALERUCELLA PUSILLA, WEISE, IN ENGLAND.

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

When Weise's work on the *Galerucidæ* appeared in 1886, I named a few specimens in my collection as his *G. pusilla*. The form, however, appeared to me to be so near to *G. calvariensis*, that I did not mention its occurrence here, preferring to wait till I should obtain more specimens. In the interval I have done so, and I think it now time to call attention to the matter.

G. pusilla is usually a little smaller than *calmariensis*, it is less marked with black on the upper-side, and the colour of the upper-surface is a little paler. It is most easily distinguished by the terminal two segments of the abdomen being entirely red.

Bedel (Faune Col. Bassin Seine, v, p. 279, note) declines to accept *pusilla* as a valid species; but it is still maintained in the recent European catalogue, and I incline to the opinion that it is valid.

The species occurs in this country both in spring and autumn. My localities for it are Horning, Mildenhall and the New Forest.*

Brockenhurst:

January 3rd, 1910.

CYRTORRHINUS GEMINUS, FLOR, AN ADDITION TO THE LIST
OF BRITISH HEMIPTERA.

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

Of the genus *Cyrtorrhinus* four species are known to inhabit Europe, and three of these have long been recognised as British. The fourth species, *C. geminus*, Flor, which has hitherto been recorded only from Scandinavia, Finland, and Livonia, may now be added to our list. I have in my collection two British specimens; one of these was taken at Broxbourne last September, the other, which has hitherto been standing unrecognised in my long series of *C. pygmaeus*, Zett., was taken many years ago somewhere in the South of England, probably in Surrey, but unfortunately I have no record of the exact locality.

C. geminus is so much like *C. pygmaeus* that only the differences need to be pointed out. In *C. geminus*, the basal joint of the antennæ is considerably longer than in *C. pygmaeus*, and instead of being black with pale apex, as is always the case in *C. pygmaeus*, it is either wholly pale, or with at most a slight dark shade at the apex; the legs of *C. geminus* are much longer, and the spines on the hind tibiæ larger and darker. The insect as a whole also is slightly larger. The size and colour of the basal antennal joint will, however, always enable it to be recognised. In habits it resembles *C. pygmaeus*, being found in damp places low down amongst rushes.

56, Cecile Park, Crouch End, N.:

January 4th, 1910

* Wicken Fen may be added.—G. C. C.

SYNONYMICAL NOTE ON *PULEX TRIPOLITANUS*, FULMEK.

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

Dr. Leopold Fulmek recently described (Zoolog. Jahrb., Syst., vol. xxviii, p. 289 [1909]) a flea from Tripoli under the above name. Through the kindness of Professor I. Ganglbauer of Vienna I have been able to examine the type of this species. The insect in question is undoubtedly identical with *Xenopsylla cheopis*, Rothsch. (1903).

Tring, Herts.:

January 1st, 1910.

Hydroporus bilineatus, Sturm, in the Isle of Sheppey.—Some little time back my friend Mr. J. H. Keys called my attention to the fact that certain *Hydropori* I had sent him long ago from the Isle of Sheppey as *H. granularis*, F., agreed with *H. bilineatus*, Sturm, in the character of the anterior tarsal claws of the ♂, as pointed out by Dr. Sharp (Trans. Royal Dublin Soc., ser. 2, vol. ii, p. 452), and quoted by Mr. E. A. Newbery (Ent. Mo. Mag., vol. xxxix, p. 224). On recently getting together my material of this genus for re-arrangement, the decidedly superior size, and especially the more oblong and parallel-sided shape of the Sheppey insect hitherto standing as *H. granularis*, was very evident when seen side by side with examples from Oxford, Brockenhurst, and Woking; and I have no doubt that all my specimens from the first-named locality are to be referred to *H. bilineatus*. I have not met with the species during my recent visits (mostly in August) to Sheerness, but it used to be fairly plentiful, especially in spring, in the less brackish ditches near the town, in company with *H. pictus*, F. Mr. Keys has just sent me micro-photographs of the anterior tarsal claws of *H. granularis* and the Sheppey insect, in which the differences as indicated by Dr. Sharp are very well shown.—JAMES J. WALKER, "Aorangi," Lonsdale Road, Summertown, Oxford: Dec. 15th, 1909.

Aleochara crassiuscula, Sahlb., &c., at Oxford.—On September 15th I was much pleased to meet with this rare species, hitherto found here singly (cf. Ent. Mo. Mag., vol. xlv, p. 270), in a rather dry manure heap quite close to Summertown. Subsequent visits to this and adjacent heaps of similar character produced a good series of the *Aleochara*, in company with *Cercyon terminatus*, *Philonthus thermarum* (common), *Sunius diversus*, *Hister bimaculatus* (in large numbers); *Myrmecoxenus vaporariorum*, *Monotoma quadricollis*, and many of the usual frequenters of such situations.—ID.: December 15th, 1909.

Coleoptera taken near Oxford in 1909.—The following species of *Coleoptera* taken by me among many others within a few miles of Oxford during the past year, are perhaps worthy of a passing notice, many of them being additions to the published local list, and others seen alive by me for the first time in my collecting experience.

Panagæus 4-pustulatus, one turned up in the sweeping-net, much to my surprise, at Tubney, on September 15th; *Harpalus obscurus*, this fine species occurs not rarely in stone-pits near Kirtlington, Oxon, in April and again in August; *Hydroporus discretus*, in a stream near Elsfield; *H marginatus*, one specimen in standing water at Tubney, July 31st; *Helophorus arvernicus*, one in river-refuse at King's Weir on the Isis above Oxford; *Aleochara fumata*, one in a tuft on the river-bank near Eynsham, in January; *Oxygaster spectabilis*, a fine specimen swept at Wytham Park, October 14th; *Microglossa gentilis*, in a starling's nest in a felled elm at Ferry Hinksey, in company with *Quedius brevicornis*; *Homalota cæsula*, common at roots of herbage, &c., in sandy places at Tubney; *H. gemina*, *laticeps*, *exilis*, and *clancula*, found not rarely in a little swamp near Islip by Mr. G. C. Champion and myself, May 15th; *Mycetoporus punctus*, by sweeping at Tubney, September 2nd; *Philonthus lucens*, rarely in tufts at Cowley and Wood Eaton in early spring; *Medon obsoletus*, flying over a manure-heap at Wood Eaton in company with *Monotoma longicollis*; *Stenus solutus*, in tufts at King's Weir in January, not rare; *Homalium salicis*, one example of this rare species by evening sweeping near Wood Eaton, May 31st. *Anisotoma anglica*, Rye, by sweeping at Wytham Park (in company with *A. cinnamomea* as before), October 1st; *A. brunnea*, both sexes by sweeping at Tubney, September 15th, and again taken there by Mr. Tomlin and myself on October 9th; the same productive locality also yielded *A. curta* and *Triarthron märkeli*, both singly, on September 15th; *A. triepkei*, not rarely at Tubney in September, also a fine ♂ at Boar's Hill, Berks, on August 4th; *A. rugosa*, again very sparingly in October at Wytham Park, where *Agaricophagus cephalotes* was locally quite common at the beginning of October, and *Hydrobius punctatissimus* (almost all of the black form) by no means infrequent; *Colon viennense* and *serripes*, not rare by sweeping short herbage (*Nepeta glechoma*, &c.) towards sunset at the end of May, in a small coppice near Wood Eaton; *C. dentipes*, both sexes at Wytham Park in October; *Euthia schaumii*, taken in abundance in the grounds of Wolvercote Paper Mill on the evening of September 9th, by sweeping weeds and rough grass; *Thalycra sericea*, by evening sweeping at Boar's Hill, August 4th; *Meligethes umbrosus*, in abundance on the flowers of cat-mint (*Nepeta cataria*) growing in roadside hedges between Abingdon and Tubney; *Pediaeus dermestoides*, under larch-bark at Besselsleigh, May 29th; *Læmophloeus ater*, sparingly in broom stems at Chawley, Berks, in April; *Cryptophagus ruficornis*, in faggots at Wytham Park, March 27th; *Atomaria fimetarii*, in abundance near Wolvercote during July, by sweeping weeds in a very restricted space, and accompanied sparingly by *Euthia scydmaenoides*; *Aphanisticus pusillus*, one by sweeping at Wytham Park, October 2nd; *Corymbites metallicus*, in plenty at the end of June by sweeping under willows at Marston Ferry, also at King's Weir; *Cænocara bovistæ*, by sweeping at Tubney in autumn; *Donacia impressa*, rarely on rushes at King's Weir, in July; *Cryptocephalus frontalis*, one by sweeping near Yarnton, July 1st; *Anisoxya fuscilla*, one at Tubney on September 15th, and one taken by Mr. G. C. Champion at Wytham Park, October 2nd, in each instance by sweeping under beech trees; *Abdera quadri-fasciata* again occurred not rarely on a dead standing beech in Wytham Park, where Mr. Donisthorpe and I first found it on July 5th, 1908; *Sitaris muralis*,

fairly common in September as before; one short length of stone wall supplied me with as many as I wanted, and I found a living specimen as late as October 30th; *Apion brunripes*, Boh. (*lævigatum*, Kirby), not uncommon in sandy fields at Tubney (where Mr. W. Holland first found it in fair numbers in 1907) on *Filago minima* and *F. germanica*, in late summer and autumn; *Tany-mecus palliatus*, in large numbers on *Centaurea scabiosa* in Pixey Mead, on the Oxfordshire side of King's Weir; *Liosoma oblongulum*, one specimen found on a primrose stalk at Wytham Park, April 28th; *Dorytomus tremulæ*, sparingly on *Populus cinerea* at the end of June, at Cothill, where I took a good series of *Rhytidosomes globulus* off small saplings of the same kind of tree, and the latter species occurred there again in September; *Gymnetron rostellum*, fairly frequent in September, in sandy places at Tubney, and apparently attached to *Veronica officinalis*; *Centorrhynchus pilosellus*, three examples of this rare species by sweeping at Tubney (July 31st, August 26th, and September 2nd); unfortunately I could not refer them to any particular plant; *C. euphorbiæ*, frequent at Tubney in September, mostly coming off *Nepeta glechoma*; *Cryphalus abietis*, four specimens by sweeping under a large larch tree at Weston-on-the-Green, Oxon, May 3rd.—ID.: *January 8th*, 1910.

Chætocnema arida, Foudr., in the Woking district.—It is perhaps worth noting that I have taken this insect singly at Chobham (September 10th, 1876), Woking, and in the London district. *C. arida* has recently been added to our list by Mr. Donisthorpe, on the authority of specimens captured in the Isle of Wight. It will probably be found that the species has been doing duty for *C. aridula*, Gyll., in British collections other than my own. This insect differs from *C. hortensis*, Fourcr. (*aridella*, Payk.), in having the upper surface more shining, the basal joint of the antennæ infusate above, and all the femora piceous or black.—G. C. CHAMPION, Horsell, Woking: *September 12th*, 1910.

Cryphalus abietis, Ratz., in Scotland.—I find I have omitted to record the fact that I beat a specimen of this species off a shrub growing alongside a grove of Scots firs at Gorebridge, near Edinburgh, on May 13th, 1905. The specimen has been compared with a continental exponent of the species sent to me by Herr Reitter.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: *January 1st*, 1910.

Further additions to the Isle of Wight list of Coleoptera.—Mr. J. Taylor of Sandown has taken the following species, all of which are additions to the recently published "Guide to the Natural History of the Isle of Wight." In moles' nests, *Medon castaneus*, Gr., *Onthophilus globulosus*, Ol., *Quedius longicornis*, Kr., *Aleochara spadicea*, Er., and *Heterothops nigra*, Kr. In stack refuse, etc., *Homalota æneicollis*, Sharp (queried by Newbery, and since confirmed by Capt. Sainte Claire Deville), and *Quedius boops*, Gr. All taken in the neighbourhood of Sandown. In the Entomologist's Record for December, 1909, pp. 272-276, will be found an additional 82 species new to the above list. These include the 6 species recorded by Newbery in the January number of the Ent. Mo. Mag.,

p. 16. One of these, however, must be deleted as it is incorrectly named, viz., *Ephistemus globosus*, Waltl. We presume this is what Newbery means by *Ephistemus globulus*, Waltl, as *E globulus*, Pk. (not Waltl) = *gyrinoïdes*, Marsh., and is not new to the Isle of Wight list, moreover, in his list to Taylor he distinctly states "The two end ones are *gyrinoïdes*, Marsh., the middle one is *globosus*, Waltl, new to Isle of Wight., *gyrinoïdes*, Marsh. = *globulus*, Pk." Taylor has now sent these specimens to me: *E. globosus*, Waltl, is a very different insect, it is longer, more oval, more distinctly punctured both above and below, and the legs and antennæ are much shorter. Ganglbauer (Käfer, Vol. iii, p. 737) fits *globosus* into a new genus *Ootypus*, on account of the shape of the meta- and meso-sternum, &c. The specimen of *Ootypus globosus*, Waltl, in the Bates' Collection agree in all these points. *Ephistemus globulus*, Pk., varies somewhat *inter se* in size and punctuation, in fact in the Bates collection *globulus*, Pk., and *gyrinoïdes*, Marsh., are treated (following Crotch) as distinct species.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: Jan., 1910.

Corymbites cupreus var. *æruginosus*, F., in Devon.—In reply to Mr. Bucknill's question about *Corymbites cupreus* in this month's Ent. Mo. Mag., p. 15, I took a specimen of the var. *æruginosus* at Belstone, near Okehampton, in May, 1901.—PHILIP DE LA GARDE, Manor House, Shaldon, Teignmouth: January 12th, 1910.

Oxytelus sauleyi, Pand., in Kent.—In view of Dr. Joy's note in the January number of the Ent. Mo. Mag., it may be of interest to record that I took a ♂ specimen of this insect on January 6th last in a moles' nest in the Isle of Grain.—M. CAMERON, H.M.S. "Attentive," Chatham: January 17th, 1910.

Platystethus alutaceus, Thoms., in Sussex.—I beg to add one more locality for *Platystethus alutaceus*, Thoms., to Mr. Newbery's list in the last number of this Magazine. I took this species last May at Pulborough, Sussex, in cow-dung.—G. W. NICHOLSON, University College Hospital, London: January 3rd, 1910.

The food-plant of Otiorrhynchus auropunctatus, Gyll.—In view of Mr. Champion's note on this interesting species (Ent. Mo. Mag., vol. xlvi, p. 2)—so well depicted in the plate which adorns the January issue of this Magazine—it may be of interest to record the fact that I was able recently to ascertain its food-plant. Being in Dublin in September last, I visited, at the suggestion of my friend, Mr. F. N. Halbert, Portmarnock, on the coast to the east of Dublin. Sweeping a bank of mixed vegetation there I soon took a few specimens of *O. auropunctatus*. On this bank grew clumps of ragwort, burdock, thistles, and other plants, with a few straggling thorn bushes. Proceeding then to carefully beat each of these plants separately into the net I discovered that it was only from the thistles (*Cardus arvensis*) that the beetle could be dislodge*d*, and on these they were quite abundant. It appeared evident that they were actually feeding on the thistle leaves, which seemed to have suffered considerably, presumably from the depredations of their larvæ, although only the

perfect beetles could then be discovered. These latter were in very good condition, many exhibiting the light coloration of immaturity. No doubt they subsequently wander over various plants and adjacent hedges, and I was perhaps fortunate in thus encountering the imaginal infancy when they were still congregated on what I believe must constitute the food-plant of the species, at any rate in this country.—W. E. SHARP, 9, Queen's Road, South Norwood: *January 5th*, 1910.

Lathrobium rufipenne, Gyll., and other *Coleoptera* at Delamere Forest.—During the year 1909 I have made several interesting additions to Mr. W. E. Sharp's recent list of Lancashire and Cheshire *Coleoptera*. In some cases the species in question have been omitted from the above named list, as the original records are very old ones, and have not been confirmed by any other collectors. In August last Mr. J. Collins, of Oxford, called upon me, so we arranged for an expedition to Delamere in search of *Lathrobium rufipenne*, Gyll. Mr. Collins had previously taken a single specimen of this species at Abbott's Moss, and I had upon several occasions taken it sparingly at Flaxmere, about five miles from his locality. We managed to find a dozen specimens between us after a hard day's work, so we were delighted with the results of our expedition.

From this and subsequent visits I have since made to both localities, I have come to the conclusion that this species is probably to be found throughout the whole district of Delamere wherever the conditions are favourable, and that it is confined to the bogs or "mosses."

L. rufipenne is a lover of exceedingly wet situations, and is only to be found in *Sphagnum* growing in the wettest portion of the bogs (though never actually in the water), in places where the sundew, cranberry, and other characteristic plants abound, and seems to specially prefer the ground upon which *Sphagnum* and cranberry grow mixed together. It is an active insect and leaves the stuff as soon as it has been loosened from the squeezing necessary to partly dry it, so that the presence of the beetle on the collecting sheet is quickly evident.

Under the same conditions I have found *Philonthus nigrita*, Nordm., to be common at both Flaxmere and Abbott's Moss, as well as *Lathrobium terminatum*, Gr.,—the variety *immaculatum*, Fowler, being as common as the normal form—and *Actobius cinerascens*, Gr.,—all new records for Lancashire and Cheshire. *Oxyptoda longiuscula*, Er., is not uncommon at both localities, and *Hyperaspis røppensis*, Herbst, seems to prefer slightly drier conditions. In moss growing under a solitary dwarf pine at the edge of a peaty pool I found about twenty specimens of this species. *Quedius semiæneus*, Steph., is common, and in drier moss I have taken *Quedius attenuatus*, Gyll., a species included in Mr. Sharp's list on a single old record from the Lake District of North Lancashire.

At Flaxmere, in wet *Sphagnum* growing at the edge of the peaty drains, *Agabus affinis*, Pk., is not uncommon, but *Agabus unguicularis*, Th., I only take at the same place with the water net. *Hydroporus umbrosus*, Gyll., from Flaxmere, is a new record for Cheshire, and *Homalota xanthoptera*, Steph., and *H. xanthopus*, Thoms., do not appear to have previously been recorded from this district.

Gymnusa brevicollis, Pk., is to be found at both localities in *Sphagnum* growing in the water, and from this wet moss I have taken three of the dark species of *Myllæna*, but they are not yet determined.

Eræsthetus læviusculus, Mann., and *E. ruficapillus*, Lac., new records for Cheshire, may be found in both localities in very wet *Sphagnum*. They are very sluggish, and by tilting the sheet so that the smaller *débris* falls on one side, these species are discovered lurking under fragments that appear to be small for concealment, even of these minute species.

Ocyusa incrassata, Muls., from moss at the roots of trees in Delamere, and *Omalium allardi*, Fairm., from a starling's nest at Helsby, are species kindly verified for me by Mr. Champion and Mr. Collins.

I have made no mention of the many ordinary species to be met with at these two localities, but I have noticed that the commoner species are generally confined to somewhat dry conditions of the *Sphagnum*, and the scarcer ones as the ground becomes more boggy and the moss is wetter.—J. F. DUTTON, Brackenhurst, Helsby, Cheshire: October 25th, 1909.

An early Cumberland specimen of Omalium brevicolle, Thoms.—Lately, when putting away some recent captures of *Omalium*, I found an insect standing reversed along with *exiguum*, Gyll., which was noticeably larger than any specimen of *exiguum* in my short series, and a careful examination at once showed it to be different to that species, especially in the shape of the thorax and punctuation of the elytra. The recently added *O. brevicolle* at once occurred to the mind, and on looking up Dr. Joy's description (Ent. Mo. Mag., 1909, pp. 102-103) I found it agreed exactly. Subsequently Mr. Britten and I compared it with the specimen taken by him (from which its occurrence in the British Isles was first established) and the identification was confirmed. The specimen now recorded was taken so long ago as May 18th, 1902, when collecting with Mr. Britten in the Great Salkeld District. My note book mentions the capture on that date of *O. septentrionis*, Thoms., in abundance in a dead rabbit. The specimen of *O. brevicolle* probably came from the same source.—F. H. DAY, 26, Currock Terrace, Carlisle: December 8th, 1909.

Variability in neuration of two species of Tortricina.—I was at first considerably puzzled by a specimen sent me for identification by Mr. C. G. Clutterbuck, of Gloucester, and presenting a combination of structural characters not known to me as found in any European species. Eventually I determined it to be an example of *Eucosma immundana*, which differed from the normal in having veins 7 and 8 stalked in both fore-wings. In order to justify this determination I examined all my specimens of *immundana* and the closely allied *tetraquetrana*, and found one example of the former and two of the latter, in which these veins were stalked, but in one wing only in each case. The variation is therefore not uncommon in the case of these two species; and as the character is of generic importance, I desire to place it on record. From a note received from Mr. J. H. Durrant I find that he had also observed a similar instance in *crenana*.—E. MEYRICK, Thornhanger, Marlborough: December 10th, 1909.

Gracilaria populetorum, Z., in Surrey.—Early in April last I was searching for “Micros” on an old fence near Croydon with very little success, as the only species present were *Tortricodes hyemana* and *Chimabacche fagella*, until at last I saw a *Gracilaria* which was quite strange to me. Upon a careful examination at home I came to the conclusion that it must be *populetorum*, a species I had never taken before. This is confirmed by Mr. Bankes who tells me that it is the first specimen he has ever received for identification and also the only modern specimen he has seen. It appears to be an extremely scarce species in the London district, but less so in some other places. Dr. Wood, in a highly instructive article (*Ent. Mo. Mag.*, xxvi, p. 135) on the habits of the larva of this and the two allied species, *fulconipennella* and *elongella*, remarks that it is quite common certain seasons in some of the Herefordshire Woods, but I am unable to find any record of its capture in the immediate neighbourhood of London, either in this Magazine or in the “*Entomologist*” in the forty volumes examined.—A. THURNALL, Wanstead, Essex: December 11th, 1909.

Evetria sylvestrana: a correction.—On page 17 of this (January) month’s Magazine, Mr. Bankes calls attention to what was undoubtedly a *lapsus calami* on my part when writing on the habits of the above-named species in the November number. I certainly intended *Pinus pinea* instead of *picca*. As I am well acquainted with both these trees, I can only suppose that the similarity of the two names caused the mistake; in this case the difference of a single letter quite altered my meaning. In my note on *Olethreutes bifasciana* on the same page, for “*evidently* separated localities,” read “*widely* separated localities.”—ID.: January 5th. 1910.

Some Hymenoptera from the Highlands.—Our knowledge of the parasitic *Hymenoptera* of Scotland, and especially of the Highlands, is practically limited to a few collected about Rannoch by Marshall, at Aviemore by Champion, and in Sutherland by Col. Yerbury; Mr. A. A. Daghish has been good enough to give me a collection from about Glasgow, and Mr. Evans has done some good work in the neighbourhood of Edinburgh. But, as a whole, Scotland has received scant attention in this direction as compared with England, or even Ireland, whence Haliday has put so many species on record. It is interesting to note that all, or nearly all, the *Ichneumonidæ* here taken have been fully described by Holmgren; “and indeed there seems no reason why any members of the Scandinavian fauna should be strangers to Great Britain, or at least to the Highlands, which are the exact counterpart, if they be not a continuation, of the Norrska Fiellen” (Marshall, *Ent. Ann.*, 1874, p. 123). It may here be noted that, although under such circumstances, one would expect to find the same plants with the same insects feeding upon them, and attacked by the same parasites, yet the parasitism is now known to be by no means so exclusive as formerly supposed, and the same parasite may be found in widely differing localities, its range being conterminous with that of its various hosts and not that of any single one of them.

The following specimens were collected by Mr. Ernest A. Elliott, F.Z.S.,

F.E.S., chiefly around Banchory, where the Highlands may be said to begin, at elevations varying from the banks of the Dee, about 150 feet, to 500 on the hill sides. The Loch of Park, called on the maps the Loch of Drum, lies almost on the same level as the river, that of Skene is some 200 feet higher. Braemar is about 1200 feet above sea level. The specimens comprise thirty-four species of *Ichneumonidæ*, seven of *Braconidæ*, one Proctotrypid, three *Aculcates* and a couple of Sawflies; no attempt was made to collect either of the last two groups, both of which are strongly represented in the District.

ICHNEUMONIDÆ.—*Stenichneumon pictus*, Grav., one ♀ of var. nov.—*antennis totis nigris*—on *Heracleum* flower on 4th Aug., 1909. *Barichneumon vacillatorius*, Grav., one ♂ swept by Loch Skene, 7th Aug. *Ichneumon extensorius*, Linn., one ♂, swept from short grass, 21st Aug.; *I. ? stigmaticus*, Zett., one ♂ by Lake of Park on 2nd Aug. *Ctenichneumon fossorius*, Grav., one typical ♀ on 28th Aug.; *C. amputatorius*, Panz. (NEW TO BRITAIN), one ♂ with the last species at Banchory. *Amblyteles armatorius*, Fst., males on *Angelica* on 30th July, and swept from short grass on 27th. *Platylabus pumilio*, Holmgr., one ♂, swept on 27th July. *Centeterus major*, Wesm., one ♂, on heathy hill side at Ballater on 27th Aug. *Glyphicnemis profligator*, Fab., two ♂♂ on *Angelica* flower on 27th July and 10th Aug.; *G. erythrogastra*, Grav., one ♀, swept on 27th July. *Phygadeuon exiguus*, Grav., one ♂, swept by Loch of Skene, 7th Aug.; *P. fumator*, Grav., several ♂♂ swept on 27th—30th July, &c. *Hemiteles melanarius*, Grav., one ♀, running on path in garden at Braemar, 2nd Sept. *Pimpla detrita*, Holmgr., one ♀, on *Heracleum* flower on 26th Aug. *Glypta lugubrina*, Holmgr., several ♀♀ at Banchory on *Angelica*, on 7th Aug., swept at Park on 2nd Aug., &c. *Lissonota cylindrator*, Vill., both sexes abundant on flowers, &c., 10th—26th Aug.; *L. sulphurifera*, Grav., one ♂ on 20th Aug.; *L. bellator*, Grav., a pair on *Angelica* on 28th Aug.; *L. uncinata*, Holmgr., a ♀ swept on 20th Aug.; *L. variabilis*, Holmgr., a ♀ swept with the last. *Lampronota melancholica*, Grav., one ♂ in garden at Braemar on 9th Sept. *Tryphon vulgaris*, Holmgr., ♀♀ swept at Skene 7th Aug., and Banchory 31st July; *T. consobrinus*, Holmgr., several ♂♂ taken at Park on 2nd Aug., Skene on 7th, and on *Heracleum* flower at Banchory on 8th Aug.; *T. trochanteratus*, Holmgr., one ♂ swept by Loch Skene on 7th Aug. *Mesoleius semicaligatus*, Grav., Park on 2nd, and Banchory on 11th Aug. *Mesoleptus xanthostigmus*, Grav., a ♂ swept on 29th July. *Megastylus meliator*, Schiöd., one ♂ taken on 25th July. *Exochus pictus*, Holmgr., a ♂ at Park on 2nd Aug., by sweeping. *Bassus tricinatus*, Grav., one ♂ on 25th July. *Paniscus virgatus*, Fourc., one ♂ “thorace vittis tribus dorsalibus maculaque media pectoris nigris,” taken on 20th Aug. *Olesiocampa longipes*, Müll., males swept by lake at Skene on 7th Aug. *Meloboris crassicornis*, Grav., both sexes at Park on 2nd, and Banchory on 18th Aug.

BRACONIDÆ.—*Spathius exarator*, Linn., a ♀ on house window on 22nd Aug. *Rhogas dissector*, Nees, two ♀♀ on *Angelica* flowers at Banchory on 30th July, and 6th Aug. *Apanteles cultrator*, Marsh., a ♀ on bedroom window at Braemar on 5th Sept. *Microgaster tibialis*, Nees, a ♀ swept on 27th July. *Pygostolus sticticus*, Fab., females swept by the Dee at Banchory on 27th July, and by

lake at Park on 2nd Aug. *Macrocentrus abdominalis*, Fab., a ♀ on *Angelica* flower on 25th July. *Atysia manducator*, Panz., a ♀ swept by Loch Skene on 7th Aug.

PROCTOTRYPIDÆ.—*Galesus fuscipennis*, Curt., one swept at Banchory on 27th July.

ACULEATA.—*Myrmica rubra*, L., race *ruginodis*, Nyl., a ♂ taken on 9th Aug. *Formica fusca*, L., a ♀ on 13th Aug. *Bombus agrorum*, Fab., a ♂ found on 25th Aug.; doubtless common.

TENTHREDINIDÆ.—*Dolerus æneus* Htg., one ♀ by Loch Skene on 7th Aug. *Allantus arcuatus*, Fab., a couple of ♀ ♀ at Skene and Banchory.

Besides these there were only a ♂ *Ichneumon* (s. s.), four *Tryphoninae* and two *Limmerii* (s. l.), which I am unable to identify.—CLAUDE MORLEY, Monk Soham House, Suffolk: October, 1909.

Hymenoptera Aculeata in Cornwall in 1909.—Although the weather has been very unfavourable for general Entomology during the present year, it may be of interest to record some of my captures in this Order, all the species having been determined by Mr. Edward Saunders, to whom I tender most grateful thanks for the valuable assistance so generously given. I have taken eighty-nine species and six varieties, of which the following may be worthy of mention:—

1.—*Species new to Cornwall*:—*Andrena fucata*, Smith, one female, Malpas, April; *A. analis*, Panz., one female, Truro district, August. *Bombus smithianus*, White, one male, three females, and three workers, Penweathers and Perranporth, July and August (there is no record for the mainland, and only a single specimen for Scilly); *B. sorocensis*, Fabr., one male, Truro district, September. *Psithyrus vestalis* var. *distinctus*, Perez, one male, Perranporth, August.

2.—*Other captures worth recording*:—*Pompilus chalybeatus*, Schiödt, one male and two females, Perranporth, June to August; *P. minutulus*, Dahlb., one female, Perranporth, August (only two previous county records). *Cerceris labiata*, Fabr., two males and six females, Calenick and Perranporth, August. *Oxybelus mucronatus*, Fabr., three males and several females, Perranporth, August. *Crabro podagricus*, V. d. Lind., one male and three females, Pencalenick, August. *Colletes picistigma*, Thoms., three males and six females, Perranporth, and several localities in Truro district, July and August; *C. succincta*, Linn., three males and five females, Truro district, September. *Prosopis confusa*, Nyl., one female, Calenick, August. *Andrena rosæ* var. *spinigera*, Kirb., two males, near Truro, April; *A. angustior*, Kirb., five males, Truro district and Devoran, July and August. *Eucera longicoruis*, Linn., five males and ten females, from a large colony near Perranporth, June. *Anthophora quadrimaculata*, Panz., two males, Perranporth, June. *Saropoda bimaculata*, Panz., ten males and two females, near Falmouth and Perranporth, July to September; a rather large colony at Perranporth. *Psithyrus campestris*, two females, Truro district, May and August. *Bombus latreillellus* var. *distinguendus*, Mor., male and female, near Truro, September (only three previous county records.—W. A. ROLLASON, "Lanorna," Truro: December, 1909.

Ichneumonidæ taken in Soay (Skye) last Autumn.—Having submitted a few *Ichneumonidæ* to Mr. Claude Morley for examination, and having been advised by him that the list is worthy of publication, considering what he rightly terms the “outlandish” district in which they occurred, as well as the rarity of some of the species, I am glad to give the list as follows:—Rarities—*Pimpla arctica*, Zett. (this was very abundant); *Mesoleius (Protarchus) rufus* ♀; *Banchus volutatorius*, Linn., ♀; *Periope auscultator*, ♀; a Tryphonid, which Mr. Morley states he does not know, and two *Ichneumons* ♀ ♂, which he thinks are probably new to Britain, and of which I am to hear more presently.

The other insects are:—*Amblyteles palliatorius*, Grav., ♂ ♂. *Anomalon cerinops*, Grav., ♂ ♀. *Pimpla turionellæ*, Linn., ♀; *P. instigator*, Fab., ♀. *Ichneumon (?) confusorius*, Grav., ♂ ♂; *I. sarcitorius*, Linn., ♂. *Craticheumon dissimilis*, Grav., ♂ ♂; *C. fabricator*, Fab., ♀. *Pezomachus (?) instabilis*, Först., ♂; *P. zonatus*, Först., ♀. *Campoplex tenuis*, Först. *Stilpnus pannoniæ*, Scop., ♀. *Platylabus pedatorius*, Fab., var. *iridipennis*, Wesm., ♂. *Centeterus major*, Wesm., ♀. *Mesoleius aulicus*, Grav., ♀.—C. H. MORTIMER: November 30th, 1909.

Aculeate and other Hymenoptera in Soay (Skye).—During a two months’ stay on the above little island last autumn, I only saw seven species of *Hymenoptera*—besides *Ichneumonidæ*, in most cases single specimens only. As the locality is considerably “off the beaten track,” the short list which follows may have some interest:—*Crabro palmipes*, ♂. *Pompilus niger*, ♀; *P. spissus*, ♀. *Odynerus pictus*, ♀; *O. trimarginatus*, ♀. *Vespa austriaca*, ♂; and a solitary *Chrysid*, which I failed to capture or identify.—Id.: November 30th, 1909.

Obituary.

The Rev. Henry Charles Lang, M.D., Vicar of All Saints, Southend, died under tragic circumstances at his residence on December 21st of last year. He was originally educated for the medical profession, in which he obtained the Brussels degree of M.D. in 1877; in 1885 he entered Holy Orders, and seven years later was presented to the living which he occupied at his decease. Dr. Lang, who was elected a Fellow of the Entomological Society in 1900, was well known as an authority on the *Lepidoptera* of the Palæarctic Region, and as an able delineator of this order of insects. His book “The Butterflies of Europe,” published in parts between 1880 and 1884, and finely illustrated under his direction by Mr. Horace Knight, was noticed at p. 141 of Vol. xx of this Magazine, and is still the most useful, and indeed the only complete work of its kind in our language. The very fine collection of Palæarctic butterflies formed by him was dispersed about three years ago.

Review.

INDIAN INSECT LIFE: A MANUAL OF THE INSECTS OF THE PLAINS (TROPICAL INDIA). By H. MAXWELL-LEFROY, M.A., F.Z.S., F.E.S., Entomologist, assisted by F. M. HOWLETT, B.A., F.E.S., Second Entomologist, Imperial Department of Agriculture for India. (Published under the Authority of the Government of India) Agricultural Research Institute, Pusa. Calcutta and Simla: Thacker, Spink & Co.: London, W. Thacker & Co., 2, Creed Lane. 1909.

This handsome and well illustrated volume of 786 quarto pages has been compiled primarily for the use of students of Entomology in India, and for those interested in the subject; and the joint authors may well be congratulated on the clear and methodical style in which their work is presented, and on the able manner in which they have dealt with the enormous mass of more or less scattered literature relating to the insect fauna of India. Following generally the now well-known arrangement adopted by Dr. Sharp in his two volumes on "Insects" in the "Cambridge Natural History," each Order as represented in India is treated with considerable fulness of detail, and with reference to the best and most recent authorities. Throughout the book the economic side of Entomology is kept prominently in view, as might have been expected from the nature of the work carried out by the author and his colleagues at the Agricultural Research Institute at Pusa, Bengal; and a large number of the plates are devoted to the illustration of the life-history of the numerous forms of insect life which are injurious or destructive to the agricultural and forest products of our Indian Empire, and add greatly to the practical value of the work. The "Interludes" dealing with such subjects as "Entomology in India," "How Insects protect themselves," "Insects as Food," "Migration," "Silk,"—to name only a few, are exceedingly well written and interesting. Although the restriction to the "Insects of the Plains" of India involves the omission of all but very slight reference to the splendid fauna of the Himalayan region, a large number of striking and peculiar forms in all Orders are referred to and delineated in the numerous text-figures, and in the 84 plates. These latter are for the most part executed by the "three colour" process by the Calcutta Phototype Company, from drawings by native artists, and although somewhat unequal in quality, are often exceedingly effective, notably so in the case of some of the large Saturniid silk-moths which are represented on a black ground. It is unfortunate that the reproduction of these illustrations has involved the use of a very heavily "loaded" paper (the actual weight of this "Manual" is just three ounces short of seven pounds), as, besides the inconvenience of handling this ponderous volume, its durability for any length of time, especially in such a climate as that of India, is open to grave doubt.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at the Royal Institution, Liverpool, *Monday, November 15th, 1909.*—Mr. C. E. STOTT, Vice-President, in the Chair.

Mr. H. S. Leigh, of Manchester, delivered a lecture, entitled "Leaf Insects." Mr. Leigh described the life-history and development of the leaf-insect *Phyllium crurifolium*, Serville, from the Seychelle Islands, which he had bred in captivity for the last three years. An exhibit of the living animals emphasized the truly remarkable resemblance they bear, both in shape and colour, to the foliage among which they live. A discussion ensued in which most of the Members present took part. Mr. F. N. Pierce exhibited the "stick insect" *Bacillus rossi* alive. Mr. W. A. Tyerman, a fine bred series of *Bombyx trifolii*. Mr. W. Mansbridge, the *Micro-Lepidoptera* taken on the occasion of the Society's Field Meeting at Silverdale, North Lancashire, June 26th, 1909; these included: *Argyrotoxa conwayana*, *Spilonota incarnatana* (larvæ), *Ephippiphora pflugiana*, *Retinia pinivorana*, *Dicrorhampha plumbana*, *Lampronia prælatella* and *Hyponomeuta irrorellus*.—H. R. SWEETING and W. M. MANSBRIDGE, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
 Thursday, November 11th, 1909.—Mr. A. SICH, F.E.S., President, in the Chair.

Mr. Ashdown exhibited examples of the species of *Lepidoptera* taken by him during July in Switzerland, including *Euranessa antiopa*, *Loweia alciphron* v. *gordius*, *L. dorilis* v. *montana*, *Polyommatus meleager*, *P. icarus* ab. *icarinus*, *Papilio podalirius*, *Syntomis phegea*, *Anthrocera ephialtes*, &c. Mr. West (Greenwich), the very rare Homopteron *Ulopa trivialis* from Chipstead, and *Limotettix stactogala* from Deal on tamarisk. Mr. Barrett, specimens of *Nonagria arundineta* and its allies. Dr. Chapman, a living bred example of *Agriades thetis* (*bellargus*). Mr. Tonge, a fine bred series of *Aplecta herbida*, and photographs of *Lepidoptera* at rest. Mr. Andrews, British *Syrphidæ*, showing how the general appearance of the insects is "broken up" by the darkened portion of the wings and the light area at the base of the abdomen. Mr. Kaye, series of *Spilosoma menthastri* illustrative of local races, and including some aberrant forms. Dr. Hodgson, specimens of *Agriades corydon* with white sub-marginal wedges and partial absence of spots on the under-side of the hind-wings, and also examples of *A. thetis* (*bellargus*) without the discoidal spots. Mr. Newman, nearly full-fed larvæ of *Pyrameis atalanta* from ova laid in August. Lantern slides were exhibited by Mr. Main: life-history of *Chrysopa* and *Eristalis*; Mr. Adkin, life-history of *Nola albulalis*; Mr. Tonge, insects in resting positions.

Annual Exhibition of Varieties, November 23rd, 1909.—The President in the Chair.

Nearly a hundred Members and friends were present, about forty of whom brought exhibits.

Mr. R. Adkin exhibited a long series of *Amphidasys betularia* var. *double-dayaria* reared from ova obtained from a pair taken *in cop.* at Lewisham, ♂ the var., ♀ darkly speckled, and read notes on the brood; also an *Abraxas grossulariata*, fore-wings practically all black to beyond the yellow line, with the yellow line almost absent, and a fine specimen of var. *lucticolor*. Mr. South,

Luperina testacea and var. *nickerlii*, and commented on the two forms and their genitalia; also aberrations of *Polyommatus (Lycæna) icarus* ♀, Chipstead and Oxted; *Melitæa aurinia* from various British localities; *Epinephele jurtina*, showing variation in ocellation, fulvous colour, and tone of fulvous in ♀; and *Luperina gueneéi* var. *baxteri*. Mr. W. J. Kaye, a remarkable series of the South American *Heliconius dorus*, including a number of the named forms and races, and commented on its geographical range and dimorphism. Mr. H. Moore, a series of the widely distributed *Melanitis leda* of both the wet and dry seasonal forms. Mr. T. W. Hall, varieties of *Agriades thetis (bellargus)*, including a ♂ under-side, left lower wing almost devoid of spots, and the right normal. Mr. A. E. Gibbs, fine series of the same species, including ab. *puncta* and ab. *ceronus* ♀ from the Swiss Jura, and a series of *A. coridon* with ab. *syngrapha* ♀ from Wiltshire, and large, very light ♂s from Caux. Mr. H. J. Turner, *Rumiccia phléas* ab. *alba* from Brasted; minute specimens of *Cupido minimus* from Winchester and Aigle; a ♂ *Polyommatus damon* with fore-wing under-side devoid of eye spots from Aigle; *Lycæna arion* var. *obscura* from Zermatt; *Chrysophanus virgaureæ* var. *niegii* and var. *zermattensis* from Zermatt; *Melitæa aurinia* var. *merope* from the Riffel-Alp; a series of *Anthrocera carniolica* and var. *hedysari* from Gex; a confluent *A. achilleæ* from Gex, &c. Mr. Leeds, a *Pieris brassicæ* with under-side of hind-wings of a very distinct blue, and a dusky variety of *Saturnia carpini*. Mr. Newman, long and varied series of the various species obtained in the Shetlands, including a series of *Noctua conflua* bred in South England from Northern ova, which were decidedly not of the Northern type; he also showed a *Leucania*, which had been named in turn *pallens*, *favicolor*, and *straminea*, the genitalic indications were indefinite. Mr. Grosvenor, long series of the forms of *Cænonympha typhon* from its various British localities. Messrs. Harrison and Main, series of *Boarmia gemmaria*, bred and captured, and of *Melitæa aurinia* from North Wales, both series showing much variation, some of the latter resembling the Kentish form. Mr. Harrison, for Mr. March, a *Pararge megæra* with large and much emphasized ocelli on the under-side, especially on the fore-wings. Mr. Hemming, a striated form of *Polyommatus icarus* under-side; a partially gynandromorphous *Euchloë cardamines*; melanic aberrations of several Argynnids; and *P. icarus* of the colour of *A. thetis (bellargus)*, &c. Mr. Percy Bright, many of the magnificent and unique varieties of British *Lepidoptera* recently in the collections of the late J. A. Clark, including *Brenthis euphrosyne* with white ground; *Melitæa athalia* with white ground; *Rumiccia phléas* with extraordinary rayed under-sides; *Aglais urticæ* with white ground; black var. of *Limenitis sibylla*; hermaphrodite *Celastrina argiolus* and *Polyommatus icarus*; *Anthrocera filipendulæ*, with five wings; *Nemeophila russula* devoid of markings on hind-wings; nearly unicolorous *Venilia maculata*, and *Saturnia carpini*, a unique strongly melanic specimen captured by J. A. Clark, and two gynandromorphs, &c., &c. Mr. Buckstone, dwarf specimens of *Melanargia galathea*, *E. jurtina*, *Pieris rapæ*, *P. napi*, and *Spilosoma fuliginosa*; *R. phléas* var. *schmidtii*, *Bithys quercus* var. *bella*; yellow ab. of *Arctia caja*; *Aphantopus hyperantus*, ab. *arete*. Mr. W. West, of Greenwich, the Society's collection of *Anthribidæ* and *Curculionidæ*, which he had recently re-arranged. Mr. Tonge, numerous stereographs of

Lepidoptera at rest. Mr. Edelsten, a bred series of *Nonagria neurica* (*edelsteni*) with ab. *rufescens* and ab. *fusca*, and ova and pupa *in situ*. Mr. St. Aubyn, a *Melanippe sociata* with the band on the fore-wing completely severed. Dr. Hodgson, a long series of many forms of *Cænonympha typhon*, and a specimen of *Pieris rapæ* with a blackish spot in the discal area of the hind-wing. Mr. Edwards, specimens of *Caligo atreus* and *C. beltrao* from South America. Mr. Gadge, *Spilosoma lubricipeda* with dashes in place of spots; a *Melanippe fluctuata* with whole of central area light grey; an *Agrotis exclamationis*, which has a very long claw to the left hind leg; and a series of *Porthesia chrysorrhæa* with aberrant spotting. Dr. Chapman, *Callophrys avis*, with specimens of *C. rubi* var. *fervida* and *Thestor ballus* for comparison, and some fine Spanish *Agriades corydon*. Mr. E. Sharp, a specimen of *Leucania l-album* taken on ivy bloom at Eastbourne; bred *Nonagria neurica*; and a nice series of forms of *Dianthæcia carpopaga*. Mr. Barnett, a confluent pink form of *Anthroceræ trifolii*; and *Strenia clathrata* with asymmetrical markings, a very light specimen, owing to irregular suppression of several transverse lines. Mr. Payne, a melanic example of *Argynnis aglaia* and a specimen of *Agriades corydon* var. *syngrapha*. Mr. E. Bedwell, specimens of *Odontoscelis dorsalis*, a species of *Hemiptera* new to the British fauna, from Lowestoft; the rare *Anchomenus gracilipes*; and two specimens of the myrmecophilous beetle *Heterius ferrugineus*, not taken since 1853 till this year. Mr. Baumann, bred *Polia chi* var. *olivacea*; *Gnophos obscurata* var. *mundata*; a very dark obscurely marked ab. of *Cuspidia megaloccephala*; and a fine banded *Angerona prunaria*. Mr. Platt Barrett, a case containing species of butterflies from near Messina, Sicily, including *Euchloë turritis*, *Melanargia iapygia*, *Epinephele jurtina* var. *fortunata*, a very large *Pararge megera*, the yellow southern *Pararge egeria*, and large and bright *Hipparchia semele*, with British representatives or allies for comparison. Mr. Andrews, the Dipteron *Chorisops tibialis*, light and dark forms, and *Microchrysa polita*, a bronze var. from Darent. Mr. Lucas, a box containing the commoner species of European *Ascalaphi*; the larva of a *Chrysops*; and a *Pieris napi* ♀, in which the apex, two blotches, and inner marginal streak were united. Mr. Sich, a bred series of the new British *Depressaria*, *D. putridella*. Mr. Tarbat, an extremely aberrant form of *Apamea luteolenta* taken at electric light at Fareham. Mr. Pickett, his fine series of practically all the known forms of *Angerona prunaria*, the results of some eleven years' crossing and inter-breeding, and also a very nice set of *Pieris napi* from various localities, bred and captured. Mr. Sperring, a long series of *Orrhodia vaccinii* taken this autumn containing all the forms hitherto noted in this country. Mr. Colthrup, varieties of British *Lepidoptera*.—

HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, December 1st, 1909*.—
Dr. F. A. DIXEY, M.A., M.D., President, in the Chair.

Mr. W. C. Crawley, of Tollerton Hall, Nottingham, and Mr. G. H. Grosvenor, M.A., of New College, and 3, Blackhall Road, Oxford, were elected Fellows of the Society.

The President announced that the Society would hold a *Conversazione* in the month of May, 1910, and invited the co-operation and assistance of Fellows.

Commander J. J. Walker exhibited 128 species of *Coleoptera*, belonging to 68 genera, which he had taken, by sweeping only, at Wytham Park, Berks., between 12.30 and 3.30 p.m. on November 5th, 1909; several local and uncommon species were included among these, such as *Homalota puberula*, Sharp, *Anisotoma cinnamomea*, Panz. (both sexes), *A. punctulata*, Gyll., *Hydnobius punctatissimus*, Steph., *Cryptophagus pubescens*, Sturm, *Phthoophilus edwardsi*, Steph., *Mantura matthewsi*, Curt., *Salpingus castaneus*, Panz., *Apion filirostre*, Kirby, &c., &c. The Rev. C. R. N. Burrows, examples of an unidentified species of *Luperina*, captured during the past season on the Lancashire coast, an insect discussed by Mr. South in the "Entomologist," 1889, p. 271, where he expresses the opinion that it may be a form of *Luperina testacea*, intermediate between *L. gueneéi* and *L. nickertii*, Mr. Tutt maintaining in his "Varieties of British Noctuae," vol. i, p. 140, that it was a variety of *Luperina testacea*; the exhibit also included three specimens of what are taken to be authentic *L. nickertii*, the first two obtained from a Vienna collection, said to be Nickert's own collecting, and over fifty years old, the third belonging to Mr. South, and labelled "Bohemia"; also a series of undoubted *L. testacea*, mostly labelled from about the same district, with four specimens of the Lancashire insects, and several specimens undoubtedly of *L. testacea*, of the palest form, taken mostly at Rainham, and named, more for convenience than from conviction, *L. gueneéi*. Mr. Burrows drew attention to the fact that the form of the fore-wings in the Lancashire insect is much narrower than in either *L. testacea* or (reputed) *L. nickertii*, and said that with respect to the possible connection of these Lancashire specimens with *L. gueneéi*, he had consulted what he believed to be Henry Doubleday's original description in the "Entomologists' Annual" for 1864, p. 123; but that he was not acquainted with "the three round white dots on the costa near the apex" in our common species, and did not see them in the (reputed) *L. nickertii*. In the absence of Mr. J. W. Tutt, who was indisposed, Dr. T. A. Chapman opened a discussion on the affinities of *Agrion thetis* (*bellargus*) and *A. coridon*, and exhibited a number of photographs upon the screen to illustrate his views, being details of species included in the Plebeiid group. These included slides of the ova of *thetis* and *coridon* by Mr. F. Noad Clark and Mr. A. E. Tonge, and of the first instar of the larvæ of *P. argus*, L., *P. argyrognomon*, *A. coridon*, and *A. thetis*; a photograph of the larvæ of *thetis* by Mr. Hugh Main, showing the "fan" structures remarkably well; also many slides illustrating the differences in the genital armature of the two species under review, and their allies. The Rev. G. Wheeler, Mr. G. Bethune-Baker, and other Fellows continued the discussion, which was eventually adjourned until the February meeting. Mr. C. P. Pickett, Mr. A. E. Gibbs, Mr. J. W. Tutt, and Dr. Chapman also exhibited series of *A. coridon* and *A. thetis* with varietal forms and aberrations. Mr. T. Bainbrigge Fletcher communicated a paper "On the Genus *Deuteroecopus*, Zeller." Mr. H. St. J. Donisthorpe, on "Some Experiments with Ants' Nests."—

II. ROWLAND-BROWN, *Hon. Secretary.*

AGATHOMYIA ELEGANTULA, FALL.—A CORRECTION, AND
AGATHOMYIA ZETTERSTEDTI, ZETT., A SPECIES NEW TO BRITAIN.

BY JOHN H. WOOD, M.B.

Agathomyia elegantula, Fall.—At p. 5, vol. xvi (new series) of this Magazine I introduced this insect erroneously under the name of *Callimyia elegantula*, and as a species new to our fauna. The error might long have gone undetected, had I not subsequently met with a small and very distinct-looking species, which on being submitted to Mr. Verrall was unhesitatingly pronounced to be the true *Agathomyia elegantula*. The insect which had for a time usurped its place is on the contrary a *Callimyia* with all the singular and characteristic beauty of the females of that genus; and it is a matter of regret that it must for the present go without a name, in spite of its striking beauty which is quite distinct in its details from that of our two well-known species.

A pair only of *A. elegantula* have been obtained. Both were swept from under old spruce trees in Stoke Wood, the male 19/9/08, and the female as far back as 14/10/05. The remarkable feature about the insect is the bright colouring of the abdomen of the male, which in tint and almost in extent rivals that of the female, and at once distinguishes it from the male of any of our other species. In the female the three basal segments are a bright orange with indications of a narrow dusky line down the middle; in the male only the 2nd and 3rd segments are of this bright colour, the narrow basal segment being black, whilst the dorsal line consists of a broad black band on the 3rd segment, continued of a dusky red about half-way into the 2nd where it ends abruptly. The female bears some resemblance to *boreella*, Zett., and might possibly be passed over for a variety of that species with the light parts on the abdomen brighter and more extensive than usual, were it not for the differently coloured thorax. In *boreella* the thorax is uniformly black, as is the rule in the genus, but in *elegantula* it is somewhat parti-coloured, muddy-grey in front and ochreous-grey behind and on the scutellum.

A. zetterstedti (Wahlb. *in lit.*), Zett.—This is another new British species which I have had the good fortune to find recently in Herefordshire, and for the name of which I am again indebted to Mr. Verrall. Five examples were taken in 1907, between September 25th and October 13th—one male and three females under some big trees (since unfortunately cut down) in Ashperton Park, and one female in my own garden. This year again, two females were met with at the end of

September, by sweeping under spruces in Stoke Wood. Mr. Verrall tells me that nothing appears to have been heard of the insect for the last 50 years. Without entering into minute detail, the following points should, I think, be sufficient for its identification. The male is all black, except for the yellow legs, and can be satisfactorily distinguished from its congeners by certain bristle characters on the legs, as given in the table below. The female has a pale washed-out look, especially when fresh. The thorax is dull grey, which throws the bristles into relief as three narrow dark lines; the abdomen is variable, usually the first two or even the first three segments are pale yellowish, sometimes the first segment only, or in one specimen the under-parts of the first two, the remaining segments are pale brown, frequently with paler indications on the sides and pale segmental divisions; and the halteres are dusky yellow (in the male they are black).

TABLE OF CERTAIN BRISTLES ON THE LEGS OF MALE BRITISH *AGATHOMYLE*.

The critical bristles are a bristle on the front tibiæ near the tip on its outer aspect; one on the upper-side of the mid tibiæ, usually in the upper-third; and one or more bristles close to the lower edge of the outer aspect of the middle metatarsi.

	FORE TIBLE.	MID TIBLE.	MIDDLE METATARSII.
<i>Antennata</i> , Zett.	Bristle present	Bristle present	One bristle close to base.
<i>Collini</i> , Verr.	Bristle rather weak	Absent	One at extreme base.
<i>Viduella</i> , Zett.	Absent	Weak, at junction of upper and middle thirds.	Absent.
<i>Borella</i> , Zett.	Present	Absent	Two, one close to base, the other just before middle.
<i>Elegantula</i> , Fall.	Bristle weak	Absent	Two at extreme base.
<i>Zetterstedti</i> , Zett.	Rather farther from the tip than usual.	Just below junction of upper and middle thirds. (In my single male a 2nd and smaller bristle is present on the right tibiæ above the other).	Three, two at the extreme base and one in the middle.

There may be a temptation at first sight to place *elegantula* under *Callimya* on account of the brightly coloured abdomen and the scarcely lengthened 3rd joint of the antennæ, but the presence of bristles on the middle metatarsi and the bare 3rd wing vein show conclusively that it is an *Agathomyia*.

ADDITIONS AND CORRECTIONS TO THE BRITISH LIST OF
MUSCIDÆ ACALYPTRATÆ.

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

It is proposed in the following pages to put on record the capture of a number of additional species in this particular group, and at the same time to indicate the many changes which the researches of other students have made necessary in Verrall's "List" as published in 1901. Those marked with an asterisk are new to our Fauna.

CORDYLURIDÆ.

**Cordylura atrata*, Zett.—A male of this species, the smallest in the genus, was taken by Col. Yerbury at Nethy Bridge (Inverness) on June 16th, 1905; its small size (5 mm.) and entirely black legs at once distinguish it.

Cordylura rufipes, Mg., which appears in *italics* in the "List" is according to Becker a synonym of *C. pubera*, F., and can therefore be struck out.

Megaphthalma pallida, Flin.—This is the *Cordylura pallida* of the List of Reputed British Species. I was fortunate enough to take a female at Orford (Suffolk) on June 20th, 1907. It is a yellow species with no long bristle at the end of the palpi, only one sternopleural bristle, scutellum with two bristles, eyes nearly round, and arista with a scattered pubescence.

Leptopa filiformis, Zett.—Col. Yerbury has taken this species at Porthcawl (Glamorgan) as recorded in the Proceedings Ent. Soc. London for November 18th, 1904; he also found a specimen at Barton Mills (Suffolk) in May, 1909, and about the same time I caught one in a large wood near Newmarket (Cambridgeshire). There are a number of specimens in the Dale Collection at Oxford under the name of *Gynnomeru dorsata*, Zett. It need therefore no longer appear in the "List" in *italics*.

Amaurosoma inerme, Beck., *armillata*, Zett., and *flavipes*, Flin., have been recorded in this Magazine as occurring in Britain, the first two on page 138 (1908) the last on page 105 (1909).

Amaurosoma brevifrons, Zett.—This yellow-legged species with two shining stripes on its somewhat pollinose thorax has been found by Col. Yerbury in some numbers at Aviemore (Inverness) towards the end of May, 1904; Mr. A. E. J. Carter has also taken it at Musselburgh (Edinburgh) on May 30th, 1906, and Mr. J. R. Malloch at Bonhill (Dumbarton). The front femora are unarmed, the clump of bristles in front characteristic of several species in this genus being absent. Mr. Malloch mentions this species on page 105 of this Magazine for 1908.

**Acanthocnema nigrimana*, Zett.—Mr. Verrall caught a male of this species so long ago as July 22nd, 1872, at Braemar (Aberdeen), but it remained unidentified, probably because it was an unset specimen making it difficult to see the spur beneath the end of the front tibiæ. I do not feel the slightest doubt concerning its identity.

**Acanthocnema glauca*, Lw.—It has fallen to the lot of Dr. J. H. Wood to first recognise this species as being British from a specimen found by him near Tarrington (Hereford) on July 20th, 1909.

Microprosopa heteromyzina, Zett., recorded as British by the late Dr. Meade in this Magazine for 1899, page 32, under the genus *Scatophaga*, has not been found since, and it is doubtful if he correctly recognised it.

Scatophaga analis, Mg., and *villipes*, Zett., have been confirmed as British, the former by Col. Yerbury (*Irish Naturalist*, xi, 88, 1902), the latter by Mr. Grimshaw (*Ann. Scot. Nat. Hist.*, 1904, 202).

Scatophaga fontanalis, Rond.—The remarks made under *Microprosopa heteromyzina* also apply to this species.

Scatophaga rudis, *eximia*, *calida*, and *arrogans* of Haliday are mere names to me, the first two have never been recognised since they were described, and the last two have been recognised by Dr. Meade only. Up to the present I have had no opportunity of examining the type specimens, if such exist they are probably in Curtis' Collection in Australia.

Gymnomera dorsata, Zett.—The only record of this species as British is that of Dr. Meade in this Magazine for 1899; he introduced it on the strength of one male taken by Mr. Dale at Glanvilles Wootton, the specimens under this name in Dale's Collection seen by me were all *Leptopa filiformis*, a species not possessed by Meade, it is therefore quite possible that *G. dorsata* has been introduced in error for *L. filiformis*.

THYREOPHORIDÆ.

A new genus *Centrophlebomyia* has been founded for *Thyreophora furcata*, F., by Hendel (*Zeitschr. Hym. Dipt.*, 1903, 216).

CÆLOPIDÆ (PHYCODROMIDÆ).

Malacomyza, Haliday Curtis' Guide, 2nd ed., 1837, p. 280, and *Ann. Mag. Nat. Hist.*, II, 186 (1838), emended by Haliday himself into *Malacomyia* in Westwood's *Mod. Class. Ins. Generic Synopsis*, p. 144 (1840), has priority over *Phycodroma*, Stenh. (1855), and must replace it. In the *Addenda* to the second volume of Walker's *Insecta Brit. Dipt.* (vol. iii, p. xiii, 1856), Haliday called attention to this by placing *Phycodroma fucorum*, Zett., as a synonym of *Malacomyia sciomyzina*, Hal. Agassiz in his *Nomenclator Zoologicus* quotes a genus *Malacomyia*, Desv., 1830, and Scudder copied him in 1883, but I cannot trace that Desvoidy ever described such a genus though he used the family name *Malacomyidæ*.

The genus *Ædoparea* has been placed by continental Dipterologists in this family.

It should be noted that Haliday's description of *Cælopa frigida* in *Ent. Mag.*, I, 167 (1833), referred to *frigida* of Meigen (*nec* Fallén), and was the same as *pilipes* of Haliday *Ann. Nat. Hist.*, II, 186 (1838), thus making *pilipes*, Hal., the type of the genus *Cælopa*.

Fucomyia frigida, Fln.—*C. simplex*, Hal., should appear as a synonym of this species (v. Hal. in *Walk. Ins. Brit. Dipt.*, *Addenda*, vol. iii, p. xiii, 1856).

Fucomyia glabra, Wlk., of the List is according to the type a greasy specimen of *Hydromyza livens*, F., and therefore disappears as a synonym.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

The Coloured Plate issued last September having been so much appreciated by our readers, another (devoted to *Hymenoptera* and *Coleoptera*) was given with the last number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also. Another Plate is in course of preparation, and it will be presented during the year 1910.

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THE
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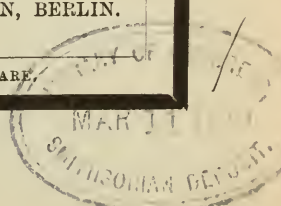
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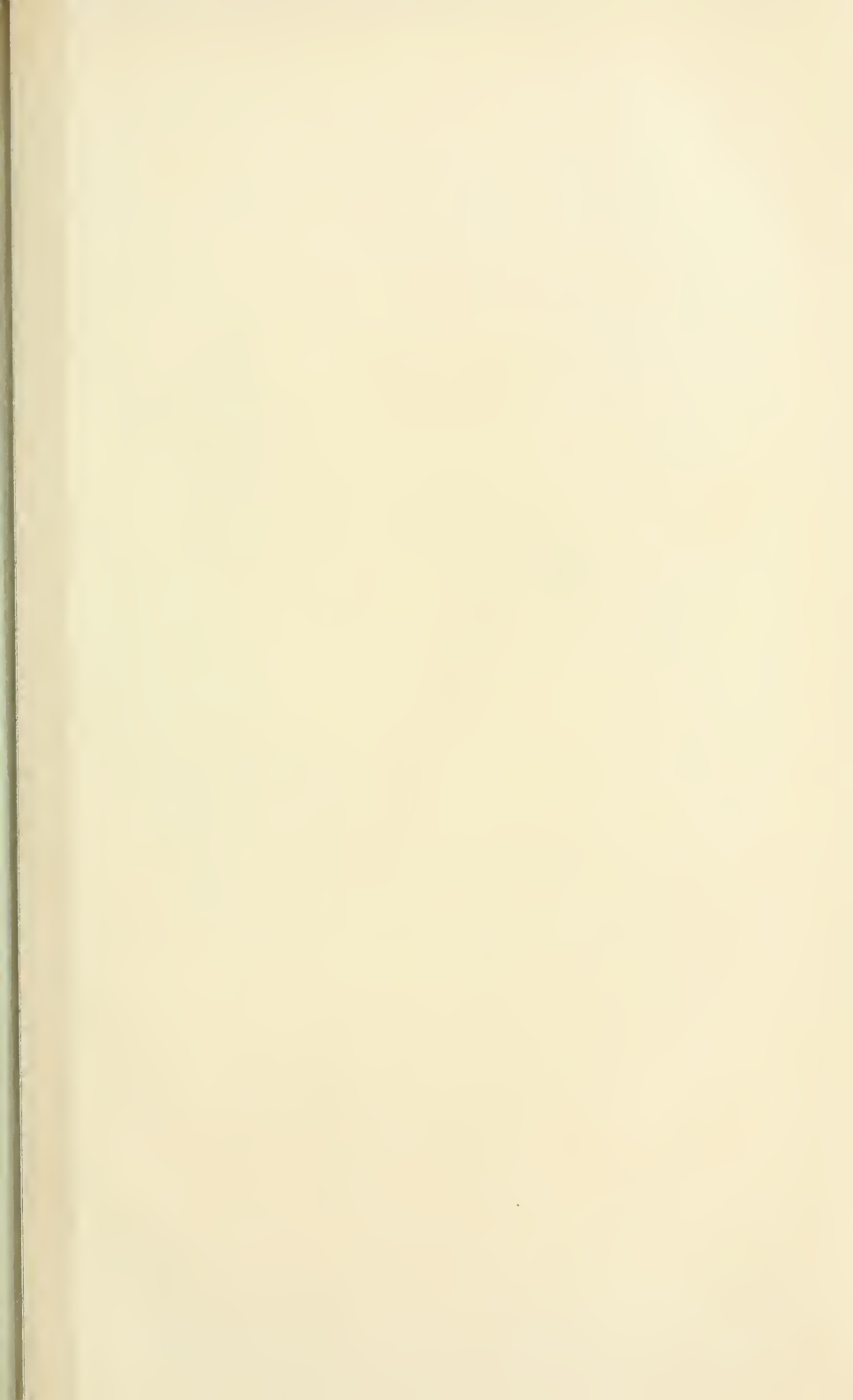
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Edward Saunders

In Memoriam.

EDWARD SAUNDERS, F.R.S.

EDWARD SAUNDERS, F.R.S., an Editor of this Magazine since 1880, and a frequent and valued contributor to it from the appearance of its first volume in 1864 up to the present year, passed quietly away in sea-side lodgings at Bognor on February 6th, 1910. In the present month he would have completed his 62nd year, having been born on March 22nd, 1848, at East Hill, Wandsworth.

His father, the late W. Wilson Saunders—also F.R.S.—held for a time a commission in the Royal Engineers, and won some credit while serving in that capacity under the Indian Government. But leaving the Army at the time of his marriage, he became a member of "Lloyd's"; and for many years was exceedingly well-known and respected in business circles, and also in those of science and art. He lived on familiar terms with most of the naturalists of his day, and was himself a frequent writer of short papers on scientific subjects, but was perhaps best known through the important collections of art and natural history formed by him at Hillfield, Reigate, to which house he removed in 1857. It was by serious work (begun at a very early age) upon these collections that Edward Saunders, who was educated entirely at home, laid the first foundations of his future eminence. He devoted himself first to the *Coleoptera*, but acquired also considerable familiarity with Entomology in general, and with several other of the "Systematic" sciences, such as Botany and Conchology. At the age of 16 he published a paper in the first volume of the Ent. Mo. Mag. on "*Coleoptera* at Lowestoft," and was afterwards for some years mainly occupied in studying the *Buprestidæ* of the world. A succession of Notes, Descriptions, Revisions of particular collections, groups, &c., bearing on this subject, were communicated by him to the Transactions of the Entomological Society from 1866 to 1869; in 1870 he published a "Catalogue of the species contained in the

Genus *Buprestis*, Linn.," and in 1871 his "Catalogus Buprestidarum Synonymicus et Systematicus," a work whose importance was immediately recognised, and which has ever since remained a classic. In order to render the synonymies of his Catalogue as reliable as possible, he undertook the only foreign tour of his life, visiting in succession all the chief Museums of Europe and examining personally the "types" of Buprestid spp. contained in them. From 1872 to 1874 he continued his work on this group, describing several new genera and over a hundred new species; and at the same time began to issue in this Magazine a long series of Notes on British *Hemiptera*, which were followed in 1875-6, by a Synopsis, in three parts, of the British *Hemiptera-Heteroptera*, and this again by a large illustrated volume, his well known "*Hemiptera-Heteroptera of the British Isles*," which was published in 1892.

Concurrently with this important mass of work on two distinct orders of insects, he began to attack a third group—the *Aculeate Hymenoptera*, to which he gradually transferred his chief attention. Two circumstances may probably have contributed to turn his thoughts this way. His father had purchased Shuckard's fine collection of British *Hymenoptera*, including several of that author's "types"; and both father and son were intimately acquainted with the veteran Hymenopterist, Frederick Smith. At any rate for the rest of his life the Aculeates (especially the British spp.) became his favourite study, and he ultimately became not merely the foremost, but, it may almost be said, the final authority upon the latter. His own explanation of his special fondness for the Aculeates was that in order to make out the species it was necessary to study *structure*, and his thoroughness in carrying out this principle gave a quite exceptional value to his descriptive work.

In studying our indigenous species he naturally became familiar with descriptions of related Continental forms. These he never had an opportunity to collect for himself, except during his one "grand tour" above mentioned, at which time he was unfortunately not yet interested in them. But his father's cousin, Sir Sidney S. Saunders, who had been Consul-General in Albania, was a well-known writer on palaearctic *Hymenoptera*, and had collected them in Greece and elsewhere with great enthusiasm and success, as evidenced by the fine series of his captures now preserved in the Hope Collections at Oxford.* Sir Sidney, though a much older man, was an intimate

* Professor Poulton informs the writer of much valuable assistance given to his Department recently by Saunders in revising the naming, &c., of the above Collection.

friend of Edward Saunders, and no doubt was more than pleased to bestow "duplicates" and items of information on so appreciative a recipient. At any rate, specimens ticketed with the initials S. S. S. form no inconsiderable part of the Palæarctic Collection of the latter, and may probably have been its original nucleus. Subsequently it was augmented from time to time by specimens, or even whole collections, handed over to him by some of his many "travelled" friends (*e.g.*, the Rev. A. E. Eaton, Commander Walker, Dr. Chapman, and others); and the excellent descriptions which he published of new species detected by him among these windfalls gradually brought him into communication and exchange of specimens with many of the most eminent Continental Hymenopterists, so that he amassed at last a collection, rich in genera and species, and not destitute of actual "types," though boasting no long series of duplicates. "Exotics" he deliberately left to others, and neither described them nor admitted them to his collection.

It is quite impossible within the limits of this Notice to give even the titles of Saunders's minor writings on Aculeates. It must suffice to say that his grand work "*The Hymenoptera-Aculeata of the British Isles*" (1896) is one of the few without which no serious Hymenopterist thinks his working-library complete, and that its merits have been acknowledged in the warmest terms by every one at home or abroad who is competent to form an opinion upon it.

Except in his earliest years Saunders could only work at entomology in the intervals of business, and this practically compelled him to deal with his subject almost entirely on its "systematic" side. It was impossible for him to conduct experiments or observations requiring unbroken attention for long spaces of time. Indeed, it is quite astonishing that a man whose daylight hours were spent almost invariably in the Royal Exchange should have been a collector and field-naturalist at all, much more one so skilful and successful as he proved himself, when a rare "off-day" or brief summer-vacation gave him his opportunity. (He never collected nor even described on Sundays, though he was absolutely free from pharisaical bigotry on this or any other matter, and often said that "what was right for a man was whatever he felt to be right in his own case"). Practically, therefore, all his serious work was done either in the early morning, or in the evening after returning from town—at which time he was always surrounded by his young family, and ready at a moment's notice to turn from his books and boxes, to join in a game or conversation, or welcome a visitor, or discuss a domestic problem. He

had no "sanctum," and no "close time" for study. It was really only by utilizing all his odds and ends of time; by the perfect *method* of his arrangements, so that he knew exactly where to look for any book or other article which he wanted; and by his phenomenal power of concentrating attention on a subject, or allowing it to be diverted for an interval, exactly as he pleased; that he was able gradually to build up his materials for a book or paper of any length, brick by brick, as it were, until the whole was completed. Obviously, the work of a systematist (which deals at any one time with a few facts only, and which at every step is completed as far as it goes), must suffer less from the sort of surroundings described above, than the welding of vast masses of experiment and observation into a connected chain of argument, such as we find in a work of Darwin's. What Saunders might have achieved in wider fields, had he been able to make science the business of his life, it is useless now to conjecture. For present purposes it is enough to say, that he contrived, under apparently most unfavourable conditions, to produce a series of important works, which have been useful to innumerable beginners, and to many serious students and even masters of science; which have been treated with something more than respect by foreign naturalists who have no great belief in English entomology as a whole; and which will long (and perhaps even always) remain standard authorities on the subjects dealt with in them. And, at the same time, he found or made leisure to exchange correspondence and specimens with the foremost entomologists of every country in Europe; to determine insects and answer letters from all sorts and conditions of collectors in England, Scotland, Wales, and Ireland; and generally, for more than half his life-time, to stimulate in a hundred quiet ways the progress of his favourite science among his own countrymen. From one method only of popularizing it he completely abstained. He had an invincible dislike of speaking in public; and except very rarely, and then only to small and special audiences, could never bring himself to deliver a formal lecture.

In 1865 Saunders entered his father's office at Llovd's, thus commencing a business career which he pursued amid universal respect till his last fatal illness, and in which he was assisted latterly, and is now succeeded, by one of his sons. In 1872 he married Miss M. A. Brown, of Wandsworth, who (as well as all but one of many sons and daughters) survives him. Of his happy and beautiful home-life, the present writer, after intimate contact with it for many years, will here say simply that to have witnessed it was a privilege, and ought to have been an inspiration. From the time of his marriage up to 1887 he

lived successively at various places within easy reach of his business (Reigate, Wandsworth, Bromley), and in the latter year he settled finally at Woking. His short holidays were generally spent somewhere on the South Coast; once or twice only did he cross the water, to the Channel Islands, or the coast of Brittany. As a young man he was active and even athletic, showing more than average proficiency in cricket, skating, &c. He was also fond of shooting, but sold his favourite gun in order to supply its place with a good microscope! Even when no longer young he enjoyed and could hold his own in a smart rally at lawn-tennis, but some years ago a sharp attack of illness made it necessary for him to abstain from all violent exertions, and at last from anything more fatiguing than a moderate walk. The actual cause of his death was probably influenza, which attacked him in March last year, but the case was complicated with lung-mischief, and his strength had for some time before been evidently, though very gradually, failing. At the last there was extreme weakness, but happily no pain whatever, and his interest in scientific matters was keen and bright up to the very end.

He became a Fellow of the Entomological Society in 1865, served as Treasurer from 1880 to 1890, and was a Vice-President in no less than five sessions, viz., in 1874, 1899, 1901, 1906, and 1907. Though he never actually held the Presidency, it is scarcely a secret that he would more than once have been elected to it unanimously, if he could have been persuaded to accept a post, whose duties he felt unequal (physically) to discharge as completely as he would have wished. He entered the Linnean Society in 1869, and about that time contributed at least three Papers to its Journal. Long after, in 1890, he published in the same Journal an exceedingly careful and interesting paper on the Tongues, &c., of Bees, with beautiful illustrations, drawn by his brother, Mr. G. S. Saunders, from microscopic preparations made by Mr. Enock.

His election in 1902 to the honour—so rarely bestowed on an entomologist merely as such—of Fellowship in the Royal Society was not only highly gratifying to himself and his personal friends, but to all who saw in it a recognition of Systematic Entomology, treated as Saunders treated it as no mere idle diletantism, but a genuine branch of Science.

The accompanying portrait is reproduced from a photograph taken several years ago and given by Saunders to the present writer.

LIFE-HISTORY OF *DREPANEPTERYX PHALÆNOIDES*, LINN.

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

PLATE II.

On the 23rd of October last, the Hon. N. Charles Rothschild secured a specimen of *Drepanepteryx phalænoides*, Linn., at Chantilly, Oise, France, the insect having been beaten from a hawthorn bush. He has very kindly allowed me to record his capture, and has at the same time placed at my disposal beautifully drawn figures of the insect and of *Drepana lacertinaria*, Linn., which bears so close a resemblance to it, a likeness that Linné and Leach have recognised in the specific and generic names given to the Neuropteran. As the species is certainly one of the rarest and most interesting of the *Planipennia* that we possess, an account of what is known about it as a British insect, and of its habits and distribution elsewhere, may be useful.

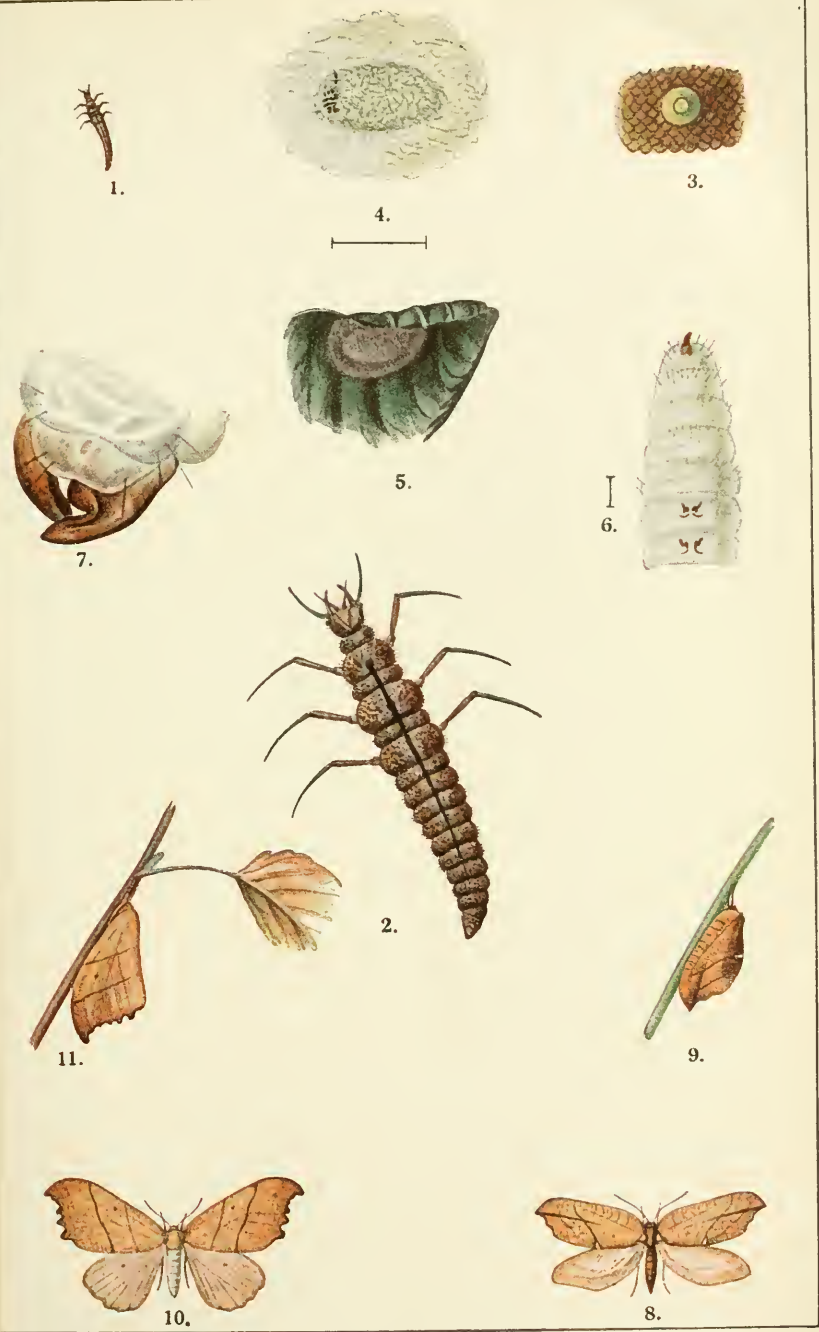
Although I have not been able to consult many of the older authors who have noticed the species, a reference to the extensive bibliography in Hagen's *Hemerobidarum Synopsis Synonymica* (Stett. Ent. Zeit., vol. xxvii, 1866, pp. 403 and 418), and Albarda's *Catalogue raisonné et synonym. des Neuroptères observés dans les Pays Bas et dans les pays limitrophes*, The Hague, 1889, pp. 307-8), shows that it excited the interest of nearly all the old writers of importance, and from Reaumur in 1737 down to Rambur in 1842, it seems to have been figured more than half-a-dozen times. The following notes will serve to give an idea of its distribution on the Continent :

Rambur ("Insectes Neuroptères," Paris, 1842, Pl. 9, fig. 6, p. 419) speaking no doubt of its occurrence in France, says: "Habite les bois où on le rencontre toute l'année mais assez rarement."

Wallengren (*Skandinavien Neuroptera*, Kongl. Svenska Vetenskaps-Akademiens Handl., Band 9, No. 8, Stockholm, 1871) records the insect as rare but wide spread, occurring in July and August in Northern and North-Western Scania, Småland and Östergöthland. He refers to Linné's locality, near Upsala, and to that quoted by Zetterstedt, near Ôfvertoenä.

Brauer (*Die Neuropteren Europas und insbesondere Oesterreich mit Rücksicht auf ihre geographische Verbreitung*, Wien, 1876) quotes France, England, Belgium, Germany, Hungary, Russia, Sweden, Switzerland, Styria and Carinthia.

Schoch (*Neuroptera Helvetia*, 1885) says it occurs at Zürich and Wetzikon ; always singly and rare. Dr. Ris (*in litt.*) informs me that



W. Frohawk, del.

Drepanopteryx phalaenoides, L.
and
Drepana lacertinaria, L.

SOME INTERESTING BRITISH INSECTS.



he has specimens from Rheinau, and further that it has been bred from apple-twigs collected there (see below).

Rostock (*Neuroptera Germanica*, 1888) gives a number of German localities; found on elm, not common.

Albarda (*l. c.*): Zélande, Hollande mér. et Hollande sept.: en mai et juin, dans les bois. Rare.

Reuter (*Neuroptera Fennica: Acta Soc. pro fauna et flora fennica*, 1894) gives the distribution as Europe, excluding the Mediterranean region. He says it is rare in Southern Finland, chiefly in oak woods.

Dziedzielewicz (*Bull. de l'Academie des Sciences de Cracovie*) records the species from Galicia, Austria.

Petersen (*Neuroptera Danica: Planipennia: Entomologiske Meddelelser*, 1906) gives a number of Danish localities.

Dr. Ris tells me he has not seen the species from Italy, and it is not mentioned in any of the few papers dealing with the Balkan Peninsula, to which I have access, although it occurs in the Transylvanian Alps (Klapálek). Nor is it included in Navas' *Neurópteros de España y Portugal*, 1908. Outside the limits of Europe, I know of no locality excepting Teneriffe. Dr. Ris possesses a ♂ labelled as from that island given to him by a Lepidopterist, Mr. Honegger, of Basel, who used to get *Lepidoptera* regularly from Teneriffe. One is tempted to suggest the possibility of its being there an introduced species.

Turning to our own country, when the species was first found at Cleghorn, Lanarkshire, in September, 1885, there had been no recorded British captures for about twenty years (*Ent. Mo. Mag.*, vol. xxii, p. 139). It is interesting to note in connection with this locality, that a specimen mentioned by Curtis was taken about fifty years before by H. Walker near Lanark, a town about two miles distant from Cleghorn. The previous occurrences, communicated to me by McLachlan at the time may be here repeated. It is indicated as British in Turton's Edition of Linné (*Syst. Nat.*) 1806; but Turton included a good many striking things as British that were never confirmed. Leach constituted the genus *Drepanopteryx* in the *Edinb. Encyc.*, 1815, probably from the citation in Turton. Curtis refers to the example taken by Walker; and Stephens figures one taken by Little at Raehills. In the *Proc. Ent. Soc. Lond.*, New Series, vol. i, p. 46 (Jan. 6th, 1851) we read: "Mr. Douglas, on the part of Mr. Allis, exhibited a specimen of the rare Neuropterous insect, *D. phalænoides*, taken by him at Bowness." And in McLachlan's *Monograph of the British Neuroptera Planipennia*, the author refers to an example taken at Windermere by Mr. Strouvelle. If Turton's citation be

excluded we have, with those recorded in the above mentioned note, seven British examples in all known at that time. McLauchlan added another example taken at Hastings (Ent. Mo. Mag., vol. xxii, p. 239). The subsequent records known to me are as follows: One beaten from willow by Miss Hutchinson in Deepdale, Yorkshire, on August 28th; it dropped on the ground and it was only afterwards that she found it was not *D. lacertula* (Ent. Mo. Mag., vol. xxvi, p. 52). One beaten from alder by Mitchell near Wolsingham, Durham, thought at first sight to be a "hook tip" (*l. c.*, p. 90). Two beaten from beech by Henderson at Gibside, North Durham, in September (*l. c.*, p. 110). One at Cleghorn, October 5th (Ent. Mo. Mag., vol. xxvii, p. 308); one at Carlisle, Lanarkshire, on June 6th, in flight in the late evening (Ent. Mo. Mag., vol. xxviii, p. 194); and one at Cleghorn beaten from hazel on August 7th (Ent. Mo. Mag., vol. xxix, p. 249). One at Pitlochry, Perthshire, by Beaumont, from birch on August 29th (Ent. Mo. Mag., vol. xxix, p. 263). One by Milton at Windermere on June 6th (Ent. Mo. Mag., vol. xxxv, p. 235). Six or seven in all were taken in the Cleghorn and Carlisle localities, and I estimate the number of known British examples at just under a score.

Whether the insect is rare or not, it is, as far as I know, never found at large as an imago either here or on the Continent in numbers. A habit of feigning death, its resemblance to a dead leaf, and the time of flight may all contribute to its being overlooked. I have seen it only once in flight, and I doubt that it ever flies voluntarily by day. A remarkable feature is its occurrence throughout the whole season. Hibernation is extremely probable, not only in this but in other species of *Hemerobiidae*. Ris informs me that he has taken an old and ragged specimen of *Drepanepteryx* in April. I possess a specimen of the closely allied *Megalomus algidus* taken by Kempny in Lower Austria, in February, while a freshly emerged series of the same species from Rheinau, Canton Zurich (Ris) is dated September.

In the Cambridge Natural History, vol. v, pp. 453 and 468, Dr Sharp has figured the whole insect, also the peculiar structure for bringing the hind and fore-wings into correlation, and the narrow space in the inner margin of the fore-wings from which colour is absent, alluding in connection with these details to the existence of somewhat analogous structures in some moths, and of small transparent spaces in the wings of some butterflies.

Although in Europe *D. phalenooides* stands alone in respect of the unusual outline [of the fore-wings, Brauer (Zusätze und Berechtigungen zu Hagen's Hemerobidarum Synopsis Synon., p. 987) calls in

question Hagen's definition of the genus: Differt a *Megalomo* sectoribus pluribus, ala apice acuta, postice excisa. He holds that the chief difference is to be found in the anterior cubitus (median) which in *Drepanepteryx* is divided into 4-5 parallel branches, which run like the radial sectors; while, for example, in *Megalomus hirtus* the same vein simply forks in the first third of the wing, and only breaks up at the margin into two further end-forks, in this respect resembling *Hemerobius*. Judged by this character, some species, usually considered as belonging to *Megalomus*, such as *M. algidus*, would fall to be placed in *Drepanepteryx*. Brauer has also described and figured the nervous system, the alimentary system, and the female genitalia of *Drepanepteryx* in his Beiträge zur Kenntniss des inneren Baues und der Verwandlung der Neuropteren, p. 18 (Schriften des zool. bot. Vereins in Wien, 1855). At p. 24 of the same paper he gives the interesting information that the imago feeds on *Lepidoptera* whose wing-scales can be quite well recognised in the stomach; the insect was found by him in June and July on elms and peach trees.

With reference to the life-history, although the species has been reared more than once, the modern literature on the subject appears to be very meagre. Von Heyden in Die Neuroptera-Fauna der weiteren Umgebung von Frankfurt a. M. (Bericht über die Senckenbergische Naturforschende Ges. in Frankfurt a. M., 1896, p. 115), says the larva is found at the beginning of June in oaks and develops in July. The pupa is said to be enclosed in a thicker yellow cocoon, suspended in a larger wide-meshed one and held from the side by only a few threads.

Prof. Standfuss also bred the insect from material collected for him by Dr. Ris. He published a very short note on the subject recording the interesting fact that the pupa after leaving the cocoon runs some distance before it bursts the pupal skin (Mitt. der Schweiz. Entom. Ges., vol. xi, Heft 4, 1906: Bewegliche Puppen bei Insekten mit vollkommener Verwandlung, p. 154).

Going back to earlier times, Reaumur knew the larva and he raised a crippled imago. But the best account extant seems to be that of Von Gleichen genannt Russwurm: Versuch einer Geschichte der Blatläuse und Blattlausfresser des Ulmenbaums: Nürnberg, 1770 (with four coloured plates). This author narrates that on opening a curled up leaf, amongst the moving mass of plant-lice of different sizes and a tangle of cast-off skins and other matter, he noticed some very active brown larvæ which he at once concluded were what they proved to be, the creatures to which Reaumur had given the name of "Lion

de Poucerons" (Blatlaus-Löwen, *i.e.*, the larvæ of *Drepanopteryx*). Judging from the time they took to reach maturity, they were already half-grown, and von Gleichen concludes that they pass from egg to pupa in at most 14 days,* an observation which agrees with Reaumur's. The head is compared to half an oval, the convex side directed to the body, covered above with two ash-grey horny plates and in front flat and membranous. The long antennæ stand between the small black eyes above the mandibles (oberhalb des Zangengebisses), and under the latter are the 2-jointed labial palpi (Fressspitzen). The thoracic segments increase in size towards the abdomen, which is flatter than round. The abdomen gradually tapers to the last segment, which is pointed, and which in running is either moved to and fro, or is used in the same way as the terminal abdominal feet (Nachshieber) of caterpillars. The ground colour above is yellow and brownish-red, beneath straw-yellow. Along the back there is a brown depression in the middle of a white stripe which looks as if dusted with a powder. This depression ends towards the middle of the abdomen. Upon the thoracic segments on each side there is a shallow, elongate depression. The sides of each segment, the last excepted, are beset with raised warts which are probably the spiracles. A figure is given of these warts, and of the scale-like texture of the skin of the back. These larvæ give off a strong scent which is compared to that of thyme. They are described as terrible gluttons. When a plant-louse is caught, it is all over with it in half a minute. The empty slough is cast aside and another victim is seized. The author states that 30 and odd plant lice were consumed one after the other without a moment's interruption. The proceeding is thus described: the larva rushes at the nearest louse which he never misses. As soon as the plant-louse is gripped with the mandibles, it is turned round with the aid of the palpi in order to bring it comfortably to the mouth. Then the mandibles and palpi become quite still, the robber being busy sucking his prey. The louse is again turned round to another side and the sucking renewed; this turning and sucking being repeated until nothing remains but an empty skin. The dexterity shown in this process cannot be surpassed, and may be compared to the rapid movements of the squirrel when he turns round a nut in his paws.

Reaumur, as quoted by Von Gleichen, in connection with the mouth parts, wrote:—

Mais ce qui est de plus remarquable, c'est que le formicaleo n' a point de bouche où les autres insectes en ont une: il en a deux qui

* Probably underestimated.

sont placées bien singulièrement, elles sont aux bouts extrêmement fins de cornes très fines. Ces mêmes cornes avec lesquelles le formicaleo perce un insecte, et avec lesquelles il le tient saissi, sont chacune un corps de pompe. Au moyen de ces deux corps de pompe il fait passer dans ces intestins toute la substance du malheureux, que est devenu sa proie. Nos lions des pucerons, ou nos petits lions, ont de semblables cornes, avec lesquelles ils sucent les pucerons.*

Von Gleichen tried in vain to reconcile his observations on this point with those of Reaumur, and he had almost equal difficulty in finding another mouth opening. Between the mandibles and palpi he saw nothing but a surface of very fine horizontal folds, and it was only when he seized a larva by the head with his forceps and brought it under a lens that he noticed in the fore part of the head an opening which could be nothing but the mouth. As he observes that this mouth is only used for sucking, its perfect closure is a natural consequence, as is also the impossibility of opening and seeing it unless by a properly directed pressure of the head.

When the larva has reached the age of 13 or 14 days, it leaves the scenes of its bloodthirsty activity and seeks to conceal itself in some angle of a twig or on another leaf. Up to that time it seems to have made no use of its spinneret (which is placed at the end of the body), but within half-an-hour it has covered itself within a web. This web is white in colour, fibrous and tangled like wool. It is not too close to prevent the enclosed larva from being seen in a curved position, the head almost withdrawn within the thorax. The cocoon consists of two separate layers, the one as above described, but the inner is hard as if made of dried paste (Kleister): this inner layer might be described as a perforated capsule rather than a web.

So far Von Gleichen. He reared two of the flies in July about the fourth week after the larvæ had spun up, but he failed to observe the actual emergence—a misfortune which the observations of Standfuss have made good.

Since the foregoing was written, I have received through the medium of my friend, Dr. Ris, an extract made by Professor Standfuss from his unpublished notes on the biology of *Drepanopteryx*. I am very much indebted to Professor Standfuss for this, and as his notes are so full of interest, I venture with his permission to give a translation of them.

* See Sharp, Cambridge Natural History, vol. v, pp. 455-7, as to the mouth parts of ant lions. It is there explained how the mandibles and the lobes of the maxillæ are modified and co-adapted to form sucking organs.

NOTES ON THE BIOLOGY OF *DREPANEPTERYX PHALÆNOIDES*, L.

BY PROFESSOR DR. M. STANDFUSS, ZÜRICH.

“Several times near Zürich I have met with the very mobile larvæ of a lighter or darker brown colour with a greasy gloss, measuring when full grown 12 to 15 mm. long. These larvæ do not cover themselves with the skins of the plant lice they have sucked dry, in this respect differing from their relatives of the genus *Hemerobius*. They were found in populous colonies of *Lachnus fagi*, L., on the under-side of the leaves of *Fagus silvatica*, L. Often also this gluttonous enemy of the plant lice was found on the foliage of plum trees, *Pruuus domestica*, L. (Zwetschen) and *Pruuus insititia*, L. (Pflaumen), amongst *Aphis pruni*, F., a species present in great numbers nearly all the year round.

With us it occurs still more numerously in the great colonies of *Schizoneura ulmi*, L. This plant-louse causes a blister-like swelling, and a yellowish discoloration of the leaves of *Ulmus campestris*, L., infested by it. Gradually the leaves become rolled at the margin downwards and inwards, and so form a pod-like sheltering hollow space in which the full grown larvæ of *Drepanepteryx* not rarely fix their pupal web. I further discovered *Schizoneura lanigera*, Hansm.—the “Blutlaus” of the apple tree—to be a specially favourite food of the larva of this fine Hemerobiid. My good friend Dr. Fr. Ris, of Rheinau, sent me repeatedly, apple-twigs much infested by this *Schizoneura*, for use in my lectures on insects injurious to agriculture and forestry. The first of these consignments in May, 1904, produced alone 32 imagos, and later sendings, also, always contained a number of individuals of this Neuropteron.

The larva of this species I found here, in Eastern Switzerland, between the beginning of May and the middle of July. In autumn I was never able to observe larvæ, so that in our region we should have decidedly only one generation of *D. phalænoides*.

Pupation takes place according to the warmth of the season, and probably also according to the available supply of plant-lice, between the middle of May and the middle of July, in rolled-up leaves, or sometimes in crannies on tree stems, or even on the ground.

The neat, rather wide-meshed cocoon, consists of two parts, the inner ordinarily oval but sometimes approaching a spherical form; the outer a looser enveloping web. It is produced from the contents of the rectal glands modified into spinning glands. The larva lies rolled up in a ball whilst engaged in this work. It is very absorbing to observe

how the eyes guidingly watch the movements of the terminal segment which, when actively spinning, lies close to the organs of vision. The pupa also rests curved in the cocoon. In from 14 days to three weeks after pupation the imagos emerge. When the pupa has worked its way out of the wide-meshed cocoon, and by this time has stretched itself out perfectly straight, it always runs some distance (35 cm. being the longest stretch hitherto observed) until it has found a suitable spot where it is able to fix itself firmly by the claws. Only then does the perfect insect burst the integument of the back of the pupa.

The height of the flight time happens in July and August, and during these months I have sometimes found paired couples. In the first days of October I have observed the last examples of the year in the open near Zurich. I have never seen the species in winter or in spring. The eggs therefore are surely deposited in high summer and autumn, and probably in large batches—the fact that the larvæ usually occur in numbers, close together, leading to this conclusion. Whether the eggs over-winter or the larvæ emerge before winter, has hitherto escaped my observation.”

In addition to these Notes, Professor Standfuss has also most kindly sent a series of the extremely neat cocoon (including one *in situ*) and two pupal skins, thus providing material which could not have been obtained otherwise for the relative figures. He and Dr. Ris have further forwarded for examination a rather long series of the perfect insect. These, in conjunction with my own few specimens, show some range in the colour of the fore-wings, the darkening being no doubt to a considerable extent a matter of age. In one or two there is also a reduction in the intensity of the brown markings, including the streak which runs to the wing-tip. The dates of these Swiss specimens include April, May, June, July, September and October. Standfuss has a specimen from the Riesengebirge in September.

This paper owes its origin entirely to the co-operation of Mr. Rothschild. In addition to providing the drawings and the plate, he has laid me under special obligation by sending me for perusal Von Gleichen's rare and interesting memoir. I should also like to thank Dr. Ris for his invaluable assistance in various ways, including a loan of several important papers.

P.S.—Commander Walker has just informed me that there are four British specimens of *D. phalaenoides* in the Oxford University Museum, *viz.*: two in the Hope-Westwood Collection of *Neuroptera*, and two in the Dale Collection. He writes: “Of the first named, one

“ is set in the attitude of repose and bears no data ; the other, which is “ in fairly good condition but not well set, has a printed label ‘ Mr. “ Little.’ Of the Dale specimens one is in quite good condition, but “ is unfortunately without data ; the other is larger but has the hind- “ wings much crumpled ; this has a label in C. W. Dale’s handwriting, “ ‘ Cumb. H. F. Farr, fr. Bond, Nov. 1862.’ ”

It seems certain that some, if not all, of these specimens were not included in McLachlan’s estimate of 1885. The example bearing the name of Mr. Little (the Rev. William Little) in all likelihood came from Raehills in the South of Scotland, the locality whence the specimen figured by Stephens came, as mentioned above.

EXPLANATION OF PLATE.

DREPANEPTERYX PHALENOIDES.

- Fig. 1. Larva, natural size.
 „ 2. „ „ enlarged.
 „ 3. Spiracle, &c., of larva.
 „ 4. Cocoon, enlarged.
 „ 5. „ „ *in situ*, natural size.
 „ 6. Abdomen of pupa (from cast-off skin).
 „ 7. Mandibles of „ „
 „ 8. Imago, natural size.
 „ 9. „ „ at rest.

DREPANA LACERTINARIA.

- Fig. 10. Imago, natural size.
 „ 11. „ „ at rest.

Figures 1, 2, and 3 are after Von Gleichen, and are given for what they are worth, in the absence of fresh material.

CRYPTOPHAGUS BIMACULATUS, PANZ., AND OTHER COLEOPTERA AT LOUGH NEAGH.

BY J. N. HALBERT, M.R.I.A.

To the student of British *Coleoptera*, the Lough Neagh district is undoubtedly one of the most interesting localities in the British Isles. It is well known as the habitat of many local insects, notably of *Dyschirius obscurus*, *Bembidium argenteolum*, and *Stenus palposus*, species which are not known to occur elsewhere in the Britannic area. During a visit to the district in the summer of 1902, I found a few specimens of a small black-banded *Cryptophagus*, which proves to be

C. bimaculatus, Panz., and is yet another addition to our list.* The present paper was written chiefly with a view to calling attention to this insect, at the same time it seemed desirable to place on record some of the more interesting species which have been recently found on the northern and north-eastern shores of the lake.

The following list is largely the result of two collecting trips to the Shane's Castle district, organized by the "Royal Irish Academy, Fauna and Flora Committee." On the first of these visits, in June, 1902, I was joined by my friend the late Mr. C. W. Buckle, and together we secured most of the local species. At my suggestion, Mr. Buckle made several subsequent excursions to Shane's Castle with a view to the preparation of a joint paper on the beetle-fauna of the district. It will be seen that eight of the species are unrecorded from this country, and at least three others must be re-instated in the Irish list, on account of their occurrence at Lough Neagh. Except where otherwise stated, the locality is Shane's Castle on the north-eastern corner of the lake.

Pelophila borealis, Payk., fairly common at Shane's Castle, found running on the shore, and also in flood refuse. *Dyschirius obscurus*, Gyll., locally abundant on sandy parts of the shore at Shane's Castle, also at Toome. *Pterostichus anthracinus*, Ill. *Anchomenus micans*, Nic., in flood refuse and by sweeping, Mr. Buckle also found it under dead alder bark at Shane's Castle; this species seems very local, and these are the only authentic Irish examples that I have seen. *Bembidium assimile*, Gyll., *B. pallidipenne*, Ill., and *B. argenteolum*, Ahr., all locally common in sandy places. *Tachypus flavipes*, L., banks of the river Bann, near Toome. *Trechus micros*, Herbst, a few specimens in flood refuse. *Celambus novemlineatus*, Steph. *Hydroporus septentrionalis*, Gyll., *H. incognitus*, Sharp, taken under flood refuse by Mr. Buckle. *Cercyon marinus*, Thoms. (*aquaticus*, Muls.), and *C. minutus*, Muls.; the latter insect must be re-instated in the Irish fauna. *Aleochara brevipennis*, Grav. *Ocalea castanea*, Er., under flood refuse; Dr. Sharp has kindly examined the Lough Neagh specimens of this species, and he remarks that they are referable to a "variety of the old *castanea*, agreeing with what Waterhouse called *O. rivularis*." *Ilyobates nigricollis*, Payk. *Caloderu aethiops*, Grav., Shane's Castle, also shaken out of reeds at Portmore Lough. *Homalota insecta*, Thoms., a single specimen of a large dark form at Shane's Castle in September, *vide* Dr. Sharp. *Homalota* "sp. n.?", near *elongatula*," *vide* Dr. Sharp; *H. picipes*, Thoms., Shane's Castle, not previously recorded from Ireland; *H. debilis*, Er., taken by sweeping at Portmore and Shane's Castle; *H. gemina*, Er., abundant on reeds at Portmore Lough, not previously recorded from Ireland; *H. divisa*, Märk., rare. *Myrmecopora sulcata*, Kies., a single specimen of what Dr. Sharp considers may

* I have already referred to the capture of this insect in the February number of the "Irish Naturalist."—J. N. H.

represent a dwarfed race of this species occurred on the shore near Toome, June, 1902. *Gyrophæna gentilis*, Er. *Bolitochara obliqua*, Er. *Conosoma pedicularium*, Grav., common at Lough Neagh, so that this species must be re-instated in the Irish list. *Philonthus lucens*, Er., in flood refuse; *P. vernalis*, Grav.; *P. nigrita*, Nordm. *Xantholinus cribripennis*, Fauvel, a specimen from Shane's Castle, in the collection of the late C. W. Buckle, seems to be referable to this species; it is slightly longer, darker, and more strongly punctured than the ordinary Irish form, as it occurs at Magilligan sandhills and other places in the North. In the males of *X. cribripennis* the hinder margin of the eighth dorsal segment is narrowly, but distinctly excised at the middle; in a male of *X. distans*, from Transsylvania, sent by Herr E. Reitter, this excision is deeper and nearly three times as wide as it is in *X. cribripennis*. [Mr. Norman H. Joy has recently sent me two specimens (♂ and ♀) of a *Xantholinus* which he collected at Dalwhinnie, in Inverness-shire, during October, 1909; these appear to me to agree with the Irish *X. cribripennis*, and I have no doubt that they are to be referred to that species rather than to *X. distans*]. This insect has now been recorded from Scotland, Ireland, France, Italy, and the Caucasus. *Lathrobium punctatum*, Zett., not previously recorded from Ulster; *L. filiforme*, Grav. *Dianous cærulescens*, Gyll. *Stenus palposus*, Zett., Toome and Shane's Castle; *S. incrassatus*, Er., Shane's Castle, not previously recorded from Ireland; *S. nigritulus*, Gyll., found by Mr. Buckle in flood refuse at Shane's Castle during September, and by myself by sweeping reeds in the same locality, not previously recorded from Ireland; *S. nitens*, Steph., swept off reeds at Portmore Lough. *Bedius subterraneus*, Er., abundant in sandy places. *Phlæocharis subtilissima*, Mann., taken by Mr. Buckle at Shane's Castle in September; a new record for Ulster. *Euplectus ambiguus*, Reich. *Calyptomerus dubius*, Marsh. *Colan serripes*, Sahlb., *vide* Champion. *Liodes humeralis*, Kug. *Silpha dispar*, Herbst, found sparingly in flood refuse. *Hister neglectus*, Germ. *Hippodamia 13-punctata*, L. *Hyperaspis reppensis*, Herbst. *Phalacrus caricis*, Sturm, on bulrushes. *Epurea obsoleta*, F. *Telmatophilus typhæ*, Fall., abundant on bulrushes. *Antherophagus nigricornis*, F. *Cryptophagus affinis*, Sturm; *C. pubescens*, Sturm; *C. bimaculatus*, Panz. [See below]. *Paramecosoma melanocephalum*, Herbst, vars. *infuscatum*, n., and *univeste*, Reitt. [both additions to the British list, see below]. *Atomaria wollastoni*, Sharp, I found a dwarf specimen of this rare insect at Shane's Castle in June, 1902, the identification of which has been kindly verified by its describer; *A. gutta*, Steph., abundant at Shane's Castle, so that this species must now be re-instated in the Irish list. *Donacia thalassina*, Germ., abundant; *D. vulgaris*, Zsch.; *D. clavipes*, F., abundant on reeds at Portmore Lough; *D. discolor*, Panz., common. *Lema septentrionis*, Weise, a few specimens taken at Toome by sweeping. *Phyllobrotica quadrimaculata*, L., Shane's Castle, Mr. Buckle found this species by sweeping under alder trees; it is a very local insect in Ireland. *Phyllotreta vittula*, Redt., Shane's Castle, not previously recorded from Ireland; *P. flexuosa*, Ill., Shane's Castle, there is but one previous Irish record (Wexford) of this species. *Crepidodera aurata*, Marsh., a dark variety of this insect occurs at Shane's Castle, one or two of the specimens having the legs and antennæ infusate. *Cassida hemisphærica*, Herbst. *Anthicus scoticus*, Rye, not un-

common on sandy parts of the shore. *Rhynchites minutus*, Herbst, Portmore Lough. *Apion athiops*, Herbst; *A. gyllenhali*, Kirby, and *A. seniculus*, Kirby. *Eriirrhinus scirpi*, F., and *E. athiops*, F., a few specimens of the last mentioned species occurred in flood refuse at Shane's Castle. *Bagous glabrirostris*, var. *nigritarsis*, Thoms., common. *Cionus pulchellus*, Herbst; Shane's Castle, in company with *Phyllobrotica* (Buckle). *Ceuthorrhynchus arcuatus*, Herbst; I found a few specimens of this rare species by sweeping on the banks of a stream running into the lake at Shane's Castle in June, 1902, and Mr. Buckle subsequently secured a fine series; it has not been previously recorded from Ireland. In some of the Lough Neagh specimens the ground-colour is rather dark, with the white marking very distinct, causing the insect to resemble the allied *C. asperifoliarum*, an insect unknown as yet from Ireland. *Rhinoncus castor*, F. *Eubrychius relatus*, Beck, and *Litodactylus leucogaster*, Marsh., in weedy drains at Glenavy and Shane's Castle. *Phytobius comari*, Herbst, *P. 4-tuberculatus*, F., and *P. canaliculatus*, Fahr., Shane's Castle. *Limnobaris pilistriata*, Steph., all the Irish specimens of *Limnobaris* that I have seen are referable to this species. *Pityogenes bidentatus*, Herbst, Shane's Castle.

CRYPTOPHAGUS BIMACULATUS, Panz.

When at Lough Neagh in June, 1902, I captured a few specimens of this insect by sweeping amongst reed-beds on the shore of the lake at Shane's Castle. An excellent definition of it is to be found in Ganglbauer's "Die Käfer von Mitteleuropa." iii, p. 678. The following short description of the Lough Neagh specimens may prove useful for reference:—

Colour in mature specimens reddish-brown, with an ill-defined black median band on the elytra, this being in most specimens reduced to a large black spot on each of them. Head and thorax strongly, deeply, and closely punctured; thorax about twice as broad as long, narrower than the elytra, strongly and regularly serrated along the side-margins, *with no trace of the more or less conspicuously larger tooth near the middle*, which is such a characteristic feature of all the known British species of the genus, the reflexed anterior angles not prominent. Elytra oblong-oval, convex, the punctures at the base almost as strong as those of the thorax, wider apart and much finer towards the apex. The entire insect clothed with rather long loosely attached pubescence. Antennæ of moderate length (about .716 mm.), comparatively slender, the fifth segment a little shorter than the third and noticeably longer than the fourth, the club rather narrow. Length, 1.8—2 mm.

This interesting species has a northern and central range in Europe (*Reitter*), extending as far north as Finland. According to Heyden, it ranges also into Siberia (Cat. Coleopt. Siberia, Nachtrag, I).

C. bimaculatus may be easily recognised by the structure of the side-margins of the thorax, and the black marking of the elytra, indeed

Ganglbauer in his synoptical table separates it from all the known central European species of *Cryptophagus* by means of these characters. The general facies of the insect is also very distinct.

PARAMESOSOMA MELANOCEPHALUM, Herbst.

The Irish representatives of this insect are decidedly interesting. It would seem that the type, with black head and thorax and chestnut-brown elytra, has not, so far as I am aware, been found in Ireland. In mature examples of the prevalent Irish form the head, thorax and elytra are black and very shining; the femora and the apical part of the tibiæ are infusate; and the general punctuation, especially of the elytra, is noticeably stronger than in the type. As this variety is so well marked, I venture to propose that it should be referred to as var. *infusatum*. I have seen specimens from the counties of Donegal, Cavan, Armagh, Dublin, and Kerry, so that it is widely spread in this country.

At Shane's Castle, Mr. C. W. Buckle found two specimens of another form of the same species, which I have little doubt is the var. *univeste* [*univestre*] of Reitter. A short comparative description of the latter is given by Ganglbauer (*Die Käfer von Mitteleuropa*, iii, p. 670). The Lough Neagh specimens are large, about 2 mm. in length, and of more robust structure than the ordinary form. They have the head, thorax, and elytra of a uniform chestnut-brown colour, with the legs and antennæ slightly lighter; the thorax a little more transverse than is the case in the type; the general punctuation of the upper surface very noticeably stronger; and the pubescence more scattered. The var. *univeste*, Reitter, has been recorded from Hamburg, Prague, Vienna, and the Caucasus.

Mr. G. C. Champion has recently drawn my attention to a record by Mr. J. H. Keys of a dark form of *P. melanocephalum* from the Plymouth district [*Ent. Mo. Mag.*, xlii, p. 137 (1906)]. Mr. Keys describes the dark colouring of his specimens, and although he does not mention the stronger punctuation, there is no doubt that they are to be referred to the var. *infusatum*.

Irish Natural Museum, Dublin :

January 27th, 1910.

TWO NEW SPECIES OF *ANTHOMYIDÆ*, IN THE GENUS
FANNIA, R. D. (= *HOMALOMYIA*, BOUCHÉ).

BY J. E. MALLOCH.

FANNIA NIGRA, *n. sp.*

♂. Deep black, hardly shining; eyes bare, very narrowly separated by a black stripe; frons and epistome hardly projecting; jowls descending but little below the eyes; face distinctly silvered; palpi normal; 3rd joint of the antennæ about two and a half times as long as the 2nd, arista slightly pubescent; thorax dull black, unstriped; abdomen with distinct grey dusting, the black dorsal stripe broadly triangularly dilated on each segment; anal organ small and inconspicuous; legs entirely black, fore femora and tibiæ with the usual bristling; mid femora hardly contracted at the tip, a row of about eight strong bristles on the antero-ventral surface from the base to about one-third from the tip, from where it is continued to the tip in a row of very short but strong bristles; postero-ventral surface with a somewhat similar row of rather weaker bristles; posterior surface with a row of long, soft, curved hairs; at the tip on the postero-dorsal surface a short row of long, strong bristles, about six in number; and a few curved hair-like bristles on the antero-dorsal surface at the tip; mid tibia with the apical half slightly thickened, the ventral surface clothed with rather short, but distinct, pubescence, which becomes longer as it nears the tip; two antero-dorsal and two postero-dorsal bristles present, the upper antero-dorsal bristle about half the size of the usual lower one; hind femora with a row of bristles on the antero-dorsal surface which ends in three or four stronger and longer bristles at the tip, a row of rather widely placed bristles on the antero-ventral surface, which increase in size as they near the tip, and the basal two-thirds of the postero-dorsal surface with soft hairs, which shorten towards the tip; hind tibiæ with generally two bristles on the antero-ventral surface, and about three bristles above the usual one on the antero-dorsal surface, the usual dorsal bristles present; calyptre black, the under scale distinctly protruding; halteres yellow; wings infuscated, outer cross vein distinctly waved, last portion of the 4th vein rather more than twice the length of the penultimate; 3rd and 4th veins slightly convergent. 4—5 mm.

Bonhill and Cardross, Dumbartonshire, 4 ♂♂. June—August.

The presence of more than one bristle on the antero-dorsal surface of the mid tibia places this species in the same section as *carbonaria*, Mg. (= *corvina*, Verr.), and *polychæta*, Stn., the only two British species with which it can be confounded if this character is attended to. From both of these species it is easily separated by its dull black colour and black calyptre, besides other characters which are quite obvious from the foregoing description. The only other European species that falls into this section is *minutipalpis*, Stn., which has the calyptre whitish-yellow, and the palpi very small.

F. FEMORATA, *n. sp.*

♂. Black, not shining; eyes large, very narrowly separated by a black

stripe: frons, epistome, and jowls very narrowly projecting; antennæ of moderate length, 3rd joint two and a quarter times as long as the 2nd, arista pubescent, thickened at the base; palpi normal; thorax dull black, sides and front undusted, distinctly grey dusted behind; abdomen dull black, base of segments laterally grey dusted, dorsal stripe much dilated at apices of segments, and hardly separable from the lateral black marks nearer the base, in some positions the segments seem to be only narrowly dusted at the base laterally; anal organ not very prominent (in the single specimen before me, with two small backward directed appendages, produced into sharp points at their apices); legs black, fore knees only inconspicuously paler; fore femora and tibia with only the normal bristling; mid femora not greatly thickened, constricted at the apex, with an antero-ventral row of long bristles, beginning at near the base, decreasing in length, but becoming closer placed till about two-fifths from the apex, from where they form a comb-like row on the constricted portion; a somewhat similar row of longer, but rather weaker, bristles on the postero-ventral surface; ventral bristle long and strong; postero-dorsal surface with long, soft, curved, hair-like bristles; mid tibia with the apical two-fifths distinctly, but not greatly thickened, much as in *verrallii*, Stn., but longer, the pubescence on the ventral surface very short and sparse on the basal unthickened portion, but longer and erect on the apical two-fifths; a rather weak bristle on each of the antero-dorsal and postero-dorsal surfaces in addition to the usual stronger lower one; hind femora bent, and dilated, thickest at about one-third from the apex, antero-ventral surface with a row of hair-like bristles, which increase greatly in length from the base to the thickest part of the femora, and then decrease to the apex, a row of about six long, hair-like bristles on the basal two-fifths, and a group of about nine very long, hairlike bristles on the thickened portion beyond the middle of the postero-ventral surface, a few very short hairs on the tip fifth; hind tibia with the usual dorsal bristles, two antero-ventral bristles, and (in the single specimen) no antero-dorsal bristle; calyptra blackened, unequal in size; halteres yellow; wings darkened along the front half, clearer behind, 3rd and 4th veins nearly parallel, outer cross vein nearly straight, last portion of the 4th vein nearly three times the length of penultimate. 4 mm.

The single ♂ of this very distinct species was taken by Mr. A. E. J. Carter at Aberfoyle, June 30th, 1904. It is quite distinct from any other British species, and cannot even be confounded with any European species. Both *fasciculata*, Lw., and *hirticeps*, Stn., have the hind femora as in this species, but the former has the base of the abdomen yellow, and the latter has the eyes densely hairy. *Atra*, Stn., differs also in many particulars from this species in the arrangement of the bristles according to Stein's description, and in the absence of the thickening of the femora.

Bonhill, Dumbartonshire:

December, 1909.

Some considerations indicative of the need for a fresh catalogue of British Coleoptera.—If the British Neuropterist, Hymenopterist, or Hemipterist wishes to find out what has been published, in this country or abroad, about any particular object of his study he may turn to the appropriate section of the "General Catalogue of the Insects of the British Isles" published from time to time by the Entomological Society of London, with a reasonable prospect of finding a reference to the original description, together with such additional references as were in the judgment of the several compilers germane to the issue from the point of view of the British student. Similar particulars are also available to the Orthopterist and Lepidopterist in the admirable "Synopsis of the British Orthoptera," by Eland Shaw (*Ent. Mo. Mag.*, vol. xxv, p. 354, *et seq.*) and Mr. Tutt's colossal "Natural History of the British Lepidoptera" respectively; but the student of British beetles has no such advantage; not that there is any lack of "Catalogues," the writer calls to mind at least eleven, from Stephens, 1829, to Beare and Donisthorpe, 1904; but the first of these is the only one which professes to be more than a list of names, and it is, in the nature of things, of very limited utility at the present day. But by far the most poignant instance of the necessity for some trustworthy guide to the literature of *Coleoptera* is furnished by Professor T. Hudson Beare, who, in a paragraph dealing exclusively with British beetles (*Ent. Rec.*, xxii, p. 1, Jan. 15th, 1910) writes of "our present scanty knowledge of the life-history of the majority of beetles." This extraordinary statement proceeds, be it observed, not from some obscure provincial student, whose lack of information might be excused, but from a "leading Coleopterist" (I quote from *Ent. Rec.*, xxi, p. 190) and a Vice-President of our National Entomological Society! Now, if there had existed a catalogue of British *Coleoptera* on the lines of the "Catalogue of British Neuroptera," it would of necessity contain references to the writings of those Entomologists who have dealt with life-histories of beetles, from Geoffroy, 1762, to Donisthorpe, 1909, writings which require for their enumeration more than six hundred octavo pages (Rupertsberger, 1880, 1894), and the passage in question need not have been written.

That it is, in some sense, a duty on the part of our National Entomological Society to provide British Entomologists with a real catalogue of the insects of the British Islands, seems to have been recognised by the executive of that body more than forty years ago, and for a few years after the appearance of the first Part in 1870 the publication went on at a reasonable rate, but I am not aware that any Part has appeared since 1876. However, it is, doubtless, only necessary to call attention to the matter and the subject will receive the consideration which it deserves.

It seems matter for regret that, so far as beetles are concerned, the question of naming varieties, *i.e.*, groups of individuals occupying a position intermediate between the individual and the species, has not received more attention in this country. The history of many species cannot well be written without reference to these things, and it would appear that the most convenient means of making such reference is by name. The latter has been the opinion of several authors of repute, though they have not always been quite logical in their application of the principle; *e.g.*, Weise in dealing with *Coccinella 10-punct-*

tata after using separate names for seven different varieties, forthwith lumps them all together under one name, *4-punctata*, L. A name as a symbol for a definition is well, but if it be made the symbol for several definitions its utility disappears. I cannot call to mind that any English author has suggested that varieties should be ignored; on the contrary, Dr. Sharp, in chapter ix of his pamphlet on Zoological Nomenclature (1873) expressed the hope that varieties would soon receive more attention than they had hitherto done. It appeared to him that the purposes of Science would be best served by there being no names for varieties, but that every author who specialized varieties should do so by means of a letter or figure, or combination of the two. Whether the latter system has any advantage over that of naming is matter of opinion, but it is to be hoped that in any future catalogue of British beetles scientific utility will not be sacrificed to mere prejudice or the curtailment of the cost of printing.—J. EDWARDS, Colesborne, Cheltenham: Feb. 7th, 1910.

Cis bilamellatus, Fowl., in Australia.—Amongst the large number of "Blackburn" types of Australian beetles at present deposited in the British Museum, there are two species of interest to our Coleopterists here, from the point of view of geographical distribution. One of them is *Pristonychus australis*, Blackb., which is correctly sunk as synonymous with the cosmopolitan *Læmostenus eomplanatus*, Dej., in the second edition of Reitter's Catalogue (1906). The other is *Cis munitus*, Blackb. [Trans. R. Soc. S. Austr. x, p. 268 (1888)], from Port Lincoln, which is synonymous with *C. bilamellatus*, Fowl. (1884), the type of the former, a ♂, agreeing perfectly with the same sex of the species described by Fowler. *C. bilamellatus* is still, I believe, to be found in its old locality at West Wickham, but it seems probable that it has been introduced in some way there, as in Australia, and that its real home has yet to be discovered. As regards this species, I may add that during the present winter it has been found breeding in great numbers in *Polyporus* on birch, obtained from the New Forest by one of our natural history dealers, for the purpose of cutting up into small blocks for staging minute pinned insects, the stock of *Polyporus* in question having been completely pulverised by its attacks. I have previously found *Cis fuscatus* under similar conditions, but this is the first time that *C. bilamellatus* has been detected amongst *Polyporus* brought to me for examination in London. So far as I am aware, *C. bilamellatus* has not been recorded from the New Forest, and the insect may have found its way into the stocked *Polyporus* from some obtained from other places. I am indebted to Mr. E. A. Waterhouse for calling my attention to these Blackburn types.—G. C. CHAMPION, Horsell, Woking: February 2nd, 1910.

Note on Grammoptera ruficornis, F., var. *pallipes*, Steph.—Mr. Bullock recently sent me an example of this variety of *G. ruficornis* from Killarney for determination. I had not seen a specimen of it before, and this form must therefore be of rare occurrence in Britain; but, according to Johnson and Halbert (List &c., p. 754), it is not uncommon in Ireland. The insect, too, appears to have escaped the notice of Continental Coleopterists, as it is not

included in either of Reitter's Catalogues. This variety is presumably the var. *flavipes* of Pic (1892).—ID.

An early specimen of Grammoptera holomelina, Pool.—On looking through some parts of the extensive collections of my friend Mr. T. G. Bishop here, I have been much surprised at finding a specimen of this species. It was found amongst the duplicates of *G. ruficornis* from the collection of the late Mr. Samuel Stevens. It has no label, and though in excellent preservation, is I have no doubt 50 or 60 years old. As the recent discovery of a species of Longicorn apparently peculiar to this country has very much astonished us, it is interesting to find that it has been here for so long.—D. SHARP, Helensburgh: *January 27th, 1910.*

Conosoma bipunctatum, Grav., at Broxbourne.—On a recent visit to this locality we had the good fortune to meet with two specimens of this apparently very rare little Staphylinid. They were in the wood-mould in a very decayed portion of a felled willow which had been left lying in a field.

As far as we have been able to ascertain, the species has not been recorded since the publication of vol. ii of Fowler's "Col. Brit. Islands" (1888). We understand from Commander Walker, however, that he met with a single (unrecorded) example in Cobham Park, Kent, in wet rotten beech-wood on April 30th, 1875; and Mr. W. E. Sharp informs us that he took a specimen in Epping Forest in June last, also in decaying beech.—G. W. NICHOLSON and F. B. JENNINGS: *January 28th, 1910.*

Longitarsus flavicornis, Steph., in the Isle of Wight.—I took a specimen of this rather rare species flying at dusk in a road near Sandown on August 27th, 1909. It is another interesting addition to the Isle of Wight list.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: *February 10th, 1910.*

Cathormiocerus maritimus, Rye, in Cornwall.—Mr. C. G. Lamb, who has made so many interesting discoveries amongst our Insect-fauna, has now added to them by finding this species at St. Merryn. *C. maritimus* was discovered by the late Mr. Monereaff near Portsmouth many years ago, and I believe has only elsewhere been found in France, nor has it been observed again in the original locality. The discovery is one of considerable interest, the only other habitats known for this species being the northern and north-western coasts of France, where, as here, the species is *rarissime*. Some references and remarks on the subject of British *Cathormiocerus* by Mr. Champion and myself may be found in vol. xx, pp. 121–123 of this Magazine.—D. SHARP, Brockenhurst: *February 12th, 1910.*

Coleophora troglodytella, Dup., feeding on Achillea millefolium, L., in Britain.—On May 22nd, 1906, I received for identification, from Mr. A. Thurnall, some larvæ of a *Coleophora* that had been found by him feeding on leaves

of *Achillea millefolium* (yarrow) at Beddington, East Surrey, two days previously. The cases, in colour, shape, and size, so closely resembled those of *troglydetylla* that there seemed little doubt that they belonged to this species, although I was not then aware that it had ever been found feeding upon yarrow. A reference, however, to the works of several Continental authors revealed the fact that "*Achillea*" is entered by Sorhagen [Kleinschmet. Mark Brand., 256 (1886)] in his lengthy list of food-plants of *troglydetylla*, which also includes "*Eupatorium cannabin.*, *Conyza*, *Inula*, *Cirsium*, *Tanacetum*, *Hieracium*, *Artemisia vulg.*, *Solidago*."

On paying a further visit to Beddington on May 22nd, Mr. Thurnall saw there a good many more of these same larvæ, and all of them were feeding on *A. millefolium*. The imagines, five in number, emerged in due course, July 17th—August 6th, 1906, and proved the correctness of my surmise as to the identity of the cases that Mr. Thurnall had kindly sent me. I do not remember any record of the larvæ of *C. troglydetylla* being met with feeding upon yarrow in the British Isles, and if any Lepidopterist has found them, with us, upon this, or any other unusual food-plant, it would be of interest if he would publish the details. The only plants on which I have noticed these larvæ are *Eupatorium cannabinum*, *Inula conyza*, and *Pulicaria (Inula) dysenterica*: in my experience, they usually show a preference for the last-named species, and are often abundant locally.—EUSTACE R. BANKES, Norden, Corfe Castle: February 12th, 1910.

Change of name of a genus.—In a paper just published in the Journal of the Bombay Natural History Society, vol. xix, p. 582, I have described a new genus of Tortricina under the name of *Epibactra*, having unfortunately somehow overlooked the previous use of this name by Ragonot in 1894. I therefore propose for my newly described genus the name of *Parabactra*.—E. MEYRICK, Thornhanger, Marlborough: January 27th, 1910.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The Annual Meeting of this Society was held at the Royal Institution, Colquitt Street, Liverpool, on Monday, December 20th, 1909.—Dr. H. H. CORBETT, of Doncaster, Vice-President, in the Chair.

The following gentlemen were elected Officers and Council of the Society for the ensuing year, viz.:—*President*, S. J. Capper, F.E.S. *Vice-Presidents*, E. R. Bankes, M.A., F.E.S., Robert Newstead, M.Sc., F.E.S., W. J. Lucas, B.A., F.E.S., C. E. Stott, Claude Morley, F.E.S., P. F. Tinne, M.A., M.B. *Hon. Treasurer*, J. Cotton, M.R.C.S. *Hon. Secretaries*, H. R. Sweeting, M.A., Wm. Mansbridge, F.E.S. *Hon. Librarian*, F. N. Pierce, F.E.S. *Council*, E. G. Bayford, F.E.S., W. D. Harrison, W. A. Tyerman, E. J. B. Sopp, F.R.Met.S., Wm. Webster, M.R.S.A.I., Geo. Arnold, F.E.S., Wm. Mallinson, W. T. Mellows, L. H. Lister, G. M. Taylor, M.A., J. H. Leyland.

An address was delivered by Dr. H. H. Corbett, the retiring Vice-President, who took for his subject, "The Evolution of the Natural Order Insecta." The lecturer, by means of lantern slides and diagrams, described how possibly the great family of insects had arisen. Beginning with the simplest animal organisms, and proceeding to others more and more complex, Dr. Corbett constructed a tree showing the probable genealogy of moths, butterflies, and beetles. The address was greatly appreciated by those present, and at the close a vote of thanks was proposed by Mr. R. Newstead, which was carried with acclamation.

Mr. C. B. Williams exhibited a box of Lancashire *Micro-Lepidoptera*, including *Scoparia ambigualis* from various localities, and *S. angustea* from Silverdale. Mr. A. W. Boyd, a box of Cheshire *Lepidoptera*, the most interesting being:—*Scoparia dubitalis*, Dunham Park, *Boarmia repandata* var. *nigra*, Delamere, a curious dull form of *Venusia cambricaria*, and *Bomolocha fontis* from Peckforton.

Monday, January 17th, 1910.—Dr. P. F. TINNE, Vice-President, in the Chair.

A lecture was delivered by Mr. C. F. Walker, M.A., of the Liverpool University, on "Mendel's Theory of Inheritance." The lecturer, by means of some excellent lantern slides, gave a very lucid and interesting account of Mendel's discovery, and also adverted to the recent work which has been done by numerous investigators. Mr. Walker mentioned the experiments of Messrs. Prout and Bacot with *Acidalia virgularia*, instancing it as a case of "Blended Inheritance" in which the Mendelian principle did not appear to apply. At the close, a vote of thanks was proposed by Mr. W. Mansbridge, who made a few remarks in opening the discussion which ensued. The motion, seconded by Mr. F. N. Pierce, was carried by acclamation, and Mr. Walker suitably replied.

Mr. F. N. Pierce exhibited a female specimen of *Hydræcia crinanensis* captured at Bolton, Lancashire, in 1897, by Mr. J. E. R. Allen. This is the first record for England. Mr. Allen also recorded the species from Enniskillen, Ireland. Mr. Wm. Mansbridge, series of *Aplecta nebulosa*. The meeting was adjourned until February 21st.—H. R. SWEETING and Wm. MANSBRIDGE, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, December 9th, 1909.—Mr. A. SICH, F.E.S., President, in the Chair.

Captain Cardew, R.A., of Wimbledon, and Mr. P. A. Tanby, of North Audley Street, were elected Members.

Mr. Sich exhibited specimens of *Gelechia hermannella* in illustration of his paper. Mr. Turner, ♂ and ♀ specimens of the rare "tailed" moth *Eudæmonia brachyura* from Sierra Leone. Mr. Edwards, a box of Exotic *Hemiptera*, among which was the remarkable Heteropteron *Macroceræa grandis* from Tenasserim. Mr. J. Platt Barrett, pupæ of *Hyles euphorbiæ* found by him in Sicily, and an immature form of a mole-cricket from Messina. Dr. Hodgson, the most

striking forms of *Anthrocera* taken or bred by him this year, including dwarf *A. trifolii* and curiously marked examples of *A. hippocrepidis* and *A. filipendulæ*. Mr. Barnett, dark forms of *Cheimatobia boreata* and of *Oporabia dilutata* from West Wickham and Wimbleton respectively. Mr. Robert Adkin, series of *Agriades coridon* ♀s from Eastbourne, showing eight or nine lines of variation; he also showed a bred series of *Polia chi* from Huddersfield ova. Mr. Sich read a paper entitled "Notes on *Gelechia hermannella*."

Thursday, January 13th, 1910.—The President in the Chair.

Mr. South exhibited, on behalf of Mr. More, of Barnet, specimens of *Coleoptera*, &c., mounted on transparent gelatine cards allowing of ready examination. Mr. Adkin, a series of *Selenia bilunaria* bred from Eastbourne ova, and read notes on the brood. Mr. Lucas, photographs of *Hybernia defoliaria* taken on January 4th and 5th. Mr. Turner, on behalf of Rev. C. R. N. Burrows, series of the genus *Hydræcia*, *H. nictitans*, *H. paludis*, *H. lucens*, and *H. crinanensis*, together with microscopical preparations of the genitalia and photographs of the same. Mr. Tonge, a bred series of *Cidaria miata* from Chichester, a bred pair of *Catocala fraxini* from ova laid by a ♀ taken at Horsham, and two species of *Hymenoptera* bred from a bamboo cane standing in a garden at Red Hill. Mr. Newman, living specimens of *Pyrameis atalanta*, which he was endeavouring to hibernate. Mr. A. H. Hemming, an under-side aberration of *Polyommatus icarus* taken at Red Hill, in which the submedian spots were closely clustered around the discoidals, while on the hind-wings some spots were obsolete. Mr. Enock gave a lantern demonstration of the life-histories of *Gonepteryx rhamni*, *Dicranura vinula*, and *Urapteryx sambucaria*, and many illustrations of the marvellous and delicate Hymenopterous egg-parasites, *Mymaridæ*.—HY. J. TURNER, Hon. Secretary.

DIPTERA TAKEN AT MORTEHOE, NORTH DEVON.

BY G. B. LONGSTAFF, M.A., M.D.

This list is obviously the work of a beginner. Those groups of flies whose habits of life force them upon the notice of a Lepidopterist have naturally enough been the first to attract his attention; but Mr. G. H. Verrall's grand volume on the *Syrphidæ* has contributed not a little to the attractions of that family.

My best thanks are due to Mr. Verrall, to Mr. E. E. Austen and his assistant Mr. Hills, as well as to Mr. A. H. Hamm, for their patient assistance in naming specimens.

MYCETOPHILIDÆ.

Sciara thomæ, L.—One at Borough, July 29th; another Twitchen, on *Angelica*, August 26th, 1909,

BIBIONIDÆ.

Dilophus febrilis, L.—Found as the prey of *Empis tessellata*, F., May 26th, 1905.

Bibio marci, L.—Abundant.

TIPULIDÆ.

Tipula oleracea, L.—Once seen in the jaws of *Asilus crabroniformis*, L., again as the prey of *Philonicus albiceps*, Mg. In the autumn, if a strong east wind be blowing, it is curious to watch this insect on Woolacombe sands. Thousands of the flies blown from the land attempt to settle on the shore; for a few moments they dother in the wind upon their long legs, but are soon swept on, rolling over and over along the smooth sand; now and again between the gusts they recover their legs, but the process is repeated until at last the all-devouring waves are reached.

STRATIOMYIDÆ.

Sargus flavipes, Mg.—A ♀ in my garden, Sept. 16th, 1909; *S. cuprarius*, L. One in my garden, July 28th, 1908.

Chloromyia formosa, Scop.—Common, July 20th—August 5th. The remains of one found as the prey of the sawfly *Allantus? arcuatus*, Scop.

Microchrysa polita, L.—One at Twitchen, May 29th, but common the last week of July. Fond of settling on leaves of *Hydrangea*.

Beris morrisii, Dale.—Two specimens: Twitchen Garden, July 22nd, Borough, July 29th, 1909.

TABANIDÆ.

Hæmatopota pluvialis, L.—Only too abundant.

Tabanus maculicornis, Ztt.—Borough, not common. *Chrysops cæcutiens*, L.—This exquisite fly is scarce at Twitchen, common at Borough.

LEPTIDÆ.

Leptis scolopacea, L.—One, Mortehoe, May 26th, 1905; another at Borough, June 4th, 1906. *L. tringaria*, L.—A ♀ with prey (which was lost), Borough, July 19th; another at Woolacombe, July 26th, 1909.

Chrysopilus cristatus, F.—Borough, several by sweeping amongst *Inula dysenterica*, July 23rd, 1909.

ASILIDÆ.

Leptogaster cylindrica, Deg.—One of this *Agrion*-like fly at Twitchen, July 28th, 1908.

Dioctria rufipes, Deg.—One at Borough, July 21st, 1908.

Asilus crabroniformis, L.—This formidable fly is not uncommon in some years; its buzz is almost as terrible and as suggestive of a hornet as its appearance. It is most commonly seen settled on very short grass on high land. Only once have I seen one with prey, a large Daddy-long-legs.

Philonicus albiceps, Mg.—Frequent on Woolacombe sand-hills close to the sea in July and August; it usually settles on the bare sand. Once I saw a ♀ devouring a blue-bottle (*Calliphora vomitoria*, L.) and whilst so engaged a ♂ fly pounced upon it and I netted all three. Another was taken flying with *Tipula oleracea*, L., in its grasp.

Epitriptus cingulatus, F.—Twitchen; taken by Dr. Dixey, August 9th—12th, 1897, also by myself, July 20th, 1908.

Machimus atricapillus, Fln.—One at Twitchen, August 22nd, 1907; another at Barnage, July 3rd, 1908.

BOMBYLIDÆ.

Anthrax paniscus, Rossi.—This pretty fly, so suggestive of a tiny *Hemaris fuciformis*, L., has occurred at Twitchen, but is commoner on the sand-hills at Woolacombe, July 27th—September 10th. [Also on Braunton Burrows, September 10th, 1907].

THEREVIDÆ.

Thereva nobilitata, F.—Woolacombe sand-hills August 24th, 1906 [Venton, George Ham parish, July 21st, 1909].

EMPIDÆ.

Empis tessellata, F.—Abundant, May 28th—July 19th. I have frequently captured it with prey, viz., *Dilophus febrilis*, L.; *Bibio marci*, L.; *Hylemyia* sp. ♂; *Mydæa* sp. ♂;* a ♂ with *Lucilia cæsar*, L.; and a ♂ with *Syrphus ribesii*, L. *E. livida*, L.—Twitchen, Woolacombe; nearly as common as the last, especially in the third week of July; two specimens with prey (unnamed flies). *E. punctata*, Mg., Twitchen, Borongh, May 28th—June 1st.

Pachymeria femorata, F.—Twitchen, flying in numbers under beech-trees, May 29th; a ♀ at Twitchen watched sucking honey from *Scabiosa arvensis*, July 24th.

DOLICHOPODIDÆ.

Dolichopus? æneus, Deg.—Twitchen garden, July 25th, 1909.

SYRPHIDÆ.

Liogaster metallina, F.—Three females at Twitchen, May 29th, 1909.

Chrysogaster splendens, Mg.—Twitchen, on flowers of *Angelica*, August 25th—September 19th, 1909; *C. solstitialis*, Fln., common on *Umbelliferæ*, July 20th—August 6th, 1909.

Chilosia variabilis, Pz.—Twitchen, several on flowers and leaves, end of July, 1909. *C. honesta*, Rnd., a ♀ at Twitchen, August 13th, 1909. *C. illustrata*, Harris. common, sometimes abundant, on Ragwort and *Umbelliferæ*, May, July, August; a fairly good mimic of *Bombus sylvarum*, L., the two occur together, sometimes even on the same flower-head. *C. albicansis*, Mg., one at Twitchen, May 29th, 1909; *C. fraterna*, Mg., one at Twitchen, August 9th, 1909; *C. bergstammi*, Beck., two ♂, one ♀, Twitchen, August 13th—25th, 1909.; *C. retutina*, Lw. Of this recent addition to the British fauna I took a ♂ near Twitchen on the flowers of *Chærophyllum sylvestre*, August 17th, 1909. Mr. Verrall detected it among some troublesome little Syrphids, which he was good enough to name for me; *C. cynocephala*, Lw., one at Twitchen, May 29th, 1909.

Platychirus manicatus, Mg.—Females only, May, August, September; *P. scutatus*, Mg., one ♂, two ♀, Twitchen, August 7th—9th.; *P. albimanus*, F., common, the sexes in equal numbers, July 24th—September 20th; *P. chypeatus*, Mg., one ♂, three ♀, August 7th—September 19th.

* See POULTON, *Trans. Ent. Soc. Lond.*, 1906, pp. 381, 382.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

The Coloured Plate issued last September having been so much appreciated by our readers, another (devoted to *Hymenoptera* and *Coleoptera*) was given with the Jan. number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also. Another Plate is in course of preparation, and it will be presented during the year 1910.

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MONTHLY MAGAZINE.

EDITED BY

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W. W. FOWLER, D.Sc., M.A., F.L.S.

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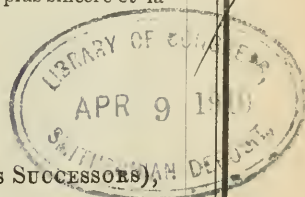
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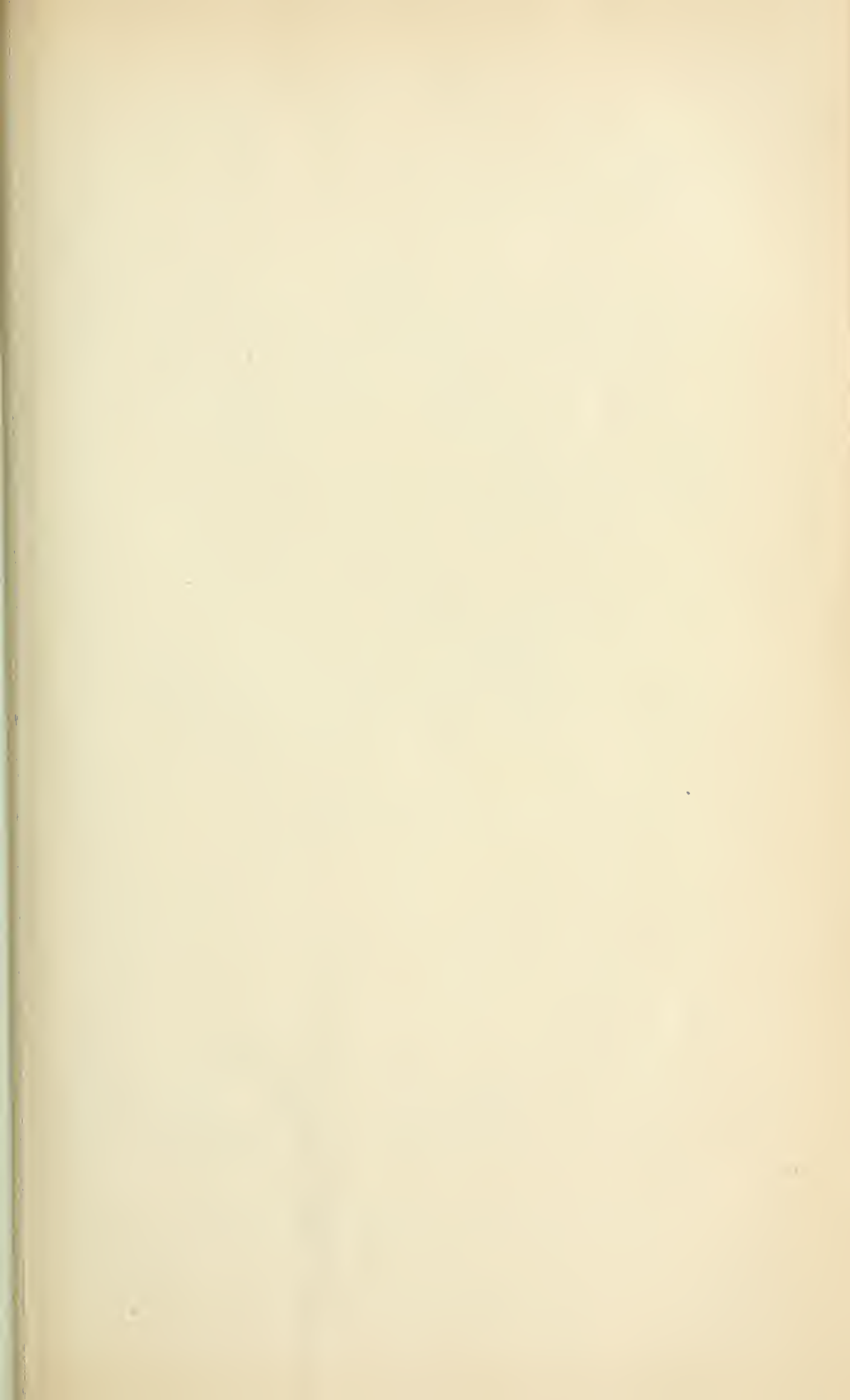
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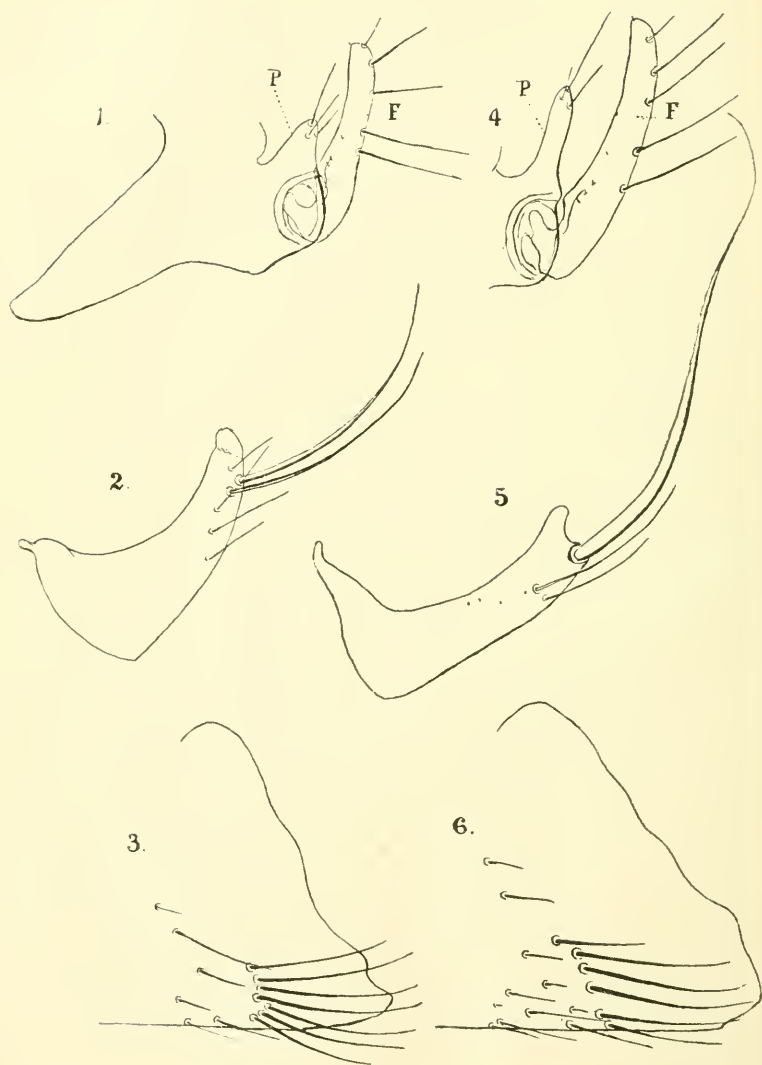
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CERATOPHYLLUS FRANCISCANUS, *spec. nov.*

Pyrophæna granditarsa, Forst.—A ♀ at Twitchen, August 4th, 1909

Melanostoma mellinum, L.—A ♀, Twitchen, August 21st, 1909; *M. scalare*, F., three ♂ in August; the ♀ abundant in September, it often flies amongst herbage close to the ground. The halteres (at all events of the ♀) are bright emerald-green during life.

Leucozona lucorum, L.—This pretty fly is rather common, May 18th—August 18th.

Ischyrosyrphus glaucius, L.—One at Twitchen, August 20th, 1907; a second, on *Angelica*, August 14th, 1909; *I. laterarius*, Müll., a ♂ at Borough, July 29th; another at Twitchen, August 15th, 1909. The latter on *Angelica*.

Catabomba pyrastris, L.—Rather common, July 23rd—August 25th.

Syrphus albostriatus, Flh.—A ♂, Twitchen, June 2nd, 1909; *S. grossularia*, Mg., very common, June 19th—September 9th; *S. ribesii*, L., less common than the last, July 17th—September 29th; *S. vitripennis*, Mg., common, May 29th—September 17th; *S. corollæ*, F., two ♂s, one on *Heracleum* beside high road, July 19th, the other at Twitchen, August 7th, 1909; *S. luniger*, Mg., a ♂ at Borough, August 2nd, 1909; *S. balteatus*, Deg., very common, July 23rd—September 29th; two ♀s taken at Twitchen September 21st, 1909, are small and dark and very shiny, having a very different appearance from the ordinary specimens, which were common at the same time and place; one specimen in the National Collection from South Devon comes near to them; *S. cinctellus*, Ztt., common, August 3rd—September 23rd; *S. auricollis*, Mg., four specimens, July 7th—August 15th; *S. umbellatarum*, F., three at Twitchen, August 19th—September 17th; *S. compositarum*, Verr., two on *Angelica* at Twitchen, August 7th, 13th, 1909.

Sphærophoria scripta, L.—Very common, May 31st—September 21st; *S. menhastri*, L., abundant, May 31st—August 13th, often flies close to the ground.

Xanthogramma ornatum, Mg.—A specimen taken by Dr. Dixey in Sandy Lane, July 10th, 1907.

Baccha obscuripennis, Mg.—A specimen on a window in the house, August 26th, 1909, was at first mistaken for a solitary wasp.

Rhingiæ campestris, Mg.—Abundant, May 28th—September 19th.

Volucella bombylans, L.—Rather common, especially at Borough, July 3rd—August 22nd; the two forms (*plumata* and *bombylans*) mimic *Bombus terrestris* and *lapidarius* respectively so closely that I have taken the fly for the bee; *V. inanis*, L., of this rare fly Dr. Dixey took a specimen in Sandy Lane, August 16th, 1907; *V. inflata*, F., one at Twitchen, July 18th, 1908, another at Borough on flowers of *Ananthe crocata*, July 23rd, 1909; *V. pellucens*, L., one at Borough, July 24th, 1906.

Eristalis tenax, L., abundant; *E. intricarius*, L., one at Twitchen, September 12th, 1907; *E. arbustorum*, L., both forms common, May, July—September; *E. horticola*, Deg., scarcely common, May, July 18th—September 22rd.

Helophilus pendulus, L.—This handsome fly was very common in one field at Twitchen, August 19th—September 12th, 1907; a single specimen September 18th, 1909.

Criorrhina oxyacantha, Mg.—One specimen of this very bee-like fly at Borough, May 26th, 1905.

Xylota seynis, L.—Scarcely common, July, August; *X. sylvorum*, L., once at Borough, July 22nd, 1908.

Syrirta pipiens, L.—Common, July 27th—August 29th.

Arctophila mussitans, F.—Several. Twitchen, Borough, Pool, September 16th—23rd, 1909. On the wing this fly is extraordinarily like *Bombus agrorum*, and I have been deceived several times. The two insects occur together at Twitchen, on the same day, on the same patch of *Centaurea nigra*, the Bumble bee very common, the fly comparatively scarce—all the classical conditions of Batesian mimicry.

Sericomyia borealis, Flin.—Occasionally at Twitchen and Borough, August 10th—September 23rd.

Chrysotoxum cautum, Harr.—A ♂ at Twitchen, August 4th, 1909; *C. elegans*, Lw., one at Borough, June 4th, 1906; *C. festivum*, L., two at Twitchen, one Warcombe Lane, July 29th—September 12th; *C. bicinctum*, L., a difficult fly to catch; one at Borough, June 26th, 1906, several at Twitchen, July 28th—August 26th, 1909.

CONOPIDÆ.

Conops flavipes, L.—Scarce; Shaftsborough on *Eupatorium cannabinum*, August 10th, 1909; Twitchen, August 12th, 1908, and August 21st, 1909. The first two specimens strongly suggested "Clear-wing" moths; of the third I noted that during life the movements of the abdomen and a general fidgettiness were very like a wasp, but that the insect's antennæ remained protracted and motionless.

Physocephala rufipes, F.—A specimen by sweeping, Shaly Hills, July 25th, 1908.

Oncomyia atra, F.—One at Borough, July 29th, another at Twitchen, August 26th, 1909.

Sicus ferrugineus, L.—One at Borough, July 24th, 1906; another, July 29th, 1909; one at Twitchen, August 12th, 1908.

TACHINIDÆ.

Echinomyia grossa, L.—Very scarce; two specimens in my garden, August 22nd, 24th, 1907, a third, August 9th, 1909. This enormous fly in appearance, voice, and manner much resembles *Bombus hortorum*, L., var. *harrisellus*, but I have not yet found the latter in this part of the parish; *E. fera*, L., common, July 24th—September 23rd.

Fabricia ferox, L.—Common, July 18th—September 30th.

Siphona geniculata, Deg.—Twitchen, two specimens, July 24th, 1909, one of them the prey of *Empis livida*, L.

Allophora hemiptera, F.—This very strange looking fly appears to be extremely local; I have met with but six specimens, all taken quite close together upon flowers of *Enanthe* and *Heracleum* at Borough, July 29th—August 2nd, 1909.

Sarcophaga carnaria—Very common.

Dexia rustica, F.—A few at Twitchen, August 4th—25th.

MUSCIDÆ.

Pollenia? vespillo, F.—As prey of *Scatophaga stercoraria*, L., July 19th, 1909.

Graphomyia maculata, Scop.—One at Twitchen on *Angelica*, August 19th, another September 15th, 1909.

Musca domestica, L.—Perhaps because the house is so isolated the Common House-Fly is almost scarce!

Morellia hortorum, Flin.—Abundant, May 28th, July 20th—August 19th.

Mesembrina meridiana, L.—Very abundant, May 15th—October 7th.

Calliphora erythrocephala, Mg.—I have identified but one specimen, Twitchen, August 20th, 1909; *C. vomitoria*, L. Blue-bottles visit my peach houses and viney in immense numbers; those examined have (with one exception) proved to be this species.

Euphoria coracina, F.—Three at Twitchen, July 28th—August 13th, 1909.

Lucilia cæsar, L.—Very abundant; *L. illustris*, two at Twitchen, May 29th, August 21st, 1909.

ANTHOMYIDÆ.

Hyetodesia basalis, Ztt.—Common, July 27th—September 15th; *H. pallida*, F., two at Borough, July 29th, August 2nd, 1909.

Mydæa? impuncta, Flin.—August 15th, 1906.

Hydrotæa irritans, Flin.—This pest, which thoroughly earns its name, swarms at the end of July.

Homalomyia canicularis, L.—In the house, August.

CORDYLURIDÆ.

Scatophaga stercoraria, L.—A few, one of them eating *Pollenia? vespillo*, F. The victim was not dead, only stupefied.

SCIOMYZIDÆ.

Neuroctena anilis, Flin.—Twitchen, September 7th, 1907.

Tetanocera coryleti, Scop.—[Two at Vention, George Ham parish, July 21st, 1909]; *T. punctulata*, Scop., a pair taken *in copulâ* by Mr. T. B. Fletcher at Twitchen, July 21st, 1909.

TEPPEIDÆ.

Acidia lychnidis, F.—Of this rare little fly, with prettily banded wings (represented in the National Collection by a single specimen), I took one on a sycamore leaf at Twitchen, July 28th, 1909.

Tephritis miliaria, Schrk.—One at Borough flying close to the ground amongst herbage, July 29th, 1909.

CHLOROPIDÆ.

[*Chloropisca? glabra*, Mg.—Common by sweeping at Vention, George Ham parish, July 21st, 1909].

Highlands, Putney Heath :

December, 1909.

ON THE BRITISH SPECIES OF *TYCHIUS*, GERMAR.

BY JAMES EDWARDS, F.E.S.

The primary object of this notice is to call attention to a well-ascertained species of the genus *Tychius* which does not appear in the latest Catalogue of British *Coleoptera*. This is *hæmatopus*, Gyll., the *junceus* of Boheman and Schönherr. It belongs to the section in which the paler marking of the elytra, if present at all, is confined to the first interstice in the form of a more or less distinct sutural stripe; the antennæ and legs are entirely pale; the rostrum is not distinctly subulate; the elytral scales are elongate, those arising from the punctures in the striæ not evidently different from the remainder; the anterior femora of the male have no fringe of hair-scales on the under-side; the anterior tibiæ in the same sex are bisinuate on the inner edge; and the greatest width of the thorax in the female is distinctly less than that of the elytra.

There is probably no other genus of British *Coleoptera* in which so much confusion has arisen in consequence of different writers having employed the same name for species which are not identical; and as the difficulties are not entirely removed by the account of the genus which occupies pp. 296–301 of the fifth volume of Col. Brit. Islands, it may be useful to review some of the descriptions there given, in relation to the insects themselves. Of *T. venustus*, F., one reads: "in some specimens the elytra are unicolorous; this is the var. *genistæ*, Boh." But, seeing that *genistæ*, Boh. (from Spain), is found on *Genista tinctoria*, and *venustus*, F., on broom, it may be doubted whether Boheman's name can properly be applied to specimens of *venustus* from broom, merely because they have the elytra unicolorous. Whatever may be the real status of *genistæ*, Boh., it should have the scaling of the elytra unicolorous whitish-grey, and the apex of the rostrum, the antennæ, and the tibiæ rust-red. I have not met with any record of a *Tychius* from *Genista tinctoria* in Britain. *T. polylineatus*, Germ.: I am indebted to Mr. Donisthorpe for the opportunity to examine a female specimen of this species taken by him at Ditchling, Sussex, at roots of grass on September 5th, 1909; it resembles *T. schweideri* in the conspicuous striping of the elytra, and *T. lineatulus* in the single white thoracic line, but differs markedly in form from either. *T. meliloti*, Steph.: all the specimens of this species which I have seen have the elytral striæ distinct; fig. 13 on Plate 168, of which, by the courtesy of Dr. Fowler, I have seen the original, represents *T. squamulatus*, Gyll., and not *T. meliloti*, Steph. *T. lineatulus*, Steph., is well characterized in the text, and the figure 12 on Plate 168

is recognisable, though the pale suture is not sufficiently emphasized in my copy. This species is associated with *Trifolium pratense*, on which plant I occasionally find it at Colesborne. In his treatment of *T. junceus*, Reiche, and *T. tomentosus*, Herbst, Fowler has evidently been misled through placing undue reliance on insects named by Dr. Power. It has been my privilege to see specimens representing the ideas of the former with regard to these two species, and if it be borne in mind that *tomentosus*, Fowler, = *meliloti*, Steph., and *junceus*, Fowler, = *tomentosus*, Herbst (Fowler's description of *junceus*, *t. c.*, p. 300, notwithstanding), it becomes easy to understand the statement that *tomentosus*, Herbst, is "very like" *junceus*, Reiche. The European Catalogue, 1906, has *canescens*, Marsh., as a synonym of *junceus*, Reiche; but Marsham's description, which is that of an insect with three pale stripes on the thorax and a black suture, does not support any such conclusion. Possibly this error was derived from Waterhouse's Catalogue which has "*canescens*, Marsh. ?" as a synonym of *junceus*.

The characters employed in the following Table are those which I have found most useful in distinguishing our species of this interesting, if somewhat troublesome, genus:—

1. (2). Elytra with the suture and two large spots on each, one at the shoulder and one behind the middle, covered with white scales*quinquepunctatus*, L.
2. (1). Elytra without a white humeral spot.
3. (10). Elytra with some of the interstices, other than the first, paler than the rest.
4. (7). Sides of thorax with a pale stripe.
5. (6). Greatest width of the thorax rather more than half that of the elytra*venustus*, F.
6. (5). Greatest width of the thorax sub-equal to that of the elytra...
schneideri, Herbst.
7. (4). Sides of thorax without a pale stripe.
8. (9). Upper-side brownish-grey, the paler colour of the alternate interstices, especially the 5th and 7th, very conspicuous; sutural stripe yellowish-white by reason that the oblong pure white scales are confined to the inner half of the first interstice, the outer half being covered with yellowish linear ones similar to those on the other interstices; base of elytra distinctly wider than base of thorax, shoulders somewhat rectangular...
polylineatus, Germ.
9. (8). Upper-side blue-grey (plumbeous), the paler colour of the alternate interstices inconspicuous; sutural stripe very white by reason that the oblong pure white scales occupy the whole width of the first interstice; base of elytra but little wider than base of thorax, shoulders rounded off.....*lineatulus*, Steph.
10. (3). Elytra sometimes with the suture whitish, but without any other pale stripe.

11. (12). Elytra with a crust of broad scales which practically, if not absolutely, obscure the course of the striæ; hind femora with a distinct sharp tooth.....*squamulatus*, Gyll.
12. (11). Elytra clothed with elongate scales; hind femora simple.
13. (20). Antennæ entirely pale.
14. (17). Punctures of the elytral striæ with extremely fine, hair-like, scales about half as wide as those on the interstices, the course of the striæ, therefore, more evident. Elytra apparently twice as long as wide, parallel-sided in the basal half. Femora usually dark.
15. (16). Rostrum strongly subulate, especially in the lateral aspect. ♂ with a distinct sharp tooth near the basal third of the inner edge of the front tibiæ*meliloti*, Steph.
16. (15). Rostrum not evidently subulate. ♂ with the anterior tibiæ bisinuate on the inner edge, but without a tooth.....*tomentosus*, Herbst.
17. (14). The scales arising from the punctures in the elytral striæ not evidently different from the remainder, the course of the striæ, therefore, barely indicated. Elytra appearing less than twice as long as wide.
18. (19). Scales of the elytral interstices elongate, but nearly twice as wide as in *junceus*, the surface, therefore, more closely covered. ♂: anterior femora simple, anterior tibiæ curved, the inner edge bisinuate. ♀: greatest width of the thorax distinctly less than that of the elytra. Length, 2-2½ mm.*hæmatopus*, Gyll.
19. (18). Scales of the elytral interstices finer and more hair-like than in *hæmatopus*, the surface, therefore, less closely covered. ♂: anterior femora with a fringe of hair-scales on the under-side, from the base nearly to the apex, anterior tibiæ strongly curved, the inner edge excavate in the apical two-thirds. ♀: greatest width of the transversely sub-orbicular thorax very nearly equal to that of the elytra.....*junceus*, Reiche.
20. (13). Antennæ blackish, with the scape and one or two joints of the funiculus pale. Femora black. Anterior tibiæ in the ♂ with a distinct tooth near the middle of the inner edge.
21. (22). Tibiæ rust-red, black at the base. Rostrum entirely black. In size, form, and general appearance extremely like *Miccotrogus picirostris*.....*tibialis*, Boh.
22. (21). Tibiæ entirely rust-red. About half the bulk of medium-sized specimens of *M. picirostris**pusillus*, Germ. (*pygmæus*, Bris.).

The above sequence of our species aims at a better expression of their affinities than that at present in use; the obvious relationship of *meliloti* and *tomentosus* becomes much obscured if we place *lineatulus* and *junceus* between them, and the latter belong to two different sections of the genus. I have retained Gyllenhal's name *squamulatus* for our insect, notwithstanding that *flavicollis*, Steph., is used for it in the European Catalogue, 1906; it is clearly *kirbii* of G. R. Waterhouse

(Proc. Ent. Soc. Lond., 1862, p. 79), and, according to him, the *flavicollis* of Walton in the British Museum collection, but not of Kirby or Stephens; moreover, there seems to be nothing in the latter's description of *flavicollis* in the "Manual" which would make it apply exclusively to the insect under consideration. With regard to *junceus*, Reiche, and *hæmatopus*, Gyll., it must not be supposed that because the most convenient index-character for separating these two species lies in the presence or absence of a sexual distinction in the males there is any lack of other distinctive features; on the contrary, few persons with specimens of each before them would think of combining the two species; but of these additional distinctions (though obvious enough in the insects) no adequate idea has hitherto been conveyed by description, and it is unlikely that the writer would succeed where others have failed. Still, one might say in general terms that *junceus*, Reiche, is a little smaller, broader in proportion to its length, and less sharply pointed at either end of the body than *hæmatopus*, Gyll. The latter, of which my determination has been confirmed by Dr. Everts, was distributed several years ago by Mr. Bennett as *squamulatus* and thus found its way into my collection. Mr. Bennett's specimens were captured near Hastings and I believe that the species will prove to be common in south-eastern England. I have submitted a male of *junceus*, Reiche, taken by myself at Colesborne, to Dr. Fowler and Mr. Champion, who both concur in my determination.

Colesborne, Cheltenham :

March 4th, 1910.

ON *HYPOTHENEMUS ERUDITUS*, WESTWOOD.

BY E. A. NEWBERY.

In January, 1834, Professor Westwood received from his friend Mr. Lumley the cover of an old book, which had been riddled by a tiny Scolytid beetle, then unknown to science. He published an account of the circumstance at the time, accompanied with a figure (Trans. Ent. Soc. Lond., i, 34, pl. 7, fig. 1), giving the name *Hypothenemus eruditus* to the insect.

The new genus, *Hypothenemus*, was both described and figured by Westwood as having a three-jointed funiculus to the antennæ. A careful examination will convince anyone that this is an error. Viewed from the upper-side the antennæ is thus formed:—

First joint (scape) elongate. Funiculus with four joints, of which the first

is cup-shaped, broadest at the apex and rather broader than the scape, very little longer than broad; the three following joints very minute, 2 rather transverse, 3 and 4 increasing in width and decreasing in length, the 4th being a flat plate adpressed to the club. The club is large, flattened, and 4-jointed, with the sutures curved on the upper-side, but nearly straight beneath.

It has been suggested that this insect is identical with *Stephanoderes* (*Cryphalus*) *aspericollis*, Woll. (Cat. Canarian Coleopt., p. 256, 1864). This is erroneous. I have two of Wollaston's specimens, from Gomera, now lying before me; they have funiculus of the antennæ distinctly 5-jointed, besides other minor differences.

Professor Westwood says (*loc. cit.*): "Mr. Lumley does not know from what quarter he received the book. . . . Entomologists must therefore use their own discretion as to its introduction into the British lists."

Mr. O. E. Janson has found the insect in the so-called "Brazil nut" of commerce, and also in some numbers in the cover of a book from Java. I have examined several of this last brood. More recently Dr. Sharp has bred it from the cover of a book from Singapore. Although it has been retained in the British list, it seems to be exclusively an exotic insect, which never appears to have dispersed from the usually abnormal pabulum in which it was originally imported.

In the last (1906) European Catalogue *Hypothenemus*—of which *Stephanoderes*, Eichh., is considered a synonym—is given as a subgenus of *Cryphalus*, and includes seven somewhat heterogeneous species, five of which are marked as introduced by ships, in grain, &c.

13, Oppidan's Road, N.W.:

February 14th, 1910.

[Mr. W. F. H. Blandford, who has recorded *H. cruditus* from Mexico, Panama, the Antilles, &c. [Biol. Centr.-Am., Coleopt. iv, 6, pp. 226, 229, 230 (1904)], states that he has found four joints in the funiculus (by mounting the antenna in balsam) in a specimen from Nevis.—G. C. C.].

NOTES ON *ACROBASIS TUMIDANA*, S. V.

(*VERRUCELLA*, HB., = *RUBROTIBIELLA*, F. R.)

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

In Ent. Mo. Mag., ser. 2, xiv, 164-166 (1903), the late Mr. C. G. Barrett stated that he had been forced to the conclusion that two closely-allied species of *Acrobasis* had, for many years, been

confused together. These he there separated under the names "*verrucella*, Hüb.," and "*rubrotibiella*, F.R.," giving detailed descriptions of both, pointing out the principal distinctions that he found between them, and stating that, although the former had been taken in some numbers at Forest Hill, near London, the only British example of the latter known to him was one in his own collection, captured near Portsmouth by Mr. Monereaff. My friend adhered to this conclusion in Lep. Brit. Isl., x, 10-13 (1904). In Ent. Mo. Mag., ser. 2, xv, 255 (1904), I gave the Isle of Wight and South Devon as additional localities for the species which, as it appeared to me, Barrett had differentiated as the true *verrucella*, and, erroneously assuming that an unidentified individual, found in a British collection and transferred to my own, represented the insect to which he assigned the name *rubrotibiella*, because it agreed with his description in certain important details, I referred to it as the only example of the latter that had come under my notice.

At the dispersal of Mr. Barrett's *Phycitidæ* in 1906, his British series of *A. verrucella* and *rubrotibiella*, as finally arranged and labelled by him, passed into my possession, the former being represented by three specimens from Forest Hill, and the latter by the solitary Portsmouth individual. This last proved to be totally distinct from my supposed example of *rubrotibiella*, which, with the kind assistance of Sir George F. Hampson, has since been identified as referable to *Trachonitis cristella*, Hb., a Phycid with rather a wide distribution on the Continent, but hardly likely to occur in Britain. Perhaps, therefore, the specimen in question, which has certainly been re-pinned, is of Continental origin.

Dr. T. A. Chapman, having kindly added to my collection the two German exponents of *rubrotibiella* referred to by Barrett (to whom they formerly belonged) in Ent. Mo. Mag., ser. 2, xiv, 166, I have now before me all the individuals of both this and *verrucella* upon which Barrett's notes were based, with the exception of those that he borrowed from McLachlan. And having seen McLachlan's own series during his life-time, and having more recently examined, in the national British collection, three individuals standing as "*Acrobasis tumidana*, Schiff. = *rubrotibiella*, F.R.," two of which are labelled as taken at Forest Hill by McLachlan, while the third is indicated as also captured there by him, I have no hesitation in saying that McLachlan's Forest Hill specimens are identical with those, from the same locality, which stood in the Barrett collection, and are now before me. A careful comparison of Barrett's notes in Ent. Mo. Mag., ser. 2,

xiv, 164-166, with the material upon which they were based, has, to my great regret, disclosed some marked discrepancies between them. Our friend's principal reasons for separating these supposed species were (1) that *verrucella*, Hb., has an elevation of red scales just outside, but not upon, the thick black first line, whereas *rubrotibiella*, F.R., has no corresponding tuft of raised scales, either red (p. 165), or black (p. 166); (2) that *rubrotibiella*, F.R., has the fore-wing decidedly broader from the base, and much more squared behind, than its ally, the hind margin being almost perpendicular, and the anal angle conspicuously filled out. But his specimens show (1) that in both his *verrucella* and his *rubrotibiella* the dark first line, which he obviously thinks is composed of flat scales in both insects, is *formed of* raised scales, and that a still more conspicuous bar of raised, and remarkably long, rufous or red-brown scales touches its outer edge; (2) that the differences in the shape of the fore-wings are not constant. Again, my friend failed to notice that whereas, in Hübner's original and all-important figure of *verrucella*, the first line is markedly oblique, he himself describes *verrucella*, Hb., as having this line "nearly straight and erect," his "erect" being evidently directly opposed to "oblique!"

An examination of Barrett's scanty material together with a large number of British individuals, standing in my own and other cabinets as "*rubrotibiella*," "*verrucella*," "*tumidana*," &c., and of the lengthy series of "*Acrobasis tumidana*, Schiff.," in our national European collection, which includes Continental specimens from the Frey, Ragonot, and Zeller collections, has led me to the conclusion that Barrett found "distinctions" where there are no reliable "differences," and that his two supposed species are merely forms of one and the same insect. The late M. Ragonot, who made a special study of the *Phycitidæ* of the world, was well acquainted with these and other forms of this *Acrobasis* (which, as he pointed out, in Ent. Mo. Mag., xxii, 27-28 [1885], should bear the name *tumidana*, S.V., this having priority over both *verrucella*, Hb., and *rubrotibiella*, F.R.), for he expressly says (*op. cit.*, p. 28),—" . . . *rubrotibiella*, F.R., but the latter species varies very much, and I have specimens which agree very well with fig. 73 of Hübner." Now Hübner named his fig. 73 "*verrucella*," and it is precisely these two somewhat different-looking forms of *tumidana*, S.V., viz., *verrucella*, Hb., and *rubrotibiella*, F.R., that Barrett convinced himself were specifically distinct. A long series of *A. tumidana*, S.V., whether British or Continental, shows a wide range of variation in size, colour, and shape of wing, but the

extremes are connected by all possible intermediate forms, nor does sex appear to be responsible for any of the differences in question. It may be as well to mention (1) that the range in size is from 20 mm. to 24 mm.; (2) that some individuals are much lighter and more ferruginous than others; (3) that every gradation occurs in shape between the unusually broad fore-wing, much squared behind, and with the anal angle conspicuously filled out, and the decidedly narrower, and much less truncate, one; (4) that the first line is always more or less straight, though somewhat bent inwards on the costa, but is, at the same time, always more or less obliquely placed, individuals, however, differing noticeably in this respect; (5) that the first line and the one just outside it vary greatly in breadth and character, and, to some extent, in colour. With regard to this last point, the majority of specimens have a black first line followed immediately by a red line, both lines consisting of raised scales, of which the red ones are the longer and overtop the others. But every intermediate form occurs between the one extreme, in which the black line is exceptionally broad and includes all the raised scales, there being no red ones at all, but only some flat dark ones outside it, and the other extreme, in which the black line is reduced almost to the vanishing point, and the red line assumes abnormal breadth and includes nearly all the raised scales.

A. tumidana, S.V., must not be confused with its close ally *A. zelleri*, Rag., which has no transverse bar of raised scales on the fore-wing, and is generally known in Britain under its synonym *tumidella*, Zk. Barrett, in Ent. Mo. Mag., ser. 2, xiv, 165, advocated the retention of the latter appellation for it, failing to see the necessity for Ragonot's judicious action (*loc. cit.*) in re-naming it *zelleri*. In colour, size, and shape of wing, *zelleri* varies to fully the same extent as *tumidana*.

In Ent. Mo. Mag., ser. 2, xiv, 164-166, Barrett makes no reference to the larva of either of his two reputed species, but in Lep. Brit. Isl., x, 11, he says of *A. verrucella*, "Larva and pupa not certainly known," while, on page 13, he remarks, with regard to *A. rubrotibiella*, "I think that we have no definite knowledge of the larva or pupa." No reliance, however, should be placed on these statements, for the larvæ *A. tumidana*, S.V. (= *verrucella*, Hb. = *rubrotibiella*, F.R.), have been recorded by Kaltenbach [Pflanz. Klas. Insek., 657, no. 315 (1874)] as living together in a web spun between oak-leaves, in the beginning of June, and various other authors, e.g., Sorhagen, Ragonot, &c., give oak as the food-plant. In Ent. Mo.

Mag., ser. 2, xxii, 28 (1885), the last-named Lepidopterist gives a description that is intended to be equally applicable to the larvæ of both *tumidana* and *zelleri*, which are very similar, and then proceeds to point out the differences between them. He tells us that the larva of the former has the markings dark and very distinct, and frequently shows a strong reddish tinge, whereas, in that of the latter, the longitudinal lines are nearly obliterated anteriorly, and the ground-colour is also yellower and greener.

The imagines appear in July and August, and, as regards the British Isles, records exist of their having been captured in Devon, Dorset, Hampshire (including the Isle of Wight), Kent, Suffolk, Surrey (?),* and Sussex. In spite of this wide distribution in the southern half of England, *tumidana* is apparently scarce, as a rule, although it was formerly taken in some numbers in the neighbourhood of Forest Hill. It is partial to "sugar," and, so far as I am aware, has never been met with in this country except in the perfect state.

Norden, Corfe Castle:

January 28th, 1910.

A NEW FLEA FROM CALIFORNIA.

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

PLATE III.

CERATOPHYLLUS FRANCISCANUS, *spec. nov.*

Closely allied to *C. ignotus*, Baker (1895), of which it is possibly the Western form. The two insects are readily distinguished from each other in both sexes by the modified segments of the abdomen, which we figure. We must, however, note that these sclerites and their bristles are not quite constant.

Male.—The process P of the clasper is much shorter in *franciscanus* (fig. 1) than in *ignotus* (fig. 4) and more triangular. The moveable process P is also shorter in the former species than in the latter. The eighth sternite is somewhat shorter and proximally broader in *franciscanus* (fig. 2) than in *ignotus* (fig. 5) and its apex is differently shaped in the two insects. Whereas this sclerite bears on each side one very strong bristle in *ignotus* (fig. 5) besides some smaller ones, there are in *franciscanus* two bristles instead, which, moreover, are much thinner and shorter than in *ignotus*.

* In Ent. Mo. Mag., ser. 2, xiv, 164, and again in Lep. Brit. Isl., x, 11, Barrett says that Forest Hill is situated on the borders of Surrey and Kent, from which one concludes that he was uncertain which of these two counties was the actual scene of the captures that he records. I am doubtful, therefore, whether *A. tumidana* has occurred in Surrey, but it has certainly been taken in Kent, for although Meyrick's entry of "Kent" in H.B. Br. Lep., 382 (1895), is probably based on the Forest Hill specimens, Mr. George W. Bird's collection contains four examples that were secured by him, at sugar, in Darenth Wood, August 17th—21st, 1875.—E.R.B.

Female.—The seventh sternite is much narrower at the apex in *franciscanus* (fig. 3) than in *ignotus*. Both insects vary rather much in the number of bristles on the thorax and abdomen, but *ignotus* has generally more bristles than *franciscanus*. On the first abdominal sternite, for instance, *ignotus* has several hairs at the ventral margin between the postmedian ventral bristle and the base, while *franciscanus* is usually devoid of any hairs in that place. The ninth abdominal tergite in *ignotus* has more than 25 bristles on the lateral ventral portion and only about 20 in *franciscanus*.

Hab.: San Francisco, California, off *Thomomys bottai*; a small series of both sexes.

Tring Park, Tring:

February, 1910.

Galerucella nymphææ and *sagittariæ*.—An unfortunate confusion exists about these insects, viz., first as to their characters and distinctness, and next as to their names. We have many of us recognised two species in this country, and have called them *nymphææ*, L., and *sagittariæ*, Gyll. Doubts have, however, been expressed as to the distinctness of the two forms by Fowler (Brit. Col. iv, p. 329) and others, and Bedel in his "Faune Col. Bass. Seine," v, p. 278, treats *sagittariæ* as merely a variety of *nymphææ*.

I think there are certainly two very variable, but distinct species: *nymphææ* is broader, has a markedly larger head, and the coxæ, more especially the hind pair, are more widely separated. The variation of the two forms is different, and *nymphææ* lives only on water-lilies, while *sagittariæ* eats a variety of plants, but apparently excludes water-lilies from its diet. They are both very variable, and it is necessary to bear this in mind in considering the question of their names. Gyllenhal describes two species under the names I have given at the head of this paper, and there is no reasonable doubt as to his intention of referring to our two forms, though he did not fully appreciate the variation and the true distinguishing characters, and the same remark applies to C. J. Thomson, who treated of a similar fauna in 1866 (Skand. Col. viii, p. 157). Weise, in 1888, also adopted two species with the same names (Ins. Deutschl. vi, p. 624); he, however, relied largely on the acuminate apices of the elytra of *nymphææ* for distinguishing them, and he gives a note expressing a little, but not much, doubt about the species Gyllenhal referred to. Weise was wrong in attaching much importance to the acuminations of the elytral tips, as this is a highly variable character, and is sometimes nearly as strongly marked in *sagittariæ* as it is in *nymphææ*; the two elytra, moreover, are occasionally differently shaped in the same individual.

Bedel, in the work already referred to, abandoned the species *sagittariæ* as a mere variety, but stated, in giving the synonymy, that Weise's *sagittariæ* was not the *sagittariæ* of Gyllenhal. He gives no reason, but I presume he was misled by the note of hesitation given out by Weise and already mentioned above.

In the Cat. Col. Europæ, published in 1896—the authors of which appear to like as many changes of names as possible—the two species are maintained as distinct, in opposition to Bedel, but the doubt as to synonymy has in this work induced an entire change of name: *sagittariæ*, Gyll., is placed as a variety of *nymphææ*, but Weise's *sagittariæ* is considered distinct and the name *grisescens*, Joannis, is adopted for it. According to this our two species are to be called *nymphææ* and *grisescens*. This seems to me to be quite a mistake, and I shall continue to use the old names; and there is no reasonable doubt that I shall be correct in doing so. Joannis described his *G. grisescens* in 1865 (Abeille, iii, p. 98); he adopts both *nymphææ* and *sagittariæ* as distinct, and describes *grisescens* as a third species, founded on a single specimen from Sicily—and separated from *sagittariæ* by the interposition of four other species. The description does not apply to *sagittariæ*; still it is possible that it may refer to a variety thereof.

I have been induced to investigate this matter by some very remarkable specimens that I believe are a form of *G. sagittariæ*, recently captured by Mr. Anderson Fergusson near Glasgow. There is only one record of the capture of *G. sagittariæ* in Scotland, and that is my own, as in September and October 1867, I captured a series at Dabton Loch, Thornhill. The specimens are very dwarfed, but I consider them to be *sagittariæ*, as a careful examination has revealed no satisfactory specific distinction. Mr. Fergusson's series agrees with the Thornhill examples except in colour, and this is somewhat variable; but some of his examples are entirely black.

This remarkable form may be thus characterised:—

G. SAGITTARIÆ, VAR. B.

Minor ($4\frac{1}{2}$ —5 mm. long.), nigra, elytrorum epipleuris pedibusque plus minus flavescentibus.—D. SHARP, Lawnside, Brockenhurst: February 28th, 1910.

Cathormiocerus maritimus in Cornwall.—I owe an apology to Mr. Butler for being ignorant of the fact that he has already recorded the occurrence of a specimen of this species in Cornwall (Ent. Mo. Mag., Feb. 1909, p. 39), and I should like to explain my mistake, which arises from the fact that until now I had not looked through that particular number of the Magazine. During February and March last I was away at Cambridge, and the Magazine was sent to Brockenhurst as usual, and when I returned I looked at the March No., but passed over the February one, probably under the impression that I had seen it before. If *C. maritimus* comes to us from N.W. France, it is curious that both of the captures in Cornwall should be in the north of the county.—ID: March 4th, 1910.

Coleoptera in South Cumberland.—The field work of resident Coleopterists in Cumberland has hitherto been largely confined to the middle of the county. The extreme ends, north and south, being rather inaccessible, have been neglected. With the intention of adding something to local knowledge, I spent the early part of last June at Seaseale, about ten miles south of St. Bees' Head, a locality I found in every way an ideal one for a summer holiday. Unfortu-

nately the weather was too cold for beetles to be really as abundant as one expects in June, but still, by persistent work, I managed to take some 300 species, a useful contribution from an unknown locality to the county list. Of course many were common forms, but a few were new finds for Cumberland, viz. :—

Cicindela hybrida, L., common on sunny days on the sandhills. I was much interested to find this well-known Lancashire and Cheshire insect in Cumberland. On dull days odd specimens were to be seen creeping on the sand. *Harpalus anxius*, Duft., one specimen; *H. neglectus*, Dej., fairly common on the sandhills. *Cillenus lateralis*, Sam., one specimen on the beach. *Tachinus flavipes*, F., in sheep-dung on the sandhills. *Meligethes rufipes*, Gyll., one specimen (*M. lumbaris*, Sturm, is the common species in Cumberland). *Saprinus quadristriatus*, Hoffm., not uncommon on the sandhills. *Corymbites holosericeus*, F., one specimen. *Cryptocephalus aureolus*, Suffr., common in flowers of buttercup near the golf-links. *Notoxus monoceros*, L., common at roots of marram grass. *Anthicus humilis*, Germ., several under dry bones on the beach. *Hypera fasciculata*, Herbst, two specimens on the sandhills.

Among other species taken may be mentioned, several hitherto accounted rare in the county, viz. :—*Amara lucida*, Duft., *Demetrius atricapillus*, L., *Omalium laeviusculum*, Gyll., *Corticaria crenulata*, Gyll., *Eumicrus tarsatus*, Müll., *Aphodius scybalarius*, F., *Microzoum tibiale*, F., and *Phaleria cadaverina*, F.—F. H. DAY, 26, Currock Terrace, Carlisle: February 17th, 1910.

Dytiscus marginalis, L., on the wing in February.—I was much astonished to find a female example of this species in a small bath, placed to catch the overflow from a rain-water tank, at the back of my house, on February 18th last. The weather was rough and stormy at the time, and the insect must have flown to the spot, perhaps attracted to light, or carried there by the wind? I have occasionally captured a *Dytiscus* on the wing in summer, when the ponds were drying up, but have never before seen one on the move in winter.—G. C. CHAMPION, Horsell, Woking: March 5th, 1910.

Coleoptera at Bude, N. Cornwall.—As the Cornish records are scanty, it may be worth while noting the following species which occurred when working on the marshes at BUDE during two forenoons of the past winter, 27th December and 5th January: *Anchomenus atratus*, *A. viduus*, *Deronectes 12-pustulatus*, *Hydroporus discretus**, *Gyrinus elongatus*, *G. urinator**, *Actobius signaticornis*, *Othius laeviusculus*, *Pæderus fuscipes*, *Stenus crassus*, *Bythinus curtisi*, and *Ephistemus globosus**, mostly singly.—PHILIP DE LA GARDE, Manor House, Shaldon, Teignmouth: March 9th, 1910.

Holoparamesus caularum, Aubé, and *Agleus brunneus*, Gyll., near Oxford.—On March 14th I met with the first-named interesting little beetle in a haystack (in process of removal) at Water Eaton, Oxon. An hour's work on a space not exceeding a foot square produced as many specimens as I cared

* First record for the County.

to bottle, as, next to *Typhaea fumata*, it was the commonest insect in the *débris*, though by no means easy to detect without close scrutiny. *Aglenus brunneus*, Gyll., has since been taken freely by Messrs. W. Holland and J. Collins, in another haystack not far off.—JAMES J. WALKER, Oxford: *March 19th*, 1910.

An early appearance of Celastrina argiolus.—My friend, Mr. J. J. Pellatt, of Sheerness, writes me that on March 6th he captured a freshly emerged ♂ *Celastrina argiolus* in the Isle of Sheppey. In the exhaustive list of dates of appearance of this insect in Mr. Tutt's "British Butterflies" (Vol. II, pp. 461-7), I can find only two notices of its having been observed earlier in the season, viz., at Dover, February 15th, 1898 (Webb), and at Worcester, February 20th, 1903 (Peed), and its occurrence in the first week in March, especially in so bleak and exposed a locality as the Isle of Sheppey, is I think worth recording.—JD: *March 19th*, 1910.

Hyponomeuta irrorellus, Hübn., in Lancashire: a correction.—Referring to the record of this insect at Silverdale, in the report of the November meeting of the Lancashire and Cheshire Entomological Society, my attention having been directed to the fact that the species was only taken in a very restricted area in Surrey, and has not been known to occur for many years; I took an opportunity of comparing the specimens with those in Mr. Capper's collection, and found them to be only the common *H. evonymella*, Sc. (*cognatella*, Hübn.).—WM. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool: *March 14th*, 1910.

Reviews.

A LIST OF THE NEUROPTERA OF IRELAND. By J. J. F. X KING, F.E.S., and J. N. HALBERT. Proceedings of the Royal Irish Academy, Dublin, 1910. Price 1s. 6d.

In 1889 Mr. King published "A Neuropterous Fauna of Ireland," and after twenty-one years, another List by the same author—in conjunction with Mr. Halbert—is most welcome. During the interval, knowledge of the distribution, &c., of these insects in Ireland has been greatly extended, but even yet there appear to be very few workers at the group, and, as the authors tell us, very little indeed has been done by anybody in the south and west of the country. The names of 38 species are given as having been added since the 1889 List, and 9 of them recorded species are deleted, but this does not quite accurately state the advance made, as several of the additions are merely changes in nomenclature, and were formerly represented in the List, by the now deleted names. Still, in so comparatively small an order, and with so few workers, the number of additions is respectable and satisfactory.

The entire number of species recorded for Ireland is 240, as against 384 for Great Britain, and the authors appear to consider that the poverty of the Irish fauna in this group of insects is clearly manifest, notwithstanding that so large an area of the country has been so little, or not at all, investigated. The deficiency is most marked in the Dragon-flies, there being only 23 in Ireland

as against 42 in Great Britain. This seems singular, as there are so many apparently exceptionally suitable localities for these conspicuous insects. The scarcity, too, of the, in England, almost universally abundant and distributed *Panorpa p̄idæ*, is remarkable, the only species recorded being *Panorpa germanica*, and it for only the Cork district. No species of *Raphidia* or *Nothochrysa* has been recorded at all; and the absence of *Chrysopa perla*, so abundant in England almost anywhere, also calls for comment. On the other hand the List includes four species of *Trichoptera* which are as yet unrecorded for Great Britain, viz., *Limnophilus fuscinervis*, *Tinodes maculicornis*, *Apatania fimbriata*, and *Lyte fragilis*. The captures of the very rare *Psectra diptera* at Wexford, and the occurrence commonly of *Chrysopa abbreviata* on the sand-hills at Portmarnock, are most noteworthy.

We heartily congratulate the authors and the Royal Irish Academy on so interesting and valuable a contribution to the literature of the Natural History of Ireland.—G. T. P.

ILLUSTRATIONS OF AFRICAN LYCENIDÆ; being Photographic Representations of the Type Specimens contained in the Imperial Zoological Museum at Berlin. By HAMILTON H. DRUCE, F.L.S., &c. London: Published by H. H. Druce at 43, Circus Road, N.W. 1910.

The author of this exceedingly useful little work has been enabled, by the kindness of the Director, to obtain photographs of the type-specimens in the Imperial Zoological Museum at Berlin, of the species of African *Lycenidæ* described by Herr E. Suffert and Dr. F. Karsch, in "Iris" and other German periodicals of recent date. These photographs, representing about 40 hitherto unfigured species, are reproduced on eight admirable half-tone plates, with brief explanatory letter-press; and these will not fail to be highly appreciated by all students of exotic butterflies, especially by those whose attention is directed to the Family on which Mr. Druce is so well known as one of the leading authorities.

Obituaries.

Basil George Nevinson, M.A., who died on December 27th last, at 3, Tedworth Square, Chelsea, was born at Leicester on November 2nd, 1852; he was educated at Shrewsbury School, from which he proceeded to Exeter College, Oxford, and afterwards became a barrister. He was a member of the Conservative Club, and of the Oxford and Cambridge Musical Club.

Mr. Nevinson was a man of very versatile tastes; he was a great lover of music, and was himself no mean performer on one or two instruments. His house was a veritable museum of objects of art and of curiosities of all kinds; his collection of Chinese robes and Japanese embroideries was one of the best private collections in existence, and he was much interested in bronzes, ivory carvings, and bric-à-brac generally.

With all this he was a very keen Entomologist; he was perhaps most interested in the *Lamellicornia*, especially in the genus *Phanæus*, of which he published a "Revised Synonymic List" in 1892, and had nearly completed a Monograph; his series of the very rare genus *Plusiotis* is almost, if not quite,

unrivalled. His association with Leicester brought him into contact with the Bates family, and he acquired the *Cicindlidæ* and *Rutelidæ* of Mr. F. Bates. Latterly, perhaps, he took more interest in the *Cicindlidæ* than in any other group, and the amalgamation of his own valuable collection with that got together by Mr. Bates, and the purchases which he has since made at great cost, have resulted in producing one of the finest collections of the family at present known.

Mr. Nevinson was elected a Fellow of the Entomological Society in 1889, of the Zoological Society in 1878, and a Member of the Société Entomologique Française in 1871. He was more of a collector than a writer, but there is no doubt that if he had really taken up the study of any group he would have been among the foremost of our Entomologists; as it was, he was always ready to put his collections and knowledge at the disposition of any one who required help, and several of us have to thank him for the loan of many valuable specimens.

His geniality and hospitality made him many friends; of late years he had not been out so much, and therefore is less known to the present generation of Entomologists, but he will be much missed by many.—W. W. F.

George Carter Bignell.—On the 1st of March, barely breathing into the morn of his 84th birthday, Mr. George Carter Bignell, F.E.S., the veteran entomologist of the West of England, passed away at his residence, "The Ferns," Saltash.

Mr. Bignell was born at Exeter, in 1826, and made his first start in life at the early age of twelve years. In 1842 he joined the Royal Marines at Stonehouse, and five years later he was on board the "Superb" off the coasts of Spain and Portugal during the eventful times of the Revolution. This period of active service was followed by a "home billet," at the Millbay Barracks, Plymouth, which lasted for seven years. Here he had the opportunity to seriously prosecute his taste for natural history, and he did not fail to avail himself of it. The year 1864 saw Mr. Bignell freed from the "service" and settled at Stonehouse as Registrar of Births and Deaths and Poor Law Officer. This position gave him much spare time, which he largely devoted to the rearing of Lepidopterous larvæ. Somewhere, too, about this period, his latent talent for water-colour painting awakened. He made up his mind that it was to be done, and forthwith commenced to draw and paint from nature; crudely at first, but success eventually came and he attained a high reputation for his scrupulously life-like figures. His own copy of "Newman's British Moths," with coloured drawings of numbers of the larvæ, is a beautiful example of his work.

We next find Mr. Bignell rearing larvæ solely for the sake of their parasitic flies; and, later still, studying the parasites and hyper-parasites of the Aphides, &c. In this branch of Entomology he won rank in the forefront of the science. He discovered no fewer than 51 of these parasites new to Britain, of which 19 were new to science, and was honoured by having the two species, *Mesoleius bignellii* and *Apanteles bignellii* named after him. His collection of Aphis-parasites and hyper-parasites is unique, and is now in the Natural History Museum at South Kensington; those in all other orders have been acquired by the Plymouth Borough Museum.

To those who knew Mr. Bignell it is not surprising that he should have been so successful in his varied undertakings, for he was a man possessed of strong will-power, combined with ingenuity and enthusiasm, and, above all, he had the ability to plod. To him failures were but stimuli to further exertion and experiment. His collecting and breeding apparatus bore evidence to his inventive power, and was, for the most part, either original in scheme, or distinct in some clever departure from the ordinary, and there was but little of all his *impedimenta belli* that had not been made by himself. The well-known "Bignell beating tray" is a lasting memento of his skill in adaptation. In addition to special knowledge in several orders of Insects, Mr. Bignell was a good all-round field naturalist, and very few questions would arise during a country ramble to which he could not afford illuminating answers. He had, too, a rich fund of humour, and delighted to jocularly entangle a questioner. To his colleagues, his best information was always available.

Amongst his contributions to the literature of Entomology may be mentioned "A List of the *Geometrina* of Plymouth" in the Transactions of the Plymouth Institution; "The *Ichneumonidæ* and *Braconidæ* of South Devon" in the Trans. Devonshire Association; the Lists of the Parasites bred from the larvæ and pupæ of species included in the volumes of Buckler's "Larvæ," published by the Ray Society; and, in the Victoria History of Devon, Vol. I, he was responsible for the lists of, and articles on, the *Orthoptera*, the whole of the *Hymenoptera*, the *Hemiptera* and the *Aphidæ*. He was a frequent lecturer at the Athenæum, and occupied the Presidential Chair of the Plymouth Institution in 1893-4.

In his married life he was fortunate in possessing a partner who extended much practical sympathy to his entomological work, and who was always rejoiced at his successes. In the trip to Corsica which they made together in 1899, to spend some months with the late Rev. T. A. Marshall, it was Mrs. Bignell who discovered the unique Anthribid which is now the type of a new genus and species, *Spathorrhampus corsicus*.

Mr. Bignell leaves a widow and three daughters, two of whom are married. His only son was drowned on the high seas many years ago.—J. H. K.

George Willis Kirkaldy was born in London and educated at the City of London School. His death, following a surgical operation in San Francisco, took place on February 2nd, 1910, at the early age of thirty-six. As a school-boy he was interested in Natural History, and more especially in the collection and study of fossils, as well as of Crustacea and aquatic insects. Subsequently he became a special student of the *Hemiptera*, the aquatic species being his particular favourites; in connection with these he specially investigated the structural characters of the stridulatory organs of the *Corixidæ*. In 1903 he joined the writer in Honolulu, to become one of the Assistant Entomologists under the Board of Agriculture and Forestry of the Territory of Hawaii. Shortly after his arrival he had the misfortune to sustain a bad fracture of the leg in a fall from a horse. Several painful operations that he underwent led to no satisfactory result, and the final one was in fact shortly followed by his

death. In 1904, with the other Territorial Entomologists, he left the employ of the Government to join the staff of the Experiment Station of the Hawaiian Sugar Planters' Association. Always a prolific writer, during the years of his residence in the Islands the time at his disposal for systematic work was much greater than ever before, and extensive publications on the *Hemiptera* resulted. The large amount of material collected by the field-workers of the Experiment Station in Australia, Fiji, China, the Malay Islands, and in parts of North America, furnished him with an endless source of work. The results have been largely published in the Bulletins of the above-named Experiment Station and in the Proceedings of the Linnean Society of New South Wales. In these and other papers may be found not only descriptions of hosts of new species and genera, but valuable contributions to the general classification and to the life-histories of the *Hemiptera*. A contribution published in 1902, and a supplementary one now in the press, almost completed the working out of the material of Hawaiian *Hemiptera* for the "Fauna Hawaiensis." In addition to his descriptive work, he prepared various faunistic or other catalogues, and had lately completed the first volume of a proposed complete catalogue of the *Hemiptera* of the world—a work for which he was admirably fitted. A sub-editor of the "Entomologist," President of the Hawaiian Entomological Society, and a member of many other societies, he contributed to the Proceedings of many of these, as well as to a great number of periodicals. A man of strong likes and dislikes, fond of controversy, but genial and with a strong sense of humour, he was always ready to assist his colleagues, even though the task were one that could have possessed little or no interest for him personally. We have no doubt that much of his work will be found to be of a very high order.—R. C. L. P.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: ANNUAL GENERAL MEETING, *Thursday, January 27th, 1910.*—Mr. A. SICH, F.E.S., President, in the Chair.

A satisfactory Balance Sheet was read and adopted as was also the Report of the Council. The President declared the following gentlemen duly elected as Officers and Council for the Session 1910–11:—*President*, W. J. Kaye, F.E.S. *Vice-Presidents*, A. Sich, F.E.S., and A. E. Tonge, F.E.S. *Treasurer*, T. W. Hall, F.E.S. *Librarian*, A. W. Dods. *Curator*, W. West (Greenwich). *Hon. Secretaries*, Stanley Edwards, F.L.S., F.Z.S., F.E.S. (Corresponding), and Henry J. Turner, F.E.S. (Report). *Council*, R. Adkin, F.E.S., S. R. Ashby, F.E.S., E. C. Joy, F.E.S., H. Main, F.E.S., A. M. Montgomery, F.E.S., R. A. R. Priske, F.E.S., and B. H. Smith.

A letter was read from Mr. Kaye, thanking the Society for the honor done him, and explaining his absence for the next few months as due to his having undertaken an expedition to Southern Brazil in search of *Lepidoptera* and evidences for or against mimetic resemblance. The President then read his address and hearty votes of thanks were passed to the Officers and Council.

ORDINARY MEETING: Mr. A. Sich, F.E.S., Vice-President, in the Chair.

Mr. R. D. Morford, of Upper Kennington Lane, was elected a Member.

Mr. Tonge and Mr. Colthrup exhibited long series of *Hybernia aurantiaria*, *H. defoliaria*, and *Himera pennaria*, taken in the New Forest, November 17th-19th, 1909, where they were abundant in spite of the weather being clear and frosty. Mr. Colthrup, a *Gonepteryx rhamni*, found at the same time hibernating among holly. Mr. Turner, a short series of the beautiful *Limonia (Melitæa) taylora*, and specimens of *Basilarchia lorquini*, from Victoria, Vancouver Island. A short discussion took place on the hibernating habits of *G. rhamni* and *Orrhodia rubiginea*.

Thursday, February 10th, 1910.—The Vice-President in the Chair.

The deaths were announced of two Members, Mr. Kirkaldy and Mr. McArthur.

Mr. H. J. Turner, a series of the brilliant Lycaenid *Danis taygetes*, from Brisbane, obtained by Dr. Lucas, an old Member of the Society. Mr. J. P. Barrett, a box of conspicuous insects of various orders from near Messina, Sicily, including an immature Mantis and a *Pieris brassicæ* it had captured on a flower head. Mr. Coote and Mr. Barnett, *Hybernia defoliaria*, which species was said to have been very abundant at West Wickham, from November to mid January. Mr. Moore, a box of various species of *Diptera*, mainly from Africa, which were instrumental in spreading disease. Mr. West (Ashstead), a specimen of the "fish" insect, *Lepisma saccharina*, which had existed two months without food. A number of Members brought microscopes and slides, and the rest of the evening was spent as a microscopical one.

Thursday, February 24th, 1910.—The Vice-President in the Chair.

Mr. G. S. Robertson, of Dulwich, was elected a Member.

Dr. Chapman exhibited a bred living specimen of *Callophrys avis* from S. France, and pointed out its divergence from the closely related *C. rubi*. Mr. Barnett, a long series of *Hybernia aurantiaria* from West Wickham Wood, where it was abundant in November of last year. Capt. Cardew, gynandromorphs of *Amorpha populi*, *Agrotis puta*, and *Dryas paphia*, the last named captured in the New Forest. Mr. Russell, a strikingly aberrant form of *Polyommatus icarus* from Reigate, the under-side was striated on the right wings only. Mr. Sperring, *Agrotis agathina* from Chiselhurst, and a smoky example of *Arctia villica*. Mr. Adkin, a bred series of *Peronea permutana* from Sussex, and read notes on its occurrence and characteristics. Mr. Alderson, a large collection of Butterflies taken by him in a six weeks' holiday in and near the Rhone Valley, during May and June of last year; over a hundred species were represented, most of them being in very fine condition. Mr. R. Adkin read a paper, entitled, "The *Lepidoptera* of a London Garden."—H. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, February 2nd, 1910.—

Dr. F. A. DIXEY, M.A., M.D., President, in the Chair.

The President announced that he had nominated as Vice-Presidents for the Session 1910-1911 Professor T. Hudson Beare, B.Sc., F.R.S.E., Mr. G. T. Bethune-Baker, F.Z.S., and Mr. H. Rowland-Brown, M.A.

Mr. Edward Morrell Holmes, of Ruthven, Sevenoaks; Mr. E. G. Josephs,

of Lincoln College, Oxford; Mr. Ernest Cooper Joy, of 2, St. Kilda's Road, Stoke Newington, N.; Mr. John W. Ward, of Rusinurbe House, Somerset Road, Coventry; and Mr. Frank C. Willecocks, Entomologist to the Khedivial Agricultural Society of Cairo, Egypt; were elected Fellows of the Society.

Dr. M. Burr gave an account of the forthcoming Entomological Congress to be held at Brussels in August next, and appealed to all Fellows for their support, as well as to the Local Natural History Societies throughout the United Kingdom, and Dr. K. Jordan gave an outline of the programme of papers already arranged to be delivered.

The Secretary having read a letter from the Entomological Society of Russia, inviting the Society to send a delegate to the forthcoming Jubilee Celebration in St. Petersburg, it was resolved unanimously to send a letter of congratulation to the Society in honour of the occasion.

Mr. John Alderson, who was present as a visitor, exhibited the results of six weeks' collecting in the Rhone Valley, Switzerland, in May and June last, representative in all of one hundred and two species of *Rhopalocera*. Mr. E. E. Green, sent for exhibition boxes designed for the convenient storage of butterflies in paper envelopes, together with the original model as made by a local tinsmith in Ceylon. Dr. K. Jordan exhibited two specimens of the new earwig, *Arizenia esau*, lately described by him in Nov. Zool., p. 313, pl. xvi-xviii (1909). The insect was discovered in the breast-pouch of a specimen of the naked bat obtained in Sarawak. Under the microscope were shown the mandible and maxilla of *Arizenia*, together with the mandible of *Hemimerus*. Dr. Malcolm Burr, D.Sc., F.L.S., F.Z.S., communicated a paper, entitled, "A Revision of the *Labiduridae*, a Family of the *Dermaptera*."

The discussion of the affinities of *Agriades thetis* (*bellargus*) and *A. coridon*, adjourned from the December meeting, was resumed by Mr. J. W. Tutt, who exhibited series of the two species, demonstrating in particular the several forms of *A. coridon* as occurring in the Palaearctic region. He pointed out in detail the nearness of the two Agriadid species in the structure of their eggs, larvæ, pupæ, imagines, especially noting in the latter case the similarity in the ♂ genitalia. Observing that it had generally been assumed that closely-allied species had been maintained if not developed by the setting up of some effective boundary in their environment or morphological structure, resulting in isolation, it was remarkable that no such boundaries could be found in these species. Not only was their environment similar, their morphological structure almost identical, but their actual range was practically the same.

Exhibitions were also made by Mr. G. T. Bethune-Baker of varieties of *A. coridon* and *bellargus* respectively from Spain, Greece, Asia Minor, and Persia; by the Rev. George Wheeler of examples from Italy and Central Europe, and by Miss M. E. Fountaine of *coridon*, var. *olympica*, taken by herself at Anasia, Asia Minor, and of *thetis*, var. *polonus*, from the Lebanon.

At the end of Mr. Tutt's remarks, the discussion was continued by Mr. A. L. Rayward, Mr. Hamilton H. Druce, the Rev. G. Wheeler, Dr. T. A. Chapman, Mr. W. G. Sheldon, Miss Fountaine, and other Fellows, the President paying a special tribute to Mr. Tutt's lucid explanation and diagnosis of the various forms of the two closely-allied butterflies.—H. ROWLAND-BROWN, *Hon. Secretary*.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (26 continued).

DOLERIDES (continued). *DOLERUS*, JUR.

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

It is fortunate that I could not find room enough in my last paper to include the Table of British *Dolerus* spp., which had been prepared for publication in it. Since that paper appeared, I have received the concluding part of Dr. E. Enslin's learned and suggestive Revision of the European forms; and thereupon have entered into a correspondence and exchange of specimens with him, which has cleared up several questions that have long puzzled me, and will enable me (I hope) to present the Table here following in a far more "up-to-date" condition, both as to nomenclature and characterization of the species, than would have been possible last September. Yet even now certain specific names will have to be given more or less provisionally, partly because there is a grave doubt whether all the forms now generally identified with species established by the older authors (Linné, Klug, Hartig, &c.) have been assigned to them correctly; and partly because several of what have always been considered, and must for the present be treated, as distinct species, will almost certainly fall to the rank of varieties and local forms, as our knowledge of this perplexing genus increases.

Of the forms (about 50 in all) enumerated by Dr. Enslin from Europe and Northern Asia (Siberia) practically just half are known to me as British; and this half includes all but a very few of those species, which from the range of their distribution abroad might naturally be expected to occur with us. If these few, which are all rarities everywhere, should turn up here, the British list would be practically identical with that of Central Europe. Several forms described by Mr. Cameron as British have not yet been identified as occurring on the Continent. Some of them, I believe, are known there under other names. Having carefully examined the types at South Kensington, I hope to throw some light on this matter in the "Notes on Species" following my "Table."

SYNOPTIC TABLE OF BRITISH *DOLERUS* SPP.

1. Abdomen black, no part of it red	14.
— Abdomen at least partly red	2.
2. Some or all the legs partly red	9.
— All legs quite black	3.
3. Abdomen above red up to and including the apex	4.
— Abdomen only <i>ringed</i> broadly with red, its apex black	5.

4. Scutellum, with the pronotum, the mesonotum (except three black marks) and the propodeum red in both sexes; or, in the ♂♂ only, the whole thorax and propodeum may be black *triplicatus*, Kl.
- Scutellum black; pronotum, mesonotum entirely (*i.e.*, without black marks) and propodeum red *madidus*, Kl. ♀ (= *lateritius*, C.).
5. Pronotum, and middle lobe only of mesonotum red (the side lobes being entirely or for the most part black), ♀♀ 8.
- Pronotum and mesonotum entirely black, ♂♂ 6.
6. Antennæ tapering, longer than abdomen: 8th dorsal segment with its apical half (or more) bisected by a long triangular polished impression *madidus*, Kl. ♂.
- Antennæ not longer than abdomen and scarcely tapering; apex of 8th dorsal segment with a central carina between two short impressed foveæ 7.
7. Apical segments of abdomen above shining, with fine sparse punctures. Antennæ thickish, shorter than abdomen *anticus*, Kl. ♂.
- Apical segments of abdomen above very finely rugulose, only slightly shining. Antennæ slender, fully as long as abdomen...
ferrugatus, Lep. ♂.
8. Side lobes of mesonotum entirely black. Saw-sheath viewed from above narrow at the apex (hardly wider than one of the adjoining "cerci"!)
ferrugatus, Lep. ♀.
- Side lobes of mesonotum more or less red in front (at the corners) and in the region of the tegulæ. Saw-sheath pretty strongly dilated towards its apex and evidently much wider than the "cerci." ... *anticus*, Kl. ♀.
9. Mesonotum (wholly or for the most part) scutellum (often) and abdomen from the 2nd dorsal plate to the apex (nearly always) red 10.
- Thorax (except sometimes the tegulæ) without red. Abdomen always black at apex 11.
10. Antennæ long and tapering (their middle joints twice as broad, viewed laterally, as the apical). Wings with a slight inky tinge. Tempora with deep furrows running along their occipital margins, and quite black (without bronzy reflections)... *pratensis*, L. ♀. (= *fulviventris*, C.).
- Antennæ short and filiform (*i.e.*, the middle joints are not much broader than the apical). Wings clear or slightly brownish-yellow (but not tinged with inky-black). Tempora with very slight shallow furrows, somewhat shining between their sparse punctures and with bronzy metallic reflections in certain lights *æriceps*, Thoms. ♀.
11. The red basal segments of the abdomen are quite smooth and shining. Length of body not exceeding 8 mm. 12.
- Red basal segments of abdomen dull, with a transverse striation. Much larger forms about 10-12 mm. long 13.
12. Puncturation of mesonotum sparse and irregular *pratensis*, L. ♂.
and *æriceps*, Thoms. ♂.
- (These ♂♂ may be separated by the characters given above for their ♀♀).
- Puncturation of mesonotum and breast close and even. Antennæ long (as in *pratensis*) but filiform (as in *æriceps*) *palustris*, Kl. ♂ and ♀.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

The Coloured Plate issued last September having been so much appreciated by our readers, another (devoted to *Hymenoptera* and *Coleoptera*) was given with the Jan. number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also. Another Plate is in course of preparation, and it will be presented during the year 1910.

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Quarterly	0	7	6	Quarterly	0	8	0

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21. Large ♂ (about 9½ mm. long) with dorsal-plates 2 and 3 of abdomen finely rugulose and (N.B.) quite hairless in the middle. Head, thorax, and base of abdomen conspicuously metallic in certain lights. Wings slightly and evenly infuscated *hematodes* ♂.
- ♂ ♂ without the above characters, or ♀ ♀ 22.
22. Very large forms (♂ ♂ about 10 mm. long, ♀ ♀ 11 to 12 mm.). Deep black, scarcely metallic. Vertex laterally well defined. Tempora more or less distinct sulcate before the occiput but (N.B.) never with a sharp occipital margin. Sides lobes of mesonotum much less closely punctured than the middle lobe, hence more shining. Saw-sheath of ♀ (dorsal view) not very long, somewhat thickened before the apex and then again constricted 23.
- Smaller species not normally exceeding 9 (♂) to 10 (♀) mm. and generally much smaller. (Side lobes of mesonotum *sometimes* punctured as closely as the middle lobe. Temporal furrows *sometimes* sharply margined. Head and thorax *sometimes* with metallic reflections) 24.
23. Side-lobes of mesonotum very shining. Wings almost clear. Cenchri clear white. Clypeus (N.B.) only obtusely emarginate at apex. Saw-sheath of ♀ (viewed laterally) subtruncate, its apex clothed with long and dense projecting hairs *gibbosus*, Htg.
- Side lobes of mesonotum less shining. Wings with a slight blackish infuscation. Clypeus (N.B.) very sharply and deeply excised. ♀ saw-sheath somewhat more shortly pilose than in *gibbosus* *niger*, L.
24. Mesonotum short and broad, with (N.B.) a *semi-circular* (not *pointed*) fovea surrounding the pointed base of the middle lobe (see Figures in my last paper); the side lobes exceedingly smooth and shining, almost entirely impunctate. Bluish-black forms 25.
- Impression round the base of the middle lobe shaped like a pointed arch; side lobes shining or not so, but always distinctly covered with punctures though they may be very slight and shallow. Colour sometimes deep black, rarely bluish, sometimes greenish-grey, with or without distinct metallic reflections..... 26.
25. Blue-black, very shining species. Head of ♂ narrowed posteriorly and clothed with pale hairs. ♀ with the middle lobe of the mesonotum bisected longitudinally by a broad and deep excavation, and *impunctate except at the sides*. Cenchri dusky. Radial nerve usually interstitial or nearly so *nitens*, Zadd.
- = *coracinus*, C.
= *varispinus*, C. ?
= *possilensis*, C. ?
- Very like *nitens*, but generally looks darker. Head of ♂ not narrowed posteriorly, and with *black* hairs (= *atricapillus*, Htg.). ♀ with middle lobe of mesonotum *punctured all over*, and bisected only by a narrow raised line (not a wide excavation!) Radial nerve usually not very near the cubital nerve. (Perhaps does not occur later than April!)...
- anthracinus*, Kl.

26. Tempora rugosely punctured but *with a pair of shining impunctate spots* (in some lights very conspicuous, in others quite invisible!) adjacent to the furrows which bound the vertical area laterally.....27.
- Tempora *without definite impunctate spots* situated as above described...29.
27. Vertex convex; the shining spots on the tempora bounded only by a simply punctured surface (without any definite raised margin or ridge-like elevation). Antennæ normal, more or less setiform and slender in both sexes, in the ♂ about $\frac{3}{4}$ of the length of the whole body, shorter in the ♀. Thorax covered with fine, but distinct regular and pretty deep punctures. Cenchri large and clear white. Wings ample, very clear and with a peculiar whiteness of tint (= *leucopterus*, Zadd.), their nervures apt to become very pale, and the stigma (usually, if not always?) pale below but darker above. The ♀ is recognisable at once by the *extreme dilatation* of its saw-sheath (viewed from above) from base to apex; its breadth at the latter point is almost or quite equal to its whole visible length! Abdomen above finely aciculated on all the segments after the propodeum, so that it is only moderately shining ...*picipes*, Kl.
 (= *intermedius*, C.
 = *æneus*, C. in part?)
- Vertex flat; each of the impunctate spots adjoining it has its margin raised into a sort of vague ridge or carina which runs diagonally up to the nearest ocellus. Puncturation of thorax above feeble, shallow and irregular. Basal segments of abdomen almost without visible sculpture, exceedingly smooth and shining.....28.
28. ♀ with short antennæ whose structure is peculiar and characteristic. Joint 3 is considerably longer and somewhat slenderer than those following. The intermediate joints, especially 5 and 6, are very short and broad—about half as broad as long! 7, 8, and 9 are each about as long as 6, but become successively a little narrower, and 9 tapers very gently to its apex. The wings are not white as in *picipes*, but seem to vary in clearness. The saw-sheath is normal (thickest *before* the apex, and not paradoxically dilated as in *picipes*), but the saw itself is most peculiar—utterly unlike that of any other black *Dolerus*, and more resembling those of certain species with red abdomen (especially *æriceps*) Length about 9 mm. Thorax and abdomen broad (the former looks a little broader than the head).....* *tinctipennis*, C. ♀.
- ♂ with unusually short and stout antennæ, about half as long as the body, but the joints successively becoming very gradually shorter and thinner from joints 3 onwards. This ♂ agrees with *tinctipennis* in the shortness of its antennæ (though not in the details of their structure); in size (long 9 mm.) and stoutness of build; in the brilliant (almost sculptureless) basal segments of the abdomen; in the shining spaces and vague ridges on the tempora adjoining the vertical area; and in the feeble,

* I cannot altogether endorse Mr. Cameron's description of the antennæ. (In the "type," which is carded, they are somewhat unnaturally arranged, and difficult to examine!) I have failed also to recognise the peculiarities mentioned by the author about the unequally infuscated wings; and in another specimen which belongs (I am satisfied) to the same species, that character is not to be found,

- irregular puncturation of the shining mesonotum. I cannot, therefore, but think it likely that this ♂ and *tinetiennis* ♀ belong together; but as I have very little doubt that it is the species described by Zaddach as *teniatus* (from ♂ ♂ only) I adopt the latter name for it. (See Notes following this paper) *teniatus*, Zadd. ♂.
29. Clypeus (viewed laterally) projecting from its base to its middle, after which its apical half is bent sharply back again (almost at a right angle!). Seen from in front, this angulation forms (or at least suggests) a transverse carina; and the apex of the clypeus appears deeply bidentate. Scutellum (according to Konow *in litt.*) "always more finely and evenly punctured than in any other species." Mesonotum strongly punctured on all its lobes, the middle lobe with a deep longitudinal impression. Cenchri fuscous. Antennæ thick in ♂, more slender in ♀ (in this sex joints 7, 8, and 9 are nearly equal in length, and the third joint is longer than the fourth, or than the eighth and ninth taken together. Length, about 9 mm. ♂, to 10 mm. ♀ *megapterus*, Cam.
- Clypeus with no appearance of a transverse carina 30.
30. Vertical area and tempora imperfectly (or at least indistinctly) separated, rugosely punctured and dull all over. Ante-occipital furrows generally present, but not sharply margined behind. Wings smoky-grey ("*rauchgrau*," Zaddach). Mesonotum with large, but shallow and ill-defined, punctures. Scutellum closely punctured in ♂, sparsely in ♀. Antennæ much as in *carinatus*. Length, 8½ mm.—9 mm. *fumosus*, Zadd.
(*nec* Stephens!).
- Vertical area and tempora distinctly separated, their surface always more or less shining between the punctures 31.
31. Tempora rounded (*i.e.*, not sharply margined) behind, and without definite ante-occipital transverse furrows (at most somewhat flattened) 32.
- Tempora quite sharply margined behind, and with well marked ante-occipital furrows 33.
32. Mesonotum strongly and evenly punctured on all its lobes. ♂ with the 8th abdominal segment above apparently slit (*fissus*, Htg.) nearly from base to apex, *i.e.*, it is chitinized only at the sides and membranous (whitish) down its middle. ♀ with saw-sheath widened (but much less so than in *picipes*) right up to its apex; and with the edges of the apical incision in the middle of the 6th ventral-plate pale, so that the polished brownish hypopygium appears to project between two oblique white streaks. Wings with a slight brown infuscation. Cenchri large and generally clear white (but I have seen Scottish specimens in which this character seems to fail). Antennæ of ♀ short and subfusiform, thickened in the middle, the 3rd joint evidently longer than the 4th. In the ♂ they are longer and more setiform. Body broad and stout. Length, about 9 mm. (♂) to 10½ mm. (♀) *nigratus*, Müll.
(= *fissus*, C).
- Mesonotum comparatively finely punctured on the side lobes, quite shining near the tegulae. Superficially not unlike *nigratus*, but the ♂ has the 8th abdominal segment above simple (not "slit"!) and the ♀ saw-

sheath is widest *before* (not *at*) the apex. (The saw itself is quite unlike that of *nigratus*, and closely resembles those of *megapterus*, *fumosus*, and *gibbosus*).....*oblongus*, Cam.

- 33. Tempora (between their deep ante-occipital furrows and the compound eyes) not swollen but flat. Mesonotum with all its lobes feebly punctured. Antennæ long and narrow throughout in both sexes. In the ♀ (N.B.) the third antennal joint is *not*, as in most *Dolerus* spp., distinctly longer than the fourth, but subequal to it (or even shorter) and *much shorter than the eighth and ninth taken together*. Cerci generally red. Wings clear. Length, about 8 mm. (♂) to 9½ mm. (♀). The ♂ 8th dorsal segment of abdomen is simple. The ♀ has an unusually long and narrow (projecting) saw-sheath, gradually attenuated towards its apex *æneus*, Hartig (*nee* C.)
(= *elongatus*, C.)

— Tempora much swollen between the compound eyes and the ante-occipital furrows. Mesonotum with distinct well-defined puncturation, whether coarse or fine. Antennæ short in both sexes, with the third joint evidently longer than the fourth. ♀ saw-sheath not very long, and thickened before the apex34.

- 34. Head and thorax with distinct metallic reflections (blue, green, violaceous, etc.) in certain lights. Vertical area and mesonotum with fine, but pretty deep punctures, not very close together nor at all rugose. Wings with a blackish infuscation. Apex of 8th ♂ abdominal dorsal segment with a short central patch of white membrane, triangular in shape (not a long narrow "slit" as in *nigratus*). A small and slenderly built species. Length, about 7-8 mm....
sanguinicollis, Kl., var. *fumosus*, Steph., *nee* Zadd.
= *ravus*, Zadd.

— Head and thorax deep black, hardly, if at all, metallic. Vertical area and mesonotum with large somewhat coarse and confluent (rugose) punctures. Wings with a very slight brownish tint. Apex of 8th ♂ abdominal dorsal segment with a polished brownish tubercle-like elevation or carina in its centre. Larger than *sanguinicollis* var. *fumosus*, and of stouter form*rugosulus*, v. Dalla Torre.

(To be continued).

NOTES ON *CORTICARIA*, WITH DESCRIPTIONS OF TWO NEW SPECIES.

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

Having had occasion to examine some *Corticaria* of the group placed in the British Catalogue under the genus *Melanophthalma*, I find two species for description, and a few observations to bring to the notice of Coleopterists.

First as to the validity and limitation of *Melanophthalma*. The Beare and Donisthorpe Catalogue assigns five British species to the

genus. But this is an error, only one of the five being a *Melanophthalma*, the other four belonging to *Corticarina* of Reitter.

Ganglbauer merges the three genera *Corticaria*, *Melanophthalma* and *Corticarina* into one, on the ground that Reitter and Belon were mistaken in supposing an anatomical distinction of importance to exist in the structure of the abdomen. Ganglbauer is correct on this point, and there remains nothing to distinguish *Corticaria* and *Corticarina*, except the existence of a minute denticle on the front tibia of the male *Corticarina*. This denticle is in some species very difficult to detect, and it is clearly inadequate for generic distinction.

The matter as to *Melanophthalma* proper is somewhat different, as the species have in common a positive character that distinguishes them satisfactorily, viz., the existence of strongly marked coxal lines on the first ventral segment. Moreover, I find a supporting character in the structure of the feet, viz., that in *Melanophthalma* the 2nd tarsal joint is simply interposed between the 1st and 3rd, so that the tarsi are conspicuously 3-jointed and are quite linear, as there is not any dilatation of the basal joint. In *Corticarina* the basal joint is enlarged and the 2nd joint is inserted so far forward on its upper surface that it is frequently difficult to detect. Several species of *Corticaria*, and one of *Corticarina* (viz. *gibbosa*), are intermediate as regards the tarsal structure; nevertheless, it remains true that *Melanophthalma* forms the extreme of the series in this respect, and therefore may be quite naturally retained on account of its coxal lines. *Melanophthalma* will then comprise two British species, *transversalis* and *distinguenda*. The other species of *Melanophthalma*, Beare and Donisthorpe Cat., should be placed as a section of *Corticaria*.

It is to this section that the two new species, characterised below, belong. The little *C. lambiana* is interesting as being the most highly developed *Corticarina* as regards the tarsal structure, but the least developed as regards the tibial denticle of the male, which is very difficult to detect. *C. fowleriana* on the other hand departs from its immediate ally *C. fuscula* and approaches *Melanophthalma* by the form of the head; there being a well-marked interval between the back of the eye and the ventral constriction behind it.

CORTICARIA LAMBIANA, sp. n.

Sordide ferruginea, pectore abdomineque plus minusve fusciscentibus, antennis pedibusque testaceis, illis clava fusca; capite obscure punctato; thorace transverso, fortiter punctato; elytris seriatim sat fortiter punctatis, subtiliter setosis; pedibus brevibus, tarsis quasi biarticulatis, articulo primo fortiter dilatato. Long. corp. $1\frac{1}{3}$ mm.

Closely allied to *C. similata*, but rather smaller (our *similata* average $1\frac{1}{2}$ mm. long), with shorter, more oval elytra, more transverse thorax, much shorter legs, and finer sculpture and pubescence on the elytra. The first joint of the tarsus is in each sex thicker, and the second joint is inserted so far back on the first joint that it scarcely projects beyond the end thereof and the tarsus looks 2-jointed. In the male the front tibiae are dentate, but the little tooth is placed so much at the back of the tibia (as in *C. truncatella*) that it is on account of this, and the small size and short tibia, very difficult to detect, whereas in the ♂ of *C. similata* the tooth is very conspicuous.

Found on an oak tree in the New Forest, in 1908 and 1909; first detected by Mr. C. G. Lamb in honour of whom the species is named.

The history of the discovery of this insect is of some interest. In August, 1908, Mr. C. G. Lamb brought me a small beetle he had found on an oak tree here. It excited my interest as it appeared to me when alive to look distinctly different from any of our common *Corticaria*. I accordingly went with him the next day to look for it, and was successful in securing on the same tree about a dozen examples. On mounting and examining the specimens it appeared to me that I had obtained a strongly dimorphic species, the males being distinguished by a different shape and sculpture, and having longer legs than the female, and also by the possession of a denticle on the front tibia.

At that time *C. similata* was supposed to be unique as British, and on comparing Mr. Lamb's species with this unique it was clear that the male sex agreed therewith. I therefore concluded that we had rediscovered *C. similata*—after an interval of 37 years—and that it was a highly dimorphic species. But I felt very much surprised that the books said nothing as to a sexual dimorphism of form and sculpture. I communicated my discovery to Mr. Champion and was agreeably surprised to hear that he was finding *C. similata* at Woking, and also that he had mentioned the fact in one of his numerous lists of captures there. At the same time he sent me two specimens of these Woking individuals; they were males, and I consequently asked him if he could let me see the dimorphic female (as I supposed it to be). In reply he sent me for inspection his fine series, and I found therein both sexes, the female resembling the male! I again therefore visited Mr. Lamb's tree to obtain more material; and, having succeeded, I examined it very carefully, and I found that I had both sexes corresponding entirely with the Woking sexes of *C. similata*, and in addition to these a few of my dimorphic female. A renewed scrutiny showed that of this latter I had really also both sexes, it

being, however, very difficult to distinguish in its case the male from the female. In short, it became quite clear that the first dozen captured consisted of males of *C. similata* and of a second closely allied species, in the case of the latter the discrimination of the sexes requiring a most careful examination.

This has since been abundantly confirmed, as I have found both sexes of *C. similata* in various parts of the New Forest and in Scotland. Here I have found it only on oak trees, but at Nethy Bridge I beat it from the spruce fir. *C. lambiana*, on the other hand, I have not yet been able to find elsewhere than on the one small oak tree on which Mr. Lamb originally discovered it.

CORTICARIA FOWLERIANA, sp. n.

Robusta, convexa, picea, antennis pedibusque testaceis, fortiter punctata, elytris evidentius seriatim pallido-setosis, interstitiis convexis; pedibus brevibus, tarsis quasi biarticulatis, articulo primo fortiter dilatato. Long. corp. 1 $\frac{3}{4}$ mm.

Allied to *C. fuscula*, but more convex, with a longer and more coarsely punctate thorax, and remarkable by the coarse sculpture of the elytra, their convex interstices, and their more highly developed setosity. The legs are stouter with thicker tarsi, and the eyes are more distant from the thorax as they are not close to the constriction that forms the neck of the head.

After examination of a long series of the varieties of *C. fuscula*, I do not entertain any doubt as to the distinctness of this form. The rare variety of *C. fuscula* found in Lapland by Sahlberg, and described by him (Notis. Fauna Flora Fenn. xi. 1870, p. 359) as *C. latipennis*, apparently approaches *C. fowleriana* by having more convex interstices on the elytra, and by the whiter and more developed setosity. In other characters the two appear to differ considerably and as Sahlberg's description of the head and thorax does not agree with *C. fowleriana*, I anticipate the two will prove to be distinct.

I have seen only one specimen of this species, apparently a female. It was found by me at Braemar in June, 1871, and is the specimen alluded to by Fowler in Col. Brit. Isl., iii, p. 294, as a variety of *C. similata*. At that time only one specimen of *C. similata* was known to exist in our collections, and now that a large series is before me it is quite clear that the Braemar insect is another species. I therefore name the insect *C. fowleriana* in honour of the entomologist to whom we are so much indebted for his work on British *Coleoptera*.

Brockenhurst:

March 20th, 1910.

LESTEA FONTINALIS, KIES., AN ADDITION TO THE BRITISH
LIST OF COLEOPTERA.

BY E. A. NEWBERY.

My friend Mr. P. de la Garde recently sent to me for identification a species of *Lesteva*, which he believed to be new to our list. I had no difficulty in referring it to *L. fontinalis*, Kies., and Captain Deville has since confirmed this identification as certainly correct, furnishing me with French examples for comparison.

A full description of the insect is given by Rey (*Omalieus*, pp. 69—71, 1880); it will therefore suffice to say that the fine punctuation of the upper-side, taken in conjunction with the short elytra, which are inflated behind, will distinguish it from every other British *Lesteva* but *pubescens*, Mann., while the following characters are given by Rey to separate it from the latter:—

First joint of posterior tarsi subequal to the three following united, the latter rather short. Thorax and elytra subequally punctured. Body grey-black, densely pubescent*L. pubescens*, Mann.

First joint of posterior tarsi a little longer than the two following united, the latter subelongate. Thorax less finely and densely punctured near the base. Body shining black, less pubescent*L. fontinalis*, Kies.

The size of the two species is about the same (length, 4 mm.). It should be observed that the tarsal distinction appears to be of little value, while that of the vestiture of the upper-side is very striking, the much longer and closer pubescence and closer punctuation of *L. pubescens* rendering it a much duller insect than *L. fontinalis*, the head and thorax of the latter being conspicuously shining.

Three specimens of *L. fontinalis* were taken by Mr. de la Garde (two on February 19th, 1908, one on March 2nd, 1910) amongst wet moss on the face of the cliffs at Shaldon, Devon, in company with *L. pubescens* and *L. punctata (muscorum)*. Captain Deville tells me that the species occurs in Normandy and Brittany, and its discovery here might have been foreseen.

13, Oppidan's Road, N.W.:

April 12th, 1910.

[All my southern specimens standing under *L. pubescens* are referable to *L. fontinalis*. They were taken from moss along the margins of a small stream at Sandown, I. W. An example of *L. fontinalis* from Aix, Provence, in my collection, is a little larger and darker than these Isle of Wight insects.—G. C. C.]

ENARMONIA ERICETANA, H.-S., A SPECIES OF *TORTRICINA* NEW
TO THE BRITISH LIST, IN SCOTLAND.

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

It affords me much pleasure to bring forward this species, which must, on no account, be confused with *Epiblema ericetana*, Wstwd., as an addition to our recognised Lepidopterous Fauna. The first known British individual was taken at Aviemore, in the county of Inverness, by Canon C. T. Cruttwell towards the end of June, 1907, and was recorded by him as "*Eriopsela quadrana*" in Ent. Mo. Mag., Ser. 2, xviii, 257 (1907). For this error of identification I am entirely responsible, for, although much puzzled by it when it reached me among other *determinanda*, I finally came to the conclusion that it was presumably a queer northern aberration of *Euarmonia* (*Eriopsela*) *quadrana*, Hb., which is closely allied to the species under notice. The next captures of the latter insect were made, in the same locality, by Canon Cruttwell and myself in the latter half of June, 1908, when our efforts were rewarded by the acquisition of a few specimens, some of which, however, were in unsatisfactory condition. On consulting my collection after my return home, it at once became evident that the Aviemore individuals did not represent any form of *E. quadrana*, and when able, in the following March, to compare them with the Frey collection, they were recognised as conspecific with the very first species upon which my eye lighted! Frey's written label, referring to this, reads "*G.* [i.e., *Grapholitha*.—E.R.B.] *ericetana*, Z.," but this name should be attributed to Herrich-Schäffer, who adopted and published Zeller's MS. name for the insect. Having been again ordered to Aviemore last summer for reasons of health, I met with *E. ericetana* in its original haunt, and also discovered a new locality for it, distant about three miles from the former: the one spot is just over 700 feet above sea-level, while the other is perhaps a trifle higher. It was very far from common, and an immense amount of hard work on the part of my wife and myself, during the whole period over which the imago was obtainable, was necessary to furnish me with sufficient material for a satisfactory study of the local variation and the sexual distinctions, and for the completion of a series for my collection.

The following translation of Herrich-Schäffer's original notice of *E. ericetana*, in Syst. Bear. Schmet. Eur., iv, 276, will perhaps be useful;—

"428. *Ericetana* Zell. in litt. As Fröhlich already has a *Flexuana*, I adhere to the earlier Zellerian name—Sspl. 136.—*Virgatana* FR. olim.—*Flexulana* Dup. pl. 265. f. 8—Zell. Is. 1846. p. 243.—S—S L."

"Violet-ashy, with the apex of the fore-wing strongly produced, hind-wings brownish ashy."

"Beautiful light violet-grey, with some lead-lustre, the apex of the fore-wing is greatly produced and rounded, the oblique brown fascia forms a pointed tooth projecting towards the apex, before which stand four very distinct double hooks on the costal margin."

"In Saxony, Bohemia, Bavaria, in leafy woods; at Ratisbon, amongst birch, in few localities, sociable. May."

The most noticeable characters shown by the fore-wing of this handsome insect, in its ordinary forms, are a large dark basal patch, a bright or dark brown oblique fascia arising about the centre of the costa and reaching the dorsum near the tornus, and a markedly produced and rounded apex, which is occupied by a bright brown, or brown, circular spot. The outer margin of the fascia varies greatly in shape, and by no means always forms the pointed tooth mentioned by Herrich-Schäffer. In some individuals this only appears as either an angulated or a rounded projection, whilst occasionally the margin shows no projection at all. The basal patch also throws out a median posterior projection, which, however, varies greatly both in size and shape; it is acutely angulated in some examples, whilst in others it is well rounded. The males are appreciably larger than the opposite sex, as is proved by the following measurements taken from Aviemore specimens in my collection:—*alar. exp.*, of largest ♂ = 19.5 mm., of smallest ♂ = 17 mm.; of largest ♀ = 17 mm., of smallest ♀ = 15 mm. The females, except for their smaller size, and apparently rather narrower wings, do not differ materially from the males in appearance, though their ground-colour seems to be a trifle lighter. Herrich-Schäffer's published entry of "8—8 L.," as representing the *alar. exp.*, must be due to a printer's error, probably for "6—8 L." (*i. e.*, 6—8 Paris lines = 14—18 mm.), as Mr. J. Hartley Durrant (*in litt.*) suggests.

As regards British specimens only, a comparison of my series of *E. ericetana*, H.-S., with those of its allies *fractifasciana* and *quadrana* shows that the first-named is so much larger and lighter than *fractifasciana* that there is no chance of any confusion between them, and that it is also decidedly larger than *quadrana*, small ♀♀ of the former having about the same expanse of wing as good-sized ♂♂ of the latter. The dark transverse markings are, in *ericetana*, very conspicuous throughout in both sexes, whereas, in *quadrana*, they tend to become faint or obsolete in the upper half of the fore-wing, particularly in the case of the males. A further useful distinction

is that while *quadraua* almost invariably shows a distinct white line, just inside the dark line at the base of the cilia, extending downwards from the actual apex of the fore-wing to about the middle of the termen, no such line is to be seen in its ally.

The Aviemore examples of *ericetana*, H.-S., show only a limited amount of variation in the matter of colour: none of them differ greatly from Herrich-Schäffer's description (*loc. cit.*) and figure (f. 136), though none appear to be precisely typical. I should describe their ground-colour as silvery whitish drab, showing, in some individuals, a partial purplish-red tinge, which varies in intensity, tends to spread to parts of the cilia of all the wings and to the upper half of the basal patch, and occasionally affects strongly even the head and thorax. The principal markings are bright russet-brown, often more or less suffused, in parts, with blackish. In his table of species of the *Tortricina*, in *Schmet. Deutsch. u. d. Schweiz, von Heinemann* gives (p. 29) the ground-colour as "shining, violet-reddish white or light violet-grey," which proves that he was acquainted with a form almost, if not quite, identical with one included in my own description, as well as with the typical one described by Herrich-Schäffer. Differing widely from these, Frey's eight exponents, hailing from Frankfort (♂, ♀), Breslau (♂), the Glarner Alps (♂), the Engadine (♂), Zermatt (♂), and "Brengarten"* (♂, ♀), represent a very much darker and more unicolorous form. The ground-colour of the males is of a dull grey—exactly similar to that of Frey's specimens of *E. fractifasciana*, which only differ from my English ones in their much larger size—and the markings are merely of a darker shade of grey, somewhat mixed with brown. Frey's two female examples of *ericetana* show the same relative difference from the males as are seen in the Aviemore form. They have a more mottled appearance, owing to the ground-colour being a little paler, and to the markings, which are rather stronger in colour and more clearly defined than in the males, showing up much more distinctly against it. In both sexes, however, the contrast between the ground-colour and the markings is immeasurably greater in the typical form, and in those nearly approaching it, than in the varietal one in the Frey collection.

In *Verh. Zool. Ges. Wien*, 1872, pp. 733-734, Staudinger brought forward *Steganoptycha languentana* as a species new to science, and in

From a comparison of many labels written by Frey, it is clear that he here intended to express doubt about the locality of these two individuals, and not about their identity or date of capture, &c. It may, therefore, be of interest to point out that Brengarten is definitely recorded as a station for the species under notice, by Frey himself, in *Lep. Schweiz*, 326 (1880). —E. R. B.

Stgr. and Rbl., Cat. ii, p. 111, No. 1990 (1901), Rebel sunk *lanquentana* as a variety of *Steganoptycha ericetana*, briefly defining it as “major, magis griseus,” but adding “*vix nom. conserv.*” From a study of the original description of *lanquentana*, I conclude that Frey’s exponents of *ericetana* are referable to this variety, and although, with an *alar. exp.* of *circ.* 19 mm. in the males, and *circ.* 15 mm. in the females, they would, on an average, be hardly larger than the Aviemore representatives of the species, their wing-expanse is decidedly greater than that of the individuals from which Herrieh-Schäffer’s description was made, if we are right in assuming that his “8.8 L.” is a mistake for “6.8 L.” Staudinger (*loc. cit.*) describes *lanquentana* from four males (*alar. exp.*, 18-20 mm.), and one female (*alar. exp.*, 16 mm.), taken by him with four other males, not identical with those so described,* at Trafoi, in the latter half of July. In the course of his detailed information, he states that *lanquentana* is, on an average, a little larger and narrower-winged than *ericetana*, but that the patterns of the forewings are almost exactly similar, though the former has a dark ashy-grey ground-colour: he adds that it is rather duller, more monotonously grey, than German examples of the latter, but that two specimens from Lapland’ also before him are likewise monotonously grey. Snellen can only have been acquainted with an unusually small form of *ericetana*, and an unusually large one of *fractifasciana*, seeing that, in Vlind. v. Ned., Microlep. (1882), he enters the wing-expanse of the former (p. 347) as only 14-15 mm., but that of the latter (p. 345) as 14-16 mm. for the males, and 12-13 mm. for the females. Rebel (*loc. cit.*) gives *ericetana* as occurring in the European Alps, North Germany, Holland, Northern Europe, Asia Minor, and perhaps Labrador, but enters the Tyrolian Alps as the only known locality for var. *lanquentana*.

Whereas von Heinemann, in Schmet. Deutsch. u. d. Schweiz, II, i (i), p. 216 (1863), states that the imago of *ericetana* (Zell. MS.), H.-S., is found at the end of May and in June, round birches, Frey [Lep. Schweiz, 326 (1880)] gives it as occurring from the end of June into August, and in Vlind. v. Ned., Microlep., p. 348 (1882), Snellen writes of it;—“Flies from the end of June until August. Larva unknown. Flies about dwarf willow (*Salix repens*), sea-buckthorn (*Hippophaë rhamnoides*), heath and *Vaccinium*.” Sorhagen [Kleinschmet. d. M. Brand., 325 (1886)], however, tells us that the moth is out in May (end) and June, and occurs “round aspens and birches,”

* Staudinger (*loc. cit.*) refers to his supposed new species, *lanquentana*, one individual (♂) that he captured in the Upper Engadine, as well as the nine that were secured at Trafoi.—E. R. B.

and that the larva feeds in August and September between spun leaves of *Populus tremula*. At Aviemore the perfect insect appears about the middle of June, but has disappeared by about the end of the month: during the past season, when I was closely watching for its emergence, the first example was seen on June 15th, and the last on June 28th. I have little doubt that the larva, which seems to be still undescribed, feeds there in August and September, on aspen (*Populus tremula*), for all the imagines have occurred where aspen and birch bushes grow together in heathy places, none having been met with where birch alone was present, even though only a few yards away from their haunts. They may be beaten out of the aspen—and rarely out of the birch—bushes by day, but their flight-time is during the evening, and I have taken them on the wing as early as 4.45 p.m., and as late as 9.45 p.m. Occasionally, about flight-time, odd examples may be disturbed from heather amongst which aspen is growing, having probably just crawled up from below to see whether the weather conditions are sufficiently favourable for taking wing. The males, as a whole, emerge before the females, as is evidenced by the fact that almost all the earlier captures have been referable to the former sex, whereas the later ones have included a modest proportion of females, which are much more rarely met with than the males. The species appears to be very local in the Aviemore district, and my efforts to find it in other spots, besides those already alluded to, have met with no success.

Norden, Corfe Castle :

March, 1910.

A NEW ABERRATION OF *EPHYRA PENDULARIA*, L.

BY F. C. WOODFORDE, B.A., F.E.S.

In 1908 I obtained batches of ova from two bred females of *Ephyra pendularia*, L., ab. *subroseata*, mihi. One of the females was paired with a bred male, the other with a very worn wild male. No partial emergence took place in August of that year though about eight of the pupæ were discovered dead in September with completely developed imagines inside the pupa case. In May and June, 1909, emergence took place, and over thirty perfect imagines were produced. The majority were ab. *subroseata*, but eleven were of a coloration I have never seen before. They differ from ab. *subroseata* (of which a description aberration may be found in the "Entomologist," vol. xxxv, p. 275) as follows:—The central portion of the fore-wings

is pale ochreous instead of being red. The hind-wings are entirely grey. In other respects the form closely resembles *ab. subroseata*. The ocelli are distinct on both sets of wings. The second line, consisting of very distinct black dots, is continued through both wings, and is followed by a distinct whitish band. The cilia are pale grey preceded by a well-marked dark grey line. This form is very distinct from *ab. subroseata*, and I would suggest as a name for it *ab. subochreatea*. Unfortunately, as it has turned out, I fed up the larvæ of the two batches together and so am in ignorance of the male parentage of the new form, as to whether it was a bred *subroseata*, or the worn wild male. The latter was of the *subroseata* type, but the colour of the central part was so faded as to be unrecognisable, and it *may* have been pale ochreous. It was taken in North Staffordshire to which district I believe the form *subroseata* is confined. Last June I paired two of the ochreous form and now have pupæ whose emergence is due next month.

The type specimen of the new form I have given to Prof. Poulton, and it is now in the Collection in the Hope Department, Oxford University Museum of British *Lepidoptera*.

Market Drayton:

April, 1910.

Coleoptera taken in Devonshire during 1909.—In continuation of my notes on Devon *Coleoptera*, in Ent. Mo. Mag., xlv, 86–88, the following list is, as a rule, restricted to such insects as I can record from fresh localities:—

At AXMINSTER, in April:—One *Badister sodalis* from a damp spot in a wood; *Clivina collaris*, *Limnebius nitidus*, *Hclophorus arvernicus* (2), *Henicocerus exculptus*, *Philonthus fulvipes* (3), *Elmis parallelopedus*, *Heterocerus marginatus**, *H. lævigatus*, *Cryptohypnus riparius*, and *C. 4-guttatus*, in, and on the banks of, R. Yarty; *Oncomera femorata* (4), *Hylastes opacus* (1), and *Meligethes riduatus* (1), on walls, &c.

Between HEATHFIELD and BOVEY TRACY on 20th May, with my friend, Mr. Keys, we took:—*Bembidium articulatum**, *Tachyusa flavitarsis**, *Ancyrophorus omalinus*, *Heterocerus marginatus*, and *Phytobius 4-tuberculatus*, on the banks of R. Bovey; *Bembidium doris**, *Hydroporus granularis**, *H. flavipes*, *H. angustatus*, *Agabus femoralis**, *Copelatus agilis*, *Dytiscus punctulatus*, *Paracymus nigroæneus* (present in fair numbers), *Ochthebius pygmaeus*, *Gymnusa brevicollis*, *Stenus melanarius**, *S. binotatus*, *Parnus algericus*, and *Bagous limosus*, in a pond on Knighton Heath; and, by sweeping, *Longitarsus holsaticus* (1), *Phyllotreta exclamationis*, *Crepidodera fulvicornis v. jucunda** (1), and *Gymnetron labilis**.

Staying by myself at BOVEY from 4th July to 5th September, there occurred in addition to the above:—*Bembidium flammulatum*,* *Hydrochus nitidicollis* (1), *Hydræna gracilis* and *H. atricapilla* (both freely), *Myllæna kroatzi*, and *Elmis volkmari*, in the river; *Haliplus confinis*, *H. obliquus* (1), *H. fulvus*, *Hydroporus obscurus** (1), *Hybius ater*, *Philydrus contractus* v. *suturalis*,* *Helophorus æqualis*,* *Hydræna testacea*, *H. riparia*, *H. nigrita*, and *Philonthus nigrita* (1), in various ponds and rills on the Heath; a peculiarly small race of *Lestera heeri* (*sicula*) in a hillside brook; *Homalota silvicola* (1, amongst hedge rubbish; *Homalota sodalis* (4), *Oxyporus rufus* (1), *Dacne humeralis* (in quantity), *Ips 4-punctata*,* *Cis hispidus*, *C. pygmaeus*, *C. festicus* (1), and *Rhopalodontus fronticornis** (several from both oak and sallow), in fungus; *Cerylon histeroides* (1), and *Diphyllus lunatus* (1), amongst the debris from a nest of *F. rufa* in an oak stump; five *Ocypris compressus*, under stones; *Scymnus pygmaeus* (1), *S. capitatus*, *S. testaceus*, *Brachypterus gravidus** (1), *Epuræa longula** (1), *Soronia grisea* (1), *Meligethes humbaris** (3), *M. brunnicornis*, *M. gurgatus** (1), *Florilinus museorum*, *Aphodius sticticus*, *Telephorus thoracicus*, *Malthodes mysticus*, *M. guttifer*, *Malachius viridis*, *Axinotarsus ruficollis** (1), *Cryptocephalus pusillus*, *Phytodecta olivacea*, *Phyllobrotica 4-maculata* (one in a swamp), *Haltica lythri*, *Phyllotreta 4-stigma*,* *Mordellistena parvula** (1), *Apoderus coryli*, *Apion craccæ*, *A. subulatum*, *A. vicinum** (2), *A. filirostre*, *A. scutellare*, *Limobius dissimilis* (2), *Orchestes saliceti*,* *Tychius tomentosus*, *T. pygmaeus*, *Coliodes quercus*, *C. ruber*, *Ceuthorrhynchus chalybeus*,* *C. punctiger*, *C. litura*, *C. terminalis* (1), *C. mixtus** (one off nettle), *Amalus hæmorrhous*, and *Magdalis armigera* (1), by sweeping; one *Silpha opaca* and two *Bathyscia rollastoni*.

TEIGNMOUTH:—In some tidal puddles about a couple of miles up the river, Mr. Keys and I took on 7th June, *Helophorus mulsanti*,* *Ochthebius marinus*, and *O. punctatus*.* At various times at SHALDON, I got one *Panagæus 4-pustulatus* from moss; one *Phyllotreta diademata* on a window; and, by sweeping, *Agathidium marginatum* (1), *Bruchus rufipes** and v. *ruficornis*,* *B. atomarius*, *B. loti*, *Apion filirostre*, *Coliodes exiguus*, *Ceuthorrhynchus scotosus* (1), *C. punctiger*, *C. chrysanthemi* (1), *Cissophagus hedere* (2), and *Phleopthorus rhododactylus* (1).

At DAWLISH:—One *Elaphrus uliginosus* and a few *Stenus picipennis* came from a small marsh near the Warren; a *Læmostenus complanatus* from roots of bent-grass, and a *Mycetoporus angularis** in tide rubbish, on the Warren; and, by sweeping on the cliffs, *Olibrus particeps*, *O. millefolii* (several), *Leptura livida*, *Bruchus rufipes* (1), *Mantura rustica* v. *suturalis* (1), *Smicronyx jungermanniæ* (1), *Gymnetron antirrhini*, *Ceuthorrhynchus cyanipennis*,* *C. parvulus* (2), *C. euphorbiæ** (1), *C. triangulum** (2), and *Cissophagus hedere* (1); also, on 8th June, Mr. Keys obtained one *Saprinus virescens** by sweeping the flowers on the cliff slopes.

In EXMINSTER Marshes, *Hybius obscurus*,* *Helophorus æqualis*, *Quedius attenuatus*, *Stenus picipennis*, and *Tanyssphyrus lemæ* (1), turned up.

A *Pogonochærus dentatus* was brought to me in June from BICKINGTON, near NEWTON ABBOT, having been found on a trunk of a hawthorn.

To list for 1907, from S. BRENT, a *Philonthus nigriventris** has to be added; this insect was taken in a carrion trap in September of that year.

* First record for the County.

One *Oxyptoda*, obtained in May, 1908, on the sandhills at BRAUNTON, was kindly submitted for me by Mr. Newbery to Captain St. Claire Deville and Dr. Sharp—the resultant opinions make its synonymy stand as *lurida*, Woll. (*perplexa*, Rey) (*teste* Capt. Deville) = *virecunda*, Shp. (*teste* Dr. Sharp). [*cf.* Ent. Mo. Mag., xlv, 37].

I am very much indebted to the kindness of Mr. E. A. Newbery for the verification of many difficult species.—PHILIP DE LA GARDE, Manor House, Shaldon, Teignmouth: *March 9th*, 1910.

Myrmecoxenus vaporariorum, Guér., near Oxford.—I met with this curious and somewhat rare little beetle, of which a single example only had hitherto been recorded from the Oxford district (*cf. antea*, p. 30) in a haystack at Wytham Park, Berks., on April 9th, and again in considerable numbers on the 11th, in company with *Sunius diversus*, *Monotoma rufa*, *spinicollis*, and *longicollis*, various *Atomarias* and the usual run of haystack-frequenting *Coleoptera*. Unfortunately an unduly large proportion of the specimens taken were found on mounting them to be more or less broken and mutilated. *Myrmecoxenus* is an addition to the list of Berkshire *Coleoptera* as given in the "Victoria County History."—JAMES J. WALKER, Oxford: *April 11th*, 1910.

Winged examples of Diglotta.—In view of Mr. G. C. Champion's remarks on the numerous examples of the genus *Diglotta* which he examined and found to be all "apterous," as recorded by him in 1899 in this Magazine (vol. xxxv, p. 264), it is interesting to record the capture of a fully winged specimen at Dawlish Warren in June last. With my friend Mr. P. de la Garde I was searching for *Bledius*, and the *Diglotta* was found with them. Two examples only were taken: one a small specimen, 1½ mm. in length, with a mere scale-like rudimentary wing as described by Mr. Champion, and the other a large specimen, 2½ mm. long, possessed of fully developed wings, the length of each being 2 mm. with a maximum breadth of 1 mm. Both individuals have the widened apex to the abdomen. Amongst his long series of *Diglotta* Mr. de la Garde has an example which also appears to be fully winged, but he has not unravelled them to make sure of the fact.—JAMES H. KEYS, 2, Freedom Park Villas, Plymouth: *April 14th*, 1910.

Lesteva sicula, Erichs., and *Lesteva punctata*, Erichs.—The Rev. W. W. Fowler in his Col. British Islands, vol. ii, p. 403, suggests that these two species are not distinct, and that the latter will probably have to be sunk as a variety of the former; this is a mistake, the two species are quite distinct, and easily separable.

Ganglbauer, in his "Käfer von Mitteleuropa," vol. ii, p. 712, divides the species of the genus he deals with into two groups. In the one group, which contains only one species (*punctata*, Erichs.), the sides of the thorax are not bordered on the basal half; in the other group, which includes the rest of the species, and therefore *sicula*, Erichs., the sides of the thorax are completely bordered.

We have thus a definite structural character, which enables any one to at once separate these two species, but in addition the shape of the thorax is quite different, it is much shorter in *sicula* and not so suddenly contracted behind the middle.

I am afraid that Fowler (misled perhaps by his correspondents) has mixed the localities for the two forms, certainly the Luccombe Chine insect (I have taken it there commonly) is *punctata*, that is the species with the thorax not completely bordered; I have also taken it at Berwyn on the Dee, Wales, but nowhere else.

The other species, *sicula*, is by no means confined to Scotland; I have taken it at Wimbledon and Wicken Fen, and in Scotland at Nethy Bridge, Aviemore, and near Edinburgh. In my opinion neither of the species is really rare, they are both local but common when found, though Ganglbauer says *sicula* is very rare and *punctata* rare.

The synonymy of the two species as given by Ganglbauer and in the latest European Catalogue agrees with that given by Fowler.

Lesteva sicula, Erichson = *heeri*, Fauvel and Kraatz = *punctata*, Duval and Thomson.

Lesteva punctata, Erichson, Kraatz and Fauvel = *riparia*, Heer = *muscorum*, Duval.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: April 9th, 1910.

A note on *Tychius hæmatopus*, Gyll., *ſc.*—I have taken the above species at Tilgate Forest, Shepherd's Well, and Sandown, Isle of Wight. Thanks to Mr. Edwards' excellent table and paper on the genus *Tychius* (*antea*, pp. 80-83), it is now possible to correctly name our species. I may mention that the specimen of *Tychius polylineatus* I took when staying at Ditchling with my friend Mr. Dollman, was actually found by him. I was sweeping and he was "grubbing" at the roots of plants for *Tychii*, and he called to me to come and take a *Tychius* off his paper. He has found three specimens so far of this very rare insect. I can only claim to have identified the species.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: April 6th, 1910.

A suggestion for future records of *Coleoptera*.—It would greatly facilitate the labour of those who are compiling local or county lists, or of any one working at the British distribution of *Coleoptera*, if all Coleopterists would mark with an asterisk, when recording captures of beetles, such species as are new to the district or the county; or when this is not possible, from a locality not given for the species in Fowler's "*Coleoptera of the British Islands*." In last year's Ent. Mo. Mag. Mr. Tomlin published some most interesting and useful lists of beetles from Herefordshire; nearly all the species, say nine-tenths of the whole, were new records for the county, but the remaining tenth would be perhaps noted in "Fowler" from "the Malvern Hills" say, whence Mr. Tomlin also recorded them! It thus meant that every one of these insects had to be checked with "Fowler" before the records could be made use of, a great waste of time and labour which could have been avoided if the hitherto unrecorded species had been marked with an asterisk! I venture to say that I now know the British localities of most of our beetles as well as any one, but it is obviously

impossible to remember the exact distribution of over 3,000 species. As I am endeavouring to keep the distribution of our species up-to-date, I shall be very much obliged if Coleopterists will kindly fall in with my suggestion.—
 ID.: April 6th, 1910.

A further instance of Coleophora troglodytella, Dup., feeding on Achillea millefolium, L., in Britain.—As Mr. Eustace R. Bankes, in his interesting notice on this point in the March number of this Magazine, asks for further particulars, the following note may be of interest. On June 11th, 1907, my brother Mr. H. Leonard Sich, sent me from Bepton, West Sussex, several larvæ he had found feeding, in cases, on yarrow. The larvæ mined in the segments of the leaves, making two or three entrance holes in each segment. The mined portions turned light brown and soon withered. In the latter half of July I bred from these larvæ two males and four females of *Coleophora troglodytella*. Before the imagines appeared, my hopes of having obtained something new had been dispelled by consulting the works of Continental authors and finding that yarrow was recorded as one of the food-plants of this *Coleophora*. Baron de Crombrugge de Piequendaele, in his catalogue of the *Micro-Lepidoptera* of Belgium (Mém. Soc. Ent. Belg., xiv, p. 77, 1906), mentions *Achillea* as one of the food-plants of this species. In Bohemia, *C. troglodytella* appears to be especially fond of *Achillea*, as Dr. Ottokar Nickerl writes (in German): "The larva with us on *Achillea millefolium*." (*Die Motten Böhmens*, p. 82, 1908).—
 ALFRED SICH, Corney House, Chiswick, W.: April, 1910.

Nemoura meyeri, Pict., abundant in March.—Whilst beating the still leafless branches overhanging the stream running through Harden Clough, Huddersfield, on the afternoon of Easter Monday, March 28th, I was surprised to note the abundance of *Nemoura meyeri*, Pict., at so early a date. The species occurred commonly all up the stream and was, I think, as plentiful as I have ever seen it in the summer months. *N. præcox*, Morton, was not uncommon along with it, but was not nearly so numerous as *meyeri*. The afternoon was very sunny and warm, notwithstanding an east wind, but was followed by a night so intensely cold as to cause a considerable thickness of ice.

As Mr. King tells us (A List of the *Neuroptera* of Ireland, 1910), that "the range of *N. meyeri* in Great Britain is not known," it may be well to record that it is one of the commonest species of its genus in West Yorkshire, occurring freely apparently on all the narrow "clough" streams, and equally so on the larger rivers such as the Wharfe.—GEO. T. PORRITT, Dalton, Huddersfield:
 April 9th, 1910.

A species of Mycetophila bred in England.—A year or two ago Mr. E. W. Swanton, the Curator of the Haslemere Educational Museum, met with some curious *Ancylus*- or miniature limpet-like creatures, near the highest part of Blackdown, Sussex, feeding on a rotten sodden oak branch attacked by the fungus *Poria vulgaris*, but could find no one to tell him what they were. Last autumn he met with them, under similar conditions, in another locality about

half a mile from the former, and bred them under a bell-glass, when they proved to be *Diptera*. On sending them to the British Museum he was informed by Mr. E. Austen that they were a species of *Mycetophilidæ* of the genus *Mycetophila*, and nearly allied to *M. bimaculata*, F., but he was not able to determine the exact species.

I am not aware that these *Ancylus*-like larvæ have been found in England before, it has, however, been observed by Perris in the similar larvæ of *Mycetophila scatophora*, and by Brauer in a species from Brazil.* The *Ancylus*-shell-like covering of the larva is said to be formed of their own excrement. Mr. Swanton remarks that at first sight he thought they might be a strange form of *Helix rotundata*. In the first case there were about twenty on the branch near each other, in the second about ten. In both years they were found early in October, and the flies were bred late in the same month.—E. N. BLOOMFIELD, Guestling Rectory: March 21st, 1910.

Obituary.

George Sharp Saunders died at Burgh Heath, near Epsom, on April 6th last, aged 68 years, his brother, Edward Saunders, having predeceased him by two months only. He was well known as an excellent entomological draughtsman, a fact alluded to in the Obituary notice of his brother recently published in this Magazine. For many years he had taken great interest in Economic Entomology, and occasionally contributed articles on this subject. He was elected a Fellow of the Linnean Society in 1899 (serving on the Council from 1902-05), and of the Entomological Society of London in 1861.

Societies.

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

The following gentlemen were elected Members of the Society:—Mr. H. S. Leigh, of Worsley, Mr. T. A. Clarke, of Hooton.

Mr. Wm. Mansbridge gave an address on "Variation in Lancashire *Lepidoptera*," specially instancing such species as *Boarmia repandata*, *Aplecta nebulosa*, *Macaria liturata*, *Odontopera bidentata*, and *Melanthia bicolorata*. The various local forms of these species were described and their distribution within the Society's area fully noted. A discussion ensued, in which the Chairman, Mr. F. N. Pierce, Mr. R. Tait, Junr., and others took part.

Mr. Mansbridge exhibited his series of *B. repandata* to illustrate his remarks, also the well-known Cheshire forms of *A. nebulosa*. Dr. Tinne also showed *B. repandata*, including vars. *nigra* and *conversaria*, the latter from the

* "Theobald's British Flies," p. 97.

New Forest. Mr. A. W. Boyd, *B. repandata* var. *nigra*, *Hybernia defoliaria* and *H. aurantiaria* from Delamere Forest. Mr. Tait's exhibit included a fine and varied series of *Himera pennaria* from Monk's Wood.

The Meeting was adjourned to March 21st. — H. R. SWEETING and W. M. MANSBRIDGE, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY
Thursday, March 10th, 1910.—Mr. A. SICH, F.E.S., Vice-President, in the Chair.

Mr. West exhibited two cabinet drawers of the Society's Collection of *Coleoptera* which he had just remounted and arranged. Mr. Barrett, specimens of *Nyssia hispidaria*, *Phigalia pedaria*, and *Hybernia leucophearia* from Richmond Park, and noted that he took the first named species in the same locality forty years ago, and that quite one-third of the last species seen were more or less crippled. Mr. Lucas, photographs of a very rare earwig, *O. lewisi*, from a specimen recently obtained in the Liverpool Docks. Mr. Bonham, two bred intensely black ♀s of *Nyssia hispidaria*. Mr. L. W. Newman, an interesting series of *Anthrocera* species from Bristol, taken by Messrs. Smallcombe, including *A. hippocrepidis* v. *chrysanthemii*; a yellow form, a fine pink form, and a red form with yellow spots, with a confluent form of *A. loniceræ*; also a confluent specimen of *A. meliloti*; and reported that pupæ of a second brood of *Abraxas grossulariata* kept out of doors were still alive. The remainder of the evening was devoted to the exhibition of lantern slides by Messrs. Tonge, West (Ashtead), Lucas, Dennis, and Edwards, including series illustrative of the resting attitudes of insects, details of insect structure, various plants attacked by galls, and the natural history and structure of the cockroach.—HY. J. TURNER, *Hon. Secretary*.

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

A vote of sympathy and condolence was passed unanimously with the family of the late Edward Saunders, F.R.S., and of the late George Willis Kirkaldy, Fellows of the Society. The decease was announced, also, of George Carter Bignell, and Albert Piffard, Fellows of the Society.

It was announced that the Society would be represented at the forthcoming Jubilee Celebration of the Entomological Society of Russia by Dr. Malcolm Burr, D.Sc., F.L.S., F.Z.S., &c., and that he would deliver an Address of Congratulation.

Mr. John C. Eales-White, of 47, Chester Terrace, Eaton Square, S.W., was elected a Fellow of this Society.

Mr. W. G. Sheldon exhibited various forms of *Agriades (Polyommatus) corydon* from Southern Europe, including *A.* var. *aragonensis*, and its form *cærulescens* from Albarracin, Spain; also a pair of *Brenthis selene* from La Granja, and a pair of *B. hecate* from Hungary, showing the remarkable

approximation of the two species in the markings of the under-side. Mr. H. St. John Donisthorpe brought for exhibition a case containing a small nest of about 30—40 ♂ ♀ living examples of *Formica rufibarbis*, var. *fuscourufibarbis*, from Whitsand Bay, August, 1909, into which had been introduced a queen of *Formica rufa* from Nothy Bridge (May, 1909); the queen had been accepted by the other ants in a few days. Mr. C. O. Waterhouse, on behalf of Mr. J. C. Moulton, of the Sarawak Museum, exhibited a Longicorn beetle of the genus *Chloridolum*, in which the right antenna was much shorter than the left: the specimen appeared to be a male in every respect except in the length of the right antenna, the joints of which were a trifle shorter than those of a female. Mr. Moulton was inclined to think the specimen might be gynandromorphous. Mr. Waterhouse suggested that it might rather be regarded as a malformation. Mr. W. E. Sharp exhibited an example of *Calathus mollis*, having the right anterior tibia and tarsus in triplicate; he said that such reduplication was not uncommon, but that it was seldom so perfect in detail. Mr. L. W. Newman, a case containing the following forms of *Zygæna hippocrepidis*, all taken in June, 1908, in one small field in the neighbourhood of Bristol: (a) analogous to *A. filipendulæ*, var. *chrysanthemæ*, (b and c) examples with the normal carmine coloration replaced by yellow, analogous to *A. filipendulæ*, ab. *flava*, Robson, and with pink, and (d) an example with yellowish spots, otherwise normal; also a specimen of *Z. loniceræ* captured at the same place, with the markings broadly confluent. Mr. G. Bethune-Baker, three nests of a species of Lasiocampid from Mount Elgon, Albert Nyanza, belonging to the same group as *Thaumatopea processionea*; he had been consulted relative to the possibilities of using the silk of which the long pouch-like "nests" were constructed. Mr. G. A. K. Marshall said that they belonged to a species of *Anaphe*. Professor E. B. Poulton, F.R.S., read a "Preliminary Note on Mr. A. D. Millar's experimental breeding of forms of the Nymphaline genus *Euralia* in Natal," by Mr. Roland Trimen, M.A., F.R.S., and exhibited examples of the species and forms referred to; he said that Mr. Millar was greatly to be congratulated on his success in obtaining the long-wished-for proof that *Euralia wahlbergi* and *E. mima* were forms of the same species. Prof. Poulton also exhibited a set of six *Euralia anhedon*, Doubl., and four *E. dubia* from Lagos, the western representatives of *E. wahlbergi* and *E. mima* respectively, giving it as his opinion that after the proof obtained by Mr. Millar, the western butterflies were also the dimorphic forms of a single species.

The following papers were read:—"Third Paper on the *Tetriginæ* (*Orthoptera*) in the Oxford University Museum," by J. L. Hancock, M.D. "Descriptions of new Algerian *Hymenoptera-Aculeata* (*Sphegidae*)," by the late Edward Saunders, F.R.S., and the Rev. F. D. Morice, M.A. "On *Zizeeria*, Chpunn. (= *Zizera*, Moore), a group of Lycænid Butterflies," by Dr. T. A. Chapman, M.D., F.Z.S. "Further Notes on two *Osmia* species of the *Adunca* group," by the Rev. F. D. Morice, M.A. "A few words respecting Insects and their Natural Enemies," by Arthur G. Butler, Ph.D., F.L.S., F.Z.S., M.B.O.U. The Rev. F. D. Morice, M.A., then delivered an address "On the Saws of Saw-flies," illustrated by many lantern slides, prepared and arranged by him.

Wednesday, March 16th, 1910.—The President in the Chair.

Mr. Edmond Wace Carlier, M.S.C., M.D., F.R.S.E., of the University, Birmingham; Mr. Herbert Alfred Green, of the Central Fire Station, Durban, Natal; Mr. Philip Harwood, of 23, Northgate End, Bishop's Stortford; Mr. J. Henderson, of Clifton, Ashbourne, Derby; Mr. Lionel Leslie Jacobs, Shelford, Copers Cope Road, Beckenham; Mr. William Laidlaw, 73, Endsleigh Gardens, Ilford, Essex, and 74, Great Tower Street, E.C.; Mr. H. S. Leigh, of the University, Manchester; Mr. F. Graham Millar, of Seafield, Batu Tiga, Selangor; Mr. Francis Alcock Oldaker, M.A., of the Red House, Haslemere; Mr. Aiyappa Raman Pillai, Trivandrum, India, and 13, Buccleuch Place, Edinburgh; Professor Reginald Crundall Punnett, M.A., of Gonville and Caius College, Cambridge; and Messrs. James M. Williams and F. R. Scott, of the Howard Motor Garage, Cardiff, and Canford Cliffs, Hants.; were elected Fellows of the Society.

Mr. H. St. J. Donisthorpe exhibited examples of *Cremastogaster scutellaris* ♀♀, *Colobopsis truncatus* ♀♀; and a beetle, *Formicomus pedestris*, a good mimic of the latter ant, all taken in virgin cork at Kew, May, 1909. Commander J. J. Walker, R.N., living specimens of *Holoparamecus caularum*, Aubé, taken commonly in haystack refuse at Water Eaton, Oxon., on March 14th. Mr. H. M. Edelsten, photographs of the anal appendages of *Tapinostola hellmanni*, *T. concolor*, and *T. fulva*, showing their remarkable similarity; also ova of the same species *in situ*. The photographs were the work of Mr. H. Main and Mr. A. E. Tonge. Mr. G. W. Nicholson, a specimen of *Dyschirius angustatus*, Ahrens, from Littlestone, Kent, taken in July, 1906; two specimens of *Bembidium 4-pustulatum*, Dej., taken at Pulborough in June, 1909; and two specimens of *Conosoma bipunctatum*, Gr., found by Mr. Jennings and himself at Broxbourne, Essex, in January of this year. Dr. T. A. Chapman, series of *Callophrys avis* bred this spring, together with *C. rubi* for comparison, and pointed out the principal superficial differences between these two closely allied species. The specimens show much uniformity in size, more on measurement than in appearance (due to setting?) the range being 33 to 36 mm. They show, when placed together, a very bright and fairly uniform red tint, markedly contrasting with the ruddiest *rubi* he has, and looking brilliant beside them. The females are rather larger than the males. Mr. J. W. Tutt read a note on the several forms of *Hydræcia* occurring in Britain, and showed examples to illustrate the superficial differences where discoverable, and the marked difference in the anal appendages of the several species, *Hydræcia nictitans*, *H. paludis*, *H. lucens*, and *H. crinanensis*. Excellent photographs of the genitalia of the four British species (both sexes) made by Mr. F. N. Pierce were handed round for examination. The Rev. C. R. N. Burrows, to whose research the discovery of *H. crinanensis* is due, stated that it seemed to him amazing that two species showing so much difference as *Hydræcia lucens* and *H. crinanensis* in their genitalia, should present no definitely marked superficial character in the imago. Dr. Karl Jordan considered that the four species, as proved by the differences in the genitalic structures, were abundantly distinct, and brought forward a parallel case among the Attacids. Mr. J. C. Kershaw contributed a paper on "The Oothecæ of an Asilid (*Promachus* sp.)." Dr. T. A. Chapman read a note entitled "*Xanthandrus comtus*, Harr., a Correction."—H. ROWLAND-BROWN, Hon. Secretary.

ADDITIONS AND CORRECTIONS TO THE BRITISH LIST OF
MUSCIDÆ ACALYPTRATÆ.

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

(Continued from page 48).

HELOMYZIDÆ.

I am much indebted to Abt. P. Leander Czerny for confirmation and correction of my identifications in this Family.

Helomyza humilis, Mg.—Col. Yerbury found this species at Barmouth (Merioneth) in May, 1902, and I have recently received a specimen from Mr. Norman H. Joy bred from English truffles.

Helomyza variegata, Lw., apparently does not occur in North Europe, and Meigen made a mistake in restricting Fallén's name *rufa* to this species. Loew's name must stand as has been pointed out by Czerny.

Helomyza pectoralis, Lw.—Czerny has sunk this as a synonym of *notata*, Mg., but Meigen's description does not apply to our species, which is, however, certainly Zetterstedt's *hilaris*. If Czerny be correct our species is the *var. hilaris* of *notata*, Mg.

Helomyza larvifrons, Lw.—Czerny sinks this species as a synonym of *rufa*, Flm. (*nec* Panz.), and contends that Fallén's reference to *Musca rufa*, Panz., does not affect the case, but I must agree with Loew that Fallén's name *rufa* cannot be used at all. Fallén must have thought he was recognising Panzer's *Musca rufa* and not describing a new species or he would not have used the name *rufa*, and as he was certainly wrong in his identification there remained only one way in which a subsequent student could use the name *rufa*, Flm., for a species of *Helomyza* and that was by restricting it to a species (not previously distinguished) included in Fallén's concept; but what has actually taken place is as follows:—The first student to deal with *Helomyza rufa* after Fallén was Meigen who, in 1830, restricted the name to a species which does not occur in N. Europe and consequently could not be included in Fallén's concept; then Zetterstedt in 1838 restricted Fallén's name to a species which he was unaware had been described eight years previously by Meigen as *flava*; again in 1847 Zetterstedt, recognising his previous mistake, attempted to restrict Fallén's name to another species, but this had also been described by Meigen seventeen years before as *affinis*. Schiner followed Zetterstedt in using the name *rufa*, Flm., for *affinis*, Mg., while Walker, Rondani, Bezzi and others have followed Meigen. When Loew monographed the group there remained only one species of those included in Fallén's concept of *rufa* undescribed, and by describing that as *larvifrons* Loew made it impossible for Fallén's name ever to be revived.

Helomyza zetterstedtii, Lw., must be known in future under the name of *H. bicolor*, Zett., as has been pointed out by Czerny.

Helomyza montana, Lw., must be known as *H. fuscicornis*, Zett.

**Helomyza oxyphora*, Mik.—This species is closely allied to *H. fuscicornis*, Zett. (*montana*, Lw.), but the scutellum terminates in a short blunt protuberance and the stout middle femora of the male are clothed beneath at the base with a number of short black hairs. Col. Yerbury took two males at Golspie (Sutherland) on August 2nd and 7th, 1900.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

The Coloured Plate issued last September having been so much appreciated by our readers, another (devoted to *Hymenoptera* and *Coleoptera*) was given with the Jan. number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also. Another Plate is in course of preparation, and it will be presented during the year 1910.

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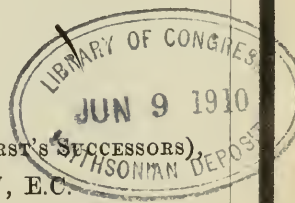
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BORBORIDÆ.

In Kertész "Katalog," vol. iv (1905), the *Borboridæ* are placed next to the *Cælopidæ* (*Phycodromidæ*), the situation assigned to them by Haliday in Westwood's *Introd. Mod. Class. Ins. Generic Synopsis* (1840).

**Limosina septentrionalis*, Stenh.—I have seen a male from Nairn (Scotland), July 10th, 1904, and a female from Porthcawl (Glamorgan), July 19th, 1896, both taken by Col. Yerbury.

**Limosina breviceps*, Stenh.—I have found this species in abundance on the shores of Poole Harbour (Dorset) in September and at different places on the Suffolk coast in August and September.

**Limosina brachystoma*, Stenh.—This species was plentiful on the sea-shore at Worth (Dorset) towards the end of August, 1906.

DRYOMYZIDÆ.

The genera *Dryomyza*, *Neuroctena*, *Neottiophilum*, and *Actora* have been united under the above family name.

**Dryomyza senilis*, Zett.—We appear to possess this species in Britain in addition to *flaveola* and *decrepita*. I have seen specimens taken by Mr. Verrall from Rannoch (Perthshire) and the island of Arran.

HETERONEURIDÆ.

This family has been recently dealt with by Czerny (Wien. Ent. Zeit., 1903) where he founded a genus *Heteromeriugia* for *nigrimana*, Lw., and sank *alpina*, Lw., as a synonym of *geomyzina*, Fln.

**Acartophthalmus nigrinus*, Zett.—This species does not appear to be uncommon in suitable localities; it has been found by Dr. Sharp and Mr. C. G. Lamb in the New Forest (September, 1903), by Col. Yerbury at Nethy Bridge (Inverness), (August, 1904), and at the same place by Mr. Lamb (June, 1905), while Mr. J. R. Malloch has sent me specimens from Bonhill (Dumbarton) taken in July, 1908, and I found it on the stumps of recently felled oak trees at Barton Mills (Suffolk) in May, 1909.

**Acartophthalmus bicolor*, Oldenberg.—When collecting in a large wood near here (Cambridgeshire) in company with Col. Yerbury at the end of May, 1909, I caught a number of this *Acartophthalmus* which I recognised as being distinct from *A. nigrinus* in having pale antennæ, front of frons and face and darkened costa. It was described in Heft III of the *Deutsche Ent. Zeitschr.* published on May 2nd last.

The generic name *Stomphastica* was proposed by Loew to replace *Clusia*, Hal., because the latter name had been employed by Linné in Botany, but on the strength of "Recent Rules of Nomenclature" Czerny has revived Haliday's name, and proposed the generic name *Paraclusia* for *tigrina*, Fln.

Helomyza similis, Mg.—Specimens of what I had believed to be *H. suilloidea* (Desv.), Hal., were returned to me by Czerny as *H. tigrina*, Mg. (= *similis*, Mg.), but I cannot agree with Czerny that this species must be called *tigrina*, Mg. In 1830 Meigen described what he thought was Fallén's *Helomyza tigrina*, but in 1838 came to the conclusion that his species was not the same as Fallén's (in which he was quite right, as Fallén's species was afterwards found to be generically distinct) and therefore renamed his species *similis*. Fallén's *tigrina*

being placed at that time in the genus *Helomyza*, Meigen was absolutely right in changing the name of his species and being right *then* his action must be accepted as right *for all time* quite irrespective of what happened to *tigrina*, Fln., afterwards. Mik (Ent. Nachr., 1897, p. 133) first advocated the use of the name *tigrina*, Mg., for this species under the mistaken idea that Fallén had described his species as *HETEROMYZA tigrina*, which of course would have altered the case entirely. Czerny states that the above case is similar to that of *Helomyza rufa*, Fallén, and so it is, for neither *rufa*, Fln., nor *tigrina*, Mg., were *new names* and therefore could not supplant any name subsequently proposed for the species included under Fallén's and Meigen's concepts, consequently the name *rufa*, Fln., cannot supplant *flava*, *affinis*, or *levifrons*, and the name *tigrina*, Mg., cannot supplant *similis*, Mg.

Eccoptomera longiseta, Mg., *microps*, Mg., and *ornata*, Lw., have been recorded by Mr. J. R. Malloch as occurring in Britain in the pages of this Magazine. Mr. Verrall caught a female of *longiseta* at Fawley (Hants.), on June 21st, 1875, and Col. Yerbury found it at Studland (Dorset) in June, 1907; *microps* is found not uncommonly in moles' nests, and in addition to other published records, I have seen specimens taken by Mr. J. H. Keys in Devon, and by Mr. E. C. Bedwell in Suffolk, Mr. Verrall found a male at Felixstowe (Suffolk), on July 14th, 1894, and Col. Yerbury a female at Barmouth (Merioneth), in May, 1902. Mr. C. G. Lamb has taken *longiseta* at Padstow (Cornwall), and Dr. J. H. Wood has found both species in Herefordshire.

**Eccoptomera excisa*, Lw., has been taken by Dr. Wood during the months of October and November in Herefordshire.

Scoliocentra villosa, Mg.—I have seen two ♂♂ and one ♀ of this species taken by Col. Yerbury at Nairn 9/7/04, and Aviemore (Inverness) 15/5/04 respectively; the strong curved apical spine to the middle tibiæ is a sexual character of the male only, but the hairy meso- and pteropleuræ will separate the genus from *Leria* (*Blepharoptera*).

Blepharoptera, Meq.—This genus must be known as *Leria*, Dsv., as used by Schiner and Rondani.

Leria casia, Mg.—This is a large species allied to *spectabilis*, Lw., but always with darker antennæ and clearer wings, which has been in the List of Reputed British species, upon Curtis' record in the addenda to the 2nd Edition of his Guide to the Arrangement of British Insects (1837). The specimens I have seen were taken by Dr. J. H. Wood and Col. Yerbury in Herefordshire, on October 17th and 21st, 1902.

**Leria flavotestacea*, Zett.—This is not an *Eccoptomera* as given in Kertész's "Katalog," Vol. iv, nor is it the same as *longiseta*, Mg., as Zetterstedt supposed, but a true *Leria*. It has been taken by Col. Yerbury at Porthcawl (Glamorgan), and Hay (Brecknock) in May, and at Forres (Elgin), and The Mound (Sutherland).

**Leria dupliciseta*, Strobl.—Two males from Dr. Capron's collection probably taken at Shere (Surrey), and a male found by Col. Yerbury at Porthcawl (Glamorgan), on June 5th, 1903, appear to represent the above species; it has two pairs of vibrissæ (one long and one short), two strong sternopleural bristles, mesopleuræ with a few bristles, pale antennæ, scutellum, abdomen, and legs.

* *Leria kerteszi*, Czerny.—The species recorded by the Rev. W. J. Wingate in 1903 (Naturalist, p. 284), as occurring in the county of Durham under the name *iners*, Mg., is not that species, but a new one which Czerny returned to me with the above name.

* *Leria halterata*, Mg., and **L. ruficeps*, Zett.—Specimens sent by me to Czerny were returned as answering to the above two species; the former is not uncommon on the coast, the latter not uncommon in large woods.

* *Tephrochlamys tarsalis*, Zett.—Col. Yerbury found a male at Porthcawl (Glamorgan) on June 13th, 1903; at one time I considered this might be the male of *flavipes*, Zett., but Col Yerbury caught a male of this latter species at Walton-on-Naze (Essex) on June 9th, 1908. The front tibiæ of *flavipes* are always pale, whereas in *tarsalis* they are darkened except at the base; moreover, in the latter species the bristles on the jowls are longer and more numerous.

SCIOMYZIDÆ.

SCIOMYZINÆ.

Sciomyza dorsata, Zett., and *ruficeps*, Zett., are not considered to be distinct species by Hendel, but I have never found any intermediate forms.

Sciomyza virgata, Hal. (= *albicarpa*, Rnd.).—Hendel (Wien. Ent. Zeit., 1910, p. 109) has agreed with my interpretation of this species as being distinct from *pallidiventris*, and from his species *lichtwardti*.

Sciomyza pallidicarpa, Rnd., of the List should be known as *scutellaris*, v. Ros.

Sciomyza lata, Schiner, was introduced by Mr. F. C. Adams on a specimen of *dorsata*, Zett., and should be struck out of the List.

Sciomyza bifasciella, Fln.—Zetterstedt's genus *Colobæa* has been revived for this species.

Sciomyza simplex, Fln.—A new genus *Bishofia* has been founded by Hendel (1902) for this species; at the same time he founded a genus *Ditænia* with *S. cinerella*, Fln., as the type and including our *S. griseescens*, Mg. (*nasuta*, Zett.), *Schönherri*, Fln., and *brunnipes*, Mg. (*pusilla*, Zett.); his character for this genus is the presence of a shining fillet or band down the centre of the frontal stripe, in some species this is very distinct but in others it is only visible as a slight continuation of the ocellar triangle, and I cannot think that in itself it forms a sound generic character.

* *Dichrochira leucopeza*, Mg.—The genus *Dichrochira* was founded by Hendel for the small shining black species of *Sciomyza* with shining frons and very narrow jowls, and with the discal cross-vein nearer the base of the wing than usual in *Sciomyza*. *S. glabricula*, Fln., and *nigrimana*, Mg., belong to this genus. I have taken *D. leucopeza* at Tuddenham (Suffolk) on August 28th, 1902, and Col. Yerbury informs me that he possesses specimens from Tram Inn and Clifford's Castle (Herefordshire), taken in August, 1902.

Tetanura, Fln.—This genus, which has stood in our List under the *Opomyzidæ*, is probably correctly placed by Hendel in the *Sciomyzinæ*.

TETANOCERINÆ.

* *Renocera striata*, Mg.—The genus *Renocera* was founded by Hendel for those species of *Sciomyza* agreeing with the *Tetanocerinæ* in the absence of the

prothoracic bristle, but differing from *Tetanocera* in having shorter, more *Sciomyzid*-like antennæ and from other neighbouring genera in having only one preapical bristle to the hind tibiæ. *Sciomyza pallida*, Fln., and *fuscinervis*, Zett., of the "List," belong to this genus, to which I now add *striata*, Mg. (*affinis*, Zett.), taken by Col. Yerbury at Nethy Bridge (Inverness) in June and August, and at Kingussie (Inverness), and Nairn in July. It has like *fuscinervis* a dark median fillet or band to the frontal stripe, but differs in having the tip of the antennæ slightly darkened, the arista with shorter hairs, frons narrower at the antennæ, bristles under the hind femora of the male less numerous (none in female), and the prothoracic sternum bristly.

Renocera fuscinervis, Zett.—I have recently seen the specimens in Zetterstedt's Collection at Lund and noted that they are as follows:—a male labelled "S. fuscinervis ♂ Scan.," a second male labelled "Fredensb. Ostrogoth.," and a female labelled "Ås ad Ostersund Jemt. $\frac{1}{8}$ 40." This female is undoubtedly a *Renocera* identical with *strobli*, Hendel, while the two males are *Tetanocera unicolor*, Lw. The original types (a pair taken at Wilhelmina, v. Ins. Lapp., p. 737) are missing, but Zetterstedt's description in Ins. Lapp. applies equally well to either *strobli*, Hendel, or *unicolor*, Lw., while his description in Dipt. Scand., Vol. v, most obviously includes *strobli*. After the description of *Tetanocera unicolor* by Loew, in 1847, **fuscinervis* of Zetterstedt was automatically restricted to the second species included under that name, which Hendel described as *strobli*, therefore Hendel's name must sink as a synonym.

Antichæta vittata, Hal.—*Sciomyza vittata* of the "List" belongs to this genus which is distinguished from *Renocera* by having two preapical bristles to each hind tibia. Hendel considers Haliday's species a synonym of *analis*, Mg., but some explanation is required in regard to Meigen's description of the antennæ as "rostgelb."

Heteropteryx brevipennis, Zett.—*Sciomyza brevipennis* of the "List," has been made by Hendel the type of this genus which he separates from *Antichæta* by its abbreviated wings, different venation, &c.

* *Ctenulus distinctus*, Mg.—This species has been taken by Col. Yerbury at Tram Inn (Herefordshire), and Porthcawl (Glamorgan), it appears to be a rarer insect than the next.

* *Ctenulus pectoralis*, Zett.—Also found by Col. Yerbury at Porthcawl (Glamorgan) in June, Torcross (Devon) in August, and Gravesend (Kent) in September. Mr. Verrall took it so long ago as 1875, at Upware (Cambridgeshire), and in 1888 at Slapton (Devon). It may be distinguished from *distinctus*, Mg., by its yellowish pleuræ and its distinct sternopleural bristle.

* *Ectinocera borealis*, Zett., was taken by Mr. C. G. Lamb at Nethy Bridge (Inverness), and by Mr. J. R. Malloch at Bonhill (Dumbarton) in June, 1906, Its elongate third antennal joint makes it a distinct looking insect.

Tetanocera robusta, Lw.—This has generally been considered only a variety of *ferruginea*, Fln., but is absolutely distinct. In addition to its larger size,

* In his "Revision der Sciomyzidae," Hendel erroneously refers to Zetterstedt's species as *rufinervis*.

longer antennæ, and more conspicuously whitish pleuræ, the middle femora bear one or more stout bristles behind near the tip, and the prothoracic sternum is bristly instead of being bare as in *ferruginea*. I have seen specimens from England, Scotland and Ireland.

A genus *Lunigera* has been suggested by Hendel for *Tetanocera chærophyllii*, F. (*coryleti*, Schin. nec Scop.), but I think it will be found that this species is congeneric with *Limnia rufifrons* with which it agrees in all respects except for the more plumose arista.

The species of the genus *Tetanocera* have been further reduced by the formation of two genera by Hendel, *Trypoptera* for *punctulata*, Scop., and *Monochætophora* for *umbrarum*, L., and by the resuscitation of the genus *Pherbina*, Desv. for *coryleti*, Scop., and *punctata*, F.

In the genus *Limnia* of the "List," *Coremacera*, Rnd., has been revived for *marginata*, F., and *Dichætophora*, Rnd., for *obliterata*, F.

In the genus *Elgiva* of the "List," a genus *Hedroncra* has been proposed by Hendel (Wien. Ent. Zeit., 1902, p. 265) for *rufa*, Pnz., and *cucularia*, L., and Desvoidy's genus *Hydromyia* has been resuscitated for *dorsalis*, F.

(To be continued).

DIAGNOSES OF SOME NEW SPECIES OF *GABRIUS*.

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

I have long been aware that under the names of *Philonthus nigritulus* and *trossulus* we have confused several species, but I have only recently made a serious attempt to unravel them. Having to a certain extent succeeded, I think it desirable to give a brief preliminary sketch of their characters. I may add that I have examined the old literature and also the Stephensian Collection, and that I cannot assign any of the names I have met with to the species here designated.

I have adopted the genus *Gabrius*, as I am inclined to the opinion that, if *Philonthus thermarum* be excluded, it will prove to be valid.

I.—*GABRIUS STIPES*, sp. n.

Latiusculus, subdepressus, niger, pedibus testaceis, tibiis plus minusve infuscatis; capite lato; thorace lato, parallelo, punctis seriatis majoribus; elytris thorace paulo longioribus, profunde punctatis. Long., 5½ mm.

Mas.: segmento ultimo ventrali rotundato, integro; ædeago ad apicem appendicula tenera, haud reflexa, nec acuminata.

Hab.: ANGLIA; rarissime. Plymouth (J. H. Keys); Mickleham (G. C. Champion); Cambridge (D. Sharp).

This is not only very rare, but also very variable. I am not,

however, convinced that all the specimens I refer to it are really one species. The appendage at the extremity of the ædeagus is of very delicate form, and shrivels somewhat in drying. A variety—quite mature—with pale elytra occurs. The type is of the large, dark, very flat form.

2.—*GABRIUS PENNATUS*, *sp. n.*

Angustus, niger, antennarum basi, palpis pedibusque testaceis; capite angusto; thorace angusto antrorsum subangustato; elytris thorace paulo longioribus, sat fortiter punctatis. Long., $4\frac{3}{4}$ mm.

Mas.: abdomine segmento ultimo ventrali excisione parva, sed profunda, a membrana pellucida fere omnino impleta; ædeago ad apicem appendicula robusta, abrupta, acuminata, quasi pentagonali.

Hab.: ANGLIA et SCOTIA; haud vulgaris.

This is much narrower than *G. nigrutilus*, and is thoroughly well characterised by the ædeagus, which does not resemble that of any other species.

3.—*GABRIUS VELOX*, *sp. n.*

Angustus, niger, antennarum basi palpisque testaceis; capite angusto; thorace angusto antrorsum subangustato; elytris thorace paulo longioribus, fortiter punctatis. Long., $4\frac{3}{4}$ mm.

Mas.: abdomine segmento ultimo ventrali excisione angusta, profunda, a membrana pellucida fere omnino impleta; ædeago sat elongato, apice obtuso, appendicula apicali reflexa, male delimitata, in partem anteriorem corporis ædeagi quasi perdita.

Hab.: ANGLIA; ad flumen Lymington dictum cujus in ripas velocissime currit.

Extremely similar externally to *G. pennatus*, but with a totally different ædeagus. This organ in the present species naturally projects between the two terminal styles, so that the form of its apex can be seen without dissection. *G. nigrutilus* is twice as broad as *G. velox*; the ædeagus in these two species approximates considerably; but there are well marked distinctions and the structure exhibited by that of *G. nigrutilus* explains that of *G. velox*, which taken alone would be obscure.

4.—*GABRIUS KEYSIANUS*, *sp. n.*

Sat angustus, niger, pedibus piccis, tarsis rufescentibus; capite oblongo; prothorace antrorsum parum angustato; elytris prothorace longioribus, sat profunde punctatis. Long., $5\frac{1}{4}$ mm.

Mas.: abdomine segmento ultimo ventrali excisione lata, a membrana pellucida parte majore impleta; ædeago apice pellucido et elongato, apice summo subacuminato sed vere minutissime bidentato.

Hab.: ANGLIA, Devon, Slapton Ley (J. H. Keys and G. C. Champion).

5.—*GABRIUS APPENDICULATUS*, *sp. n.*

Augustus, *conceiusculus*, *nigerrimus*, *antennarum basi palpisque piccis*, *pedibus rufo-piccis*, *tarsis brevibus, robustis, rufis*; *elytris thorace paulo longioribus, fortiter punctatis*. Long., 4 $\frac{3}{4}$ mm.

Mas.: *abdomine segmento ultimo ventrali excisione profunda, a membrana pellucida parte majore impleta*; *ædeago brevi, robusto, appendicula reflexa lata, brevi, perdura*.

Hab.: ANGLIA et SCOTIA; hic inde, sat rarus.

Very similar to *G. keysianus*, but smaller, with short, robust feet, and a very remarkable ædeagus.

6.—*GABRIUS BISHOPI*, *sp. n.*

Augustus, *niger*, *antennarum basi palpisque piccis*, *pedibus testaceis*, *tibiis plus minusve infuscatis*; *capite angusto, oblongo-ovato, thorace antrorsum paululum angustato*; *elytris thorace longioribus, fere subtiliter punctatis*; *tarsis gracilibus*. Long., 5 mm.

Mas.: *abdomine segmento ultimo ventrali excisione profunda a membrana pellucida parte majore impleta*; *ædeago elongato, apice duro, rotundato fere bulboso*.

Hab.: SCOTIA: rarissime, Beattock and Thornhill (T. G. Bishop and D. Sharp).

Extremely similar to *G. velox*, but a little broader, with slightly darker palpi, the punctuation of the elytra rather less impressed, and an ædeagus very distinct from that of any other species. It occurs at Beattock, I believe, on the banks of the stream in the grounds of Mr. Bishop, and I am glad to have the opportunity of naming it after my old friend.

Brockenhurst:

May 14th, 1910.

TRECHUS SUBNOTATUS, DEJ., IN SOUTH DEVON.

BY E. A. NEWBERY.

A single specimen of this interesting insect has been taken by Mr. P. de la Garde, under circumstances which leave little doubt as to its native origin. At the same time, owing to its known distribution (Italy, Istria, Dalmatia, Greece), it appears to be a south-eastern species, which can only be regarded provisionally as British until other specimens are captured here.

The following description is translated from Putzeys (*Trechorum oculatorum Monographia*, 1870, species No. 94):—

Pitchy, with an oblong spot at shoulder, a subrotundate one before apex, and the inflexed margin of elytra, testaceous. Antennæ with the 2nd joint shorter and thicker than 4th. Thorax subcordate with sides a little arched and posterior angles small, prominent, and acute. Elytra sub-oblong-ovate, punctate-striate, the marginal striæ nearly obsolete.

T. subnotatus has several marked varieties, which have been studied by Holdhaus (*Verh. zool.-bot. Ges. Wien*, 1902, p. 195). In Mr. de la Garde's example the shoulder spots are altogether wanting, and although coming very close to the var. *fairmairei*, Pand., an example of which Capt. Deville has kindly sent me for comparison, he thinks it may possibly belong to an undescribed race, if other specimens occur to support this view.

The specimen in question was found at Shaldon, near Teignmouth, on February 26th, 1910. In order that the probability of its being a native or an importation may be fairly judged, I give details of capture in Mr. de la Garde's own words:—

“Shaken out of a tuft of grass which had evidently been dislodged from the face of the cliff during the heavy rains. The tuft was lying on the beach in a trickle of water. The cliffs at this spot are nearly perpendicular and about 150 feet high, with here and there ledges and crevices in which grass, &c., grows. At high tide the sea washes nearly, or quite, to the foot of the cliff, but this part of the beach is entirely free from any eddy of the river (which debouches the other side of a prominent point), and in fact, has rarely any tidal refuse at all on it, there was none whatever on the day in question.

There is no house within half a mile of this part of the cliff; the village of Shaldon is on the bank of the river some distance up, and Teignmouth is on the opposite bank further away still.”

13, Oppidan's Road, N.W.:

May 11th, 1910.

[I have taken *Trechus subnotatus* in the Ionian Islands (Corfu and Argostoli [Cephalonia]), Greece (Patras), and Asia Minor (Vourlah Bay, near Smyrna), usually at roots of grass in marshy places.—J. J. W.]

ON THE BRITISH SPECIES OF *SMICRONYX*, SCHÖNHERR.

BY JAMES EDWARDS, F.E.S.

We have in Britain three species of *Smicronyx*, which may be distinguished as follows:—

1. Claws equal2.
 Claws unequal; the inner one on the front tarsi, and the outer one on the middle and hind tarsi, the smaller*cæcus*, Reich.
2. Length of the elytra visually twice as great as their width at the base.
 Thorax without any appearance of tuberculation...
jungermanniæ, Reich.
 Length of the elytra visually one and a half times as great as their width at the base. Thorax apparently tuberculate*reichi*, Gyll.

The characters employed above are designedly independent of the scaling of the upper surface, because it appears that abraded specimens are much more frequent in collections than well-clothed ones. The first point to be observed in essaying the determination of *Smicronyx* is the condition of the claws; with specimens set in our English fashion there is no difficulty about this, and the omission to do so has led to confusion in more than one collection of repute. The sculpture of the thorax merits attention, but its real character cannot readily be observed except in abraded specimens. In the interspaces of the large punctures it consists of a shallow confluent punctulation (the "cross reticulation" of Fowler), which in *S. cæcus* is so little evident that for practical purposes it may be regarded as absent; in *S. jungermanniæ* it is more easily seen, and in *S. reichi* it is sufficiently evident to impart to the surface a characteristic dull appearance. The large punctures are similar in *S. cæcus* and *S. jungermanniæ*, *i. e.*, the cavity is shallow and has a flat bottom which bears behind the middle a minute pit, from which a hair-scale arises. In *S. reichi*, however, the greatest depth of the puncture, which is considerable, lies at its hinder edge; and the floor, although plane, rises gradually from back to front, so that in the customary cephalad aspect, when the surface is lighted from front to back, the front edge of the puncture is invisible; from this circumstance arises an appearance of tuberculation (the "punctuation râpeuse" of Bedel), but when the surface is lighted at a right angle to the long axis of the body the complete circular boundary of the orifice of the puncture is easily seen; indeed, if regarded under that lighting alone, the thorax might be described as deeply punctured. These particulars may easily be verified with a magnification of fifty diameters or less.

S. cæcus, Reich.—This species may be recognised in any condition by its unequal claws. I have seen no specimen in which the scaling of the elytra was complete, but several had more or less extensive patches of undisturbed scales, from which it is evident that the normal condition is for each interstice to have a row of distant fine hair-scales down the middle, and an irregular double series of elongate-oval white

scales; the latter are twice as long as wide, truncate at the apex, and separated from each other in a lateral direction by a space equal to the width of one scale. In addition to the two specimens mentioned by Dr. Fowler (Col. Brit. Isl., v, p. 282), I have seen others from Weymouth (J. J. Walker), ex coll. Gorham, and ex coll. Fowler. This is the *S. reichei* of Fowler, *l. c.*; the figure of his insect, Pl. 167, fig. 10, though sufficient to show that *reichi* proper was not intended, is not characteristic of *S. cæcus*. There seems no reason to doubt that G. R. Waterhouse's treatment of the *Pissodes* ? *pygmæus* of Curtis (Ann. Nat. Hist., v, p. 280, 1840) as a *Smicronyx* was correct; and Curtis' phrase, "deep shining black, sparsely clothed with minute white scaly hairs," appears to me to identify his insect with *S. cæcus*, Reich, so clearly that what the *S. pygmæus*, Curt., of British collections may have been matters nothing. Curtis' description does not apply to either of our two other species in any condition.

S. jungermanniæ, Reich.—In form this species resembles the foregoing so closely that denuded examples are only to be separated by their equal claws. In fresh specimens the elytra are densely covered with broad, subcontiguous, pale brown scales, with a sprinkling of irregular patches of white ones, and each interstice has a row of distant decumbent hair-scales down the middle. The appressed scales are not more than one and a half times as long as wide.

S. reichi, Gyll.—This is easily distinguished from our other two species by its larger size, and the greater bulk and width of the body behind the thorax, as well as by the peculiar sculpture of the latter. The character of the scaling of the elytra does not differ appreciably from that of *S. jungermanniæ*, as appears, amongst others, from a very perfect specimen ex coll. Capron lent me by Mr. Champion. A recognisable figure of the species, from Mr. E. A. Waterhouse's Folkestone specimen is given in Ent. Ann., 1873, but the artist has somewhat exaggerated the width of the elytra as compared with that of the thorax, and also made the latter too long in proportion to its width. Var. *championis* is the name by which Fowler distinguished this species from the *S. reichei*, of Col. Brit. Isl., as appears from Mr. Champion's Folkestone specimen, which is the type, or co-type, of the name in question. Besides the two specimens previously mentioned, Mr. Champion has lent me two others ex coll. F. Smith, and one taken by himself at Caterham.

Dr. Fowler most obligingly sent me on April 25th, 1910, all his *Smicronyx*, with the labels as they were standing in his collection, viz.: above the label *cæcus*, Reich, the specimen of that species referred to

in Col. Brit. Isl. and determined by M. Bedel; above the label *reichei*, Gyll., three specimens of the real *S. reichi*, all of them with the scaling of the elytra abraded to an extent which would justify Bedel's phrase, "condensées par places;" above the labels 2483 *jungermanniæ*, Reich, 2484 *cicur*, Reich, and 2485 *pygmaeus*, Curt., cut from Sharp's Catalogue of 1871, four examples of *S. cæcus*, Reich (two of them being the material on which his figure of *S. reichei*, l. c., was based), and one very abraded specimen of the real *jungermanniæ*, Reich. It appears, therefore, that the author's views have been modified since his account of *Smicronyx* in Col. Brit. Isl. was written, and that he has properly discarded var. *championis*, a name which he applied to the real *S. reichi* at a time when he considered specimens of *S. cæcus* to represent the true *reichei*. He also put in the box thirteen specimens of *Smicronyx* from Chobham and Woking, ex coll. E. Saunders, but as these had been simply gummed on card without any pretence at setting, they did not, with the exception of one fresh well-clothed *jungermanniæ*, Reich, admit of determination. It is clear that if records of the British distribution of *Smicronyx* are to have any value whatever they will have to be worked out *de novo*.

Mr. Champion's specimens of *S. jungermanniæ* were mostly taken on "dodder," in heathy places (Bournemouth, Woking, Esher, Shirley, &c.) and on the chalk (Mickleham, Caterham, Guildford, &c.).

Colesborne, Cheltenham :

May 4th, 1910.

DESCRIPTION OF TWO NEW SPECIES OF THE LONGICORN GENUS *PENTOMACRUS*.

BY MALCOLM CAMERON, M.B., R.N., F.E.S.

Pentomacrus serratus, n. sp.

Reddish-testaceous, head and thorax dull, very obsoletely and diffusely punctured, the latter much longer than broad, slightly rounded at the sides. Elytra rather shining, coarsely and thickly punctured, less so at apex. Anterior femora armed with a tooth, middle and posterior femora armed with a strong tooth, the posterior edge of the tooth on the hinder femora being finely but distinctly serrated for its whole length. Anterior and middle tibiæ slightly, posterior distinctly, sinuated. Legs and antennæ reddish-testaceous.

In general appearance most like a small *P. fasciatus*, Gahan, but differs in the puncturation of the thorax, the absence of elytral bands, the well marked serrated edge of the posterior femoral tooth and the sinuated posterior tibiæ. Length, 5 mm.

Taken by sweeping near Port au Prince, Haiti, in February, 1908.
Type in my Collection.

Pentomaerus distinctus, n. sp.

Testaceous, rather shining. Head shallowly punctured, slightly infusate on the front. Thorax almost cylindrical, much longer than broad, with shallow puncturation, disc marked on either side with ill-defined ferruginous spot. Elytra shining testaceous, rather coarsely punctured, each marked with two ferruginous bands, one situated before the middle and convex backwards, the other placed behind the middle and slightly convex forwards, each pair meets its fellow at the suture. Antennæ and legs testaceous, all the femora armed with a tooth, that of the middle and posterior, larger and having the posterior edge of the tooth on the hinder femora serrated. All the tibiæ distinctly sinuated. Length, 5 mm.

Taken by sweeping near Port au Prince, Haiti, in February, 1908.
Type in my Collection.

The following Table should serve to discriminate the species at present known:—

A.—Posterior tibiæ sinuated.

1. Posterior edge of posterior femoral tooth not serrated.
 - a. Thorax more diffusely punctured, elytra mottled with purplish-brown spots.....*scambus*, Newm.*
 - a'. Thorax closely punctured, elytra with two transverse bands, one behind shoulders, one before apex.....*dentipes*, Ol.†
2. Posterior edge of hinder femoral tooth serrated.
 - a. Colour reddish-testaceous, thorax dull, very obsolete punctured, no definite bands on the elytra.....*serratus*, n. sp.
 - a'. Testaceous, thorax shining, distinctly punctured, each elytra marked with two distinct bands.....*distinctus*, n. sp.

B.—Posterior tibiæ not sinuated.

1. Size larger (12 mm.), thorax marked with black at anterior margin and sides in front. Elytra marked with three well-defined transverse dark brown bands*femoratus*, F.
2. Size smaller (7-10 mm.), thorax without markings, three obscure transverse elytral bands*fasciatus*, Gahan.

February, 1910.

* This insect was removed from Newman's genus *Curius* and placed by Leconte and Horn (Col. North America, p. 289) in Dejean's *Plectromerus*. As the latter author has given no characteristics of the genus and the insect falls naturally into White's *Pentomaerus* (Longicorn viii, 2, 1855, p. 297) I have accordingly included it in the Table.

† Henshaw, Cat. Col. North America, 1885, p. 97, sinks *scambus*, Newm., as a synonym of *dentipes*, Ol. The insect in the British Museum Collection standing under the latter name is quite distinct from the type of Newman's *scambus* in that Collection. Olivier's description and figure, although the latter is poor, would apply to the insect named *dentipes*, Ol., in the B. M. Collection, but would not apply to *scambus*, the elytra of which are said to be, "profunde puncta, luteola fusco varia" (The Entomologist, March, 1841, p. 79), whilst Olivier's description of *dentipes* reads, "elytris fasciis duabus fuscis" (Ent. iv, 70, p. 29).

NOTES ON *CETONIA AURATA*, L., AND *C. FLORICOLA*, HERBST.

BY A. H. HAMM.

C. AURATA, L.

During a brief visit to the New Forest in August, 1908, my son and I came across some fairly large Lamellicorn larvæ. They were feeding upon the fragments of damp dead wood, at the foot of what had once been a very fine beech, now, alas! reduced to a mere stump,



× 1½.

C. AURATA.*C. FLORICOLA*.

situated at the far end of Queen's Bower, near Brockenhurst. A few of the largest were placed in a tin box with a sufficient supply of the dead wood to enable them to arrive at maturity. Upon reaching home several of the smaller individuals were put into spirit, but five examples of the same size and apparent age were kept alive for future study. The larvæ continued feeding until quite late into the autumn. They then buried themselves in the accumulation of frass

and hibernated until the following spring. Towards the end of March they again commenced feeding and continued to do so without intermission until mid-June, when four of them built from their excreta, &c., oval cocoons about the size of a good-sized hazel-nut. On August 19th the first emerged, another on the 23rd, and the remaining two on the 25th. By this last date four out of the five larvæ had produced perfect specimens of *Cetonia aurata*. The remaining larva continued feeding until some time in October, and finally hibernated as before. The four imagines, after emergence, were left in the tin box with the remaining larva. These at the beginning of September buried themselves at the bottom of the box and remained perfectly motionless, with all their limbs tightly adpressed to the body, until the beginning of April.

They are now (April 10th) quite lively. The remaining larva has also commenced to feed again.

These few observations tend to prove (1) that the larvæ of *C. aurata* feed for several seasons before reaching maturity; (2) that the imagines can hibernate and pass the winter in a quiescent state; (3) that all larvæ of the same age do not reach maturity together. These facts may account for the abundance or scarcity of this insect in certain seasons. Reference may also be made to the "Entomologist's Record," 1904, p. 301.

C. FLORICOLA, Herbst.

Last July my friend Mr. Horace Donisthorpe brought to the University Museum a larva of *C. floricola*, which he had obtained from a nest of *Formica rufa* in Scotland, in order that Professor Poulton might witness its remarkable mode of progression, afterwards described in "The Entomologist's Record," 1909, p. 288. This larva I have kept supplied with *F. rufa* nest material, and like *C. aurata* it has hibernated during the past winter. Having a larva of both species I thought it would be interesting to place them side by side and note the difference, if any, in their movements, &c. The comparison was made on April 13th last, when both larvæ were placed on a sheet of white paper and the following notes were made. With *C. floricola* it mattered not whether the larva was placed laterally or ventrally, it always turned over on to its dorsal surface, and with very slight contractions of the body moved along steadily and easily on a perfectly "even keel." In colour it is pale ochreous-yellow, almost straw-colour, and it is thickly covered with short, reddish-brown, bristly hairs. Its dorsal surface is not strongly convex, and the folds between its segments are arranged quite differently from those of *C. aurata*. These differences will be better appreciated by reference to the illustration. The latter is nearly white, and its dorsal surface is far more convex from side to side; it is less thickly covered with lighter-coloured hairs, which are chiefly developed on the sides. Its mode of progression differed in a marked degree from that of *C. floricola*. Like the latter it always turned over on to its dorsal surface, but its relatively rapid motion was accompanied by a pronounced roll, like that of a ship, due to the rounded contour of its back.

My thanks are due to my friend, Mr. C. J. Bayzand, for his kind assistance in photographing these larvæ.

University Museum, Oxford:
May, 1910.

COLEOPTERA IN HEREFORDSHIRE (III).

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

The first and second papers of this series appeared in vol. xlv, pp. 56 and 252, of this Magazine; and it may be well to note that only the former of these two papers is indexed under the county heading. The notes below refer almost exclusively to captures in 1909. Since the publication of Part II, I have to record a fine specimen of *Oxyptoda spectabilis*, Märk., from a mole's nest at Tarrington, taken on January 3rd last.

Leptinus testaceus, Müll., Ledbury, West Malvern and Tarrington; at the last two places it occurred in mole's nests which had passed by reversion to field-mice: *Clambus armadillo*, de G., and *C. pubescens*, Redt., common on a species of Agaric in an oat-field in the Woolhope district; *C. minutus*, Stm., common and very large in flood refuse at Symonds Yat: *Agathidium nigripenne*, Kug., Stoke Edith woods under beech bark: *Anisotoma parvula*, Sahl., one swept on the Great Doward: *Amphicyllis globus*, F., West Malvern: *Choleva intermedia*, Kr., West Malvern, rare in moles' nests; *C. spadicea*, Stm., Cusop Dingle, in moss: *Bryaxis hæmatica*, Reich., Great Doward; *B. impressa*, Panz., not uncommon in marshy ground at Mathon: *Trichonyx sulcicollis*, Reich., one swept at Tarrington on August 3rd: *Seymnus minimus*, Ross, one swept at West Malvern: *Endomychus coccineus*, L., bred from a *Polyporus* in Stoke Wood: *Paromalus flavicornis*, Hbst., Kerne Bridge, in *Polyporus*: *Micropeplus porcatus*, Pk., rare at Bromyard and West Malvern: *Microrula melanocephala*, Marsh., Cusop: *Pocadius ferrugineus*, F., widely distributed and common: *Meligethes lumbaris*, Stm., Mathon on *Angelica* flowers: *Ips 4-punctata*, Hbst., Devereux Pools (one): *Melanophthalma similata*, Gyll., on spruce in several localities; very common in Abbeydore Churchyard: *Diphyllus lunatus*, F., Abundant at Fownhope in its usual habitat: *Antherophagus nigricornis*, F., odd specimens at Mathon and Cusop; *A. pallens*, Ol., ditto at Mathon, Cusop, and on the Doward: *Cryptophagus subdepressus*, Gyll., vide Ent. Mo. Mag., 1909, p. 215: *Paramecosoma melanocephalum*, Hbst., common in flood refuse at the foot of the Great Doward: *Atomaria munda*, Er., West Malvern, in a cellar; *A. elongatula*, Er., one swept at Abbeydore: *Georyssus pygmaeus*, F., not uncommon on the banks of the River Teme: *Macronychus quadrituberculatus*, Müll., vide Ent. Mo. Mag., 1910, p. 15: *Potaminus substriatus*, Müll., common with the last in September.

Aphodius borealis, Gyll., Mathon, not uncommon in August; *A. zenkeri*, Germ., Stoke Edith Park, where there used to be deer, and Great Doward; *A. sticticus*, Panz., one of the commonest *Aphodii* in the county; *A. obliteratus*, Panz., rare at Stoke Edith; *A. erraticus*, L., Leech Pool and Kerne Bridge; *A. rufescens*, F., Fownhope and Devereux Pools; *A. depressus*, Kug., Cusop.

Melasis buprestoides, L., Stoke Edith, in beech-wood.

Rhagonycha fuscicornis, Ol., rare at Mathon: *Malthodes minimus* var. *margi-*

nicollis, Schilsky, West Malvern; *M. mysticus*, Kies., common on the Great Doward; *M. flavoguttatus*, Kies., Kerne Bridge; *M. pellucidus*, Kies., West Malvern; *M. dispar*, Germ., Hereford, Mathon, and Cusop, always in damp ground; *M. atomus*, Th., Bromyard and West Malvern, common: *Anobium fulvicorne*, Stm., widely distributed; bred from dead elder-wood at Stoke Edith: *Cis villosulus*, Marsh., Kerne Bridge and Fownhope; *C. micans*, Hbst., Abbeydore; *C. nitidus*, Hbst., not uncommon; *C. fuscatus*, Mel., not at all uncommon: *Ennearthron affine*, Gyll., Kerne Bridge, in *Polyporus* on elm: *E. cornutum*, Gyll., Devereux Pools, common.

Mesosa nubila, Ol., one on *Spiræa*, at the foot of the Great Doward.

Bruchus atomarius, L., Cusop and West Malvern, on *Vicia sativa*; *B. pectinicornis*, L., one at West Malvern in a house; *B. cisti*, F., common on *Helianthemum vulgare* at West Malvern and Symonds Yat.

Donacia versicolora, Brahm.; *D. semicuprea*, Pz.; *D. sericea*, L.; *D. discolor*, Pz.; all four at Devereux Pools: *Cryptocephalus aureolus*, Suffr., Doward Quarries (Wood): *Chrysomela didymata*, Scrib., West Malvern, Stoke Edith, on *Hypericum perforatum*; *C. varians*, Sch., Great Doward and Cradley Woods: *Phytodecta pallida*, L., Mathon, on hazel: *P. rufipes*, de G., Stoke Edith (Wood): *Galerucella viburni*, Payk., Great Doward on *Viburnum lantana*: *Longitarsus lycopi*, Foud., Ledbury, on *Lycopus europæus*, Colwall, Stoke Edith, Whitechurch, and Abbeydore; *L. ochroleucus*, Marsh., rare at Bromyard and Coddington; the food-plant of this species seems quite unknown; *L. gracilis* var. *poweri*, All., Colwall, on *Senecio crucifolius*; *L. flavicornis*, Steph., Kerne Bridge and Great Doward, on *Convolvulus sepium*: *Phyllotreta crucifera*, Gœz., West Malvern, on turnips; *P. sinuata*, Steph., one swept at Abbeydore: *Crepidodera chloris*, Foudr., West Malvern, Mathon, Whitbourne, and Great Doward.

Heledona agaricola, Hbst., common near Huntsham Hill: *Eryx ater*, F., bred from *Polyporus* in Stoke Edith Wood (Wood): *Mordellistena punila*, Gyll., rare on the Great Doward; *M. humeralis*, L., Whitechurch, on *Heracleum sphondylium*: *Anaspis garneysi*, Fowler, Stoke Edith.

Rhynchites æneovirens, Marsh., Stoke Edith (Wood); *Apion eraccæ*, L., Hay and Great Doward on *Vicia hirsuta*; *A. urticarium*, Hbst., Hohne Lacy, common on nettles; *A. varipes*, Germ., West Malvern; *A. sorbi*, F., I swept a single example of the excessively rare ♂ at Abbeydore; *A. atomarium*, Kirby, Kilpeck, Huntsham Hill and Seager Hill; *A. lirescerum*, Gyll., West Malvern, on *Onobrychis sativa*; *A. tenue*, Kirby, universally distributed, occurring on *Lotus corniculatus* and *Medicago lupulina*; *A. pubescens*, Kirby, widely distributed, on *Lotus*: *Tropiphorus tomentosus*, Marsh., Mordiford: *Tanymecus palliatus*, F., Kerne Bridge, common on *Carduus arvensis*: *Atactogenus exaratus*, Marsh., Huntsham Hill and the Great Doward, rare: *Sitones cambricus*, Steph., Colwall, one in a wet meadow: *Limobius dissimilis*, Hbst., sparingly in the Symonds Yat district, on *Geranium robertianum*: *Orchestes ilicis*, F., Huntsham Hill, one on oak; *O. rusci*, Hbst., Great Doward, rare on birch; *O. saliceti*, F., one in flood refuse by the Great Doward: *Tychius junceus*, Reich., rare on *Trifolium pratense* at Colwall and Huntsham Hill: *Gymnetron antirrhini*, Payk., Kerne

Bridge and Holme Lacy, common on *Linaria vulgaris*: *Cœliodes ruber*, Marsh., Bromyard and Westhild: *Centhorrhynchus cyanipennis*, Germ., Kerne Bridge, common on *Alliaria officinalis*; *C. asperifoliarum*, Gyll., rare on *Cynoglossum officinale*, Great Doward: *Balaninus venosus*, Grav., not uncommon on oak, Huntsham Hill; *B. turbatus*, Gyll., Devereux Pools (Wood): *Rhyncolus lignarius*, Marsh., Devereux Pools, in elm.

“Stoneley,” Reading:

March 4th, 1910.

PÆCILOSCYTUS PALUSTRIS, REUT.: AN ADDITION TO THE LIST
OF BRITISH HEMIPTERA.

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

Whilst searching for *Strongylocephalus agrestis* at the roots of rushes in marshy spots on the Pendine Burrows, Carmarthenshire, I have several times come across examples of a dark *Pæciloscytus* allied to *P. unifasciatus*, but not agreeing with anything hitherto notified as British. The ♀ might, in the field, be mistaken for a dark and dull *P. unifasciatus*, but the ♂ is very different in coloration, and a close examination reveals structural points in both sexes which indicate the specific distinctness of the insect. Dr. Horvath has kindly examined a pair of them, and has recently returned them to me as *P. palustris*, Reut. In his interesting “*Hemipterologische Spekulationem*, II” (Helsingfors, 1905), Reuter, while treating of the progressive development of melanism observable in the species and varieties of the genus *Pæciloscytus* (amongst others), gives the name *palustris* to the darkest of the European forms of that genus. The description and figure appended exactly agree with the coloration of my insect. This form has by some Hemipterists been regarded as a variety of *P. unifasciatus*, but Reuter himself seems to have left the question open, as it had no bearing on the subject then under consideration. His words are:—“Es mag übrigens die Frage noch offen bleiben, ob *P. unifasciatus* und dessen sogenannte Varietäten nur als solche oder als selbständige Arten aufzufassen sind. . . . Jedenfalls ist diese Frage von keiner wesentlichen Bedeutung für die obigen Betrachtungen, für welche es ziemlich gleichgültig ist, ob wir hier mit Varietäten, oder mit selbständigen Arten zu rechnen haben.” For the

same reason, I presume, he makes no reference to structural differences in most of the forms referred to. Horvath's view, like that of the late Mr. E. Saunders, to whom I showed the insect last year, is that the structural distinctions in the present insect, and the difference in habitat, are sufficient grounds for its specific separation, and with this view I certainly concur.

It is not necessary to do more than point out wherein *P. palustris* differs from the allied species. The ♂ is smaller than in *P. unifasciatus*, and the fore parts are duller, because more rugose. The pronotum has no yellow margin, but is wholly black; the scutellum has only the extreme apex yellow; the clavus is black and the corium has only a humeral streak, its apex next the cuneus, and a minute streak at the inner angle just beyond the claval suture, yellow; the cuneus is black, passing into red and then yellow at each end. The antennæ are darker, and have the terminal joint longer than the third, considerably longer than in *P. unifasciatus*. The femora are chiefly black. The ♀ resembles the ♂ in coloration, rugosity, and structure of antennæ, but is slightly broader than in *P. unifasciatus*, and with more rounded sides. Length, $4\frac{1}{2}$ —5 mm.

Thus the difference in size, the greater rugosity, the length of the terminal joint of the antennæ, the general melanic coloration, and the habitat, easily distinguish the insect.

I found one ♂ and one ♀ amongst rushes in a wet field just outside the town of Carmarthen, and one ♀ at roots of rushes at Rookiey Wilderness, Isle of Wight. At Pendine, I obtained seven ♀ ♀ and one ♂, all of them by searching at roots, and I could get none by sweeping, as they were too low down amongst the rushes. In fact, the only specimen I have taken at all by sweeping is the above-mentioned ♂ from the wet field at Carmarthen. On the Continent it is found on *Galium palustre*, while *P. unifasciatus* occurs chiefly on *G. verum*, and not at all on *G. palustre*. I did not notice any *Galium* in any of the above localities, though other plants were, in some cases, growing with the rushes. But the insects when found were certainly crawling on the rushes. All my specimens were taken in August and September. The insect occurs also in South Finland (*Renter*), Germany (*Schumacher*), Hungary and Japan (*Horvath*).

56, Cecile Park, Crouch End, N. :

May 2nd, 1910.

INSECTIVOROUS INSECTS.

BY CLAUDE MORLEY, F.Z.S., F.E.S.

Fourteen years ago I published some notes on this subject; and since then Prof. Poulton has done something to popularize its study. The following observations are no more than casual, and I have others, for the moment mislaid, of an equally scrappy nature. They are drops in the ocean of a wide subject, each one of which, no matter how small, will go to build up a vast edifice; but the recording should be close, and misnomers strenuously avoided. For the names here employed I am indebted to Mr. E. E. Austen and his Attendant at the British Museum; and, for the prey of *Mellinus*, to Rev. E. N. Bloomfield. Unless stated, the species were taken in the garden of Monk Soham House, Suffolk.

- 6.9.1907.—*Cænosiæ pedella*, Fln., ♀, preying upon *Sciara* sp., ♀, while sitting on a post in the salt marshes of the Buss Creek at Southwold.
- 23.5.1908.—*Empis trigramma*, Mg., upon being frightened, dropped a ♂ of *Tachydromia agilis*, Mg.
- 24.5.1908.—Three pairs of *Empis pennaria*, Fln., sitting in cop. on lime leaves, each ♀ with a very small ♂ *Chironomus*.
- 24.5.1908.—*Empis trigramma*, Mg., ♀, with ♂ *Sciara* sp., sitting on flower of *Chærophyllum*, upon which the latter had probably been feeding, as also often do the former.
- 24.5.1908.—*Tachydromia cursitans*, Fab., on lime leaf, devouring a *Psychodid*.
- 24.5.1908.—*Scatophaga stercoraria*, L., ♂, sucking *Corethra* sp., ♂, at 7 p.m.
- 29.5.1908.—Two *Tachydromia minuta*, Mg., ♂ ♀; ♀ preying upon *Phora* sp., ♂ preying on *Sciara* sp.
- 30.5.1908.—*Tachydromia agilis*, Mg., ♀, preying on *Chironomus*? *brevitibialis*, Zett.
- 2.6.1908.—*Scatophaga maculipes*, Zett., ♂, sucking *Hydrotæa irritans*, Fln., on window.
- 5.6.1908.—*Gerris gibbifera*, Shm., on moat surrounding house, holding with its front or anterior legs and sucking *Tenthredo balteatus*, Klug, ♂, while skimming the surface.
- 4.8.1908.—Two *Cricotopus tricinctus*, Mg., ♂ ♂, in spider's web on gate, mutilated and apparently dead; one *Microphorus velutinus*, Mcq., ♀, was flying round them and presently distinctly sucked one in the web.
- 7.9.1908.—*Tachydromia cursitans*, F., ♀, sucking a tiny *Phorid*, among *Aphis crataegi*, Kalt., on whitethorn, to whose honeydew the latter had probably been attracted.
- 5.6.1909.—*Scatophaga squalida*, Mg., ♂, sucking *Homalomyia canicularis*, Linn., ♂; the former had pierced its proboscis through the base of the latter's head, on the right side, and it was holding its prey with the front legs only, while standing on the posterior, upon the window-sash.
- 27.8.1909.—*Caricea tigrina* preying upon *Dilophus febrilis*, Linn., ♀, on *Angelica sylvestris* flower at Kenton, Suffolk.

Pakefield Cliffs, near Lowestoft, have suffered severely from erosion since Frederick Smith collected there, and but few of his rarities remain. On August 19th, 1908, I could find no *Aculeate Hymenoptera* upon them but *Myrmosa melanocephala* and *Mellinus arvensis*. The latter, however, was abundant, and constantly observed carrying *Diptera* to its holes in the sand, about half way up the face of the cliff. Many of the "prey" were ejected, and comprised, as far as my observation went:—Several *Euphoria cornicina*, Fab.; several *Scatophaga stercoraria*, Linn.; *Ceromasia spectabilis*, Mg., which abounded among the marram grass of the "denes;" *Spilogaster* sp., *Phyto melanocephala*, Mg., *Lucilia cæsar*, Linn., *Onesia sepulchralis*, Linn., *Syrphus balteatus*, De G., *Hylemyia* sp. (probably *H. strigosa*, Fab.), *Pollenia rudis*, Fab., and *Sarcophaga melanura*, Mg. I noticed one ♀ *Mellinus* carrying a fly upside-down, with its legs round the latter's thorax; another was carrying *L. cæsar* the right way up, with its legs also clasping the fly's thorax, but with its mandibles lightly fixed in the fly's proboscis, which position was rendered practicable by the reversion of the latter's head.

Monk Soham House, Suffolk :

March 7th, 1910.

Ceuthorrhynchideus mixtus, Muls., &c., in the Oxford district.—On May 16th—almost the first favourable day for many weeks—I had the good fortune to sweep up an example of the very rare *Ceuthorrhynchideus mixtus*, Muls.,* from nettles and mixed herbage in a shady lane near Tubney, Berks. In the net the beetle bears a strong superficial resemblance to a small feebly-marked *Cæliodes A-maculatus*, and I fear is sometimes thrown out as that too abundant pest. My insect agrees in every respect with a fine specimen of the species in the "Dale" collection of *Coleoptera*, now in the Oxford University Museum, labelled "Newton Abbot" in the handwriting of the late Mr. T. V. Wollaston.

Of *Ceuthorrhynchus pilosellus*, Gyll.—thanks to a friendly hint from Mr. Tomlin, who found this rare species at Tubney in March last—I took several examples in a sandy field, crawling about on patches of bare sand and "trapped" in rabbit-holes. I am still as far off a satisfactory conclusion as ever as to its food-plant, but I suspect it will prove to be one of the common little yellow-flowered *Compositæ* of the genus *Leontodon*. Other noteworthy beetles taken on the same day include *Atomaria versicolor*, *Aphanisticus pusillus*, *Rhytidosomes globulus*,* and *Phytobius quadrinodosus* by general sweeping, and *Trox sabulosus* in an old rabbit-skin.—JAMES J. WALKER, Oxford: May 18th, 1910.

* Not included in "Victoria County History" List of Berkshire *Coleoptera*.

County Records of Coleoptera.—Mr. Donisthorpe makes a very sound suggestion in the May number of this Magazine as to the indication by an asterisk of new county records, but some much more definite basis is needed to make it practicable. Either one must take some recognised starting-point to work upon, such as the lists given in the "Victoria County Histories," as hitherto published, or Recorders must be appointed for the various counties, to whom reference can be made regarding additions to the County list. Reference to Fowler's *Coleoptera* is precluded in cases where no list of localities is appended, and one cannot assume the occurrence in any particular county of every species of general distribution. I have been much impressed in working up the beetles of Herefordshire—which is almost virgin ground to the Coleopterist—by the great rarity or apparent absence of many species which I had always regarded as of general occurrence, and every student of geographical distribution must have had similar experience, I would therefore emphasize the importance of *complete* county lists, and not merely records of rarities. The notes to which Mr. Donisthorpe refers are, as the title implies, entirely concerned with Herefordshire, whereas "the Malvern Hills" as usually so-called, lie entirely in Worcestershire. It is true that the Herefordshire Beacon is in the county to which its name refers it, but I had, before writing my notes, taken the precaution to ascertain from Canon Fowler that his records from "the Malvern Hills" related entirely to Worcestershire.—J. R. LE B. TOMLIN, Reading: May 14th, 1910.

A Tasmanian weevil found alive at Willesden.—Mr. G. C. Doughty, of 27, South Molton Street, W., has recently sent me a peculiar Curculionid for determination, stating that it was found crawling on the sideboard of a house at Willesden Green, in June, 1908. The insect in question proves to be *Gonipterus lepidotus*, Gyll., and, from what Mr. Doughty tells me, it was no doubt introduced in a barrel of apples purchased the preceding winter.—G. C. CHAMPION, Horsell, Woking: May 19th, 1910.

An early specimen of Tryphæna pronuba.—Mr. L. S. Brady allows me to record that he took "an absolutely perfect specimen of the ordinary dark form of *Tryphæna pronuba*," at sugar, near Sheffield, on April 20th last. Surely this is a "record" early appearance of such a summer-loving moth.—Geo. T. PORRITT, Dalton, Huddersfield: May 14th, 1910.

Obituary.

George William Chaster, M.R.C.S., L.R.C.P., died on May 5th, at Southport, Lancashire, aged 47, succumbing after four days' suffering from an attack of pleuro-pneumonia. He was one of the Founders of the Southport Natural Science Society, and for a number of years was Editor of the Proceedings of that Society, contributing various papers on the Foraminifera of the district. He also took great interest in the *Mollusca* and *Coleoptera*, and was well known to British Entomologists as an enthusiastic collector. From time to time he

has contributed papers to this Magazine, his last, on the capture of *Deliphrum crenatum*, at Helensburgh, having appeared in January, 1908. Mr. Chaster practised at Southport, and was noted for the sympathy which marked his professional work, particularly in regard to the poorer classes of the population, to whom he rendered many services that will never be forgotten. It is, therefore, surprising that he found sufficient time for his multitudinous Natural History studies.

Societies.

THE BIRMINGHAM NATURAL HISTORY AND PHILOSOPHICAL SOCIETY: Entomological Section—Meeting was held *January 17th*, 1910.—Mr. G. T. BETHUNE-BAKER, President of the Section in the Chair.

Mr. G. T. Bethune-Baker was re-elected President of the Section and Mr. H. Willoughby Ellis was elected to the vacant office of Hon. Secretary.

Professor E. Wace Carlier shewed *Lepidoptera* from Lake Victoria, Central Africa, including *Papilionidæ*, *Danaidæ*, *Pieridæ*, *Acræidæ*, *Nymphalidæ*, and *Hesperidæ*. Mr. Fountain, *Geometra papilionaria*, L., from Moseley, with wings pinkish-brown and from its condition must have recently emerged; *Eugonia autumnaria*, *Cheimatobia boreata*, and *Oporabia dilutata*, Earlswood, Warwickshire. Dr. W. T. Elliott, a species of *Collembola* which occurred in enormous numbers on the gravel walks round the filter beds at Stratford-on-Avon Water Works. Mr. G. T. Bethune-Baker, forms of *Lycæna corydon* and *L. bellargus*, from Asia Minor, Spain, Greece, Algeria.

Monday, February 21st.—The President in the Chair.

Professor E. Wace Carlier, a series of *Danias*, including 21 species from S. America. Mr. P. H. Harvey, fine specimen of *Abraaxas grossulariata*, var. *lacticolor*, taken at Warwick. Mr. Lloyd Chadwick, curious cocoons of *Eriogaster lanestrus*; some were double and some contained more than two pupæ, the cocoons being joined together laterally with an outer envelope to cover the group. Mr. A. H. Martineau, *Andrena wilkella*, Kirby, and another specimen of the same species attacked by *Stylops*. The parasite alters the whole appearance of its host and led to Kirby describing Styloped specimens as another species, *A. convexiuscula*. Also a nest of *Odynerus* sp. in the hole of a cotton reel which was filled with cells and sealed up at both ends. A number of drawers of the Bradley collection of *Diptera* and *Odonata* (which the Society is holding in trust for the Birmingham Corporation pending the completion of the Municipal Natural History Museum) were examined by the Members. Much regret was expressed in the loss by death of Mr. Edward Saunders, one of the honorary members of the Society, and a vote of sympathy with his family in their bereavement was passed.—H. WILLOUGHBY ELLIS, *Hon. Sec.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, March 10th*, 1910.—Mr. A. SICH, F.E.S., Vice-President, in the Chair.

Mr. Sich exhibited specimens of *Coleophora troglodytella* bred from larvæ fed on *Achillea millefolium*, and also larvæ feeding on mignonette seeds, probably those of *Borkhausenia pseudospretella*. Mr. R. Adkin, series of *Tæniocampa gothica* and v. *gothicina*, selected from a large number of bred and captured specimens. Captain Cardew, a bred series of *Pachnobia leucographa*, very dark in colour, a series of typical *T. gothica* bred from v. *gothicina* parents, and specimens of *Phigalia pedaria* from Wimbledon, one taken on January 2nd, worn, two on March 18th, in good condition. Mr. J. P. Barrett reported *Brephos parthenias* and *Gonepteryx rhamni* in woods near London.

Thursday, April 14th, 1910.—Mr. A. SICH, F.E.S., Vice-President, in the Chair.

Mr. Ashdown exhibited a large number of *Coleoptera* taken in Switzerland during July, 1909, including *Staphylinus fossor*, *Trichodes alvearius*, *T. apiarius*, *Spondylis buprestoides*, *Endomychus coccineus*, *Molorchus minor*, *Strangalia attenuata*, &c., &c. Mr. R. Adkin, long series of the various forms of *Hepialus humuli*, including some very fine Shetland specimens. Mr. Cowham, portions of ash stems showing extensive marks of the depredations of a species of Scolytid beetle. Mr. Turner, a number of species of *Lepidoptera* sent him from Saskatchewan and Vancouver by Mr. Croker, and commented on their British-like appearance; included were *Argynnis bremneri*, *Polygonia marsyas*, *Cænonympha elko*, *Notolophus badia*, *Malacosoma pluvialis*, *Thanaos persius*, &c., &c. Mr. Newman, larvæ of *Dryas paphia*, *Melitæa cinxia*, *M. athalia*, *Argynnis adippe*, *A. aglaia*, and *Agriades coridon*, which he had been forcing. *A. adippe* and *A. aglaia* had scarcely responded to the treatment, but the rest were practically all full fed. Mr. Coote, a bred series of *Nyssia hispidaria* from ova laid in 1909. Mr. Sich, the two species of *Adela* with entire yellow fasciæ, *Adela cræsellæ* (*sulzellæ*), and *A. degeerella*, and pointed out their differences.

Thursday, April 28th, 1910.—Mr. A. SICH, F.E.S., Vice-President in the Chair.

Mr. W. West (Greenwich), exhibited numerous rare and interesting specimens taken mainly by himself forty or fifty years ago. Many were of local interest to entomologists of S.E. London. Included were *Pieris daplidice* (Folkestone), *Agrius convolvuli* (Greenwich Park), *Hippolion cclerio* (Greenwich), *Deiopeia pulchella* (St. Margaret's Bay), *Spilosoma urticae* (Greenwich), *H. cynipiformis* and *H. myopæformis* (Greenwich), *H. culiciformis* (Darent), *H. ichneumoniformis* (Lee), *Colias hyale*, *C. adusa*, and v. *helice* from the Brockley Railway Banks. Mr. R. Adkin, specimens of *Anthrocera* including the form supposed to be a hybrid between *A. achilleæ* and *A. filipendulæ*, and stated that an examination of the genitalia by Mr. Pierce had shown that the example in question was the latter species. Mr. Turner, a large number of *Diptera*, *Ichneumonidæ* and other *Hymenoptera*, sent to him from Waroona, W. Australia. Mr. Sperring, specimens of *Amphydasis strataria* bred from ova, and having extremely dark bands.

Mr. Sich read a paper, entitled the "Legs of Lepidopterous Larvæ."—H. J. TURNER, Hon. Secretary.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, April 6th, 1910.*—
Mr. H. ROWLAND-BROWN, M.A., Vice-President, in the Chair.

Mr. Horace B. Browne, M.A., of 118, Sunny Bank, Hull; Mr. William George Dawson, of 31, King's Gardens, West End Lane, West Hampstead, N.W.; Mr. Alfred Nander Hedges, of 42, Kensington Park Gardens, W.; the Rev. Hubert George Stanley, of Marshfield Vicarage, Cardiff; and Mr. Rupert Stenton, of Southwell, Notts.; were elected Fellows of the Society.

Mr. W. G. Sheldon exhibited several series of the butterflies taken by him last July in the Hohe Tatra region of the Carpathians, Eastern Hungary. They included examples of *Melitæa dictynnoides*, Hormuzaki, with *M. aurelia* and *M. dictynna* for comparison; *Brenthis pales* var. *arsilache* from the forest zone at 3000 feet, and a form of *B. pales* from 5000 feet, with the upper-side approaching in colour and markings to var. *arsilache*, but of smaller size, the under-side being typical; also Swiss examples for comparison: *Parnassius apollo* var. *carpathicus*, Aigner; *Erebia medusa*, var. *hippomedusa*, *E. ligea*, and *Ceanonympha hero*. The Rev. G. Wheeler expressed a decided opinion that *M. dictynnoides* constitutes a good species, and is not a form of *M. aurelia*. Mr. P. Harwood, an example of *Strangalia reresita*, taken on a flower-head near Andover in 1909. Mr. W. F. T. Rosenberg, (a) a "combination" consisting of a Nymphaline butterfly, *Euphædra ruspina*, and three species of moths belonging to as many different families, viz., *Phægorista similis* (Hypsidæ), *Xanthopilopteryx poggei* (Agaristidæ), and a Geometer, *Aletis helcita*. These insects bore a close superficial resemblance to each other in colour and pattern of markings, the wings being tawny-orange, with black marginal borders and white apical and marginal spots: (b) a pair of the Nymphaline butterfly, *Harma theodota*, a strikingly dimorphic species, the female of which bears some resemblance, especially on the upper-side of the hind-wings, to a moth, *Nyctemera hesperia*, of the family *Lymantriadæ*; and (c) five species of *Planema* (family *Acræidæ*) and an equal number of species of *Pseudacræa* (family *Nymphalidæ*) mimicking them, the superficial resemblance being very close in each case. Special attention was called to the specimens of *Planema plagiocia*, the males of which, with tawny bands on the fore-wings, are mimicked by the males of *Pseudacræa hobleyi*, while the females of the *Planema*, with white bands are mimicked by the females of the same species of *Pseudacræa*. Mr. H. St. J. Donisthorpe, examples of *Methoca ichneumonides*, parasitic on the larva of the Tiger Beetle, taken by him at Blackgang Chine, in the Isle of Wight, where its host would be *C. germanica*; also an example of *Ptinella britannica*, Mat., found in a mole's nest at Burwell Fen last month. This is only the third British specimen that has yet been recorded, and apparently the fourth only in Europe, one having been reported from France.

Mr. Norman H. Joy, M.R.C.S., read a paper "On the behaviour of *Coleoptera* during Floods," and exhibited living specimens to illustrate the remarkable power of *Dianous cærulescens* in "skimming" on the surface of water. The following papers were also read:—"A Revision of the genus *Diplatys*, Serv.," by Malcolm Burr, D.Sc., F.L.S., F.Z.S., &c. "On the *Geometridæ* of the Argentine Republic," by Louis B. Prout.—H. ROWLAND BROWN, M.A., *Hon. Secretary*.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

The Coloured Plate issued last September having been so much appreciated by our readers, another (devoted to *Hymenoptera* and *Coleoptera*) was given with the Jan. number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also. Another Plate is in course of preparation, and it will be presented during the year 1910.

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BY JOHN H. WOOD, M.B.

(Continued from Vol. xlv, p. 244).

SECTION D.

- 1 (44) *First costal division much longer than the second and third together (at least half as long again, often twice as long or even more).*
- 2 (25) *Costal fringe short.*
- 3 (4) *Middle and hind tibiæ with double rows of cilia, one on each side the seam.*

♂ ♀. Thorax and halteres yellow, mesopleuræ bare; venter and 1st segment of male abdomen wholly yellow, the rest of the dorsum black or suffused on the last segment or two with yellow, female abdomen black only on dorsum of 3rd and 4th segments; frons yellow, dusky towards vertex, rather longer than broad, its bristles large, inner bristle of the lower row much below level of outer one, but well away from eye margin; one pair only of very minute supra-antennal bristles; antennæ and palpi clear yellow, the former large and oval and with a very short arista (about as long as the frons), the latter small and with very short and stubby bristles; wings pale yellowish; costa about $\frac{2}{5}$ wing length, 1 fully double 2 + 3 (♂) rather less (♀), angle at fork rather small, 1st thin vein recurved at margin; legs yellow; tibial cilia on inner side of seam very large and conspicuous, on outer smaller and confined to upper half of limb; hind metatarsi somewhat thickened (♂) much thickened (♀); hypopygium more or less concealed within the last segment, but usually leaving visible the short rounded flap into which the lower edge on each side is cut; anal organ very large, yellow, but more dusky at its base, and with the usual pair of terminal bristles remarkably large; ovipositor very large, the 1st joint always exerted and often the whole organ, 2nd joint encircled at the end with 6 strong bristles $1\frac{1}{2}$ —2 mm. *fasciata*, Fall.

- 4 (3) *Cilia on one side of the seam only—the inner.*
- 5 (14) *Mesopleuræ bristly.*
- 6 (7) *Halteres yellow. Arista very short—not longer than the frons.*

♂. Thorax yellow, pleural bristles small and few; abdomen black; frons grey, as long as broad, frontal bristles as in *fasciata*; the upper pair of supra-antennal bristles small, the under very minute; antennæ red, not large, and of the usual roundish form: palpi pale yellow, large and armed as in *fasciata*; wings and veins yellow; costa about $\frac{2}{5}$ wing length, 1 about half as long again as 2 + 3, angle at fork acute, 1st thin vein nearly straight at its origin from the fork and not recurved at the margin (this straightness at the start is the invariable condition of the first thin vein, at least in those species in this section which do not much exceed 1 mm. in measurement); legs yellow, hind femora dusky at tip, the hairs on basal half of its under-side well developed; hind tibiæ strongly arched and strongly ciliated; hypopygium concealed, anal organ clear yellow, very

large, and as long as the last abdominal segment, the bristles at its extremity of the usual sizebarely 1 mm. *pollens*, n. sp.

7 (6) *Halteres black. Arista much longer than frons.*

8 (9) *Pleuræ with a very large and spine-like bristle on each side, besides smaller ones.*

♂. Described from a single specimen: Thorax and abdomen black, the latter with pale hind margins to the segments, the spine-like bristle very conspicuous and situate high up on the pleura close to the root of the wing; frons black, $\frac{1}{3}$ broader than long, 4 large and nearly equal supra-antennal bristles, the upper pair wide apart and outside an alignment with inner bristle of middle frontal row, the under pair considerably below them and approximated; outer bristle of lower frontal row much above the level of the inner one, antennæ not small, palpi yellow; wings lightly tinged with grey, thick veins black, costa $\frac{2}{3}$ wing length, fringe very short, 1 fully half as long again as 2 + 3, angle at fork large; legs brown, hind femora with some long, loose hairs on basal half of under-side, tibial cilia weak but fairly distinct and bristly in character; hypopygium almost entirely concealed within the last segment, but as far as can be judged it is very short, a small subanal body being exposed but no ventral plate, whilst the yellow anal organ is very large and as long as the last abdominal segmentabout $\frac{3}{4}$ mm. *spinata*, n. sp.

9 (8) *Pleuræ without such bristle.*

10 (11) *Terminal joint of fore tarsi dilated. Wings limpid, thin veins colourless.*

♂. Described from a single specimen: Thorax and abdomen black; frons dull, about $\frac{1}{3}$ broader than long, apparently but one pair of small and closely approximated supra-antennal bristles, antennæ small, palpi dusky yellow; wings limpid with colourless thin veins, costa hardly more than $\frac{1}{3}$ wing length, it and the supporting veins black, fringe very short, 1 about $\frac{3}{4}$ as long again as 2 + 3, angle at fork large; legs brownish-black, end joint of fore-tarsi dilated, distinctly wider than the penultimate joint instead of narrower as usual, under-side of hind femora remarkably serrated near the base with about 4 blunt teeth, hind tibiæ bare; hypopygium withdrawn within the last segment, leaving exposed only a rather large and depressed black anal organbarely more than $\frac{1}{2}$ mm. *serrata*, n. sp.

11 (10) *Terminal joint simple.*

12 (13) *Abdomen strikingly banded with whitish hind margins to the segments.*

♂ ♀. Thorax and abdomen black, halteres brown; frons dull, about $\frac{1}{2}$ broader than long, 4 large and nearly equal supra-antennal bristles, the under pair almost directly underneath the upper, antennæ small, palpi yellow; wings nearly clear, thin veins fine and delicate, costa rather more than $\frac{1}{3}$ wing length, fringe very short, 1 more than double 2 + 3, angle at fork moderate; legs blackish (♂) browner (♀), fore tarsi somewhat short and thick, tibial cilia very short and delicate; hypopygium large with some long hairs on each side, ventral plate small and yellowish, anal organ black, short and stout.....about 1 mm. *verralli*, n. sp.

13 (12) *Abdomen not so banded.*

♂. Thorax and abdomen black; frons fully $\frac{1}{3}$ broader than long, 4 large and nearly equal supra-antennal bristles, the upper pair wide apart and outside an alignment with inner bristles of middle frontal row, under pair closely approximated, palpi yellow, antennæ fairly large; wings nearly clear, veins black, 1 not more than half as long again as 2 + 3, costa more than $\frac{1}{3}$ but less than $\frac{2}{3}$ wing length, fringe only moderately short; legs from yellowish-brown to almost black, fore tarsi somewhat thickened with the metatarsus shorter than the 2 following joints, hind tibiæ very finely and thickly ciliated; hypopygium large, produced on either side below into a point armed with a bunch of 5 or 6 short hairs, ventral plate minute and yellow, anal organ black, rather long and slender $\frac{3}{4}$ mm. *lutifrons*, n. sp.

14 (5) *Mesopleuræ* bare.

15 (20) *Halteres* yellow.

16 (17) *A largish species* ($1\frac{1}{2}$ mm. or more). *First costal division more than twice as long as the other two.*

♂ ♀. Thorax black, sometimes obscurely reddish; abdomen entirely black, or yellow underneath and with narrow yellow margins to the segments; frons black and slightly shining, rather broader than long, upper supra-antennal bristles large, under ones much smaller—about $\frac{1}{4}$ the size, antennæ black or red, palpi pale yellow; wings nearly clear in the darker and pale yellowish-brown in the paler specimens, costa $\frac{1}{3}$ wing length, 1 more than double 2 + 3, fringe only moderately short, outer branch of 2nd thick vein incrassated, angle at fork large; legs very variable, from yellow in the pale forms to brown or almost black in the dark, tibial cilia distinct and rather sparse; male abdomen stoutish, hypopygium small, bare of bristles and almost of hairs, ventral plate small and indistinct, anal organ short and thick, black in the dark and yellow in the pale forms...

$1\frac{1}{2}$ — $1\frac{3}{4}$ mm. *pygmæa*, Zett.

17 (16) *Small species* (under 1 mm.). *First costal division only half as long again as the other two.*

18 (19) *Halteres* yellow and yellow stalked. *Hypopygium without bristles.*

♂. Thorax and abdomen black; frons black, $\frac{1}{3}$ broader than long, upper supra-antennal bristles fairly large and approximated, under ones directly underneath them and much smaller, antennæ black, palpi yellow; wings tinged with yellowish-brown, thin veins dark and strong, costa barely more than $\frac{1}{3}$ wing length, fringe only moderately short, angle at fork moderate; legs yellowish-brown, fore tarsi rather longer and more slender than usual, cilia on hind tibiæ fine and delicate; male abdomen stout, hypopygium small and prolonged behind into a sort of snout, a few fine hairs but no bristles, the large and dusky ventral plate broad but with a pointed end, anal organ yellow, of moderate size and proportions and with a jaunty upward tilt..... $\frac{3}{4}$ mm. or rather more, *lata*, n. sp.

19 (18) *Halteres* pale yellow and black stalked. *Hypopygium with a small bristle at each hind corner.*

♂ ♀. Thorax and abdomen black; frons moderately but distinctly glossy, about $\frac{1}{3}$ broader than long, only 1 pair of rather weak supra-antennal bristles, placed low on the frons and very closely approximated, consequently inner bristles of lower frontal row rather nearer the middle line than usual, palpi dull or dusky yellow; wings nearly clear, thin veins fine and delicate, costa $\frac{1}{3}$ wing length; legs blackish-brown, fore tarsi not longer and more slender than usual (normal) tibial cilia fine and delicate; male abdomen not stout, hypopygium of moderate size, rather hairy and with a short bristle below on each side, ventral plate indistinguishable, anal organ yellow or dusky yellow, short and thick... $\frac{1}{2}$ mm. or barely, *angelica*, n. sp.

20 (15) *Halteres black*.

21 (22) *Male palpi very large and armed with only a few weak bristles*.

♂. Thorax and abdomen black; frons broad and low (fully half as broad again as long), somewhat shining, apparently but one pair of small and approximated supra-antennal bristles, antennæ small, palpi black, in form and size extremely like the palpi of *Phora nudipalpis*; wings pale grey, costa $\frac{2}{3}$ wing length, 1 not more than half as long again as 2 + 3, angle at fork large; legs blackish-brown, front tibiae short and stout, and tarsi also somewhat stout, hind tibiae bare; hypopygium fairly large with 1 or 2 small bristles beneath on each side, ventral plate broad and black, ending in a conspicuous pale yellow and somewhat curved process, anal organ small with a yellowish tip $\frac{3}{4}$ mm. *longipalpis*, n. sp.

22 (21) *Palpi simple*.

23 (24) *Costa very short—barely $\frac{1}{3}$ wing length; fringe short without being very short. A very minute species*.

♂. Thorax and abdomen black; frons black, fully $\frac{1}{3}$ broader than long, supra-antennal bristles large and nearly equal, the upper pair set very wide apart and outside an alignment with the inner bristles of the middle frontal row, under pair considerably below them and approximated, outer bristle of lower frontal row moved higher up the frons than usual, and the middle row shifted close up against the ocellar triangle, antennæ small and black, arista thick and short—not half as long again as the frons, palpi yellow; wings lightly tinged with yellowish-brown, veins brown, the thin ones fine and delicate, 1 more than double 2 + 3, angle at fork moderate; legs yellowish-brown, hind femora more dusky at the outer end and beneath with a few long hairs on the basal half, hind tibiae scarcely arched on the upper-side, the cilia small and delicate but of bristly character; hypopygium moderate in size, with a few strongish hairs beneath, ventral plate not distinguishable, anal organ small and yellow...

barely $\frac{1}{2}$ mm. *gregaria*, n. sp.

24 (23) *Costa more than $\frac{1}{3}$ wing length; fringe very short*.

♀. Described from a single specimen: Thorax obscurely reddish, abdomen black; frons obscurely reddish with a narrow margin of red above the antennæ, frontal and supra-antennal bristles as in *gregaria*, antennæ small and red, arista of the usual length, palpi yellow; wings more distinctly

tinged than in *gregaria*, thick veins blackish, thin ones brown, strong and distinct, costa more than $\frac{1}{3}$ and less than $\frac{2}{5}$ wing length, the uniformity of its curve broken by a depression just past the insertion of 1st thick vein, 1 about double 2 + 3, angle at fork very large—nearly a right angle, 1st thin vein slightly but plainly recurved at margin; legs pale yellow, tip of hind femora blackish, hind tibiae arched and the cilia larger and more distinct than in *gregaria* $\frac{3}{4}$ mm. or rather more, *rufifrons*, n. sp.

25 (2) *Costal fringe long.*

26 (33) *Mesopleura bristly.*

27 (28) *Besides the ordinary bristles a remarkably large and spine-like one similar to the one in spinata, and lying as there close to the root of the wing.*

♂ ♀. A deep black species: Thorax and abdomen black, the spine-like bristle in the fresh state lies flat against the side, directed horizontally backwards, but in drying assumes various positions and more often than not sticks out at right angles to the pleura; frons more than $\frac{1}{3}$ broader than long, supra-antennal bristles not large, the upper very wide apart and well outside an alignment with inner bristles of middle frontal row, the under approximate, quite small and generally concealed by the antennae, antennae rather large, palpi black; wings nearly clear, costa $\frac{2}{5}$ wing length or a little more, 1 half as long again as 2 + 3, thin veins fine but distinct, angle at fork large; legs black, tibial cilia distinct and bristly but not large; hypopygium grey, large and knob-like, produced below at the corner next the abdomen to a point on each side armed with some stout hairs, which are continued a little way up the side, the yellowish ventral plate small and narrow, subanal body large and frequently exerted, anal organ of good size, black with a yellow tip about 1 mm. *pectoralis*, n. sp.

28 (27) *With no such bristle.*

29 (30) *Fore tarsi short and distinctly thickened in both sexes. Halteres variable, from yellow to black.*

♂ ♀. Thorax and abdomen black; frons black, obscurely shining, about $\frac{1}{3}$ broader than long, 4 moderate and nearly equal supra-antennal bristles, the upper ones inside an alignment with inner bristles of middle frontal row, antennae small, palpi yellow; wings nearly clear, costa $\frac{2}{5}$ wing length or rather less, fringe full long yet not very long, 1 at least double 2 + 3, angle at fork moderate; legs from dark yellowish-brown to almost black, tibial cilia very small and numerous; the last 2 segments or so of male abdomen margined on each side of the venter with some large and coarse hairs, continued on to the hypopygium in a more delicate form, hypopygium of moderate size, black and somewhat glossy at the base, ventral plate indistinguishable, anal organ small, yellow or dusky yellow...

about 1 mm. *involuta*, n. sp.

30 (29) *Fore tarsi simple. Halteres not variable.*

31 (32) *Halteres deep yellow.*

♂ ♀. Thorax and abdomen black; frons somewhat shining, about $\frac{1}{3}$ broader than long, 4 strong and equal supra-antennal bristles (♂) nearly equal

(♀), the upper pair approximated and the under close underneath them and well in view, antennæ small, palpi dull yellow; wings nearly clear, costa less than $\frac{2}{3}$ wing length, fringe very long, 1 double 2+3, angle at fork moderate; legs brownish-black to deep black, tibial cilia very fine and numerous; male abdomen stout, hypopygium small, without bristles or hairs, the yellowish ventral plate large and nearly reaching in the quiescent state to the end of the hypopygium, the short and thick anal organ yellow or black $1\frac{1}{4}$ — $1\frac{3}{4}$ mm. *simplex*, n sp.

(To be continued).

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (26 continued).

DOLERIDES (continued). DOLERUS, JUR.

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

(Continued from page 105).

FURTHER NOTES ON THE SPECIES.

Triplicatus, Kl.—The only British ♂♂ I have seen have the thorax entirely black. This form was described by Klug as *T. tremula*, and Konow employed the name *tremulus*, Kl., for the species. But, as the ♀ had previously been described in the same work as *T. triplicata*, I follow Mr. Cameron in retaining the name which appears to have priority.

Madidus, Kl.—This species is called *lateritius* in the Monograph. But, according to Konow, *T. lateritia*, Kl., is the ♀ not of *T. madida*, Kl., but of another of his ♂♂, viz., *uliginosa*, which seems not to be British. Therefore in this case I adopt Konow's nomenclature.

Ferrugatus, Lep.—The identification of this species (called by Thomson, *brevicornis*—a pre-occupied name—and by Konow, *thomsoni*) with Lepelletier's *ferrugatus* is due to Dr. Enslin. I have seen a good many British ♀♀ of the species, but only two ♂♂ (both of the very dark form var. *miricolor*, Knw.). They were taken in Dumbartonshire by Mr. Malloch, who has kindly given me one of them.

Anticus is also British, but seems much rarer—at least I have only seen one ♂ and one ♀ (taken by Mr. Atmore in the King's Lynn district). The description by Mr. Cameron of his *anticus* does not agree so well with *anticus*; Kl., as with *ferrugatus*, although in Vol. iv he says that our species appears to him to be true *anticus* Kl. and not *brevicornis*, Th., nec. Zadd. (i.e., *ferrugatus*).

Pratensis, L.—I do not enter into the probably insoluble question whether Linné's actual type of *pratensis* belonged to this species.

The latter at any rate answers to his description, and is so common in all Scandinavia (*vide* Thomson) that he must surely have known it. Hence I acquiesce in the name employed for it on the Continent.

Æriceps, Th.—This is not mentioned in the Monograph, but it appears to be at least as common in this country as *pratensis*. Besides the characters given above in the Table, I find a substantial difference between the ♀ saws of *æriceps* and *pratensis*, which bears out Thomson and Konow in treating the insects as specifically distinct.

Palustris, Kl.—I never took this species in England myself, but have received it from several correspondents. The ♀ is easily recognised by the black thorax, being much smaller than any other similarly coloured female. (Its saw is hardly distinguishable from that of *pratensis*). The ♂ much resembles that of *pratensis*, but the punctuation is of quite another style.

Bimaculatus, Geoff.—This species = *tristis*, Kl., which is mentioned by Mr. Cameron, but apparently not considered by him to be British. I possess, however, a ♀ taken by Col. Yerbury in Scotland, which quite agrees with my foreign specimens, and was determined for me as *bimaculatus* by Konow.

Chappelli, C.—I do not retain this in my Table, because having carefully examined the solitary recorded specimen (in the Cameron Collection at South Kensington) I find that its mesonotum is not (as stated by the author both in his synopsis of species and in the description) "black," but entirely, though obscurely, red. I have not the slightest doubt that it is only a *madidus* ♀ in exceedingly bad condition.

Gessneri, Andre.—The types of *gessneri* (C.) at South Kensington belong to this species; but the figures of the "saw," &c., in the Monograph (Pl. xix) bear no resemblance to the actual saws in balsam in the Cameron Collection, and must have been drawn by mistake from something else—probably from a saw of *Loderus palmatus*.

Scoticus, Cam.—The saw of the type in the Cameron Collection is quite identical with that of *gessneri*, and is figured fairly correctly in the Monograph. I do not doubt that the insect is a small and probably immature ♀ of *gessneri*. It is certainly not, as suggested formerly by Dr. Enslin, a *Loderus*—the eyes being short!

Gonager, F.—This is by far the commonest species of the black forms with red on the legs. I have a (British) ♂ with [N.B.] the 2nd cubital nerve present in both wings (four cubital cells!).

Puncticollis, Thoms.—This was treated by Konow as a variety of *gouager*; but I find that its ♀ has an entirely different saw, more resembling that of *liogaster*, so that I cannot here follow him. (Dr. Enslin, to whom I have sent photographs of the saws, agrees in this).

Sanguinicollis, Kl.—The typical ♀ of this species (with red on the thorax) is recorded by Mr. Cameron as British on the strength of a single specimen (now at South Kensington) from Shuckard's Collection, without any definite locality. It may occur in this country, but more precise evidence is desirable.

But an entirely black form of (according to Konow) the same insect is not uncommon with us. This is described, and its "saw" well figured, by Zaddach under the name *ravus* (see below), and Konow accordingly called it *sanguinicollis* var. *ravus*, by which name it is generally known on the Continent. It was, however, previously described by Stephens as *fumosus*, whose type, bearing his label, I have examined in the Collection at South Kensington, and it must therefore, if it is really a form of *sanguinicollis*, be called var. *fumosus*, Steph., *nec. Zadd.* (= *ravus*, Zadd.).

Having carefully examined and photographed the "saws" of typical *sanguinicollis* and var. *fumosus*, I find them practically identical and distinct, both in their shape as a whole and in the details of their denticulation, from those of any other species, so that I think Konow was probably right in uniting the two forms specifically. I should say, however, that Dr. Enslin has some doubt on the point, and would prefer to wait for further evidence before accepting the identification.

Hæmatodes, Schr.—This appears to be a rather common and widely distributed British insect. It is one of our largest and finest species.

Gibbosus, Htg.—See Ent. Mo. Mag., June, 1898, p. 127.

There is an extraordinary similarity between the "saw" of this species and several others now considered distinct from it and one another, viz., *megapterus*, *oblongus*, *fumosus*, Zadd., *nec. Stephens*, and the non-British form *thoracicus*, Kl. (with red mesonotum). I expect that some at least of these will ultimately be sunk as varieties of a single species, but at present I confine myself to the expression of this opinion. The saws in question are distinguishable from those of all other species at a glance, and, so far as I can see, quite undistinguishable from one another!

Nitens, Zadd.—Dr. Enslin has shown that a form which I have

long known, on Konow's authority, as *coruscans*, Konow, is really identical with Zaddach's species. It seems to be really rather common, though little known in this country. (I have taken it myself, and several correspondents have sent it to me). It is certainly Mr. Cameron's *coracinus*, and I find specimens of it in the Collection at South Kensington under various names, and sometimes mixed with those of other species. Both the types and description of *varispinus*, C., *nec. Htg.*, are, I think, to be referred to it, and also one specimen of "*intermedius*," C., in that Collection (the others being *picipes*!), and several of those called *possilensis*. The saw, however, figured in Plate 19 of the Monograph as "*possilensis*" seems different from the real saw of *nitens* which is figured there as "*coracinus*," and more like that of *picipes* (figured in Plate 20 as "*intermedius*." It is often difficult or impossible to recognise specimens of *nitens* and *anthracinus* by the sculpture of the mesonotum—a pin driven in the usual way through the middle of the thorax is almost sure to obliterate it!

Anthracinus, Kl.—I have only one British specimen myself (a ♂), but have seen several of both sexes, all of which appear to have been taken in April! Dr. Schmiedeknecht tells me that he has not unfrequently taken it in Thuringia, and invariably very early in the season (March), at a time when few, if any, other *Doleri* are flying. Accordingly Stephens' record of it, "taken in June at Darenth Wood" probably refers to some other species.

Picipes, Kl.—This is one of our most common species. I feel certain that *intermedius*, C., is the same, although the author does not allude to its best character—the dilatation of the ♀ saw-sheath. He says, "sutures on the vertex distinct and very shining," referring, no doubt, to the shining spaces on the tempora. And the "types" in his Collection at South Kensington, with their "saws" figured in Vol. i, Plate xx of the Monograph, lead me to the same conclusion.

Tinctipennis, C.—Besides the "type," a ♀, whose characters in its present condition are very hard to see satisfactorily, I have only seen one other *certain* representative of this form, also a ♀ taken by Mr. Claude Morley at Southwold last year in "sweeping" reeds. The antennæ and saw are unlike those of any species at all resembling it. It is quite different from *fumosus*, Zadd., *nec* Stephens, with which it has been thought to be identical. Its ♂ is unknown; but, as stated in my Table, I am much inclined to believe that *tinctipennis* is really the ♀ of *tæniatus*, Zadd. (described by its author from ♂♂ only). Of the latter Mr. B. Harwood has taken (if I have identified them

correctly) two ♂♂ near Colchester, but he failed to find a ♀ corresponding to them. I have never seen to my knowledge a ♀ called *teniatus*, either British or foreign, and Dr. Enslin tells me he has none in his collection, but thinks that a ♀ which he has seen (determined by Konow) was a more slender looking insect than Mr. Morley's—sent to him by me for inspection. I do not venture, therefore, as yet to unite *tinclipennis* ♀ with *teniatus* ♂; but I hope that collectors, in the Eastern counties especially, will be on the look out for these forms, and provide materials for a future solution of this question.

Megapterns, C.—I have seen the “type” at South Kensington, and Mr. Waterhouse kindly had its “saw” photographed for me (the latter is figured, but not quite correctly, in the Monograph). Both type and saw agree precisely with Konow's *carinatus*, of which I have both British and German specimens determined by the author. As Mr. Cameron's name has priority, I retain it.

Fumosus, Zadd.—I retain temporarily for this insect the name which has been employed for it by Continental writers. Ultimately no doubt it must be re-named, since the *fumosus* of Stephens is a different species altogether—the black form of *sanguinicollis*, Kl. There are difficulties, however, about substituting any of the names which have been regarded as synonyms of *fumosus*, Zadd.; and until these difficulties, and also the question as to its relation to other forms with the same peculiar type of saw, have been cleared up, I think it best to acquiesce in the name at present generally applied to it.

The species has been sent to me from Scotland, but I cannot find it described in the Monograph. As I have already said it is *not* Mr. Cameron's *tinclipennis*. Nor is it his *megapterns*, nor his *oblongus*.

Nigratus, Müll.—This name was revived by Konow. The species is well known under Hartig's name *fissus*, which well describes the chief character of its ♂. It seems to be widely distributed, and not at all uncommon in this country.

Oblongus, C.—This species was supposed by Konow to be the *brevicornis* of Zaddach (*ucc.* Thomson). Unless, however, Zaddach's figure of the “saw” is extraordinarily and—for him—most unusually incorrect, the identification seems to me quite impossible. I therefore retain Mr. Cameron's name. (I have never seen a *Dolerus* with a saw at all like that figured by Zaddach as *brevicornis*. The saw of *oblongus* is figured, not quite exactly, but recognisably, in the Monograph). Mr. Malloch has taken the species at Bonhill, in Dumbartonshire. (A character mentioned by Zaddach as distinguishing his only specimen of *brevicornis*, viz., large white spines at the apices of the tarsal joints

—not, as Mr. Cameron quotes him, large white "*calcaria*," the latter of course being on the tibiæ not the tarsi!—is found to a certain extent in *oblongus*; but it seems to me to vary, and I think I have seen something of the kind in examples of other species).

Æneus, Htg.—The insect described under this name by Hartig has been recognised, I have no doubt correctly, by Konow, and since by Dr. Enslin in the species, common all over England and Germany, which Thomson (followed by Mr. Cameron) calls *elongatus*. The *æneus* of Zaddach appears to be the same; and perhaps the *æneus* of Thomson is only a small form of it. But what the *æneus* of Mr. Cameron's Monograph is, I am still not certain. The specimens so called at South Kensington mostly look like very small examples of *picipes*, and the "saws" mounted beside them also appear to belong to that species, except one which is evidently that of the true *æneus*, Htg. (= *elongatus*, C. On the other hand the saw figured in the Monograph as *æneus*, must, I think, have been that of a *sanguinicollis* var. *fumosus*, its denticulated teeth having a peculiar very convex outline which is characteristic only of that species. I have repeatedly tried, but never successfully, to find an *æneus*, C., among the numerous specimens of *æneus*, Htg., which have reached me; and several items in Mr. Cameron's descriptions of his *æneus* and *elongatus* altogether puzzle me. Thus *æneus* is said, in the ♂, to have the antennæ "longer than the body," and *elongatus* to have them "as long as the body"—yet it is also said that *elongatus* has "longer antennæ in both sexes." Again, *elongatus* is said to have "as a whole more of a bluish tinge than *æneus*," yet the former is described as "black" simply, and the latter as "deep black, with a very faint bluish tint." How to reconcile these statements I do not know, but I can come to no other conclusion than that *æneus*, C., is probably a mixed species, founded on several small examples of *picipes*, true *æneus*, and var. *fumosus*.

Sanguinicollis, var. *fumosus* (= *ravus*., Zadd.).—I have already discussed this form, both as to its characters and its synonymy. It is very distinct and easily recognised, and I have frequently captured it and received it from correspondents.

Rugosulus, v. d. Torre.—This was originally described by Konow under the name *rugosus* which has had to sink as pre-occupied. It seems to be very rare, but I have specimens from Scotland, and "Sopworth" (Gloucestershire?), and Mr. Harwood has taken it near Colchester. (See Ent. Mo. Mag., June, 1898, p. 127).

(To be continued).

NEUROTOMA MANDIBULARIS, ZADD., ♂, FROM THE NEW FOREST.
A SAW-FLY NEW TO BRITAIN,
AND IN THIS SEX NEW TO SCIENCE.

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

A splendid addition to the British list of Saw-flies has been made by Mr. Donisthorpe, who has for some time been kind enough to reserve for me any specimens of these insects which he has come across in looking for *Coleoptera*, &c. Among a small batch which he lately gave me from the New Forest was a ♂, which, I saw at once, agreed with nothing known to me, unless it might possibly be a black-faced aberration of *Lyda erythrocephala*, L. But on finding that the front-legs as well as the face were destitute of yellow marks I felt that this was improbable; and a more careful examination presently showed that its generic characters were those not of a true *Lyda* at all, but of a *Neurotoma*. The front tibiæ proved to be unspined—I thought at first that I had seen a spine, but I must have been looking at the middle pair, for certainly the front pair are unarmed—and the intercostal nerve was simple, *i. e.*, not apically branched.

Among the described Palaëartic species of the genus there is one only to which it can possibly be referred, *viz.*, *Neurotoma* (subg. *Gongylocorsia*, Knw.) *mandibularis*, Zadd. And not only is this species new to this country ("Hitherto known only from France and Germany. Rare." Konow, *Chalastogastra*, p. 179), but its ♂ is new to science. I am therefore half afraid to assume responsibility for recording the occurrence of this ♂ in our own country, but its characters agree so precisely with those of Zaddach's insect that I will venture. The following description made by myself, actually from the ♂ before me (and *not* from comparison of it with descriptions of the ♀), will be felt, I think, to justify my boldness.

NEUROTOMA (GONGYLOCORSIA) MANDIBULARIS, Zadd.

Maris adhuc ignoti descriptio.

Atro-cyanea, metallescens, scutello viridi-subaurato, clypeo immaculato, mandibulis flavis, tibiis posticis dimidio basali albo-lincatis: antennis 20-articulatis, articulo 3^o tribus sequentibus simul sumptis subæquali; capite et mesonoti lobis lateralibus rugose fortiter punctatis, huius lobo medio polito, nitidissimo, impressione mediana profunda: alis pure hyalinis, nervis ac stigmatibus fuscis, huius basi extrema nonnihil decolorata.

Blue-black, very shining, with metallic reflections, scutellum with a tinge of golden-green. Mandibles orange-yellow, face absolutely immaculate. Basal half of hind tibiæ narrowly streaked with white exteriorly. Antennæ 20-jointed, the third joint about as long as the three following together. Head

and thorax clothed with rather long grey hairs. Head above strongly punctured, with tempora not distinctly margined posteriorly; its sides behind the eyes converging strongly and rectilinearly, as viewed from above (—subgenus *Gongylocorsia*, Knw.!); Middle lobe of mesonotum very smooth and shining, bisected by a sharply-defined deep longitudinal impression; the side-lobes punctured much as is the head. Wings clear hyaline, nervures and stigma brown-black, the latter somewhat pale at its extreme base.

The “unique” ♂ specimen of this beautiful insect was taken by Mr. H. St. J. Donisthorpe while sweeping close to the Queen’s Bower, at Brockenhurst on May 28th, 1910, and most kindly presented to myself. I may add that it is in absolutely perfect condition, and that I tender him my most sincere thanks for enriching my collection with this and other rarities, one of which I shall have occasion to mention in a future instalment of my “Help-Notes, &c.” now appearing from time to time in this Magazine.

Brunswick, Woking:

June 6th, 1910.

Agrion armatum, Charp., at Stalham Broad, Norfolk.—As Mr. Balfour Browne could not be persuaded to supply either Mr. K. J. Morton or myself with a specimen of this recent addition to the List of British *Odonata*, it became necessary for me to go and collect it myself. A nine days’ visit to Norfolk, within easy access of the Broads, at the end of last month (May) gave me the desired opportunity. My first search for the species was on Monday, May 23rd, an ideal day for collecting dragon-flies, calm, with continuous hot sunshine; and as I understood that Mr. Browne had recorded it as occurring on Sutton Broad only, so far as he knew, I naturally looked for it there, and spent all my time that day in a fruitless quest, for not a trace of it could I find. The next two days were as great a contrast in weather as could well be imagined—absolutely sunless, with a bitterly keen north-east wind, in which searching for dragon-flies was hopeless. The day following, the 26th, was a considerable improvement, warm and fairly sunny, so I decided to try Stalham Broad, which is only separated from Sutton Broad by a tributary of the river. There I was fortunate enough to come across the special object of my search, and a few nice *A. armatum* were gracing my setting boards before the day was over. Next day I took several more on the same ground, but it was not until the following morning, Saturday the 28th, when I tried another part of Stalham Broad, that I evidently hit on one of the head-quarters of the species. The weather was by far the best I had had since Monday, and *armatum* was flying so commonly that before I left I had netted a fine series for my own cabinet, with some additional specimens for my Neuropterist friends, and yet I perhaps did not capture more than half the specimens I saw.

In the sunshine the species flies rather quickly, and for the most part just

over the surface of the water, close to the banks, but the specimens thus taken were nearly all males evidently in search of the females. I netted four couples paired, all the males mature, but three of them paired to immature females, showing that the latter are paired soon after emergence. On the previous days, when I had taken them on the banks, females were greatly in the majority. When flying in the sun the mature insect is a very striking *Agrion* and cannot be mistaken for any other British species; the green on the front and posterior segments of the abdomen shines like emeralds, and is more brilliant than is the blue in *Agrion puella*, *A. pulchellum*, &c. I took one specimen, a female, in which the green was entirely replaced by a beautiful clear blue, forming a striking contrast, but it was the only mature specimen I saw which departed from the green marked, and evidently ordinary form in the Broads.* My friend Mr. W. J. Lucas will, I am sure, forgive my pointing out that his figure of segments 1 and 2 of this species ("Entomologist," February, 1904) is not quite accurate in its details. The two black marks are there shown as being on the dorsal part of the segment (σ), whereas in reality they are on the sides, and can scarcely be seen at all when the insect is looked at from above. Then the neat conical mark in the figure, which purposes to represent the male, is characteristic of the female only; in the male the mark is almost square and occupies the entire width of the segment.

Other early dragon-flies were much in evidence. *Libellula quadrimaculata*, *Erythromma najas*, *Pyrrosoma nymphula*, *Isonura elegans*, and *Agrion pulchellum* were all plentiful; *Brachytron pratense* was common, and *Libellula fulva* was getting nicely out, but the specimens as yet, of course, immature. Of *Trichoptera*, *Phryganea striata*, *Glyptotendipes pellucidus*, *Agrypnia pagetana*, and *Limnophilus xanthodes* were all abundant; and *Limnophilus marmoratus*, *Molanna angustata* and several other species were less common. No evening work was attempted, as I had to leave the Broads in the middle of the afternoons to catch my train, or probably the list of these insects could have been considerably lengthened. Nor was any attention given to *Lepidoptera*, but *Papilio machaon* was getting out, and hibernated *Vanessa io* were not uncommon depositing eggs on the large patches of nettles.—GEO. T. PORRITT, Dalton, Huddersfield: June 9th, 1910.

A street blocked by a moth.—The following rather amusing incident is extracted from the "Gibraltar Chronicle and Official Gazette," dated May 4th, 1910:—"A very large moth was the means of drawing quite a large crowd, and causing some commotion in the Main Street, just outside the 'Welcome,' about 9 o'clock last evening. It was a remarkably large and rare-looking specimen, and somewhat resembled one of the larger sized bats, which most of the spectators took it to be. Attracted by the glare of the electric street lamp, it fluttered about before it was detected by some boys, who were hastily on its track. After a few minutes' diversion on the wing, it settled on the wall of the Spanish Pavilion, about twenty feet from the ground, where it became an interesting target, and had to stand the bombardment of hundreds of caps,

* Descriptions of the species denote the blue-marked as the prevailing continental form.—G.T.P.

hats, and such other missiles from the crowd in the street, which had by this time considerably increased, and blocked the traffic. After some time it was dislodged by a well-directed shot and fell into the street, where a general *melee* took place, each and every one being over anxious to secure the rare and interesting visitor, which eventually got crushed in the scuffle. By this time traffic was at a standstill, but the appearance of a sturdy policeman soon dispersed the crowd."

I believe the insect in question was a large specimen of *Salurnia pyri*, which occurs commonly in this district. A freshly emerged specimen, rather the worse for wear, was brought to me a few days later.—J. J. JACOBS, Gibraltar: *May 12th*, 1910.

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. iii, pp. 410, plates liii. London: Swan Sonnenschein & Co. Berlin, Friedländer und Sohn. 1908-1909.

Another volume of Mr. Tutt's monumental work on our native butterflies has followed its predecessor in good time, and in excellence of execution and general interest it fully maintains the very high standard set by the two volumes that have already appeared. Continuing the consideration of the *Lycæninae*—our familiar "Blue" butterflies—the author here deals with five species only. Of these one, *Erebes argiades*, is among the rarest of stragglers to the South of England in quite recent years, and another, the "Mazarine Blue" of the old collectors, *Cyaniris semiargus*, has only too probably been lost to our fauna since the last quarter of the nineteenth century at the latest. The history of both these butterflies as British species is treated by Mr. Tutt with his usual exhaustive fulness, and the copious extracts from the older authors from Mouffet to Stainton respecting the former occurrence of *C. semiargus* in England, are very interesting reading. The other three butterflies under consideration, *Cupido minimus*, *Plebeius argus*, and *Agriades thetis* (*bellargus*) are sufficiently familiar to Lepidopterists, but the most advanced student of the Order will not fail to see his old friends in many novel and pleasing aspects, in the minute and thorough way in which each species is traced through its extreme range of variation and geographical distribution, and its life-history worked out in detail. Hybridity, gynandromorphism, and pathological modification all receive their due share of treatment; and the question as to which of two closely allied forms the specific name "*argus*" of Linné is to be referred, a matter that has occupied the ingenuity of Entomologists for more than a century, is, we hope, finally settled in favour of our familiar British species.

As before, Dr. T. A. Chapman has rendered most substantial assistance in working out the life-histories of the species under treatment, as well as in supplying material for biological details, of which the photographs by Mr. F. Noad Clark are reproduced in a large number of excellent half-tone plates. Messrs. Hugh Main and A. E. Tonge contribute illustrations of the species in

their various stages, and we would call special attention to the figure of *Agrialdes thetis* at rest on a plantain-head (plate xliii, fig. 8), as quite the most beautiful example of this kind of work we have ever seen, though it is rivalled, if not equalled, by that of *Cyaniris semiargus* on plate liii. The very interesting series of essays on "Family Habits of Butterfly Larvæ" (pp. 1-40) dealing with those of the Chrysophanids, Urbicolids, and Papilionids, are brought to a conclusion in this volume, and we would say a final word in commendation of the excellent and exhaustive "Special Index" compiled by Mr. H. J. Turner.—J. J. W.

A SYNOPSIS OF THE ORTHOPTERA OF WESTERN EUROPE: by MALCOLM BURR, D.Sc., F.L.S., &c. London: Oliver Janson, 44, Great Russell Street W.C. 1910.

Dr. Burr is to be congratulated on this important contribution to the literature of a somewhat "neglected" Order of Insects, on which he has by universal consent been long recognised as the foremost authority in our country. In this well got-up little volume of 160 pages he has brought together his notes on the *Orthoptera* of Europe occurring to the west of the Carpathians, which have appeared at frequent intervals since 1903 in the "Entomologist's Record." As compared with our own rather meagre Orthopterous fauna, the number of species that have been found in this region, especially in the Iberian Peninsula, will be rather surprising to the student of exclusively British insects, and the book is issued in the hope that entomologically inclined tourists on the Continent may be induced to pay some attention to this very interesting Order, and that it may help them in determining their captures. For this latter purpose, the brief but lucid diagnoses (in English) of each insect, and especially the very clear and simple tables of genera and species, will be found most useful; and copious lists of localities, with occasional interesting bionomic notes, are also given. As it is not always easy to make "good specimens" of Orthopterous insects when captured, we should have been glad if the accomplished author could have included a few practical hints on this point, as well as on methods of collecting. This omission may, however, be supplied in a future issue of the work; and we would add that it is brought fully up to date, and that most desirable feature, a copious and well arranged Index, is duly provided.

ILLUSTRATIONS OF DISEASE-CARRYING MOSQUITOES FROM THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE (Propaganda North Brazilian Division): by R. NEWSTEAD, F.E.S.

We have received, by the courtesy of our correspondent, Mr. R. Newstead, several very beautifully executed coloured figures from his own drawings, representing on an enlarged scale, certain mosquitoes known to be agents in the conveyance of disease to man in Tropical South America. These include the Anopheline *Cellia argyrotarsus*, an important carrier of "malaria," and the now notorious "Tiger Mosquito" *Stegomyia calopus*, to whose bite the infection of yellow fever has been definitely traced. Each of these figures, which are printed on cards of the International Postal Union, is accompanied by a concise

account of the mosquito's relation to the special disease which it conveys, and the methods of dealing with the pest; and their publication cannot fail to be of the utmost value to residents in, and intending visitors to, the regions where these dangerous insects prevail.

ILLUSTRATIONS OF AFRICAN BLOOD-SUCKING FLIES OTHER THAN MOSQUITOES AND TSETSE FLIES: by E. E. AUSTEN. London: printed by order of the Trustees of the British Museum, 1909. Price, £1 7s. 6d.

The work consists of xv and 221 pages and thirteen coloured plates, containing 103 figures. On the first 178 pages will be found short explanations of the figures, lists of localities, and in many cases bionomic notes supplied by collectors, with a *resumé* of what has been recorded concerning the capabilities of the species to transmit disease; the last 43 pages are devoted to lists of the known species arranged under countries, and a very complete index. No attempt is made to give scientific descriptions, and in only a few cases is a species differentiated from its allies, consequently the chief value of the work (as may be inferred from the title) lies in the illustrations; the 102 species figured include representatives of six families as follows: *Chironomidæ* 3, *Psychodidæ* 1, *Simuliidæ* 4, *Tabanidæ* 87, *Muscidæ* 5, *Hippoboscidæ* 3. These figures, the work of Grace Edwards, are excellent of their kind, and show signs of considerable care having been taken in their preparation, so much so that possibly in the case of some *Tabanidæ* the hope expressed in the Introduction that the standard of accuracy attained is such as to render detailed descriptions unnecessary, may have been realised, but in the other families, especially the *Muscidæ* and *Simuliidæ*, such a standard of accuracy is almost impossible.

The publication of showy volumes of this nature, though possibly not adding much to our knowledge of the families dealt with, may stimulate interest in this branch of science, so that by the accumulation of more material for our systematists to arrange and classify and a closer study of the habits and life-histories of the species, we may be enabled to attain a more accurate knowledge of these blood-sucking insects which in many cases seriously menace the welfare and happiness of humanity in the localities wherein they occur.

Societies.

THE BIRMINGHAM NATURAL HISTORY AND PHILOSOPHICAL SOCIETY: Entomological Section—Meeting was held *Monday, March 21st, 1910.*—Mr. G. T. BETHUNE-BAKER, President of the Section in the Chair.

Special business was the consideration of the families *Bryophilidæ* and *Bombycidæ*. Mr. Lloyd Chadwick, *Bryophila perla* (Warwick), *Acronycta psi* (Warwick), *A. leporina* (Wye Valley and Denstone, W. Staffs.), *A. aceris* (Brockenhurst), *A. megucephala* (Princethorpe and Snitterfield), *A. rumicis* (Long Itchington), *A. ligustri* (Snitterfield), *Diloba cæruleocephala* (Warwick). He also stated that a larva of *A. alni* had been sent to him from Leek Wootton, Warwicks. Professor E. Wace Carlier, about 50 specimens and varieties of *Euplwinæ* from Malaya and India. Mr. G. T. Bethune-Baker,

species of *Zallissa* and *Pseudozallissa* from New Guinea; species of *Diphthera*, *Dipterygia*, and *Euplexia* from New Guinea; species of *Acronycta*, New Guinea and Europe, and *Bryophila*, Europe. Mr. G. T. Fountain, a specimen of *Spilodes palcalis* from Jersey. Mr. H. Willoughby Ellis, varieties of *B. perla* from Knowle, *A. tridens*, *A. psi*, *A. megacephala*, *A. runicis* and *Diloba cæruleocephala*, Knowle, and a bred specimen of *A. alni*, from Moseley. Also the following *Coleoptera*:—*Liparus coronatus*, Falmouth; *Hylecoetus dermestoides* (Cannock Chase); *Necrophorus vestigator* (Bedfordshire); *Carabus nitens*, dark var. (New Forest); *Malachius xeneus* (New Forest); *Clythra quadripunctata*, and its life history from nests of *F. rufa*. Mr. Wyllard Griffiths remarked upon the few records that had been made of *Lucanus cervus* in the Birmingham district, and said that one had been sent to him from Bewdley. Information was asked for as to the composition of the colour pigment in the scales of *Lepidoptera*, a great difficulty being experienced in analysing the very small quantities of material available. Mr. Lloyd Chadwick pointed out that very young larvæ of *Triphæna fimbria* behaved like loopers, and were apparently not furnished with the usual number of prolegs which developed later. Mr. Fountain said that very young larvæ of *Pieris brassicæ* also "looped" and Mr. Chadwick pointed out that Buckler says that larvæ of *Triphæna pronuba* do the same.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, May 12th, 1910.—Mr. A. SICH, F.E.S., Vice-President, in the Chair.

Mr. Tonge exhibited a series of *Mcbitæa aurinia* taken at Verney Junction, about 1890, but apparently now it is extinct there. Mr. Ashdown, a specimen of *Asphalia flavicornis* from Mickleham having a large dark blotch in the disc of the fore-wings. Mr. Edwards, numerous species of the genus *Parnassius*, including *P. transicus*, *P. smintheus*, *P. gracilis*, *P. imperator*, &c. Mr. Main, specimens of two species of Scorpion sent him from S. France by Dr. Chapman. Mr. Coulson, a very pale buff example of *Phigalia pedaria* from Epping Forest. Mr. Hy. J. Turner, a number of species of *Lepidoptera* from Zermatt, and read a paper entitled, "A few days with the Butterflies of Zermatt."

Thursday May 26th.—Mr. J. W. KAYE, F.E.S., President, in the Chair.

Mr. Newman exhibited ova of *Sesia andreniformis* and two specimens of a blue butterfly ♂ and ♀ from the late Mr. Sabine's collection supposed to be a natural hybrid between *Agriades coridon* and *A. thetis* (*bellargus*). Mrs. Hemmings, a very fine gynandrous specimen of *Celastrina argiolus* taken in Surrey on March 10th, 1910. Mr. Edwards, numerous species of the S. American genus of Satyrids, *Taygetis*, and a number of under-sides of *Melanitis leda* showing extreme variation in colour and markings. Mr. Adkin, the series of *Boarmia repandata* referred to in Proc. S. Lond. Ent. Soc., 1909, p. 3, and read further notes on them. He also reported an instance of a butterfly, *Pieris brassicæ* (?) being captured and carried off by a bird. Mr. Sich, the small winter tents of the hibernating larvæ of *Hyponomeuta cagnagellus*. Dr. Hodgson, specimens of *C. argiolus* and *Pieris napi* recently bred or taken by him as noteworthy in the colour investigations he has been carrying on for some years.—HY. J. TURNER, Hon. Secretary.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, May 4th, 1910.*—
Dr. F. A. DIXEY, M.A., M.D., F.R.S., President, in the Chair.

The decease was announced of Mr. G. S. SAUNDERS, F.L.S., a Fellow of the Society.

Mr. J. J. Ward brought for exhibition an example of the ichneumon-fly, *Rhyssa persuasoria*, ♀, together with a photograph of the living insect. The specimen was captured at Coventry; but whether that place was its natural habitat is doubtful, as some packing straw from Geneva was lying in the vicinity. Mr. H. St. J. Donisthorpe, on behalf of Dr. Nicholson, Mr. Dollman, and himself, examples of a species of *Olophrum* new to science, and Scotch specimens of *Olophrum fuscum*, Grav., the species to which it comes nearest, for comparison. The specimens of the new beetle were taken by Dr. Nicholson and himself in Wicken Fen under sedge refuse, and subsequently by Mr. Dollman in some numbers in the same locality. Mr. Donisthorpe pointed out the characters in which it differed from *O. fuscum*, and said he had described it, and proposed for it the name of *Olophrum nicholsoni*. Mr. H. Eltringham stated that in reference to his previous paper describing experiments on the edibility of certain Lepidopterous larvæ (Trans. Ent. Soc., 1909, pp. 471-478), the caterpillars there referred to as *Boarmia rhomboidaria* had proved to be *Odontopera bidentata*. Further, that some of the moths had been bred from larvæ fed exclusively on ivy, and though similar larvæ had, as explained in the paper referred to, proved extremely distasteful to the lizards with which he had experimented, the moths were found to be palatable. His lizards having failed to survive the winter, he had sent the moths to the Zoological Gardens where Mr. Pocock had given one to a bird and two to some lizards (*Lacerta viridis*), and all of the moths had been devoured at once. The result, therefore, appeared to show that the distastefulness of the larvæ was due to the particles of the food-plant contained in the digestive tract. Mr. E. Meyrick, B.A., F.R.S., communicated a paper entitled "Descriptions of Micro-Lepidoptera from Mauritius, and the Chagos Isles."

Wednesday June 1st, 1910.—President in the Chair.

Mr. F. Merrifield, and Mr. R. Trimen, F.R.S., were appointed to act as additional delegates to the International Congress of Entomology at Brussels in August.

The President announced that the *Conversazione*, postponed from Friday, May 27th last, by reason of the general mourning for His late Majesty King Edward VII, would be held during the forthcoming session on some date not earlier than the last week in November.

Mr. Arnold Whitworth Boyd, The Alton, Altrincham, Cheshire; Mr. Emile Garecke, M.I.E.E., Witton House, Maidenhead; Mr. Henry Oliver Holford, Elstead Lodge, Godalming; Count Birger Morner, Consul for H. M. the King of Sweden, Sydney, New South Wales; Mr. C. W. Mason, S.E.A.C., St. Denis, Shaftesbury, Dorset; Mr. Martin E. Mosely, 13, Addison Road, London, W.; Mr. Robert Tait, junior, Roseneath, Harboro' Road, Ashton-on-Mersey, Cheshire; Mr. Frank Wray Terry, The Planters' Association, Honolulu, Hawaiian Islands; Mr. F. V. Theobald, M.A., South Eastern Agricultural College, Wye Court, near

Ashford, Kent; Mr. Charles Henry Rudge, Assoc. M. Inst., C.E., 15, Newton Road, Bayswater, W.; and Miss Carlotta Rudge, 15, Newton Road, Bayswater, W.; were elected Fellows of the Society.

Commander J. J. Walker exhibited examples of *Ceuthorrhynchus pilosellus*, Gyll., and *Ceuthorrhynchidicus mixtus*, Muls., taken by him during May last at Tubney, Berkshire. The Rev. F. D. Morice, a specimen of *Clavelia pompiliiformis*, Luc. ♂, the only known fossorial wasp with pectinated antennæ, taken by him this spring in Algeria; also examples of the saw-fly *Phymatocera aterrima*, Klug, with photographs of the insect in the act of ovipositing on "Solomon's Seal," and gave an account of the way in which the saws are employed for the purpose. Instead of cutting vertically the saws are turned sideways, a characteristic method employed, said Mr. F. Enock, by many of the *Homoptera*. Mr. C. O. Waterhouse and Dr. T. A. Chapman also joined in the discussion, and Mr. A. Sich mentioned that some years since many larvæ which appeared identical with those of *P. aterrima* occurred on the same plant in his garden at Chiswick. Mr. H. Main, an empty larva skin of a ♂ *Lampyrus noctiluca* with a living pupa, which was seen to be intermittently luminous. Mr. L. Newman, a case containing a long and varied series of *Ematurga atomaria* bred from a melanic ♀ taken *in cop.* with a dark typical ♂ at Bury, Lancashire. It was noticeable that melanic and semi-melanic forms of the offspring predominated; also a ♂ and ♀ of ? hybrid *Agriades thetis (bellargus) × A. coridon*, taken wild in North Kent, June, 1909, and ova *in situ* of *Sesia andreniformis*; of which Mr. A. E. Tonge handed round a photograph × 26 of the same. Mr. O. E. Janson, a remarkable gynandromorphous example of *Goliathus giganteus* and other *Cetoniidæ* recently collected by Mr. E. Brown in Uganda, British East Africa, including both sexes of the rare *Formasimus russus*. Nearly all the species exhibited were West African forms, proving the great similarity of the central African fauna, extending over a district of two to three thousand miles across that continent. The Rev. G. Wheeler, a case containing many examples, showing a wide range of variation, bred from identical parents of *Smerinthus populi*, taken in Lancashire; also a curious pale dwarf example of *S. ocellatus* from the same locality. Mr. C. O. Waterhouse, specimens of a beetle of the family Chrysomelidæ, *Crosita altaica*, Gebl., found by a poulterer at Bournemouth in the crop of a pheasant from Russia. He remarked on the brilliancy of the metallic coppery-red and green colours. It has been held by some that bright metallic colours were warning-colours. Dr. T. A. Chapman, specimens of this spring emergence of double-brooded *Agriades coridon*, taken in April and May last at various places in the St. Tropez district of the Riviera, displaying considerable variation, but all appear to be of one race. Very few specimens showed any red colour on the upper-side; also larvæ of *Thestor ballus* in last instar, feeding on flowers of *Ulex europæus*; larva of *Agriades coridon* var. *constanti*, from eggs laid at Ste. Maxime at the beginning of May, and now in third instar; and a living imago of *Callophrys avis*, Chapman, a somewhat belated specimen, emerged June 1st, 1910; the delay no doubt due to an unsuccessful attempt at forcing in February. Dr. K. Jordan, a live specimen of a ♂ of *Truxalis* obtained by him at Portimão, South Portugal, and also living larvæ and the cocoon of a moth, *Diplura loti*. The larvæ were found on

Cistus in the Serra de Monchique, Algarve, South Portugal, on May 13th, and were being fed upon *Helianthemum*. They resemble the caterpillar of *Eriogaster lanestris* so closely that a generic separation is hardly justified. Mr. H. C. J. Druce, some notes received from Mr. J. C. Moulton, of the Sarawak Museum, on the association of a Homopteron with a Lycænid butterfly observed in Borneo.

The following papers were read:—"Mr. A. D. Millar's Experimental Breeding of *Euralia*," by Roland Trimen, M.A., F.R.S., F.L.S. "Notes on the *Scoliidae*," and "New Fossorial Hymenoptera from Australia," by Rowland E. Turner. "On the position of the *Rhopalosomidae*, with description of a second new Species," by Claude Morley, F.Z.S. "Descriptions of Malayan Micro-Lepidoptera," by Edward Meyrick, B.A., F.R.S., F.Z.S. "On the Specific Distinctions between *Acræa lyeoa*, Godt., and *Acræa johnstoni*, Godm.," by Harry Eltringham, M.A., F.Z.S.—H. ROWLAND-BROWN, M.A., *Hon. Secretary*.

ADDITIONS AND CORRECTIONS TO THE BRITISH LIST OF
MUSCIDÆ ACALYPTRATÆ.

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

(Continued from page 129).

SAPROMYZIDÆ.

I do not propose to follow Hendel (*Genera Insectorum*, 1908, Fasc. 68), in considering the genus *Sapromyza*, a subgenus of *Lauzanina*, and consequently have to alter the name of the Family.

Trigonometopus, Mcq.—Hendel is probably correct in placing this genus among the *Sapromyzidæ*.

Minettia, Desv.—The combination of two such characters as the long plumed arista and the presence of a distinct strong intra-alar bristle *not* on the postalar callus in several British species of *Sapromyza*, appears to be sufficient justification for separating them under the above name. The following species possess these characters:—*longipennis*, F., *flaviventris*, Costa, *trispina*, Rnd., *lupulina*, F., *longiseta*, Lw., *subvittata*, Lw., *fasciata*, Fln., *plumicornis*, Fln., and *inusta*, Mg.

**Minettia longiseta*, Lw.—This species has a uniformly grey thorax, three pairs of dorso-central bristles, acrostichal bristles in four rows, and the second abdominal segment abbreviated and bearing two long stout bristles on the hind-margin; it was found in some numbers by Col. Yerbury at Torcross (Devon), in August, 1903; Mr. Verrall had previously taken a male at St. Mary Cray (Kent), in June, 1869, another male at Dyffryn (Merioneth), in July, 1888, and a female at Leigh (Essex), in June, 1871; it was upon these specimens that he added *flaviventris*, Costa, to the "List," that name, however, may still stand for I have seen true *flaviventris* from Scotland and Herefordshire taken by Col. Yerbury.

**Minettia subvittata*, Lw.—I record this with some hesitation, but specimens I had considered to be only *fasciata*, Fln., appear to belong to this species.

**Minettia trispino*, Rud.—A species allied to *flaviventris*, Costa, but distinguished chiefly by having three spines at the end of the middle tibia. In Becker's Table of Species it is wrongly included among those with only three pairs of dorso-central bristles, and I believe that de Meijere (Tijd. v. Ent., 1907, 186), was led astray by this mistake of Becker's and redescribed it under the name *uncinata*. Col. Yerbury found it in Ireland (Waterville and Glenbeigh) in 1901, and at Porthcawl (Glamorgan) in 1903 and 1906. I took a male at Worth (Dorset) in August, 1906.

**Sapromyza illota*, Lw.—This is a dull yellow species with antennæ and palpi darkened at their tips, arista only pubescent, four dorso-central bristles, acrostichal bristles in two rows, and tip of the wing indistinctly darkened. It is a somewhat common species and I think there can be little doubt but that *S. pallida*, Fln., was included in the British List on the strength of specimens of this species.

Sapromyza affinis, Zett., was recorded by Mr. W. Evans in 1904, from Newpark, Midlothian (Ann. Scot. Nat. Hist., p. 129); it has been taken by Col. Yerbury at Nairn in June, and at Nethy Bridge (Inverness) in July, by Mr. J. R. Malloch at Bonhill (Dumbarton), I have found it in Suffolk, and it has occurred in Herefordshire.

**Sapromyza interstincta*, Fln.—I have seen specimens of this small species taken by Dr. D. Sharp in the New Forest in July, 1904; it has the crossveins darkened, and fairly close together, arista almost bare, three pairs of dorso-central bristles and acrostichal bristles in four rows.

**Sapromyza tesquæ*, Beck., is closely allied to the last species but the crossveins are not so close together, and the arista is distinctly pubescent; it is the species recorded by Mr. Verrall in 1894 as *biunbrata*, Lw., which consequently should be struck out of the List.

**Sapromyza linnea*, Beck.—A small species with the crossveins, and the junction with the costa of the radial cubital and discal veins, darkened, three pairs of dorso-central bristles, and strong acrostichal bristles in two rows. It was found by Col. Yerbury at Porthcawl (Glamorgan) about the middle of June, 1903, and Dr. Wood has taken it in Herefordshire.

Sapromyza scarpunctata, Mg., which was in the List of Reputed British species, has been recorded by Col. Yerbury from Ireland (Irish Nat., 1902, p. 91).

**Sapromyza opaca*, Beck.—Col. Yerbury took this species, which is closely allied to the last, at Porthcawl (Glamorgan) in June and July, 1903.

**Sapromyza decaspila*, Lw.—This species has two dark spots or blotches on each of the fourth and fifth abdominal segments, acrostichal bristles weak and in four rows, the palpi darkened at the tip and the arista almost bare. Dr. Sharp and Mr. C. G. Lamb found it in the New Forest in July 1904 and 1905.

**Sapromyza basalis*, Ztt., is easily recognised by the darkened basal joints of the antennæ, darkened tips of the palpi, and the presence of only one sternopleural bristle. Dr. Sharp found it in the New Forest in August and September, 1904, and I took it in some numbers at Wormsley Park (Oxfordshire) in August, 1907.

Sapromyza quadricittata, Lw., was recorded by Mr. Malloch from Bonhill (Dumbarton) in this Magazine for 1908, p. 138.

**Sapromyza nitidifrons*, Becker, is allied to *decipiens*, Lw., but the frons is shining and the pubescence of the arista is longer; it was taken by Col. Yerbury at Porthcawl (Glamorgan) in May, 1906.

Sapromyza pallida, Fln.—I have never seen a British specimen of this species as interpreted by Becker (v. *Sapromyza illota*, p. 170).

Sapromyza tarsella, Zett., was placed in the "List" in mistake for *obsoleta*, Fln. I have never seen a British specimen.

Sapromyza apicalis, Lw.—Recorded by Rev. Thornley in his List of Lincolnshire *Diptera* (1899), and by Rev. W. J. Wingate in his List of Durham *Diptera*, 1906. I have never seen a British specimen.

Sapromyza placida, Mg.—This species has very slight claims to remain in the List, it was recorded by Curtis in 1837, though it was unknown to him, and no one appears to have recognised it since it was described.

Paralauzania albiceps, Fln.—Mr. Malloch has confirmed the occurrence of this species in Britain in this Magazine for 1909, p. 41. I have seen specimens taken in Herefordshire by Dr. Wood, and in the New Forest by Mr. C. G. Lamb.

Cnemacantha muscaria, Fln.—Mr. Malloch has also recorded this species on p. 234 of this Magazine for 1909. Mr. Verrall possesses a specimen taken by Mr. Coryndon Matthews at Stoweford Cleave (Devonshire) on August 19th, 1888.

Peplomyza wiedemanni, Lw., is now considered a synonym of *litura*, Mg., under which name it should appear in the List. *P. baumhaueri*, Lw.=*discoidea*, Mg., is a distinct species of which I have not seen a British specimen.

Lauzania atrimana, Mg., is an unrecognised species recorded by Stephens (1829) in his Catalogue as having been taken by himself within 25 miles of St. Paul's Cathedral.

Lauzania geniculata, Mg., has been recognised as a good species by Becker (1902). Specimens taken by Mr. Verrall at Upware (Cams.) on July 11th, 1875, and near Aberdeen on June 3rd, 1884, also by Col. Yerbury at Nairn in June, 1900, may be at once separated from *L. ænea* by having a much more shining thorax (owing to the absence of pollen) and darker legs, but I am not sure that they do not answer better to the description of *L. nitens*, Lw.

Lauzania hyalinata, Mg.—*L. frontalis*, Lw., is a synonym of this species (t. Becker, Zeitschr. Hym. Dipt., 1902, 232), and I feel sure that Haliday's *L. amica* is another synonym. It has been found by Dr. Wood in Herefordshire in June, and I have seen it from the New Forest. Becker placed it in the genus *Sapromyza*, but I consider that Loew was correct in considering it a true *Lauzania*.

LONCHÆIDÆ.

Lonchæa pusilla, Mg.—This is a synonym of *Lauzania hyalinata*, Mg., according to Becker.

Lonchæa latifrons, Mg., is considered a synonym of *lasiophthalma*, Mg. I have not seen a British specimen.

Lonchæa nigra, Mg.—Mr. Verrall took a female at Aberlady (Haddington) on June 30th, 1870; Col. Yerbury took it at Golspie (Sutherland) on June 16th, 1904; I found it at Orford (Suffolk) on June 19th, 1907, and Dr. Wood has taken it in Herefordshire. *L. inæqualis*, Lw., is a synonym (*t.* Becker, 1902).

Lonchæa vaginalis, Fln., is now considered a synonym of *L. chorea*, F.

**Lonchæa flavidipennis*, Zett.—I recognise this as distinct from *chorea*, F. (*vaginalis*, Fln.). In addition to the darker coloured wings, *L. flavidipennis* has the frons and face wider, the former not so dull black and the latter more distinctly whitish, the pleural pubescence is shorter (at least in the male), and there are two equally strong sternopleural bristles. *L. fumosa*, Egg., would appear to be very closely allied if not identical.

**Lonchæa deutschii*, Zett.—This has entirely black legs, dark squamæ, third joint of antennæ about twice as long as broad, and the disc of the abdomen obscured about the middle by brownish dust. I have seen specimens taken by Col. Yerbury and Dr. Wood in Herefordshire, and by the former at Golspie (Sutherland), Mr. Verrall has taken it at Newnham (Cambs.) and I have found it at Chippenham Fen (Cambs.).

**Lonchæa scutellaris*, Rnd.—This species was taken by Mr. Verrall in company with the last at Newnham (Cambs.) on August 3rd, 1906. It may be recognised by its partly pale tarsi, pale fringed squamæ, and the scutellum being of a different colour to the thorax.

**Lonchæa peregrina*, Becker.—This fine species has partly pale tarsi and and pale fringed squamæ like the last, but its large size 5—6 mm., and shining cheeks serve to distinguish it. Mr. Verrall caught a female at Landwade (Cambs.) on August 19th, 1883.

**Lonchæa zetterstedti*, Becker.—According to Becker this is the *laticornis* of Zetterstedt, but not of Meigen. I have seen specimens of what I believe to be this species taken by Col. Yerbury at Nethy Bridge (Inverness) in July and August.

**Lonchæa viridana*, Mg.—This small species with short antennæ, pale first joint to all tarsi, and brown fringed squamæ, was found by Mr. Verrall in his garden on May 2nd, 1886, and I have seen specimens taken by Col. Yerbury at Golspie (Sutherland) and by Dr. Wood in Herefordshire.

Palloptera lætabilis, Lw., was recorded as British by Dr. J. H. Wood in 1905; I took a female at Wormsley (Oxfordshire) on July 12th, 1907.

Palloptera costalis, Lw.—Becker (Berl. Ent. Zeit., 1895, 318) mentions having seen in the collection of Herr Alex. Siebeck a specimen of this species, from England, differing somewhat from his idea of *costalis*. Among the British specimens examined by me I have found none answering to his note of this species.

Toxoneura.—This genus is considered a synonym of *Palloptera*; there can be no doubt concerning Moses Harris' name *muliebris* which has priority over *pulchella* of Rossi.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

During July and August such matters will be attended to by Mr. CHAMPION, at his address, Heatherside, Horsell, Woking.

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

The Coloured Plate issued last September having been so much appreciated by our readers, another (devoted to *Hymenoptera* and *Coleoptera*) was given with the Jan. number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also. Another Plate is in course of preparation, and it will be presented during the year 1910.

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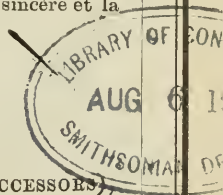
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LONCHÆIDÆ (continued).

**Lonchæa hirticeps*, Zett.—Dr. Wood has taken this species in Herefordshire; it may be recognised by its hairy eyes, dark squamæ, and long antennæ reaching to the mouth edge.

Lonchæa ænea, Mg.—Included by Stephens in his Catalogue (1829) as having been taken within twenty-five miles of St. Paul's Cathedral. It is practically an unrecognised species, which might well be struck out of the List.

Lonchæa nigrimana, Mg.—Included by Stephens in his Catalogue (1829) as having been caught by himself within twenty-five miles of St. Paul's Cathedral. Becker recognises it as a good species near *lusiophthalma* and *crepidaria*, but I have seen nothing answering to this in British collections.

ORTALIDÆ.

Ptilonota centralis, F., was recorded as British by Mr. Verrall (Ent. Mo. Mag., xxii, 223) in error for *guttata*, Mg., but it will almost certainly sooner or later be found in Britain.

Ortalis.—I have never seen a British specimen belonging to this genus and am strongly inclined to think that the two species in our List were wrongly identified by Curtis and Stephens.

Herina luctuosa, Mg.—The generic name *Herina* is used by Becker for Loew's genus *Pteropæctria*, and *luctuosa*, Mg., is the correct name for the species standing in italics in our List as *marens*, Mg. (v. Mg., Syst. Besch., vi, 378); it was described from a specimen sent to Meigen by Dr. Leach, and would appear very closely allied to *nigrina*, Mg. I have seen no specimen answering to the description.

**Melieria (Ceroxys) cana*, Lw., was taken by Mr. Verrall at Sutton Wash, near Wisbech (Cambs.) on July 15th, 1881, and more recently (July 9th, 1904) at Felixstowe (Suffolk); Col. Yerbury found it at Shoeburyness (Essex) on June 15th, 1899, at Barmouth (Merioneth) on July 7th, 1902, and commonly at Walton-on-Naze (Essex) in August, 1907. It is as small as *M. picta*, Mg., but has not the black abdominal bands of that species. It appears necessary to use the name *Melieria*, Dsv., for this genus as Becker has done in Vol. iv of Kertész's Catalogue (where, however, it is spelt *Meliera*).

Anacampta hyalinata, Pnz.—This is almost certainly another case of wrong identification by Stephens, I know of no British specimen. *Meckelia*, Dsv., having been previously employed in Verrill (1828) cannot supplant the name *Anacampta*, Lw. (v. Loew Mon. Dipt. N. Amer., 1873, p. 17).

Tanypeza longimana, Fln., recorded as British by Rev. E. N. Bloomfield (Ent. Mo. Mag., 1904, p. 60), is now placed in the *Ortalinæ*.

**Psairoptera albitarsis*, Zett.—Col. Yerbury and Mr. C. G. Lamb found this species near Nethy Bridge (Inverness) in June, 1905. It may be distinguished from the other British genera of *Ortalidæ* with short rounded antennæ by its transversely oval eyes and its short face without the usual keel.

Scoptera, Kirby, was first distinguished in Kirby and Spence's Introduction to Entomology II, p. 305, 1817, long before *Myodina*, Dsv., and consequently has priority.

Ulidia nigripennis, Lw., was recorded as British by Mr. Wesché (Ent. Mo. Mag., 1905, p. 227). The specimens in the British Museum are only *erythrophthalma*, Mg., while those under this latter name are *Chrysoomyza demandata*, F. *U. nigripennis* has, therefore, no right to remain in the List.

TRYPETIDÆ.

Platyparea discoidea, F.—There is a specimen in Dale's Collection correctly named, and there are specimens (probably British) in the Collections at the British Museum, while Walker's figure of his *Aciura lychnidis* (Ent. Mag., iii, 72, Plate ix, f. 15) undoubtedly refers to this species; it need therefore no longer remain in italics in the "List."

Acidia lychnidis, F., in the latest catalogue is given as a synonym of *casio*, Harris, under which name it will have to be known in future.

Spilographa abrotani, Mg., belongs to the genus (or sub-genus) *Stemonocera*, Rnd., and *Spilographa alternata*, Fln., and *meigeni*, Lw., to *Zonosema*, Lw.

Rhagoletis cerasi, L.—The British records of this species almost certainly refer to *Herina (Pteropæctria) frondescentiæ*, of which *cerasi*, Mg. (*nec* L.) is a synonym. I have never seen a British specimen of *cerasi*, L., though I possess specimens bred from what were probably foreign cherries bought in the market. *Tephritis hebe*, Newman, = *Sphenella signata*, Wlk., is certainly not a synonym of *cerasi*, L., but of a species of *Myopites*.

Goniglossum, Rnd.—The generic name *Orellia* of Desvoidy has been revived for this genus.

Trypeta onotrophes, Lw., is now known as *cylindrica*, Desv.

**Trypeta acuticornis*, Lw.—This species is closely allied to *serratulæ*, but is larger, has a faint clouding about the apical half of the wing, and a female ovipositor as long as the abdomen. It was found by Col. Yerbury in the neighbourhood of Porthcawl (Glamorgan) in 1903 and again in 1908.

Urophora spoliata, Hal.—The only specimens of this species known to me are those in the Dale Collection at Oxford. The black ovipositor of the female is nearly as long as the rest of the abdomen.

Myopites.—I believe we possess two species of this genus in Britain, *blotii*, Breb., of which *inulæ* v Ros, is probably a synonym, and *frauenfeldi*, Schin., but these two have never been well differentiated. Dale recorded *inulæ* in 1904 as common on *Inula crithmoides*, but the five males and seven females in his collection represent my idea of *frauenfeldi*. There is no doubt that Walker's description of *signata*, Mg., and Newman's description of *hebe* apply to a species of this genus.

Oxyphora, Dsv., is retained by Becker in Kertész's Catalogue and includes *flava*, Geoffr. (= *miliaria*, Schrnk.), and *corniculata*, Zett.

Icterica, Lw., was founded in Monog. Dipt. North America, iii, 287 (1873) for *westermanni*, but is not mentioned by Becker at all. *Icterica* and *Oxyphora* have the cubital vein bristly above and below, in *Oxyyna* and in *Urellia* (except *cometa*, Lw.) that vein is absolutely bare; in *Tephritis*, *Euaresta*, and *Urellia cometa* it is bare above but bristly below, a character overlooked by Loew.

Oxya, Desv.—The following British species of *Tephritis* belong to this genus: *Tephritis parietina*, L., *flavipennis*, Lw., *proboscidea*, Lw., *plantaginis*, Hal., *tessellata*, Lw., *absinthii*, F., *elongatula*, Lw., and *parvula*, Lw.

**Oxya parvula*, Lw.—I am convinced that a small species not uncommon in Stoke Wood (Herefordshire) in July, and found by Mr. C. J. Wainwright in Wyre Forest (Worcestershire) in July must represent this species; it comes near *absinthii* and *argyrocephala*, but the thorax is not striped, the abdomen has only two rows of spots, and the femora are pale with dark stripes, or even broad dark rings.

Tephritis dioseurea, Lw.—I consider the specimens upon which this species was added to the "List" to be only *leontodontis*, it therefore remains unconfirmed as British.

Euaesta guttata, Fln.—I have not seen a British specimen of this species. The genus *Euaesta* was suggested by Loew in his Monog. Dipt. N. America, iii, 296 (1873), for a group of species intermediate in their wing-markings between *Tephritis* and *Urellia*, but there is no mention of it in the fourth volume of Kertész's Catalogue.

SEPSIDÆ.

Sepsis violacea, Mg.—R. Frey, of Helsingfors, who has recently written upon this family, considers that *violacea*, Mg., like *punctum*, has only one pair of dorso-central bristles; I have seen the type in the Paris Museum and noted that it possessed two pairs and agreed with our species of that name.

Sepsis flavimana, Mg., which is in the List in italics, has been considered identical with the next species, *ruficornis*, Mg., but there is a considerable difference in size given by Meigen; anyhow, a description made from only the female should not have priority over one made from both sexes. The name had better be struck out of the List.

Sepsis ruficornis, Mg.—Specimens from Norfolk, Suffolk, Cambridgeshire, and Herefordshire, agree with a pair in the Paris Museum so named by Meigen, and with Frey's description of *flavimana*. Walker professed to recognise the species as British.

Sepsis cynipsea, L.—Frey's identification of this species is not the same as Stæger's, the latter's description of "*tibiis anticis acute excisis*" evidently points to his having before him the species called by Frey, *incisa*, Strobl. I prefer to accept Stæger's identification. Frey's *cynipsea* is the same as our *S. nigripes*, Mg.

Sepsis ornata, Mg., is a synonym of *S. punctum*, F.

Sepsis pilipes, v. d. Wulp.—Two authors described a species under this name, van der Wulp in 1871, and Loew in 1873, and Hendel in 1902 (Wien, Ent. Zeit., 265) proposed the name *lævi* for *S. pilipes* of Loew; I very much doubt if there are two distinct species with long hairs on the middle and hind femora in the male (Hendel was wrong in thinking that van der Wulp's species had long hairs on only the hind femora, and Loew's species long hairs on only the middle femora) though van der Wulp's species was described as having "een weening in 't oegg vallend stomp tandje" in the middle of the front femora

beneath, and the front femora of Loew's species were described as entirely simple. In our British species the front femora have two or three tiny bristles at the middle beneath, hardly distinguishable from the other pubescence except for the fact that they stand out more at right angles to the femur. Frey has proposed a genus (or subgenus) *Sepsidimorpha* for this species.

**Sepsis orthocnemis*, Frey.—We appear to possess this species, which is closely allied to *S. ruficornis*, in Britain. I have seen specimens from various localities ranging from the South of England (Lewes), to Scotland (Rannoch).

**Sepsis biflexuosa*, Strobl.—This dark-legged species has very distinct male front tibiae, the dorsal surface starts straight, but before the middle springs in an arched line to the tip, the ventral surface after a short, slender knee portion, forms a large swelling ending somewhat abruptly just beyond the middle of the tibia, then extends in an almost straight line to the tip; the swelling bears short bristles about its middle. There is only one long bristle beneath the front femora, very close to a large swelling bearing two moderately long bristles and a number of very short ones. Three males were taken by Mr. Verrall in a paddock behind his house (Newmarket, Suffolk) in August, 1894, and May, 1895.

Sepsis duplicata, Hal., was probably described from an abnormal specimen of *S. violacea* possessing an adventitious cross-vein to each wing.

Sepsis maculipes, Wlk., and *concinna*, Wlk., are unrecognisable from the descriptions, and had better disappear from the List.

Henicita leachii, Mg.—I agree with Haliday (in Westwood's Generic Synopsis, 1840, p. 148) that this species is better placed in *Henicita* than in *Themira*; in addition to the abdomen being subpetiolate, the great development of the back of the head, the absence of the humeral bristle, and the short wings all point to its being congeneric with *annulipes*. *Themira curvipes*, v. d. Wulp, almost certainly belongs to the same genus.

Themira nigricornis, Mg.—I have never seen a British specimen, and Walker's description cannot refer to a species of *Themira* at all. The name has no right to remain in the List.

Themira spinosa, Verr.—An examination of the type of *Th. pusilla*, Zett., at Lund, convinced me that *spinosa*, Verr., is only a synonym of Zetterstedt's species.

Themira superba, Hal.—It should be noted that *Th. pilosa*, Wlk., (Ent. Mag. i, 1833, p. 254) is a synonym of this species, but *pilosa*, Dsv., is a synonym of *putris*, L. (v. Wlk. Ent. Mag. iii, 1836, p. 182). *Th. ciliata*, Stæg., is also a synonym of *superba*, Hal.

Themira minor, Hal.—*Th. dentimana*, v. d. Wulp (1864), is a synonym of this species in addition to *lucida*, Stæg., but *minor*, v. d. Wulp (1864) and Schiner (1864) = *consobrina*, v. d. Wulp (1871), v. Tijd. v. Ent., xiv, 191-192 (1871).

Nemopoda tarsalis, Wlk., and *fumipennis*, Wlk., are mere names in the List, they should share the fate of *Sepsis maculipes* and *concinna*.

Saltella nigripes, Desv.—This may be only a variety of *scutellaris*, I have not sufficient material to decide. *S. basalis*, Hal., was quoted as a synonym of *nigripes* by Walker.

Piophilala luteata, Hal.—There is no doubt that this and *pectoralis*, Zett., are the same species as Haliday pointed out in Walker's Ins. Brit. Dipt. iii, p. xiii (1856). Walker was wrong in calling it "The Bacon Fly" and quoting *petasionis*, Duf., as a synonym. *P. casei*, L. (of which *petasionis*, Duf., is a synonym) is the "Cheese and Bacon Fly." I have bred it from cheese and caught it on bacon hanging up in a house.

Piophilala vulgaris, Fln.—This is the species standing in the List under the name *atrata*, F. No one has satisfactorily differentiated *atrata*, F., from *casei*, L. Meigen's *atrata* is certainly true *casei*, and Zetterstedt had *casei* mixed up with *vulgaris*, Fln., under the name *atrata*, according to specimens in his collection; I therefore agree with recent authors in sinking *atrata*, F., as a synonym of *casei*, L. In Fallen's collection, under the name *vulgaris*, I found a pair of the species to which I now restrict that name, and a male *nigriceps* evidently answering to the black-headed variety of *vulgaris* mentioned by Fallen in his description.

Piophilala nigrimana, Mg., I consider this and *affinis*, Mg., to represent the same species.

Piophilala apii, Westwood, was described in the "Gardener's Chronicle," 1848, as follows: "Thorax and abdomen entirely jet-black and very glossy, with a slight brassy tinge and with fine golden-grey hairs scattered about the body. The head is chestnut coloured, paler near the mouth, and black in the middle above; the eyes and the club of the antennæ are pitchy, the bristle of the latter luteous. The legs (including all the coxæ or joints by which they are attached to the body) are very pale straw-yellow, the tarsi especially of the hind feet somewhat more dusky. The wings are entirely hyaline or colourless and the veins very pale buff. Larvæ in solid part of stalk of celery." No one has ever recognised the species, and I cannot help thinking that the description applies better to a species of *Psila*.

The following Table will give some idea of my interpretation of the eight species of *Piophilala* in the British List:—

- 1 (6). Humeral and presutural bristles present, mesopleuræ bare, one pair of fronto-orbital bristles strongly developed.
- 2 (3). Face and frons black, legs yellow, except front tibiæ and tarsi and end of front femora.....*latipes*, Mg.
- 3 (2). Face and frons yellowish.
- 4 (5). Humeri and pleuræ extensively reddish-yellow*luteata*, Hal.
- 5 (4). Humeri and pleuræ black*vulgaris*, Fln.
- 6 (1). Humeral and presutural bristles absent, fronto-orbital bristles small or absent, mesopleuræ hairy (except in *nigriceps*).
- 7 (8). Thorax dull and bare with only three lines of small hairs ...*casei*, L.
- 8 (7). Thorax shining with scattered pubescence.
- 9 (12). Face and frons black.
- 10 (11). Antennæ yellowish, mesopleuræ bare*nigriceps*, Mg.
- 11 (10). Antennæ black, mesopleuræ hairy*nigricornis*, Mg.
- 12 (9). Face and frons yellowish.

- 13 (14). Frons narrow and extensively yellowish, ventral surface of male abdomen not very bristly, end of male front tarsi yellow...
nigrimana, Mg.
- 14 (13). Frons wider and pale only in front, ventral surface of male abdomen very bristly, male front tarsi black.....*varipes*, Mg.

The genus *Madiza* has been removed to near *Desmometopa* in the *Milichida*.

(To be continued).

A REVISION OF THE BRITISH SPECIES OF *PTENIDIUM*, ERICSON

BY H. BRITTEN, F.E.S., AND E. A. NEWBERY.

A revision of this genus has admittedly been long needed. The collections of the late Mr. Matthews were purchased by the Natural History Museum, but with the exception of the types, the British collection is now in the hands of Professor Ericson for examination, and therefore not available at present. The state of the European portion, in which as many as three or four species often stand under one name, is a sufficient indication of the uselessness of his tables and descriptions, even to Matthews himself, nor have we found other British collections that we have examined more correctly named.

It is to Herr K. Flach's "Bestimmungstabelle" (Verh. z.-b. Ges. Wien, xxxix, 1889) that we are indebted for the most valuable characters in the following table. These are taken chiefly from the scutellum, which has a transverse basal furrow bearing normally a short central keel and two or more punctures; the shape and furrowing of the prosternal keel; and the punctuation and pubescence of the upper surface, which latter is extremely short in *P. gressneri* and *laevigatum*, very long and conspicuous in *punctatum*, *fuscicorne*, *brisouti*, *pusillum*, and *nitidum*, and intermediate in the other species. Of course this can only be useful in fresh specimens. The thorax has normally four round, foveiform punctures placed transversely at the base, the size and depth of which are variable, and of little use for the separation of species. Nearly all of them have the elytra paler at the apex. A good half-inch objective is recommended for the examination of most of the above-mentioned characters, and examples can usually be named from the upper-side alone, but in doubtful cases recourse must be had to the form of the prosternal keel.

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

- 1 (18). Scutellary furrow with a minute but distinct middle keel.
- 2 (7). Prosternal keel broad and furrowed in nearly its entire length...
Sub-genus *MATTHEWSIUM*, Flach.
- 3 (4). Thorax broadest at the base. the two middle basal foveæ wanting.
Body regularly egg-shaped; upper-side castaneous-brown; pubescence scanty, extremely short and scarcely visible; elytra sometimes paler at base, very finely alutaceous; scutellum with punctures in basal furrow absent or obsolete...
Length, 0.8—0.84 mm. *P. gressneri*, Gillm.
- 4 (3). Thorax broadest a little before base, basal foveæ small but distinct, middle pair placed at some distance from base; scutellum with a very minute (and in *turgidum* sometimes obsolete) puncture, placed between the middle keel and side-angles, but rather nearer to the latter.
- 5 (6). Upper-side distinctly alutaceous, with fine, scattered, shallow punctures and scarcely visible pubescence; thorax not strongly margined; scutellum with a distinct puncture on each side of middle keel, placed as above; elytra usually castaneous-brown, the head and thorax darker, but colour somewhat variable...
Length, 0.86—0.94 mm. *P. lævigatum*, Gillm.¹
- 6 (5). Upper side with distinct hairs, which are especially long on sides of thorax; thorax strongly margined, with punctuation rather strong and deep; scutellum with punctures extremely small or obsolete; elytra not or scarcely alutaceous; body broader in proportion to its length than that of *lævigatum*...
Length, 0.92 mm. *P. turgidum*, Thoms.
- 7 (2). Prosternal keel simple, at least in front; thorax broadest a little before base.
- 8 (9). Scutellum with about six minute semi-equal ridges on each side of central keel, the interspaces being punctiform,² without larger puncture close to the side angles; prosternal keel with a short furrow between the anterior coxæ...
Sub-genus *WANKOWIZIUM*, Flach.
Basal thoracic foveæ very small; thorax and elytra with widely and irregularly placed shallow punctures; elytra usually castaneous, with somewhat raised scattered hairs, fore-parts darker...
Length, 0.86—0.92 mm. *P. intermedium*, Wank.³

¹ *P. bruckii*, Matth. (Trichopt., 82), Woll. (Cat. Col. Canar., 104), can hardly be said to have even varietal differences from *lævigatum*, Gillm. The fact that Matthews confused the latter species with *myrmecophilum*, Mots., and that the *lævigatum* of his collection are *nitidum*, Heer, will account for this and some other of his mistakes. The types of *P. bruckii* are from the Canary Islands (Crotch). Other specimens under this name are labelled "Morocco," "Italy," &c.

² Wankowicz says "crenate," Flach describes them as "6 punctures"; either is correct. Somewhat similar ridges are often found in *P. fuscicornis*, but they are less regular, being strongest near central ridge, and becoming progressively weaker as they approach the large puncture in side-angles. *P. fuscicornis* may also be distinguished by its black colour and much longer pubescence.

³ The name "*intermedium*, Wank.," must be retained, Gyllenhal's "*intermedium*" is a *Trichopteryx*. Matthews's type of *wankowiczii* is a rubbed specimen of *pusillum*, Gyll.

- 9 (8). Scutellum with a distinct central keel, and two punctures, which are placed just within the side angles; prosternal keel simple, narrow; pubescence long, evident, and semi-raised (except in *myrmecophilum*, Mots.)Sub-genus PTENIDIUM, i. sp.
- 10 (11). Thorax and elytra coarsely punctured with simple, deep punctures, the interspaces being minutely punctulate; thorax with a broad, impunctate central line; body black; antennæ and legs dark yellowLength, 0.8—0.84 mm. *P. punctatum*, Gyll.
- 11 (10). Thorax not coarsely punctured.
- 12 (15). Metasternum smooth, not alutaceous.
- 13 (14). Body deep black, clothed with long grey hairs; head and thorax with distinct, scattered, shallow umbilicate punctures, with a central impunctate line; elytra with simple punctures, which are either not confluent (type form) or very large, deep, and confluent on apical third (var. *rugosum*, Britten); antennæ dark pitch-brown...
Length, 0.74—0.8 mm. *P. fuscicornæ*, Er.
- 14 (13). Body, or at least elytra, castaneous-brown, longish, strongly convex; head and thorax scarcely punctured; elytra with evident punctures and very short scattered hairs; antennæ yellow. The var. *kraatzi*, Matth., has the outer basal thoracic foveæ deeper than in the type formLength, 0.88—0.96 mm. *P. myrmecophilum*, Mots.
= *formicetorum*, Kraatz.
- 15 (12). Metasternum alutaceous, at least at the sides.
- 16 (17). Thorax, especially at sides, almost as strongly punctured as elytra, sides less rounded; elytra distinctly punctured in eight or nine irregular longitudinal rows, furnished with long, semi-erect, grey hairs; antennæ yellow, at most with the last two joints slightly darkerLength, 0.9—0.94 mm. *P. pusillum*, Gyll.
apicale, Erichs.⁴
- 17 (16). Upper-side of thorax scarcely punctured, sides more rounded, inner basal foveæ less distinct than in *pusillum*; elytra more scantily punctured in six or seven irregular longitudinal rows; hairs much shorter and more slender than in *pusillum*; antennæ with first two joints and club nearly always infusate,⁵ the middle joints being more slender than those of *pusillum*...
Length, 0.8—0.9 mm. *P. brisouti*, Matth.
= *nitidum*, Bris., nec Heer.
- 18 (1). Transverse furrows of scutellum without a middle keel, with four deep equidistant foveæ; prosternal process with two furrows between the anterior coxæ.....Sub-genus GILLMEISTERIUM, Flach.
- Basal thoracic foveæ deep, proportional size of outer foveæ very

⁴ The type of Marsham's *P. evanescens* in Stephens's collection is *Atomaria pusilla*, Payk. Gyllenhal's name (*pusillum*) is only a year or two later (1808) and should be preferred.

⁵ A specimen in the Matthews collection received from Brisout under the name of *nitidum*, Bris., has pale antennæ, but Brisout's description accords with that given above, as do all the specimens we have seen.

variable in respect to inner ; length of pubescence, size, and colour also very variable ...Length, 0.74—0.96 mm. *P. nitidum*, Heer.

= *pusillum*, Erichs., nec Gyll.

= *laevigatum* (pars), Matth., nec Gyll.

In the following references to Matthews's collection, the European portion of it is implied. The British collection, with the exception of the type specimens, being at present in the hands of Professor Ericson for examination. All the specimens referred to have been examined by one of us.

P. gressneri, Erichs. (Nat. Ins. Deutschl., III, 13, 1845), Gillm. Introduced as British by Blatch in 1883 (Ent. Mo. Mag., xx, 121).—New Forest, in rotten wood, especially beech (Champion), in rotten wood infested with fungus, rare (Dr. Sharp), (Tomlin); Bradfield (Dr. Joy); "no connection with ants" (Dr. Sharp).

P. laevigatum, Erichs. (Nat. Ins. Deutschl., III, 36), nec Matth. Represented in the Matthews collection by two *nitidum*, Heer, and several *pusillum*, Gyll.—Widely distributed from Cumberland to the Isle of Wight. Found with *Formica rufa* and *Lasius fuliginosus*, in moss, rotten wood, moles' nests, &c., and rather common. Numerous specimens in the Matthews collection under *formicetorum*.

P. turgidum, Thoms. (Öfv. Vet.-Ak. Förh., 340, 1855). Represented in the Matthews collection by a specimen (co-type?) from Thomson, and by an *intermedium*, Wank.—New Forest, in rotten wood infested with fungus, "especially in beech" (Champion), rare (Dr. Sharp), "in hundreds" (Tomlin); Colham Park, Kent (J. J. Walker), "no connection with ants" (Dr. Sharp).

P. intermedium, Wank. (Ann. Soc. Ent. Fr. Sér. 4, ix, 412, 1869). The type of *wankowiezii*, Matth., in his British collection is a rubbed and dirty specimen of *pusillum*, Gyll. In the European collection are two specimens: the first is *pusillum*, and so labelled by Jekel; the second is probably a small immature *intermedium*, labelled "Italy."—Brookenhurst, in very powdery decayed wood, six specimens (Newbery); Tring, in very rotten willow (Elliman); Sandown, Isle of Wight (Champion); Falkirk, Scotland (Hislop, ex coll. Champion); Dunchiedoek, Exeter District (de la Garde).

P. punctatum, Gyll. (Ins. Suec. IV, 293).—Under seaweed on all our coasts, usually in profusion. It has also been found inland, in dung heaps, shingle, moss, &c. These inland specimens are usually smaller than the coast form, and have occurred at Hendon, Esher, Woking, Great Salkeld, &c.

P. fuscicorne, Erichs. (Nat. Ins. Deutschl. III, 37).—In moss and at roots of plants at sides of streams, and also in marshes. Widely distributed from Aberlady to the south coast, Isle of Man, Ireland, &c.

P. myrmecophilum, Mots. (Bull. Mosc., 1845, 518) = *formicetorum*, Kr. Represented in the Matthews collection by *laevigatum*, *myrmecophilum*, *nitidum*, and *pusillum*, almost all Matthews's own specimens being *laevigatum*. The type of the var. *kraatzi* in the British collection is a rather small *myrmecophilum* with the outer basal thoracic foveæ much deeper than the middle pair.—One specimen ex coll. Bates (Joy), two specimens, near Leicester (labelled “*kraatzi*” by Matthews) (Fowler). Appears to be rare. In Matthews's European collection are two bad specimens under *kraatzi*: one appears to be *myrmecophilum*, the other *intermedium*.

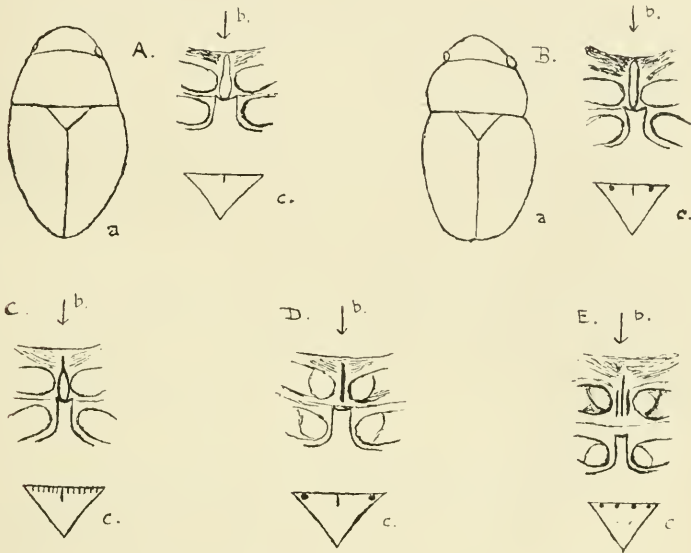
P. pusillum, Gyll. (Ins. Suec. I, 189, 1808) = *apicale*, Erichs.—The very numerous specimens of this common and widely distributed species in the Matthews collection have not been examined. It occurs in dead leaves, moss, &c., in Britain, Ireland, and the Isles of Wight, Man, Lundy, Scilly, &c.

P. brisouti, Matth. (Trichopt., 82) = *nitidum*, Bris. (Cat. Gren., 43, 1863), *nec* Heer. Represented in the Matthews collection by a small specimen with paler antennæ than usual, from C. Brisout himself (see footnote 5). A second specimen is most probably *pusillum*, Gyll., the third and last is *nitidum*, Heer.—In moss on banks of ponds and streams, in flood refuse, *d'bris* of reeds and rushes, &c. Banks of Thames, Walton (Champion); banks of River Eden and ponds at Great Salkeld (Britten); Bradfield (Joy); Dunchedioc, near Exeter (de la Garde).

P. nitidum, Heer (Fn. Helv., 377, 1841) = *laevigatum*, Matth., *nec* Erichs.—It has not been considered necessary to examine the numerous specimens of this common species in the Matthews collection. Like *pusillum*, Gyll., it is widely distributed and very common, often occurring with it. The variations in size, colour, and pubescence have given rise to several so-called species, among which we may rank *P. laevigatum* of Matthews (*nec* Gillm.), which is represented in his collection by *nitidum*, Heer, with pale elytra, labelled “*pusillum* var.,” by Brisout; another *nitidum* from Aubé, and several *pusillum*, Gyll., from Jekel. The *P. salinum*, Mots., of the Matthews collection must be referred to this species, as also must the type of *P. attenuatum*, Matth., which is an example of the pale form.

We desire to render our best thanks to the following gentlemen

who have very kindly placed the whole or part of their collections of *Ptenidium* at our service:—Rev. W. W. Fowler, Drs. D. Sharp, N. H. Joy, Commander J. J. Walker, Messrs. E. C. Bedwell, E. A. Butler, G. C. Champion, E. G. Elliman, P. de la Garde, W. E. Sharp, J. R. le B. Tomlin, and W. West.



- A. *P. gressneri*, Gillm.—a. outline, b. prosternal keel, c. scutellum.
 B. *P. levigatum*, Gillm.—a. " b. " " c. "
 C. *P. intermedium*, Wank.—b. prosternal keel, c. scutellum.
 D. *P. pusillum*, Gyll.—b. prosternal keel, c. scutellum.
 E. *P. nitidum*, Heer.—b. " " c. "

July 4th, 1910.

DESCRIPTION OF A NEW SPECIES OF *ASTENUS* (*SUNIUS*)
 FROM MALTA.

BY MALCOLM CAMERON, M.B., R.N.

ASTENUS GATTOI, n. sp.

Very closely allied to *A. uniformis*, Duv., but differs at first view by its stouter build and shorter antennæ. Head black, narrower before the eyes, but with sides parallel, about as broad as long, puncturation umbilicate as in *A. uniformis*. Antennæ reddish-testaceous, shorter than in *A. uniformis*, the individual joints being shorter. Thorax black, about as broad as long, widest in front, gradually narrowed behind, anterior and posterior angles obtusely rounded, each bearing a seta; puncturation of similar character to that of head, but rather coarser; pubescence yellowish. Elytra longer than broad, parallel,

black, apical margins (broadly) and shoulders testaceous, roughly punctured as in *A. uniformis*, pubescence yellowish. Abdomen elongate, margins of segments narrowly testaceous, apex testaceous, coarsely punctured, pubescence yellowish. Legs reddish-testaceous. Length, 4.3 mm.

Compared with *A. uniformis*, Duv., which is the only European species with which it could be confused, its stouter build, shorter and broader head and thorax, and stouter antennæ, distinguish it.

Taken at Ta Baldu in vegetable *débris* in November, 1901.

Type in my collection.

The insect recorded by me from Malta as *Sunius uniformis*, on Mr. Walker's authority (named by M. Fauvel), proves to be referable to the same species. *A. gattoi* is the *Sunius*, *n. sp.*, of my List.*

Dedicated to Dr. A. Caruana Gatto, to whom I was much indebted during my visits to Malta.

I append the following Table, which may assist in determining the species of the group to which it belongs.

- A. Species broad and short *tristis*, Er., *latus*, Rosenh., &c.
 B. Species elongate.
 (1) Size larger.
 A'. Elytra dull, puncturation finer.
 1'. Thorax longer than broad, oval-oblong, angles obsolete.
 a. Anterior and posterior angles of thorax each furnished with a seta, elytra longer than thorax ... *filiformis*, Latr.
 b. Anterior and posterior angles without setæ...
 ab. *anguinus*, Baudi.
 c. Posterior angles only with a seta ... ab. *subditus*, M. & R.
 d. Humeral angles of elytra testaceous... ab. *humeralis*, Gredl.
 e. Elytra shorter than thorax v. *abbreviatus*, Baudi.
 2'. Thorax broader, about as long as broad, angles obtusely rounded but traceable.
 aa. Head longer than broad, antennal joints longer; species more slender.
 a. Head black, thorax red *walkeri*, Fvl.
 b. Head and thorax black *uniformis*, Duv.
 c. Head and thorax red ab. *diversicollis*, Baudi.
 d. Humeral angles of elytra testaceous...
 ab. *humeralis*, Rottbg.
 bb. Head as broad as long, antennal joints shorter; species more robust *gattoi*, n. sp.
 B'. Elytra shining, puncturation very coarse...
 cribrellus, Baudi, *illum*, Aubé.
 (2) Size smaller *pulchellus*, Heer, *angustatus*, Payk., &c.

June 28th, 1910.

* Cf. Trans. Ent. Soc. Lond., 1907, p. 392.

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

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

(Concluded from vol. xlv, p. 181).

PYRALIDINA (including DELTOIDES).

Madopa salicalis, W. V.—Four specimens, including one ♀ in excellent condition; labelled at side "Ként."

Sophronia emortualis, W. V.—A very fine example, apparently a ♀. Labelled "Taken by the late Charles Healey near the King's Oak, High Beech," and at side "Epping Forest." (Cf. Barrett, Lep. British Islands, vol. vi, p. 288).

Hermiua derivulis, Hübn.—A fine series of twelve specimens, some of them on old pins; the more recent are labelled "Abbot's Wood" at side.

Pyrallis lienigialis, Zell.—A pair in excellent condition; the ♀ is labelled "From Rev. H. Burney coll., 1893" (C. W. D.).

Diasemia ramburialis, Dup.—One example in good order as to the wings, but lacking the antennæ and most of the legs. "Folkestone" at side; probably the specimen referred to by Barrett (*l. c.*, vol. ix, p. 258) as taken in that locality by Mr. W. Purdey in 1878.

D. literalis, Scop.—Five examples, in good condition and apparently of fairly recent date. "Devon" at side.

Antigastra catalaunalis, Dup.—A single example in very good condition "from Rev. Burney's coll." (C. W. D.), but with no further history.

Endotricha flammæalis, W. V.—Two fine examples, in which the usual pinkish-fulvous ground colour is almost entirely replaced by a rich dark fuscous-brown tint. "Folkestone" at side.

Acentropus niveus, Oliv.—Four examples from "Glanvilles Wootton" stand under the label "*Garnonsii* B. E., pl. 497," and probably include the type specimen figured under the name of *A. garnonsii* by Curtis, Brit. Ent., plate 497 (April 1st, 1834), and therein referred to the *Phryganida* (*Trichoptera*) (Cf. also Stephens, Ill. Mand., vol. vi, pp. 148, 151, and "The Naturalist," vol. i, p. 14, 1837). One of these is a ♀ with rudimentary wings about 1.5 mm. in length, or proportionately of about the same size as those of *Cheimatobia brumata*, ♀; this has a printed label "foem.?" and a bright red plain label. A fine ♀ with fully developed wings, among others from "G. Wootton" is labelled in a similar manner.

Margarodes unionalis, Hübn.—Three examples, indifferently set, and in fair to poor order; the best is labelled "Galley Head, L. H.," and the others, "Taken Kewton Downs, July, 1880," and "Geo. King, Torquay, 1859" (C. W. D.).

Botys repandalis, Schiff.—One fine specimen, which bears a printed label apparently cut out of a sale catalogue, "bred by Rev. H. Burney from *Verbascum*," and "Torquay" at side. (Cf. Ent. Mo. Mag., vol. xxii, p. 145).

B. lupulinalis, Clk.—A fine but very badly set specimen on an old gilt pin, with label also cut out of a sale catalogue, "taken from Dr. A. Wallace, 1857, Bembridge, Isle of Wight."

Mecyna polygonalis, Hübn.—There are four of this very rare species in the collection, all set low down on rather old white and gilt pins; the best one is labelled "taken nr. Herne Bay." "Kent" at side.

Ebulea stachydalis, Zinck.—Six good specimens, three with "Freshwater" and three with "Sussex" at side.

Lemiodes pulveralis, Hübn.—Five specimens (4 ♂, 1 ♀), all except one in fine condition. "Folkestone" at side.

Scoparia cembralis, Gn.—The series of this species includes three of "v. scotica, White, Renfrewshire" (C. W. D.), and three of var. *zelleri*, Woeke, "Folkestone."

S. basistrigalis, Knaggs.—Three specimens from "Tilgate" and two from "Bordean" (C. W. D.), one of the latter also labelled "Bordean, July, 1844" (J. C. D.).

S. conspiciualis, Hodg.—Five specimens, "Yorkshire" at side. Included in the series of this species are two rather ill-set but otherwise good specimens, labelled "*S. ulmella*, Dale," also with "Bordean" at side (C. W. D.).

S. mercurella, L.—Under this name are included some very fine and well-marked specimens of the var. *portlandica*, Dale, from Portland.

Platyles alpinellus, Hübn.—Five examples from "Hunstanton," and three from "Southsea" (C. W. D.).

Crambus culmellus, Linn.—Two almost pure white specimens are labelled "*striga*, Haw.," and there are also examples of the species from St. Kilda in the series.

C. rorellus, Linn.—Two fine specimens on rather old pins, one of which is labelled "*chrysonuchellus*, Hübn." (? J. C. D.).

C. myellus, Hübn.—Two examples, also very fine; one is labelled "Dr. B. White, Braemar, 1870" (C. W. D.).

C. verellus, Zinck.—A rather badly set example, labelled "E. R. Dale" (C. W. D.), "Christchurch" at side, and another somewhat worn "C. A. Briggs, Folkestone, '72" (C. W. D.), and "Taken by Mr. C. A. Briggs, nr. Folkestone, July 21, 1872, see Ent. Ann., 1873."

Eromene ocella, Haw.—Two specimens, both ♂, on modern gilt pins, one badly set, the other very good; labelled "Roxburgh."

Schœnobius gigantellus, W. V.—Three examples of this species from "Whitesea" fully merit their specific name, as a ♂ measures in expanse of wing as set, $1\frac{3}{10}$ inch (46 mm.), and two ♀'s are each 1 mm. less.

Anerastia farrella, Curt.—Three specimens, one labelled "Paget, 1841" (J. C. D.), and two "from Grigg coll., 1889" (C. W. D.), "Yarmouth" at side.

Episehniæ banksiella, Rdsn.—Three very good examples apparently bred, "Portland" at side.

Caterepnna terebrella, Zk.—Two specimens, labelled "bred Norfolk, 1899;" "Merton" at side.

"*Eurhodope argyreus* (*Dubrensella*)."—Under these names are two examples of a Phycitid standing at the head of the series of *E. carnella*, L., which are

decidedly puzzling; their general shape and aspect agreeing pretty well with *carnella*, but the fore-wings being of a shining metallic silvery-grey tint longitudinally suffused with fuscous. Both specimens are somewhat worn, on old bead-headed pins, and without data. I cannot find any reference to "*Eurhodope argyreus*" in our older authors, and the insects are certainly not the "*Palparia argyrea*" (*Crambus argyreus*, F.) of Haworth, Lep. Brit., p. 486.

Phycis obductella, F. v. R.—A very fine specimen, labelled only "Gravesend" at side.

Rhodophaea rubrotibiella, Mann.—Six more or less worn specimens under this name, much more probably *Acrobasis verrucella*, Hübn. One is labelled "Wolmer Forest (J. C. D.)," and another "G. W., July, 1901 (C. W. D.)."

Nephopteryx similis, Zk.—A fine fresh ♂ example of this very rare and distinct-looking species bears a label "N. Forest, Gulliver 190—" (the last figure is illegible) (C. W. D.) and is undoubtedly the specimen referred to by Mr. C. G. Barrett as taken in the New Forest by Mr. C. Gulliver (Ent. Mo. Mag., vol. xxxix, p. 1, and Lep. British Islands, ix, p. 424).

N. hostilis, Steph.—Three specimens, one "Grigg coll." (C. W. D.) "Colchester" at side.

Melissoblaptis cephalonica, Sta.—Six fine specimens, "London" at side; two are labelled "Meek" and "Bower" respectively, and a very fine ♀ "Entom. xxiii, pl. iv, fig. 3."

Pterophorus rhododactylus, Fab.—Five examples, some very fine; "Chat-tenden" at side.

P. brachydactylus, Tr.—A very fine example of this great rarity is labelled "J. Weir's coll. 1894" (C. W. D.) and "Norfolk" at side, and is presumably the specimen taken on June 17th, 1842, at Herringfleet, Norfolk, by Mr. Farr, on which the species was introduced as British (*cf.* Barrett, Lep. British Islands, ix, p. 396).

P. paludum, Zell.—Eight specimens, "Bloxworth" at side.

Owing to my lack of special knowledge of the *Tortricina* and *Tineina*, I do not propose to deal with the very rich and extensive series of these groups in the Dale Collection, which have been recently made much more safe and more available for study, by "staging" the whole of the specimens on cards raised well above the bottom of the cabinet drawers. I may, however, draw attention to the exceedingly fine series of *Peronea cristana* and *hastiana*; the former species being represented by 224 specimens arranged under 39 varietal names, and including nearly all the forms indicated by Haworth, Curtis, Stephens, Designes, &c.; and the latter by 89 specimens and 17 named varieties.

"Aorangi," Lonsdale Road,
Summertown, Oxford:
July 16th, 1910.

A DIPTERON NEW TO THE BRITISH FAUNA.

BY J. RAY HARDY.

I have for some considerable time been engaged in making a collection of the insects which inhabit wasps' nests. In February of the present year I received an intimation that a fine large and old nest of *Vespa vulgaris* had been found on a farm at Northern Etchells in Cheshire. I went down and received the nest intact, brought it up to Manchester, and kept it at my home.

During the last two or three weeks various insects have emerged from the nest, and among others there appeared four or five specimens of *Fannia (Homalomyia) insignis*, Stein, a Dipteron which has not been previously recorded from Britain.

I am indebted to Mr. E. E. Austen, of the British Museum, for kindly identifying it. A series of specimens of this species has been presented to the Manchester Museum.

Manchester Museum:
June 21st, 1910.

[Meade's *Homalomyia vesparia* bred from nest of *Vespa germanica* (Ent. Mo. Mag., 1891, 42), a species overlooked by Stein and by Meade himself in his later writings, should be compared with the above, though Mr. Verrall is of the opinion that Stein described Meade's species under the name *ciliata*.—J. E. C.]

Note on the British example of Apion cantianum, Wagner (= brevicorne, Schilsky).—In Heft xxxix of Küster's "Die Käfer Europa's," No. 31 (published in 1902). Schilsky has described a new species of *Apion*, from Britain, upon the authority of a single specimen found by Commander Walker in the Chatham district (in 1872 or 1874, probably at Chattenden), and communicated by me with other British and continental forms when he was preparing his work for publication. As this species is likely to be overlooked by British Coleopterists (it had been completely forgotten by myself, though the insect had long been separated from *A. filirostre* in my cabinet), it is perhaps desirable to call attention to the above mentioned publication, in the hope that further examples may be found in our collections. I have seen many *A. filirostre* from Oxford, Caterham, Mickleham, Guildford, &c., but cannot identify *A. brevicorne* amongst them, and as the type remains in Schilsky's collection, it is no longer available for comparison. The detailed description may be freely translated thus:—

"Similar to *A. filirostre* in shape and colour, and at the same time very like it, but with the antennæ shorter and stouter, the thorax much more finely punctured, the anterior tibiæ straight, the middle tibiæ slender, and the posterior tibiæ curved at the base (straight in *A. filirostre*). Body black, shining, apparently glabrous. Head broader than long, finely punctured, smooth behind, forehead finely striated, eyes moderately arched. Rostrum slender, almost longer than the head and thorax together, slightly curved, equally slender throughout; faintly and indistinctly punctured at the base, with a slight prominence on each side above the points of insertion of the antennæ, and before these with a distinct transverse furrow (? constant); thence to the apex

very shining, finely punctured, and towards tip with a fine transverse furrow (? accidental, though conspicuous). Antennæ black, stout, glabrous, inserted almost at the middle of the rostrum; scape short, considerably thickened at the apex; joint 1 of the funiculus of the same breadth as the apex of the scape, slightly longer than broad, almost club shaped, 2 very little longer, 3 only as long as broad, the following joints gradually shorter and stouter, and the last two strongly transverse, and not sharply separated from the obovate club. Thorax as long as broad, somewhat arched on the disc and at the sides, narrowed in front, but not contracted before the apex; disc moderately thickly and strongly punctured, shagreened, the spaces between the punctures even, shining, and almost as large as the punctures themselves, the depression before the scutellum distinct, almost rounded (the punctuation in *A. filirostre* is much closer and the spaces between the punctures are wrinkled). Scutellum punctiform. Elytra long-oval, rounded at the sides, strongly arched, broader at the base than the thorax, very sloping behind, striate-punctate, the punctures in the striae strong and catenulate, the interstices almost level, twice as broad as the striae, the sutural interstice the broadest, the suture itself raised (level in *A. filirostre*), the humeral callosities distinct. Legs unicolorous black, tibiæ slender, claws toothed. Hab., ENGLAND, Kent, Chatham (J. J. Walker). I have seen only one example of this species, which was sent me by Mr. G. C. Champion; it was labelled ? *filirostre*. The form of the antennæ and legs is suggestive of a ♂, but the last abdominal segment does not project as is usually the case in the ♂♂ of this group, therefore I conclude that this example is a ♀. If really a ♀, this insect differs considerably from the same sex of *A. filirostre*, but even if it proves to be a ♂ there is sufficient to distinguish it from that sex of *A. filirostre*, as the latter has a very strongly curved rostrum and straight tibiæ. There still remain the very much finer and more scattered punctuation of the thorax and the roof-like elevated suture of the elytra, but the conspicuous transverse furrows on the rostrum are probably accidental. Nevertheless, the species still requires careful consideration and study when further material is available for examination. The specimen described was committed to my charge, and is now in my collection."

It may be stated that Schilsky's specific name *brevicornis* proved to be pre-occupied in the genus, and was subsequently changed to *cantianum* by Wagner. I am indebted to my friend Signor Angelo Solari for calling my attention to the description of this insect during a recent visit to Genoa.—G. C. CHAMPION, Horsell, Woking: July 7th, 1910.

Coleoptera at Newcastleton, &c., in 1909.—Last June I spent a very enjoyable three weeks' holiday on the Scottish border, for the most part at the bleak little town of Newcastleton. Amongst the *Coleoptera* observed there the following seem noteworthy:—*Trypodendron lineatum*, Ol., a few specimens, extracted with the aid of a sharp chisel from larch planks in the timber yard, but afterwards seen in numbers on the wing when the sun was bright; *Tomicus acuminatus*, Gyll., with the preceding; *Asenum striatum*, L., half a dozen in the timber yard; *Phyllobius viridicollis*, F., abundant; *Aneistronycha abdominalis*, F., two on the wing and two by beating alders; *Telephorus paludosus*, Fall.; *Corymbites pecti-*

nicornis, L., *C. cupreus*, and its var. *æruginosus*, F.; *Helodes marginata*, F., common on the banks of small burns; *Gnathoncus nannetensis*, Mars.; *Hister marginatus*, Er.; *Rhizophagus dispar*, Gyll.; *Alophus triguttatus*, F.; *Adalia oblitterata*, L.; *Paramecosoma melanocephalum*, Herbst; and *Aphodius lapponum*, Gyll.

At Greywell, Hants, *Eubria palustris*, Germ., *Orsodacna lineola*, Panz. (on the wing), and *Melasoma æneum*, L. Near Aldershot, *Anoplus roboris*, Suffr., and at Mickleham Downs, *Conopalpus testaceus*, Ol., and *Cryptocephalus ochrostoma*, Har.—LEWIS BARTON, The Retreat, Guildford Road, Woking: July 7th, 1910.

Coleoptera in Cumberland.—Among recent captures are a number of species worth noting, either on account of their previous rarity with us, or as being now recorded from the county for the first time, such new records being, as usual, indicated by an asterisk.

Blethisa multipunctata, L., taken freely in May on the grassy margins of a large pond near Carlisle; **Bembidium nuditulum*, Marsh., common on the clayey banks of the Camwhinton brick ponds; *Haliphus obliquus*, F., common in the same ponds, the only previous county record being on the authority of the late T. J. Bold; *Hydroporus pictus*, F., a number taken in a pond in a disused freestone quarry near Carlisle; *H. ferrugineus*, Steph., in the Camwhinton brick ponds; **Agabus unguicularis*, Th., any previous records of this species for Cumberland refer to *affinis*, Pk., a common insect here in boggy ponds; I have now taken the true *unguicularis* in Thurstonfield Lough, a large sheet of clear fresh water near Carlisle, but it is apparently scarce, as much search has only yielded five specimens, three males and two females. *Hydrochus brevis*, Hbst., taken rather freely in May, 1909, by dredging up the mud in the overflow pools by the sides of the before-mentioned Lough. Having several requests for it, I looked for it again this spring, but unsuccessfully. **H. angustatus*, Germ., one specimen on Burgh Marsh; **Helophorus mulsanti*, Rye, not uncommon in shallow, brackish pools on the Solway Marshes; *Ochthebius marinus*, Pk., common at the mouth of the River Waver; *Aucæna limbata*, F., rather a scarce species here, but widely distributed, **ovata*, Reiche, being much more often met with.

**Aleochara lygæa*, Kr., one example at Silloth in seaweed; *Oxyptoda spectabilis*, Märk., swept in wood rides; *Homalota gemina*, Er., *curtipennis*, Shp., *aubei*, Bris., all in moss; *H. eremita*, Rye, rather common in moss both at high and low elevations; **H. oblita*, Er., *boletobia*, Th., *autumnalis*, Er., in fungi in Gelt Woods; *H. cauta*, Er., *villosula*, Kr., *cinnamoptera*, Th., among dead leaves, &c., in various localities; **H. alpestris*, Heer, in flood refuse by the River Petteril; *H. pilosiventris*, Th., a few specimens in fungi; *H. pallens*, Redt., one or two in flood refuse; *H. soror*, Kr., *H. curvifrons*, Shp., *H. exilis*, Kr., in moss and flood refuse. **Actobius signaticornis*, Muls., taken in autumn on sandy banks by the River Calder; *Lathrobium longulum*, Gr., occasionally in flood refuse. *Tachinus proximus*, Kr., in fungi in autumn, not uncommon and more often taken than *humeralis*, Gr.; *T. laticollis*, Gr., common in dung. *Stenus foveicollis*, Kr., a few taken in sphagnum, Bowness Moss and Oaton Woods; *S. lustrator*, Er., *binotatus*, Ljun., *cicindeloides*, Gr., under refuse by Monkhill Lough. **Lesteva punctata*, Kr., in waterfall moss in the Gelt Valley, this species was recorded from Cumberland in error by Mr. Murray (Ent. Mo. Mag., 1909, p. 137). *Omalium tricolor*, Rey, several in flood refuse in the Petteril Valley.

Meligethes subrugosus, Gyll., appears to be very rare, I have only taken one more specimen (*vide* Ent. Mo. Mag., 1909, p. 63); *M. bidens*, Bris., on *Teucrium* in Gelt Woods; **Atomaria fimetarii*, Hbst., one specimen in my house; *A. umbrina*, Gyll., by beating, &c.

**Aphodius fœtidus*, F., a series in sheep droppings near Wasdale Head. *Scymnus hæmorrhoidalis*, Hbst., in haystacks. **Bruchus pisi*, L., in flour mills in Carlisle. **Batophila rubi*, Pk., swept in Gelt Woods; **Chætocnema sahlbergi*, Gyll., one specimen near the mouth of the River Waver. **Alphitobius piceus*, Ol., in flour mills in Carlisle.

**Apion trifolii*, L., near Carlisle by sweeping; *Trachyphlæus scaber*, L., roots of grass in the Eden Valley; **Bagous limosus*, Gyll., taken in the water net in a pond in a quarry near Carlisle; *Ceuthorrhynchus marginatus*, Pk., roots of grass; *Magdalis phlegmatica*, Hbst., a third specimen taken in a new locality near Carlisle by beating the Scotch fir; **Tomicus acuminatus*, Gyll., Durdar near Carlisle, by beating recently cut fir tops.—F. H. DAY, 26, Currock Terrace: June 26th, 1910.

Further captures of Ceuthorrhynchidius mixtus, Muls.—I am glad to be able to report the capture of two other specimens of this rare species. They were taken on the same day as those recorded by Commander Walker (Ent. Mo. Mag., xlv, p. 144), and in the same way, by sweeping amongst mixed herbage, but at a locality some 60 miles distant. The spot where I took them is in the immediate neighbourhood of Royston, on the border line between Hertfordshire and Cambridgeshire. Mr. G. C. Champion has kindly confirmed my identification of the species. Two other captures made on the following day, May 17th, and in the same neighbourhood, may perhaps be worth recording:—*Cryphalus abietis*, Ratz., in some numbers, and one specimen of the Hemipteron *Gastrodes abietis*, L., both insects from the boughs of a recently fallen spruce fir, which still retained its foliage.—E. A. BUTLER, 56, Cecile Park, Crouch End, N.: July, 1910.

A new locality for Cathormiocerus maritimus, Rye.—On June 23rd I found a single specimen of *Cathormiocerus maritimus* at roots of herbage in a damp sandy spot on the face of the cliffs at Milford-on-Sea, Hants, in company with *Actobius procerulus*, *Pæderus caligatus*, *Georyssus pygmaeus* (common), &c. A second visit to the same place produced nothing better than *Trachyphlæus myrmecophilus*, but I have no doubt that the *Cathormiocerus* will be found in suitable spots on the Milford and Barton Cliffs, if sought for at the right time of year.—JAMES J. WALKER, Oxford: July 16th, 1910.

Coleoptera in Suffolk.—Two or three visits to Glensford, a village in the Sudbury district of Suffolk, have produced several interesting beetles, and the following species are all new to the Suffolk list published by Mr. Morley in 1899.

Oligota pusillima, Gr., in garden refuse; *Hypocyrtus læviusculus*, Mann., *Tachyporus pallidus*, Sharp, *Stenus niveus*, Fauvel, *S. foveicollis*, Kr., *Trogophlæus pusillus*, Gr., all by sweeping; *Choleva intermedia*, Kr., *Sericoderus lateralis*, Gyll., *Monotoma brevicollis*, Aubé, in cut grass; *Melanophthalma similata*,

Gyll., common on spruce; *Paramecosma melanocephalum*, Hbst., not uncommonly swept beside a ditch; *Malthodes atomus*, Th., common in long grass; *M. brevicollis*, Payk., one specimen beaten from a hedge; my determination of this specimen is confirmed by Ganglbauer, who says that the name *nigellus*, Kies., falls as a synonym before *brevicollis*, Payk.; the species is twice the size of *atomus* and intermediate in size between *atomus* and *pellucidus*: if Dr. Power's specimens do not (as Fowler states) seem to differ from *atomus*, they are evidently too small for *nigellus*; *Mantura rustica* v. *suburalis*, Ws., one swept; *Rhytidosomus globulus*, Hbst., one on *Populus tremula*.—J. R. LE B. TOMLIN, Stoneley, Reading: July 8th, 1910.

The dispersal of shells by insects.—Cases of this kind have been recorded fairly frequently with freshwater Mollusca, but rarely with land shells. It is therefore of some interest to be able to report the abduction of a *Cyclostoma elegans*. While botanizing this spring at the foot of the Great Doward a little below Symonds Yat, my wife called my attention to a huge humble-bee, which was flying slowly along and apparently carrying something. On being netted and examined, the bee proved to have one of its hind legs firmly wedged between the shell and operculum of a live adult *Cyclostoma elegans*. Any one who is acquainted with this species knows how tightly and exactly the operculum fits the mouth of the shell. The association of bee and mollusc was of course quite accidental and involuntary on the part of each, and one can only theorize as to how it happened. I do not imagine the *Cyclostoma* would be carried far enough to lead to any definite result of colonization, but it shows in what unexpected ways shells may be transported.—*Id.*: July 8th, 1910.

Tinodes dives. Pict., at Malham, Yorkshire.—On June 4th last, when attending an excursion of the Yorkshire Naturalists' Union, I came across the local *Tinodes dives* in plenty on the river Wharfe at Malham. It occurred for some distance on the river banks, sitting on grass stems close to the water, the day being sunny but with a somewhat cold wind. At one point, however, where a bridge crossed the river, a stone wall ran at right angles up to the bridge, and on getting over the wall, I found an old ash stump overgrown with new shoots and leaves against the wall close to the water, and completely sheltered from the wind by the wall. The sun was shining full on it, and the stump was "alive" with *Tinodes dives*, various saw-flies, beetles, *Diptera*, &c. It was quite new to me to learn that *T. dives* (or indeed any *Tinodes*) was such a sun-loving species, but it was constantly flying and pairing all over the leafy stump. I boxed some fifty *dives* from it alone, and left with the species still visiting it.

T. dives has only once previously been recorded for Yorkshire, in June, 1891, when I took two specimens on the same river at Grassington, but about seven miles away from the Malham locality. Probably it occurs on the open parts of the river for many miles.—GEO. T. PORRITT, Dalton, Huddersfield: July 9th, 1910.

Oviposition of Baccha.—At noon to-day my attention was attracted by a female *Baccha obscuripennis*, Mg., hovering about a leaf of bullace, which was

partially curled longitudinally by *Aphis pruni*, De G., and also contained a Coccinellid larva (probably *Coccinella bipunctata*) and an *Anthocoris* larva. The fly investigated the surrounding leaves of various shrubs, but after several fleeting visits eventually settled down to oviposit, and actually placed several white eggs upon the under-side of the curled leaf, so close to the larval Aphidids as to touch them; I then captured her. Although Verrall gives *Baccha* as an Aphidivorous genus (Brit. Flies, viii, 674), his statement there appears to rest on his earlier one (*lib. cit.*, 456), that "the larvæ feed on *Aphides* or *Coccidæ*," which is a little vague. Bradley thought (Ent. Mo. Mag., 1896, p. 256) that *B. elongata* could not have been parasitic upon *Mamestra persicariæ*—but cf. *l. c.*, 1909, p. 244—and it is satisfactory to have ascertained the actual species of *Aphis* attacked by it.—CLAUDE MORLEY, Monks Soham House, Suffolk: July 3rd, 1910.

A further note on Melangyna quadrimaculata, Verr.—In order to follow up my observations of last year on this species, I visited, on March 29th (Easter Monday), a suitably situated bush of *Salix caprea* on the outskirts of one of the numerous woods, which so thickly clothe this part of Nottinghamshire. The day was brilliantly hot and sunny, and even at some yards' distance it was easy to see that the newly opened catkins were proving attractive to *Diptera*. A closer inspection revealed a most interesting sight. The shrub, which was 10 or 12 feet high, was absolutely alive with *Melangyna quadrimaculata*, each catkin being furnished with its pollen-seeking guests, jostling one another in their eager enjoyment of the sweets. No net was needed, so I threw it down and stood watching for some time, boxing as many specimens as I wanted at my leisure. So intent were the insects on feeding that I had no difficulty in making a selection amongst them, and frequently found I had got two or three together in one box. Curiously enough nearly all were ♀♀. I could not see the top of the bush above my head, but boxed all the males I saw on the lower branches, and found when I got home that I had only 6 ♂♂ to 33 ♀♀, of which sex I could have taken many hundreds. My experience of this insect has generally gone to prove that it is a shy species on the wing, but a stroke with the net on this occasion only scared them off with a buzz for a few yards, all returning immediately to recommence feeding. I did not observe any other species of *Diptera* on the tree, only a brightly coloured, hibernated *Vanessa urticae*, which, in conjunction with the deep blue sky and bright golden catkins of the willow, made up a lovely coloured picture. It would be interesting to know what is the special attraction of willow blossom to *M. quadrimaculata*; if it is the pollen that is eaten, or if there are some hidden honey glands amongst the golden anthers of the catkins. I noticed that a shrub growing close by with female flowers was also attractive, but in a much lesser degree. I kept four pairs of the *M. quadrimaculata* alive for a few days in a glass jar, hoping for ova, as I have always wished to breed this species, but in this I was disappointed, as all the females died without ovipositing.—E. MAUDE ALDERSON, Park House, Worksop: June 22nd, 1910.

Porphyrops nasuta, Fall., and P. elegantula, Mg., in Perthshire.—While

collecting at Clunin Loch, four miles to the west of Blairgowrie, on June 13th, I took a single ♂ example of *Porphyrops nasuta*, Fall., a species added to the British List by Mr. Verrall in the volume of this Magazine for 1894, p. 141, upon a ♂ specimen, without data (but probably taken at Deal), in the late Dr. P. B. Mason's collection. From Mr. Verrall's "List of British *Dolichopodidae*" (Ent. Mo. Mag., 1905, p. 112) I gather that the species has not been met with again, and the present record is therefore of some interest as further establishing the claim of the species to a place in our List.

Porphyrops elegantula, Mg., occurred at the same spot in some numbers and in both sexes, but most of them rather worn. This is another rare species, and I am glad to add it to the Perthshire List, as I know of no other record beyond the two given by Mr. Verrall, Tarrington and Avimore (Col. Yerbury). Both species are easily identified from Mr. Verrall's valuable paper before referred to.—A. E. J. CARTER, Blairgowrie: June, 1910.

Time of emergence of New Zealand Lepidoptera.—In studying the habits of some of the *Lepidoptera* native to this country, I have been much struck with the fact that the emergence of the imago seems almost invariably to take place during the hours of darkness, the only exceptions I know of being the butterflies, and a day-flying moth, *Nyctemera annulata*, Boisd., which is distasteful to birds. This habit would appear to be an important factor in the preservation of the species, as it affords the individual protection from the attacks of insectivorous birds at a very critical stage of its existence, by giving time for the wings to expand and harden, and for any protective coloration or structure to come into operation, before the birds are astir.

It would be interesting to know if similar habits have been observed among the *Lepidoptera* of other lands.—R. M. SUNLEY, Macdonald Street, Karori, Wellington, N. Z.: June 2nd, 1910.

Society.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, June 9th, 1910.—Mr. J. W. KAYE, F.E.S., President, in the Chair.

Mr. Edwards exhibited a large number of species of American *Pierinæ*. Captain Cardew, a short series of *Epione advenaria*, including a unicolorous specimen from Godalming. Dr. Hodgson, the imagines bred from a brood of *Pieris napi* from ova laid in May, 1909. Some emerged in July and August, 1909, but most of the insects did not appear till the spring of 1910. Mr. Harrison reported the assembling of 21 ♂s of *Amphidusys betularia*, 14 of which were v. *doubledayaria*, at Woodford.

June 23rd.—The President in the Chair.

Mr. Ashdown exhibited a specimen of *Egeria culiciformis* and the rare Coleopteron, *Anthaxia nitidula* from the New Forest in May. Mr. Newman a very long bred series of *Ematurga atomaria*, with a large proportion of melanic specimens. Mr. West, specimens of *Coleoptera* and *Hemiptera* taken

during the Field Meeting at Rammore on June 18th, including *Cryptocephalus coryli*, *C. moræi*, *Stiroma albomarginata* (developed forms), *Deltoccephalus abdominalis*, &c. Mr. Carr, a collection of *Lepidoptera* taken in the Wye Valley during July and August, 1909, including *Leucophasia sinapis*, *Grapta c-album*, a fine series of *Cidaria picata*, &c. Mr. R. Adkin, series of *Endromis versicolor* and *Biston hirtaria* reared from ova sent him from Aviemore in 1908, and read notes on the emergences in 1909 and 1910. Several of the former species, and many of the latter were apparently going over another year. Mr. Sich, a beetle reared from a yellow silken cocoon found at Rammore Common on *Hippocrepis comosa*. Mr. Cowham, a *Nyssia zonaria*, mainly ♀, but having antennæ slightly pectinated and unusually large wings. Mr. Edwards, a number of large species of *Coleoptera*, among which were *Oxygnathus audouinii* (a gynandromorph) from N. Borneo, *Ceratorrhina morgani* and *C. quadrimaculata* from W. Africa. Mr. W. J. Kaye, numerous aberrant specimens of *Polyommatus icarus*, varying in ground colour, with confluent spots, developed marginal spots, &c. Mr. F. Noad Clark, photographs taken by him during the Field Meeting at Rammore Common; and reported that *Æ. tipuliformis* had been common in his garden at Wembley, the ♀s "assembling" from about 1.30 to 2 p.m.—HY. J. TURNER, *Hon. Secretary*.

ON THE BRITISH SPECIES OF *PHORA*.

BY JOHN H. WOOD, M.B.

(Continued from p. 154).

SECTION D.

(32) (31) *Halteres black*.

♂ ♀. A deep black species with clear, almost hyaline, wings:—Thorax and abdomen black, pleural bristles strong and of pretty uniform size; frons fully $\frac{1}{3}$ broader than long, 4 moderate and nearly equal supra-antennal bristles, the upper ones nearly in alignment with inner bristles of middle frontal row and the under closely approximated, antennæ rather small, palpi black; wings nearly or quite hyaline, thin veins fine and indistinct, thick veins black, 2nd thick vein somewhat arched, hence costal cells deep, costa $\frac{2}{3}$ wing length, fringe full long, 1 from 2 to 3 times as long as 2 + 3, angle at fork moderate; legs from blackish-brown to deep black, hind tibiæ somewhat dilated towards distal end, and hind metatarsi also somewhat stout, cilia very fine and numerous; hypopygium large and glossy at the base, without bristles or conspicuous hairs, produced below into a pair of incurved processes between which when seen from behind the black and shining subanal body comes into view, at the tips of the processes a small curved hair directed backwards may often be made out, the long and slender ventral plate yellow or dusky, anal organ small and papilla-like, black or dusky yellow.....1 mm. *clavipes*, n. sp.

33 (26) *Mesopleuræ bare*.

34 (39) *Halteres black or brown (halterata)*.

35 (38) *Hypopygium without bristles underneath*.

36 (37) *A large species (2 mm.). Cilia on hind tibia well developed.*

♂ ♀. Thorax and abdomen black; frons scarcely shining, a trifle broader than long, 4 large and nearly equal supra-antennal bristles, the upper ones outside an alignment with inner bristles of middle frontal row, the under closely approximated, inner bristles of lower frontal row much below and a little to the inner side of the outer ones, antennæ of average size, palpi large and deep yellow; wings pale yellowish-brown, costa barely $\frac{2}{3}$ wing length (♂) about $\frac{2}{3}$ (♀), fringe moderately long, 1 more than double 2 + 3, angle at fork small especially in ♀, first thin vein in ♀ slightly curved at its origin from the fork; legs yellowish-brown, tibial cilia sparse and strong; male abdomen stout, hypopygium small, without bristles, the yellowish ventral plate broad and reaching in the quiescent state to the middle of the under-side, subanal body invariably concealed, the yellow anal organ short and stout, filling the posterior outlet of the hypopygium...
2 mm. *maura*, n. sp.

37 (36) *A small species (under 1 mm.). Hind tibiæ quite bare.*

♂. Described from a single specimen:—Thorax and abdomen black; frons black and slightly shining, being somewhat bent in down the centre its characters are rather obscured, but it is certainly broad, the upper supra-antennal bristles in alignment with inner bristles of middle frontal row and the under ones closely approximated, inner bristles of lower frontal row well below the level of outer ones, antennæ rather small, palpi small and dusky yellow; wings nearly clear, thin veins fine and delicate, costa not $\frac{2}{3}$ wing length, fringe moderately long, 1 not more than half as long again as 2 + 3, angle at fork large; legs blackish-brown, hind femora stout and angulated in the middle of the under-side, hind tibiæ gradually and distinctly thickened in their lower half, and fringed about the middle of their inner side with a few short and erect hairs; hypopygium large, equal in length as well as in its other dimensions to the last abdominal segment, thickly fringed below with fine and short hairs, ventral plate small, anal organ minute and yellow $\frac{3}{4}$ mm. *erecta*, n. sp.

38 (35) *Hypopygium with a pair of conspicuous bristles on each side.*

♂ ♀. Thorax and abdomen black, the former sometimes obscurely reddish; frons about $\frac{1}{3}$ broader than long, upper supra-antennal bristles of average size and fairly approximate, under ones very much smaller and often not in view, antennæ black or brown, rarely red, palpi pale yellow; wings deeply tinged with yellowish-brown, costa less than $\frac{2}{3}$ wing length, fringe only moderately long, 1 more than double 2 + 3, 2nd thick vein somewhat incrassated in both sexes and its outer branch turned up abruptly to the costa, angle at fork moderate, 1st thin vein recurved at the margin; legs yellow, hind femora darkened at the tip and the basal half of its under-side loosely fringed with longish hairs, tibial cilia weak; hypopygium of ordinary form and size, almost bare of hairs, and the pair of bristles on each side so close together as often to appear but as a single bristle, the yellow ventral plate broad and reaching only a short way along the under-side, anal organ yellow, short and stout $1\frac{1}{4}$ — $1\frac{1}{2}$ mm. *halterata*, n. sp.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

During July and August such matters will be attended to by Mr. CHAMPION, at his address, Heatherside, Horsell, Woking.

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

The Coloured Plate issued last September having been so much appreciated by our readers, another (devoted to *Hymenoptera* and *Coleoptera*) was given with the Jan. number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also. Another Plate is in course of preparation, and it will be presented during the year 1910.

WATKINS & DONCASTER, Naturalists,

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MONTHLY MAGAZINE.

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42 (41) *First costal division not double the other two (about 1¾). A very minute species (½ mm. or less).*

♂ ♀. Not unlike preceding species in some respects, but much smaller and paler:—Thorax from reddish-yellow to dusky red, abdomen black (♂) reddish-grey or brown (♀); frons dark grey, supra-antennal bristles as in *halterata*, antennæ small and yellow; wings yellowish, costa less than ⅔ wing length, fringe moderately long, 2nd thick vein not incrassated nor its outer branch turned up abruptly, angle at fork moderate, 1st thin vein not recurved at margin; legs pale yellow, fore tarsi somewhat short and thick, the metatarsi shorter than the two following joints, tip of hind femora blackish, tibial cilia fine and indistinct; in the only male before me (taken *in cop.*) the hypopygium has apparently but a single strong bristle on each side, the ventral plate is small and inconspicuous, the subanal body very large, and the anal organ small and yellow...

barely ½ mm. *minutissima*, n. sp.

43 (40) *Hypopygium without bristles.*

♂ ♀. In size and appearance very like *simplex*; but apart from the bare mesopleuræ, it differs in having a broader frons, smaller supra-antennal bristles (the under pair being almost minute), and a longer and finer arista; the costa too is longer—⅔ wing length (♂) and rather more (♀), the fringe only moderately long, the legs yellowish-brown rather than black, the tibial cilia more distinct and the seam deflected outwards a little below the middle instead of being continued straight as in *simplex*...

1—1¾ mm. *exigua*, n. sp.

Fasciata, Fall.—A widely distributed species. The male seems to be seldom met with, but the female is not uncommon. On one occasion I came across a swarm (apparently all females) hovering at the roots of an old and half decayed ash tree. Although coming under this Section, it looks out of place among its associates, and bears a much closer resemblance to the *meigeni* group in Section B, agreeing with it in its yellow colouring, short costal fringe, doubly ciliated tibiæ, and in type of hypopygium—characters, especially the last two, which would, I think, justify their inclusion in a separate genus. The relationship to the *meigeni* group is further shown in that the anterior scutellar bristle is often represented in the female *fasciata* by a large and coarse hair.

Pallens.—A very distinct looking species, of which I took a single male at Westhide 21/6/05. Two others, I hear from Mr. Collin, are in Mr. Verrall's collection, taken by Colonel Yerbury at Porthcawl in 1906. Here again the insect seems out of place among the species associated with it, and reminds one much more of some of the forms in B, the Section with 4 bristles to the scutellum. And should the female be found to have four scutellar bristles, as is not altogether unlikely, the species would have to be moved into that Section, where it would fall in beside *albicans* and *rata*, both of which have a shortish arista and other characters in agreement with it.

Spinata.—A single male, taken in Stoke Wood 17/9/07. Its great feature is the very large and conspicuous pleural bristle, the nature of which will be referred to later on in the remarks on *pectoralis*. Other characters deserving attention are the distinctly ciliated hind tibiæ and the long anal organ.

Serrata.—This again is another very distinct little species, which I have had no scruple in describing on a single male, taken in the garden 10/7/06. The dilated terminal joint of the fore tarsi is its most prominent and distinguishing characteristic, though equally important, were they not so microscopic, would be the serrations under the hind femora. Both, however, may be purely male characters (the first certainly is so), and the recognition of the female would depend mainly upon the small and closely approximated supra-antennal bristles, and the hyaline wings with their colourless thin veins.

Verralli.—This interesting insect was discovered by Mr. Verrall, after whom I have the pleasure of naming it, at Swanage; a male being captured 6/9/06 and two females 4/9/06. The hind margins of the abdominal segments, narrowly but conspicuously whitish, and alike in both sexes, catch the eye at once, and distinguish it from any other species I am acquainted with.

Latifrons.—Described from five males in my collection, taken in such widely separated and for the most part wet localities as Stoke Wood, Shobdon Marsh, the Monnow, and Middle Park Pool, four of them in July and one in October. Recently I received from Colonel Yerbury both sexes of a form which I was at first inclined to treat as a distinct species under the name of *yerburyi*, but now think it safer to consider as a variety of *latifrons*. The chief almost the only distinction lies in the form of the hypopygium, which is not produced below into a point and also wants the little bunch of hairs characteristic of the type. The other and less important difference is the paler halteres—

brown in the male and almost yellow in the female. Yerbury met with it in large numbers at Walton-on-Naze, sweeping it on the first occasion (26/6/09) from the ditch separating the salt from the fresh water marsh, and two or three weeks later he again found it in the same locality running actively about on the sea wall.

Pygmæa, Zett.—A common and well-known indoor insect, found more rarely in the woods or fields. Our insect is the dark or type form, the *pygmæa* of Zetterstedt, and it is doubtful whether we have typical *brachyneura*, Egg, the variety in which the thorax is red or yellow. The nearest approach to it is given by an obscurely reddish thorax and red antennæ in a few examples only out of the many I have examined. Individuals, however, with yellow legs but in other respects black are more often met with. Becker, dismissing the type in little more than a couple of lines, devotes his description to the variety *brachyneura*, and speaks of the hind tibiæ being tenderly (*zart*) ciliated. In my judgment, however, the cilia are both strong and sparse, at any rate in the insect commonly accepted as *pygmæa* with us.

Lata.—Two males, taken by sweeping in Stoke Wood 20/9/08. Agreeing in size and many other particulars with *angelicæ*, it may be differentiated from that species by the dull frons, the not only slender but also to my eye the somewhat lengthened fore tarsi, by the stout abdomen and the form of the hypopygium with the absence of bristles or of any special hairy development on it.

Angelicæ.—An autumnal species, frequenting commonly the flowers of *Angelica* and *Heracleum*, and also to be obtained by general sweeping. Its small size and bare pleuræ, distinctly if only moderately shining frons with its closely approximated supra-antennal bristles—an unusual condition in these very small forms, the normal fore tarsi (neither specially slender nor stout) together with the small bristle at the corners of the hypopygium leave its identification in little doubt.

Longipalpis.—A scarce and very interesting species, of which only five males have been obtained; the dates and localities being Stoke Wood 2/8/05, 11/6/06, 11/6/06, Westhide 7/6/06, and Coldborough Park 20/8/06. The female has not been met with or possibly has been overlooked, since it would almost certainly lack the striking character which has suggested the name of the species, namely, the very large and almost bare palpi. These remarkable organs resemble in shape the large palpi of *Phora nudipalpis* rather than those of *projecta*.

Gregaria.—The only occasion on which I ever met with this tiny

little species was on June 13th, 1905, when I came upon it running in numbers over the trunk of a small oak tree in Stoke Wood. All the specimens I secured were males.

Rufifrons.—One female only captured in Stoke Wood 30/8/06. The short costal ciliation gives to some of the species in this Section a strong likeness to the short ciliated group in C, and none perhaps more so than *rufifrons*. The only species, however, in that group for which our insect might be mistaken is *surdifrons*. But the marked difference in the length of the costa—conspicuously less than half the wing length in the one and barely short of it in the other (at least in the female), and the very different proportions of the costal divisions, clearly differentiate them. At one time I was inclined to think it might be the female of the preceding species. But against that idea had to be set such considerations as the shorter costal fringe, the darker and coarser veins, and the arched and more distinctly ciliated hind tibiæ, not to mention the great contrast in colour and the unlikelihood that so pale a form should exist of the dark and black fronted *gregaria*. The depression in the outline of the costa may possibly be accidental, but the fact of its being the same on both wings favours the view that it is natural.

Pectoralis.—This small and deep black insect I take plentifully all over my district and in every month of the year from May to October. As in *ciliata*, *æqualis* and some others, so in *pectoralis* I usually confirm its identification on removal from the killing-bottle by looking for the large and remarkable bristle on the mesopleuræ. This bristle will be found close under the root of the wing. It seems to be quite distinct from the ordinary bristles, and in the fresh state lies close against the side, directed horizontally backwards instead of sloping diagonally upwards as they do. Where one of the ordinary bristles is enlarged, as, for instance, in *pleuralis*, it retains its diagonal upward direction, and is, I think, always one of those at the lower corner of the patch. Hence as a character it is less reliable than the other.

Involuta.—Mr. Collin was the first to recognise, and suggest the name of, this species; and from his specimens (three males and one female) my description was chiefly drawn. His dates and localities were:—for the males Newmarket 28/6/94, 10/9/09, and Kirtling 1/3/06, for the female Kirtling 7/3/06. Since then he writes me that he took a pair at Chippenham Fen 7/3/10, and a little later obtained it in numbers by beating a box tree in his garden at Newmarket. Of a pair of my own, the female is a good specimen and was taken by

sweeping in that prolific place Stoke Wood 17/4/07, but the male has the end of the abdomen injured, and it is only by the approximated supra-antennal bristles, the thickened fore tarsi, and bristly pleuræ that it can be confidently referred to this species. The colour of the halteres is usually so constant, that it comes as a surprise to find it variable here, the variability as in the few other instances of its occurrence being independent of sex.

Simplex.—An indoor insect, common on the windows here in the autumn, but rare at Newmarket. Whilst quite distinct from the preceding species, from which the slender (normal) fore tarsi and other characters readily differentiate it, it bears a close resemblance to *exigua*, a species which also is a frequent visitor of our houses in the autumn. Here, however, the bristly nature of the pleuræ in the one insect and their bareness in the other, apart from some smaller and less important distinctions, amply separate them.

Clavipes.—A deep black and abundant species, occurring in May and again in the autumn; probably also of wide distribution, for Mr. Collin takes it freely on his side the country. Its most obvious features are the limpid wings with their long costal fringe and crowded thick veins, deep costal cells and clubbed hind tibiæ, and strongly bristled pleuræ. Among my material are two males which vary from the type by having a shorter costal ciliation, but as there are no other differences, they are doubtless nothing more than a variety. With better claim, however, to specific rank is a form which has been chiefly taken by Mr. Collin at Newmarket. In this the palpi are yellowish rather than black and the hypopygium appears different. But these are its only peculiarities, and for the present I prefer to look upon it as a variety. The male hypopygium is unquestionably a character of the highest importance, yet there is often a difficulty over the details. The very smallness of the parts handicaps one greatly, moreover the position may be unfavourable for examination, or other parts, as the legs, may get in the way, whilst the organ itself wears a very different aspect according as the inner parts are exposed or not. Hence caution is needed when dealing with species that measure so little as 1 mm.

Maura.—This is another of those insects that are fond of entering the house. It makes its appearance in the autumn and again in smaller numbers in the spring, doubtless after hibernation. Its large size, bare pleuræ and black halteres, the massing of the thick veins at the end of the costa, and the strong and sparse tibial cilia are the salient points about it.

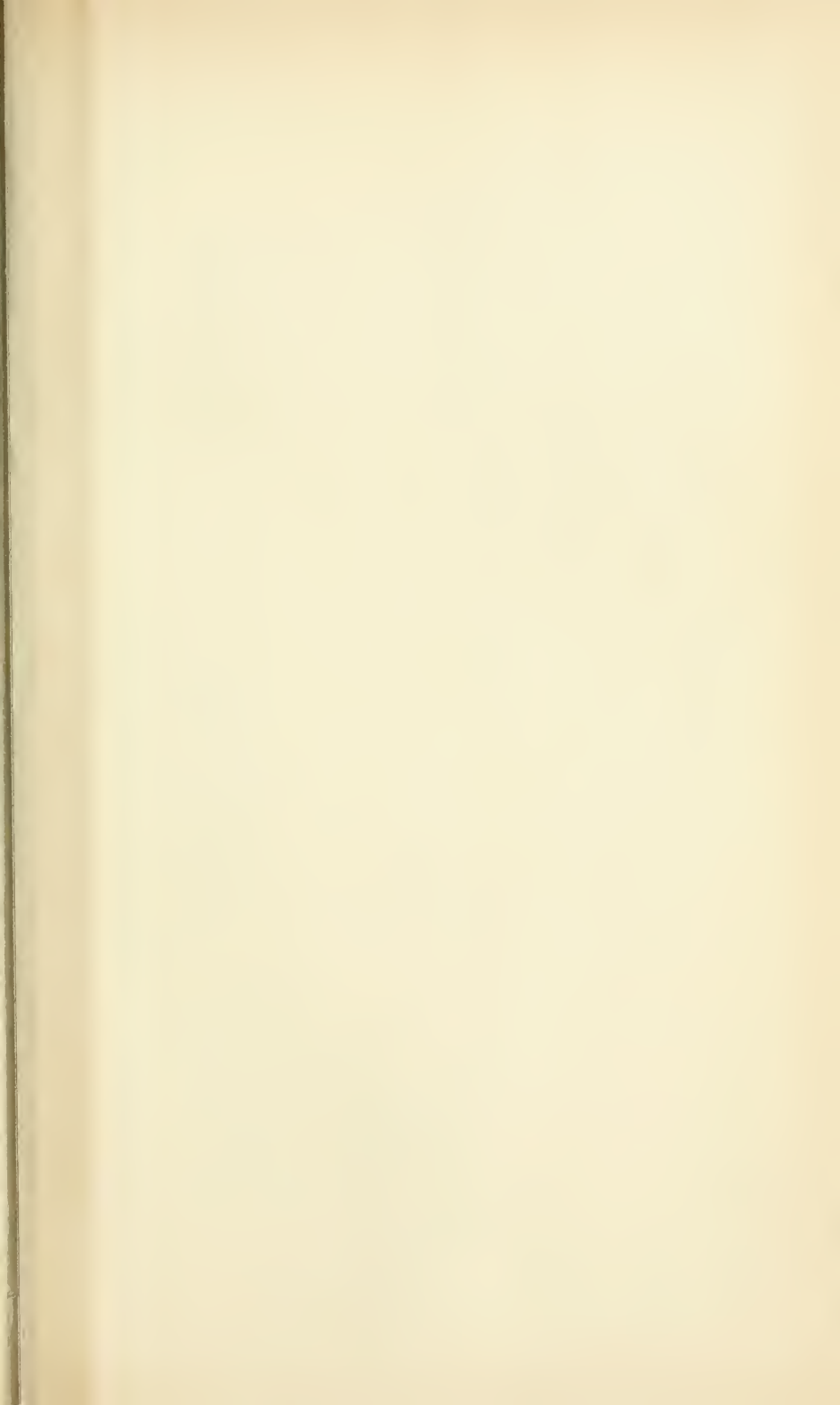
Erecta.—A single male taken in Stoke Wood 12/5/06. I have ventured to distinguish this little species; firstly because of the unusual clubbed shape of the hind tibiæ with the curious little erect hairs on the inner and under-side, and secondly because of the form of the hypopygium and its papilla-like anal organ, which are quite unlike those of its neighbours and follow the type presented by *discreta* and *nudiventris* in Section C.

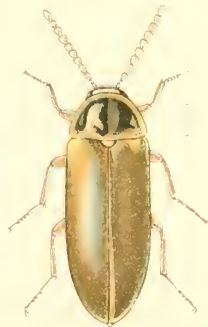
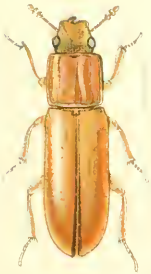
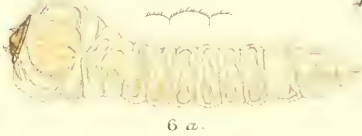
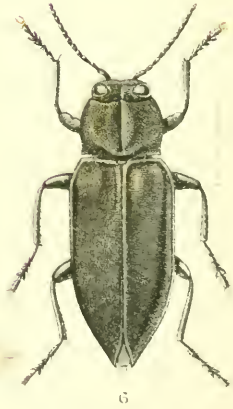
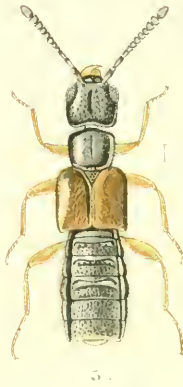
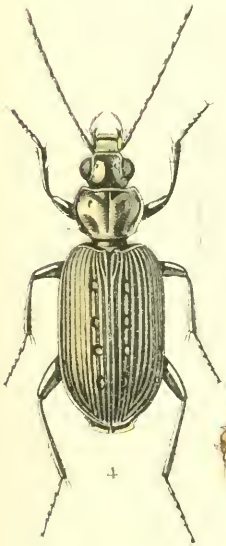
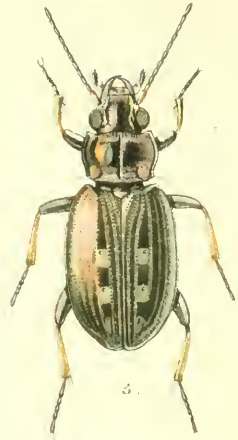
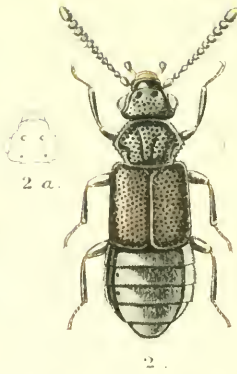
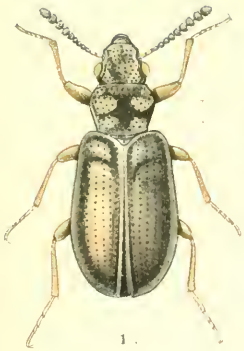
Halterata.—A common and widely distributed species. The black form with dusky halteres is the larger insect, and is found almost exclusively in the woods, whilst the paler and smaller one with yellow halteres frequents as exclusively the house or garden. That the two are, however, one and the same species, I think there can be little doubt. At one time I was inclined to refer it to the *pumila* of Meigen, and have, I am afraid, so returned it to some of my correspondents. *Pumila* according to Becker should have only ten short bristles on the hind tibiæ, whereas in our insect the cilia—they are not worthy the name of bristles—are very numerous and very delicate, which makes it quite impossible for it to be that species. In roughly recognising *halterata* I look for three chief points—the pair of strong and closely approximated bristles (should it be a male) under the hypopygium, the recurved first thin vein, and the massing of the thick veins at the end of the costa with the 2nd vein thick and strong and its outer branch turned up abruptly to the costa.

Minutissima.—Quite a mite of a species. As long ago as September 2nd, 1902, I found a small family of it running up and down the window of a house at Ledbury. A few were secured, including two pairs *in cop.*, and of these I still possess in good condition one of the pairs and two odd females. I have been on the look out for it since, but the opportunity of taking it has never again presented itself. A suggestion once made to me that it might be a diminutive and unusually yellow form of *halterata* is negatived by the important differences in the costa and its supporting thick veins, by the straightness of the 1st thin vein as well as by the other and smaller distinctions.

Exigua.—This is another of the species fond of disporting itself on our windows. It is abundant in the autumn and probably of wide distribution. Its likeness to *simplex* is very close, but the bare mesopleuræ should always distinguish it.

(To be continued).





Edwin Wilson, del.

Fa. Trap, Leiden, lith.

SOME INTERESTING BRITISH INSECTS (III).*

BY G. C. CHAMPION, F.Z.S., AND R. W. LLOYD, F.E.S.

(PLATE IV).

We now give figures of nine more species, all *Coleoptera* this time, in continuation of those shown on Plate I of the present volume †.

Fig. 1—*Salpingus (Rabocerus) bishopi*, Sharp.—Found by Mr. T. G. Bishop and Dr. Sharp at Grantown, Inverness-shire during the summer of 1909. Fifteen specimens in all were captured by shaking twigs and branches of birch [Ent. Mo. Mag., xlv, pp. 245, 246]. The allied *R. mutilatus*, Beck, and *R. championi*, Sharp, have been taken in beech and sallow respectively, whereas the true *Salpingi* are probably all attached to Conifers.

Figs. 2, 2a—*Eudectus whitei*, Sharp.—This species is sunk in the last European Catalogue as a variety of *E. giraudi*, Redt. The single known example (kindly lent by its describer for figuring) was captured by Dr. Sharp on the summit of Ben-a-Bhuird, Braemar, in June, 1871. The minute ocelli are shown in the detached figure 2a. We have seen examples of *E. giraudi* from Germany and the Austrian Tyrol, and they differ in various respects from the Scotch insect, which is almost wholly black. *E. gerhardti*, Pietsch, again, seems to be very nearly related to *E. giraudi*. These continental forms have been found in moss or under bark, *E. gerhardti* in maple.

Fig. 3—*Bembidium argenteolum*, Ahr.—Specimens of this handsome insect were captured by the Rev. W. F. Johnson, at Ardmore, Lough Neagh, Ireland, in June, 1899, and recorded as *B. paludosum*, Panz. Soon afterwards, however, the mistake was detected, and the species appears for the first time under its proper name in Messrs. Johnson and Halbert's "List of the Beetles of Ireland," p. 587 (1902). It is larger, more robust, and more shining than *B. paludosum*, and has the prothorax much broader than long, and with sharp, prominent posterior angles. The earlier Irish records of the last-mentioned insect probably refer to *B. argenteolum*.

* Cf. Ent. Mo. Mag., xlv, pp. 196, 197, pl. III; xlvii, pp. 1-3, pl. I.

† In the explanation of Plate I (*antè* p. 1), line 9, *Odynerus herrichii*, for 1878 read 1868. This insect was also figured in the "Annual" for 1869 under the name *O. basalis*.

Fig. 4—*Anchomenus quadripunctatus*, De G.—The figure of this species (drawn by Westwood) in Dawson's "Geodephaga Britannica," Plate I, fig. E, presumably taken from the single example captured by Bold at Long Benton, is not characteristic, and we therefore show one of those taken near Woking in August, 1900 [Ent. Mo. Mag., xxxvi, p. 202, xlv, p. 248]. The allied *A. bogemanni*, Gyll.—a less elongate, flatter, black insect, wanting the deep foveæ on the elytra—has been taken in Austria with *A. quadripunctatus* about charred pines, and it may be found here eventually.

Fig. 5—*Borboropora kraatzi*, Fuss.—We figure a continental example of this rare insect. The unique British specimen was captured by Dr. Power at Mickleham, on July 13th, 1862, and is now in the Natural History Museum at South Kensington. The species has been taken "at light" at Vizzavona, Corsica.

Figs. 6, 6a—*Melanophila acuminata*, De G.—This conspicuous Buprestid, found in some numbers last year on charred pines in the neighbourhood of Woking, was a wholly unexpected addition to our very meagre list of species of that group [Ent. Mo. Mag., xlv, p. 249 (1909)]. The larva is shown also (fig. 6a), and, so far as we are aware, it has not been described or figured, there being no mention of the species in Rupertsberger's lists (1880 and 1894). Perris's figure of the larva of the allied *Phænops cyanea*, F., is very similar. A few specimens of the adult beetle have again been captured in the same district this season, from July 9th onwards. Dr. Sharp informs us that an example has just been taken by Mr. Ford in the New Forest!

Fig. 7—*Aulonium sulcatum*, Oliv. (*trisulcum*, Geoffr.).—Found on July 13th, 1904, in all its stages, in burrows of *Scolytus multistriatus*, in elm-bark at Enfield, by Mr. C. J. C. Pool [Ent. Record, xvi, p. 310 (1904)]. Prof. Hudson Beare (*l.c.* p. 311) notes that the larva was described and figured by Westwood (Introd. Mod. Class. Ins., i, pp. 146, 147, pl. 12, fig. 5). Ganglbauer (Käfer Mitteleuropa, iii, p. 852) states that the species also lives in the burrows of *Scolytus destructor*. This is one of the numerous additions to our list for which we are indebted to Mr. Pool.

Fig. 8—*Carida affinis*, Payk.—Found singly at Strathspey, in July, 1905, by Mr. C. G. Lamb, and subsequently in numbers, by

Colonel Yerbury. It occurs in fungus on old trees [Ent. Mo. Mag., xlii, p. 220 (1906)]. The unidentified *Abdera picea*, Walk., is not in the least likely to be the same species.* Like the allied forms, it is extremely fragile.

Fig. 9—*Hypophlæus linearis*, F.—Taken in some numbers by Mr. Heasler in the burrows of *Pityogenes bidentatus*, Herbst, in a felled pine, at Oxshott, Surrey, in 1898 [Ent. Record, x, p. 176, (1898)]. It has also occurred very sparingly during recent years (1899–1909) in three widely separated localities in the Woking district, always under the bark of pines. The insect is really narrower and more cylindrical than represented by our artist.

August 13th, 1910.

CRYPTOPHAGUS FOWLERI, SP. NOV., A BEETLE NEW TO BRITAIN.

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

I have had in my collection for a long time a series of a *Cryptophagus* which, although somewhat resembling *C. scanicus*, var. *patruelis*, Sturm, seemed to me to be distinct. Some of these specimens have been submitted to Herr Reitter and Capt. Deville, who have been unable to name them, and as the insect does not agree with any of the allied forms known to me, I have no longer any hesitation in describing it as new.

My specimens were all obtained at Bradfield, most of them in dry wood dust in old beech trees, in company with *C. bicolor*, Sturm, *Ptenidium gressneri*, Er., and *Trichopteryx montandoni*, All., and one or two on freshly cut wood. It is probably not a common insect, but will be found mixed with *C. v. patruelis* in collections.

The following is a short description of the species, which I propose to name *C. fowleri*:—

Somewhat resembling *C. scanicus*, but rather broader, duller, and with the elytra more parallel-sided and differently punctured. Ferruginous or reddish-testaceous, without trace of darker colour on the elytra; antennæ with the club smaller than in *C. scanicus*, the last joint distinctly narrower than the penultimate (in *C. scanicus* the last joint is scarcely narrower or as broad as the penultimate); thorax as in *C. scanicus*, but with the median tooth smaller, and the punctuation not so strong and much closer; elytra dull, parallel-sided or

* It may be noted here that *Hallomenus fuscus*, Gyll. (given as a synonym of *H. axillaris*, Ill., by Dr. Seidlitz), was incorrectly recorded as British by Stephens. There is nothing to represent it now in the Stephensian collections.

even slightly widened to beyond the middle, and from thence somewhat abruptly narrowed, the punctuation nearly as strong at apex as at base, slightly rugose at base, closer and less strong than in *C. scanicus*, the pubescence rather longer and more erect than in that species.

From the above description it will be seen that *C. fowleri* differs from *C. scanicus* in a good many details. Its shape and distinctly duller elytra at once attract attention. In *C. scanicus* the elytra are gradually narrowed from about the median third to the apex, and the upper surface has a characteristic shining appearance.

C. fowleri is rather closely related to *C. subfumatius*, Kr., but is smaller, the anterior angles of the thorax are more strongly callose and more strongly toothed behind, and the elytra are broader, duller, and more strongly punctured than the thorax; and from *C. hirtulus*, Kr., and *C. thomsoni*, Reitt., in the much wider margin to the thorax. In the strong punctuation of the apex of the elytra *C. fowleri* comes near *C. validus*, Kr., and *C. subdepressus*, Gyll., but is much smaller than the former and has quite a differently shaped thorax from the latter.

Bradfield, Berks.:

August 5th, 1910.

COLEOPTERA IN DEVON.

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

On behalf of my friend, Mr. S. G. Rendel, I have to make from among his captures the following additions to the county and locality records for Devon.

DUNCHIDEOCK, near EXETER:—*Brachinus crepitans*, *Deronectes latus*, *D. 12-pustulatus*, *Oxygaster pectita*, *Homalota fungivora*, *Tachinus rufipennis* (one), *Ancyrophorus aureus*, *Leptinus testaceus*, *Bryaxis hæmatica*, *Abreus globosus*, *Rhizophagus parallelocollis*, *Ennearthron cornutum*, *Acalles turbatus*, *Poöphagus nasturtii*, *Ceuthorrhynchus melanostictus*.

HEXWORTHY, near PRINCETOWN:—*Bembidium punctulatum*, *Ichnopoda cærulea*, *Meloe brevicollis*.

SLAPTON LEY: *Homalota laticeps* (?)*

TIVERTON DISTRICT:—*Leistus ferrugineus*, *Taphria nivalis*, *Eadister sodalis*, *Stomis puniceatus*, *Amara ovata*, *Olisthopus rotundatus*, *Bembidium articulatum*, *B. gilvipes*,* *B. bruxellense*,* *B. punctulatum* (R. Creedy), *Patrobis excavatus*,* *Dromius 4-notatus*, *Haliplus flavicollis*, *Hydroporus rivalis*, *H. nigrita*, *H. ferrugineus* (one), *Hydræna nigrita*, *H. longior*, *H. gracilis*, *H. atricapilla*, *Orectochilus villosus*, *Helophorus nubilus*, *H. dorsalis*, *Ochthebius rufimarginatus*, *Cercyon lugubris* (all the thirteen foregoing water species from the watershed of the

R. Exe), *Aleochara mæsta*, *A. spadicea*, *Microglossa pulla*, *Ocyusa defecta* (vide Ent. Mo. Mag., xlv, 150), *Calodera rufescens* (?),* *Callicerus obscurus*, *Homalota oblongiuscula*, *H. monticola*,* *H. debilis*, *H. exilis*, *H. validiuscula*,* *H. boletobia*, *H. nigricornis*, *H. atomaria* (?),* *H. canescens*, *H. lævana*, *H. testudinea*, *Tachyusa flavitarsis*, *Encephalus complicans*, *Leptusa analis*, *Bolitochara lunulata*,* *Conosoma immaculatum*, *Mycetoporus lepidus*, *M. longulus*, *M. angularis*, *M. splendidus*, *Quedius puncticollis*, *Q. obliteratus*, *Q. attenuatus*, *Staphylinus cæsareus*, *Philonthus carbonarius*, *P. decorus*, *P. umbratilis*, *P. fulvipes* (R. Creedy), *P. puella*, *Xantholinus ochraceus*, *Lathrobium longulum*, *Stiliculus similis*, *Medon fuscus*, *Dianõus cærulescens*, *Stenus picipennis*, *Oxytelus sculptus*, *Syntomium æneum*, *Homalium punctipenne*, *H. striatum*, *Phlæobium clypeatum*, *Phlæocharis subtilissima*, *Agathidium seminulum*, *A. varians*, *A. rotundatum*, *Cyrtusa pauxilla*, *Colenis dentipes*, *Choleva intermedia*,* *C. spadicea*, *C. anisotomoides*, *C. grandicollis*, *Catops sericatus*, *Neuraphes elongatulus*, *Euthia scydmanoides*, *Cephennium thoracicum*, *Pselaphus heisei*, *Bythinus puncticollis*, *B. validus*, *B. curtisi*, *Trichonyx märkeli*,* *Euplectes piceus*, *Pteryx suturalis*,* *Ptilium spencei*,* *Scymnus testaceus*, *Mycetæa hirta*, *Cerylon histeroides*, *Micrurula melanocephala*, *Meligethes lunbaris*, *Rhizophagus dispar*, *R. cærulipennis* (Ent. Mo. Mag., xlv, 165), *Lathridius angulatus*, *L. bergrothi*, *Paramecosoma melanocephalum*, *Elmis volkmari*, *E. parallelopipedus*, *Aphodius hæmorrhoidalis*, *A. borealis*,* *A. sticticus*, *Dascillus cervinus*, *Hydrocyphon deflexicollis*, *Dryophilus pusillus*, *Ochina hederæ*, *Leicopus nebulosus*, *Phytæcia cylindrica*, *Lema cyanella*, *Lamprosoma concolor*, *Chrysomela didymata*, *Phyllotreta diademata*, *P. 4-stigma*, *Apteropeda globosa*,* *Mniophila muscorum*, *Psylliodes picina*,* *Cassida vibex*, *C. sanguinolenta*, *Clinocara undulata*, *Lissodema 4-pustulatum*,* *Oncomera femorata*, *Mordellistena abdominalis*, *M. pumila*, *Anaspis costæ*, *Rhynchites cupreus*,* *Apion unicolor*,* *Alophus triguttatus*, *Sitones cambricus*, *Hypera alternans*,* *H. murina*, *Larinus carlinæ*, *Trachodes hispidus*, *Dorytomus pectoralis*, *Elleschus bipunctatus*, *Gymnetron beccabungæ v. niger*, *Acalles ptinoides*, *Cæliodes ruber*, *C. erythroleucus*,* *Pöophagus nasturtii*, *Ceuthorrhynchus cochleariæ*, *C. parvulus*, *C. melanostictus*, *Balaninus villosus*, *Scolytus intricatus*,* *Myelophilus piniperda*, *Pityophthorus pubescens*, *Pityogenes bidentatus*.*

The species recorded for the first time from the county are marked with an asterisk.

2, Fairmead, Hall Road,
Leckhampton, Cheltenham :
August 12th, 1910.

TWO NEW EUROPEAN SIPHONAPTERA.

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

1.—CTENOPHTHALMUS PROVINCIALIS, spec. nov. (Fig. 3).

♂. Differs from *Ctenophthalmus agyrtes*, Heller, in the form of the clasper. The clasper is similarly divided into three lobes, but the central is longer than in *agyrtes*, and the third lobe represented merely by the lower angle of the clasper

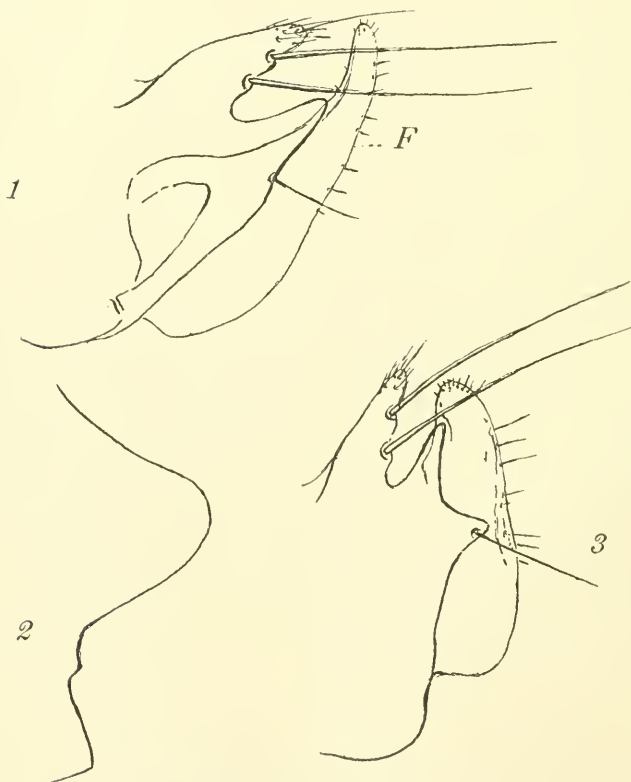
being somewhat produced as shown in the figure. The ninth sternite agrees with that of *C. agyrtes*, except in being wider at the apex and bearing one or two more hairs.

One ♂ from Valescura, Portugal, April 14th, 1910, off *Mus sylvaticus*.

2.—*CTENOPHTHALMUS BÆTICUS*, *spec. nov.* (Figs. 1 and 2).

♂ ♀. Also closely related to *C. agyrtes*, from which it differs in the modified abdominal segments. In the ♂ the clasper is divided into two lobes only (fig. 1), and the movable process (F) is much longer and slenderer than in *agyrtes*. In the ♀ the seventh abdominal sternite (fig. 2) is produced into a broad lobe, beneath which the edge of the sternite is slightly angulate, this angle representing probably the narrower second process found in *agyrtes*.

A small series (4 ♂♂, 11 ♀♀) from Cintra, Portugal, off *Mus sylvaticus*.



EXPLANATION OF FIGURES.

- 1.—*Ctenophthalmus beticus*, ♂ clasper.
 2.— do. do. ♀ vii sternite.
 3.— do. *provincialis*, ♂ clasper.

Tring Park, Tring:
 July 20th, 1910.

DESCRIPTION OF A NEW *SMERINTHINE* HAWKMOTH FROM
SOUTH AFRICA.

BY ROLAND TRIMEN, M.A., F.R.S.

Family *SPHINGIDÆ*.

Sub-Family *SMERINTHINÆ*.

Genus *PLATYSPHINX*, Rothsch. & Jord.

This genus was founded by Rothschild and Jordan in 1903 (Novit. Zool., ix, p. 224) in their "Revision of the Family *Sphingidæ*," and placed in immediate succession to their genus *Pseudoclanis* (the type of which is *Basiana postica*, Walk.,* a well-known South-African species). *Platysphinx* is diagnosed by its founders as "a derivation from a form similar to *Pseudoclanis postica*, differing in the shorter tongue, the longer tibiæ, the absence of the proximal pair of hind tibial spurs, the not prolonged serrated cilia of the ♀ antennæ, &c."

The new species of *Platysphinx* here described is wanting in the general prevalence of yellow colouring which marks its nearer known congeners; and, as Dr. Jordan has been so kind as to point out to me, the very striking colour feature of the red upper surface of the hind-wings is among allied forms found to exist only in *Pseudoclanis karschi*, R. & J. (*l.c.*, p. 220).

PLATYSPHINX BOURKEI, *sp. nov.*

♀. *Exp. al.*, 4" 9".

Fore-wing: rather dull greyish-brown, closely and minutely irrorated with ochre-yellow (especially at and beyond middle); outer area to hind margin broadly shaded with dark brown; at base two hirsute ochre-yellow spots, the upper one larger than the lower; on costa, immediately before apex, a good sized roughly triangular ill-defined blackish spot, sparsely irrorated (except on its edges) with pale ashy-grey. *Hind-wing*: dull purplish-red, except for a rather broad inner-marginal and anal-angular area, which is of the same dull greyish-brown as the fore-wing, with minute yellowish irroration; at base a small space clothed with whitish hair; immediately beyond this a large roughly ovate ocellate spot, black, centred by a narrow elongate streak of pale ashy-grey. Cilia in both wings ochre-yellow, with narrow dark brown nervular interruptions, except near and at anal angle of hind-wing where it becomes brown mixed with whitish.

Under-side: paler; the yellow irroration lighter but more evenly inter-mixed with dark brown scales over entire hind-wing, and also over fore-wing, except from base between subcostal nervure and inner margin to beyond the

* List Lep. Brit. Mus., pt. viii, p. 237 (1856).

middle, all this space being clothed with very dull purplish-red down; hind-wing with no trace of the purplish-red or of the basal ocellus of the upper-side. Cilia in both wings as on upper-side, but paler.

Head and body above of the same dull greyish-brown as the fore-wings; beneath darker. Antennæ dull yellowish. Eyes faintly ringed with ochre-yellow. Thorax above with two median and two posterior inconspicuous ochre-yellow hairy tufts; beneath with a well-marked prothoracic front edging, and some less defined mesothoracic and metathoracic hairy tufts, all ochre-yellow. Legs dark greyish-brown, with paler femora. Abdomen much paler laterally, but dark brown beneath; the tip and an inferior spot near it ochre-yellow.

Hab.: Zululand: Etshowe (E. Bourke).

Allied to *P. phyllis*, R. & J.,* from Konakry Island, Los Islands, West Africa, being quite similar in general character and shape of wings, but very different in colouring, *P. phyllis* having the fore-wing very pale reddish-brown, shaded with a deeper tint beyond middle, and the hind-wing yellow, thickly spotted with rust-red, with the basal ovate black subocellate marking almost devoid of any paler centre. *P. bourkei* is also related to the still larger (*exp. al.* $5\frac{1}{2}$ ") *P. stigmatica*, Mab., from the Congo,† which is coloured similarly to *P. phyllis*, but has the under-side universally yellow, varied with generally dispersed irregular and broken rust-red bands and spots. A third ally, kindly brought to my notice by Sir G. Hampson, is *P. piabilis*, Dist., a native of the Transvaal, which I have not seen, but which, from Rothschild and Jordan's description (*l.c.*, p. 227) of the ♂ type, differs greatly from *P. bourkei* on the upper-side in the yellow disc of the fore-wing and the yellow hind-wing speckled with red, and on the under-side in the universally yellow tint, varied with a red bar and spots in the fore-wing and red speckles in the hind-wing.

This fine Smerinthine was discovered at Etshowe, in Zululand, by my friend Rear-Admiral Edmund Bourke, after whom I have the pleasure of naming it. He writes:—"I took it at Etshowe on the 8th April, 1909, in a bush road; it was clinging to some low herbage, and I do not think it had ever used its wings. I glanced round for others, but was too busy with the butterflies to make a search."

Admiral Bourke presented this unique example to Mr. A. D. Millar, of Durban, who kindly forwarded it to me for determination.

133, Woodstock Road, Oxford:

July 20th, 1910.

* *Novit. Zool.*, ix, p. 224, pl. I, fig. 1 (♀).

† A specimen from "Stanley Falls, 1889," is in the Hope Collection of Oxford University Museum.

A NEW EUROPEAN SPECIES OF *TORTRICIDÆ*.

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

The specimens described below were taken during my visit to Saas-Fée, Switzerland, in 1900, which produced two new *Pterophoridae* already described in this Magazine. Though belonging to an obscure group, they constitute a fine and distinct species, and, aided by Mr. J. H. Durrant, I have recently searched the Walsingham collection, including the extensive series of the group obtained from Zeller and Hofmann, without finding anything like it. In explanation of the generic reference I may add that I now separate *Cnephasia* from *Tortrix* on the following characters, viz., veins 6 and 7 of hind-wings normally connate or stalked, thorax usually with more or less marked crest, fore-wings sometimes with raised scales; in *Tortrix* as restricted (*Eulia* and *Argyrotoxa* being also maintained as distinct) none of these characters occur.

CNEPHASIA RASTRATA, *n. sp.*

♂ ♀. 26—31 mm. Head and palpi fuscous, irrorated with white, palpi 2½. Antennæ fuscous, ciliations in ♂ ½. Thorax white, more or less sprinkled with fuscous or dark fuscous, with moderate posterior crest. Abdomen pale whitish-fuscous. Fore-wings elongate, posteriorly moderately dilated, costa gently arched, apex obtuse, termen somewhat rounded, rather strongly oblique; 7 to apex; fuscous, suffusedly irrorated with whitish, with scattered black scales, sometimes forming distinct lines on veins, and short costal and dorsal strigulae; basal patch suffused with brownish towards costa, outer edge formed by a narrow brownish fascia mixed with black reaching from costa two-thirds across wing, acutely angulated in middle of disc, its angle produced posteriorly into a more or less developed oblong projection; central fascia narrow, brownish, irregularly sprinkled with black, running from two-fifths of costa two-thirds across wing, acutely angulated in middle of disc; costal patch fuscous, flattened-triangular, or more usually resolved into a cloudy elongate subcostal streak connected with costa by three small spots or bars; towards termen about eight scattered strigulae of black irroration suffused with brown: cilia light brownish sprinkled with whitish. Hind-wings with veins 6 and 7 connate or short-stalked; pale grey, faintly darker-strigulated, whitish towards base and anterior two-thirds of costa; cilia whitish, with faint grey sub-basal line.

Hab.: Saas-Fée, 6000–7000 feet, in August.

Seven specimens, from rough vegetation growing amongst rocks; the species was common, occurring in company with a large and very white form of *C. bellana*, which it equals in size, though conspicuously different in colour and markings. The large size will separate *C. rastrata* from any other species of the allied group, but it is also well characterized by the peculiar form of the markings and the termen of fore-wings more oblique than usual.

Thornhanger, Marlborough:
August 7th, 1910.

The *First International Congress of Entomology* was held in the grounds of the Exhibition at Brussels, on August 1st—6th, and was a great success, thanks to the untiring energy of M. G. Severin, Dr. A. Lameere, Dr. Karl Jordan, Dr. Walther Horn, and Dr. Malcolm Burr. A large number of well known entomologists attended, or gave their support. Representatives from the following countries were present: Austria, Belgium, Egypt, France, Germany, Great Britain (England, Scotland, and Ireland), Holland, Hungary, India, Italy, Japan, Russia, Spain, Sweden, the United States, Canada, Argentina, &c. Papers on various subjects were read daily in the several sections, the Musée Royal d' Histoire Naturelle de Belgique and the fine Congo Museum at Tervueren were visited, and between times there were always the attractions of the Exhibition (free tickets for which were presented to the members of the Congress) available to those who wanted a change. But above all, it was a pleasure for many of those present to meet some of their old or life-long correspondents for the first time, and this alone, to many of them, was worth the journey. Great Britain was particularly well represented, and the following papers, amongst others, were read by our own countrymen: Mr. G. Theobald, "Artificial distribution of Insect Pests," and "The distribution of the Yellow Fever Mosquito (*Stegomyia fasciata*);" Mr. J. M. Howlett, "Economic questions in Bengal" and "Preservation of collections in Tropical Climates;" Mr. R. MacDongall, "*Galerucella lineola*, its life-history and habits, with notes on preventive and remedial researches;" Sir D. Morris, "The disinfection of imported seeds of plants and the use of insecticides;" Mr. G. H. Carpenter, "Notes on the *Æstridæ*;" Mr. R. C. Punnett, "Mendelism and *Lepidoptera*;" Dr. F. A. Dixey, "Mimicry;" Mr. F. Merrifield, "Experimental Entomology;" Professor E. B. Poulton, "C. A. Wiggins's researches on Mimicry in the forest butterflies of Uganda, 1909-1910;" Mr. H. Donisthorpe, "Ants and their guests." Dr. Karl Jordan also read a paper entitled "The Systematics of certain *Lepidoptera* which resemble each other, and their bearing on general questions of evolution;" and amongst the contributions of our Continental confrères, that by Herr A. Handlirsch, entitled "Rekonstruktionen fossiler Insekten" (illustrated by a large number of excellent lantern slides), was of special interest. These papers, and the full report of the Congress, will be published in due course, there being, we believe, no lack of financial support. On the invitation of Prof. Poulton, it was decided to hold the next meeting at Oxford in two years' time (in 1912), to avoid any possible clashing with the triennial gathering of the Zoological Congress in 1913 (their meeting for the present year, at Gratz, immediately following the Entomological Congress at Brussels), and after that triennially.

The food-plant of *Ceuthorrhynchus atomus*, Boh. (= *setosus*, Boh.)—Whilst sweeping for *Coleoptera* on a dry bank on June 10th last, I found a pair of *Ceuthorrhynchus atomus*, Boh. (= *setosus*, Boh.), in the net, with a pair of the common *C. contractus*, Marsh., and one *Ceuthorrhynchidius floralis*, Pk. After reaching home and verifying my captures, I considered the whole of the flora of this particular bank in hopes of solving the mystery of the food-plant of

this species. I could then remember seeing a single plant of the "Thale-
cress," *Sisymbrium thalianum*, J. Gay, and striking it with the net, the only other
Cruciferous plant seen near at hand being water-cress, growing on the margin
of the river at the foot of this bank, but this plant I had not touched. Upon
going to the bank the next morning I examined the plant of "Thale-cress" and
found four more *C. atomus* on the flowers, and a careful search along the bank
produced another small plant of "Thale-cress" and another pair of the
Ceuthorrhynchus. As the season for the plant was over, and these only two
belated examples, I was unable to again verify my captures, but write this note
in hopes that it will be searched for by other collectors earlier in the season
when the plant is in full flower.—H. BRITTON, Prospect House, Salkeld Dykes,
Penrith: August 12th, 1910.

[*Cf.* Ent. Mo. Mag., vol. xliii, p. 136, for a record of the occurrence of
C. setosus in some quantity on *Sisymbrium thalianum* at Tubney, Berks.—
J. J. W.].

Tychius polylineatus, Germ., at Streatley, Berks.—On July 19th I took a
single example of this rare and handsome *Tychius* on the chalk downs near
Streatley by sweeping mixed Leguminous flowers, *Lotus corniculatus*, *Anthyllis*
vulneraria and a species of *Medicago* predominating, but I am under the
impression that the weevil came off the first-named plant. Mr. N. H. Joy,
I believe, took a worn example of the species some years ago on the same range
of chalk-hills. My specimen is in fine fresh condition, but unfortunately both
the antennæ are mutilated.—JAMES J. WALKER, Oxford: August 15th, 1910.

Capture of Trichonyx sulcicollis, Reich., and *T. märkeli*, Aubé.—In June last
I was fortunate enough to take a small series of *Trichonyx sulcicollis*, Reich., in
the damp rotten wood and fungoid growth of a moribund beech tree in the
New Forest, near Brockenhurst; and since my departure, further specimens
have been taken in the same tree by Mr. Donisthorpe and Dr. Sharp. As far as
I could ascertain at the time the tree was entirely free from ants of any kind.
T. märkeli, Aubé, has been found rarely (and also unaccompanied by ants), by
Mr. J. Collins, in a sand-pit near Cumnor, Berks, at the end of June; and
thanks to his kind indication of the locality, Mr. Donisthorpe and I have had
the pleasure of taking this interesting Pselaphid for the first time.—ID.:
August 15th, 1910.

New localities for Ptinus tectus, Boield.—This comparatively recent intro-
duction to our British list of *Coleoptera* is evidently on the increase in this
country, and indeed seems likely ere long to become one of the commonest
species of its genus with us. On August 3rd I found it in plenty among refuse
in a granary at Faversham Creek, Kent, and a few days later again came on it
in large numbers in the "sack-heap" of the Sheppey Glue and Chemical Works
at Queenborough. The size and fine development of the specimens from the
latter locality tend to show that grain is by no means a necessity for *Ptinus*
tectus, as I could find nothing whatever of a farinaceous nature among the very
miscellaneous contents of the condemned sacks.—ID.: August 15th, 1910.

A note on the distribution of Bembidium saxatile, Gyll., var. vectensis, Fowler.—The error that this variety is confined to the Isle of Wight has arisen since the publication of Fowler's "British Coleoptera," and is perhaps worth correcting, as it has appeared again recently. The variety is described and named by Fowler, who says, "there is a permanent variety found in the Isle of Wight which I would separate under the name of var. *vectensis*," and no other locality is given for its occurrence. Dawson, however, many years before, in his "Geophaga Britannica," though he does not name the variety, describes it accurately, and states that it is found "all along our southern coast." This is doubtless correct, as it occurs commonly on the undercliff at Barton-on-Sea, Hants, and Mr. G. C. Champion informs me that he has taken it in localities as far apart on the south coast as Folkestone and Teignmouth.—C. F. SELOUS, Barton-on-Sea, Hants.: *July*, 1910.

Agabus brunneus, F., in the New Forest in 1908.—I was fortunate enough to capture one specimen of this rarity beneath a stone at the edge of a stream in the New Forest on July 31st, 1908. Not realizing the importance of my capture, and being without a net, I took no more specimens, though others were probably present. Two visits to the same spot in June this year have been fruitless. As the professional collector has no mercy on a rarity I do not mention the exact locality. I have to thank Mr. W. E. Sharp for kindly identifying my specimen.—Id.

Note on Melitea cynthia, Hb.—On June 28th, 1910, and on other days near thereto, when searching for larvæ of *L. orbitulus*, a good many full-grown or nearly full-grown larvæ of *M. cynthia* were met with, as well as a few of *M. merope*, one of *B. pales*, and a quite small *M. didyma*. Two of these *M. cynthia* (all I kept) emerged August 6th, somewhat delayed by captivity, if I may judge by its effect on *L. orbitulus*. They were kept all the time at about or over 5000 feet, and if sheltered from the cold at night, were deprived of the direct heat of the sun by day. On July 12th a ♀ *M. cynthia* was captured on the Furka (8000 feet). Again, on July 21st, several of both sexes were taken, although the day was not very favourable, and again on July 28th they were seen quite commonly, on both dates also on the Furka. On July 21st a few larvæ of *M. cynthia* were observed, but on the 28th the number seen crawling on the highway was remarkable, nearly a score were picked up and thrown into the herbage on the roadside. All those seen on July 28th were in the penultimate instar, not one in the last. It seemed clear therefore that they could not be part of a brood continuous with those that were, and had been for more than a fortnight, on the wing. The want of intermediates was, of course, the main point in arriving at this conclusion. At Binn full-grown larvæ, when present, were easily and frequently seen; and were therefore exceedingly scarce, so far as evidence went, absent, on the Furka on July 28th. These half-grown larvæ were, I imagine, looking for a place to hibernate in, though they might, of course, be looking for food, or perchance their wanderings might be the result of the scattering instinct that probably affects these, like other gregarious larvæ, when they reach a certain stage.

I do not know the evidence on which *M. cynthia* is believed to take two years over its life-history, but I think the circumstances I here note go far to corroborate that belief, if any corroboration be necessary. The small larva of *M. didyma* rather surprised me; it seemed an undue elevation for that species, and its small size suggests (with the *M. cynthia* facts before us) that it must take two years (at 7000 feet) over its transformations. I did not keep the larva, and so, not having bred it, may be in error; but I am fairly well acquainted with the larva of *M. didyma*, and know nothing else it could be.

On July 21st *P. callidice* was flying on the Furka, and, under stones, its empty pupa-cases were not uncommon, under two stones were respectively six and seven empty cases, probably not all of one season.—T. A. CHAPMAN, Betula, Reigate: August 12th, 1910.

P.S. August 13th.—I had just despatched the above note when I received from Mr. Bethune-Baker, whom I accompanied on the Furka on July 21st, a letter from Saas-Fée in which he says, "I am under the impression that the former" (*M. cynthia* larvæ) "frequently pass two winters in that condition, for two or three will not feed, but are apparently lying up already, and that although the heat at Baveno was very great." Mr. Bethune-Baker has thus done what I was blaming myself for omitting to do, viz., kept some of these immature larvæ under the observation necessary to confirm the conclusion I had otherwise arrived at.—T. A. C.

✓ *Agriades coridon* and ants.—On June 19th I found in the Rhone Valley, near Fiesch, an abundance of *Hippocrepis comosa* by the roadside, in isolated plants and mixed with other vegetation. The day was sunless, but I may note, parenthetically, that *A. thetis* was freely on the wing on the following day in a neighbouring locality. It occurred to me to look for larvæ of *A. coridon*. Searching under several dozen plants I met with three (3) larvæ. Then I came across a fine plant, beneath and amongst which was much ants' nest material. In this somewhat loose stuff I found eighteen (18) larvæ; a smaller plant close by, but on the same nest and with similar material excavated by the ants under it, afforded eight (8) larvæ. I only happened to meet with another plant, a very small, poor specimen, similarly on an ants' nest, this afforded no larva, and in searching for other such plants I found under ordinary plants one other larva only. Imperfect as this observation is, it shows that ants and larvæ flourish together, and are mutually helpful, but it does not go far in deciding whether all plants would have had as many larvæ, had they also been on an ants' nest, or whether the ants nested under a plant well supplied with larvæ, whether the butterflies laid more freely on the ant-protected plant, or whether, perchance, the ants collected the larvæ, when small, from other plants. Two pupæ from these larvæ afforded Ichneumonids, emerging by cutting off a lid on August 7th and 9th. These have been submitted to Mr. Morley, who says, it is an *Ichneumon* sp., probably *raptorius*, Grav., but both specimens being ♂♂ the determination cannot be quite certain. He adds that Marshall records the Braconid, *Apanteles impressus*, from *L. coridon*.

Tutt's "British Lepidoptera" reports no Hymenopterous parasite for *A. coridon*.—Id.

Distinction of Argyroploce sellana, Hb.—In Staudinger's European Catalogue this is included as a simple synonym of *oblongana*, not even ranking as a variety. I used to take *sellana* commonly in the Madingley Chalkpit near Cambridge, but have never met with it in Wilts, where *oblongana* is fairly common, and have never had any doubt of its distinctness; but the different shape of the fore-wings (in *sellana* the costa is more arched and the termen less oblique) is probably not appreciated by everybody, and though the whitish hind-wings of *oblongana* ♂ are really a reliable distinction, there is some variability in the colour of the hind-wings of both species, and it was quite possible to argue that the difference was varietal or geographical. In this genus, however, there are often good specific characters in the secondary sexual structures of the ♂, which have been much overlooked, and on making search for such I found that in *sellana* ♂ on the under-surface of hind-wings the tornus and lower part of dorsal area is clothed with long, rather rough, whitish hair-scales suffused with pale yellow; this structure and the yellow colour are not found either in *oblongana* or *gentianana*, and I think should be conclusive. I may add that all three species are furnished in the ♂ with an expansible hair-pencil from the base of posterior tibiae above. European and Algerian examples of these forms agree essentially with British.—E. MEYRICK, Thornhanger, Marlborough: *Aug. 7th*, 1910.

Times of emergence of British Lepidoptera.—With reference to Mr. R. M. Sunley's interesting note (*antea* p. 194) on the time of emergence of New Zealand *Lepidoptera*, and his request for information from entomologists of other countries, I may mention that, during the last thirty years, I have reared an enormous number of species of British moths, varying in size from *Manduca atropos* down to *Nepticula acetosæ*, and often in very lengthy series. During the last eleven years, the attempt, which was previously impossible, has been made to inspect my breeding-cages fairly frequently each day at the right season, and to take down detailed notes of the precise, or approximate, times of emergence of the imagines, and many species representing various groups, have been dealt with in this way. Speaking from memory, I should say that an appreciable majority of the British moths, that have been under observation, have left the pupa during the hours of daylight, and not of darkness, and, in any case, large numbers of them have certainly done so. My experience has also made it clear that, whereas some species almost invariably emerge during a special period, restricted, perhaps, to two or three hours, others seem to do so, quite indifferently, at any hour of the day or night. And between these two extremes, one finds every possible intermediate class, the members of one displaying greater regularity, and of another greater irregularity, of habit. But most of the imagines reared have exhibited a more or less marked preference for emerging during some special period, whether longer or shorter, of the twenty-four hours, and it is highly improbable that, in this respect, their behaviour in confinement differs from what it would be in nature. One might perhaps suppose that emergence would take place, as a rule, just sufficiently long before the usual time of flight for the wings to become thoroughly dry by then, but although this appears to be the case with some species, others are fully equipped for flight many hours before they would naturally come on the wing.

Whilst appreciating Mr. Stunley's argument that protection from insectivorous birds, during the critical period immediately following emergence from the pupa, would probably be of great value to a species in its struggle for existence, the fact must not be overlooked that newly-emerged *Lepidoptera* have far greater powers of escaping their enemies than one would expect. Until their wings are dry, and any protective coloration, or the like, has had time to come into operation, instinct teaches them that, when disturbed, their best chance of safety lies in running away, or jumping backwards off the surface to which they have been clinging and then falling perpendicularly, &c.; and the strength of their legs, together with the remarkable agility that they can then display in the use of them, has often impressed me greatly.—EUSTACE R. BANKES, Norden, Corfe Castle: *August 2nd, 1910*

Capture of Ceroplastus lineatus, F.—On June 13th I took on a window here another specimen of this rare Mycetophilid. It is a ♀, and so far no more have been seen, although a sharp look out has been kept.—F. C. ADAMS, Fern Cottage, Lyndhurst: *July 1st, 1910.*

Early appearance of Leptomorphus walkeri, Curt.—A specimen of the above was also taken on same window on June 7th, which seems an unusual date, all my previous captures having been made during September or October, with the exception of one on August 25th, 1901.—ID.

A note on Aphidivorous larvæ.—Mr. Claude Morley's note on *Baccha obscuripennis*, Mg. (p. 192), is interesting, as proving it to be an Aphidivorous Dipteron; but the conclusion that its food consists exclusively of *Aphis pruni*, De G., in a state of Nature should not, I think, be formed too hastily. My experience of Aphidivorous larvæ is that they are not, as a rule, at all particular as to diet, and probably the statement, "the larvæ feed on *Aphides* or *Coccidæ*," though somewhat vague sounding, may be actually more correct than to say, that any particular Dipteron is confined to one species of *Aphides*. I have frequently bred *Diptera* from the egg, or from larvæ taken wild, and have always found that these bred specimens never showed the slightest reluctance to accept *Aphides* of other species than those on which they were found. That this should be so is hardly surprising, when one considers the length of time such a species as *Syrphus ribesii*, L., is on the wing (generally from May to October), and the comparatively short period during which many species of *Aphides* are in existence. In my experience with other Aphidivorous larvæ I have found newly hatched Chrysopids attacking unhatched ova of the same species, and later, when partly or fully grown, devouring other individuals of their own species. They also feed readily on any species of *Aphides*; at least, I have never yet found them refuse any species, and I have tried them with many. Some that I have feeding now have even attacked and fed on parasitized *Aphides*; and, on one occasion, a specimen of *Chrysopa flava*, Scop., was found devouring a larva of the small rose feeding *Tortrix*, *Dictyopteryx bergmanniana*, L. In a recent attempt to breed a species of *Coccinella* from the egg, I found

the same general disposition to accept any species of *Aphides* offered, and also the same cannibalistic tendency, for my batch of larvæ were ultimately reduced to one individual, which had presumably devoured the rest.—E. MAUDE ALDERSON, Worksop: August 16th, 1910.

Reviews.

CATALOGUE OF THE HEMIPTERA (HETEROPTERA), with biological and anatomical references, lists of food plants and parasites, &c., vol. i, *Cimicidæ*: by G. W. KIRKALDY. Pp. xl and 392. Berlin: Felix L. Dames. 1909.

This Catalogue will be welcomed by every Entomologist, no matter what his own views on the subject of nomenclature may be. The geographical distribution of each species is given, as well as such food-plants, prey, parasites, etc., as have been recorded; the type of each genus is indicated; the fossil forms are included; and much other valuable information, not usually to be found in works of this kind, is interspersed through the various pages. In the synonymy of the species the genus is quoted under which each successive author has placed it, these generic names being often entirely omitted by cataloguers (as, for instance, in the Munich Catalogue of *Coleoptera*), though most useful to workers. The present Volume, dated December 24th, 1909, on the last page, the first of the estimated six or seven required, includes the enumeration of the Family *Cimicidæ* (= *Pentatomidæ*, Lethierry and Severin (part.)), and extends to 392 pages, eight less than the estimated approximate total of 400 required. The second Volume, treating of the *Thyrcocoridæ*, *Urolabididæ*, *Aradidæ* and *Coreidæ*, is stated (on p. xl) to be in the press; and the third, for the *Pyrhocoridæ*, *Mydochidæ*, and *Tingidæ*, to be in active preparation. The untimely decease of the author on February 2nd, 1910, under somewhat tragic circumstances, as a result of a surgical operation at San Francisco, at the early age of 36, renders the continuation of the scheme very doubtful, and we shall probably have to be content with one volume only. Kirkaldy's views on Nomenclature are given at great length (pp. x—xvii), under three headings: A, "Genera and Species;" B, "Nomenclature of groups of rank higher than the genus;" C, "The fixation of genotypes." He also discusses the Classification (pp. xxi—xxix), Bibliography (pp. xxiv—xxvi), &c. At the conclusion of the Volume (pp. 383, 384) there is appended a list of the new names for genera, species, and varieties proposed by him in the preceding pages; a useful Table of Contents (p. 385); and an Index to the genera (pp. 385—392). The difficulties of preparing such a Catalogue, and seeing it through the press, at such a distance (he was a resident in the Hawaiian Is.) from the larger libraries, will account for any minor errors in his citations, &c. One obvious slip may be noted, a well-known beetle (*Adimonia capreæ*) being given (p. 17) as a food-plant of *Zicrona carulea*. The Catalogue must have cost the author a vast amount of labour for many years, and it is one that certainly ought to be in the hands of every Entomologist, Hemipterist or otherwise. It shows what can be done by one who really knows his subject, even if isolated in a distant land.

CATALOGUE OF BRITISH HYMENOPTERA OF THE FAMILY CHALCIDIDÆ: by CLAUDE MORLEY, F.Z.S., F.E.S. Pp. 74. London: Printed by order of the Trustees of the British Museum (Natural History), Cromwell Road, S.W. 1910.

This Catalogue, as stated by its author, is uniform with the various Parts of the "General Catalogue of the Insects of the British Isles," published long ago (at a considerable loss) by the Entomological Society of London. The *Chalcididæ* is the least known group of our indigenous *Hymenoptera*, and the only one of which no complete list has hitherto been published. Little seems to have been written about our English forms since Francis Walker's time. Altogether 148 genera and 1424 species are enumerated, which are placed under three main divisions, the *Pentamera*, *Tetramera*, and *Trimera*. It is to be hoped that Mr. Morley's useful compilation will induce collectors to study these insects, as there is evidently an ample field for investigation. The few recorded localities might have been added with advantage and at the cost of very little extra space. It may be observed here that an interesting account of the habits, etc., of the *Chalcididæ* (the *Pteromalini* of Ratzeburg, the group also including the "Fig insects") is given by Dr. Sharp in the Cambridge Natural History, Insects, Part 1, pp. 539-551 (1895).

THE FAUNA OF BRITISH INDIA, including Ceylon and Burma: DERMAPTERA (Earwigs): by MALCOLM BURR, D.Sc., M.A., F.L.S., F.Z.S., F.E.S. London: Taylor and Francis, Red Lion Court, Fleet Street. Calcutta: Thacker, Spink and Co. Bombay: Thacker and Co., Ltd. Berlin: R. Friedländer und Sohn. Svo. pp. xviii, 217, plates I-X. 1910.

A notable addition to the fine series of works dealing with the animal life of our Indian Empire, published by the Indian authorities under the general title of the "Fauna of British India," is made by the appearance of the present volume, in which the members of a limited but exceptionally well-defined Order of Insects native to that region are enumerated and described with a thoroughness hitherto unapproached in the literature of the group. The work of Dr. Burr on the *Orthoptera* generally is now so well known and appreciated, that we need only say that the volume under notice may be regarded at present as his *magnum opus*; though we note with great pleasure his announcement on p. ix that he is engaged upon a general revision and monograph of the Earwigs of the world. Full ordinal rank is, we think justly, given to the *Dermaptera*, in which a new classification is adopted, based on the systems of de Bormans and Verhoff, with large modifications by the author. From the Indian region 132 species of Earwigs (with two more regarded as uncertain), ranged under the five families recognised by Dr. Burr, are recorded—a great contrast indeed to the two or perhaps three species truly native to our Islands. The structure, life-history, and general bionomics of the Order are fully and clearly stated in the Introduction, which includes (pp. 26-30) an exhaustive bibliography. A very large amount of material, besides that already in the author's possession, has been used by him in the preparation of the work, and is fully acknowledged

on pp. x—xi, and a very useful feature is the present location of the "type" of each species, as far as known, indicated in the comprehensive table on pp. 23—25. The ten plates (one in colour) from drawings by Mr. E. Wilson are among the best of their kind, and it may suffice to say that the bizarre, often almost monstrous forms of some of the members of the Order, which should make them so attractive to collectors abroad, have never before been so fully and adequately rendered. Brief directions for collecting and preserving earwigs, which are among the most fragile of insects, especially when dry, are given in an Appendix. The well known method of "carding" as adopted with the smaller *Coleoptera* is not alluded to, but from our own experience we would remark that few if any insects lend themselves better to this mode of mounting, or make more beautiful "specimens" when thus treated; and the security from breakage which this method ensures is, in our opinion, a full equivalent for any other drawbacks it may have.

Society.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, July 14th, 1910.—MR. J. W. KAYE, F.E.S., President, in the Chair.

Mr. Scorer, of Chilworth, was elected a Member.

There was a special exhibition of *Polyommatus icarus*.

Dr. Hodgson exhibited a large number of selected specimens, many of them being blue ♀s or having aberrant under-sides. Mr. R. Adkin, geographical series, the most striking of which were those from the West of Ireland. Mr. Joy, long series of the spring and summer broods, illustrative of the seasonal dimorphism in size. Mr. B. Adkin, some very fine examples from the Hebrides, Islands of Scilly, N. Cornwall, Ireland, &c. Mr. Kaye, selected examples from various localities. Mr. Turner, a few aberrations in colour, including specimens from several Swiss localities. Mrs. Hemmings, one or two remarkable aberrations, including a *thetis*-like ♂, and a ♀ with the eye-spots on the under-side showing extreme displacement. Mr. Pickett, a drawer containing the results of many years' selection of forms. Mr. Tutt, in summing up the exhibit, considered it one of the finest and most complete ever got together, and stated that nowhere throughout its range was the species so extremely variable as in the British Isles.

Mr. R. Adkin, exhibited some bred examples of *Cyaniris argiolus* ♀ with much reduced borders to the wings. Mr. Edwards, a box of exotic species of *Apatura*, *Adelpha*, and *Limenitis*. Mr. Sich, specimens of *Prays curtisellus* with *v. rustica* from Westerham. Mr. Pickett, an extremely fine bred series of *Angerona prunaria*, this year's result after twelve years' selection, crossing, and interbreeding. Many of the forms were extreme *v. pickettaria*. Mr. Step read the report of the Delegates to the Guildford Congress of the South-Eastern Union of Scientific Societies.—HY. J. TURNER, *Hon. Secretary*.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

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

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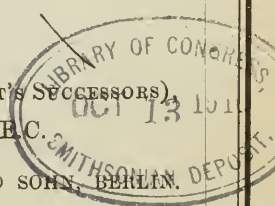
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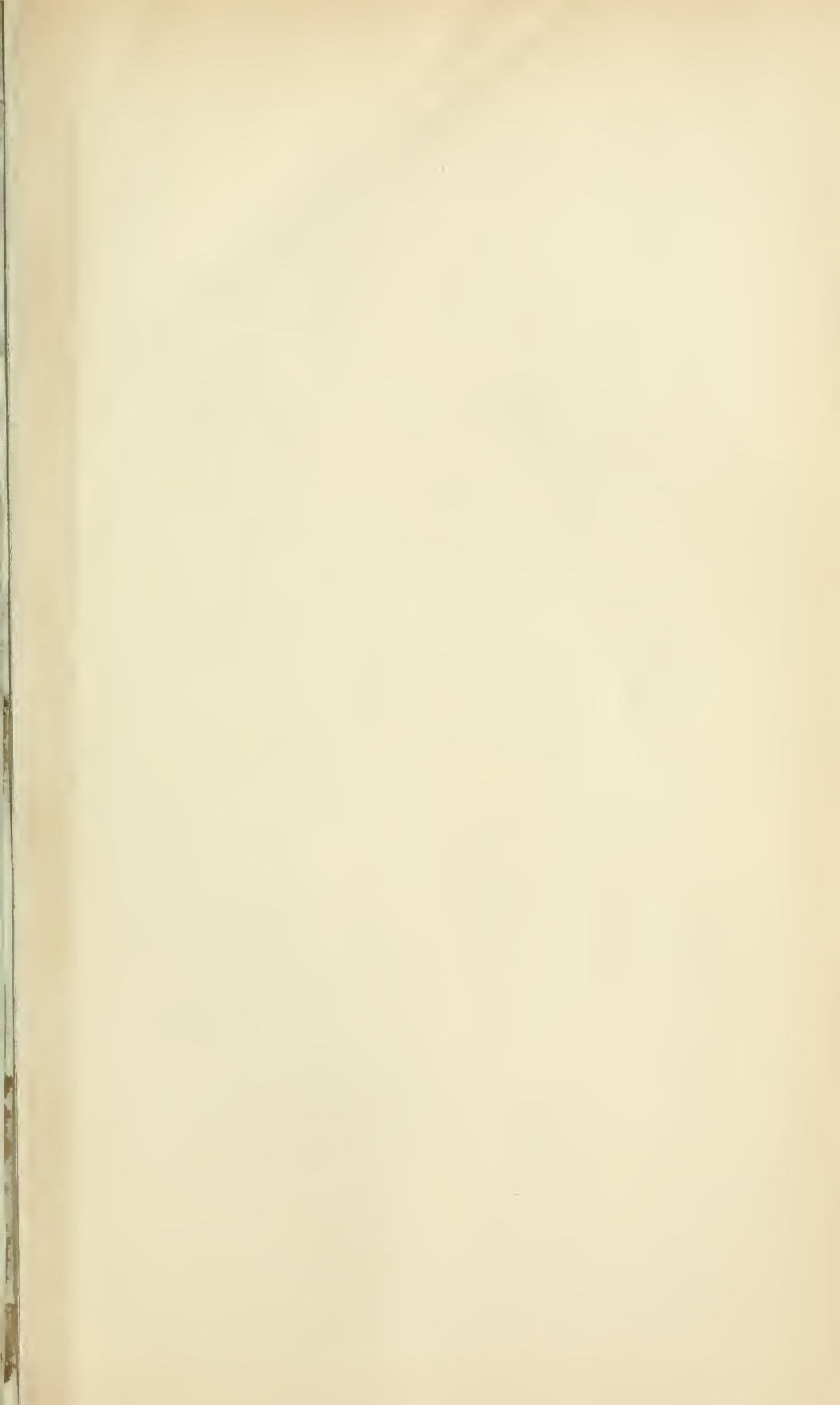
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Photo. F. Noad Clark.

Comparative View of Genitalia of *Monopis rusticella*, Hb. (Figs. 1, 2), and *M. macromella*, Swett (Figs. 3, 4).

MONOPIS WEAVERELLA, SCOTT (n. syn. = SEMISPILOTELLA, STRAND),
SPECIFICALLY DISTINCT FROM *M. RUSTICELLA*, Hb.

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

PLATE V.

In the "Zoologist," 1858, pp. 5964-5965, the late Mr. John Scott brought forward as a new species a Scottish "*Tinea*" very closely allied to *rusticella*, Hb., saying that he had gradually formed the decided opinion that it was specifically distinct from the latter species, and bestowing upon it the name *weaverella*. He added that, in Ins. Brit., Lep. Tin., p. 27 (1854), Stainton had alluded to *weaverella* with a query as to whether it was a variety of *rusticella*.* Although Scott's arguments, which were based upon differences of facies, habit, habitat, &c., were, so far as I am aware, not controverted, they failed, nevertheless, to secure for *weaverella* a place in the standard works, or catalogues, dealing with the British *Lepidoptera*, and even the name itself appears to have been completely ignored by the synonymists.

Some years ago the name *spilotella* appeared, in the genus *Tinea*, in a printed "exchange list" of British *Lepidoptera* compiled by Mr. A. F. Griffith, of Brighton, and, on inquiry, I was informed that some specimens taken by him in Scotland had been reliably identified as *spilotella*, Tgstr. In the absence of any evidence to the contrary, this determination was accepted by the few of us who were especially interested in the matter, and individuals so labelled are consequently to be found in certain British collections. In September, 1907, however, Lord Walsingham privately questioned my identification of a Scottish Tineid,† taken by Canon Cruttwell at Aviemore that season, as "*Monopis spilotella*, Tgstr." He informed me that *Blabophanes spilotella*, Tgstr., differs from *Monopis rusticella*, Hb., in having veins 5 and 6 of the hind-wings separate instead of stalked, and suggested that the individual in question (which he had not seen) would probably be found to have veins 5 and 6 of the hind-wings stalked, which would refer it to "*Monopis rusticella*, Hb., + *weaverella*, Scott (Zool. 1858, 5963-4—var., an sp.?)." This information, and the citation of Scott's paper, which was previously unknown to me, led me to investigate the matter, and to collect for comparison as much material as possible, with the result that all the British reputed

* Stainton (*l.c.*) concludes his notice of *rusticella*, Hb., with the following words: "Mr. Weaver has taken several specimens of a variety (?) with an ochreous spot at the anal angle running into the cilia; these he found in fir-woods, Perthshire."—E. R. B.

† This was omitted from the list of Canon Cruttwell's Aviemore captures, published in Ent. Mo. Mag., ser. 2, xviii, 257 (1907), because its identity was then under discussion.—E. R. B.

spilotella, of whose existence I am aware, together with certain British individuals standing as *rusticella*, have proved to be *weaverella*, Scott, which has a distinct facies, and is a *Monopis*, having, like *rusticella*, veins 5 and 6 of the hind-wings stalked. It is evident, therefore, that *B. spilotella*, Tgstr., has no claim to a place in the British List, and must be excluded therefrom. Except that its name has appeared for some years in Mr. Griffith's "exchange list," the only published reference to its occurrence in Britain, that is known to me, is one by Mr. W. H. B. Fletcher, who, in "The Victoria History of the county of Sussex," i, 200 (1905), enters "*Scardia spilotella*, Tengström," in error for *Monopis weaverella*, Scott, and states that it is apparently not uncommon in Abbots Wood.

To prevent further confusion, a few notes on *B. spilotella*, before we dismiss it, may be of use. Rebel [Stgr. and Rbl., Cat., ii, p. 236, No. 4537 (1901)], who gives it as occurring in Lapland, Finland, and Labrador, erroneously enters it as a variety of *M. rusticella*, Hb., with which, as already stated, it is not even congeneric. It agrees with *M. rusticella* in size, both, however, being decidedly variable in this respect, but its ground-colour is more uniformly dark, being violet-black, and similar to that of *M. weaverella*. The principal markings on the fore-wing are a white triangular blotch on the middle of the costa, embracing the hyaline eye-spot, and another white blotch, smaller, if anything, than the costal one, on the outer third of the dorsum, extending to the tornus. These two conspicuous blotches separate *B. spilotella*, at the first glance, from *M. rusticella* and *weaverella*, neither of which shows a costal blotch, though both may exhibit some pale ochreous scales above the eye-spot, and *weaverella* has a distinct pale ochreous tornal blotch. Both Zeller and Stainton considered *B. spilotella* to be a variety of *M. rusticella*. The former possessed three specimens of it, which are accompanied by his written label, "*Rusticella* var. *b. spilotella*, Tgstr.," while the latter's continental series of *rusticella* consists of nine individuals, of which two, labelled "Germany, Staudinger, 12/77," are dark *rusticella*, the remaining seven being all *spilotella*: six of these bear Stainton's written labels "Norway, Staudinger, 1.82," but the other, which is labelled by him "Becker 4/56," carries also another label, which reads

Spilotella
C
97

"The Walsingham Collection includes ten specimens of *Blabophanes bivittimaculella*, Chms. (= *insignisella*, Wkr.), from North America. This species appears to be superficially inseparable from *spilotella*, but, so

far as we know at present, may be recognised by vein 2 of the fore-wing arising out of the stalk of 3-4, whereas, in *spilotella*, vein 2 is connate with 3-4.

The comparison of a large number of examples of *M. rusticella* with many of *weaverella*, and an acquaintance with both insects in nature, have firmly convinced me that Scott was right in regarding the latter as specifically distinct from the former, and it is particularly noteworthy that, whether in the far north of Scotland or the extreme south of England, each species retains its own special characteristics, there being a marked absence of any intermediate forms. The imaginal distinctions, upon which Scott laid stress, are the darker ground-colour of *weaverella*, which brings into greater prominence the ochreous markings, its much more distinct central ochreous spot [*i.e.*, the hyaline eye-spot.—E.R.B.], and the presence of a large ochreous subtriangular tornal blotch, which is absent in *rusticella*. Scott (Zool., 1858, p. 5964) adds that "in all other respects they seem to harmonise,—the ochreous head and face, pale palpi, irroration on the wings, pale ochreous cilia varied with fuscous, and pale grey posterior wings," but it is certain that *rusticella* and *weaverella* exhibit, in connection with some of these parts, differences which escaped Scott's notice.

In *weaverella* the ground-colour of the fore-wing, which is less flecked with ochreous than that of its ally, is silky violet-black, while that of the hind-wing, which, as in *rusticella*, is rather lighter in the male than in the female, is dark grey, sometimes strongly tinged with purple. Both fore- and hind-wings are therefore distinctly darker than those of *rusticella*, while the abdomen is also darker, and the head is more orange. *Rusticella* only occasionally shows a pale ochreous tornal spot, and even then this spot is not nearly so large or conspicuous, nor is the pale ochreous oblique bar through the tornal cilia nearly so broad, as in *weaverella*. The latter seems remarkably constant in facies, though, in worn or old individuals, the faded ground-colour is noticeably brown instead of black. Like *rusticella*, it is very variable in size, but although, on the whole, the males are not so large as the females, size cannot be relied on as any criterion of sex. *Weaverella* is certainly smaller, on an average, than its congener, good-sized examples expanding 15.5—16.5 mm., whereas correspondingly large individuals of *rusticella* show an *alar. exp.* of 18—19 mm. Larger examples of both are, however, occasionally met with.

Scott (*l.c.*) also pointed out certain differences between these species in habit, &c., saying that he used to meet with *weaverella* at

Rannoch, "far away in the woods, either at rest on the trunks of the black firs* or by beating these trees," from the middle of June until the first week in July, and that they were not uncommon, and were very frequently to be found on those trees at the feet of which were situated the ant-hills that yielded "*T. ochraceella*." But although *weaverella* is far more local and uncommon than *rusticella*, especially in England, both seem more or less at home in a strange variety of natural habitats. In this country extensive woods and forests appear to form the principal haunts of *weaverella*, though, in the Hassocks district of Sussex, Mr. A. C. Vine finds it sparingly in lanes. In the highlands of Inverness-shire, however, it has occurred to me, in such fine condition that it was obviously at home, not only in Scotch pine forests in the glens and on the mountain-sides, but also on the open moor, where the only trees were some young birches, and even on a bleak mountain-top about 2330 feet above sea-level, where there was neither a tree, nor even a vestige of one, anywhere near, but only heather and other low-growing plants. Although I have never yet actually taken the two insects together, *rusticella* either has been met with, or might be expected to occur, in all such spots as have yielded me its congener. The converse of this, however, would not be true, for, although *rusticella* abounds in houses and outhouses both in England and Scotland, I know of no single instance of *weaverella* having been observed inside a building. This points to the probability of the larvæ, at least to some extent, favouring different foods, as also does the fact, recorded by Mr. W. H. B. Fletcher (*l.c.*), that, whereas he bred *rusticella* in abundance from birds' nests collected in Abbots Wood, Sussex, he reared no "*spilotella*" (*i.e.* *weaverella*).—E. R. B.) from them, although, as stated below, the latter is really not uncommon in that locality. Scott's remark, referred to above, suggests the possibility of *weaverella* feeding on the rubbish in the nests of the wood-ants, but, in any case, it cannot, like *Myrmecozela ochraceella*, always do so, for, on various occasions, I have captured the moth far away from any wood-ants' nests, and, I believe, from the nests of any species of ants, though vegetable refuse has always been present. Both *rusticella* and *weaverella* rest quietly by day, as a rule, and fly naturally in the evening, and probably during part of the night. The only known Dorset specimen of the latter, however, was netted by me at 2.40 p.m., whilst hovering about two feet above the ground, in a large wood at Bloxworth on June 8th, 1907; its deliberate oscillating flight was

* I have little doubt that these were Scotch pines (*Pinus sylvestris*), and that they were popularly called "black" because of the darkness of the foliage as compared with that of certain other species.—E. R. B.

obviously a voluntary one, not provoked by disturbance, but this exceptional behaviour was perhaps due to the intense heat that prevailed. *Weaverella* is certainly double-brooded sometimes, and probably always, in the south of England, appearing in May or early June, and again in August or September, but no evidence is before me of the existence of a second brood in Scotland. The imago was taken by Scott at Rannoch, Perthshire, from mid-June to early July in former years, and by myself at Aviemore, Inverness-shire, June 23rd—July 3rd, 1908, and again June 21st—July 1st, 1909.

Learning from Stgr. & Rbl., Cat., ii, p. 236, No. 4537 (1901), that Strand had described, under the suggestive name "*ab. semispilotella*," a form that he assigned to *rusticella*, I asked Mr. Durrant for a copy of the original notice, and he kindly forwarded one, pointing out that the reference, which should read "Ent. Nachtr., xxvi, pp. 225—226 (1900)," is incorrectly given by Rebel (*l.c.*). Strand only knew this form, which he says is intermediate between *rusticella* and its var. *spilotella*, through a single individual taken by him at Vefsen, Norway, on May 5th, 1899. He tells us that, while the ground-colour of the fore-wings is identical with that of var. *spilotella*, the costa shows only a pale spot (presumably as distinct from a blotch.—E. R. B.), and the hind tarsi are unicolorous. Strand's remarks leave me in no doubt that his *rusticella ab. semispilotella* is the same insect that was described as *weaverella* by Scott forty-two years previously, but although, in the solitary specimen before Strand, the hind tarsi were unicolorous, as is occasionally the case, these parts are, as in *rusticella*, dark-barred above, as a rule, sometimes broadly and conspicuously so. Strand seems clearly to imply that the hind tarsi of *B. spilotella* are not unicolorous, but they certainly are so in the individuals examined by me, and Rebel (*l.c.*) specially says of *spilotella*, "*tarsis postic. unicoloribus*." A specimen in the Walsingham collection (14332), taken at Fagernes, also in Norway, by the Rev. A. E. Eaton on July 11th, 1902, is certainly *weaverella*: before I saw it, it had already been identified as "*Monopis rusticella*, Hb., + *weaverella*, Scott (= *semispilotella*, Strand)," by Mr. Durrant, who, with Lord Walsingham, has hitherto regarded *weaverella* as a form of *rusticella*, Hb., but structurally distinct from *spilotella*, Tgstr., and *biflavimaculella*, Clms.

It should be observed that No. 4537 of Stgr. & Rbl., Cat., ii, p. 236 (1901), embraces three distinct species, viz., *Monopis rusticella*, Hb., *M. weaverella*, Scott (= *semispilotella*, Strand), and *Blabophanes spilotella*, Tgstr., and that, in consequence, the synonymy there given requires careful correction.

Although Norway is the only continental habitat of *M. weaverella* at present known to me, the species shows a remarkably wide distribution in Britain, and I have been able, partly through the kindness of friends, to examine and identify individuals from the following localities therein: ENGLAND—Dorset (Bloxworth, one, *E. R. Bankes*): Hampshire (Brockenhurst, one, *E. R. Bankes*; Lyndhurst, one, *E. R. Bankes*): Herefordshire (Tarrington, not uncommon, *J. H. Wood*): Sussex (Abbots Wood, not uncommon, *A. F. Griffith*, *T. Salvage*, *A. C. Vine*; Hassocks, taken sparingly, *A. C. Vine*). SCOTLAND—Aberdeenshire (Braemar, apparently not uncommon, *P. M. Bright*): Inverness-shire (Aviemore, widely distributed, but rather sparingly taken, *C. T. Cruttwell*, *E. R. Bankes*): Perthshire (*Mus. Bankes*): Sutherlandshire (Strath Naver, two, *A. F. Griffith*).

Except for Weaver's "Perthshire" captures, recorded by Stainton [Ins. Brit., Lep. Tin., p. 27 (1854)] as perhaps representing a variety of *M. rusticella*, the only British examples of *weaverella* known to me, that I have not actually seen, are the original co-types taken by Scott at Rannoch, Perthshire, where he found it not uncommon; his notes (*l.c.*), however, leave one in no doubt whatever as to the insect that was before him. C. G. Barrett's series of *rusticella*, which I acquired at the dispersal of his collection, included a few examples of *weaverella*: one of these bears his written label "Perthshire," while the rest, which were, to my knowledge, taken and set by Dr. J. H. Wood, are labelled, in Barrett's handwriting, either "Ledbury," or "Tarrington in woods," both names denoting the Tarrington district.

Since the above notes were written, Dr. T. A. Chapman has, at my request, kindly compared the genitalia of *M. rusticella* and *weaverella*, and his valuable preparations formed the subjects of the photographs, which are reproduced on the accompanying plate. He informs me that the appendages of these species "are close, but sufficiently distinct to confirm specific non-identity deduced on other grounds," and I am greatly indebted to him for the following detailed notes respecting them.

Comparison of male genitalia of *M. rusticella* and *weaverella*.

"In *rusticella* they are larger and more robust. The several dimensions are as follows:—

	RUSTICELLA.	WEAVERELLA.
Length of uncus	0.34 mm.	0.32 mm.
" " claspers	0.71 "	0.71 "
" " saccus	0.93 "	0.65 "
Width of claspers	0.27 "	0.26 "
Length of dorsal hooks	0.33 "	0.30 "

"The form of the claspers is different, so that the widest part in *rusticella* is 0.3 mm. from the extremity, whilst in *weaverella* it is nearly 0.4 mm., so that the claspers look round and broad in *rusticella*, narrow and tapering in *weaverella*. The hairs along their upper outer margins extend much further back in *weaverella*, and have the appearance of being each on a little eminence, which one misses in *rusticella*. The dorsal hooks are stronger and more curved in *rusticella*. No doubt the most striking difference is in the length and strength of the saccus, as noted above in dimensions. The aedeagus seems to be longer and more robust in *rusticella*, but the specimens I have mounted unfortunately obscure this organ somewhat in *weaverella*.

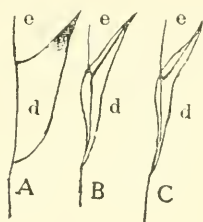
"I have examined a few other of these rubbish-eating *Tineæ*, and find they all have male appendages of a common pattern, but with much variation in proportions of parts. The point of greatest interest in connection with *M. rusticella* is that *T. pallescentella*, which differs so much from *M. rusticella* in its neuration, has appendages that differ from those of *M. rusticella* and *weaverella* hardly more than they do from each other."

Comparison of female genitalia of *M. rusticella* and *weaverella*.

"The photographs of the two species show the female organs to be very much alike; the rods are of identical length, and the small terminal plates of the ovipositor apparently so also. Unfortunately the dorsal and ventral plates of the seventh abdominal segment were left in the preparation of *weaverella*, and, as a result, the *bursa* became ruptured. The vaginal tube appears to be shorter in *weaverella* than in *rusticella*. The photograph (and preparation) of *rusticella* is a fairly satisfactory one, showing the *bursa* and attendant sac.

"In both species there is a line of small chitinous plates forming a zone round the middle of the *bursa*; these seem very much the same in both insects, and fourteen in number in both cases, though the *bursa* being ruptured in that of *weaverella* may perhaps permit doubts as to this being accurate. On the other hand, when the *bursa* remains intact, these little plates, which are complicated in form, and seem to have a point free from the bursal wall, lie over one another (from opposite sides and at margin) so as to make counting them somewhat difficult, especially as, in *rusticella*, some specimens have fourteen and some sixteen plates. That photographed has sixteen. These little plates seem to be attached to the wall of the *bursa* by one margin, the plate itself swinging free in the sac. The lines of attachment are parallel with the length

of the sac. The margin of the plate next the *fundus* is thickened, and inclines towards the *fundus*; the angle between this margin and the attached margin is about 135° . It ends in a sharp point; the rest of the plate forms a sort of bracket or support to this special spinous margin. The accompanying diagrams made from camera sketches may be of interest: they represent plates (\times about 200) of the *bursa* of *rusticella* ♀."



- A = side view.
 B, C = oblique views.
 d = plate.
 e = line of attachment to wall
 of bursa.

EXPLANATION OF PLATE V.

Figs. 1, 3. Genitalia ($\times 40$) of ♂ *Monopis rusticella*, Hb., and *M. weaverella*, Scott.

" 2, 4. " ($\times 40$) " ♀ " " " " " "

Norden, Corfe Castle:

July 27th, 1910.

DESCRIPTION OF A NEW SPECIES OF GALERUCELLA.

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

GALERUCELLA FERGUSSONI, *sp. nov.*

G. SAGITTARIÆ affinis, sed multo minor et brevior, sat nitida, tota nigra, vel marginibus elytrorum peranguste dilutioribus: antennis articulo secundo pro ratione tertio paullo longiori: pronoto angulis lateralibus magis distinctis: elytris interspatiis punctorum evidentius alutaceis.

A small dark species of about the size of *G. lineola*, closely allied to *G. sagittariæ*, but at once distinguished by its small size and dark colour: entirely black, or with the margins of the elytra very narrowly dusky yellowish; there are also in some instances lighter markings on the pronotum: the antennæ have the second joint slightly longer in proportion than the third: the lateral angles of the pronotum are more pronounced and in this respect the insect rather resembles *G. nymphææ*, which I believe with Dr. Sharp to be a distinct species from *G. sagittariæ*; the sculpture of the elytra is variable as in the last named species, but the interstices appear to be somewhat more plainly alutaceous; the grey pubescence is more distinct and appears to be thicker, but this is in part due to the darkness of the elytra.

Length, 4—5½ mm. (In my "Coleoptera" of the British Islands, vol. iv, p. 329, the length of *G. sagittariæ* should be 6—7½ mm. instead of 4—5 mm.).

Taken in numbers by Mr. Anderson Fergusson at Possil, near Glasgow, and afterwards at Frankfield Loch, also near Glasgow, in early June on the Marsh Cinquefoil, *Comarum palustre* (the *Potentilla palustris* of the London Catalogue), and again in August. Mr. Fergusson believes that the insect hibernates in the perfect state and that the June examples have lived through the winter, as he could not find any traces of larvæ in that month. The August examples are the second brood and had just emerged from the pupa: in fact, Mr. Fergusson collected several pupæ (which were quite black) to send me, but the beetles emerged almost immediately afterwards.

This insect (the facies of which is, perhaps, the most distinct in the genus) is the *G. sagittariæ* var. B of Dr. Sharp, which is briefly noticed by him on page 90 of the current volume of this Magazine; apparently *G. sagittariæ* is very rare or local in Scotland, as there is only one record, Dr. Sharp in 1867 having captured a series at Dabton Loch, Thornhill, Dumfriesshire. If *G. fergussoni*, with its very distinct facies, is to be regarded as a variety, we may with quite as much reason class *G. lineola* and *G. tenella* (both willow feeding species) as one species, and perhaps throw *G. calvariensis* in also; *G. tenella* often shows the dark central thoracic line which is characteristic of *G. lineola*, and the characters of the apex of the elytra as well as of the sculpture are very variable in the genus.*

Earley Vicarage, Reading:

September 16th, 1910.

NOTES ON VARIOUS BRITISH COLEOPTERA.

BY E. A. NEWBERRY.

CHRYSOMELA DIDYMATA, Scriba.—The insect standing in British collections as this species is *C. brunsvicensis*, Grav. Bedel (Col. Bassin Seine, v, 146-7) separates the two species thus:—

Punctures in elytral striæ more distant and less numerous (about 15 to 20 in each stria)*C. didymata*, Scriba.

Punctures closer and more numerous (30 or more in each stria)...

C. brunsvicensis, Grav.

The colour of the upper-side is almost always blue in *didymata*,

* *G. lineola* is found on *Lysimachia vulgaris*, and *G. sagittariæ* on *Rumex hydrolapathus*, in the Woking district.—G. C. C.

while in *brunsvicensis* the elytra are usually coppery-red, with a narrow green suture. I have indeed never seen a British example otherwise coloured. *C. didymata* does not appear to be British. Capt. Deville has kindly sent me specimens of both for comparison.

OXYPODA PERPLEXA, Rey (= *lurida*, Woll.?).—A specimen of an insect previously named *perplexa*, Rey, by Capt. Deville, has been identified by Dr. Sharp as his *O. verecunda* (Trans. Ent. Soc. Lond., 1871, 189). Taking the "very elongate maxillary palpi" into consideration, it is evident that Rey's description of *O. (Bæoglena) exoleta* [Brévipennes, Aléochaarires, p. 285 (1874)] also refers to the same insect.

Capt. Deville has pointed out to me that Dr. Bernhauer (Verh. k. k. zool.-bot. Ges. Wien, 1902, p. 20) has tabulated the two species thus:—

Thorax more than one-half broader than long; elytra dirty yellow; hind body with normal side-border, and short slight hairs at apex; penultimate joint of maxillary palpi normal*O. exoleta*, Erichs.

Thorax scarcely more than one-third broader than long; elytra reddish-yellow; hind body with straight, swollen, separate side-border, and long coarse hairs at apex; penultimate joint of maxillary palpi abnormally elongate...
O. lurida, Woll.

The two species are abundantly distinct, but the synonymy is very confusing. I am by no means sure that Wollaston's type of *lurida* agrees with Bernhauer's description. Rey places his *perplexa* in the sub-genus *Podoxya*, in which the maxillary palpi are only moderately elongate, which suggests that the insect he describes is identical with Bernhauer's *exoleta*. If the above suggestions prove correct, another name will have to be found for the insect with elongate palpi.

QUEDIUS VARIABILIS, Heer (of Rey).—Dr. Joy some time since pointed out to me that the insect I had brought forward under this name (Ent. Mo. Mag., xli, 197) is identical with others named by me var. *fajeti* for Mr. Kidson-Taylor. As Dr. Joy is certainly right, I desire to make the correction. *Q. fajeti* is, however, now considered synonymous with *Q. maurus*, Sahlb., and a good and distinct species. The characters given in my table (*loc. cit.*) will serve to separate the species from its allies, but for "*Q. variabilis*, Heer." the following synonymy should be substituted: *Q. maurus*, Sahlb. = var. *fajeti*, Thoms., *variabilis*, Rey (*nec* Heer?).

TELEPHORUS (ANCISTRONYCHA) ABDOMINALIS, Fab.—The insect

standing in British collections, as well as Fowler's description of this species (Brit. Col., iv, 134), must be referred to the var. *cyanea*, Curt. (1839) = *cyanipectus*, Bach. What is regarded on the Continent as the type form, in which the thorax of the ♂ is entirely black, does not, I believe, occur in Britain.

CÆLIODES CARDUI, Herbst, and FULIGINOSUS, Marsh.—These insects are quite distinct, and may be separated by Bedel's characters reproduced by Fowler (Brit. Col., v, 338). These do not appear very striking on paper, but are distinct enough when the two species are before one. Our insect is *fuliginosus*, Marsh. *C. cardui* is presumably not British.

LESTEVA SICULA, Erichs.—In a recent note on this species (Ent. Mo. Mag., xlvi, 118) Prof. Beare states that the synonymy given in the last (1906) European Catalogue agrees with that of Fowler (i.e., *L. sicula*, Erichs. = *heeri*, Fauv. and Kraatz). This is an error, the catalogue gives *L. sicula*, Erichs., from Sicily only, *L. heeri*, Fauv. = *punctata*, Duv., from Europe. Capt. Deville tells me that he considers *L. sicula* distinct from *heeri*, and has expressed himself to this effect in the "Faune du Bassin de la Seine" (Staphylinides, p. 49, note) now publishing in the French Annales. He further says that he has only seen *L. sicula* from Sicily and Algeria. It is presumably not British.

13, Oppidan's Road,
Prinrose Hill, N.W.:
September 17th, 1910.

NEW CORSICAN AND FRENCH MICROLEPIDOPTERA.

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

(Continued from Vol. xxxviii, p. 81).

341. MEGACRASPEDUS Z.

30091. MEGACRASPEDUS TRISTICTUS, sp. n.

Antennæ pale ochreous, annulate with pale brown. *Palpi* cream-whitish, the median joint slightly shaded externally with brownish. *Head* and *Thorax* whitish ochreous. *Forewings* unicolorous pale ochreous, with two black spots, one in the fold and one at the end of the cell, situated as in *vinotellus* FR., but having a stronger spot on the disc equidistant between them, of which there is no trace in that species; cilia scarcely paler than the wings. *Exp. al.* 12 mm. *Hindwings* pale grey; cilia very pale brownish ochreous. *Abdomen* greyish ochreous. *Legs* whitish ochreous.

Type ♂ (81169) Mus. Wlsm., B.M.*

Hab.: S. FRANCE: (*Alp. mar.*): Cannes, 22.V.1892 (*Wlsm.*). Unique.

This species is of the same colour as 3006 *bin stellus* FR., but differs in the absence of the speckled shading along the costa and in the presence of the very conspicuous discal spot; the hindwings are also somewhat narrower than in that species. From 3097 *imparellus* FR., in which three spots are indicated, it is distinguishable by its ochreous colour and by vein 6 of the forewings being almost anastomised with 7 + 8.

365. ETHMIA Hb.

3160-1. ETHMIA CALLIDELLA, sp. n.

Antennae black. *Palpi* rather slender, rising above the vertex, black. *Head* and *Thorax* black. *Forewings* dull black, with three intensely black spots (••), the first two situated very slightly before the wing-middle, one on the middle of the fold, one on the cell directly above it, the third slightly larger, at the upper angle of the cell; cilia black; underside black. *Exp. al.* 19 mm. *Hindwings* a little paler than the forewings, sooty black; cilia the same; underside black. *Abdomen* black, the terminal three segments only bright orange; this colour is produced towards the base along the sides, but is diminished and confined to the last two segments beneath. *Legs* including the hind tibiae black.

Type ♂ (82800) Mus. Wlsm., B.M.

Hab.: S. FRANCE: (*Pyr. or.*): Thuès-les-bains 27.VI. 1900 (*Wlsm.*). A single specimen taken near the hot stream which flows on the south side of the road near the hotel.

This species differs from 3160 *andalusica* Stgr., which is its nearest ally, in its black hind legs, its slightly broader and more rounded wings, its much darker hindwings and underside, as well as in the reduced extent of the orange colouring on the abdomen. The position of the three spots is almost exactly the same, but in *callidella* the first two are rather smaller and a little nearer to the base, from which they are more precisely equidistant.

412. COLEOPHORA Hb.

3653-1. COLEOPHORA PTARMICIA, sp. n.

Antennae white: the basal joint thickened by rough brownish grey scales. *Palpi* not tufted, extending rather more than the length of the head beyond it; whitish. *Head* and *Thorax* brownish grey, sometimes whitish. *Forewings* olivaceous brownish, the costa dirty white throughout, the costal cilia becoming

* The Walsingham Collections were transferred to the British Museum, 1st April, 1910.

greyish on their outer half; before the middle of the cell commences a dirty whitish line which runs to the apex, leaving a broad band of the dark ground-colour above it; a second line commences at the base and accompanies the fold to the dorsum beyond the middle, and a few whitish scales occur about the base of the dorsum; cilia brownish grey, with a line of dirty whitish scales along their base; (♀ somewhat paler than the ♂, a dorsal as well as a costal white line being clearly indicated throughout, the markings are also somewhat more clearly defined). *Exp. al.* 8-11 mm. *Hindwings* pale grey; cilia brownish grey. *Abdomen* dirty whitish, with some grey shading. *Legs* whitish, the hind tibiae with long brownish grey hair-scales.

Case pale brownish, darker along the central portion; formed of small portions of the mined ends of the leaflets, wider anteriorly and tapering posteriorly. The points of the leaflets are separated irregularly on either side, giving the case a curiously hirsute appearance; it is somewhat flattened and the projecting leaflets are lateral, not disposed all round the case.

Type ♂ (85279); ♀ (85280) Mus. Wlsm., B.M.

Hab.: S. FRANCE: (*Pyg. or.*): Thuès-les-bains, ⊕ *Achillea millefolium*, VI, ex. 13-28. VII.1900 (*Wlsm.*). Eight specimens.

This species is most nearly allied to 3653 *bifrondelta* Wlsm.

(To be continued).

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (27).

SCIOPTERYX, RHOGOGASTER, PERINEURA, PACHYPROTASIS.

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

(Continued from page 159).

After wrestling to the best of my power with the difficulties attaching to specific determinations in the genus *Dolerus*, it is quite a relief to devote a paper to a few "short" genera, whose species are distinguished by such characters as make their recognition and tabulation comparatively easy. We have arrived now at the last Tribe in Konow's system, called by him the *Tenthredines*, but better, perhaps, by Thomson the *Tenthredinidæ*; and of the genera comprised in it one only (*Tenthredopsis*), which I reserve for later consideration, presents any serious difficulty to the student, so far as British insects are concerned.

Sciopteryx, Stephens.—We have two species of this genus, much resembling each other, and superficially so like the common *Allantus arcuatus*, that they may perhaps occasionally escape collectors in con-

sequence—at any rate they are of rare occurrence in collections; and of one (*consobrinus*) I have only seen or heard of a single British example—a ♀ most kindly presented to me by Mr. Bloomfield. They are really, however, quite distinct from *Allantus* in the structure of the head, the eyes being small, separated from the mandibles by long “genæ” and (N.B.) lying well outside the base of the clypeus, while in *Allantus* the reverse is the case (the clypeus extending outwards beyond the inner margins of the eyes). The stigma, too, in *A. arcuatus* is wholly pale, while in *Sciopteryx* it is at least black at the apex. Both our species have the clypeus excised not very deeply, but sharply, and somewhat angularly, throughout the whole breadth of its projecting apex, and the latter almost hides the mandibles beneath itself when they are closed.

The species are easily distinguished as follows:—

Tegulae, costa and sub-costa (or at least the bases and apices of these veins), and the stigma (except its black apex) bright straw-yellow. The excised clypeus is flat, and its apex ends on each side in a sharply defined angle.....*costalis*, F.

Tegulae black, with only a narrow white edge, costa, subcosta, and stigma black (or at least fuscous) throughout. Apex of clypeus somewhat depressed or foveated transversely, its excision appearing less angular, and its outer corners more or less rounded away*consobrinus*, Klug.

There is also a slight difference in the colouring of the abdomen above. In *consobrinus* each segment has a nearly similar and uninterrupted narrow pale edging, yellowish in dried specimens, but possibly rather greenish in the living insect (which, however, I have never seen, so the above is only an inference based on analogy). In *costalis* these pale margins are widely interrupted, in fact almost entirely obliterated on the basal segments, but towards the apex they begin to appear, first as lateral streaks, and then as continuous bands, growing wider and wider, till they almost cover the segments altogether.

Rhogogastera (better, as originally, *Rhogogaster*), Knw.—The species of this genus are placed by Mr. Cameron in *Tenthredo*, by Thomson and André along with *Tenthredopsis* in *Perineura*. Neither arrangement is at all satisfactory, and the only doubt is whether Konow went far enough in creating a single new genus only to receive them. That genus was originally published as *Rhogogaster*, a name in my opinion perfectly unobjectionable; but the author was induced by a friend on whose authority in philological matters he was accustomed

to rely, to change the name, to put it mildly, very much for the worse, into the quite indefensible form *Rhogogastera*! I am very pleased to see that Dr. Enslin has gone back to *Rhogogaster*, and should have done so, silently, myself, if I had not employed the altered name in earlier papers of this series.

Rhogogaster (as I shall henceforth call it) comprises five British species, none of which can be called rare, and most of which are exceedingly common. Three of them are green in life, with green stigma, and the body more or less—often very slightly—marbled with black in certain regions (mostly on the dorsal surface), but after death the green fades almost invariably into ochreous-yellow, or (especially if the insects have been killed with cyanide) into a pale reddish-brown. In the other two species the prevailing colours are black and red, with the tegulæ, edges of pronotum, orbits of the eyes, and other parts of the face, &c., prettily ornamented with bright yellow. They can be distinguished at once from *Tenthredo* by the almost parallel inner orbits of the eyes, which, as in *Sciopteryx*, stand evidently outside and clear of the base of the clypeus. From *Tenthredopsis* they differ considerably in the structure of their antennæ; which are comparatively short, and have the 3rd joint evidently a good deal longer than the 4th, these joints in *Tenthredopsis* being practically equal. Also the central fissure of the propodeum (called by Mr. Cameron "the blotch") is quite conspicuous in *Rhogogaster*, while in *Tenthredopsis* it can hardly be detected at all. And lastly, the hind-wing in *Rhogogaster* ♂♂ has never "continuous external neuration."

It is curious that in one species (*aucuparia*) the nervures which cross the radial and humeral areas are so often wanting, either one of them or both, and either in one or both of the upper wings, that it is actually almost unusual to find a specimen in which the neuration is thoroughly normal. This fact is, naturally, a constant source of perplexity to beginners, causing them to refer their abnormal specimens to *Nematid* genera in some cases, to *Selandria* &c., in others. But as one becomes familiar with the general *facies* of the different groups, and learns to recognise them in a general way without examining the neuration this difficulty disappears.

SYNOPTIC TABLE OF BRITISH RHOGOGASTER, Sp.

1. Body in great part green, or black with green markings. Stigma always of that colour. (But it must be remembered that in old specimens the green will have passed into yellow, or almost white, or testaceous). Apex of clypeus strongly and semi-circularly emarginate..... 2.

- Body without green. Abdomen at least above black with a broad band of red. Stigma fuscous with its apex paler. Apex of clypeus truncate, *i.e.*, hardly at all emarginate..... 4.
2. Rather small (8 or 9 mm. long) and comparatively dark. Head above (including ocellar region, &c.) *n.b.*—*uninterruptedly black*, except at the sides where, touching each of the compound eyes, is a small but conspicuous (subtriangular) green mark. The breast of the ♀ is black...
picta, Kl.
- Larger (10 to 13 mm. long) and more brightly coloured. Vertex more or less green, with that colour (*n.b.*) extending into the ocellar region, and not limited to spots on the *sides* of the head. Whole under-side of thorax green, or practically so 3.
3. Abdomen green with only, on each side, a series of about ten minute black dorsal spots arranged longitudinally (two on each side of each intermediate segment), but not quite in a straight line—rather in “echelon.” The head and thorax marked very sparingly with black...*punctulata*, Kl.
- Abdomen not spotted laterally like that of *punctulata*, but either entirely green, or with a broad, black, *central vitta*, which leaves the sides and extreme apex green. (The black markings on head and thorax vary, but are generally more extensive than in *punctulata*, and always less so than in *picta*)*viridis*, L.
(This is by far the most common of the green species, though none of them are rare).
4. Abdomen with the *sides* of the dorsal segments *where they overlap the venter* changing their colour rather abruptly into a sort of creamy-white. In the ♂ this colour stretches more or less across the entire ventral surface, at least on the apical segments.....*fulvipes*, Scop.
(= *lateralis*, C.).
- Abdomen with no whitening of the segments at the sides or beneath; but, beneath as well as above, black with a broad central belt of red...
aucupariæ, Kl.
(= *gibbosa*, C.).

Perineura, Htg.—Of this genus (= *Synxerema*, C.) we have but one species, *viz.*, *rubi*, Pz. It seems to be rare in this country. I have but one British specimen of it (a ♀ from Dr. Capron's collection), and have only taken it myself in Mecklenburg, where I found both sexes, apparently not uncommon—among ferns, if I remember rightly, in May, 1905. Mr. Cameron records ♂♂ only from Cadder Wilderness. The abdomen is fulvous-yellow (testaceous). In the ♂ the whole flagella of the antennæ, in the ♀ their apical joints only, are of the same colour, and the ♂ has a large splash of white (reduced in the ♀ to a mere spot) on each side of the breast. It is nearly allied to *Tenthredopsis*, differing, however, in having the humeral area in the

upper-wing "contracted." Though not a very large insect, its general appearance is rather striking; and there is nothing for which it could be easily mistaken by any one fortunate enough to capture it.

Pachyprotasis, Htg.—This is a genus whose characters, once grasped, are easily recognised in all its species, viz., the extremely elongate hind coxæ, which ally it with *Macrophya*, and the long, slender antennæ, which at once distinguish it from that genus. One of its species (*rapæ*) is abundant in almost every district; another (*antennata*) is local, but not at all uncommon in the New Forest; a third (*variegata*) seems to be rare—my only British specimens of it, all of which are ♀ ♀, were taken long ago by Dr. Capron. Our fourth and last species, *simulans*, is *exceedingly* rare; in fact, I only know of two British captures of it, Mr. Bridgman's ♂ from Norwich (recorded in the Monograph), and a ♀, taken by Mr. Donisthorpe at Darenth in June, 1909, which he has very kindly added to my collection.

These insects, at least in dried specimens, have a characteristic "piebald" coloration—black and white, the white sometimes inclining towards yellow. But sometimes, at least, in life the pale parts are of a beautiful (but sadly evanescent) green. My first captures of *antennata* while fresh exhibited this tint to perfection, and I felt quite distressed when, within a few days, they faded to a dirty white!

SYNOPTIC TABLE OF BRITISH PACHYPROTASIS SPP.

- | | |
|--|------------------------|
| 1. Hind trochanters, femora, and tibiae (except their black apices) bright testaceous-red | <i>variegata</i> , Kl. |
| — Legs altogether without red..... | 2. |
| 2. Pleuræ with large black markings | 3. |
| — Pleuræ entirely pale | <i>antennata</i> , Kl. |
| 3. Head and mesonotum above with a dull surface, finely and closely punctulated all over. Abdominal dorsal segments black right up to their apices | <i>rapæ</i> , L. |
| — Head and mesonotum very smooth and shining, practically impunctate. Abdominal dorsal segments with conspicuous but narrow, pale, apical streaks, slightly widened inwards in the middle. (Mr. Cameron says, "broadly bordered with yellowish-white;" but this is not the case with Mr. Donisthorpe's specimen, nor with a German ♂ and ♀ given to me by Konow) | <i>simulans</i> , Kl. |

(To be continued).

Hæmonia appendiculata, Panz., and other water-beetles near Oxford.—Last month my friend Mr. Joseph Collins, of the Oxford University Museum, kindly called my attention to the occurrence of *Orectochilus villosus* in plenty in an affluent of the Cherwell near Kidlington, some five miles north of Oxford. On August 26th, whilst working here for this and other water-beetles, I was greatly pleased to find a specimen of the very rare *Hæmonia appendiculata* in my net. Several subsequent visits by Mr. Collins and myself have produced a very few further specimens; indeed, I may say that each one I have taken has entailed at least two hours of hard work with the water-net, while wading knee-deep in cold (but fortunately clean) water over a rough stony bottom; though it is possible that earlier in the season the beetle may be obtained with less labour. All have been found within a limited space on *Potamogeton pectinatus*, which is here associated with a thin bright green, ribbon-like *Alga*, growing in a somewhat rapid current. Apart from the last-named circumstance, the habits of *H. appendiculata* are precisely like those of its congener, *H. curtisi*, which loves stagnant water; and its power of clinging to any object with its largely developed tarsal claws is at least as great as in the latter species. *Orectochilus* was found in abundance, hiding among the moss, &c., growing on the stonework of a small weir, often several inches above water-level; and when disturbed, gyrating away on the surface of the stream with a velocity almost too great for the eye to follow (*cf.* Ent. Mo Mag., vol. v, p. 59). In the stream itself, *Brychius elevatus*, *Haliphus obliquus* and *fluvialis*, *Deronectes depressus* (very variable), *Platambus maculatus* (a very handsome clearly-marked form, characteristic of the Oxford district), and *Bagous tempestivus* (also in moss), occurred more or less plentifully, with occasional specimens of *Agabus paludosus*, *Ilybius fenestratus*, *Hydræna riparia*, *Limnius tuberculatus*, &c.

There are two local examples of *Hæmonia appendiculata* in the Hope-Westwood collection in the Oxford University Museum; these were taken on water-weeds in the Isis opposite Binsey by Dr. W. Hatchett Jackson as long ago as July, 1872.—JAMES J. WALKER, Oxford: *September 17th*, 1910.

Cryptamorpha desjardinsi, Guér., in Glasgow.—On March 23rd, 1905, I found a specimen of this species in a house in Glasgow, where it had no doubt been brought in with bananas. The insect was laid aside at the time, and it is only recently I became aware of its identity through the kindness of Commander J. J. Walker.—ANDERSON FERGUSSON, 99, Clarence Drive, Hyndland, Glasgow: *September 12th*, 1910.

Smerinthus ocellatus, L.—a tragedy!—While walking home on June 26th 1905, after spending part of the evening, which was sultry and calm, with an overcast sky, in collecting *Lepidoptera* near here, I noticed, at 9.15 p.m. (late dusk), a swarthy form, looking as though it might be that of a large hawk-moth, fly rapidly past me, from behind, towards a farm pond, which lay just ahead beside the road. On reaching the pond, I spent a few minutes watching the gyrations of the supposed moth, which was flying round and round over the water, and frequently lowering itself sufficiently to touch it at about the same

spot. Eventually it tried this experiment "once too often," and, dipping rather too deeply, was unable to rise again on the wing. It began, however, to swim vigorously, and at first made considerable progress, reaching the middle of the pond, but since it then appeared, in spite of its continued efforts, not to be able to make much headway, I waded into the muddy pond, and landed it with the help of my net. My capture proved to be a large female example of *Smerinthus ocellatus*, but its condition naturally did not admit of its being considered worthy of "cabinet rank"! I have little doubt that its strange behaviour was due to one or two bright spots on the water, which were visible to me, and were caused by the reflection of the last rays of light from the sky, exercising over it the same power of attraction which bright artificial lights are well known to possess over this species.—EUSTACE R. BANKES, Norden, Corfe Castle: *September 16th, 1910.*

Lampronia (Incurvaria) tenuicornis, Stn., in *Inverness-shire*.—On June 15th, 1909—one of the exceedingly few days, during my eight weeks' sojourn in the Scottish Highlands, on which it was possible, even in the most sheltered spots, to collect with a reasonable chance of success—I had the pleasure of taking near Aviemore, Inverness-shire, a beautiful male specimen, in perfect condition, of *Lampronia tenuicornis*, Stn. It was netted at 6 p.m., whilst on the wing of its own accord in bright sunshine, over a heather-clad bank beside some birch bushes, growing at about 800 feet above sea-level, and it is the only individual of this very rare and local species that has ever occurred to me. Unfortunately my efforts to meet with other specimens, both there and elsewhere in the neighbourhood, were not attended with success.

In his original description of "*tenuicornis*, n. sp.," in I. B., Lep. Tin., 41 (1854), Stainton, who had only seen two individuals, described the head as "pale yellowish," and he used the same expression about it in Man., ii, 297 (1859), while Meyrick [HB. Br. Lep., 781 (1895)] says "Head whitish-yellow." Of the four male examples, forming the lamentably short series in my collection, the three older ones have the head either pale ochreous or dingy ochreous, whilst, in that from Aviemore, it is bright orange. This last individual is, in general, strikingly darker than the other three, for its silky fore-wings are fuscous-black instead of fuscous, and its hind-wings, thorax, &c., are proportionately dark as compared with those of its companions. Probably the imago gradually fades in the cabinet, as do so many black or blackish *Lepidoptera*, but it is also not unlikely that northern specimens are, in nature, more strongly coloured than southern ones.

Meyrick (*loc. cit.*) gives the known British distribution of *L. tenuicornis* as "Kent, Surrey, York to Westmoreland," and I am not aware of the existence of any Scottish examples of it, with the exception of the one recorded above.—*Id.*: *September 17th, 1910.*

Occurrence of Trichoptilus paludum, Zell., near *Woking*.—Early this year my brother and I noticed that the two species of *Drosera* growing in this district (*D. rotundifolia* and *D. longifolia*) were far more abundant and well developed than usual, and it occurred to us that there was every probability that *Trichop-*

tilus paludum was to be found if one searched for it. The perusal of Dr. Chapman's most interesting paper on the life-history of this species, published in the *Trans. Ent. Soc. Lond.*, 1906, pp. 133—154, confirmed us in our desire to find this rare Plume-moth. Owing to our absence from Woking we were unable to look for it until the middle of August, but our first visit on the 21st of that month, to a locality which appeared to us by far the most likely of those round about, was amply rewarded by the capture of a fair number of specimens. We went to the same place several times subsequently and found that the insect did not begin to fly freely until about 6 p.m., although it could be disturbed (earlier with difficulty, however), from the *Sphagnum*, *Narthecium*, *Calluna* and grasses, amongst which most of the *Drosera* was growing and the imagines had been taken; it was most abundant about 6.30 p.m. A careful examination of plants of *Drosera rotundifolia* yielded, in several cases, obvious signs of the presence of the larvæ earlier in the year, but no traces could be seen on *D. longifolia*, which was also not uncommon, possibly because the latter is a plant much more difficult to examine than its ally. It may further be noted that practically all the imagines taken were flying over ground which is so sodden with water during the greater part of the year as to be impassable, although the *Drosera* plants are kept from being submerged by the *Sphagnum* around them. The plants whose leaves were found to have been partially devoured were, however, all on the wet bare patches where sods had been cut. Searching in similar places not far distant—even 100 yards away—from the spot alluded to above, failed to produce a single specimen.—H. G. CHAMPION, Heatherside, Horsell, Woking: *September 16th*, 1910.

Oviposition of Baccha.—I am indebted to Miss Alderson for calling attention (p. 217, *ante*) to my badly expressed final line (p. 193, *ante*), which should read "It is satisfactory to have ascertained *an* (not *the*) actual species of *Aphis* attacked by it." I by no means wished to convey the idea that *Baccha* confined its attacks to *Aphis pruni*. In the preceding line read "1900" for "1909."—CLAUDE MORLEY, Southwold: *September 1st*, 1910.

Review.

AFRICAN MIMETIC BUTTERFLIES: being Descriptions and Illustrations of the principal known instances of Mimetic Resemblance in the Rhopalocera of the Ethiopian Region, together with an explanation of the Müllerian and Batesian theories of Mimicry, and some account of the evidences on which these theories are based. By H. ELTRINGHAM, M.A., Cantab. et Oxon., F.Z.S., F.E.S., Member of the Natural History Society of Durham and Northumberland. 4to, pp. 130, with 10 coloured Plates and a Map. Oxford: at the Clarendon Press, 1910.

Nearly half a century ago, and not long after the appearance of the epoch-making memoirs of Bates and Wallace on the subject of mimetic resemblances among Amazonian and Malayan butterflies, the veteran Entomologist Mr. Roland Trimen called attention to the equally striking agreement in colour and markings between various South African butterflies of widely diverse groups. As in the course of exploration the continent has been opened up, and our knowledge of its varied and extensive insect fauna has become more complete, fresh examples of mimetic resemblance have been brought to light in rapid succession, until Africa may be almost regarded as the classic land of mimicry among butterflies. Even now nearly every large collection received from the more remote regions of Africa is found to contain one or more new and striking mimetic forms. Mr. Eltringham's book forms an important landmark in our knowledge of the subject of mimicry in the African Diurnal *Lepidoptera*, and in this sumptuous volume he has brought together a large amount of most interesting material. The unrivalled resources of the Oxford University Museum, to which some of the most extensive collections of Tropical African butterflies made in recent years have found their way, have been placed at the author's disposal by Professor Pouiton, whose assistance in the preparation of the work, with that of Mr. Trimen and others, is gracefully acknowledged by him. The question of mimetic resemblance in butterflies, from the points of view of Bates, Fritz Müller, and more recent writers on the subject, is discussed very clearly and pleasantly in the opening chapter, which embodies a brief but useful sketch of the structure and modern classification of these insects. The body of the work (pp. 24-103) is devoted to the descriptions of the chief mimetic associations in the African *Rhopalocera*, special prominence being given to the various phases of the females of *Papilio dardanus*, which constitute what is probably the most curious and complicated instance of protective mimicry with which we are acquainted. The two chapters on the comparative palatability of butterflies to insect-eating animals, and on the evidence that they are preyed upon by birds, form a very able summary of the investigations of the author and other observers in this direction, including the classic researches in insect bionomics of Mr. G. A. K. Marshall in South Africa. The ten coloured plates, of which the first is a very useful series of highly-magnified figures of the fore tarsi of representative families of butterflies, are reproduced from the author's drawings by chromo-lithography, and by a liberal use of half-figures, no fewer than 173 specimens are depicted of the natural size. With a few duly acknowledged exceptions, all these are from Mr. Eltringham's collection and that of the Oxford University Museum, and include many forms of the greatest rarity and interest. Very few, if any, figures that we have seen surpass these in spirited execution and fidelity of detail, and Plate X, which illustrates the mimetic ♀ forms of *Papilio dardanus*, some of these here figured being as yet unique, is perhaps the most striking of the whole series. A word of commendation must be given to the very full and clear "Explanations of Plates;" and a copious bibliography and index, with an excellent "up-to-date" map of Africa, complete this important work, on which the author may be very heartily congratulated.

Society.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
Thursday, July 28th, 1910.—Mr. J. W. KAYE, F.E.S., President, in the Chair.

Mr. Main exhibited the larvæ and luminous ova of the glow-worm, *Lampyris noctiluca*. Mr. Clark, on behalf of Mr. Gadge, a specimen of a mite found at Ventnor on *Melanargia galathea*; it was a species of the genus *Trombidium*. Mr. B. H. Smith reported the larvæ of *Cucullia verbasci* found feeding on *Buddleia variabilis*. Mr. Edwards, a box of exotic *Satyriinæ*, including *Neorina erishna* from Java, and several species of the genus *Cithærias* from Central America. Mr. Sich reported finding a larva of *Zeuzera pyrina* (*arsculi*) attacking jasmine.

August 11th, 1910.—The President in the Chair.

Mr. Carr exhibited the ova of *Acidalia stramineata*, from Oxshott, on heather. Mr. Sich, ova of *Eupithecia subumbrata* laid on leaves of yarrow. Mr. Rayward, a specimen of *Adopæa flava* (*linea*) in a moribund condition, from being attacked by no less than 21 mites; also the egg-shell of *Phorodesma smaragdaria* and *Geometra vernaria*, and made comparison of the surface structure and the method of oviposition. Mr. West (Greenwich), specimens of *Coleoptera* and *Hemiptera* recently met with by him attacked by mites. Mr. R. Adkin, a number of "white butterflies" from North America, sent him by Mr. Lachlan Gibb, including a series of the introduced *Pieris rapæ*, a series of *P. oleracea*, and three specimens taken near Lost River, Canada, in May last, about which comment and opinion were requested. Mr. Turner, a short series of *Coleophora silenella* (?) bred from the heads of wild "Sweet William," sent him by Dr. Chapman from the South of France; also the nest of a wasp, a species of *Polistes*, found at Zermatt in July, 1909, suspended in a bush of alpine rose (*Rhododendron*). Captain Cardew, a fine confluent by-marked example of *Anthrocera vicia* (*meliloti*) taken in July in the New Forest. Mr. A. E. Gibbs, a series of *Epinephela jurtina* from Algeria, having the females of the extremely large and bright form *v. fortunata*. Mr. Edwards, a box of *Satyriinæ*, including a series of the dimorphic species, *Heteronympha merope*, from Australia. Mr. Enock, living specimens of the egg parasites, *Mymarida*, taken in Richmond Park.

August 25th, 1910.—The President in the Chair.

Mr. Adkin exhibited a series of *Hesperia malvæ*, and read notes on the peculiar resting habit of the species. Mr. Edwards, a box of *Satyriinæ*, and called attention to the varied local forms of *Ergolis ariadne*. Mr. West (Greenwich), a series of the rare Homopteron, *Typhlocyba eruenta* from Box Hill, and specimens of *Oncotylus viridiflavus* from Rammore. Mr. Newman, *Odontoptera bidentata*, intermediate between the ordinary and the melanic forms; a ♀ *Bithys quercus* with "Adonis-blue" blotches on fore-wings; bred examples of *Argynnis paphia* *v. valesina*, a ♀ *Euchloë cardamines* with a thin streak of bright yellow scaling on the left fore-wing, and another much darker at base of wings with aberrant marbling on the under-side; a partial gynandromorph of *Amorpha*

populi; and a very darkly marked specimen of *Pseudoterpna pruinata* (*cytisaria*). Mr. Hugh Main, the larva of a glow-worm. Mr. W. J. Kaye, a long series of *Morpho cytheris* (*thamyris*) taken by him at Castro Parana, South America. Dr. Chapman, rich brassy examples of *Anthrocera filipendulæ*, and large specimens of *Pieris rapæ* from near Hospenthal, where the species is single-brooded. Mr. Sich, a specimen of *Aventia flexula* from Wisley, a series of *Coleophora albicosta* from Sheen, and a cocoon and imago of *Nepticula centifoliella*.—HENRY J. TURNER, *Hon. Secretary*.

ON THE BRITISH SPECIES OF *PHORA*.

BY JOHN H. WOOD, M.B.

(Continued from p. 202).

44 (1) *First costal division not greatly longer than the other two, at the most less than half as long again.*

45 (52) *Costal fringe short.*

46 (47) *Fore tarsi short and distinctly thickened, especially in male.*

♂ ♀. Thorax and abdomen black; frons distinctly but not highly glossy, rather broader than long (♂) not broader (♀), supra-antennal bristles small, the upper pair about in alignment with inner bristles of middle frontal row, the under pair seldom in view, hidden between the antennæ, antennæ rather small, palpi pale yellow; wings yellowish, costa and veins yellow, costa $\frac{2}{3}$ wing length or rather more, costal cilia only moderately short, 1 distinctly longer than 2 + 3 but not half as long again, angle at fork large; legs yellowish-brown, all the joints of fore tarsi distinctly thickened (♂) slightly thickened (♀), tibial cilia fine and delicate; hypopygium small, with a few weak hairs but no bristles, ventral plate small and yellow, the yellow anal organ small, short and stout...

barely 1 mm. *tarsalis*, n. sp.

47 (46) *Fore tarsi slender.*

48 (49) *Legs brownish-black or black.*

♂ ♀. Thorax and abdomen black; frons slightly shining, scarcely broader than long, 4 nearly equal supra-antennal bristles, the upper ones rather outside an alignment with inner bristles of middle frontal row, the under ones nearer together and well in view, palpi yellow or dusky yellow; wings greyish, veins black, costa less than $\frac{2}{3}$ wing length, fringe very short, 1 rather longer than 2 + 3, angle at fork fairly large; hind tibiæ distinctly and somewhat sparsely ciliated; male abdomen stout, hypopygium small, neither bristly nor particularly hairy, the conspicuous ventral plate dusky yellow, broad and flap-like, anal organ black, short and stout...

1 mm. *brevicostalis*, n. sp.

49 (48) *Legs yellow.*

50 (51) *Thorax red or yellow. Tibial cilia very fine and indistinct.*

♂ ♀. Thorax red or yellow; abdomen reddish-grey rarely black, venter and hind margins of segments yellow; frons grey and strongly bristled, about

half as broad again as long, upper supra-antennal bristles large and rather inside an alignment with inner bristles of middle frontal row, lower ones minute, antennæ red, arista rather short—not twice the length of the frons, palpi pale yellow; wings and veins yellowish, costa about $\frac{2}{3}$ wing length or rather more (♀), fringe only moderately short, almost bordering upon longish, 1 about $\frac{1}{4}$ as long again as 2 + 3, angle at fork moderate, outer branch of 2nd thick vein angulated, and at the angle 1st thin vein leaves with a small but distinct curve; legs yellow, tip of hind femora dusky, upper knife-like edge of hind tibiæ deflected outwards a little below the middle, cilia very indistinct; hypopygium small and black, with a few hairs but no bristles, ventral plate yellowish, broad and reaching in the quiescent state to about the middle of the under-side, anal organ of a honey yellow, long and slender and with the pair of terminal bristles unusually small1—1½ mm. *lutescens*, n. sp.

51 (50) *Thorax black. Tibial cilia well developed.*

♂ ♀. Thorax and abdomen black; frons black, about $\frac{1}{4}$ broader than long, upper supra-antennal bristles large and moderately approximated, under ones very small, antennæ black with arista of usual length, palpi yellow; wings yellowish-brown, costa barely $\frac{2}{3}$ wing length, fringe short, 1 about $\frac{1}{4}$ longer than 2 + 3, angle at fork moderate, 1st thin vein scarcely curved at its origin opposite the fork; legs yellow, hind femora stout and blackened at the tip, upper edge of hind tibiæ uniformly arched, cilia fairly large and not crowded; hypopygium in the two males before me retracted within the last abdominal segment, leaving in sight only a stout yellow anal organ1½ mm. *nigrescens*, n. sp.

52 (45) *Costal fringe long.*

53 (60) *Halteres yellow.*

54 (55) *Mesopleura bristly.*

♂ ♀. Thorax and abdomen black; frons about $\frac{1}{3}$ broader than long, 4 large and nearly equal supra-antennal bristles, the upper ones approximated and the under ones close underneath and a little to the inner side of the upper, antennæ rather small, palpi yellow; wings yellowish-brown, costa $\frac{2}{3}$ wing length or rather more, fringe remarkably long, 1 distinctly longer than 2 + 3 but not quite half as long again, angle at fork moderate, 1st thin vein leaves at the fork with a more distinct curve, especially in female, than usual in these small forms; legs brown, hind tibiæ bare and with a straight upper margin; hypopygium fairly large, without bristles or conspicuous hairs, the yellowish ventral plate reaches about to middle of under-side, anal organ of moderate size, dusky with a yellowish tip...

$\frac{3}{4}$ mm. *superciliata*, n. sp.

55 (54) *Mesopleura bare.*

56 (57) *Male hypopygium conspicuously white. Four large and nearly equal supra-antennal bristles.*

♂ ♀. Thorax black, sometimes with a more or less reddish tinge; abdomen either wholly black or black with the venter yellow, sometimes (♀) reddish-brown; frons black, $\frac{1}{3}$ broader than long, supra-antennal bristles as

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

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

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in preceding species, antennæ black and rather small, palpi pale yellow; wings yellowish-brown, costa more than $\frac{2}{5}$ wing length, fringe very long, 1 about $\frac{1}{3}$ longer than 2 + 3, angle at fork moderate, 1st thin vein gently curved at its origin; legs yellow, hind femora darkened at tip, tibial cilia very fine and indistinct; hypopygium white with only the hind margin narrowly black, pubescence black, ventral plate large and white, anal organ black and of moderate size1—1 $\frac{1}{4}$ mm. *albicaudata*, n. sp.

57 (56) *Hypopygium black. Under pair of supra-antennal bristles minute.*

58 (59) *The marginal hairs on 6th abdominal segment very large and conspicuous.*

♂. Thorax and abdomen black; frons barely $\frac{1}{3}$ broader than long, black, upper pair of supra-antennal bristles large and approximate, under pair minute, antennæ rather small and brown, palpi pale yellow; wings and veins pale yellowish-brown, costa more than $\frac{2}{5}$ but considerably less than $\frac{1}{2}$ wing length, 1 hardly longer than 2 + 3, angle at fork largish, 1st thin vein gently but distinctly curved at its origin from the fork; legs yellow, hind femora not darkened at the tip, their under-side with some moderately long and loose hairs on the basal half, tibial cilia rather small and numerous but distinct; the conspicuous hairs on the last abdominal segment (nearly as long as the segment itself) are 6 or 8 in number and disposed at regular intervals round the margin on its dorsal aspect, whilst irregularly grouped are 2 or 3 smaller ones at the edge of the venter on each side; hypopygium of moderate size, without bristles, ventral plate dusky, short and broad, anal organ papilla-like, yellow or dusky yellow...

1 $\frac{1}{4}$ mm. *spinicincta*, n. sp.

59 (58) *Without such hairs.*

♂ ♀. Thorax and abdomen black, the former occasionally with an obscure reddish tinge; frons and its bristles as in *spinicincta*, antennæ rather small, black or sometimes brown, palpi yellow; wings as in *spinicincta*, but rather darker with the veins browner and costa not more than $\frac{2}{5}$ wing length; legs pale yellowish-brown, hind femora armed underneath as in *spinicincta*, tibial cilia larger and less numerous than in that species; hypopygium of moderate size, without bristles, ventral plate yellow and flap-like, reaching to middle of under-side, anal organ yellow and of ordinary proportions...

1 $\frac{1}{4}$ mm. *sylvatica*, n. sp.

60 (53) *Halteres black. Mesopleuræ bristly, or (hirticaudata) bare,*

61 (62) *Mesopleuræ bare.*

♂. Thorax and abdomen black; frons about $\frac{1}{3}$ broader than long, hardly shining, upper supra-antennal bristles large and approximate, under ones minute, antennæ rather small, palpi brown; wings pale grey, costa fully $\frac{2}{5}$ wing length, 1 longer but not greatly longer than 2 + 3, angle at fork moderate, 1st thin vein without appreciable curve at its origin; legs brownish-black, tibial cilia fine and delicate, fore tarsi slender; abdomen fringed as in *involuta* with strong bristly hairs on the last segment or two just above the venter, increasing in size from before backwards and continued in unreduced form on to the hypopygium, giving the latter a rough

resemblance to the hypopygia of *humilis* and *pleuralis*; hypopygium large, a small and indistinct yellowish ventral plate, anal organ minute and dusky.....under 1 mm. *hirticaudata*, n. sp.

62 (61) *Pleuræ* bristly.

63 (61) *Fore metatarsi of male conspicuously dilated. Frons in both sexes smooth and slightly shining, the pubescence being very fine.*

♂ ♀. A deep black insect with clear wings:—Thorax and abdomen black², one large pleural bristle near root of wing, the others small; frons of the usual proportions, slightly shining, upper supra-antennal bristles large and in alignment with inner bristles of middle frontal row, under ones approximated and about $\frac{1}{3}$ as large as the upper, antennæ small, palpi variable, yellow or brown, usually darkest in male; costa less than $\frac{2}{5}$ wing length, 1 considerably longer than 2 + 3 but not half as long again, fringe only moderately long, angle at fork large, 1st thin vein leaves at the fork without appreciable curve: legs brownish-black or black, fore metatarsi (♂) conspicuously swollen and nearly as thick as the tibiæ, the other joints and the whole tarsus of female slender, tibial cilia small and delicate; male abdomen stout, hypopygium small, with a small weak bristle on each side beneath, the dusky ventral plate broad and rounded at the end, anal organ black, short and thick1—1 $\frac{1}{4}$ mm. *manicata*, n. sp.

64 (63) *Fore metatarsi simple. Frons dull and roughened with strong pubescence.*

♂ ♀. Another deep black insect with clear wings:—Thorax and abdomen black, pleural bristles strong with one or two specially enlarged at the bottom corner of the patch; frons of the usual proportions, 4 large and nearly equal supra-antennal bristles, the upper ones (at least in the male) outside an alignment with the inner bristle of middle frontal row, and the under ones approximated, antennæ rather large, palpi black; wings clear, costa fully $\frac{2}{3}$ wing length or rather more, 1 a third as long again as 2 + 3 or sometimes rather more, angle at fork large, 1st thin vein slightly curved at its origin; legs black, tibial cilia distinct but numerous; hypopygium large, armed beneath with 3 or 4 long bristly hairs on each side, ventral plate small and slender, black or dusky yellow, subanal body generally exposed, anal organ large and black1—1 $\frac{1}{4}$ mm. *hirsuta*, n. sp.

Tarsalis.—Not a very common species. Most of my specimens have been taken in May, and a few again in September and October. Of the various localities, the old decaying beech tree in Stoke Wood has been the most prolific. It has many points in common with *angelicæ*, but the distinctly enlarged fore tarsi, which in the male at least cannot be overlooked, serve at once to distinguish it from that species.

Brevicostalis.—A common and widely distributed little species, occurring in every month in the year from April to September, but most abundantly perhaps in August. It frequents the flowers of *Angelica* when in bloom, and at other times is obtained by general

sweeping. The temptation to refer it to the short-fringed group in Section C is great, and only its unmistakably short costa stands in the way. Among the species in that Section it comes nearest to *equalis*, agreeing with it in its general blackness associated with very clear yellow halteres, its grey rather than brown wings, and in the stout abdomen of the male, but differing radically in the bare pleuræ, shorter costa, and smaller and more numerous tibial bristles. From any species in its own Section it is sufficiently differentiated by the bare pleuræ and very short costal fringe, the deep black limbs and clear yellow halteres, and by the distinct and fairly strong tibial bristles.

Lutescens.—A moderately common autumnal species, found at one time or another in pretty well every locality where I collect in Herefordshire, and probably therefore of general distribution. Its resemblance to *lutea* in Section C is very close, not only as regards colour, but also as to many of the details. The chief points of distinction are the much longer costa in *lutea*, the more strongly ciliated tibiæ (in *lutescens* the cilia are scarcely visible, though the form of the tibiæ is the same in both), and its shorter and stouter anal organ.

Nigrescens.—I have only seen three examples, all from Stoke Wood, the dates being ♂♂, 7/9/08 and 15/10/06, ♀, 26/9/04. That it is not a dark form of the preceding species is shown by its longer arista, shorter costal fringe, strongly armed and differently shaped tibiæ, and by other minor differences.

Albicaudata.—An autumnal species, which I take some years not uncommonly on the windows of the house, and more rarely by sweeping in the woods. The male is known at once by its curiously white hypopygium, but the female, as is so often the case with that sex, is less easy of recognition. The four large and approximated supra-antennal bristles, after the type in *rufipes* and most unusual in this Section, are perhaps its most critical character. It shares it however in common with the species next following, but there the smaller size of the insect, the bristly pleuræ, and the extremely long costal fringe (longer not only relatively but absolutely) are characters that should separate it at once from *albicaudata*.

Superciliata.—Three males and two females have been picked up at different parts of my home district—the males in May and June, and the females, one in May and the other in August. The strikingly long costal fringe, which cannot fail of notice, the four large and approximated supra-antennal bristles, the bristly pleuræ, and the bare tibiæ with their straight upper margin, are the chief features that distinguish it.

Spinicineta.—Mr. Collin meets with it at Newmarket as a winter and early spring species. My own specimens, five in number, have been taken in the garden or house from late August to October. The female has not yet been identified, and should probably be looked for among the puzzling nondescript forms at the end of Section C. It would almost to a certainty want the long hairs on the 6th abdominal segment so characteristic of the male, whilst the costa, which in the male approaches the limit assignable to Section D, might have just that extra length (a common female characteristic), which would lead one to place it in the other Section.

Sylvatica.—Not a common species; taken perhaps most often in May or a little later, and occasionally in the autumn. It seems to be a counterpart on a small scale of *scutellaris* in Section C, the chief distinction being the marked difference in the length of the costa, considerably less than half the wing length ($\frac{2}{3}$) in *sylvatica* and fully half in *scutellaris*. Other differences are the much smaller size of *sylvatica*, its darker body colour but paler wings, the coming off of the first thin vein at the fork instead of beyond it, and with a less pronounced curve, and the more moderate development of the hairs underneath the hind femora.

Hirticaudata.—A very small and scarce species, of which I have picked up at one time or another in my home district five examples, all males—four of them in the spring months, March, April and May, and one in July. The bristly hairs at the end of the abdomen give it a rough resemblance to *involuta*, but in that species the hairs become weaker in passing on to the hypopygium instead of stronger and more bristly as in *hirticaudata*, whilst the bare pleuræ in the one case and their bristly nature in the other will always satisfactorily distinguish them.

Manicata.—A common and widely distributed little species. Mr. Collin has long been acquainted with it; indeed, it was from him I borrowed the name. Mainly an autumnal insect, it is often to be found on the flowers of *Angelica* and *Heracleum*. The male, with its strikingly swollen metatarsi, is quite unlike any of its neighbours, but the female has nothing distinctive about it, and closely resembles in size and general appearance the female of the next species. I believe, however, they may be satisfactorily separated by the texture of the frons—smooth and almost shining in *manicata*, dull and rough looking from the coarse pubescence in *hirsuta*. It must not be confused with the little black *conformis* in Section C. There, however, the metatarsi are

swollen in both sexes, those of the female being as thick as in male *manicata* and those of the male considerably more so, fully as thick in fact as the tibiæ.

Hirsuta.—By no means so common as the preceding species; it occurs at the same time with it and under the same conditions, and is probably of wide distribution, for I have seen it from Newmarket and I think from Bonhill also. The large coarse hairs on the hypopygium, combined with its deep black colour and strongly bristled pleuræ, are rough and ready means of identifying it.

In working through the species in this Section two points have forced themselves into notice. One is the frequency with which the upper supra-antennal bristles are set wide apart and outside an alignment with the inner bristles of the middle frontal row, whilst the under ones, generally nearly as large, lie close together and considerably below them. It is especially among the smaller forms that this arrangement prevails; among the larger ones the bristles rather follow the pattern most usual in the other Sections, in which the upper pair lie inside this alignment, and the under pair, varying from large to minute, come nearly directly underneath and close to them. The other and more interesting point, since it illustrates the ready way in which the wings adapt themselves to their mechanical needs, is the absence in these short-costa species of a distinct curve at the commencement of the 1st thin vein. In those with a long costa a greater or less curve is generally present, in order seemingly to enable the vein the better to fulfil its function as a support or buttress to the costa. That this is its purpose here is, I think, shown by the fact that in the heavy female the curve is commonly bolder than in the smaller and lighter male. Where, however, the costa is short, it is the long and weak portion of the wing beyond that wants support, and so the 1st thin vein, instead of bending downwards into the wing space, comes off straight or nearly so, and acts as a sort of prolongation of the costa, including under the term not the costa only but also its framework of thick veins.

I have now passed systematically in review this huge complex of a genus as represented in our British fauna. Great as is the number of species here dealt with, many others there can be little doubt yet await discovery or exist undescribed in collections. Several indeed are even now known to me, and I hope shortly to describe them in a Supplement, which will at the same time be needed for some general remarks, and for the correction of those errors that have come to light whilst this article has been in progress.

A NEW SPECIES OF *LACCOBIUS*.

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

LACCOBIUS YTENENSIS, sp. n.

Ovalis, sat angustus, posterius acuminatus, niger, antennarum basi, palpis pedibusque flavis, prothorace lateribus sat anguste testaceis, elytris testaceis, punctis nigricantibus maculisque numerosis obscuratis; crebrius punctatus, elytrorum punctatura minus evidenter seriatim disposita. Long., 3½—4 mm.

Mas.: labro anteriori fenestris vitreis duabus magnis, parum distantibus, ornato.

This species is a very distinct one, though it has apparently escaped discrimination until now. The male character, of the labrum having two lenses, or goggles, of large size and short-oval form, and separated from one another by a rather less space than the transverse diameter of one of the lenses, is in itself sufficient to characterise the insect. In several members of the genus the males have no goggles, and in none of the species in which this peculiar structure is exhibited are the lenses similar in shape, and so little separated.

The species has no spot of pubescence on the middle femur of the male. It must be placed between *L. oblongus*, Gorb., and *L. regularis*, Rey.

L. ytenensis occurs in great profusion in the New Forest during the month of September. Outside our district, I know it by a small series found by Mr. Philip de la Garde in Devonshire, and a single specimen from Padstow (C. G. Lamb); Mr. Champion has also found it, very sparingly, in Devon and Cornwall. It is the insect I have given previously to various friends as "*L. sinuatus*," but it is certainly not the species Motschoulsky had in view when he proposed that name.

L. ytenensis varies a good deal in size, and in the colour of the posterior femora; these are usually extensively clouded with black, but are sometimes quite yellow. The maculation of the elytra is also subject to slight variation.

Brockenhurst: October 15th, 1910.

ENICMUS HISTRIO, Sp. Nov.: A BEETLE NEW TO BRITAIN.

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

Rather elongate, slightly convex, glabrous, head and thorax dull, elytra somewhat shining; reddish-testaceous, head and thorax a little darker, generally a fuscous patch near scutellum and at sides of elytra; head transverse, very

closely and rugosely punctured and channelled in the centre, temples distinct, slightly shorter than diameter of eyes. Antennæ testaceous, rather short, reaching to about the base of the thorax, club well marked, three-jointed, of which the first two are distinctly transverse; thorax rather variable, transverse, much narrower than elytra, anterior angles rounded or very slightly prominent, sides rounded in front and somewhat contracted in a straight line or scarcely sinuate behind, margins narrow, a very shallow, broad, longitudinal furrow in the centre, and a rather strong transverse impression towards the base, very closely and rather strongly, rugosely punctured; elytra somewhat convex and shining, rather short oval, evenly rounded at the sides, striæ with closely set, moderately large square punctures, interstices narrower than striæ, distinctly convex; under-side fuscous or black, shining; prosternum keeled between the anterior coxæ; metasternum, as in *E. transversus*, Oliv., with a large fovea near the anterior margin on each side, from which radiate a number of fine impressed lines; first ventral segment with about six very fine, short, impressed lines starting from near the posterior coxæ; legs testaceous; ædeagus simple, very slightly curved, about four times as long as broad, apex not sharply pointed. Length, 1.4—1.6 mm.

Enicmus histrio differs from *E. transversus* in many details. It is distinctly smaller and less elongate; the club of the antennæ is shorter; the thorax is more rugose and duller, and the borders are narrower; the elytra are shorter and broader in proportion, the striæ are much more strongly punctured, the punctures are more closely placed, and the interstices are more convex.

In *E. transversus* there is a single, well-marked, long, impressed line on the first abdominal segment. The ædeagus is entirely distinct in the two species. That of *E. histrio* is described above; in *E. transversus* it is a remarkable organ. It is long and thin, and sharply pointed at the apex, and is strongly bent twice at a right angle, somewhat like the letter Z, the basal portion being a little longer than the other two, which are equal in length.

This species is undoubtedly of very general distribution, and has simply been overlooked. Its usual habitat seems to be in hay. Mr. J. Collins seems to have been the first to suspect its distinctness from *E. transversus*, and has shown us a long series from the Oxford district. We can vouch for its occurrence also at Southport, Bradfield, Whitbourne-on-Teme, Symond's Yat, Mathon, and West Malvern—the last four being Herefordshire localities.

Dr. Sharp has very kindly helped us to go into the description of closely allied species and varieties, and agrees that this insect is undescribed. Neither is it one of recent introduction into this

country, as the Southport specimen was taken in 1898, and there are much older examples in Dr. Sharp's and Garney's collections.

October 13th, 1910.

ATHETA (HOMALOTA) PICIPENNIS, MANNH., A NEW BRITISH BEETLE.

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

Head and thorax brassy black, elytra brown, these parts being plainly shagreened and moderately shining, hind body shining black; head very finely and sparingly punctured; antennæ pitchy-black, furnished with rather long outstanding hairs, somewhat thickened towards the apex, 3rd joint equal to or a little longer than 2nd, 4th—6th slightly longer than broad, 6th—10th as long as broad, the last nearly double as long as the penultimate, sharply pointed; thorax narrower than elytra, one-third broader than long, moderately rounded at sides and slightly narrowed behind, finely pubescent, closely and rugosely punctured, sides with rather strong outstanding setæ, often with a depression at the middle of the base and a slight central furrow; elytra one-third longer than the thorax, moderately finely and very closely rugosely punctured, finely pubescent; abdomen narrowed behind, with segments 2—4 finely and rather diffusely punctured, the remainder very finely and very sparingly punctured, furnished at sides with distinct outstanding setæ; legs brownish-testaceous, femora sometimes darker, intermediate and posterior tibiae furnished with two long bristles. Length, 2·3—2·8 mm.

Male with posterior margin of 7th segment of hind body emarginate.

A. picipennis is related to *A. atramentaria*, Gyll., especially in having the front parts brassy; but these parts, particularly the elytra, are more finely and much more closely punctured. The antennæ are less thickened towards the apex, the penultimate joints being about as long as broad, instead of distinctly transverse, and the last joint is more pointed; and the legs are lighter in colour.

I took one specimen at Dalwhinnie, Inverness-shire, in September, 1909, and a few at Aviemore in rotting fungus on September 10th, 1910. There is no reason why this species should be confined to Scotland, as Ganglbauer records that, although rare, it is found over the greater part of the Palæartic region.

Bradfield, Berks.:

October 15th, 1910.

ON SOME EUROPEAN SIPHONAPTERA.

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

Through the kindness of Dr. Geza Horváth we have lately been able to examine specimens of *Ischnopsyllus wagneri*, Kohaut (1903). The insect is undoubtedly identical with *I. intermedius*, Rothschild (1898).

In Tijdschr. v. Ent., 1909, pp. 96—108, Dr. A. C. Oudemans described a female and a male of *Ischnopsyllus* under the new name of *I. schmitzi*. In a subsequent paper (Zool. Anzeig., 1909, p. 736) the author stated that the female belonged to *I. intermedius*, Rothschild. The description of the specimen, however, does not agree with any of our females from England and the Continent in several of the details on which Oudemans lays stress, for instance, in the bristles of the abdomen and legs. As the author states his description and figures to be "peinlichst genau," it is perhaps venturesome on our part to assume that some of his statements are nevertheless incorrect, and that the female of *schmitzi* is after all the same as *I. intermedius*.

The male of *schmitzi*, of which the author very kindly gave us a specimen in exchange, proves to belong to *I. simplex*, Rothschild. (1906).

The synonymy of these bat-fleas therefore reads:—

1.—ISCHNOPSYLLUS INTERMEDIUS, Rothschild. (1898).

Ceratopsylla intermedius, Rothschild., Nov. Zool., p. 543, t. 17, fig. 15 (1898).

Ceratopsylla wagneri, Kohaut, Állat. Közlem. ii, p. 62, t. 7, fig. 3, 8.9.10 (1903).

Ischnopsyllus schmitzi, Oudemans, Tijdschr. v. Ent., p. 97 (1909) (♀ only; ♂ alia species).

2.—ISCHNOPSYLLUS SIMPLEX, Rothschild. (1906).

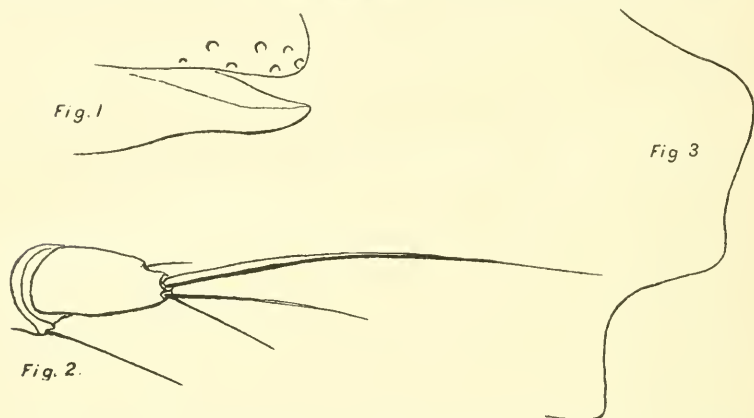
Ischnopsyllus simplex, Rothschild., Nov. Zool., p. 186 (1906).

Ischnopsyllus schmitzi, Oudemans, *l.c.* (♂ only; ♀ alia species).

Besides these two species five more eight-combed bat-fleas are known from Europe, namely, *I. elongatus*, Curt. (1832), *I. obscura*, Wagn. (1898), *I. octactenus*, Kolen. (1856), *I. variabilis*, Wagn. (1898), and *I. decimpilata*, Wagn. (1898); to which I can add another species, which, however, may possibly be the true female of *obscura*. The specimens described as females of *obscura* by Wagner probably he himself states, did not belong to that insect.

3.—*ISCHNOPSYLLUS BRACHYSTYLUS*, spec. nov. (Figs. 1 and 2).

We have two specimens, which, in general appearance, most nearly resemble *I. elongatus*, Curt. (1832), but are at once distinguished from both this species and *I. intermedius*, Rothsch. (1898), by the short



anal stylet. The two specimens differ considerably in detail. But as they were obtained off the same host on the same day, presumably off the same individual of the host, and as in the allied species also there is a great amount of variation in such details, we believe we are justified in treating the two specimens as belonging to one species.

The head is a little less rounded than even in *I. intermedius*. The numbers of spines in the eight combs are in the type 41, 43, 28, 41, 34, 25, 13, and 16, and in the second specimen, 41, 39, 30, 35, 32, 23, 13, and 11. The mesonotum bears in the type a row of about 20 slender spines on the inside before the apical edge, and in the other example 12. There are on the epimerum of the mesothorax 3 or 4 apical bristles and 4 or 5 lateral ones (2 or 3, 2, 3 or 4). The sternites of segments 4 to 6 of the abdomen have a row of 6 bristles on each side in the type, and of 5 in the second specimen. The seventh sternite bears in the type an elbowed row of 13 bristles on one side and 16 on the other, with six or seven smaller bristles in front of the row, the numbers in the second individual being 11 bristles in the row, and 3 or 4 in front. In shape the seventh sternite resembles that of *I. intermedius*, being narrower than in *I. elongatus*. The eighth sternite (Fig. 1) is elongate-triangular in lateral aspect, differing therein considerably from *I. elongatus*, but less from *I. intermedius*. The stylet (Fig. 2) is very short, being much shorter than in any other eight-combed bat-flea.

The bristles on the first segment of the mid and hind tarsi are longer than in *I. elongatus*, being practically the same as in *I. intermedius*. The hind tibia bears 12 or 13 short bristles along the hind edge between the second notch and the apex, the hind tibia having 9 or 10 notches inclusive of the apical one. As in the allied species, only the first and second notches bear a pair of diverging spines.

Two females off *Vespertilio serotinus*, obtained at Malcoci Tulcea, Roumania, on May 4th, 1908, by A. Rettig.

4.—CTENOPHTHALMUS PROVINCIALIS, Rothsch. (Fig. 3).

C. provincialis, Rothsch., Ent. Mo. Mag. (2), vol. xxi, p. 207, Fig. 3 (1910).

This species was described from a single male found on *Mus sylvaticus* at Valescure, South France (not Valescura, Portugal, as misprinted in the original description). Dr. K. Jordan caught a series of both sexes of the same insect in July of this year at Valloire, Savoie, off *Arvicola agrestis*. The males agree well with the type specimen. The female is distinct from that sex of *C. agyrtes* Heller (1896), and agrees with *C. baticus*, Rothsch. (1910), in the absence of a narrow lobe beneath the large one in the seventh abdominal sternite. This sternite is characterised in *C. provincialis* by the large lobe being emarginate as shown in the figure (fig. 3). Sometimes the sinus is deeper, in which case the lower portion of the lobe is transformed into a small process, which is probably homologous with the narrow separate lobe found in *C. agyrtes*.

Tring: September, 1910.

THREE SPECIES OF THYSANOPTERA (TUBULIFERA) NEW TO THE
BRITISH FAUNA.

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

Of the following three species, all of which are described in Uzel's "Monographie der Ordnung Thysanoptera," the occurrence of *Liothrips hradezensis* is perhaps the most interesting, there having been but one example previously known. The last-mentioned insect is apparently attached to elm.

The other two species are recorded on the strength of single pinned specimens in the British Museum.

Sub-Order TUBULIFERA.

✓ CRYPTOTHRIPS LATA, Uzel.

"Monographie der Ordnung Thysanoptera," p. 230, pl. iii, fig. 24, pl. vii, figs. 118—122, 1895.

A single British example is in the British Museum. A very broad and distinct form, which is most closely related to *C. nigripes* (Reuter), from Finland, differing chiefly in its shorter and broader head, and the relatively longer antennæ.

Distribution: — BOHEMIA (Uzel); FINLAND (Reuter); ITALY (Buffa); ENGLAND.

LIOTHRIPIUS HRADECENSIS, Uzel.

“Monographie der Ordnung Thysanoptera.” p. 262. pl. vii. fig. 146, 1895.

The antennæ of *Liothrips setinodis* (Reut.) are clear yellow, excepting only the two basal joints and the eighth joint which are dark brown, whilst in *L. hradecensis*, Uzel, the third joint only is clear yellow, the fourth and fifth joints being tinged with brown distally, and the apical half of the sixth and the whole of the seventh and eighth joints are dark brown.

In July of this year I discovered a number of *Liothrips hradecensis*, Uzel, on the under-side of the leaves of elms growing by the Durham banks of the Tees near Piercebridge, and on re-examining the specimen found on elm at Gibside, and recorded by me (Ent. Mo. Mag., xlv, p. 4, 1908) as *L. setinodis*, I find that it is referable to *L. hradecensis* also, whilst there are two unlabelled examples (probably from the south of England) in the British Museum.

The species was described by Uzel from a single ♀ found on the under-side of the leaf of *Heracleum sphondylium*, in September, Bohemia.

Distribution: — BOHEMIA (Uzel); ENGLAND.

Genus ACANTHOTHRIPIUS, Uzel.

ACANTHOTHRIPIUS NODICORNIS (Reuter).

Phloeothrips nodicornis, Reuter, “Thysanoptera Fennica,” p. 16, 1880.

There is a single imperfect and pinned example of this distinct insect in the British Museum, unlabelled, but probably from the South of England.

This form is the *Phloeothrips ulmi* (1836) and *P. coriacea* (1839) of Burmeister, and apparently the *Hoplothrips corticis* of Amyot and Serville.

Until this year, *A. nodicornis* (Reut.) was the only European representative of the genus, but we have recently described a second species, *A. bidens*, Bagnall, from Hungary, easily distinguished by the two small teeth at the apex of the fore-femur within, and the exceptionally long bristle at each anterior angle of the prothorax.

Distribution: — Apparently of wide European distribution, and recently recorded from North America.

Penshaw Lodge, Penshaw, Co. Durham:

October 13th, 1910.

MADEIRAN TINEINA (LEPIDOPTERA).

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

OLETHREUTIDAE.

EUCOSMA Hb.

2129.0. *Eucosma* sp.? (near *tetraquetra* Hw.).*Steganoptycha* sp. Wlsm. Tr. Ent. Soc. Lond. 1894. 537, 541 sp. 15 (1894) ¹.*Type* ♂ (13576) Mus. Wlsm., B.M.**Hab.*: **Madeiras**—MADEIRA: (*Wollaston*) ¹.The single specimen on which this record was founded, a ♂ in poor condition, with costal fold, should be referred to *Eucosma*.

HEMEROPHILIDAE.

HEMEROPHILA Hb.

2318.1. *Hemerophila threnodes*, sp. n.

Antennae black, fading to dark chestnut-brown, with white annulations, more pronounced towards the base. *Palpi* upturned as high as the crown of the head, stout, moderately smooth; blackish, profusely speckled with hoary whitish. *Head* and *Thorax* dark chestnut-brown, profusely dusted with hoary whitish scales. *Forewings* dark chestnut-brown, speckled with bluish white scales which cease, partially or entirely on two outwardly bent transverse bands of the dark ground-colour, one before, and the other scarcely beyond the middle, and entirely on a terminal band of the same which is widened across the apex to the costa, and attenuated to the tornus; small irregular streaks of dull white occur along the outer edge of the postmedian dark band, an outwardly oblique one on the costa being alone conspicuous—these show also on the under side; there are also some similar white scales on the costa, scarcely before the middle; cilia dark chestnut-brown. *Exp. al.* 15 mm. *Hindwings* dark unber-brown, with a curved streak of whitish speckling from the end of the cell to the flexus; cilia brown, slightly tipped with whitish on the termen. *Abdomen* dark chestnut-brown, with transverse lines of whitish speckling at the junctions of the segments. *Legs* brown, speckled with white; the tarsi conspicuously banded with ivory-white.

Type ♀ (62296) Mus. Wlsm., B.M.*Hab.*: **Madeiras**—MADEIRA: V.1886 (*J. H. Leech*). Unique.

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

GLYPHIPTERYX Hb.

2332-1. *Glyphipteryx diaphora*, sp. n.= *Glyphipteryx* sp. Wlsm. Tr. Ent. Soc. Lond. 1894. 537, 545 sp. 39 (1894) (1).

Antennae bronzy fuscous. *Palpi* white, with black bars across the outer side, three on the median, and one on the terminal joint. *Head* and *Thorax* pale bronzy cupreous. *Forewings* dark bronzy fuscous, the colour becoming more intense, almost black, along the margins of the following white streaks: five costal streaks, the first pair on either side of the middle of the wing, running obliquely outward, tipped with iridescent rosy steel-grey, tending to converge about the upper angle of the cell—the first is shorter than the second; these are followed by a still shorter, outwardly oblique, streak, and, at an equal distance beyond this, by a pair of short converging streaks before the apex; there is a black, lunate spot at the apex, the cilia beyond it bronzy cupreous at their base, white at their apex, with a small uncate streak running through them at the extreme apex, a white streak forming an incision below the apical spot; the cilia are of the same pattern along the termen, with a pale line along their base; from before the tornus arises an inwardly bowed, erect, silvery white streak, terminated by a bright metallic sheen at its apex, beyond which, before the termen, are three detached, iridescent, metallic spots, but the most conspicuous marking is a strong silvery streak running from the base of the costa along the cell, about the outer end of which it terminates in a slightly attenuate obtuse point, directed upward toward the apex. *Exp. al.* 9—10 mm. *Hindwings* scarcely more than half as wide as the forewings; brownish grey; cilia tawny grey. *Abdomen* bronzy brownish grey. *Legs* bronzy fuscous, with the ends of all the joints tipped with white.

Type ♀ (14289) Mus. Wlsm., B.M.

Hab.: **Madeiras** (1)—MADEIRA (1): Funchal (*Wollaston*) (1); Monte, 6.III.1902, 14.IV.1904 (*Eaton*). Three specimens.

A very distinct and somewhat conspicuous species, which I recorded in 1894 as *Glyphipteryx* sp., recognising its distinctness but being unable to describe it from the badly worn specimen collected by *Wollaston*; the reception of two fine specimens collected by the Rev. A. E. *Eaton*, at Monte, near Funchal, enables me to supply the omission.

HYPONOMEUTIDAE.

BEDELLIA Stn.

4107. *Bedellia somnulentella* Z.

= **Phyllobrostis daphneella* Wlsm. Tr. Ent. Soc. Lond. 1894. 538, 555 sp. 66 (1894)—*nec* Stgr.

Hab. **Madeiras**—MADEIRA: The Mount (*Wollaston*).

“The record of the occurrence of ‘*Phyllobrostis daphneella* Stgr.’ in the Madeiras [Wlsm. Tr. Ent. Soc. Lond. 1894. 538, 555 no. 66] must

be corrected: examining again the fragment thus identified at the time, I find it to be a remnant of *Bedellia somnulentella* Z., which Stainton had already recorded from Madeira." [Wlsm. Pr. Z. Soc. Lond. 1907. 984 sp. 102 (1908)].

TINEIDAE.

OPOGONA Z.

4277·1. *Opogona subcervinella* Wkr.

n. syn. = *plumipes* Btlr.

Tinea subcervinella Wkr. Cat. Lp., B.M. 28. 477-8 sp. 78 (1863) ¹.

Laverna plumipes Btlr. Ann-Mag. NH. (4 s.). 17. 409 (1876) ².

Type ♂ *subcervinella* Wkr., B.M.; *plumipes* Btlr., B.M.

Hab.: **Mascarenes**—MAURITIUS ¹: RODRIGUEZ ². **Madeiras**—MADEIRA: Monte, Funchal, 13.IV.1904 (*Eaton*).

Two specimens, taken at light in the Bello Monte restaurant.

MICROLEPIDOPTERA OF GRAN CANARIA.

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

BLASTOBASIDAE.

ZENODOCHIUM Wlsm.

3069·4. *Zenodochium sostra*, sp. n.

Antennae ♂ biciliate, not notched; pale ochreous, the basal joint white. *Palpi* white, slightly shaded with pale greyish fuscous to beyond the middle of the median joint. *Head* and *Thorax* white. *Forewings* scarcely shining, white, with a faint shade of pale greyish fuscous dusting, along the costa at the base, and in a somewhat inwardly oblique, narrow, transverse shade-line from costa to dorsum at four-fifths from the base, above the middle of which is a minute dot of darker scales; a similar, but smaller dot is indicated on the cell about the middle of the wing; cilia faintly yellowish white; underside pale greyish fuscous. *Exp. al.* 10 mm. *Hindwings* shining, white; cilia faintly yellowish white. *Abdomen* silvery white. *Legs* dull white.

Type ♂ (98421) Mus. Wlsm., B.M.*

Hab.: **Canaries**—GRAN CANARIA: Las Palmas, 15.VI.1907 (*Stringer*). Unique.

Inconspicuous in appearance, but quite distinct from any described species of this genus.

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

Note on the destructive habits of Myelophilus piniperda.—On Pitch Hill (above Ewhurst, Surrey), Mr. H. J. Turner and I, on September 24th, 1910, noticed, with some surprise, the ground carpeted with twigs of Scotch fir. So abundant were they that on several square yards selected at random we counted from 40 to 80 such twigs, each being the whole growth of the present year and some 3 or 4 inches long, and with its attached leaves covering some 6 to 10 square inches of surface. They were remarkably evenly distributed, no doubt due to their falling by accident from the tops of well grown trees, of various sizes, but most perhaps 12 inches in diameter and in no case with the foliage within reach. A short examination showed that they had all been bored by some beetle and no doubt broken off by the wind. The beetles probably came from a large area close by, which had been burnt, about a twelvemonth ago (we were told), from which most of the dead timber had been removed, but on several still standing trees we found the characteristic burrow of *M. piniperda*, and the abundant holes from which the young brood had emerged, probably comparatively recently, and then committed the havoc we noticed. That it was recent followed from the fact that the fallen shoots and their leaves were quite mature and the buds for next year's shoots fully developed. The burrows into the shoots were quite at their bases, really rather into the previous year's growth, as evidenced by two or three of the present year's shoots having fallen together, the weak place being below their point of origin. The fracture was apparently usually near the hole of entry, the beetle burrowing downwards, and very little of the burrow was present in the fallen shoot and very rarely the hole of entry higher up. In some instances, however, the fallen piece included the whole or greater part of the previous year's growth, and in these cases the hole of entry was at the top, close to the base of the present year's shoots, and the burrow went down the whole length of last year's growth. The pith of the present year's shoot was in fact only interfered with close to its base (place of entry) and the greater part of the burrow remained on the tree in the majority of cases. We did not devote any long time to the search, but we failed to find a beetle, either in the fallen twigs or in the few trees in which they had been reared, which we examined. Beetles probably existed on the trees, in the scene of their depredations, but these regions were quite out of our reach.

The area of mischief was round the margin of the burnt area, a very large one, and extended for a width of 50 yards into the unburnt area, with the severity noted above, and for another 50 yards gradually diminishing in severity, though twigs were noticed on the ground half a mile off.

As to the damage done to the affected trees, it must be noted that the twigs seen were of course those blown off by the last wind of sufficient strength, and that most likely they were, notwithstanding their abundance, but a fraction of those damaged, probably in some cases all on the tree. It is most likely that the damage to the trees will be sufficient to make them succumb, next spring, to the ovipositing attacks of these beetles.

As I noted many years ago in the case of *Scolytus destructor* in elms, we should have an instance illustrating that the beetles only oviposit in dead or

dying trees, but also, that by other than the ovipositing attack, they may themselves be the cause of the predisposing weakness.

I make this note as it concerns the most severe attack by this beetle that I myself have happened to come across, and one probably not often exceeded in extent in England.—T. A. CHAPMAN, Betula, Reigate: *September, 1910.*

Note on the sexual characters of Longitarsus agilis, Rye.—During a recent visit to Seaton, Devon, August 30th—September 10th, I found (on September 7th and 8th) *Longitarsus agilis*, Rye, in abundance on a particular cluster of plants of *Scrophularia nodosa*, and as I have been asked more than once by continental and British entomologists for specimens of it, numerous examples were captured, notwithstanding the fact that many of them were immature.* On examining this series when mounted, I found that (1) there was no variation in colour, all being uniformly testaceous, the posterior femora included, the outer joints alone of the antennæ being infusate; (2) that more than half of the specimens had rudimentary or abbreviated wings (and were therefore incapable of flight), and rounded shoulders to the elytra; (3) that the fully-winged examples with prominent humeri were females, and the others (with slightly thickened basal joint to the anterior tarsi, &c.) males. In their uniform pallid colour these Devonshire specimens resemble *L. pullens*, Foudr., nec Weise and Bedel = *caninæ*, Buys. (found on *Scrophularia canina*, a non-British plant), for examples of which I am indebted to M. Henri du Buysson, but differ from them in their more diffuse elytral punctuation. The insect found by Commander Walker at Halstow, Kent, on *Scrophularia aquatica*, and recorded by him as *L. rutilus*, Ill., also has the wings fully developed in the ♀ and abbreviated in the ♂; it appears to me to be scarcely more than a form of *L. agilis*, deep red in life and with rather coarser elytral punctuation. It is probable, however, that this sexual character will prove to be inconstant in *L. agilis*, but the differences are so obvious in the Devonshire insect that it is desirable to call attention to them. My specimens from Mickleham, Tilgate, Newbury, and Oxford are few in number, and apparently fully-winged, but I am not quite certain as to the sex of all of them. It may be that the male is rare, as in the case of certain species of the genus *Haltica*.—G. C. CHAMPION, Horsell, Woking: *October 10th, 1910.*

Hydroporus ferrugineus, Steph., &c., at Seaton, Devon.—In addition to the above-mentioned *Longitarsus agilis*, the following species were noticed at Seaton: *Cymindis humeralis*, *Pristonychus terricola*, and *Alcochara cuniculorum*, in rabbit burrows on Beer Head; *Pterostichus anthracinus* and *Anchomenus micans*, along the banks of the Axe; *Hydroporus ferrugineus*, in running water at Branscombe, with *Agabus paludosus*; *Bledius spectabilis*; *Stenus melanopus* and *S. guttula*; *Necrodes littoralis*, on the shore and on Beer Head; *Meligethes fulvipes*, in abundance on a yellow-flowered Crucifer; *Corticaria lambiana*, one specimen, swept up; *Crepidodera ventralis*; *Ceuthorrhynchus nasturtii*, rarely, on its usual plant, watercress.—*Id.*

* Those placed in spirit retained their colour when dried, others placed in laurel became permanently discoloured.

A beetle which produces eloquence.—The following extract is of interest. It is taken from a book recently published, entitled, "With a Prehistoric People: the Akikuyu of British East Africa," by W. Scaresby Routledge and Katherine Routledge (page 206): "Intelligence is much prized and so is eloquence. A particular beetle (*Melaspis glabripennis*, Kolbe), carries with it the power of conviction, and, if a man finds one of these he rejoices greatly. He takes a banana and makes a hole in it, puts the beetle in the banana and dries it in the sun. Then the day before he has to go to a shauri (or debate) where he is anxious that his words shall receive due attention, he eats the banana and the beetle and tells no one. He finds himself gifted with many words, every one hangs on his utterance, his arguments are overwhelming, and no one knows that he has eaten the beetle."

Probably there is something in this, as the possession of the beetle, and the evident traditional belief in its powers, of themselves serve to give confidence and help among reasoners. I have never heard of any such custom before but possibly other entomologists may know of something analogous to this.—W. W. FOWLER, Earley Vicarage, Reading: *September 19th*, 1910.

A melanic form of Athous hæmorrhoidalis from Dartmoor.—During the past summer Mrs. A. E. Holt-White, of Princetown, has been good enough to send me several consignments of beetles which she had taken on Dartmoor. From amongst them I have the pleasure to record a melanic form of *Athous hæmorrhoidalis*, F. Unfortunately there was a single specimen of it only. On writing to Mrs. Holt-White about the insect, she replied: "I remember the one I sent perfectly . . . I saw a similar one a day or two after, but being busy with something else, I did not take it immediately, and when I looked for it later there was no beetle to be found." My friend, Mr. E. A. Newbery, has seen the insect, and tells me that the variety is unknown to him. He further says that, according to du Buysson, the type form of *A. hæmorrhoidalis* is dark brown, almost black; the var. β dark brown-black with sometimes a greenish reflection, and the elytra more strongly punctate-striate. The Dartmoor specimen is not punctured differently from the usual pale form. It is black with the elytra showing a tinge of pitchy colour in certain lights; the legs pitchy-black with middle of tibiae slightly less dark, and terminal joint of tarsi ferruginous.—J. H. KEYS, 2, Freedom Park Villas, Plymouth.

Further captures of Galerucella fergussoni, Fowl.—The Rev. W. W. Fowler (p. 228 *ante*) describes a new species of *Galerucella* taken this year by Mr. Anderson Fergusson. There is, however, no mention of this insect having been taken or recorded previously. In 1900 I took three specimens of this species at Possil Marsh, and it is included in the list of *Coleoptera* compiled by Mr. Fergusson for the "Flora and Fauna of the Clyde Area" in 1901. These were identified for me at that time, through Mr. Fergusson, by the Rev. Alfred Thornley as dark varieties of *Galerucella nymphææ*, and if my memory serves me correctly, Mr. Thornley experienced considerable difficulty in placing the insect. They now turn out to be the *G. fergussoni* the Rev. Mr. Fowler has described. The other specimens I took at Milngavie, also named and recorded

as *G. nymphææ* in the same list, I now understand should be *G. sagittariæ*, but as all of them were handed to Mr. Fergusson some time since for reference, and are still in his possession, I cannot with much confidence draw comparisons; besides the great difference in the length of the second joint of the antennæ, which I pointed out at the time, I believe there is also a greater difference in the shape of the thorax than Mr. Fowler points out.—ANDREW ADIE DALGLISH, 21, Prince's Street, Pollokshields, Glasgow: October, 1910.

Capture of Chærocampa nerii.—On September 24th a fine specimen of *Chærocampa nerii* was taken on a lamp at Sydenham, and is now in the Joicey Collection, Bourne End, Bucks.—A. NOAKES, The Homestead, Bourne End, Bucks.: October 18th, 1910.

Luperina guenéei, Dbl., on the Lancashire Coast.—*Luperina guenéei*, reinstated in the British List at the end of last year, from specimens taken on the Lancashire Coast, where over three dozen examples were secured at St. Annes-on-the-Sea in September, 1909, was this year, to my own knowledge, again taken in considerable numbers during the latter half of August and first half of September. As it has now been reported from near Blackpool, St. Anne's-on-the-Sea, and Southport, on the Lancashire Coast, in addition to the original locality at Rhyl in North Wales, it is evident that it has a fairly wide range on the sandhill districts of the West Coast of Britain, and the marvel is, that it has so long remained undetected since it was first described and named from the Rhyl specimens by the late Henry Doubleday in the "Entomologist's Annual" for 1864, p. 123. The species seems to vary but little, in this respect differing greatly from *Luperina testacea*, which, on the Lancashire Coast as in many other localities, shows a great range of variation; *guenéei* is very constant to its rather bright grey colouring, varying a little from pale to darker. Several very dark melanic specimens were, however, taken this year, but there was apparently little tendency to intermediates between the comparatively rare melanic and the type forms.—GEO. T. PORRITT, Dalton, Huddersfield: October 11th, 1910.

Nomada argentata, H.-Sch., near Oxford.—On August 7th last I was collecting near Tubney, Berks, when, during a very brief period of sunshine, I netted, from a small patch of *Knautia arvensis*, a male and female *Nomada argentata*; and at the same time and place a few *Andrena cetti*, Schr., with which this *Nomada* is usually associated. It is interesting to find this very rare inquiline in a new district so far from the few localities from which the species has hitherto been recorded. It was first taken by the late Mr. S. Stevens, at Arundel, and described under the name of *N. atrata* by Mr. F. Smith. Subsequently, the late Mr. Edward Saunders and the Rev. F. D. Morice captured both sexes at West Clandon, Surrey, and near Woking (*vide* Ent. Mo. Mag., 1900, p. 204; and 1901, p. 278). I feel sure that if looked for where its host *A. cetti* occurs, the distribution of *N. argentata* would be found to be more general than is usually supposed.—A. H. HAMM, 22, Southfield Road, Oxford: October 18th, 1910.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
Thursday, Sept. 8th, 1910.—Mr. A. SICH, F.E.S., Vice-President, in the Chair.

Mr. J. P. Barrett exhibited bred *Hyles euphorbiæ* from Sicily, and a number of reeds from which larvæ and pupæ of *Nonagria arundinis* had been extracted by birds. Mr. Ashby, a series of *Anomala frischi* from the New Forest, three-fourths of which were of the beautiful blue-green variety. Mr. West (Greenwich), a short series of the rare Homopteron, *Oliarus leporinus* from Holmsley, New Forest. Mr. Newman, long varied series of *Agrotis cinerea* from N. Kent and *Pachnobia alpina* from Ramoeh; *Euchelia jacobææ* with red markings united; a number of *Spilosoma fuliginosa*, bred in August from Aberdeen ova laid in June, which were of the red southern form; and a varied series of *Amorpha populi*, including a unicolorous specimen and one with a greenish band. Mr. Step, for Mr. Bishop, a cluster of *Drosera intermedia* from Cut-mill, which had captured a dragon-fly, *Agrion puella*. Dr. Hodgson, a gynandromorphous *Brenthis euphrosyne* from Ashdown Forest. Mr. Sich, shells of the ova of *Coleophora niveicostella* on thyme, cases of *C. potentillæ* (?), and of *C. paripennella*, and mines the of larvæ of *Cemistoma scitella* on hawthorn. Dr. Chapman showed a series of slides illustrating variations, chiefly structural, points in relation to the "Blues," especially *P. argus*, *A. coridon*, and *A. thetis* (*bellargus*); their larvæ at various stages, characteristic hairs, honey glands, &c.; pupal structure, such as the curious pocket in *P. argus* and *A. thetis* between segments 4 and 5 of the abdomen, to receive the ends of the legs and antennæ; the male appendages, to illustrate their characteristic forms in the Plebeids; a series of specimens of the teeth at the end of the clasp of *P. argus*, and also of a number of allied species, showing the great variation of these parts in *P. argus*, and quite impossible to confound with the other species, where variation might be equally great, but specimens were not available for this. The specimens were all pressed quite flat so as to be perfectly comparable.

Thursday, September 22nd, 1910.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Dr. Chapman exhibited a bred series of a second brood of *Agriades eoridon* from ova laid by spring imagines taken in the Riviera. Mr. West (Ashstead), a bred series of *Malacosoma neustria*, containing a good proportion of very light and very dark forms in both sexes. Mr. Andrews, short series of the Diptera *Pegomyia setaria* and *Isopogon brevirrostris* from Chattenden, Kent, and Shoreham respectively. Mr. Newman, a *Celustrina argiolus* ♀ with very wide black margin and spotted fringe; a *Pachnobia hyperborea* in which a radial segment of the hind-wing has the rich markings of the fore-wing; on orange *Aretia caju* with fore-wings having only a few small blotches of dark marking; several forms of *Angerona prunaria* uniform and richly marbled; an *Adopæa lineola* with

xanthic discal patches on all wings, and an *Abraxas grossulariata* extremely pale, with only a few scattered traces of black and yellow markings. Mr. Kaye, for Mr. Percy Richards, a curious and unique specimen of the genus *Zanclognatha*, with a combination of the markings of both *Z. grisealis* and *Z. tarsipennalis*, but considered as being the former species. Mr. Step, the galls of *Cynips kollari* (?) from Bookham and compared them with *C. tinctoria* (?) brought from the Riviera by Dr. Chapman. Mr. Turner, a box of Geometers which he had received from West Australia.—HY J. TURNER, *Hon. Secretary.*

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 5th, 1910.*—

Dr. F. A. DIXEY, M.A., M.D., F.R.S., President, in the Chair.

The Secretary read the reply to the Address to the King and to Queen Alexandra.

The President announced that the *Conversazione* postponed from last May was unavoidably postponed until next year.

Mr. George William Vitalli de Rhe Philipe, of Calcutta, and Dr. Charles Ernest Lakin, M.D., M.R.C.S., F.R.C.S., of 2, Park Crescent, Portland Place, W., were elected Fellows of the Society.

The President exhibited an impression of the new seal of the Society, prepared from a design made by Professor Selwyn Image, M.A., Slade Professor of Fine Art in the University of Oxford, and a Fellow of the Society. Mr. G. C. Champion, two living examples of *Melanophila acuminata*, captured at Woking on September 17th last. Mr. E. A. Butler, specimens of three rare species of British *Hemiptera-Heteroptera*, viz., (a) *Mesovelia furcata*, M. and R., and (b) *Cicadula cyanæ*, Boh., both from leaves of *Potamogeton natans* in Epping Forest; and (c) *Cyrtorrhinus geminus*, Flor, from Broxbourne—a recent addition to the British list, only two British specimens being at present known. Mr. A. H. Jones, a series of *Pieris manni*, males only, from the valleys of the lower slopes of Mont Canigon, near Vernet-les-Bains, taken at the end of June last, with examples of *P. rapæ*, and *P. ergane* from Italy for comparison. Mr. P. J. Barraud, a case containing *Pieridæ* from the neighbourhood of Formia, Central Italy, including *Pieris rapæ*, L., and var. *metra*, Stephens; *Pieris manni*, Mayer, and var. *rossii*, Stefanelli, and ab. *erganoides*, Stefanelli; and *Pieris ergane*, Hübn. With these examples he showed also enlarged photographs of male and female specimens of the summer forms of the above-named species to illustrate the difference in the character of the markings and shape of the wing; and enlarged photographs of the male genitalia of each of the above-named species, exhibiting the difference in the shape of the clasper. Commander J. J. Walker (a) a "co-type" of *Austrostylops gracilipes*, Lea, from Bridgetown, West Australia; (b) a series of *Carabus violaceus*, L., var.

exasperatus, Curtis, taken by Mr. F. C. Woodforde at Bude, where this well-marked race appears entirely to replace the ordinary form of *violaceus*; and (c) 4 examples of *Hæmonia appendiculata*, Panz., taken near Kidlington, Oxon, August, 1910; also (d) a specimen of *Cryptophagus subdepressus*, Gyll., from Wytham Park, Berks, with the right antenna duplicated from the 3rd joint. Mr. F. H. Rosenberg, a living beetle of the genus *Alindria*, received in a collection of preserved *Coleoptera* from Abyssinia, when this insect was found to be alive. The insect has the habit of simulating death on being alarmed, which probably accounts for the collector having packed it up without noticing that it was alive. Mr. H. St. J. Donisthorpe, two nests of ants to illustrate his observations on the founding of nests of *Formica rufa* by a ♀ of that species in nests of *Formica fusca*, and also made some remarks on the association in nature, both with *F. fusca* and *F. exsecta*. Mr. J. W. Tutt, a fourth British example of *Xylophasia zollikoferi*, taken in September, 1905. Dr. T. A. Chapman, several cases containing series of *Agriades coridon*, var. *meridionalis*, Tutt, ♂ (= *constanti*, Reverdin), and gave an account of his breeding experiments to show that this form is double-brooded. Mr. J. W. Tutt said the Rivieran race of *A. coridon* was exceedingly interesting as providing the only case recorded where the species is certainly double-brooded, he also gave an account of the geographical distribution of the species, and the differences of marking in the various races. Mr G. Meade-Waldo read a note received by him from Mr. J. C. Moulton upon the "praying attitude" of the larva of *Hymenopus bicornis* posing to appear like an orchid in flower, and exhibited an example of a Mantis. The Rev. G. Wheeler gave an account of an entomological excursion made by him in the Abruzzi, and exhibited many interesting species of butterflies met with by him in that region; and a few also from Subiaco in the Latian Apennines. *Pieris ergane* was found to be somewhat widely distributed, having been taken at Sulmona, 1300 feet; above Subiaco, about 2000 feet; and at Roccarso, over 4000 feet. There was also a series of very strongly marked *Hesperia cirisii*, some of which approached somewhat closely to *H. cynaræ*. *Polyommatus eros*, of a much deeper blue than is usual in the Alps was abundant at and above 4000 feet, i.e., nearly 2000 feet lower than normal in the Alps; other unexpected captures were *P. amanda* and *Limenitis camilla*, both at over 4000 feet. Besides these was a *Pontia daplidice* ♂ from Rome, showing distinct indications of a black spot near the middle of the inner margin of each fore-wing on the upper-side. Mr. E. Dukinfield Jones, lantern slides of *Lepidoptera* in natural colours, photographed by the Dufay Dioptrichrome process. The advantages over other plates are the greater transparency and the facility of working, giving little more trouble than an ordinary negative. Miss Margaret E. Fountaine communicated a paper on "Descriptions of some hitherto unknown, or little known, Larvæ and Pupæ of South African Rhopalocera, with notes on their Life Histories." Professor A. Jacobi, a paper, "Remarks on the Cicadoid Genera *Lembeja*, Dist., and *Drepanopsaltria*, Breddl." Mr. Arthur M. Lea, a paper "On a new Genus of *Stylopidæ* from Australia."—H. ROWLAND BROWN, *Hon. Secretary*.

FURTHER NOTES ON THE GENUS *COLON*.

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

At the end of last year Mr. P. Harwood asked me to examine some *Colons* which he had taken during the year; among them I found a ♂ *C. appendiculatum*, Sahlb., and an immature looking specimen which I have since identified as *C. calcaratum*, Er., both taken at Burghclere, Hants. The bad weather this year has given me very few chances to hunt this spot, but on June 21st Mr. Tomlin and I spent a few hours evening sweeping there with a very satisfactory result, catching a ♀ *C. appendiculatum* and a fine ♂ *C. rufescens*, Kr. On July 13th, one of the very few suitable evenings this year, I spent from 5 to 8 p.m. sweeping the same 100 yards or so of long grass, obtaining two *C. calcaratum* and several other good beetles, including *Anisotoma brunnea*, Sturm, and *Prionocyphon serricornis*, Müll. Two or three more visits paid by Mr. Tomlin and myself have produced *C. angulare*, Er., and *C. denticulatum*, Kr. This material has given me the opportunity of thoroughly studying the British members of the genus. In all the tables of identification I have seen very few specific characters are given, except in the case of males, so that the student finds it almost impossible to identify a single female specimen. In the following table I hope I have overcome this difficulty. I have deleted two species which are given in Beare and Donisthorpe's Catalogue and added *C. calcaratum* which they had erased from the list, as the records of its captures were hitherto doubtful.

Dr. Sharp has kindly allowed me to examine his specimens of supposed *C. puncticolle*, Kr. The one recorded by Fowler from an unknown locality is a ♀, and only differs from *C. serripes* in having the thorax slightly more strongly punctured. I have a ♀ specimen from Bradfield which exactly corresponds to it. As *C. puncticolle* is recognised almost entirely by the ♂ characters and the "much stronger" (Ganglbauer) punctuation of the thorax than in *C. serripes*, it can hardly be included in the British list on these two ♀ examples only. Dr. Sharp's two specimens, a pair, from Dumfries, are undoubtedly only *C. serripes*.

C. microps, Czwal., described from a single female specimen, seems to me a very unsatisfactory species, especially as no further examples have turned up during the last 29 years, and I think there is little doubt it is an abnormal specimen of some allied species.

The following table of the British species of *Colon* is based on the characters common to both sexes:—

I. Tarsi linear.

- i. 8th joint of antennæ not or scarcely narrower than 9th; thorax as broad as elytra, and about as strongly punctured; form long oval...
C. viennense, Herbst.
- ii. 8th joint of antennæ distinctly narrower than 9th; thorax broader than elytra, and more strongly punctured; form shorter, oval...
C. serripes, Sahlb.

II. Tarsi dilated, more strongly in male.

- i. Form much broader; border of elytra near base broad and distinctly visible from above *C. latum*, Kr.
- ii. Form longer, oval; border of elytra much narrower, and not or scarcely visible from above.
1. 8th joint of antennæ obviously narrower than 9th; thorax about as long as broad, deeply and closely punctured, more strongly than elytra *C. angulare*, Er.
2. 8th joint of antennæ as broad as, or scarcely narrower than, 9th; thorax distinctly transverse.

A. Thorax more strongly punctured than elytra.

- a* Last joint of club of antennæ scarcely narrower than the penultimate; thorax deeply and rather diffusely punctured; sutural stria, towards the base, deep and strongly sinuate; form elongate and parallel-sided...
C. rufescens, Kr.
- b*. Last joint of club of antennæ distinctly narrower than penultimate; sutural stria, towards the base, evanescent and almost straight.
- a**. Form parallel-sided; punctuation fine; pubescence very fine and dense; sides of thorax slightly sinuate before posterior angles *C. dentipes*, Sahlb.
- b**. Form fusiform; punctuation stronger; pubescence longer and coarser; sides of thorax not sinuate, posterior angles blunter.
- a*†. Outer border of anterior tibiæ straight, simply right-angled at apex; thorax rather dull ... *C. zebci*, Kr.
- b*†. Outer border of anterior tibiæ distinctly curved, ending in a small sharp projecting tooth or very acute angle; thorax shining *C. brunneum*, Latr.

B. Thorax very finely and not more strongly punctured than elytra.

- a*. Elytra more evenly rounded at sides, broadest about the middle, without traces of striæ; colour dark brown; length, 1·8 to 2·2 mm. *C. denticulatum*, Kr.
- b*. Elytra broadest near the base.
- a**. Size larger, length, 2 to 2·8 mm.; colour generally dark brown; elytra with slight traces of striæ...
C. appendiculatum, Kr.
- b**. Size smaller, length, 1·5 to 1·8 mm.; colour testaceous or reddish-brown; elytra without traces of striæ...
C. calcaratum, Er.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

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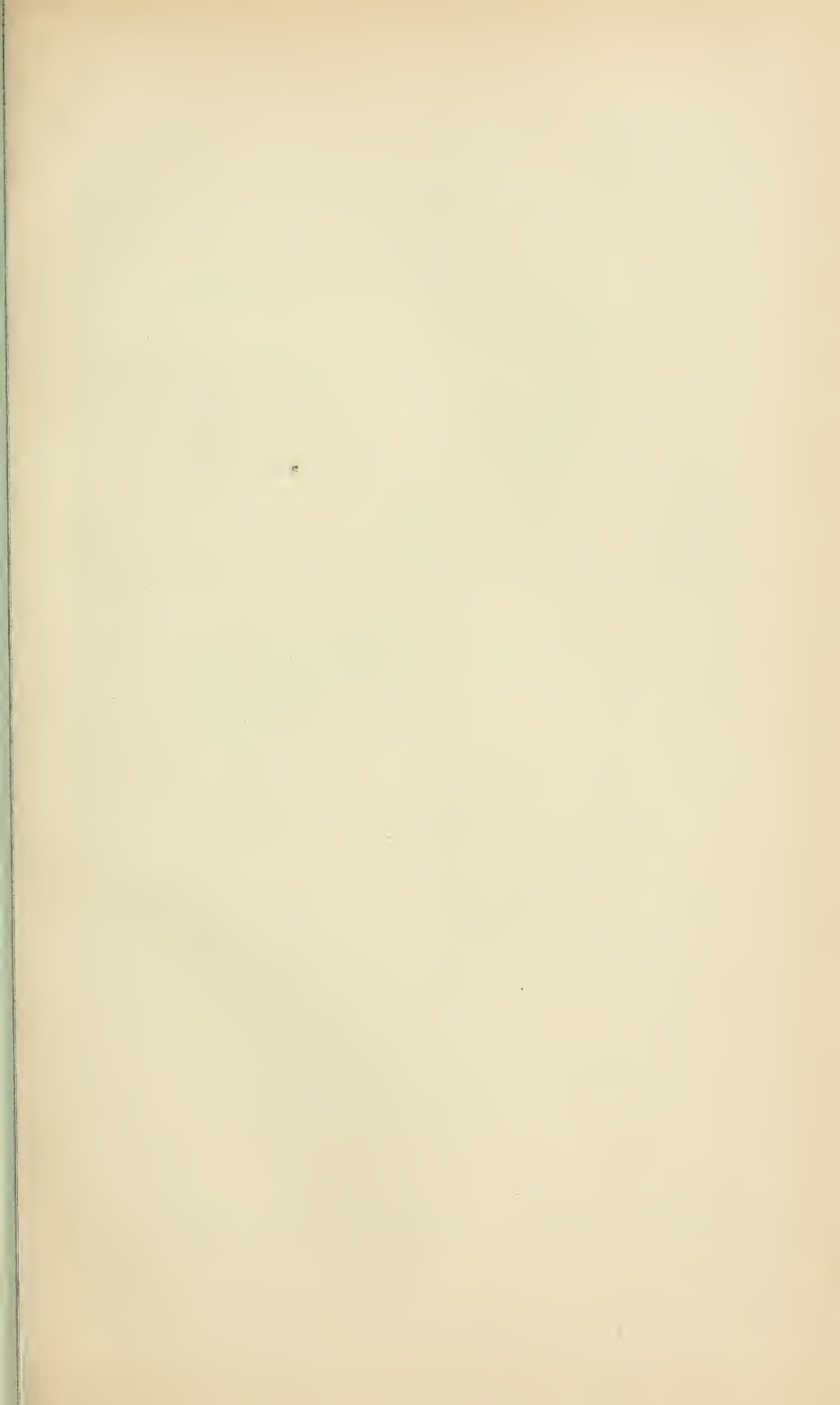
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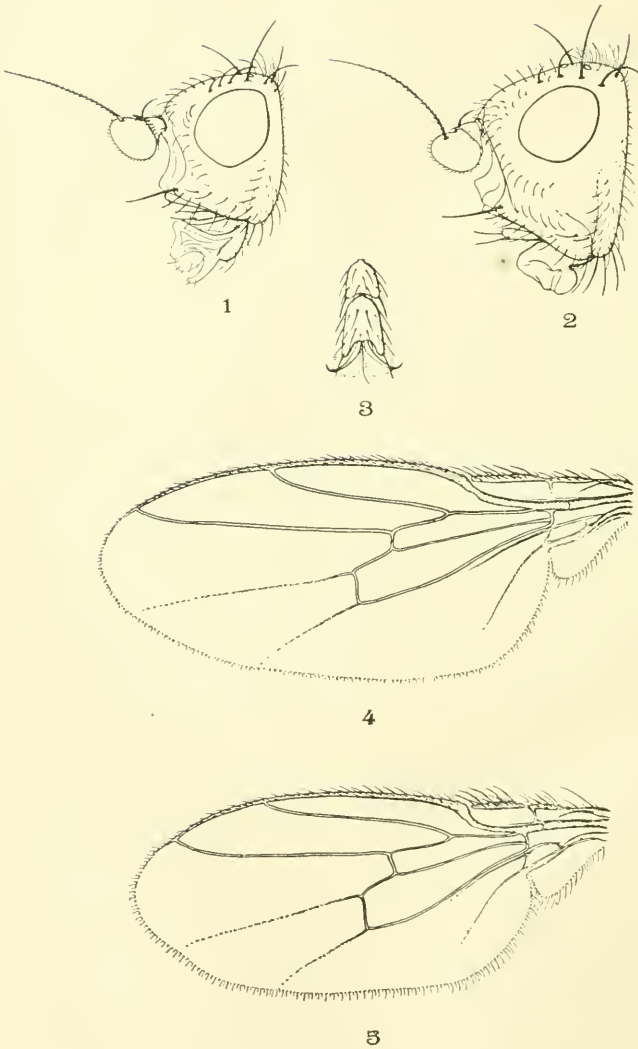
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LIMOSINA EQUITANS, *n. sp.* figs. 1, 3, 4. L. SACRA, *Mg.*, figs. 2, 5.

As the male characters in this genus are so very distinctive, I think it as well to give a short table of these, which will help in the identification of male specimens.

- I. Anterior tibiæ strongly bent; posterior femora simple...
C. latum and *C. rufescens*.
- II. Anterior tibiæ straight.
- i. Posterior femora terminating in an angular tooth at the apex...
C. angulare and *C. viennense*,
- ii. Posterior femora simple at the apex, but armed near the centre with a tooth.
1. Tooth small*C. serripes*, *C. brunneum*, and *C. denticulatum*.
2. Tooth long, curved, and sharply pointed...*C. dentipes* and *C. zebei*.
3. Tooth long and terminating in a tuft of hairs...
C. appendiculatum and *C. calcaratum*.

There can be no difficulty in the identification of the very broad *C. latum*; and the long thin anterior tarsi of *C. viennense* and *C. serripes* differentiate these from all the rest; care must be taken, however, not to mistake the comparatively slightly dilated tarsi of the females of such species as *C. brunneum*, viewed edgewise, for an undilated tarsus. The difference in punctuation between the thorax and elytra is quite a good character. *C. dentipes* is the only species at all doubtful, as its thorax is more finely punctured than in the others, but is certainly more strongly so than the elytra. Its long parallel form will distinguish it from any of the *appendiculatum* group, which all have the thorax very finely punctured, sometimes even more finely so than the elytra.

C. angulare is easily recognised by the characters given in the table, especially by the gradual club of the antenna, which is entirely reddish. The close and very deep and distinct punctuation of the long thorax is quite characteristic. *C. rufescens* is a very distinct long parallel-sided species, and is the only one with a well marked deep scutellary stria at the base.

I have pointed out previously (Ent. Mo. Mag. vol. xlv, p. 38) how *C. zebei* may be distinguished from *C. dentipes*, and am glad now to have discovered a definite character for the ♀, which so very closely resembles a large ♀ of *C. brunneum*. In spite of its great variation in size and shape, I have no difficulty in at once recognising *C. brunneum* by its rather strongly and closely punctured shining thorax, and the shape of the anterior tibiæ. The club of the antenna is generally darker, but is usually concolorous with the rest of the antenna.

Single individuals of the last group are perhaps the most difficult

to identify. The traces of striæ on the elytra of *C. appendiculatum* are variable, and may be very slight indeed, but the much larger size of this species will distinguish it from *C. calcaratum*, and the more acuminate elytra from *C. denticulatum*. In general appearance *C. appendiculatum* somewhat resembles *C. zebei*, but the punctuation is much finer, and the elytra are less rounded at the sides than in the last-named insect.

C. denticulatum is an inconspicuous species which might be easily passed over for *C. brunneum*, which it resembles in size and colour and somewhat in shape. It is, however, broader and has the elytra more rounded at the sides, the club of the antennæ is wider and the punctuation of the thorax much finer.

C. calcaratum at first sight looks just like an immature specimen of one of the other species, but the dark club of the antennæ at once indicates that it is mature. The colour, very fine punctuation (it is the most finely punctured of all the species) and small size will distinguish it.

I have on several occasions during the past summer visited the small area referred to in Ent. Mo. Mag., vol. xlvi, p. 25, but only on one of them saw *Colons* flying over it, when I took two *C. brunneum*. I have dug up a good deal of this ground without finding *Colons* or their larvæ, and have also dug several inches deep into the ground at Burghelere without results. I suspect that the larva will be found at some distance from the surface, and I think it very probable that it feeds on fungi and moulds on the roots of dead grass, &c. In the Burghelere locality the whole ground among the grass is covered with old mouldy beech leaves, and there is no doubt that truffles and other underground fungi occur there, as *Anisotoma cinnamomea*, *A. anglica* and *Homalota dilaticornis* are not rare.

I have noticed that *Colons* may generally be taken by sweeping the long coarse light-coloured grass known as "Melic" (*Melica uniflora*, Retz.). This grass grows in tufts, and many dead blades and roots may always be found among it. Mr. Champion mentions the fact that he and Commander Walker have taken *C. serripes* from grass tufts. There was none of this grass at the small area mentioned above (although there is plenty close by where I have taken *Colons* for many years in succession), but there must have been many dead roots of the sainfoin which had been choked by the grass, &c.

Bradfield, Berks :

September 26th, 1910.

SOME ADDITIONS TO THE BRITISH LIST OF *CRABRO* SPECIES.

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

Herr Kohl has lately returned to me with his determinations a large number of *Crabro* specimens, British and foreign, which I had forwarded to him, at his request, for study in connexion with his forthcoming Monograph of the group.

In consequence, I am able to make two unexpected additions to the British List of *Crabro* spp., and also to record positively the occurrence in this country of a species, as to which Mr. Saunders wrote in Ent. Mo. Mag., 1906, p. 173, that he had little doubt it was British, and in fact possessed a specimen from Shuckard's collection, but did not propose to introduce it into our list, as that specimen was without date or locality.

CRABRO (*CÆLOCRABRO*) *INERMIS*, Thomson.

This is a *Cœlocrabro* with the front scarcely excavated, the hind tibiæ spinose, and the propodeal area ill defined—allied, therefore, to *ctratus* and *pubescens*.

I have taken it twice in this district, at Clandon, 18.viii.1900, and at Woodham (between Woking and Byfleet), 18.vi.1902, in both cases a single ♀. Having found the first of these specimens and a *pubescens* ♂ in the same place on two following days, I hastily concluded that they were sexes of the same species, viz., *pubescens*, and have taken this for granted ever since. *Pubescens*, however, in both sexes, has the scape of the antennæ and the base of the hind tibiæ marked with white, while in *inermis* these parts are immaculate (black). The ♀ ♀ both of *inermis* and *pubescens* differ from those of *ctratus* in having the tempora behind the eyes simple (i.e., un-spined), and the ♂ ♂ in having simple fore-legs. (*Styrius*, added to our list by Mr. Saunders l.c., appears to be a smaller and otherwise very different insect, which could only be confounded with *capitosus*).

Pubescens, *ctratus*, and *inermis* seem to be widely and similarly distributed through Europe from Scandinavia to the Alps, but to be everywhere rather rare. Probably they often escape capture and recognition through being confounded with the very common, and therefore unvalued, species *leucostomus*.

CRABRO (*SOLENIUS*) *LARVATUS*, Wesm.

This, though hitherto unrecorded, is probably no rarity—at any rate in the south of England, as I have taken a ♂ in the New Forest (6.vi.1900) and 4 ♂ ♂ and 1 ♀ at different places in my own neighbourhood (Woking, Chobham, Downside near Cobham, &c.) in Jun and July, 1899—1902.

Many collectors may probably find it in their boxes mixed with *vagus*, which it very closely resembles. But it may be picked out at once by simply examining the hind metatarsi, these being always yellow in *vagus*, but dark ruddy brown (like the apex of the tibia) both in ♂♂ and ♀♀ of *larvatus*. A more important though less obvious character is the structure of the clypeus in *larvatus*. Its apex in the centre projects into a distinct though blunt tuberculation or "tooth," and this is accompanied by two other much smaller denticulations, one on each side of it; so that the whole apex may be called tridentate. Other more difficult characters are mentioned by Wesmael, but the above suffice to distinguish the species.

Larvatus is a good deal smaller than normal *vagus*; and I remember consulting Mr. Saunders on this account, as to my first capture of the former insect, and asking if he did not think it must be something distinct. He did not, however, encourage the idea; and not being then acquainted with *larvatus*, nor with Wesmael's description of it, I simply placed the specimen in my collection as a *vagus* without looking for other differences, and acted similarly as to the later captures.

The ♂, which was unknown to Wesmael, has excisions like those of *vagus* under the antennæ; but from the small size of the insect these are easily overlooked, and I must confess with some shame that I sent Herr Kohl several of my ♂♂, both British and foreign, as small ♀♀ of *vagus*. I may add that I have taken *larvatus* ♂ and ♀ several times at Innsbruck and Bozen in the Tyrol, and once in North Germany (Bremen).

The species is not mentioned by Thomson, so it is probably not a Scandinavian form. How far north it goes in this country I cannot say, but it would be interesting to know. It seems to be well known in Central Europe, and is duly tabulated in Dr. Schmiedeknecht's recent work *Hymenoptera Mittel-Europa's*.

CRABRO (CLYTOCHRYsus) PLANIFRONS, THOMS.

This is one of the several forms which used to be confounded under the old name *cephalotes* in our List. (See Ent. Mo. Mag., 1906, p. 173. I need not repeat Mr. Saunders's full description, there given, of its characters).

I took a single ♀ in August, 1894, at Hillmorton in Northamptonshire. The specimen till now has been mixed with *cavifrons* in my collection, but was fortunately detected by Herr Kohl. I have never again found it in England, but often in Switzerland.

Brunswick, Woking:
November, 1910.

CONOPS (*BRACHYGLOSSUM*) *SIGNATA*, WIEDEMANN: AN ADDITION
TO THE LIST OF BRITISH DIPTERA.

BY J. COLLINS.

On September 11th last I brushed with my sweeping-net out of a birch bush at Tubney, Berks., a pair of Conopid flies. They were probably *in cop.*, but when I first noticed them in my net they were apart. In the field they looked quite ordinary yellow *Conops*, and it was only when I was examining them critically that I noticed each had a very short and thick proboscis, in this respect being quite different from any of the known British Conopids, all of which have a slender proboscis, at least four times as long as in my specimens.

Writing to Mr. Collin to ask him if he knew of a Conopid fly with a short proboscis, he very kindly offered to examine my insects for me, and I forwarded them to him. He returned them soon afterwards as the above-named species, with a note on its distribution and a reference to the literature, adding, "This is a Central and South European species, its home appearing to be Italy. The best description is given by Loew (*Dipterol. Beitr.*, iii, 1847, p. 2). Schiner also described it in his 'Fauna Austriaca.' It is a fine addition to our list."

Oxford: October 16th, 1910.

A few notes on the above species may be of interest, especially as it appears in the Catalogue of Palearctic *Diptera* under the wrong name (*brevirostris*, Germ.). It was first described by Wiedemann in Meigen's *Syst. Besch. Eur. Dipt.* iv, 134 (1824) as *Conops signata*, then shortly afterwards* by Germar in Ahren's *Faun. Ins. Eur. Fasc.* xiii, pl. 24, as *Conops brevisrostris*, and in 1843 by Rondani as *Leopoldius erostratus*. Loew dealt with it under the name *brevirostris* in 1847 (*Dipt. Beitr.*, iii, 2) giving *erostratus*, Rdi., as a synonym, but in 1853 (*Neue Beitr.*, i, 27) having examined the type of *signata*, Wied., he promptly adopted that name for the species, in which he was followed by Schiner in 1862 (*Faun. Austr. Dipt.*, i, 370).

C. signata may be easily distinguished from the other species having a short proboscis by its entirely black frons with only the ocellar region yellowish, and by its yellow legs with a dark streak above at the middle of the hind femora. Wiedemann's specimen was from Austria,

* Germar's *Fasc.*, xiii, must have been published after Meigen's vol. iv, because Germar's description of *Conops silacea*, Mg., figured on pl. 23 quotes the page upon which Meigen described that species in his fourth volume.

Germar's from Paris, while Rondani found it at Parma in Italy, and this latter country appears to be the only one in which it has been taken in any numbers.—J. E. C.

TWO DIPTERA NEW TO BRITAIN.

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

1.—MICRODON EGGERI, Mik.

This species is readily distinguished from its three British congeners by its dark scutellum, short antennæ, and strongly clouded wing-nervures.

It is the *M. brevicornis* of Egger; Mik proposed the new name for it (Wien. ent. Zeit., xvi, 1897, p. 66) on account of *brevicornis* being already in use for an African species.

I captured a single specimen of *M. eggeri* at Rannoch early in June this year, settling in the sunshine on a birch log.

According to Mik there are very few records of the occurrence of this insect; indeed he says (Wien. ent. Zeit., xviii, p. 138) that it is the rarest of the European species, and that he knew only of two records of its occurrence, to which he adds a third, all these being from Austria. Since then, however, Wasmann has informed us that the larva of *M. eggeri* is not uncommon in the nests of *Formica sanguinea* in the Luxemburg. I am sorry that I forget from which one of Wasmann's numerous and valuable memoirs I derived this information.

M. eggeri is the fourth British member of this interesting genus, and as we have now all the four known European species of *Microdon* no other addition is to be expected to our list.

2.—ERNONEURA ARGUS, Zett.

This is the only species of the genus, and is therefore a generic addition to the British Catalogue.

E. argus is a remarkable Scatomyzid form, distinguished from all others by the extremely peculiar coloration of the wings, which have numerous dark round marks, the small nervures being broken in a correlative manner.

I captured a single example of this species on the shores of Loch Garten, near Nethy Bridge, in the latter part of June or early July, three or four years ago. This is not, however, the first time the insect has occurred in Britain, as previously Colonel Yerbury captured a specimen in the Thurso district on the shores of a small loch near

Scrabster. This example was unfortunately entirely destroyed as the result of a violent storm that occurred before Colonel Yerbury could get back to his hotel. The wings are so remarkable that a mistake in the identification is improbable. I am indebted to Mr. Lamb for suggesting the name.

Zetterstedt informs us that the species is common in Lapland, where it is found running on the surface of stagnant waters, agitating its wings as if in flight. It has probably only to be looked for, in conformity with this habit, to be found commonly on the lakes of North-eastern Scotland. Zetterstedt states that it does not occur to the South of Lapland, except on the frigid waters of the Jemtland Hills, at an elevation of 3500 feet (Dipt. Scand., v., p. 1980).

In the Catalogue of Palearctic Diptera (iv, p. 15), the species is ascribed to Germany on the authority of Becker and of Riedel. Becker, however, never mentions Germany, but states that it occurs only in the North (Berl. ent. Zeitschr., xxxix, 1894, p. 136). Riedel records the occurrence of *E. argus* on the shores of Lake Lubow, near Neu Stettin, in North Germany (Allg. Zeitschr., Ent. vi, 1901, p. 153).

Brockenhurst:

October 31st, 1910.

A NEW SPECIES OF THE DIPTEROUS GENUS *LIMOSINA*, MACQ.
(*BORBORIDE*), FROM CEYLON,
WITH HABITS SIMILAR TO THOSE OF *L. SACRA*, MEIG.

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

For some years past the fact that large Coprid beetles might often be found infested by a small species of *Diptera* in addition to the usual mites has been well known to different Entomological collectors in Ceylon; it did not escape the observation of Col. J. W. Yerbury in 1890, at Trincomali, and on a label attached to the specimens in the British Museum captured by him on December 16th, 1890, it is stated that he found 15 flies upon one specimen of *Scarabæus indicus*, Motsch.; nor was it unknown to Mr. E. E. Green, who recorded the occurrence in *Spolia Zeylanica*, vol. iv (1907), p. 183, as follows: "November 8th: Found a dung beetle (Coprid) which, besides the usual collection of mites, was infested by a number of small hairy flies. They were clinging to the under surface of its thorax and abdomen and did not attempt to fly away when the beetle was handled, but allowed themselves to be dropped into a tube of alcohol together with their host." Finally, Mr. T. Bainbrigge Fletcher,

R.N., noticed the same peculiar habits of these small *Diptera* when collecting at Yala (S. E. Ceylon), as the following extract from his journal will show:—

T. Bainbrigg Fletcher, at Yala (S. E. Ceylon), February 9th, 1909.

“Wheeling about swiftly but heavily in the bright sunshine was a large black Coprid beetle, which seems very like the figures of *Ateuchus sacer*, but larger.* I saw no individuals except on the wing, so cannot say whether they were in search of any particular kind of dung. At the time, however, they seemed to be attracted in some degree by fresh buffalo's dung as I saw several flying about in its vicinity. I seem to remember, however, reading in Tement's book of a large Coprid beetle peculiar to the elephant, and it may perhaps have been this animal's dung of which they were in search.

“The most interesting point, however, about these beetles was the fact that they were all carrying about small winged *Diptera*, which ran actively about over the ventral surface of the thorax and abdomen of the beetle, reminding one in their movements of the flies parasitic on bats, but seemed loathe to use their wings, even when the beetle had been caught and was being handled. Of four beetles caught, one was carrying 12 of these flies, another 3, and the other two, 3 between them; but it is very probable that in the last three cases some of the flies had been brushed off in netting the beetle or during its struggles in the net.

“Green found these flies at Trincomali on a Coprid beetle which he showed me at the time, and afterwards recorded in ‘*Spolia Zeylanica*’ (vol. iv, p. 183). He speaks, however, of the beetle as their ‘host,’ thereby inferring that the flies derive their nourishment directly from the beetle: but, unless the mouth parts of these flies support the assumption that they are able to penetrate between the tough ventral plates of the beetle, I am inclined to look upon these flies as filling the rôle rather of passengers than of parasites in the strict sense of the word. It seems to me probable that these flies feed during their early stages, and perhaps during the adult stage also, on the same sort of dung which forms the food of the beetle, and that they cling to the beetle only as a means of easy transport to, and discovery of, their pabulum. As against this † view, however, it should be added that I noticed the abdomina of some of these flies to be very swollen, as is the case in the ♀ *Hippobosca* when its embryo is ready for expulsion, so perhaps the flies may be pupiparous. In this case, the

* *Later Note*—Determined by Mr. Arrow as *Scarabeus gangeticus*.

† “this view,” i.e., that the larvae of the flies are dung-feeders.

flies might perhaps feed on the dung themselves, the energy conserved by the avoidance of any necessity to search for their own food being devoted to the extra drain on the parental system caused by a pupiparous method of reproduction.

“These large Coprid beetles also carried a few mites.”

On his return to England Mr. Fletcher exhibited specimens at a meeting of the Entomological Society on June 2nd, 1909, and his efforts at getting them named ended in their being sent by Mr. Hugh Scott, Curator of the University Zoological Museum at Cambridge, to the present writer.

As the species does not appear to have been described, it is proposed to name it after its peculiar habits.

LIMOSINA EQUITANS, sp. n.

A brownish-yellow species; frons somewhat produced; thorax with only one pair of dorso-central bristles; scutellum with only four marginal bristles; last joint of the tarsi dilated and with large pulvilli. Female abdomen with remarkably small dorsal chitinous plates.

Head (fig. 1) brownish-yellow; frons uniformly dull, paler in front than behind, more produced than usual in this genus but with the usual bristles of *Limosina*; the orbital bristles are, however, small, placed closer together and further back than usual, the front one not being half way from the vertex; the central row of crossed bristles is composed of some six pairs, smaller than usual; the produced part of the frons bears a number of small bristles on each side; the small keel between the antennæ is very narrow and short, not continued down the face, which is concave; the yellow antennæ normal, with the only slightly pubescent arista not so long as the frons. Eyes small. Palpi yellow.

Thorax brownish-yellow, the disc about the same colour as the vertex and occiput of the head; dorso-pleural suture, upper part of pleuræ, and metanotum, somewhat paler; chætotaxy normal, with, however, only one pair of dorso-central bristles and none of the acrostichal bristles strongly developed, the usual sterno-pleural bristle is not very large, but the prothoracal bristle and the stigmatal bristle are well developed; scutellum of the same colour as the disc of thorax, with four equally strong marginal bristles, otherwise bare.

Abdomen greyish-black, with a narrow yellowish-white hind margin to all segments, and a wide yellowish-white membraneous strip each side, the last segment and the hypopygium yellowish-brown, more the colour of the thorax. The disc of the abdomen apparently bears scattered bristles, as usual longer at the hind corners of each segment, the membraneous sides are moderately thickly beset with short stubby bristles, as are the ventral chitinous plates, and these bristles become very dense on the hind margin of the last ventral plate, beneath which the genital lamellæ are concealed. There are no long bristles on the hypopygium, and the lamellæ appear to be represented by four sharp pointed and slightly curved processes.

Legs yellowish, with the knee joints sometimes very narrowly darkened, clothed with short brownish-yellow bristles (all the bristles in this species have a tendency to appear brownish), front femora the stoutest, and all the tarsi gradually dilated towards the tip, with the last joint produced at each corner (fig. 3), unguis large, yellow with black tips, pulvilli large and pale, empodium well developed and pectinate on the lower half, the basal joint of hind tarsus seen from above is not dilated and about equal to or slightly longer than the next joint, but it is considerably dilated downwards, more at the base than at the tip. Bristles on the legs by no means strong, on the middle femora there is a short black bristle in front near the tip, on the middle tibiae beneath only the apical spur, antero-dorsally two or three small bristles, and dorsally the usual pre-apical bristle, on the hind tibiae the pre-apical bristle is inconspicuous, one or two small apical spurs are present beneath at the tip placed somewhat anteriorly.

Wings (fig. 4) of normal size, brownish-yellow, especially about the costal margin, subcostal ending in costa just before the radio-cubital fork, radial and cubital gradually curved up to costa, the cubital ending therein before the tip of the wing, and the penultimate costal segment longer than the last, discal and postical veins continued faintly beyond the postical cross vein to, or almost to, the wing margin, base of costa with only short bristles. Halteres pale yellow.

♀. Like the male, except for the great extension dorsally of the yellowish membranous part of the abdomen which leaves only shallow chitinous hind-marginal plates to all the middle segments, though the ventral chitinous plates are normal in size. The membranous sides are studded with short stubby bristles as in the male, but the bristles on the disc are confined to the chitinous plates and their immediate neighbourhood. The first segment appears to be mainly greyish-black, but the second to fourth segments are yellowish with the shallow, pre-hind-marginal chitinous plates brown (deepest on the fourth segment), the fifth and sixth segments are narrow normal segments. The ovipositor is somewhat flattened, nearly as wide as the last abdominal segment, and bears a few long hairs at the tip.

This species varies somewhat in colour from yellowish-brown to brown, and in size from 2 to $2\frac{1}{2}$ mm.

Trincomali, 16.xii.1890 (Col. J. W. Yerbury): Yala, 9.ii.1909 (Mr. T. Bainbrigge Fletcher, R.N.), 2 ♂♂, 5 ♀♀, and 4 ♂♂, 3 ♀♀ in spirit.

In 1838 Meigen described a *Limosina sacra* (Syst. Besch. vii, 409) found by Dr. Waltl on the under-side of *Ateuchus sacer* in Spain, and this has been recognised as occurring upon *A. cicatricosus*, Luc., in Spain (Czerny, Verh. z.-b. Ges. Wien, lix, 278 (1909), and upon *A. latcollis*, L., and *A. puncticollis*, Latr., in Algeria (Lesne, Bull. Soc. Ent. Fr. 1896, 162). I have examined two males of what is probably this species in the British Museum Collection, taken by the Rev. A. E. Eaton near Bône, Algeria, upon the big coprophagous beetles common in that

locality (*v. Ent. Mo. Mag.*, 1896, 139), and they agree with *L. equitans*, in having a dilated last tarsal joint with produced corners and large pulvilli, also in the produced frons, but they are entirely different in colour, being black, legs with the front knees, and all the tarsi yellowish, eyes smaller and jowls deeper (fig. 2), thorax with (I believe) two pairs of dorso-central bristles, middle tibiæ with two distinct pre-apical bristles close together, and wings (fig. 5) with the second costal segment longer in proportion to the third.

EXPLANATION OF PLATE.

- Fig. 1.—*Limosina equitans* ♂ head × 40.
 Fig. 2.— „ *sacra* ♂ head × 40.
 Fig. 3.— „ *equitans*, last two tarsal joints.
 Fig. 4.— „ „ ♂ wing × 32.
 Fig. 5.— „ *sacra* ♂ wing × 32.

Rayland, Newmarket:

November, 1910.

Coleoptera at Woking and Guildford.—The following species of *Colcoptera*, amongst others, captured in the Woking district or at Guildford during the past season are perhaps worth recording, a few of them being new to me (marked with a *) from these localities:—

WOKING DISTRICT.—*Hydroporus neglectus*,* in some numbers in April, also found by Mr. J. J. Walker. *Gymnusa brevicollis*, one specimen, previously seen at Chobham only. *Anisotoma lunicollis*.* *Triarthron märkeli*, seen as late as August 27th. *Abdera bifasciata*, one specimen resting on a charred pine. *Ascum striatum*, May 20th and 21st, emerging in some numbers from charred pine stumps. *Criocephalus fesus*, sparingly, July 9th—August 14th. *Melanophila acuminata*, more frequent this year than last, July 9th—September 17th, the last two captured were kept alive for about a fortnight; one specimen was found quite late in the evening on a charred stump, it being a new experience to me to come across a Buprestid under such conditions. *Balaninus cerasorum*, rarely, and *B. rubidus*, commonly, on birch, at Chobham, in August. *Dorytonus validirostris** and *D. vorax*,* under bark of a large poplar, in February. *Cryptocephalus punctiger* and *C. parvulus*, on birch, Chobham.

GUILDFORD: *Colon viennense*, one fully developed ♂, with the anterior tibiæ strongly sinuate within and the posterior femora sharply angulate at apex (I have a similar male from the Chatham district), October 1st. *Anisotoma brunnea*,* one specimen, September 17th. *Cassida sanguinolenta*, May 16th.—G. C. CHAMPION, Horsell, Woking: October 31st, 1910.

Polydrosus chrysomela, Oliv., and *P. confluens*, Steph., apterous or subapterous insects.—I have recently had occasion to examine critically our British species of *Polydrosus*, and was surprised to find that *P. chrysomela* was completely apterous, and that *P. confluens* had the merest rudiments of wings, our other

forms being fully winged. Bedel and other authors, of course, note that *P. chrysomela* has the elytra ovate and the humeral angles obtuse, but they say nothing about the absence of wings. These two species, it seems to me, would be better placed, either in a separate genus, or under *Eusomus*, which is practically an apterous Polydrosid with the humeral angles completely obliterated. In the last European Catalogue both insects are included under the sub-genus *Eustolus*, Thoms., with such fully winged forms as *P. flavipes*, *cervinus*, *fuscescens*, &c. *Eusomus smaragdulus*, Fairm. (which I have taken in numbers on *Genista* at Vigo, N.W. Spain), incorrectly given as a synonym of *P. chrysomela* in the same Catalogue, is certainly a true *Eusomus*, and has no vestige of humeri. *Metallites marginatus*, Steph., again, is completely apterous, like *Eusomus*. The relative development of the wings, however, in the Otiorrhynchids, is a character not always to be depended upon, as I have lately come across a few fully-winged examples amongst a very long series of a common American *Tanymericus (variabilis)*, Gyll., which usually has them in a rudimentary condition and of no use for flight.—ID.

Atheta (Homalota) picipennis, Mann., in Ireland.—I am able to confirm Mr. N. H. Joy's record of *Atheta (Homalota) picipennis* as a British insect. I took a specimen of it on the wing on July 4th, 1909, at Rathmullan, Donegal, which agrees perfectly with my Austrian examples of this species. It is most likely to be confused with *A. cinnamoptera*, Thoms.; indeed, Fauvel, "Faune Gallo-Rhenane," p. 692, gives the latter as a synonym. The most striking differences between these two closely allied forms appear to me to be as follows:

A. PICIPENNIS, MANN.

Fore-parts less bronzed and duller.

Abdomen somewhat parallel-sided.

Antennæ rather stouter.

A. CINNAMOPTERA, THOMS.

Fore-parts more bronzed and more shining.

Abdomen more pointed.

Antennæ more slender.

—M. CAMERON, H.M.S. "Attentive," Home Fleet: November 1st, 1910.

Occurrence of Lathrobium longipenne, Fairm., in the Oxford district.—I found a small and rather immature *Lathrobium* at Tubney, Berks, on July 29th, 1909, in an unusual habitat for a member of this genus, viz., under a plant of *Echium vulgare* in the middle of a dry sandy field. At the time of capture I thought the beetle was a diminutive stray specimen of *L. pallidum*, Nordm., already known from the Oxford district (Ent. Mo. Mag., xlv, p. 135), but neither Mr. Champion nor I could satisfactorily refer it to that or any other of our known species of the genus. Quite lately, however, we found it to agree with Fairmaire's description of *L. longipenne*, as translated by Dr. G. W. Nicholson in his recent note introducing the species as British (Ent. Record, vol. xxii, p. 259), and our determination has been confirmed by a comparison of my insect with the two specimens (one fragmentary) in Dr. Sharp's collection at the Natural History Museum.—JAMES J. WALKER, Aorangi, Lonsdale Road, Summertown, Oxford: November 9th, 1910.

Catops varicornis, Rosenh., in Berkshire.—On September 3rd I took a fine ♂ example of *Catops varicornis*, Rosenh., by sweeping on the chalk downs near Streatley, Berks. I had long been on the look-out for this rare species, which is an addition to the published list of *Coleoptera* for the county of Berkshire.—*Id.*: November 9th, 1910.

Capture of Pterostichus aterrimus, Pk., in Norfolk.—While searching under cut sedges near Stalham on April 19th last, I was fortunate enough to shake out on to the collecting paper a specimen of *Pterostichus aterrimus*, Pk., a conspicuous species, which would never be passed over in the field by any one at all familiar with the species of the genus which occur in this country.

I find that Dawson and other authorities of his day mention that this insect was common at that time in and about the peat-pits of the Fen Country of our Eastern Counties, but I can find no record of its capture for a great number of years. This species was in fact supposed to be extinct in this country, and its recapture, therefore, is a matter of some considerable interest. Details of the first captures of the insect in this country are given in Mr. Edwards' "List of the *Coleoptera* of Norfolk."—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: November 9th, 1910.

Further note on the habits of Myelophilus piniperda.—In the light of Dr. Chapman's notes in the last number of the Ent. Mo. Mag. (pp. 260–261), on the ravages, as seen by him at Pitch Hill, of the above-mentioned insect, the following observations are perhaps worthy of mention:—Among the beeches and oaks which form the greater part of Wytham Woods, two miles west of Oxford, there are two or three small groups of *Pinus sylvestris*, each consisting of but few trees. As I was walking under one of these little colonies—of four trees only—I noticed the abundance of young shoots which had fallen to the ground, and examination of these revealed the expected burrows, whilst one of them proved to contain a living specimen of the beetle responsible for the damage. The point of interest in this case is the scarcity of the tree in the neighbourhood, for I believe I am right in saying that there is no plantation of pines within four or five miles, and at the most not more than a couple of score of trees at Wytham. In vol. iv of Prof. Schlich's "Manual of Forestry" (p. 265), and in Nisbet's "Forester," vol. ii, pp. 79 *et seq.*, detailed accounts of the life-history of this Scolytid are to be found. We learn from these that the imagines, breeding from larvæ which have fed in spring and summer on the bark of dead pine trees, or on that of parts of living trees injured by fire, axe, or other agency, attack the young shoots of well grown trees, with the results described by Dr. Chapman. Rarely, the beetle hibernates in the burrow, as in the case of the specimen mentioned. One shoot I picked up bore both this year's carpellary flower and last year's maturing cone, the burrow entering some distance below the latter. Of the two other clusters of pines I was able to find, the larger, containing about a dozen trees, had not been attacked so far as I could ascertain, whilst the second was a repetition in every respect of the one alluded to in detail above.—H. G. CHAMPION, New College, Oxford: November 6th, 1910.

Correction of locality of a Tineid.—As insects assigned to a particular fauna are often a source of much perplexity to students, it seems worth noticing that *Gelechia* (*Helcystogramma*) *obscuratella*, Zell., Hor. Ross, xiii, 371, pl. v, 127, attributed dubiously to Cuba (“vermuthlich von Cuba”), and included on the strength of this by Lord Walsingham in his list of West Indian *Micro-Lepidoptera*, is clearly identical with the earlier described *Gelechia hibisci*, Stn., from India, which I refer to the genus *Strobisia*. The larva feeds on a cultivated *Hibiscus*, and it is therefore certainly possible that the species might have been artificially introduced into Cuba; but it is more probable that the record is erroneous. As the species is the type of the sub-genus *Helcystogramma*, that name becomes a synonym of *Strobisia*.—E. MEYRICK, Thornhanger, Marlborough: October 27th, 1910

Leucania loreyi in the South of Ireland.—Among a number of insects recently sent to me to name by Commander Gwatkin-Williams, R.N., I found a fresh looking specimen of the above rare species. It was beaten from ivy growing on a garden wall about 30 yards from the sea, in the neighbourhood of Queenstown, on the night of October 6th.—GERVASE F. MATHEW, Dovercourt, Essex: November 16th, 1910.

Eupithecia lariciata and *Coremia munitata* at Huddersfield.—It is, I think, many years since two species of *Maero-Lepidoptera* were added to the Huddersfield list in one year, but such has been the case during the past season. The first, *Eupithecia lariciata* occurred to myself in Farnley Mill Wood in the third week of June, but calls for little comment, as its previous absence was sufficiently accounted for by the small quantity of larch which our woods contain. I was indeed surprised to see it in the wood mentioned, containing as it does, very few larches. In the woods only a few miles outside our area, but where the conditions are more suitable, the insect abounds. The other species, *Coremia munitata*, is much more interesting. It was found by Mr. S. L. Mosley in some numbers on high moorland ground beyond Bilberry Reservoir, whilst Mr. B. Morley recorded it from another similar locality in the Skelmanthorpe district. Both collectors showed me the species from the respective localities, neither, at the time, having any knowledge that the other had taken it. As Huddersfield for the past sixty years has probably never been without eager and energetic Lepidopterists, it is now a question as to where *C. munitata* can have come from; as it seems incredible that a moth so conspicuous in itself and its habits, could have been missed for so long, had it been about. Probably, too, this district is the most southerly in England where the species has been found, though it is recorded from near Glamorgan in Wales.—GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield: November 1st, 1910.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, October 13th, 1910.—MR. W. J. KAYE, F.E.S., President, in the Chair.

Mr. West (Greenwich) exhibited a series of the Homopteron, *Limotettix*

stactogala, beaten from tamarisk at Deal. It was gradually extending its range. Mr. Tonge, photographs of the young larvæ of *Celastrina argiolus* attacking ivy buds, and of *Vanessa io* and *Pyrameis atalanta* at rest. Mr. Newman, a melanic example of *Bryophila perla* taken at Folkestone, a suffused pink specimen of *Anthrocera trifolii*, an example of *Spilosoma menthastræ* with joined-up spots. Approaching *v. walkeri*, several *Abraxas grossulariata*, (1) black markings especially wanting on all wings, (2) yellow markings much increased in area and black decreased, and (3) a very dark specimen, the black areas united and enlarged. Mr. Adkin, a series of *Cossus ligniperda* from Lewisham, and read notes on the occurrence and pupation of the species. Mr. Turner, living bred examples of *Lyonetia clerckella* and its mine in a birch leaf with the swung silken cradle in which the larva turned to pupa. Mr. Moore, a variety of *Limnys chrysippus v. alcippus* in which the apical white dot is duplicated, and *Acræa encedon ab. alcippina* from the same locality, Northern Nigeria. Mr. Main, newly hatched larvæ of the Glow-worm. Dr. Hodgson, an example of *Callophrys rubi* with xanthic areas on the disc of all the wings, specimens of *Nemeobius lucina*, (1) ♀ in which the yellow area was much increased at the expense of the black, (2) a ♂ in which the opposite was very strongly marked, a black example of *A. trifolii*, the only one obtained this year, and one with extreme red suffusion. Mr. Rayward, ova of *Plebeius argus (ægon)* laid naturally on *Erica cinerea*. Dr. Chapman, *Lepidoptera* obtained by him in Sicily, *Oreopsyche kahri*, *Depressaria thapsicella*, *D. ferulæ*, &c. Mr. Kaye, a box of Brazilian Butterflies taken by him in the early part of the year, including *Morpho anaxibia*, *M. menelaus*, *M. hercules*, *M. laertes*, *M. æga*, and the rare *M. cytheris*, the beautiful *Papilio ascanius*, five species of *Heliconius*, species of *Catagramma* and *Callicore*, numerous very beautiful *Erycinidæ*, and the Ithomiine *Mechanitis lysimnia* with its Pierine mimic *Dismorphia astyoche* caught on the same flower heads at Castro. Mr. Sich, specimens of *Monopis weaverella*, a rare species only recently differentiated from *M. spilotella*; he also showed the hibernaculum of *Yponomeuta cognatellus* on *Euonymus* twigs. Mr. Platt Barrett, a large collection of butterflies taken in Sicily during the last two years, and read a paper on the exhibit and the localities he visited.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 19th, 1910.*—

DR. F. A. DIXEY, M.A., M.D., F.R.S., President, in the Chair.

Dr. A. Feynes, of 61, East Colorado Street, Pasadena, California, U.S.A.; Mr. Thomas Henry Geary, of Enderby, Leicestershire; and Mr. Edward Barton White, of the City Mental Hospital, Cardiff; were elected Fellows of the Society.

Mr. A. M. Lea sent for exhibition two interesting beetles of the genus *Lissoles*, which he had presented to the British Museum (Natural History) Teratological Collection: *L. curvicornis*, Boisd., var. with an additional leg jutting out from the left front coxa, and *L. punctatus*, Lea, an hermaphrodite having the left side ♂ and the right ♀. Mr. H. St. J. Donisthorpe exhibited an example of *Helcon ruspæta*, a Braconid new to Britain, taken at Cannock Chase on July 16th last, in a cell of *Strangalia 4-fasciata* in a fallen birch tree,

and an example of the host captured at the same time. Mr. P. J. Barraud, examples of two new forms of *Melitæa aurinia* from Italy (*a*) var. *aurunca*, Turati, from the Aurunci Mountains, Southern-Central Italy, first discovered in May, 1909, by Signor Querci, of Formia, the most striking feature being the wide black median band on the upper-side, contrasting with a rather pale ground-colour; and (*b*) var. *comacina*, Turati, from above Como, North Italy. Mr. A. E. Gibbs, a case of butterflies containing a representative collection of the twenty-eight species met with by him at Blidah and Hammam R'irha, &c., during an entomological excursion to Algeria made at the end of May and the beginning of June this year. The weather was extremely bad throughout, being cold, wet, and windy; the most interesting species taken in the first-mentioned locality were *Euchlœa eupheno* and *Cœonympha arcanioides*; in the latter *Dryas pandora* and *Melitæa ætheria* var. *algerica*. Mr. W. J. Kaye, many remarkable wasp-like and beetle-like *Syntomidæ*, with their models, the wasps and beetles from British Guiana, S.E. Brazil and Venezuela. Attention was particularly drawn to the wonderfully similar habits of the one to the other, so much so, that it was impossible in some instances to distinguish the moth from the model until it settled. This was the case with *Pseudosphex noverca* and the wasp *Zethus binodis*, which Mr. Kaye had caught on *Ageratum* flowers at Fernandes Pinheiro in Parana. From Caracas, Venezuela, were shown also the Syntomid *Macrocne me lades*, with a Pompilid wasp of an undescribed species. The two insects had been caught flying together. In the discussion which followed, the President said that cases of close similarity with insects of different Orders were always welcome, and that in this instance Mr. Kaye had shown that the resemblance extended not only to outside appearances, but to the habits of the several mimics and their models. Arguments based upon cabinet specimens alone as to the supposed resemblance of originals in the field were to be accepted with caution. Mr. C. J. Gahan, Mr. G. C. Champion, the Rev. F. D. Morice, Mr. J. W. Tutt, Mr. A. Sich, Dr. T. A. Chapman, and other Fellows joined in the discussion. Mr. E. D. Nevinson, bred series of *Xanthia ocellaris*, developing three distinct aberrant forms, and examples of *X. fulvago* and *X. gilvago* for comparison, the exhibit demonstrating the apparent transition from one species to the other through the typical and variant forms. The only other series bred from British ova by Mr. Mills in 1908 displayed no variation of any kind, and were all typical specimens. The Hon. N. C. Rothschild, a number of Anthrocerids captured in Great Britain, and called attention to some remarkable specimens secured at Ashton Wold, Oundle, which belonged to the form known as *Anthrocerus hippocrepidis*; he also showed some enormous specimens of *A. filipendulæ* from the same locality, and pointed out that this large race had apparently exterminated *A. hippocrepidis* in a locality where that species had only recently appeared. Commenting on Mr. Rothschild's exhibits, Mr. J. W. Tutt said he also found the insect confined to rough pastures, and also with a tendency to die out in one spot and appear in a similar one at no great distance.

Sir George H. Kenrick communicated a paper "On some rare and undescribed Butterflies from Dutch New Guinea." Mr. A. E. Wileman, on "New Species of *Heterocera* from Japan."—H. ROWLAND-BROWN, *Hon. Secretary*.

NOTE.—Subscriptions for 1910 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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

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

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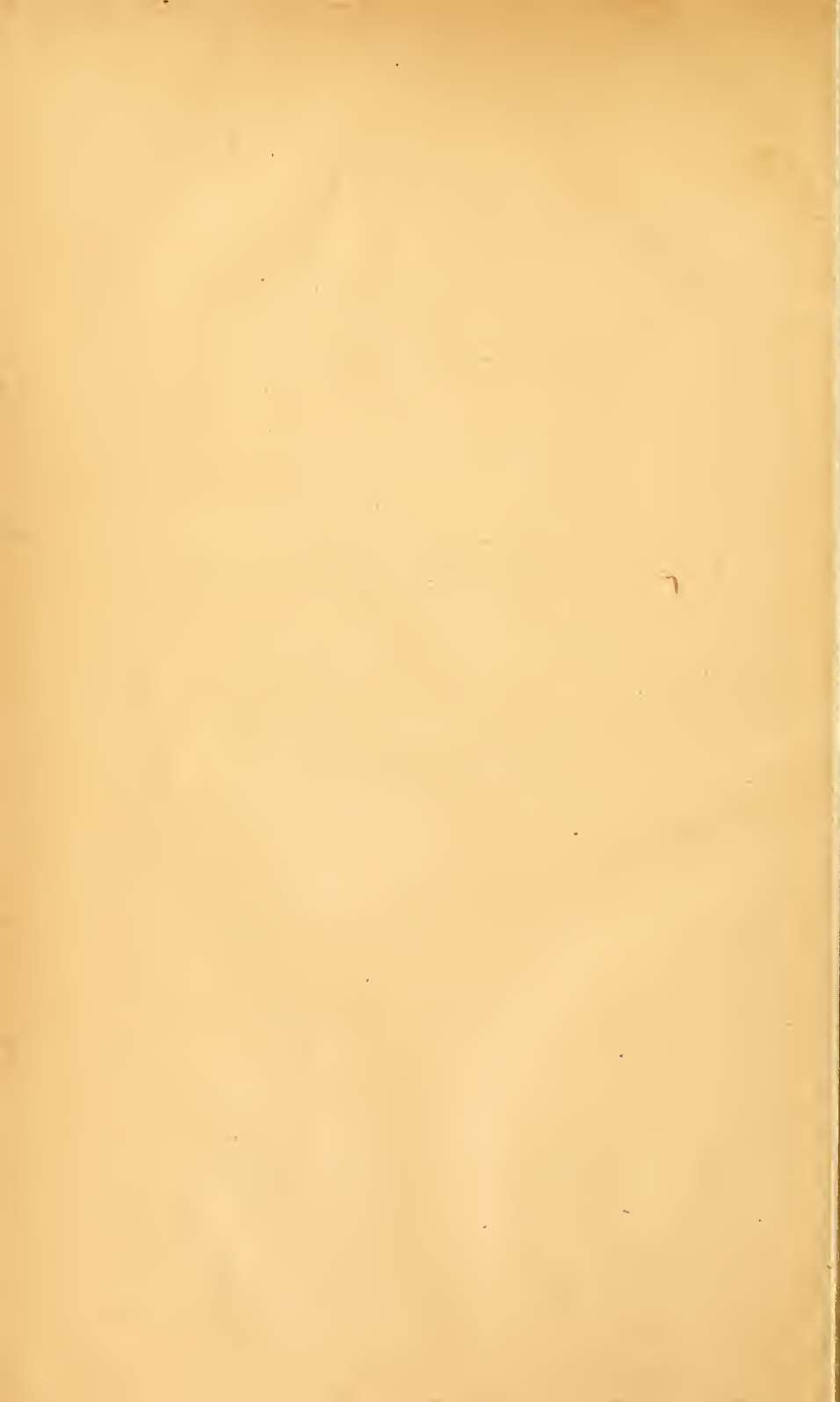
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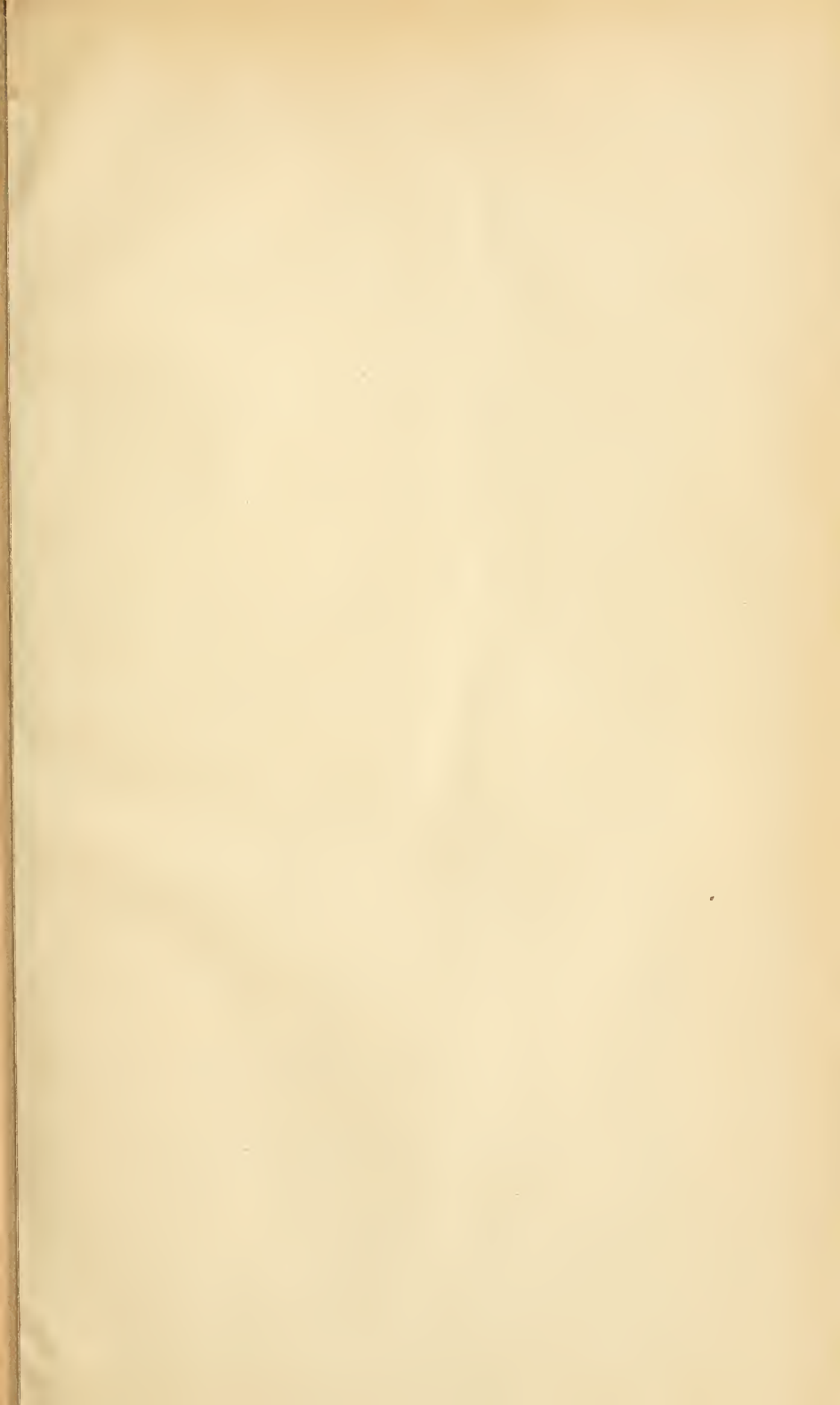
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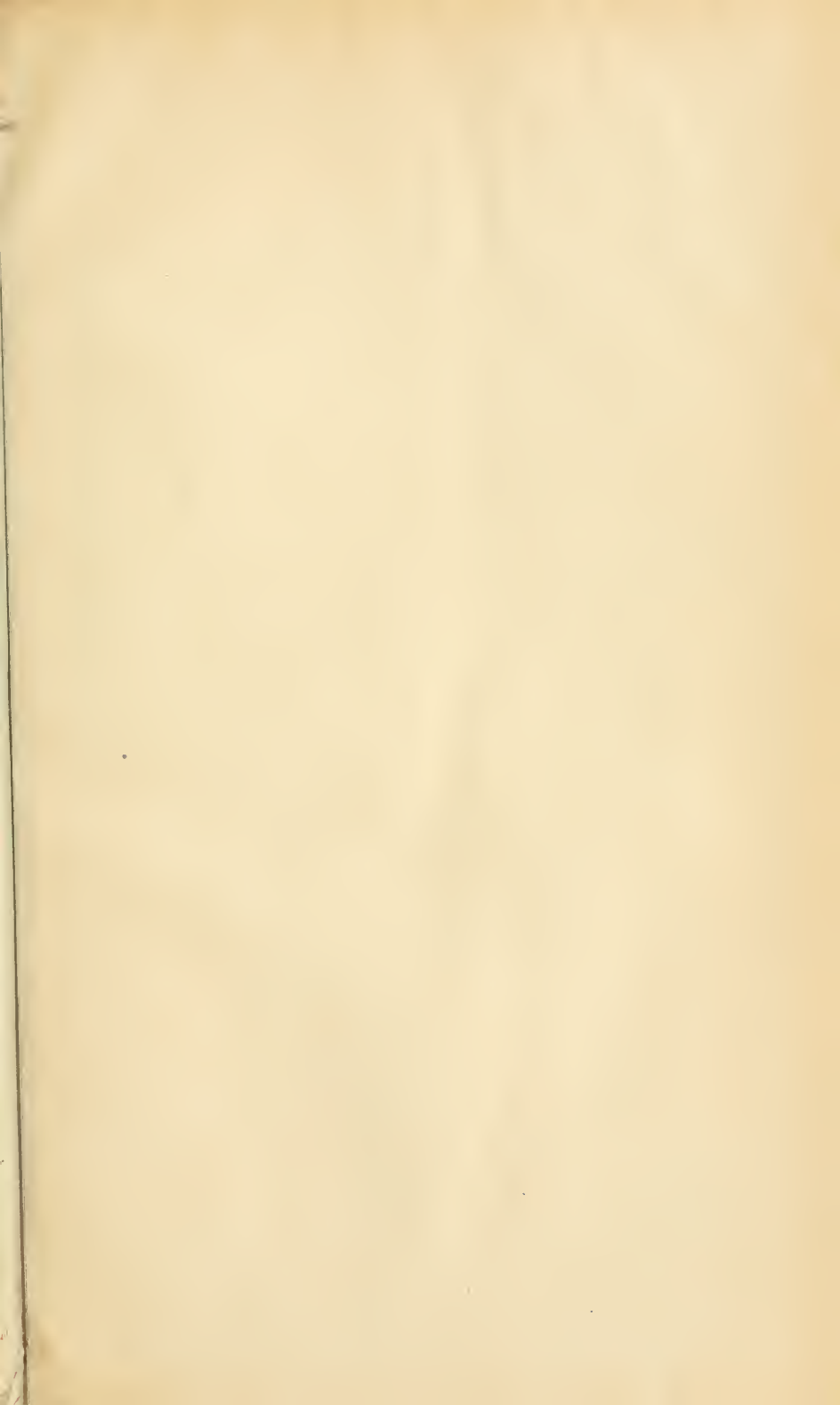
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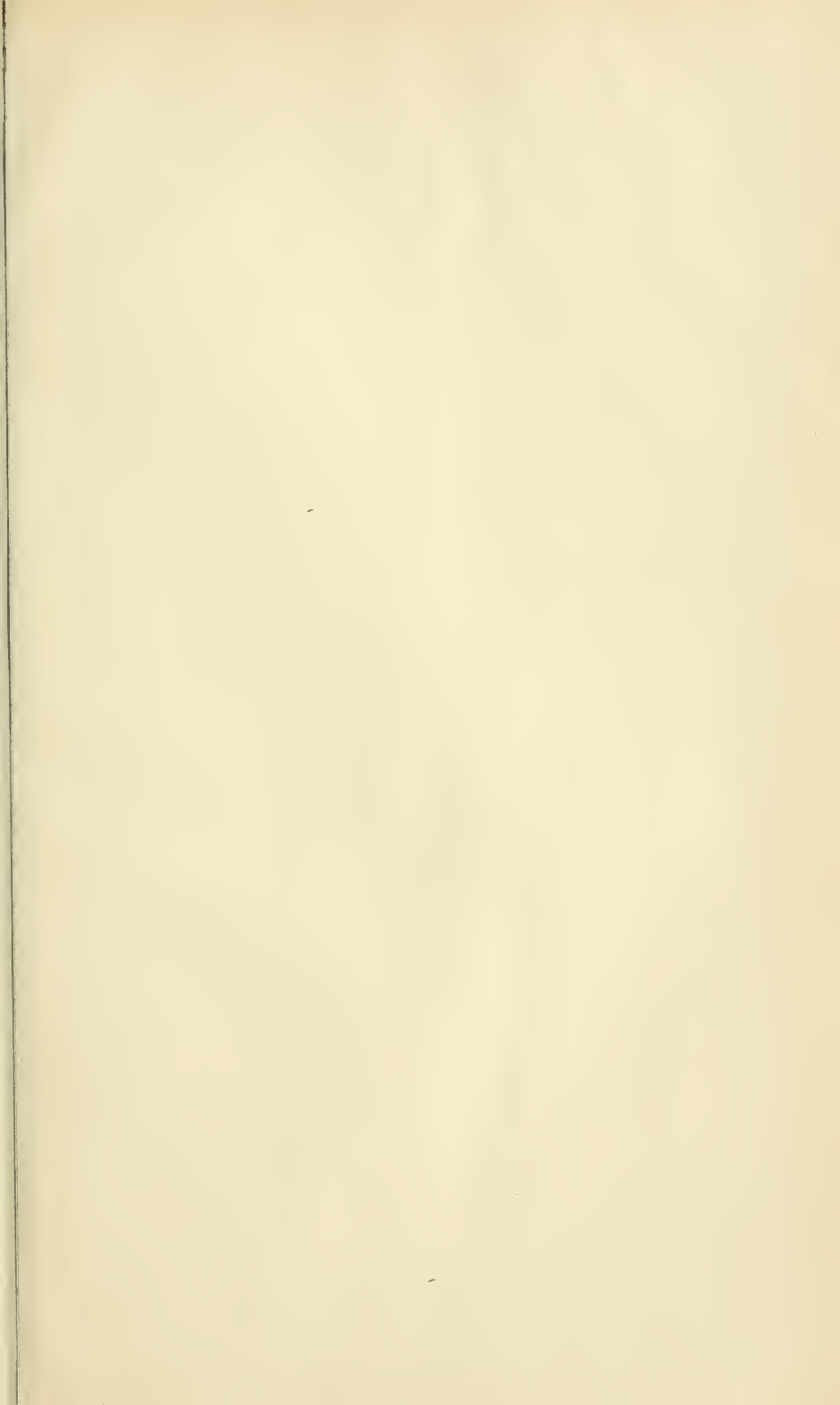
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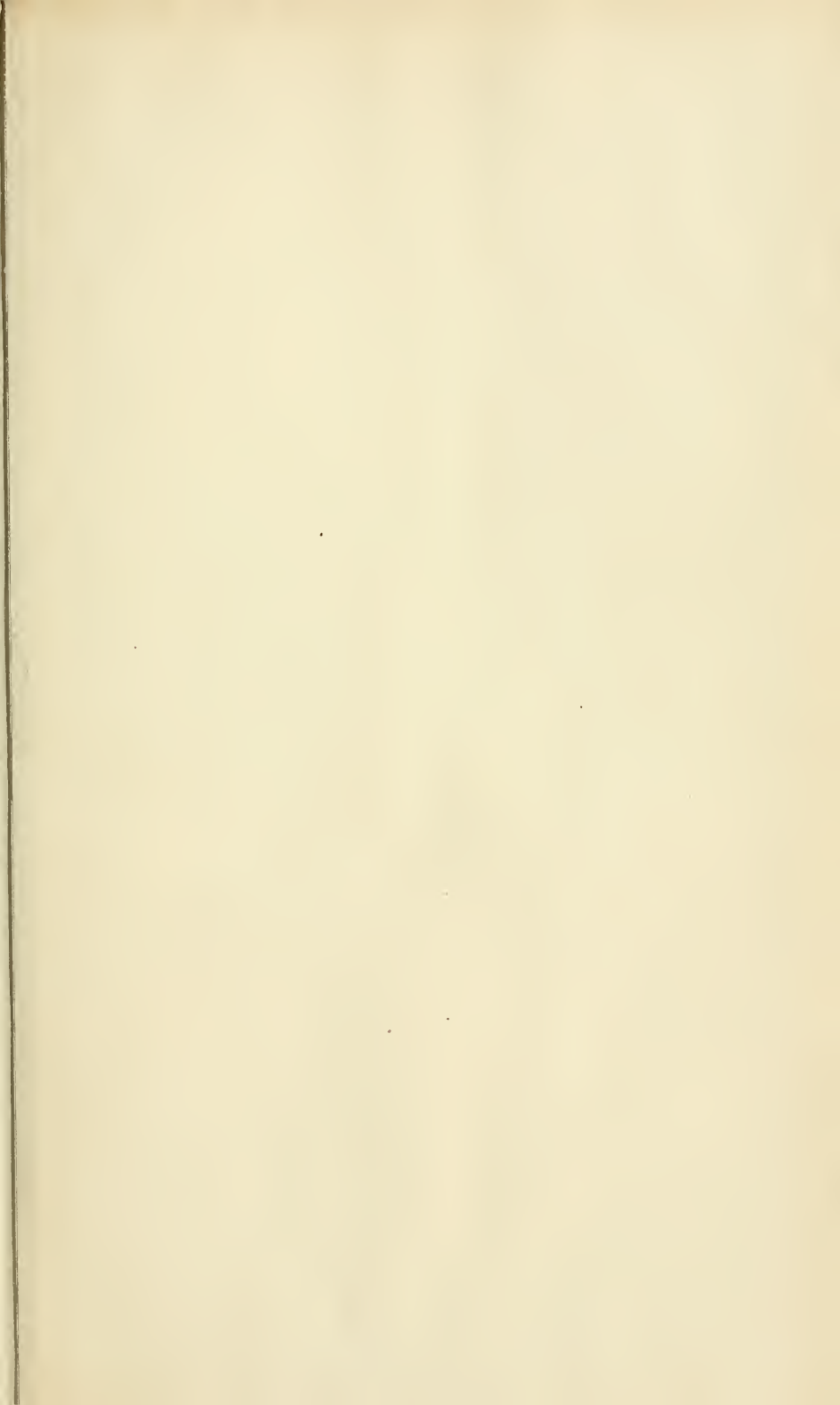
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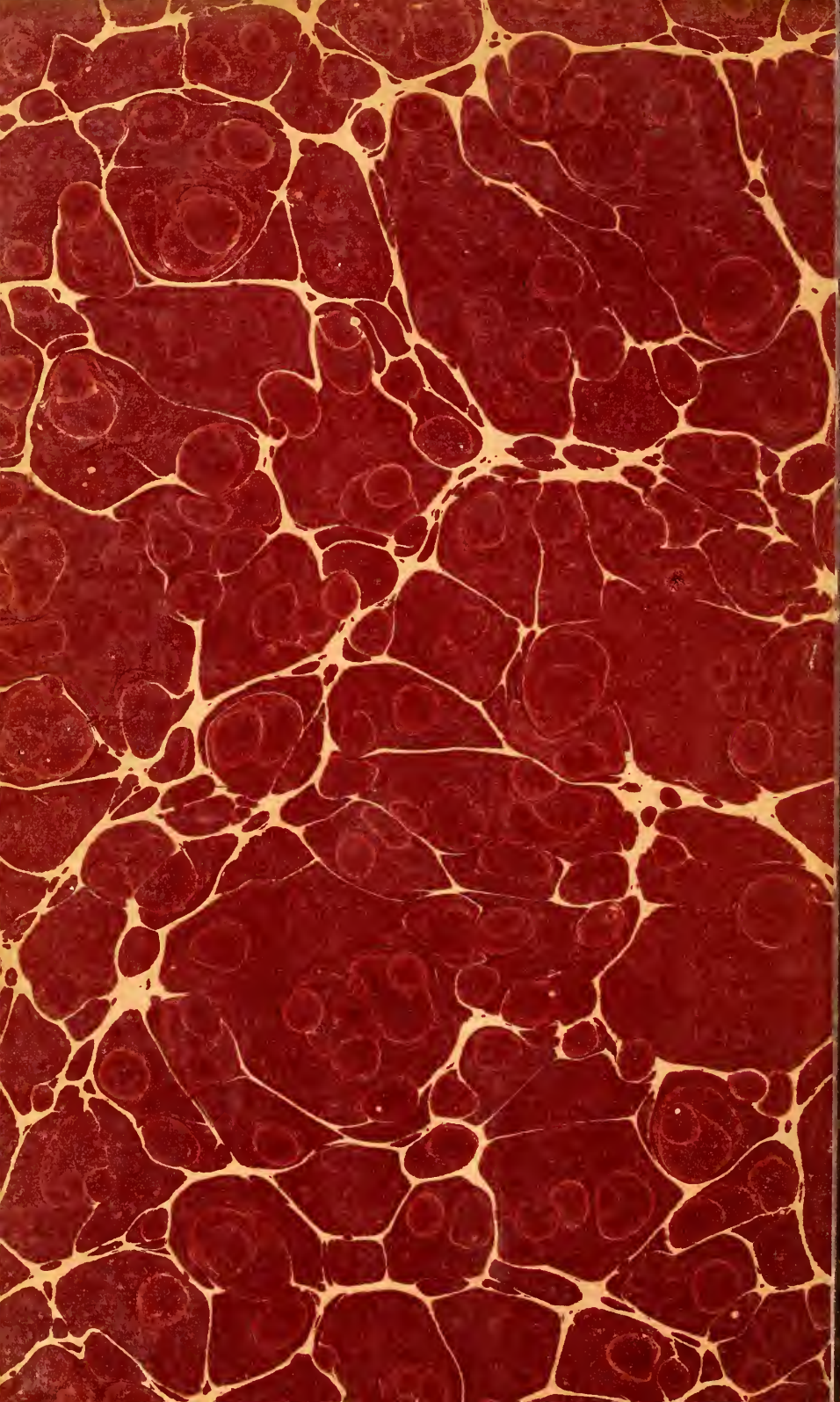














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