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ERRATA.

- Page 106, lines 11 and 12 from bottom, for "*chloris*," read "*aurata*."
 „ 111, line 1 from bottom, for "*R*," read "*T*."
 „ 116, bottom line, for "*Fröhlich*," read "*Frölich*."
 „ 208, line 7 from bottom, for "*Coniopora*," read "*Conipora*."
 „ 215, „ 13 from bottom, for "three," read "four."

JAN 18 1893

T H E

ENTOMOLOGIST'S MONTHLY MAGAZINE.

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[VOLUME XXXIV.]

ABERRATIONS OF *ARGYNNIS PAPHIA* AND *THECLA QUERCÛS*.

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

Not the least remarkable result of my summer excursion to the south was the capture of an extraordinary aberration of *Argynnis Paphia*. It is a female, and its peculiarity does not lie in its colours, but in their distribution, which will be best understood as far as the upper-side is concerned, from the accompanying figure. It will be seen there is a decided asymmetry in the markings of the fore-wings; the light terminal and sub-terminal rows of spots, which are distinct on the left, are reduced to mere traces on the right. In the hind-wings the asymmetry is little marked.

The under-side of the fore-wings is shining green at the tip, the extreme apex being paler; otherwise these wings are tawny, with a broad median blackish suffusion. In the hind-wings there is a median green band, the base and a broad terminal band being silvery.

The insect was taken in July, in an extensive wood in Northamptonshire.

The figure (Pl. I) is reproduced from a photograph made directly from the insect under a very powerful electric light.

I also take this opportunity of recording the capture of a female *Thecla quercûs*, in which the purple of the upper-side of the fore-wings is replaced by a beautiful metallic blue. This was taken also in July in the New Forest.

13, Blackford Road, Edinburgh:

December 6th, 1897.

DESCRIPTIONS OF THE LARVA AND PUPA OF *APROÆREMA*
SANGIELLA, STN.

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

The larva of *Aproærema Sangiella*, Stn., has been already described by Stainton in Ent. Ann., 1867, p. 21, but as his description, which is copied by Meyrick in his Handbook, is very brief, a more detailed one, made on May 15th, 1896, from nearly full-fed larvæ kindly sent me from Co. Durham by Mr. J. Gardner, may be useful.

LARVA.

Length, 7—8 mm. *Greatest breadth*, 1·7 mm.

Head considerably narrower than the prothoracic segment, highly polished, amber-yellow; mouth parts reddish; ocelli black, distinct. *Prothoracic segment* with a highly polished blackish plate divided across the centre by a whitish line. The incisions which precede and follow both the prothoracic and the mesothoracic segments are conspicuously greenish- or yellowish-white. The thoracic and abdominal segments viewed together form a short stumpy mass, very stout in the middle, and tapering much and rather suddenly towards both extremities, rather dark reddish-brown, occasionally brownish-red, with a whitish or yellowish-white dorsal line on the thoracic segments. *Tubercles* and *spiracles* very small and inconspicuous, black, polished, emitting pale hairs. *Anal plate* small, polished, blackish. *Ventral surface* yellowish red-brown, with some minute black polished tubercles. *Legs* highly polished, horny, externally black, with the joints pale ringed, internally much paler. *Prolegs* semi-transparent, yellowish-white.

The larva lives in a neat habitation formed by drawing together with silk the edges of the topmost outer leaves of a shoot of *Lotus corniculatus*, and feeds on the tender heart of the shoot, moving readily from one sprig to another. A few of the larvæ received were still small, but all alike were very similar in colour and markings to those described above.

PUPA.

The following description was made on May 25th, from pupæ which had assumed that state only a few days previously:—

Length, 5·5—6 mm. *Greatest breadth*, 1·7 mm.

Rather short and stout, brownish-orange, with the wing-cases and ventral surface of the anterior segments rather paler; the abdominal segments, and, to a less noticeable extent, the other parts are clothed with a short whitish pubescence.

Head rather broad and flattened above, rounded in front. *Eyes* showing through as black spots. *Wing-cases* reaching to the end of the fifth abdominal segment, and of almost equal length with the antennal cases which lie between them. The shape of the last three segments when viewed together reminds one of that of the sharpened end of a common pencil, the seventh abdominal segment

narrowing abruptly like the cut wood, while the following ones are relatively very narrow, and resemble the lead; the pointed anal extremity is armed with some orange coloured or whitish hooked bristles. The colour of the whole pupa soon darkens to orange-brown, and then gradually to black before the escape of the imago. The fifth and sixth abdominal segments were the only "free" ones in the several pupæ examined, so most probably this is the case in both sexes.

The pupa is enclosed in a small and closely-spun white silk cocoon, well concealed between the united leaves of the shoot of the food-plant. The moths emerged from June 7th to 14th.

It has been suggested to me before now that *Aproærema Sangiella*, Stn., is specifically identical with *A. coronillella*, Tr., but the idea is quite untenable. Whereas the larva of the former, which feeds on *Lotus corniculatus*, is, at any rate from an early stage and presumably throughout, dark reddish-brown or brownish-red, that of the latter, which feeds on *Coronilla varia*, and has also been recorded as found on *C. minima*, *Vicia*, *Genista tinctoria*, *Ononis spinosa*, *Lathyrus pratensis*, *Astragalus glycyphyllos*, *A. bæticus*, and *Aster amellus*, but not on *Lotus corniculatus*, is, when feeding up, "greenish, spotted with reddish, indistinctly towards the head, but more distinctly posteriorly," and when full-fed is no longer green, but "pale amber, with the red spots more distinct," as described by Stainton in Nat. Hist. Tin., vol. x, where the imago, larva, and mode of feeding are also figured. The distinctions between the imagines are much less obvious, but Stainton points out that *A. Sangiella* has the fore-wings longer, narrower, and more pointed, the costal spot more oblique, and the dorsal spot less distinct, than *coronillella*, and has also when in fine condition a decided bluish gloss, which is wanting in the latter. Meyrick lays stress also on the difference in the colour of the pale spots, which are pale ochreous in *coronillella*, but ochreous-whitish in its ally. As regards the shape, direction, and distinctness of these spots, it must be added that they vary immensely in *Sangiella*. The distribution of both species seems in Britain to be strangely limited, for whereas *coronillella* is only known to have occurred at Mickleham, in Surrey, where Stainton suggests that the larva probably feeds on *Onobrychis sativa*, *Sangiella* has, I believe, never yet been met with outside the county of Durham.

The Rectory, Corfe Castle :

November 16th, 1897.

LOCAL VARIATION IN *LEPIDOPTERA* FROM THE ORKNEYS.

BY C. G. BARRETT, F.E.S.

A box of insects, forwarded for examination by Mr. E. M. Cheesman, of Stromness, all captured in the Orkneys, presents some points of interest.

Nemeophila plantaginis, L.—The beautiful white variety, *hospita*, is represented, and, as usual, its complement in a form of the female with brilliant red hind-wings. In other specimens there is a tendency to breaking up of the markings: the large cross in the hinder portion of the fore-wings being often separated from the longitudinal stripe, or having two or even three of its arms obliterated; or the stripe is broken by the black ground-colour.

Agrotis saucia, Hüb.—One specimen, very pale in colour, but worn, apparently new to these Isles, though it has been taken in Shetland.

Noctua glareosa, Esp.—A slate-grey form, not quite so dark as is found in the Shetlands, but having the transverse lines and margins of the stigmata conspicuously pale, and the black interspaces strongly marked—very pretty.

N. festiva, Hüb., var. *borealis*, Tengs.—Rather narrow and pointed-winged specimens, as found in the Shetlands, and some of them of a very rich purple-brown. The form erroneously called *conflua*, Tr.

Caradrina cubicularis, Schiff.—One specimen having the fore-wings so dark that the usual submarginal stripe and costal spots are quite obscured.

Hypsipetes elutata, Schiff.—Some of the usual full size, but varying to uniform green-black; others of the small mountain variety varying to rusty-brown and rusty-black, with green clouding.

Melanippe montanata, Schiff.—Along with ordinary typical specimens is a very pretty variety, not of the character of those from the Shetlands, but having the fore-wings rather narrow and pointed, the general surface very softly shaded with soft, warm, fawn-colour, and the central band of a deeper tint of the same.

M. fluctuata, L.—Fluctuating as usual. Some having the ground-colour nearly as white as in the south, but with the central band and rippled markings very black; others with grey ground completely covered with rippled markings in dark grey, and with the central band but little darker: or grey with very little rippling.

Coremia munitata, Hüb.—One form has an exceedingly rich, deep, purple-red central band, margined with black; another, with the black margins very sharp and distinct, has the middle portion of the band extremely pale purplish-pink or whitish-pink, giving it an extraordinary resemblance to the paler varieties of *C. propugnata*, Schiff.

Cheimatobia brumata, L.—The nervures of the fore-wings much dotted or streaked with dark olive-brown, giving it a blacker appearance.

Cidaria russata, Schiff.—With ordinary forms is one having the general surface of a tawny-yellow, the central band being pale tawny-brown.

Crambus tristellus, Schiff.—One specimen of a soft, bright, yellow-brown, with the pale streak rather obscure, has two distinctly visible, angulated, transverse lines.

There are slight variations in other species, but hardly such as can be put definitely into words.

39, Linden Grove, Nunhead :

December, 1897.

COSSUS LIGNIPERDA: CHANGE OF HABIT OF LARVA WHEN
ICHNEUMONED.

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

Any change of habit of a larva made not in its own interest, but in that of a parasite with which it is infested, is worthy of note. I do not know whether this instance in the case of *Cossus* has been noted before or not.

According to my observations of *Cossus*, it leaves its burrows when full-fed, makes a hibernating cocoon, and in spring either in this or in a fresh place makes a pupating cocoon. It does not, however, make a cocoon at any earlier period, or in its burrows.

Meniscus setosus is a large ichneumon, well known as a parasite of *Cossus*. I met with its cocoons this year under circumstances shewing that it quitted its host when the latter was rather more than half full-size. A size that I have been used to regard as one year short of full fed, and which Buckler figures as in its second year. In a *Cossus*-infested tree at Sterzing (Tyrol), I found several cocoons, evidently made by *Cossus* larvæ at this stage, as their remains testified, and occupied also by a cocoon of the ichneumon, which had emerged from the destroyed larva after it had spun up. The *Cossus* cocoon was not a very strong structure, still strong and definite enough, and was made under bark loosened by the *Cossus*, and in fact in the *Cossus* burrows, though superficially. The presence of the parasite had, therefore, induced the *Cossus* to make a cocoon in its burrow, though superficially, again evidently in the interest of the parasite, and to do so when only half fed.

The variation from natural habit may perhaps be regarded as due to a premature and weak maturity. The larva acts as if full-grown, desires to spin up, and even attempts to leave the burrow, but only succeeds in reaching a superficial portion of it.

I owe the verification of the name of the ichneumon to Mr. Bignell.

Redhill : December, 1897.

NOTES ON APHIDES.

BY G. C. BIGNELL, F.E.S.

CALLIPTERUS QUERCÛS, Kalt.—One of my young oaks growing in a flower pot this autumn was much infested with *Callipterus quercûs*. On October 21st, when looking at them I saw a winged male, and on reference to the figure in Buckton's Monograph, I observed that it did not agree in colour with that species; I consider this, however, to be only a variety, as it was in company with the yellow viviparous females of this species, a description of it may be of service at some future time.

Head wider than the thorax, both very broad. Antennæ, base greenish-black, the remainder fuscous; apex of the second and third joints much darker. Eyes red. Abdomen with seven black dashes on the dorsal region, and five black spots on the sub-dorsal, forming a line with the nectars, which are short, black, and trumpet-shaped. Wings, veins fuscous, and slightly clouded at their apices. Stigma light fuscous, with base, outer and inner margins, and apex much darker, thereby giving a well defined and conspicuous border to the stigma.

Expanse of wing, $6\frac{1}{2}$ mm., or four times the length of the body.

SCHIZONEURA VAGANS, Koch.—This white form* does not appear to have been previously recorded as occurring in England. I captured a dozen winged specimens on October 4th, in Cannwood. I met with it again on the wing on October 11th, nearly a mile distant from the first locality; it is a very conspicuous black insect, with the first *two segments* of the abdomen white, and the basal margins of the last three also white; these I captured when they settled on the leaves to bask in the sunshine.

PROCIPHILUS BUMELIÆ, Schr.—I observed what I am almost certain was this species; I saw many examples, but as I had not my net, I only managed to capture one, this one was driven on to my coat in my endeavour to capture it with my hat; I placed it in a glass tube, but much moisture condensed, and it got spoilt by the end of my walk. I had a good look at it directly after its capture, and on my arrival home I hunted through Koch's Monograph of the Aphides, and therein found a good figure of it. This insect when on the wing looks very like a small white feather floating along; I tried many times to capture it with my hat, but the current of air carried forward with my hat also carried the insect with it.

Stonehouse, Plymouth:

November 9th, 1897.

* In G. B. Buckton's Monograph of the British Aphides, vol. iii, p. 107, this name is placed as a synonym of *Schizoneura corai*, which is described as "velvety-black, with the first three abdominal and also the apical rings ferruginous."

CEPHENOMYIA AURIBARBIS, Mg.: LARVÆ, &c.

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

Some weeks ago I received from Mr. J. Mearns, of Aberdeen, some larvæ taken from "the heads" of Red Deer, which had been sent to Mr. G. Sim, of Aberdeen, to be mounted. These larvæ I sent to Mr. E. E. Austen, of the British Museum. He informs me that they are the larvæ of *Cephenomyia* sp., and probably of *C. auribarbis*, Mg.

On writing to Mr. Mearns for further particulars, he tells me these deer came from Strathdon and other places in Aberdeenshire. In one instance about thirty of these large larvæ (they are about an inch in length) were found near the root of the tongue of one individual deer; they were alive when extracted.

As will be seen from Mr. Austen's paper in the present number, this fly is one of the *Æstrinæ*, of which nine species belonging to five genera are found in Britain; it is parasitic in the larval state in the nasal passages and throat of the Red Deer. It was introduced as British under the name of *Cephenomyia rufibarbis*, Mg., by Mr. Percy Grimshaw, of the Edinburgh Museum (*Annals of Scottish Natural History*, 1895, pp. 155-158), from two specimens collected in Ross-shire in 1894.

Mr. Grimshaw has since presented a specimen to the British Museum, and there is little doubt that these larvæ belong to the same species.

I am indebted to the paper by Mr. Grimshaw for the following particulars, which may be of interest to British Dipterists. "*Cephenomyia* may be readily distinguished from *Gastrophilus* by the inflexion of the fourth longitudinal vein of the wings; from *Hypoderma* by the prolongation of this vein beyond the origin of the apical transverse vein, by the position of the discal transverse vein, which in *Hypoderma* joins the fourth longitudinal immediately at its angle, and especially by the absence of the dividing ridge in the concavity of the face. From *Æstrus* it differs in the apical transverse vein not uniting with the third longitudinal. And from *Pharyngomyia* in the body being more uniformly coloured, never checkered, but densely clothed with hairs."

A full description of the genus and species and life history will be found in Mr. Grimshaw's paper. I will only give a few particulars, therefore, taken from his account.

Cephenomyia auribarbis, var. *rufibarbis*, Mg., is a large fly nearly three quarters of an inch in length; head as broad as the thorax; cheeks with a beautiful bright

tawny beard. Antennæ very short, dark reddish-brown; third joint orbicular with a naked dorsal seta. Thorax with five not very distinct naked lines, otherwise densely clothed with hairs which form a tawny transverse band continuous in colour with the hinder part of the head; hinder part of thorax clothed with black hairs. Abdomen rounded in both sexes, densely clothed with hair, which on the foremost segments are dingy yellow, while the apex is white; between these is usually a black bar. Wings with the fourth longitudinal vein bent upwards at a right angle, forming an apical transverse vein, the straight portion slightly prolonged beyond the angle. Halteres dark brown, with white tips.

The females are viviparous, and seize the opportunity to deposit their larvæ in the nostrils of the Red Deer, which are greatly disturbed at the presence of the flies.

The little maggots adhere firmly by means of minute hooks with which they are furnished, and work themselves upwards until they reach the back of the throat, where they remain until fully grown, when they are ejected by the coughing of their host.

The colour of the larvæ is dirty yellow, the upper part of the last segment yellowish-brown.

Guestling Rectory :

November 1st, 1897.

NOTES ON THE *ÆSTRINE* PARASITES OF BRITISH DEER.

BY ERNEST E. AUSTEN.

The following paper, which possesses no claim whatever to originality, is the result of a request from the Rev. E. N. Bloomfield for further information upon the subject of *Cephenomyia auribarbis*, Mg. While endeavouring to comply with Mr. Bloomfield's desire, it occurred to me that since hardly anything has been written in English on the subject of the *Æstrinæ*, which, in the larval state, are parasitic upon deer, it might be of some slight use to British Dipterists to give a brief summary of what is known of such of these interesting forms as are either recognised members of our fauna, or may perhaps yet prove to be so. Unfortunately, I can boast of no acquaintance in the living state with any of the species mentioned, and the only one at present represented in the British Museum collection is *Cephenomyia auribarbis*, of which we have a single female from Glenmore Forest, Cairn Gorm Mts., Inverness-shire, taken in June, 1895, by Mr. L. W. Hinxman, and kindly presented by Mr. P. H. Grimshaw, of the Edinburgh Museum, and four larvæ, the story of which is described above by Mr. Bloomfield. Consequently, not only for details of life-

history, but also for specific characters, I have been compelled to rely upon Prof. Brauer's "Monographie der *Æstriden*"—that storehouse of information upon everything connected with the present group.

The species of *Æstrinæ* parasitic upon British deer, so far as at present known, are three in number:—*Cephenomyia auribarbis*, Mg., *Pharyngomyia picta*, Mg., and *Hypoderma Diana*, Brauer. The larvæ of the two former occur in the throat and nasal passages; those of the latter species, as the generic name implies, in the subcutaneous tissue.

Cephenomyia auribarbis, Mg.—As this species and its habits were described by Mr. Grimshaw when he introduced the fly as a British insect,* and have also been dealt with in the foregoing paper by Mr. Bloomfield, I need only add a few supplementary details. According to Brauer, the perfect insects of *C. auribarbis* may be met with from May to July, though the majority of individuals appear in May, and they are of more isolated occurrence in July.† Larvæ in the third or final stage are to be found in numbers in the throat of the red deer in February; they leave the host from the beginning of March to April, and the pupæ may be looked for at the end of March and commencement of the latter month.‡

The full grown larvæ of *Cephenomyia* may be distinguished from those of *Pharyngomyia picta*, Mg., which are also parasitic in the throat of the red deer, by the fact that their short, fleshy antennæ, which are situated immediately in front of the mouth-hooks, are in contact at the base, while those of *Pharyngomyia* larvæ are widely separated.

In addition to *C. auribarbis*, three other species of *Cephenomyia* are found in Europe, viz.: *C. stimulator*, Clark, *C. trompe*, Fabr., and *C. Ulrichii*, Brauer. Of these, *C. stimulator* is parasitic upon the roe (*Capreolus caprea*, Gray), *C. trompe* upon the reindeer (*Rangifer tarandus*, L.), and *C. Ulrichii* upon the elk (*Alces machlis*, Ogilby), and their larvæ are to be found in the throats of their respective hosts.

It is quite possible that *Cephenomyia stimulator* will one day also be recognised as British, and entomologists living in parts of Dorset and Scotland where roe deer occur would do well to look out for it. Brauer states that this species is on the

* P. H. Grimshaw, "On the Occurrence in Ross-shire of *Cephenomyia rufibarbis*, a New British Bot-Fly parasitic on the Red Deer:" *Annals of Scottish Natural History*, 1895, pp. 155-158. Grimshaw follows Brauer in his choice of the specific name. The species was described by its author, Meigen, twice over: on p. 171 of Vol. IV of the "Systematische Beschreibung," as *Æstrus auribarbis*, and again on the following page (p. 172) as *Æ. rufibarbis*. Brauer considered *auribarbis* to be a variety, and on that account elected to designate the species by the later name. This, however, being contrary to the rules of priority, cannot be admitted.

† I am informed by Mr. C. W. Dale, of Glanvilles Wootton, that he took a single specimen of this species at Loch Rannoch, Perthshire, on June 15th, 1896; it came flying round his head.

‡ It should be remarked that these dates refer to Austria, and may require slight alteration in the case of Great Britain.

wing during July and August and until the first days of September, and that he has found the full-grown larvæ in the throat of the roe from May to August. The fly which, like the rest of its congeners, is thickly clothed with hair, measures 15 mm. (7 lines) in length. In the male the hair on the thorax in front of the transverse suture is of a bright greyish-ochre; behind the suture it is deep blue-black; the abdomen is clothed with bright yellow hair, with an orange-yellow tuft on each side of the segments from the second to the fourth, the tufts on the third enclosing a small black-haired spot. The female is so far similar to the male that it cannot be mistaken, though considerable differences are seen on a close examination; the hairy coat is less brightly coloured, and that on the abdomen is sparser; owing to the hair being concentrated more on the anterior halves of the segments, the abdomen appears to be banded.

Pharyngomyia picta, Mg.—This species, of which the larvæ, like those of the preceding, are found in the throat of the red deer (*Cervus elaphus*, L.), though an old established member of our British List, has not been heard of for half a century, and it is quite time that a record was published of the capture of another British specimen. Figured by Curtis (under its original name, *Æstrus pictus*) in his "British Entomology," pl. 106 (1826), where it is stated that a single specimen was "taken by Mr. Samouelle in the New Forest at Burley Heath, 12th of June, 1823," its larvæ were afterwards made the subject of a "Note on the Bot infesting the Stag," by Bracy Clark, published in the "Zoologist," vol. v, 1847, pp. 1569, 1570, and reprinted subsequently in Clark's "Addenda, 1848."* Clark refers to the specimen taken by Samouelle, and says that a subsequent capture was made in the same place by "our very worthy friend and excellent entomologist, J. C. Dale, Esq."†

Since the date of Clark's observations nothing more has been heard of the species in this country. So far as British entomologists are concerned, it seems to have remained sunk in oblivion for the last fifty years, and to have become, so to speak, one of those *nomina nuda* of the List, of which *Ephippium thoracicum*, Ltr., *Doros conopseus*, Fabr., and others are conspicuous examples. Nowadays red deer are doubtless much less numerous in the New Forest than they were in the first half of this century, and this may well account for the disappearance of *Pharyngomyia picta* from that locality. In order, if

* Cf. Austen, Ann. Mag. Nat. Hist., ser. 6, vol. xvi, 1895, pp. 150, 151. The "Note" as originally published was headed with figures of the larva and pupa described as those of "*Æstrus cervi*"; the reprint in the "Addenda, 1848," has different figures of the larva and pupa, and also a woodcut of the imago.

† The specimen alluded to is still in existence, and in the collection of Mr. C. W. Dale, to whom I am indebted for the following extract from his father's entomological diary, giving the date and exact locality of its capture:—

"1835. July 31st. Stoney Cross, Hants. I think I saw 2 *Æstrus pictus* settle on a fern, and I struck at and missed them: looked like bees.

"August 1st. Lyndhurst. *Æstrus pictus* on dried leaves. Captured this one."

possible, to obtain further information upon this point, I applied to the Hon. G. Lascelles, Deputy Surveyor of the New Forest, of the Queen's House, Lyndhurst. Mr. Lascelles, writing under date October 17th, 1897, replied to my enquiries as follows:—

"The number of red deer in the New Forest is very small—perhaps a dozen or so. At the time of the Deer Removal Act, 1851, they were reduced to the lowest ebb, and a mere remnant has existed since. I have killed only a few from time to time, and I have never observed such a bot-fly as you name, or its larvæ in the throats of deer. I have killed so many *fallow* deer that if it existed in their case I must have observed it."

With reference to the last remark of Mr. Lascelles, it may be added that the fly has never been reported to attack fallow deer; indeed, did it do so, *Ph. picta* ought to be comparatively common, considering the number of fallow deer kept in parks in this country.* All *Æstrinæ* (even species like *Hypoderma lineatum*, Vill., and *Gastrophilus equi*, Fabr., whose larvæ are parasitic in domestic cattle and horses) are relatively rare in the perfect state, and, therefore, it is not surprising that *Ph. picta* should have disappeared from the New Forest, where it could have but a dozen victims. But the argument does not apply in the case of deer-forests in Scotland, or the country of the "Devon and Somerset," and Dipterists who have access to these favoured localities at the proper season should bear this in mind.

As a further hint to collectors, it may be added that, according to Brauer, *Cephenomyia auribarbis* is a comparatively sluggish fly, which does not wander far from the haunts of the deer; *C. stimulator* and *Pharyngomyia picta*, on the other hand, are much more active and roam further afield. Of these latter species, the males in particular are very partial to the summits of mountains, where they greet the climber by sweeping to and fro in the air in front of him, while in colder weather they may be found seated on stones warmed by the rays of the sun—

Brauer states that the larvæ attain their full development in May and June, and that the fly is on the wing at the end of June and during July. Unlike *Cephenomyia* this species is clothed only with short hair, so that it appears to be bare. According to Brauer ("Monographie," pp. 178, 179) the head is yellowish-brown, beautifully marked with shimmering silvery flecks; the face and occiput are

* For some reason the fallow deer appears to be remarkably little troubled by the attacks of *Æstrinæ*. According to Brauer and von Bergenstamm ("Vorarbeiten zu einer Monographie der Muscaria Schizometopa—Exklusive Anthomyiide—Pars iv.," Denkschr. math.—naturwiss. Classe K. Akad. Wiss. Wien, Bd., lxi, 1894, p. 587) the only species that molest it are "*Cephenomyia rufibarbis*, Wd." (= *C. auribarbis*, Mg.), and an unknown species of *Hypoderma*. The former, however, is given with a note of interrogation, and from a comparison with the "Monographie," p. 276, its insertion as a parasite of the fallow deer appears simply to rest on a vague and unsupported statement by Bechstein ("Gemeinnützige Naturgeschichte Deutschlands," Bd., i, 1801, p. 452) to the effect that this deer is "von Engerlingen (*Æstrus*) geplagt" ("plagued by bots (*Æstrus*)").

clothed with fine downy golden-yellow hair; the thorax in the male is darker, and somewhat bluish-grey, in the female it is bright silvery bluish-white; it is spotted and streaked with black, especially conspicuous being a broad, dead-black, and somewhat quadrate patch in the median line in front of the scutellum; the abdomen is black, with shimmering silvery markings; the legs are yellowish-brown, and the femora have a dark streak on the posterior side. The length of the fly is from 13 to 14 mm. ($6\frac{1}{2}$ lines).

Hypoderma Diana, Brauer.—This is a little greyish-brown species, smaller than *H. lineatum*, Vill. (the common cattle gad-fly), and according to Brauer its larvæ are parasitic upon the red deer and the roe, being found in cysts (warbles) beneath the skin of the back, chiefly in the vicinity of the spine. Brauer states ("Monographie," pp. 115—117) that the insect is on the wing in May, in Northern Germany later, and until August. The length of the male is 11 mm. ($5\frac{1}{2}$ lines), that of the female 12 mm. (not including the ovipositor). Full grown larvæ are to be met with from February to April, and they leave the host from the beginning of March until the latter month.

According to evidence from a firm of leather merchants, published by Miss E. A. Ormerod ("Report of Observations of Injurious Insects," 1896, pp. 134—139), in Scotland red deer and roe are both troubled with the attacks of *Hypoderma* larvæ, though the former are by far the greatest sufferers in this respect. The firm in question (Messrs. R. and J. Pullman, 17, Greek Street, Soho Square, London, W.) even goes so far as to say that:—"The Scotch red deer pelts are all more or less infested with marks of 'bot.'" To judge from the pelts, hinds are attacked much more severely than stags, but this is due to the fact that the stags are killed earlier in the season, before the larvæ have come to maturity. The same firm states that bot- or warble-marks "have never been noticed on the pelts of fallow deer,"* but that, "The Scottish roe deer pelts are frequently seen very badly 'bot-marked;' but the 'bot-holes' are smaller than in the red deer pelts, and some are so full of small 'bot-holes' it seems as if a charge of shot had riddled the pelts." No Scotch specimens of deer gad-flies have yet been bred, but Miss Ormerod, after examining a number of maggots taken from the hide of a young red deer, considered that they might "be very safely referred to the second stage of the larvæ of the *Hypoderma Diana*, Brauer" (*op. cit.*, p. 137). On the other hand we have the remarkable statement as to the smaller size of the bot-holes in the roe deer pelts. If this is really the case, it can only be explained in one of two ways: either the roe deer are killed at a period when the *Hypoderma* larvæ with which they are infested are not so far advanced as those in the hides of the red deer at the time the latter are shot; or we have in this country two species of *Hypoderma*, one of which is parasitic upon the red deer, the other upon the roe. In the latter event the British roe deer parasite may prove to be *Hypoderma Diana*, while the persecutor of the red deer may be found in *Hypoderma Actæon*, Brauer.

According to the author, this species, which is 13 mm., or just over 6 lines in

* Cf. *supra*, p. 11, note.

length (not including the ovipositor in the female), is parasitic upon *Cervus elaphus*. He characterizes it shortly as follows:—"Smaller species, with thorax marked with four glistening black stripes, and clothed with short and fine hair; abdomen black, flecked with silver, clothed at the base with whitish-yellow, at the tip with golden-yellow hair" ("Monographie," p. 118). Brauer states that he has examined specimens from Austria and Thuringia, and that the insect is on the wing in May. He observed larvæ in the third or final stage in March and April, and adds that they leave the host in the latter month.

British Museum (Natural History),
Cromwell Road, London, S.W. :
November 3rd, 1897.

NOTES ON SOME INTERESTING *HETEROPTERA* MET WITH IN 1897.

BY F. B. JENNINGS.

Prior to the latter half of last season, I had taken no very active interest in the Order *Hemiptera*, but the discovery in August, whilst searching for *Coleoptera*, of some very good species, induced me to begin collecting these insects systematically. I record below my more distinguished captures.

The four species following were all taken in the neighbourhood of Box Hill, Surrey:—

Scirius morio, four specimens.—The first presented itself to my gaze most unexpectedly on August 15th, when pulling up a young *Verbascum* plant, and shortly afterwards I found another under a stone. On August 29th, in the same vicinity, I found a pair at the roots of a tall plant, which I was not botanist enough to recognise. Two of the four specimens were damaged when found.

Sciocoris cursitans.—A single specimen found on August 15th, at the roots of one of the tall plants before-mentioned. The locality appears to be quite a new one for this species, as Mr. Edward Saunders (Hem. Het. Br. Islands, p. 23) records it from Deal and Sandwich only. An additional interest attaches to the locality from its inland situation.

Corimelæna scarabæoides —On August 29th I found some scattered patches of dog-violet growing amongst moss on one of the slopes of the hill. It occurred to me that I might possibly find the weevil *Orobitis cyaneus* at the roots, so I set to work to examine some of them. No *Orobitis* turned up, but presently, on shaking a plant, two specimens of *Corimelæna* dropped out. This encouraged me to go on working, and in about half an hour I had taken ten specimens, of

which one was a larva, and another, although apparently in the imaginal state, had not yet attained its proper depth of colouring, the two latter individuals I restored as nearly as I could to their original positions. I may add that I sifted the thick moss surrounding some of the plants without result.

I believe *C. scarabæoides* has not before been recorded as attached to *Viola*. Mr. Saunders only mentions that it has been found in Britain "in moss and dead leaves, and by casual sweeping," adding that, "Dr. Puton, in his 'Synopsis des Hémiptères Hétéroptères de France,' says it occurs by sweeping in meadows, especially on Ranunculaceous plants" (Hem. Het. Br. Islands, p. 15). It is now of interest to recall the fact that Mr. J. J. Walker has taken another small Pentatomid, *Gnathoconus picipes*, in some numbers at Yarmouth, "at the roots of a species of violet, probably *Viola canina*, in a very restricted space on the North Denes" (Ent. Mo. Mag., 1895, p. 282).

Gonocerus venator.—One specimen beaten out of box, August 29th. This individual is unfortunately minus one of its hind-legs, which injury may possibly have been caused by my too enthusiastic beating. I believe the only previous record of *Gonocerus* in this Magazine was that by Mr. J. W. Douglas, in Vol. ii, First Series (1865), p. 46, which will, I think, bear repetition. Mr. Douglas' note was as follows:—

"Twice, at a long interval, during fifteen years, I have taken a single example by beating the box trees on Box Hill in May; but, although I have beaten about the bush nearly every May, and also in other months, these two were all that rewarded my diligence. Still, it would be hazardous to say that the insects have not been there during any of those seasons, knowing, as we do, how many fortuitous circumstances must often happen together to enable an entomologist to find some particular species. Be this as it may, it is certain that, on the 23rd inst., I was lucky enough to get eight ♂ and eight ♀ of this coveted beauty. They affect the shoots that stand out from the bushes, and are fond of sitting on the top of them in the bright sunshine, and taking short flights from one to another; and when one is in the net, you are not sure of him, as he has a strong propensity to fly out of it.

"Fieber gives oaks and hedge-roses as the habitat of this species; with us it is exclusively found on the box."

The difference in the dates of Mr. Douglas' captures and mine appears noteworthy.*

The following additional species, from various localities, are of more or less interest:—*Henestaris laticeps*, a nice series, for which I am indebted to my friend Mr. W. H. Harwood, of Colchester, who accompanied me on September 10th to the spot on the N.E. Essex coast, where they were taken; *Peritrechus nubilus* (1) with the *Henestaris*; *Coranus subapterus* (2), beaten out of ling at Oxshott, September 11th; *Acanthosoma dentatum*, a short series out of birch

* The Power Collection possesses a series of *Gonocerus*, and Mr. E. A. Newbery informs me that Dr. Capron also had a series, taken, he thinks, about the year 1884.

in Epping Forest, September 14th and 25th, in company with the commoner *A. interstinctum*; *Nabis brevipennis*, several out of *oak*, and one from *hornbeam*, Loughton; I mention this merely because Mr. Saunders only gives it in his work as on *Corylus*; as *N. brevipennis*, like the rest of the genus *Nabis*, is insectivorous in its habits, there seems to be no reason why it should be attached exclusively to one kind of tree; *Salda cincta* (1), on a ditch bank at Cheshunt, Lea Valley, October 24th.

152, Silver Street, Upper Edmonton, N. :
December 1st, 1897.

[I have taken *Gonocerus* on two occasions on box trees at Box Hill, in July and August, 1868; as these are intermediate dates to those given by Mr. Jennings, I think it may be worth while to mention them.—E. S.]

PÆCILOSCYTUS VULNERATUS, WOLFF, AN ADDITION TO THE
LIST OF BRITISH *HEMIPTERA*.

BY H. J. THOULESS.

On September 17th last I took on the sand hills at Yarmouth some *Hemiptera* which did not appear to answer the description of anything in the British list. I sent a pair to Mr. Saunders, who has been kind enough to examine them, and finds them to be *Pæciloscytus vulneratus*, Wolff, a species which occurs in Sweden, Denmark, Germany, France, Switzerland, and all over South Europe, but which has not previously been recorded from Britain.

All I saw were on the patches of *Galium verum* growing among the short grass, but on the continent, according to Dr. Reuter, it has also been found on *Galium Mollugo*, *Achillea*, *Echium*, *Artemisia*, *Plantago*, and *Arenaria*.

It is a very pretty and conspicuous species, somewhat like *P. unifasciatus*, but considerably smaller than that insect, and at once distinguishable by its paler color, being scarcely marked with black, and by the shorter and stouter third and fourth joints of the antennæ, which taken together do not equal the length of the 2nd. In *unifasciatus* the head and thorax are nearly entirely black, the scutellum black, except at the apex, and the elytra have the clavus and a wide band on the corium black.

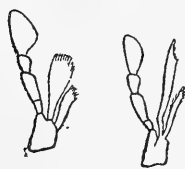
It was not common, and I was only able to obtain just over a dozen specimen. Probably it was rather too late in the season, as most of my examples, especially the males, were rather worn.

48, Grove Avenue, Norwich :
December 3rd, 1897.

VARIATION OF THE FORM OF THE MAXILLÆ IN THE GENUS *MORDELLA*.

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

Several years ago, when studying the *Mordellidæ*, I noticed that some of the species of the genus *Mordella*, European and American, had long slender lobes to the maxillæ, the outer one tapering, and so much elongated as to be partly exposed, and others short obtuse lobes. These characters, overlooked by Mulsant, Emery, and others, are well illustrated in *M. fasciata*, F., and *M. aculeata*, L., as may be seen by the



1.

2.

accompanying figures: No. 1 representing the maxillæ and maxillary palpus of *M. fasciata*, and No. 2 the corresponding parts of *M. aculeata*. The outer lobe in *M. aculeata* varies in length, and the angular dilatation on the inner side towards the apex is not always distinct. Jacquelin Duval's description and figure of the maxillæ of the genus *Mordella* (Gen. Col. Europ., iii, pp. 405, 406, t. 90, fig. 447 *bis*) were probably taken from the S. European *M. sulcicauda*, Muls. (some of the varieties of which closely resemble *M. fasciata*, F.), or from *M. aculeata*, L.; the figure is incorrectly assigned to *M. fasciata*, F. His description does not apply to the last-mentioned species, in which these organs are formed very much as in *Tomoxia biguttata*, Cast.; the maxillæ of this insect being also figured by him on the same plate (fig. 446a). The dissections were made long ago and forgotten, till Mr. J. J. Walker recorded the capture of *M. aculeata* in Kent.*

The sexual characters of some of the species of this family, as illustrated by *Mordellistena abdominalis*, F., &c., have already been noticed by me.†

Horsell, Woking:
September 18th, 1897.

HOMALIUM NIGRICEPS, KIES.: SYNONYMIC NOTE.

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

The *Homalium nigriceps* of our collections, first introduced as a British insect by the late E. C. Rye (Ent. Annual, 1863, p. 89), with some doubt, is, as generally admitted by British Coleopterists, a colour variety of *H. cæsum*, Grav.; it is not, however, referable to the apterous *H. nigriceps*, Kies., but to *H. tricolor*, Rey [Omaliens, p. 218 (1880)].

* Ent. Mo. Mag., xxxiii, pp. 161, 176.

† Biol. Centr.-Am. Col., iv, 2, p. 308; Ent. Mo. Mag., xxvii, pp. 287, 288.

H. nigriceps, Kies., as pointed out by Rey (*loc. cit.*, p. 227), differs from the reddish varieties of *H. cæsum* in having the head less rugose, the elytra shorter, the antennæ longer, &c. *H. nigriceps* is a mountain species, found in the Auvergne, Vosges, Pyrenees, &c., while *H. tricolor* is generally distributed in France, as well as in Great Britain. I have had correctly named specimens of *H. nigriceps* from Cantal, in the Auvergne district, in my collection for many years, but till M. Fauvel recently called my attention to the matter, I had not compared them with British ones. He has recently published a short note on the same subject (*Rev. d'Ent.*, 1897, p. 230).

Horsell, Woking :

November 25th, 1897.

Brachysomus hirtus, Boh. (*Platytarsus setulosus*, Boh.), at Chatham.—This little weevil is usually regarded as one of our rarest species, single specimens being found at long intervals, usually in moss, in the South of England; and hitherto only three examples had been taken by me since 1873, which have been recorded in this Magazine (*Ent. Mo. Mag.*, vol. x, p. 253, and vol. xxvi, p. 11). It is, therefore, with no small pleasure that I record its occurrence, in scanty but satisfactory numbers, at the edge of a coppice about a mile and a half south of Chatham. The first specimens were obtained on October 23rd, by casually shaking over paper a small bough of hornbeam with the dried leaves on it lying on the ground; and in subsequent visits, further examples were taken by examining the dry but not decayed leaves of oak, Spanish chestnut, hornbeam, &c., strewn loosely about and accumulated round the stumps of the underwood. With the exception of three, which were beaten out of a faggot a few yards distant, all were found in a space about ten feet by six, the soil being a light loam overlying the chalk at a very slight depth. It is a very sluggish creature, and is by no means easy to detect among the *débris* when feigning death, which it does with much persistency. According to M. Bedel (*Faune des Coléoptères du bassin de la Seine*, vi, p. 237), *Brachysomus hirtus* is found “dans les bois, sous les feuilles morts—Hiver, printemps—Rare—Presque toute l’Europe moyenne.” As the beetle is traditionally associated with primroses (*cf. Ent. Mo. Mag.*, vol. vii, p. 37, and vol. ix, p. 159), I am able to state that this plant grows plentifully in the spot where my specimens were taken.—JAMES J. WALKER, 23, Ranelagh Road, Sheerness : November 8th, 1897.

Captures of Coleoptera, &c., during the past season in the vicinity of Hastings.—Although I have had less time at collecting than usual, this year has afforded a fair number of species which do not occur here commonly. Taking them in seasonal order, *Gyrinus urinator* heads the list, taken, as before, round submerged posts in the River Rother in January, in about the same numbers as last year. In April *Apion varipes* turned up to the number of six among a swarm of *A. difforme* swept under a hawthorn hedge at Ewhurst. In May *Ceuthorrhynchidius Chevrolati* made

its appearance on the usual railway bank, along with *Orchestes pratensis*, *Apion stolidum* (not recorded previously from this district), *Cassida sanguinolenta*, and innumerable *Apion ebeninum* and *Gymnetron pascuorum*. Visiting Winchelsea towards the end of June I found *Donacia cinerea* in fair numbers at the same end of the same ditch, with a few *D. braccata* and *D. menyanthidis*. In trying for *Gyrinus Suffriani*, however, in a ditch where it occurred last year I captured a single *Telmatophilus sparganii*, of which species I afterwards (by sweeping the flower heads of *Sparganium ramosum*) took enough for a good series, and a few over. In this same ditch, or rather a very short portion of it, all five of the species of *Telmatophilus* put in an appearance in the course of three visits, besides *Phytobius notula*, *Coccidula scutellata*, and *Eubrychius velatus*. In July *Rhinoncus inconspicuous* was fairly abundant on *Polygonum persicaria*, with one or two *Hypera Pollux*, at Pevensey, where also a few *Laccophilus variegatus* occurred. At Camber *Harpalus servus* was abundant at roots of grass, and *H. cordatus* appeared in small numbers in August, with seven or eight *Amara rufocincta* and one *Masoreus*; *Phytobius Waltoni* occurred sparingly on *Polygonum* at Ewhurst, where *Sibinia primita* swarmed in nearly every hedgerow, though I have never taken it but singly in the neighbourhood before. In September *Apion varipes* appeared again very sparingly, and one or two *Scymnus capitatus* with it at Ewhurst. At St. Leonard's *Ceuthorrhynchidius Chevrolati* and *Orchestes pratensis* put in an appearance as long as the weather remained mild, which was well into October this year. In October my only other attempt at collecting was a "treacling" expedition to Guestling Wood, in hopes of turning up *Anchomenus livens*. I am pleased (?) to be able to assert that there is still one there at least, but, owing to the roughness of the oak bark, it managed to give me the slip.

I am also able to record the rare *Halictus lavigatus* from this neighbourhood; a single specimen was taken on one of the yellow Compositæ, along with *H. minutus*, which is also new to this district. I am indebted for their names to Mr. Edward Saunders.—W. W. ESAM, Eagle House, St. Leonard's: December 3rd, 1897.

The food of Silpha lavigata, F.—As there appears to be a considerable amount of doubt with regard to the food of some of the species of *Silpha*, it may be of interest to record that I recently watched a *Silpha lavigata* making a meal of a snail. The latter appeared to belong to the species common in gardens, and was about quarter grown. The beetle commenced at the thin edge, cracking the shell away until it had made a hole large enough to bury its long mandibles in the soft body of the snail. I am inclined to think that the snail is the usual food of this species, as the narrow head and long serrated mandibles appear admirably adapted for this class of food, and reminds one forcibly of the same parts in *Cychrus rostratus*, which is well known to be a snail feeder.—H. J. THOULESS, 48, Grove Avenue, Norwich: December 3rd, 1897.

[This habit of *S. lavigata* is mentioned by Westwood, who states (Introd. Mod. Classif. Ins., i, p. 136) that "it feeds voraciously upon live snails, digging its strong jaws into the fleshy bodies of the latter, which in vain endeavour to escape." It has also been noticed by Jacquelin Duval and others.—G. C. C.].

Pissodes notatus near *Wellington, Berks.*—On July 16th and 17th I found over thirty specimens of *Pissodes notatus* near Wellington, under the bark of a felled Scotch fir; several of them were just emerging from their cocoons, but there were also quite a number of chrysalides and immature beetles. This usually northern species has, therefore, occurred far inland in the south. I believe that Bournemouth is the only other southern locality for this species.—L. M. BUCKNILL, Wellington College, Berks: December 12th, 1897.

Pissodes notatus, *F.*, near *Bournemouth.*—While collecting one afternoon lately at a place called "Ferndown" (Dorset), near Bournemouth, I took two specimens of this species in a fir plantation.—E. J. BURGESS SOPP, Saxholme, Hoylake: December 11th, 1897.

Coleoptera notabilia of the Liverpool district during 1897.—The following species have been added to our list of local *Coleoptera* during the past year. *Gyrinus opacus*, Leasowe. *Helophorus rugosus*, swept from herbage some distance from water, Sealand. *Grypeta labilis*, several localities. *Tachyusa flavitarsis*, Hoylake. *Diglossa mersa*, sea shore, Formby. *Pæderus littoralis*, Hoylake. *Agathidium nigripenne*, Willason, under aspen bark. *Hoplia philanthus*, Wallasey. *Sericosomus brunneus* and *Lyctus canaliculatus*, Delamere. *Ochina hederæ*, Ledsham, in ivy on tree trunks, abundant. *Mordellistena brunnea*, Ledsham. *Otiorynchus atroapterus*, Formby sandhills. *Sitones cambricus*, Ledsham. *Ceuthorrhynchus rugulosus*, Stanlow and Chester. *Hylastes opacus* and *H. obscurus*, Delamere Forest, in bark of pine stumps; and *Hylesinus vittatus*, Shotwick, abundant in an elm rail.

Besides the above records it may be thought worth while to mention that *Carabus nitens* has again been taken at Freshfield (damp places in the sandhills) and at Knowsley. *Bembidium stomoides*, at mouth of River Alt; and *Chlanius nigricornis*, banks of Gowey, neither species having been recorded from the district for nearly twenty years. *Ægialia rufa* was taken in June at Wallasey, and a single specimen of *Anthicus bimaculatus* in a dead sea bird on the shore at Formby.

Of the above species other records seem to afford evidence that 1897 has been a year of abundance for *C. nitens* and *P. littoralis*.

It may be of interest, in view of the interesting and suggestive remarks by Mr. Barrett in recent issues of this Magazine, to state—

(1). That the "Liverpool district" here referred to consists of the plain of S.W. Lancashire south of the Ribble, and N.W. Cheshire between the Eastern hills and valley of the Dee; the region so delimited being of one uniform geological character, that of the sandstone of the Trias, generally overlaid by the boulder clays, and comprising besides the cultivated area, coast sandhills, peat mosses, detached woodlands, and heaths.

(2). That the recording of the entomological fauna is a work officially undertaken by a local Society (the Entomological Society of Lanc. and Ches.), and assigned by it to a Special Committee, which reports annually to that Society additions in all Orders of Insects to the local faunistic lists, each record in any Order being verified by the member of the "Record Committee" responsible for that Order.

(3). That as regards *Coleoptera* the excellent list of Dr. J. W. Ellis, published in 1889, forms the base on which new records are made as "additions."

W. E. SHARP, Ledsham: December, 1897.

Prosopis dilatata and *Megachile versicolor*, near Maidstone.—On June 22nd last I was fortunate enough to take a female of *Prosopis dilatata* in Oaken Wood, and on July 16th in King's Wood, a female of *Megachile versicolor*, burrowing in a piece of decayed oak stump, also two others on August 21st, from the head of a thistle. *Cælixys rufescens* probably associates with this *Megachile*, for close to the spot and on the same day that I took my first specimen I also captured on bramble a male and female of this inquiline.—HUBERT ELGAR, Assistant Curator, Museum, Maidstone: December, 1897.

[I have seen these specimens, and although the females of *dilatata* and *Masoni* are very hard to distinguish, I think Mr. Elgar's determination is undoubtedly correct.—E. S.]

Pompilus (Aporus) unicolor, Spin., near Dover.—I took a ♀ of this rarity at St. Margaret's Bay on August 10th last.—F. W. L. SLADEN, Ripple Court, Ringwould, Dover: December 2nd, 1897.

A freak of Nature: Lasiocampa trifolii.—Early in July of last year Mr. Gray, Naturalist, of this town (well known for his captures of *A. Lathonia* nearly twenty years ago), informed me of the curious behaviour of a specimen of *Lasiocampa trifolii* he had bred. It was one of three which had emerged one afternoon and had not fully expanded its wings, when an evening engagement (which detained Mr. Gray until a late hour) drew him from home. When the breeding cage was looked at the next morning two of the three inmates were battered and ragged from dashing wildly about, but this specimen (which was the first to emerge) occupied the same position it had first taken up, and was metaphorically "as fresh as paint" two days afterwards. Of course it was duly pinned out, but although in the height of summer, it refused to dry for an unnatural time, and when brought to me a week afterwards was still sufficiently limp for me to re-arrange the wings to my liking. Mr. Gray had assured me that it was not an hermaphrodite or gynandrous specimen, but a pure male, at least so far as the pectinated antennæ and wings were concerned, and so I found it, everything purely male and the shape of wings and their coloration normal, but the body was unduly distended, and although not longer than that of the male, of quite a female character, and upon pressure of the abdomen it exuded two or three imperfectly developed eggs. This insect appeared to me sufficiently curious to mention it to my friends, but I probably should not have recorded it if I had not been urged to do so by Mr. Barrett.—SIDNEY WEBB, Maidstone House, Dover: December, 1897.

[So strange a freak as this appears to me to be exceptionally worthy of record. This specimen is to all external appearance a male—antennæ, thorax, wings, all male—even the abdomen, though thickened, has much the same appearance, since there is a very noticeably expanded anal tuft. But so far as can be ascertained without actual dissection there is no trace of either of the *harpes* (claspers) or of the *uncus* (anal

hook), while on the other hand the ovipositor, although not extruded, is very distinct and centrally situated, and the body has every appearance of still containing numerous eggs.—C. G. B.].

Limnophilus nigriceps, Zett., at Ipswich.—Among several other *Trichoptera* taken on the banks of the Gipping on October 9th Mr. McLachlan has picked out this as being a species worthy of mention. I have little doubt I could have taken many more if I had liked to do so, but this is the first time it has been observed in the district, and, as far as I am aware, in Suffolk.—CLAUDE MORLEY, Everton House, Ipswich: December 7th, 1897.

Limnophilus affinis at sea ten miles from land.—When the Rev. A. E. Eaton was on his way home from Algeria by sea, a ♀ of this small caddis fly flew on board the steamer on September 12th last, when ten miles off the Sussex coast. This power of making long flights may have connection with the wide distribution of the species, which probably inhabits the whole of Europe, and which I possess, or have seen, from Eastern Siberia, the Caspian, North Persia, Iceland, and Madeira. The larva of this species can exist in brackish water.—R. McLACHLAN, Lewisham, London: December 4th, 1897.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: October 18th, 1897.—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. R. C. Bradley showed the following *Diptera* from Sutton:—*Machimus atricapillus*, the first true Asilid he had seen there; *Helophilus trivittatus*; and *Cænomyia alpina*, a species which is marked doubtfully British in Mr. Verrall's list, but has just been confirmed by Mr. Grimshaw in the *Annals Scot. Nat. Hist.*, 1897, from specimens taken in South Ayrshire. Mr. Bradley had taken a score in his garden during the summer, all males; he said that it was so like *Musca vomitoria* that it was probably overlooked on that account. Mr. A. H. Martineau, *Asilus crabroniformis* from Nenin, North Wales, also a smaller species of *Asilus* with a *Lycæna Alexis* in its grasp. Mr. Bethune-Baker, two drawers from his collection containing a portion of the genus *Pieris*. Mr. P. W. Abbott, *Deilephila galii* from Wallasey, where the larva was found this year by Mr. Victor Wilson; a short series of *Lithosia caniola* from South Devon, August, 1897. Mr. G. H. Kenrick read a paper upon "Mimicry," in which he pointed out all the difficulties of the present theories, and said that he believed we ought not to arrive at any conclusions until we had more and better evidence; he exhibited a very fine lot of examples of both Batesian and Müllerian mimicry, exhibiting both phenomena in a particularly perfect state.—COLBRAN J. WAINWRIGHT, *Hon. Secretary*.

CAMBRIDGE ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: October 29th, 1897.

Mr. Farren exhibited *H. lineola* from Burwell Fen, *P. xanthomista* from the Isle of Man, *D. rubiginea* (reared) from Reading, and *A. occulta* from Rannoch. Mr. Lefroy, specimens of some salt water insects from South Wales; a beetle

(*Ochthebius Lejotisi*) and its larva, a rat-tailed maggot resembling *Eristalis*, and two Chironomid larvæ with the pupa and fly of one of them; they lived in small salt pools on the face of a cliff, about ten feet above high tide, the saltiness of the water varying greatly from time to time. Dr. Sharp, a small portion of the Collection of *Carabidæ* made by Mr. Perkins in the Hawaiian Islands for a Committee of the Royal Society and British Association; 700 or 800 specimens, representing five or six very closely allied forms, were shown. He stated that these forms were so extremely closely allied that it was reasonable to consider them as modifications of one species that had undergone change in connection with difference of locality; some of the forms, however, were from the same island, so that it was not possible to consider the geographical isolation as the immediate or sole cause of the distinctions. — L. DONCASTER, *Hon. Secretary*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: October 28th, 1897.—Mr. R. ADKIN, F.E.S., President, in the Chair.

Mr. H. B. Browne, B.A., of Hammersmith, was elected a Member.

Mr. Montgomery exhibited a long bred series of *Cidaria truncata* (*russata*), the parent was var. *centumnotata*, but none of those bred were of that form; also a bred series of *Acidalia dimidiata* from July ova, and stated that some half dozen larvæ were not feeding up, and apparently intended to hibernate; specimens of *Apamea ophiogramma* bred from ova, and a *Cidaria corylata* which emerged at the end of September. Mr. Newman, large 1st and 2nd broods of *Arctia Caja*, the former from larvæ taken round Darenth, the latter from ova, and reared in a greenhouse. Considerable variation was shown, but only one of the more extreme dark forms and one of the yellow hind-wing forms occurred; a small very pale specimen was the most unusual form; also *Odonestis potatoria* bred of varietal forms from Darenth, *Dryas Paphia* with white patches, *Argynnis Adippe*, increase of dark markings, both from Goodwood, *Epinephele Janira*, two specimens with the usual fulvous colour quite white from Singleton, and *Smerinthus populi* bred of a very pink tinge. Mr. Tutt, on behalf of Dr. Ridg. and Mr. Bacot, the long series of the much debated *Tephrosias*, together with crosses, hybrids, mongrels, &c., and made remarks upon the results of their experiments; on behalf of Mr. Merrin, a long series of vars. of *Aglais urticæ*, having an incipient silvery mark on the under-sides of the fore-wings; on behalf of Mr. Horne, an almost completely black variety of *Nemeophila plantaginis*; and on behalf of Mr. Griffith, a series of *Tephrosias* taken in the Bristol Woods. Mr. Moore, a specimen of *Enodia portlandica* from North America, and said that it did not seem right to place this species and *E. hyperanthus* in the same genus; and a specimen of *Locusta viridissima* with its eggs from Chambéry. Mr. Adkin, vars. of *Argynnis Selene* from Sutherlandshire, much duller than usual, and with marginal spots large and pale. Mr. Merrifield, a very large number of specimens bred under extremes of temperature, to illustrate his *resumé*, entitled, "Recent Examples of the Effect on *Lepidoptera* of Extreme Temperatures applied in the Pupal stage."

November 11th, 1897.—The President in the Chair.

Mr. Tutt exhibited a number of *Psyche* cases taken by Messrs. Edwards, Tunaley and himself in the Forest of Fontainebleau, including *Psyche unicolor* (*graminella*),

P. opacella, *Epichnopteryx bombycella*, and *Fumea nitidella* (*intermediella*). Mr. Filer, a long series of mottled forms of *Nonagria arundinis* (*typhæ*) bred by Mr. Dennis and himself from Surrey. Mr. Bishop, specimens of *Aglais urticæ*, one having very large spots and the other almost var. *ichnusa*, both from Epping; *Agrotis exclamationis* with scarcely perceptible markings; *Melanippe fluctuata*, having a broad marginal band dark, the inner area light with the exception of a black costal blotch on the fore-wings; and various varieties of *Fidonia atomaria*. Mr. Moore, the following *Orthoptera* from La Grande Chartreuse:—*Stetheophyma variegata*, *Decticus verrucivorus*, *Psophus stridulus*, *Stenobothrus geniculatus*, *S. declivus*, *Edipoda fasciatum*, and others, and contributed interesting notes and observations. Mr. Adkin, bred specimens of a black variety of *Odontopera bidentata* from Westmoreland. Mr. Tutt then read a paper, entitled, "The Drinking habits of Butterflies and Moths," and a long discussion ensued.

November 25th, 1897.—The President in the Chair.

Mr. Tunaley exhibited xanthic specimens of *Epinephile Janira* taken in North Kent in 1896; a variable series of *Angerona prunaria* from the same locality; and, on behalf of Miss Miller, of Chelmsford, an unusual variation of *Acronycta rumicis*, having a distinct submarginal red tinge on the wings, some portions of the body being similarly tinted. Mr. H. Moore, a small collection of *Lepidoptera* taken in France last August while on a cycling tour, and contributed notes. *E. Janira* generally, and *Erebia athiops* and *E. neoridas* locally, were the only species at all commonly seen; Chambéry was the farthest point reached. Mr. Bristowe, a small collection of *Lepidoptera* taken during a short visit to Japan; it was remarked how close the species were to those of our own country, but much larger. Mr. Tutt, a bred series of *Cnethocampa pityocampa*, from larvæ taken by Dr. Chapman in South France, and remarked on the considerable sexual dimorphism; also a specimen of *Eriogaster catax* from the same locality. Mr. Adkin, an asymmetrical specimen of *Arctia Caja*, in which the left fore- and hind-wings were much suffused with the dark brown colour, the right wings being normal; the specimen was one of a second brood, and emerged from pupa in October last.—HENRY J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: November 17th, 1897.—Mr. R. McLACHLAN, F.R.S., Vice-President and Treasurer, in the Chair.

The Chairman referred with regret to the death, while serving on the Indian Frontier Expedition, of Capt. E. Y. Watson, Fellow of the Society, and well known for his writings on Oriental *Rhopalocera*.

Miss E. F. Chawner, of Forest Bank, Lyndhurst; Mr. F. N. Brown, M.R.C.S., of The Elms, Chobham, and Natal; Mr. Albert Harrison, F.C.S., of 72, Windsor Road, Forest Gate; Mr. Albert Norris, of Church Lane, Napier, New Zealand; Mr. Stephen Pegler, of Retford, Notts; Mr. Edward G. J. Sparke, M.A., of 1, Christchurch Villas, Tooting Bee Road, S.W.; and Mr. Wilmot Tunstall, of Brook House, Meltham, near Huddersfield; were elected Fellows of the Society.

Mr. Selwyn Image exhibited male examples of *Pieris brassicæ* with a black spot on the disc of the fore-wings. They were bred from larvæ found feeding on *Tropæolum* at Lee, N. Devon, in the autumn of 1896, and six out of ten males showed this variation. He also showed a dark aberration of *Vanessa urticæ*, taken

at Copthorne, in Sussex, and exhibited two fine specimens of *Plusia moneta* taken at valerian, near Balcombe, Sussex, on June 30th, 1897. Mr. M. Burr, three new species of Roumanian *Orthoptera* in illustration of a later communication. On behalf of Mr. T. D. A. Cockerell, of Mesilla, New Mexico, two specimens of *Synchloe lacinia* from that locality were exhibited to show the remarkable forms of variation found in individuals occurring at the same time and place and on the same flowers. Mrs. Nicholl communicated a paper "On the Butterflies of Aragon;" and Mr. Burr a "List of Roumanian *Orthoptera*." Mr. Tutt read a paper, entitled, "Some Results of recent Experiments in hybridising *Tephrosia bistortata* and *Tephrosia crepuscularia*."

December 1st, 1897.—Mr. R. TRIMEN, F.R.S., President, in the Chair.

Mr. Hope Alderson, of Hilda Vale, Farnborough; Mr. Arthur Horne, of Ugie Bank, Aberdeen; Mr. Charles H. Pemberton, of 4, Kent's Terrace, Torquay; and Mr. E. P. Stebbing, Indian Forest Service; were elected Fellows of the Society.

Mr. Dudley Wright exhibited an aberration of *Argynnis Euphrosyne*, in which the upper-side was suffused with black, and the silver spots of the under-side of the hind-wings converted into streaks. On behalf of Mr. W. H. Tuck, Mr. Tutt showed examples of *Metæcus paradoxus*, L., taken in nests of *Vespa vulgaris*, near Bury St. Edmunds, together with some of the cells in which they were found. About a fifth of the nests examined were affected, some containing as many as twenty-four, twelve, and eight examples of the beetle; the more usual number present was from two to four. The dates between which examples were taken in 1897 were from August 2nd to October 1st. According to Dr. Chapman, the eggs were laid in the cracks of posts, &c., from which the wasps got the pulp to make their cells. Combs were also exhibited from the nests of *Vespa crabro* and *Vespa germanica*, in which Mr. Tuck had found larvæ of *Velleius dilatatus*, Fabr., which, however, he had been unable to rear. The Rev. A. E. Eaton, a specimen of the singular *Myodites subdipterus*, Fabr., taken by himself at Biskra, Algeria, and a near ally of *Metæcus*. Mr. Blandford called attention to a new instance of the destructive propensities of *Dermestes vulpinus*, Fabr. He had received examples found at Hong-Kong among flags made of bunting, which were presumably injured, although no details had been forwarded. This form of injury was analogous with the damage to woodwork recorded by himself and others; it had nothing to do with the feeding habits of the insect, but was committed by the larvæ in their search for shelter in which to pupate. Probably the flags had been stored at some period in the neighbourhood of infested leather goods, or dried provisions. The only other case of damage to textile fabrics by *Dermestes vulpinus* which he knew of occurred in connection with the case recorded by him (Proc. Ent. Soc. Lond., 1890, p. xxxi); a blue handkerchief, spotted with white, left in the infested building, was found next day to have all the white spots eaten out. In the ensuing discussion Mr. C. G. Barrett referred to the damage done by Agrotid larvæ to linen spread out to bleach on the hillsides near Belfast. Investigation showed that this did not take place except when the linen was gathered up and brought into the warehouses without being shaken. The caterpillars which had taken shelter underneath it then ate their way through, in order to escape in search of food. Mr. Champion communicated papers, entitled, "Notes on American and other *Tingitidæ*, with descriptions of two new Genera and four Species," and "A List of the *Staphylinidæ* collected by Mr. J. J. Walker, R.N., in the region of the Straits of Gibraltar."—W. F. H. BLANDFORD, *Hon. Sec.*

NOTES ON THE *RHOPALOCERA*, &c., OF THE ALPS,
PARTICULARLY THE UPPER ENGADINE.

BY ALBERT H. JONES, F.E.S.

It may interest some of your readers who collect *Lepidoptera* to have an account of my experiences of two summer holidays in the Upper Engadine.

From July 23rd to August 7th, 1892, I stayed at Campfer, which is situated between St. Moritz and Silvaplana. This year, in company with my friend Mr. Charles Fenn, I stopped at the same place from the 12th to 25th July, about a fortnight earlier. On the first occasion I returned by way of the Stelvio and the Tyrol, and on the last by the Maloja, the Italian Lakes and the Simplon, spending a few days both at Zermatt and Chamonix.

To persons who have only visited other parts of the Swiss Alps the first impression of the Upper Engadine is perhaps disappointing, the mountains appear low, being viewed from an elevation of 6000 feet. The weather at this altitude is naturally variable, yet on both visits it was fine, this year exceptionally so. Some of the days were brilliant in the extreme, and we were fortunate in selecting such for making lengthened excursions. Our visits to the Cavloccio (an ideal valley near the Maloja), the Fex Valley, and lastly to the Fuorcla Surlej (9042 feet), a pass leading to the Roseg Valley, could not easily be forgotten by any one who appreciates scenery and enjoys a day's mountain collecting.

In my experience the best localities are in the neighbourhood of the little lakes between Campfer and Pontresina, the Schafberg, and between the Hannen See (about 1000 feet above Campfer), and the Fuorcla Surlej. It was surprising to find on a sheltered and sunny slope at about 8000 feet on this Pass, three or four species of butterflies in the greatest profusion.

Of the lateral valleys the Cavloccio is probably the best, fulfilling all the requisite conditions—neither so broad, like the Fex Valley, as to be exposed, nor too narrow and under the influence of excessive shadow. The *Erebix* predominate to a large extent over other butterflies; they are abundant in the meadows and woods, frequently three or four species flying together. If one ascends a thousand feet up to the tree limit, they are equally plentiful although, the species are different, and the last butterfly seen before reaching the snow is *Erebia glacialis*.

Melitæa and *Argynnis* were well represented, and often abun-

dant. The "Blues" were by no means plentiful, although a fair number of species were to be found, the best locality for them probably being along the zigzag path in front of the Hotel d'Angleterre. Although we only collected in the day time it was surprising to find such a scarcity of moths; occasionally we met with a species fairly abundant, but that was quite the exception. Some of the forms were interesting, and several species the same as those occurring on the Scotch hills in such profusion. *Sciaphila argentana* was the only Tortrix we saw!

I append notes of our captures, to which I have added a list of those species met with in other localities.

Papilio Podalirius, Promontogno (2687 ft.), July 26th, Martigny (1558 ft.), in gardens and surrounding meadows, August 5th. *P. Machaon*, near Coire, July 12th, Promontogno and La Flegère, Chamonix.

Parnassius Apollo, generally distributed and common. *P. Delius*, commencement of the Cavloccio Valley, common, a few also in the Suvretta Valley at about 6500 ft.

Pieris brassicæ and *rapæ*, a few. *P. napi* ab. *bryonia*, one worn, Campfer. *P. Callidice*, one or two worn, Cavloccio and Suvretta Valleys. *P. Daplidice*, Promontogno (July 26th) and Martigny (August 5th), rather common, but worn.

Anthocharis Belia var. *simplonia*, one specimen very worn, Campfer.

Leucophasia sinapis, Zermatt, Chamonix, and Martigny, in the last locality fairly common.

Colias Palæno and ab. *Werdandi* and *C. Phicomone*, a few of each at Campfer (in 1892 these two species were very abundant). *C. Hyale* was also very scarce, we saw but one specimen at Zermatt and a few at Martigny. *C. Edusa* was also rare, but two or three specimens being seen at Chamonix and Martigny. From this it would appear that 1897 is not a *Colias* year.

Rhodocera rhamni, Julier Pass, July 12th.

Polyommatus virgaurea var. *zermattensis*, very common at Zermatt. *P. Hippothoë* var. *Eurybia*, the best locality for this species is the Fex Valley, where in 1892 it was very abundant.

Lycæna Aegon, Fex Valley, common, scarce elsewhere. *L. Optilete*, a few on the banks of the Inn at Campfer, but more plentiful near the Hannen See about 1000 feet higher. *L. orbitulus* and *Astrarche*, Campfer, a few. *L. Pheretes*, sparingly in 1892, Campfer. *L. Argiolus*, Promontogno. *L. Eros*, fairly common, Campfer, males only, the female appears to be excessively scarce. *L. Icarus*, fairly common. *L. Escheri*, a few at Campfer, small form. *L. Bellargus*, Campfer and Zermatt. *L. Hylas*, on the road to the Zmutt Thal, Zermatt, a few. *L. Corydon*, generally distributed and fairly common, small form. *L. Damon*, not common, small form. *L. Donzelii*, scarce. *L. semiargus*, Campfer, the commonest "blue." *L. Arion* var. *obscura*, Campfer and Zmutt Valley, Zermatt.

Grapta c-album, Chamonix. *V. urticæ*, very abundant in the larval state throughout the Engadine. *V. Io*, Cavloccio Valley. *V. Antiopa*, at about 8000 feet near Sils Maria. *V. Atalanta*, Campfer and Zermatt. *V. cardui*, a few in 1892 near Maloja.

Melitæa Cynthia and *M. Aurinia* var. *Merope*, both very common at one spot about 8000 feet between the Hannen See and the Fuorcla Surlej. *M. Phæbe*, Zermatt, rather common. *M. didyma*, Fex Valley. *M. Athalia*, a few, closely resembling the Devonshire specimens. *M. Parthenie* var. *varia*, not uncommon, Campfer.

Argynnis Pales, the males fairly abundant; we took one or two of the typical females, but the ab. *napæa* was the commoner form. *A. Arsilache* was also common in the swampy ground round the little lakes between Campfer and St. Moritz; comparing the females of this species with those of *Pales*, it is difficult to reconcile the idea that they are one and the same species. Guenée considers them distinct, and he is probably correct. *A. Anathusia*, Campfer in 1892, one specimen, and Zermatt. *A. Ino*, on the banks of the river Inn, Campfer, two specimens only. *A. Lathonia*, occasionally. *A. Aglaia* (a dark form), rather common, Campfer. *A. Niobe* and ab. *Eris*, very common, Suvretta Valley, Campfer, Zermatt, and Chamonix. *A. Paphia*, Promontogno, not uncommon.

Melanargia Galatea, Promontogno.

Erebia Epiphron, chiefly ab. *Nelamus*, very abundant, some of the specimens very dark with little indication of either spots or rusty bands. *E. Melampus*, very abundant, Campfer; we took a few of a large and dark form of this species at La Flegère, near Chamonix; they have a strong superficial resemblance to *E. Eriphyle*, but an examination of the anal claspers by Mr. W. E. Nicholson, of Lewes, confirmed the opinion he had already expressed, that they were a form of *Melampus*. *E. Pharte*, very abundant, July 17th, in a swampy hollow at the commencement of the Cavloccio Valley, but extremely local; the specimens are the usual Swiss form, those from the Karinthian Alps are deeper in colour and the rusty bands brighter. *E. Mnestra*, this is generally considered a scarce species, but in the Upper Engadine it seems fairly distributed, and in some localities rather common at an elevation of 7000 to 8000 feet. *E. Stygne*, La Flegère, Chamonix, a few. *E. Nerine* and *E. æthiops*, common at Bormio at the foot of Stelvio Pass, August 9th, 1892. *E. glacialis*, at about 8500 feet, Fuorcla Surlej, flying over stones and boulders where there is practically not a trace of vegetation; in 1892 I found it commonly in a similar locality on the Schafberg near Pontresina. *E. Tyndarus*, very common, Campfer. *E. Gorge*, ab. *triopes*, abundant just above the tree limit, Campfer, 7000 to 7500 feet. *E. Goante*, common, Campfer, also at Zermatt, very abundant. *E. Ligea*, La Flegère. *E. Euryale*, excessively plentiful in the woods between Campfer and St. Moritz.

Eneis Aëlo, just above the tree limit, Campfer, rather common, but difficult, as usual, to obtain in fine condition.

Satyrus Semele, Zermatt. *S. cordula*, a small form, Zermatt.

Pararge Mæra, a few at Campfer. *P. Megæra*, a very fine form, Martigny, common.

Epinephele Janira, Promontogno, Chamonix, and Zermatt. *E. Lycaon*, Zermatt, rather common.

Cænonympha Arcania var. *Satyrion*, common in the swampy ground in the woods between Campfer and St. Moritz. The form taken here is extremely interesting. The males are quite unicolorous (almost as deep in tone of colour as *C. Hero*), without a trace of any fulvous in the centre of the fore-wing; the females are slightly lighter, with only a faint indication of fulvous. In the Zermatt specimens the fulvous begins to show itself in both sexes.

Syrichthys alveus and *S. cacaliæ*, were both common on dry slopes up to 7500 feet.

Hesperia comma (a dark form) and *H. lineola*, a few, Suvretta Valley.

Zygana exulans, very abundant at the higher part of the Cavlocchio Valley, also at about 7500 feet near Sils Maria.

Setina aurita var. *ramosa*, this Alpine and interesting species (allied to our *irrorella*) was fairly common on the mountain sides at about 7000 feet.

Arctia flavia, a connecting link between *A. Caja* and *villica*. Mr. Fenn found a male and female at rest on the wall of the Hotel d'Angleterre; the female deposited eggs freely, and I have now about 70 larvæ half grown. German authors state that the larvæ hibernate two winters, but I should think those I have under the altered conditions will produce moths next summer.

Gnophos obfuscaria var. *canaria* (similar to Scotch specimens, but larger) disturbed from rocks, also at light. *G. dilucidaria*, one or two, not fine.

Psodos alpinata, sparingly in the woods between Campfer and St. Moritz. *P. quadrifaria*, occasionally, up to 7500 feet.

Fidonia brunneata (larger than Rannoch specimens) and *Acidalia fumata*, single specimens of each, Campfer.

Lobophora sabinata, two, Zmutt Thal, Zermatt.

Larentia casiata, sparingly, Campfer.

Melanippe hastata var. *subhastata*, Cavlocchio Valley, one specimen.

Cleogene lutearia, the commonest Geometer, flying in the meadows in the afternoon sunshine.

Anaitis paludata var. *imbutata* (similar as regards markings to Scotch examples, but larger), *Lygris populata*, and *Eubolia mensuraria*, single examples of each.

Diasemia literalis, one or two. (This species I have taken at Stresa, near Lago Maggiore).

Botys uliginosalis, occasional specimens; *Pempelia carbonariella*, *Scoparia sudetica*, single examples of each. *Mimaseoptilus pelidnodactylus*, common; and a few *Sciaphila argentana*.

The number of species of butterflies we met with in the Upper Engadine was 58. Mr. Nicholson tells me that he has taken *Argynnis Thore* near Pontresina, and Professor Frey, in "Die Lepidopteren der Schweiz" mentions 13 others as occurring there, viz., *P. Machaon*, *P. Dorilis*, *L. Eumedon*, *L. Sebrus*, *L. Alcon*, *M. Maturna*, var. *Wolfensbergeri*, *M. Phœbe*, *M. Dictynna*, *A. Selene*, *A. Euphrosyne*, *E. Evias*, *S. andromedæ*, *C. Paniscus* (2 at Maloja, small form). This makes a total of about 72 butterflies, a very good list, considering the elevation and the limited area, viz., Maloja Pass to Samaden, a distance of 15 miles.

It is doubtful if at any corresponding elevation in the Swiss Alps such a variety could be obtained. Several species of butterflies occur in very limited numbers and as small forms, suggesting that they have difficulty in maintaining an existence at such a high altitude. On the other hand, although the material at hand is very scanty, the moths in several cases are larger than those found in the British Isles.

NOTE ON A FEW *ORTHOPTERA* FROM JAPAN AND KOREA.

BY MALCOLM BURR, F.Z.S.

I am indebted to Mr. T. S. Fletcher, of H.M.S. "Centurion," for a small, but very interesting collection of *Orthoptera* from Japan and Korea. The chief interest lies in the notes which Mr. Fletcher has most carefully written on the papers in which the insects were packed. If all collectors abroad followed this excellent example, we should know more about the actual Natural History of the insects, and not have to be contented with mere descriptions of Museum specimens.

ANISOLABIS MARITIMA (Bon.).—One male, two females, two immature, Kobè, June 11th, 1897. "One running along the ground; the other under a stone. The only specimens I saw here." Nagasaki, June 26th, 1897. "Found under refuse, &c., on the beach (shingle and sand) of an island just outside Nagasaki." Mr. Fletcher also observed that the male seemed to have a "number of lice (?) adherent to its under surface."

TENODERA ARIDIFOLIA (Serv.).—One male and one female. Nagasaki, October 14th, 1897, and October 17th, 1897.

PSEUDOMANTIS HAANII (Sauss.).—Nagasaki, October 14th, 1897.

STENOBOETHRUS BICOLOR (Charp.).—Port Lazareff, Korea, October 2nd, 1897. Mororan, Yezo, September 13th, 1897. Two females.

CEDALEUS INFERNALIS (Sauss.).—Port Lazareff, Korea, a place about twelve miles from Gensan, October 2nd, 1897.

ACRIDIDIUM JAPONICUM (Burm.).—Port Hamilton, a group of small islands some thirty miles south of Korea, October 10th, 1897. Kobè, June 11th, 1897. Nagasaki, October 17th, 1897, where, he adds, it is common. Two males, one female.

CALOPTENUS ITALICUS (L.).—One male. Port Lazareff, Korea, October 2nd, 1897.

DUCETIA JAPONICA (Thunb.).—Port Lazareff, Korea, October 2nd, 1897.

CONOCEPHALUS BREVIPENNIS (Redt.). — Hakodatè, August 16th, 1897. "Amongst grass, near the town. Grasshoppers are rather scarce near the town, as the Japanese boys catch them and put them into little paper cages; what they do with them afterwards I do not know." This species has hitherto been recorded from North-East India.

GREYLLUS MITRATUS (Burm.).—One male, one female. October 10th, 1897. Of this species Mr. Fletcher writes: "This is a very common species at Port Hamilton, where it occurs in dry fields. It is also common at Nagasaki, where I have found it under heaps of decaying vegetable matter.

CECANTHUS, sp.—One male, too crushed for accurate identification. It very closely resembles *O. pellucens*, Scop., which, however, does not seem to occur further east than Asia Minor. Mororan (70 or 80 miles from Hakodate), Yezo, September 10th, 1897. "This specimen was found sitting inside a shrivelled-up leaf. There was a hole in the leaf, and in this hole it was sitting, and making a tremendously

loud noise in proportion to its size. It is an active species, but does not jump far. Found on sand hills on the beach, about 50 yards above high water mark." I know of no *Æcanthus* recorded hitherto from Japan, and it may quite possibly be new.

Bellagio, East Grinstead :

December 20th, 1897.

COLEOPTERA IN THE MANCHESTER DISTRICT DURING 1897.

BY J. HAROLD BAILEY, M.B.

During 1897 most of my collecting was confined to the Manchester District, more especially to the portion of the South Lancashire Plain lying within the fifteen mile radius. With the exception of the Bollin Valley, all the following records are from localities situated within this area. The most noticeable feature during the past year was the occurrence in profusion of certain species not found as a rule in any great number in the district.

In February, March and April *Aphodius conspurcatus* occurred sparingly in horse dung in one corner of a field in Ellesmere Park, Eccles, twelve specimens in all being taken during four visits. On searching in the same locality on October 17th this species turned up in great numbers over a wider area of ground, and was to be taken subsequently on October 18th, 24th and 28th, along with *Aphodius contaminatus*. This latter species also occurred freely in Prestwich Park at the beginning of October.

Trypodendron domesticum—a species which I had previously taken in small numbers in November, 1895, April and August, 1896, and February, 1897, from a clump of dead trees on the bank of the River Irwell at Agecroft—occurred in profusion on April 20th, the beetles evidently preparing to take flight, for they had emerged from their burrows and were congregated in groups of a dozen or more under the loose bark. On previous occasions the species was difficult to obtain in any numbers, owing to the provoking readiness with which the beetle retreats down its burrow in the solid wood, the tip of its abdomen just being visible when the bark is stripped off; the only chance of capture being when the beetle happens to be in the length of burrow situated in the bark.

Trafford Park—until its recent sale by Sir Humphrey de Trafford a *terra incognita* to Coleopterists—has been thrown open to the public

on payment of a small charge for admission.' Such an opportunity was not to be lost, seeing that the estate is already beginning to be developed, patent fuel works and corn mills being erected in what was till recently a well wooded deer park. At the end of April *Baptolinus alternans* occurred under bark of pine, whilst the dry crumbling rotten wood of the dead portions of a living oak produced over a hundred *Mycetophagus piceus*, a few *Soronia grisea*, and a few dead specimens of *Pocadius ferrugineus*. The *Mycetophagus* occurred in the same place in less numbers in May, July and September; in July *Soronia grisea* was found rather more frequently in the interstices of the bark, together with two specimens of *Quedius cruentus*. On July 6th, in the birch plantations on what was formerly Trafford Moss, beating produced the following species sparingly: — *Rhamphus flavicornis*, *Microcara livida*, *Luperus rufipes*, *Orchestes stigma*, and *O. rusci*. Beneath dung of vole a single specimen of *Philonthus puella* was taken. In May, *Liodes humeralis* and *Elatер balteatus* occurred under the bark of a dead birch, and in September *Autalia impressa* was taken in an agaric.

In Ringley Wood *Telephorus paludosus* occurred in the same restricted area and at the same time of the year as in 1896. On visiting the locality on May 20th no specimens were found; on June 11th it was abundant, forty-five males and five females being taken; on June 22nd only eleven specimens were found. A species which I had not previously met with in the wood was *Nebria Gyllenhali*, of which two specimens occurred on the banks of a stream.

Chat Moss is a locality which in the near future bids fair to become merely a memory from an entomological point of view. Carrington Moss, on the Cheshire side of the Mersey, was purchased by the Manchester Corporation in 1886 for the disposal of the city refuse on it. The whole of the 1100 acres (600 acres of which, at the time of purchase, were rough moss land) have been brought into a high state of cultivation, and botanists may now search in vain for the various species of *Drosera*, and Lepidopterists for *Cænonympha Davus*, var. *Rothliebii*, for which years ago Carrington Moss was a well known station. The more famous Chat Moss, which is a few miles to the west of Manchester on the Lancashire side of the Mersey, is likely soon to experience the same fate as Carrington Moss, for it was purchased in 1895 by the Manchester Corporation for a similar purpose. The extent of the Chat Moss Estate is 2600 acres, 400 acres of the estate being outside the borders of the Moss, and having long been

in agricultural use. Of the remainder, 1900 acres are already under cultivation, the original leaseholders of ninety years ago having drained and cultivated and intersected the Moss with roads. Rather less than 300 acres remain as wild moss, and some of this area has been planted for pheasant cover, while a portion of it is being destroyed year by year owing to the peat being removed from the underlying clay by a Peat Moss Litter Company. During May and June I was able to spend six short afternoons on the Moss. On May 22nd, *Anoplus plantaris*, *Rhynchites nanus*, *Orchestes rusci*, and *O. stigma* were beaten from small birch trees, and at the roots of heather *Coccinella hieroglyphica* and *Haltica ericeti* occurred sparingly. On exploring a small plantation of stunted Scotch firs in which I had never collected before I alighted on a prize in the shape of *Pissodes notatus*, a species I had not taken before, but which has been recorded as occurring on Chat Moss. Vigorous beating of every fir in the plantation produced twenty specimens, not more than three or four being beaten from a single tree; the only other species in the net were one *Hylobius abietis*, a few *Pityogenes bidentatus* and several *Scymnus testaceus*, var. *scutellaris*. From under bark of firs killed by former burning of the heather, the following species were obtained:—*Myelophilus piniperda*, *Hylastes palliatus*, *Rhizophagus depressus*, *Rhinosinus planirostris*, and *Homalium punctipenne*. On each succeeding visit (the last being on June 30th), *Pissodes notatus* was obtained, but never in greater numbers than about twenty at a time, sometimes less. The specimens varied greatly in size, the largest measuring 10 mm., the smallest, taken by Mr. W. E. Sharp, who accompanied me on a visit, being only 5 mm. in length. Other species taken in June included *Campylus linearis*, *Corymbites quercus*, var. *ochropterus*, and *Sericosomus brunneus*, all on birch; the latter species not having been previously recorded nearer than Delamere Forest. *Elatér balteatus* was phenomenally abundant; on May 24th scores were to be beaten from birch. On June 26th the following additional species appeared on birch:—*Luperus rufipes*, *Microcara livida*, and *Rhamphus flavicornis*.

Five afternoons by the River Bollin produced the usual species: on June 5th nine specimens of *Bembidium paludosum* were taken, and this species occurred in greater numbers on June 30th, July 10th and 24th, and August 4th. *Bledius subterraneus* and *B. pallipes* were taken, both in their burrows and running on the banks. *Heterocerus marginatus*, which occurred in small numbers on June 5th, was taken in profusion on August 4th by treading in the wet sand and mud at the water's edge. Additional species included about thirty *Anthobium*

minutum, swept from herbage on the banks; *Georyssus pygmæus*, which occurred on each visit, but most abundantly on June 5th; three *Bledius fracticornis* on June 5th; two specimens of *Deronectes assimilis* on July 10th and 24th respectively; and one *Hoplia philanthus* on July 10th, entangled amongst water weeds floating in mid-stream.

In a small brook at Swinton on July 15th I took *Agabus paludosus*; this species was present in the same brook in 1896, from May 11th to 29th; during the first week in May, 1897, the species had not appeared.

Clifton, near the Viaduct over the River Irwell, is historic ground botanically, being a favourite locality with Richard Buxton, the Manchester artisan botanist, 60 and 70 years ago. Close to Clifton is Mere Clough, a locality where *Saperda scalaris* was formerly taken in abundance by the older generation of Manchester Coleopterists. Clifton being only three miles from Pendleton, I was able to pay frequent short visits, and from the Bolton Canal near the Viaduct I obtained several interesting species. On June 11th *Bagous alismatis* was in the utmost profusion on *Alisma plantago*, and *Donacia linearis* occurred on the same plant. A visit on July 12th produced *Donacia sparganii* in abundance on *Sparganium*, and *D. linearis* and *D. bidens* rarely on *Potamogeton*. *D. sparganii* occurred constantly at the same spot in decreasing numbers throughout July, and on August 18th four species only were taken; *D. bidens* had increased somewhat, twelve specimens being taken on August 18th.

At Prestwich *Rhagium inquisitor* occurred under loose bark, and in August *Bolitochara obliqua* was taken in agarics, and from lycoperdons *Cryptophagus lycoperdi* was obtained, together with a single specimen of *Liodes orbicularis*, a new record for this neighbourhood. In November decaying agarics produced, amongst other species, *Philonthus decorus* and *Cercyon unipunctatus*.

At Worsley on September 27th *Dorytomus pectoralis* was obtained by beating fallows at a spot where this species occurred in the same month in 1895 and 1896. In the same locality *Baptolinus alternans* was common in a decaying stump, *Cryptophagus lycoperdi* occurred freely in lycoperdons, and in agarics a fair number of *Autalia impressa*, together with *Scaphisoma agaricinum*, and various *Homalotæ* and *Gyro-phænæ*, not yet determined.

128, Broad Street, Pendleton :

January 4th, 1898.

REVISION OF THE NOMENCLATURE OF *MICRO-LEPIDOPTERA*.

BY THE RIGHT HON. LORD WALSHINGHAM, M.A., LL.D., F.R.S.,
AND
JOHN HARTLEY DURRANT, F.E.S., MEMB. SOC. ENT. DE FRANCE.

BORKHAUSENIA, Hb.

= * *ÆCOPHORA*, auct. (*nec* Ltr.).

The generic name *Æcophora*, Ltr., has for nearly half a century been erroneously employed in the sense in which it is used in Staudinger's Catalog. Latreille, Hist. Nat. Crust. Ins., III, 417 (1802), himself cited *Tinea sulphurella*, F., as the type of his genus *Æcophora*, which type was also adopted by Curtis, Br. Ent., IX, expl., Pl. 408 (1832), in redescribing the same genus under the same name. Meyrick, HB. Br. Lep., 633 (1895), has therefore very properly used *Æcophora* for *sulphurella*, F., in accordance with Latreille's original intention, and § *Dasycerus*, Hw. (= *Dasycera*, Steph., auct.), having been created for this species and *Oliviella*, F., must sink as a synonym; moreover, Stephens in changing the name to *Dasycera* pointed out that *Dasycerus* was pre-occupied in *Coleoptera* (Brongn., 1799).

Other authors (*e. g.*, Herrich-Schäffer and Snellen) have wrongly adopted the generic name *Lampros*, Tr., in the sense of *Æcophora*, auct., but this use is inadmissible, for Duponchel, Hist. Nat. Lp, Fr., XI, 17—18, 257—8 (1838), cited *majorella* (Schiff.), Hb. (= *Harpella forficella*, Sc.), as the type of *Lampros*.

Meyrick, HB. Br. Lp., 633—4 (1895), employed *Acompsia*, Hb., in lieu of *Æcophora*, auct., but Walsingham, Pr. Z. Soc. Lond., 1897, 82, has pointed out that Duponchel, Hist. Nat. Lep., Fr., XI, 19 (1838), cited *cinerella*, L. (= *ardeliella*, Hb., 437), as the type of *Acompsia*, Hb., and that therefore *Acompsia*, Hb., = *Brachycrossata*, Hein., = *Recurvaria* (Hw.), Meyr., HB. Br. Lp., 606—7 (1895).

Since all previous writers have thus failed to find a name which can properly be applied to the very natural and recognisable conception known as *Æcophora*, auctorum (*vide* Stgr. Cat., p. 307), it becomes necessary to search for a dormant one, that can be so applied and to resuscitate it; *Borkhausenia*, Hb. Verz. bek. Schm., 420 (1826), can be employed in the sense required. The original types were: 1. *minutella*, L., Hb., 141 (= *Æcophora*, Stgr., 2281); 2. *similella*, Hb., 182 (= *Æcophora*, Stgr., 2273); 3. *atrella* (Schiff.), Hb., 278 (? = *atrella*, Hw. (Hw.), *i. e.*, *Lamprotes*, Stgr., 2062).

Stephens, Ill. Br. Ent. Haust., IV, 354 (1834), 423 (1835), did not affect this genus, for he referred both *minutella*, L., and *atrella*, Hb., to his genus *Amaurosetia* in both references, however, omitting to note

that *minutella* was one of the types of *Borkhausenia*, although this was indicated in the case of *atrella*. We are, therefore, at liberty to select the type; *atrella*, Hb. (being a doubtful species, and if correctly identified by Haworth, not agreeing with the other two species, which are isotypical), should be rejected, and *minutella*, L., a common form, in structure thoroughly representative of a large section of those prevalent species with which it has long been associated, should be adopted as the type of *Borkhausenia*, under which title *Batia*, Steph., and *Chrysia*, Mill., will lie dormant.

(To be continued).

ON CERTAIN RECENT ADDITIONS TO THE BRITISH *MUSCIDÆ*
(*TACHINIDÆ* OF VERRALL'S LIST).

BY ERNEST E. AUSTEN.

The following remarks are published in no spirit of captious criticism, but in the hope that they may prove of some slight assistance to those who are engaged in the difficult task of unravelling the identities of our British *Tachininæ*—a group which, in spite of the labours of Brauer and von Bergenstamm, still presents so many difficulties to the careful student.

PHOROCERA INCERTA, Meade.

Of this species—which was lately described in this Magazine (Ent. Mo. Mag., ser. 2, vol. viii, 1897, pp. 223, 224), from three specimens collected by Mr. C. Morley, of Ipswich, and another example in the collection of the Museum of Science and Art, Edinburgh—the British Museum has just received a couple of co-types, through the courtesy of Mr. Morley. A careful examination of the specimens in question, which agree very well with the description, enables me to say positively that *they have nothing to do either with Phorocera, or with the "sub-gen." Campylochæta*, Rond., to which the author assigns them. Mr. Meade writes: "facial setæ . . . extending upwards to near the end of the frontal bristles;" this means that the projecting ridge on each side of the sunken epistoma bears a fringe of setæ, commencing at the long vibrissæ on the facial angles below and terminating at about the level of the base of the third joint of the antennæ; in other words it is the condition termed by Schiner: "Untergesicht an den Seitenrändern . . . mit . . . Borsten bewimpert;" and by Brauer (Verh. z.-b. Ges. Wien, Jahrg., 1893, p. 472): "Mundborsten bis oben aufsteigend." But on examining a specimen of "*Phorocera*" *incerta* from in front, so that we look straight into the cavity of the epistoma, it is seen that the setæ to which Meade refers are not on the *facial ridges* at all, but on the *face* itself, *i. e.*, the space on each side between the facial ridge and the eye. The real facial or oral setæ (*Mundborsten*) extend no higher than the facial angles, and consist of four or five small and slender bristles immediately above the vibrissæ

on each side. What Meade regards as facial setæ are really part of the series of *frontal* bristles, which are continued down the face itself to well below the middle, and terminate nearly on a level with the lower margin of the eye. These descending frontal setæ run *near* to the facial ridges, it is true, but, nevertheless, well to the outside, and the end of the series curves distinctly outwards towards the eye. The true nature of Meade's supposed "facial" setæ is evident at once when the insect is viewed from in front, in the manner already described; if the head is looked at in profile and slightly from the rear, the descending frontal setæ might well be supposed to spring from the facial ridges. In "*Phorocera*" *incerta*, Meade, therefore, the facial ridges are *not* fringed with setæ, and this in itself precludes the possibility of the species belonging either to *Phorocera* or *Campylochæta*. In working out the *Muscidæ* in the new collection of British *Diptera* in the British Museum, I have followed Prof. Brauer's latest arrangement of the "*Muscaria schizometopa*" (Verh. z.-b. Ges. Wien, Jahrg., 1893, pp. 447—525), under which *Campylochæta* retains its generic rank (*cf. loc. cit.*, p. 480). If further reasons are required as to why "*Phorocera*" *incerta*, Meade, cannot belong to *Campylochæta*, they may be found in the absence of the strongly developed ♂ hypopygium, curved forwards beneath the tip of the abdomen, and of the elongated tarsal claws of the ♂—both of which characters are well exhibited in *Campylochæta (Tachina) obscura*, Fln. (? = *Tachina schistacea*, Mg.; *Campylochæta id.*, Rond.).

The true systematic position of Mr. Meade's species is another question, which I must frankly admit I am unable to answer. I do not know where to place it myself, and, after many attempts, I have utterly failed to run it down to any existing genus with the tables either of Schiner or Brauer (Verh. z.-b. Ges. Wien, 1893, pp. 463—510). From this point of view it is a little unfortunate that the specimens which Mr. Morley has kindly presented to the Museum are both males. Possibly the species should be placed somewhere near *Masicera*; in any case a new genus will probably have to be founded for its reception.

NEMORÆA QUADRATICORNIS, Meade (Ent. Mo. Mag., ser. 2,
vol. v, 1894, p. 160).

The type of this species is in the collection of Mr. C. Morley, through whose kindness I have recently been enabled to examine it. The species is identical with one which, in November, 1896, I incorporated into the British Museum collection as *Micropalpus pudicus*, Rond. (Dipt. Ital. Prod., iii, 1859, p. 69). Consequently, if, as I believe, my identification of Rondani's species is correct, the name *quadraticornis* must fall. In the specimens determined by me as *M. pudicus* the *palpi*, although extremely slender, are *not abbreviated*, and in addition to this there are other striking differences from normal representatives of the genus *Micropalpus*, such as *M. vulpinus*, Fln., and *M. comptus*, Fln. (= *fulgens*, Schin.; Mg., p. p.).*

* The type of the genus *Micropalpus* is *M. (Linnæmya) Sophia*, Rob. Desv. (Essai sur les Myodaires, p. 53), a Sicilian species, but, as I have no personal acquaintance with this, I do not refer to it.

The front in both sexes is much narrower; the angle in the fourth longitudinal vein occurs considerably nearer the apex of the wing, and the posterior transverse vein makes a corresponding approach towards the hind margin. The result is that the first posterior and discal cells are much wider, while the second posterior cell is considerably shorter. The prolongation of the fourth vein beyond the angle is shorter than in *M. vulpinus*, Fln., and *M. comptus*, Fln., but is, nevertheless, well marked. In spite of the differences alluded to, however, the species is distinctly a *Micropalpus* in general appearance, as is easily seen when the insect is regarded from above, or the head is looked at in profile. Perhaps the best test is to collect a number of specimens of *M. vulpinus* and *M. comptus* into one group, and a corresponding number of examples of *Erigone* (*Nemoreæ*) *radicum*, F., *strenua*, Mg., and *rudis*, Fln., into another; not a moment's consideration will be necessary to decide to which group a specimen of *M. pudicus* should be assigned. The characteristic *downwardly directed angle* in the fourth longitudinal vein in the wing of an *Erigone*, the absence of an appendix beyond the angle, the shape of the head in profile, the smaller antennæ and different shape of the third joints, and the much more slender thoracic setæ—to mention no other differences—at once distinguish a member of this genus from a *Micropalpus*. In his description of *Nemoreæ quadraticornis*, Mr. Meade points out the presence of an appendix beyond the angle of the fourth vein, but apparently considers it of no importance.

Since the palpi of *Micropalpus pudicus* are of full length—albeit, exceedingly slender—either the existing definition of the genus must be modified to accommodate it, or the species must be relegated to a new genus, which would be placed between *Micropalpus* and *Erigone*. On the whole, especially considering the large number of genera of *Muscidæ* with which the system of Messrs. Brauer and von Bergenstamm has already provided us, the former course seems the more advisable.

It is perhaps as well to state that in his original description of *M. pudicus* Rondani makes no mention of the palpi. The description was based upon a single (male) specimen from Piedmont, and in all probability the proboscis was so far retracted that the palpi were invisible. On examining the type of Mr. Meade's description (in which likewise there is no mention of the palpi), I found that the proboscis is similarly retracted, so that it is possible to make out the palpi only with great difficulty. Owing to the diagnostic importance of the palpi in the *Muscidæ*, collectors should take care in all cases to endeavour to make the proboscis protrude from the buccal cavity at least sufficiently far to enable these organs to be readily examined.

The synonymy of the various species of *Micropalpus* is much involved, and the conclusions of Brauer and von Bergenstamm differ largely from those of Schiner. The latter gives *M. pudicus*, Rond., as a synonym of *M. hæmorrhoidalis*, Fln., while the two former authors restore *pudicus* to its specific rank, but regard *hæmorrhoidalis*, Fln., as a synonym of *pictus* (Mg.), Schin., and they recognise another species as *hæmorrhoidalis*, Mg. (*nec* Fln.), of which *impudicus*, Rond., is given as a synonym.

The British Museum possesses a fair series of specimens of *M. pudicus*, Rond., including six males from Felixstowe, Aug. 14th—20th, 1896 (A. Piffard), and two from Walton Wood, St. Osyth, Essex, August 21st, 1896 (F. B. Jennings); the only female in the collection

is from Bearsted, Kent, June 15th, 1896 (E. E. Green). I believe Mr. Harwood, of Colchester, found the species not uncommon in his neighbourhood during the summer of 1896.

To judge from the present state of our collection, the rarest of the British species of *Micropalpus* is *M. comptus*, Fln., of which we possess only two *modern* specimens—a male from Bisley Common, Surrey, July 18th, 1897, captured by myself, and a female from the North Sutor, Cromarty, N. B., June 12th, 1894, taken by my colleague, Mr. W. R. Ogilvie Grant.

Before dismissing the question of *Micropalpus pudicus*, it may be added that in it, as in *M. vulpinus*, Fln., *orbital* setæ are confined to the female, while in the case of *M. comptus*, Fln., they are present in both sexes.

BRACHYCOMA ERRATICA, Mg.

This species, described by Meigen under *Tachina*, was introduced as British by Mr. Meade (Ent. Mo. Mag., ser. 2, vol. v, 1894, p. 110), on account of two specimens (♂ and ♀) bred by Mr. C. J. Watkins, of Painswick, Gloucestershire, from pupæ found in borings of *Pemphredon* in a rotting cherry tree stump. Of the two specimens in question, the ♂ was presented to Mr. Meade, while through the generosity of Mr. Watkins the ♀ is now in the collection of the British Museum.

After describing the species, Meade writes (*loc. cit.*): "Meigen placed this anomalous species, together with *B. devia*, in the genus *Tachina*, in which he was followed by Schiner; by the spotted abdomen and other characters, however, it more properly belongs to *Brachycoma*." But this species cannot possibly be congeneric with *Brachycoma devia*, Fln.; the entirely different shape of the head, as seen in profile, the bare face (*i. e.*, the absence of the row of fine setæ running down on each side from the end of the series of frontal bristles to the lower margin of the eye), the fact that the clypeus is contracted below by the approximation of the facial angles (a feature which Mr. Meade has omitted to notice), the shorter and less attenuated arista, the fact that the third longitudinal vein is entirely bare (instead of being clothed with setæ from the base to the anterior transverse vein), and the very different shape of the first posterior cell, all these are characters which, severally of systematic importance, together constitute a body of evidence that cannot be disregarded. It is true that Schiner (Fauna Austriaca, Diptera, i, p. 477) places *erratica* immediately after *devia*, under the same tabular number, but as he expressly states that he is not acquainted with either species this goes for nothing. Moreover, in a foot-note (*loc. cit.*), Schiner expresses his conviction that Rondani's interpretation of Fallen's *devia*, which is the one followed by modern authors, certainly refers to a distinct species.

It is to be feared that the true systematic position of the species from Painswick must for the present remain in doubt. Owing to the contraction of the clypeus below, and the elongated claws of the ♂, it works down under Brauer's system to the Section *Paramacronychia* (*cf.* Verh. z.-b. Ges. Wien, Jahrg., 1893, p. 505), a group which is largely composed of new genera; but the trail is here lost.

Whether the species is Meigen's *Tachina erratica* at all seems to me, so far as it is possible to judge from the single ♀ at my disposal, also doubtful. Meigen describes the abdominal segments, after the first, as "ash-grey, each with two blackish-brown, triangular, shimmering spots, which are in contact with the lateral margin." He thus says nothing about a "central dorsal stripe," as described by Meade, while the triangular spots on the second and third segments of the abdomen are a long way from the lateral margins. Meade and Meigen both speak of four black stripes on the thorax, but it is perhaps as well to mention that in the Painswick ♀ the four thoracic stripes are præ-sutural; behind the suture there are but three. Finally, it may be observed that *T. erratica*, Mg., is not included by Brauer and von Bergenstamm in their list of 1520 species of *Muscidæ* examined by them (Denkschr. Math.-Naturw., Cl. K. Akad. Wiss. Wien, Bd. lviii, 1891, pp. 421—443).

XYSTA CANA, Mg.

This species, described by Meigen under *Phasia*, but placed under *Xysta* by Schiner, who is followed by Brauer and von Bergenstamm, was introduced as British by Mr. C. Morley (Ent. Mo. Mag., ser. 2, vol. vii, 1896, p. 212), on the authority of Mr. Meade, whose identification was based upon a couple of specimens swept by Mr. Morley out of grass at Ipswich: one in May, 1894, and the other on May 23rd, 1896. Mr. Morley having recently been good enough to allow me to examine these specimens, I found that they agree in all respects with a single specimen in the Museum collection from Felden, Herts, May 14th, 1894 (A. Piffard), which I had previously identified provisionally as *Phasia Rothi*, Ztt. (Dipt. Scand., xiii, 1859, pp. 6170, 6171). The three specimens agree fairly well with the description of *cana*, except that in Meigen's description there is no mention of macrochætæ on the abdomen, whereas in these specimens the posterior margins of the second, third, and fourth abdominal segments are sparsely fringed with such setæ. According to the definition given by Schiner, abdominal macrochætæ are absent in all genera (*Xysta*, *Syntomogaster*, *Phasia*, *Ananta*, and *Alophora*) included by him under "*Phasinæ*;" while with regard to the abdomen of *Xysta* he expressly states (Fauna Austriaca, Diptera, i, p. 407) that: "symmetrically arranged large bristles are nowhere found, even when the hairy coat is pretty thick." It is, therefore, evident that if these specimens really belong to *cana*, the species is as much out of place under *Xysta* as it would be if allowed to remain under *Phasia*. Meigen, however, as already stated, says nothing about macrochætæ in his original description of *Phasia cana*, whereas Zetterstedt (*loc. cit.*, p. 6171) describes the abdomen of *Phasia Rothi*, as: "marginæ apicali segmentorum 3 & 4 parce setulosum" (the macrochætæ on the posterior margin of the second segment are very inconspicuous, being much smaller than the others). For this reason it seems better to designate the species, for the present at any rate, by Zetterstedt's name, instead of by Meigen's, which, if eventually found to apply, would have priority by thirty-five years. In the three specimens that I have examined the fourth longitudinal vein is bent at an obtuse angle, and the first

posterior cell is almost closed (Zetterstedt writes : "4 : tus longitudin. angulo obtuso curvatus ; area modice aperta in apice alæ terminatur"). Here we have an additional reason for the foundation of a new genus for the reception of *Phasia Rothi*, Ztt., which, owing to the presence of abdominal macrochætæ, would form a connecting link between the rest of the "Section" *Phasia* (*Phasinæ*, of Schiner) and the nearest allied setigerous genera.

British Museum (Natural History),
Cromwell Road, London, S.W. :
December 7th, 1897.

The Meeting of the International Congress of Zoology at Cambridge in 1898.—It is pretty well known amongst Zoologists that the Fourth Meeting of this Congress will commence at Cambridge on August 23rd. The First was at Paris in 1889, the Second at Moscow in 1892, the Third at Leyden in 1895. The President for the Meeting is the Rt. Hon. Sir John Lubbock (in place of Sir W. Flower, who resigned on account of ill-health), and there is a very strong and representative Executive and General Committee. A powerful Reception Committee is already seeking to secure accommodation for the visitors. Former Meetings have been most enjoyable, and attended by visitors from all countries in which Zoology is cultivated. This one on our own shores cannot fail to equal, if not to exceed, any of its predecessors. It is anticipated that a large number of Foreign Entomologists will attend, and they will no doubt receive a hearty welcome. Any further information can be obtained by applying to Prof. F. Jeffrey Bell, M.A., 3, Hanover Square, London, W.—EDS.

The Ragonot Collection of Micro-Lepidoptera.—It will be of interest to Entomologists generally to learn that this very important Collection has been given by Madame Ragonot to the Museum of Natural History at Paris, and is now installed there in the Entomological Gallery, where it can be consulted at all times.—EDS.

Homalota clancula, Er., near *Chesham*.—During the early part of last August I took seven specimens of a small and peculiar looking *Homalota*, which I thought would probably prove to be *clancula* ; Mr. Champion has kindly examined them for me, and returns them as that insect. These specimens were found in rotting leaves, which lay many inches deep, almost choking up several pools, in a wood in this district. A small isolated deposit of the Reading Beds upon the chalk gives a clayey character to the parts of the wood in which the capture was made, some other parts being more or less sandy. When running, this species elevates the last three or four segments of the hind body slightly, much after the manner of *Habrocerus*, and its strong resemblance to a small *Placusa* is very striking.—E. G. ELLIMAN, Chesham, Bucks : January 17th, 1898.

Andricus (Aphilotrix) corticis, L., and *A. gemmatus*, Adler.—I obtained galls of *A. corticis* from the bark of an oak in January, 1897 ; the flies emerged in April. I at once placed them on a young oak tree, when they began immediately to deposit eggs in the buds. On May 30th I could plainly detect the young galls of *gemmatus*, and on June 21st the flies began to appear and continued until the 27th, the males preceding the females by three days. The galls are formed on the petioles and

young twigs, and cannot be distinguished from those of *A. trilineatus*.—G. C. BIG-
NELL, Stonehouse, Plymouth: December 25th, 1897.

[This is a confirmation of a similar experiment by Adler.—EDS.]

Aculeate Hymenoptera at Stoborough Heath, Dorset.—I spent many days in August, 1895, and August, 1896, in hunting for *Odynerus basalis*, but without success. I easily fixed the spot where I captured the ♀ on July 24th, 1868; the surroundings have not altered in the least, even the tall clump of thistles grows exactly as it did on that memorable occasion, but the strikingly handsome wasp was not to be found; no doubt in July one would have more chance of success.

Stoborough Heath is a most attractive collecting ground, stretching almost from Wareham to Corfe, and though disappointed in the main object of my visit, the capture of such species as *Methoca ichneumonides* (in one instance the ♂ was seen hovering low down and shadowing the ♀ as she ran along the sand—but was missed), *Myrmica melanocephala*, *Salix affinis*, *Nomada alboguttata*, *Andrena argentata*, &c., made some slight amends.

Bournemouth.—A week spent in August, 1896, to find *Formica exsecta* was equally unsuccessful. My previous visit dated back to 1868, and the improvements which have taken place since then are most depressing from an entomological point of view; the wild stretch of East Cliff, where *exsecta* nests were abundant in 1868, is now a worn out parade, the wild bit of heathy ground at the back of the old town, where *exsecta* was equally common, is now a Winter Garden, and the bank which that most tropical form of all our Aculeates, *Eumenes coarctata*, used to frequent in numbers, is not to be fixed at all. Perhaps *exsecta* still flourishes a little further out, but I was glad to move on to Stoborough.—G. A. JAMES ROTHNEY, 8, Versailles Road, Anerley: December 5th, 1897.

Aculeate Hymenoptera at Newquay, North Cornwall.—Mr. Edward Saunders (who with his usual kindness named my captures) thought that the following list of species taken at Newquay last August might be of interest to Hymenopterists. Newquay itself is not a very promising collecting ground: the golf links at Fistral Bay proved the most favoured spot, but any one who could visit Perran Porth in June or July would, I feel convinced, obtain some very fine species; at this village, situated about eight miles from Newquay, there are miles and miles of most glorious sandhills, with plenty of attractive vegetation, altogether forming an ideal collecting ground, especially for the fossorials. Unfortunately, on the two days I spent there the weather was windy and cold.

At Bedruthan Steps, a few miles from Newquay, when climbing up the cliff from the beach on August 3rd, the hottest day of last year, a wasp settled for a second on the face of the rock close by me, and then sailed backwards and forwards in a way there was no mistaking; it was a black *Rhynchium*, and the size and purple shimmer of the wings recalled the Indian species *metallicum*. Before I could get out my net the prize had disappeared, and some hours of careful search were unsuccessful. I trust the next Hymenopterist who visits this wild and beautiful spot will be more fortunate, for I am as certain as any one can be, short of actual capture, that it was a true *Rhynchium*.

The following is a list of my captures:—*Formica fusca*, L.; *Lasius niger*, L. *flavus*, De G.; *Myrmica scabrinodis*, Nyl.; *L. flavus* was most in evidence, but all ants were distinctly scarce, and the nests of even *flavus* few and far between; *Evagethes bicolor*, Smith; *Salix affinis*, v. d. L., ♂ and ♀, common in Fistral Bay, *S. pusillus*, Schiöd.; *Pompilus rufipes*, L., *pectinipes*, v. d. L., *plumbeus*, Fab., *niger*, Fab., *unguicularis*, Thoms., *chalybeatus*, Schiöd.; *Ceropales maculata*, Fab., common; *Tachytes pectinipes*, L.; *Ammophila sabulosa*, Kirb., *hirsuta*, Scop.; *Cerceris arenaria*, L., 5-fasciata, Rossi; *Odynerus parietinus*, L., *trimarginatus*, Zett.; *Vespa sylvestris*, Scop.; *Sphecodes gibbus*, L.; *Prosopis hyalinata*, Smith; *Halictus rubicundus*, Chr., *quadrinotatus*, Kirb., *tumulorum*, L., *villosulus*, Kirb., *cylindricus*, Fab.; *Andrena pilipes*, Fab.; *Dasygaster hirtipes*, Ltr.; *Megachile argentata*, Fab., common, *maritima*, Kirb., common; *Cœlioxyx vectis*, Curt., *acuminata*, Nyl.; *Psithyrus campestris*, Panz., *rupestris*, Fab.—In.

Diptera taken in the New Forest.—In the December number of this Magazine I recorded some rare *Diptera* taken in this district during 1897, and now give a more general list of my captures, amongst which will again be found some good and rare species. *Platyura marginata* (1), *Limnobia bifasciata* (1), *L. annulus* (2), *Tipula flavolineata* (1 ♂), *T. gigantea* (2 ♂ & ♀), *Stratiomys potamida* (5), *Chrysosotus bipunctatus* (4 ♀), *Sargus flavipes* (1), *Beris clavipes* (3), *B. vallata*, *B. chalybeata*, and *Actina tibialis*, *Hæmatopota crassicornis* (2), *Atylotus fulvus* (4), *Tabanus bovinus* (2 ♂), *Leptogaster cylindrica* (4), *Dioctria atricapilla*, *D. rufipes*, and *D. linearis* (3); *Thereva nobilitata* (1), *T. plebeia* (1), *Empis livida* and *Argyra diaphana* (2); *Cephalops pilosus* (3), and five other species of *Pipunculidæ*, the names of which I have not yet ascertained for certain; *Paragus tibialis*, *Chilosa flavicornis*, *Pyrophæna ocymii* (2), *Platychirus angustatus* (1), *Syrphus umbellatarum* (2), *S. tricoloratus*, *Myiolepta luteola*, *Baccha elongata*, *Brachyopa bicolor* (2), *Volucella inflata* (4), *Sericomyia borealis*, swarming about the flowering rhododendrons, *S. lapponi* (3), *Arctophila muscitans* (2), *Eristalis sepulchralis* and *Criorrhina ruficauda* (8). I was fortunate in getting the last named, as I really arrived (second visit) only just in time, it having been on the wing more than a month. I took them all on May 8th in one spot of limited extent, and after this only saw one more on the 9th, which I failed to net. *C. berberina* (3) and *C. floccosa* (3), *Xylota lenta* (3), *X. nemorum* (1), *Eumerus ornatus* (2) and *Conops vesicularis*. *Ceromasia stabulans* (1), *Eutachina rustica* (1), *Melanota volvulus* (1), *Degeeria convexifrons* and *D. spec.?* (1 each), *Myobia fenestrata* (1), *Servillia lurida*, *S. ursina* (5), *Plagia ruralis* (1), *Bigonochæta spinipennis* (1), *Thryptocera pilipennis*, *Alophora hemiptera Trixa grisea* (2), *Cynomyia mortuorum* (1). I have not met with the last species in the Forest before, and thought it was confined to coast districts. My specimen is a good deal worn, and was probably transported from Lymington in one of the many covered carts which pass my door, and flew into the garden on being disturbed. *Nyctia halterata* (1), *Miltogramma punctata*, *Metopia campestris* (3), *M. leucocephala* (2), *Myiocera carinifrons*, *Hyetodesia læta* (1), *Spilogaster uliginosa* (1), *Pegomyia latitarsis*, *P. flavipes* (2), *Homalomyia Roserii*, and *Cænosa elegantula* (2). *Cordylura albipes* (3), *Limnia unguicornis*, *L. rufifrons* (1), *Elgiva dorsalis*, *Sepedon spehegus* (1), *Chyliza leptogaster* (4), *Loxocera albiseta* (2), *Lissa loxocerina*, *Rivellia syngenesiæ* (2), *Trypeta onotrophes*, *Urophora cardui*, *Sphenella marginata*

(1), *Carphotricha pupillata* (1), *Palloptera ustulata* (3), *Toxoneura muliebris* (4), *Heteroneura albinana*, *Stomphastica flava* (1 and 3, 1896), *Stegana coleoptera* (1), *Phora flava* (2), and *P. maculata* (1).

For introducing me to *L. annulus*, *M. luteola*, *B. bicolor* and *A. hemiptera*, I am indebted to Col. Yerbury, and he also gave me a live specimen of *Lipara lucens* (N. F.), and two *Eumerus sabulorum* from Christchurch Bay.—FRED. C. ADAMS, 68, St. Ermin's Mansions, S.W., and Lyndhurst, Hants: *January*, 1898.

Mites wanted!—Mr. A. D. Michael, of 9, Cadogan Mansions, Sloane Square, S.W., who is preparing a Monograph of the British *Tyroglyphidæ* (so-called "cheese-mites") for the Ray Society, would be obliged to any entomologists who will send him specimens of dry insects attacked by mites, with the mites on them, or mites picked off the insects. In every case the name of the insect should be given. If the mites are sent without the insect, and are not sent alive, they should be in dilute acetic acid, dilute alcohol, or dilute glycerine.—EDS.

Review.

REPORT OF THE GOVERNMENT ENTOMOLOGIST FOR THE YEAR 1896. Cape of Good Hope: by CHAS. P. LOUNSBURY, B.Sc. 8vo, pp. 153, with one chromolith. plate and many illustrations in the text. Cape Town: W. A. Richards and Son. 1897.

As the Cape Government Entomologist is an importation from the United States, it is quite in keeping that his Report should be drawn up on the American plan: and it would scarcely be possible to find a better. The majority of the insects treated on (chiefly *Coccidæ*) seem also to be importations, mostly from Europe. Judging from his Report, Cape Colony has few indigenous injurious insects, except migratory locusts. A feature in the work being done is the supervision exercised over importations of living plants, or fruits, from abroad, and this, with field work also, can scarcely be done single-handed.

Obituary.

George Henry Horn, M.D., President of the American Entomological Society, was born April 7th, 1840, in Philadelphia, and died November 24th, 1897, at Beesley's Point, New Jersey. He graduated in medicine in 1861, and from 1862 to 1866 was surgeon in the U. S. army. Subsequently he established himself as a physician in Philadelphia, and had an extensive practice. Before he graduated he published on recent and fossil corals, but eventually turned his attention entirely to North American *Coleoptera*, as a pupil of, and fellow-worker with, Leconte, until the death of the latter in 1883, and afterwards on his own account. It has been said that if the death of Leconte was a severe blow to North American Coleopterology, that of Horn is probably greater. His first entomological paper was published in 1860, and was followed by others (jointly or separately) to the number of about 150, appearing almost entirely in America, but he worked out the *Eucnemidæ* for the "Biologia Centrali-Americana." He visited Europe on several occasions, and was not unknown at the meetings of the Entomological Society of London. His collections, and a sum of money, have been left to the American Entomological

Society, of which he had been long President. He was a systematist of the highest order, judging beetles as he found them, and probably caring little for the speculative side of the subject. For much of the information in the foregoing short notice we are indebted to our excellent American contemporary "Psyche."

George Christopher Dennis, F.E.S., died almost suddenly at York on December 22nd, at the age of 49 years: he was born March 11th, 1848. The earlier part of the previous day he had spent in setting exotic (or European) butterflies; then went out in his usual health and spirits to distribute the Christmas dole in connection with one of the York charities, and whilst thus engaged in the Vestry of the Church he attended, was seized with a stroke, became unconscious almost immediately, and died soon afterwards. When quite young he became connected with a well known north of England firm, eventually becoming partner in the business, from which about two years ago he retired, to devote his time to natural history, gardening, fishing, and other outdoor pursuits. He was best known, and for many years, as a Lepidopterist, and in the pursuit of his favourite study it was his delight to make distant and lengthened excursions to localities in various parts of the country. Quite recently he had taken up the study of the *Neuroptera* and *Trichoptera* with the intention of forming a collection for the York Museum, in which institution he took great interest, and to which we believe he has left his collection of insects. At the time of his death he was (and had held the office for a number of years previously) President of the York and District Naturalists Society; he was also on the Council of the Yorkshire Philosophical Society; was a member of the Yorkshire Naturalists Union, in which he formerly took active interest, holding office as Secretary of the Entomological section, but the presidency of which, though repeatedly offered to him, he always refused. He joined the Entomological Society of London in 1892. Mr. Dennis has left a widow, but no family.—G. T. P.

SOCIETIES.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *November 15th, 1897.*—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Apropos of Mr. G. H. Kenrick's paper on Mimicry at the last meeting of the Society, the following examples of cases of mimicry were shown:—By Mr. R. C. Bradley, *Volucella bombylans*, with both its forms and the Bombs they resemble, *B. lapidarius* and *terrestris*; and *V. inanis*, with its host, *Vespa crabro*, which it also closely resembles. Mr. C. J. Wainwright, a number of examples amongst *Diptera*, arranged in groups, showing various species mimicking *Apis mellifica*; another lot showing a general wasp-like type; another lot closely resembling *Bombus muscorum*, &c. Mr. A. H. Martineau, a number of similar insects; *Chilosia flavicornis*, with an *Andrena*, with which it flies in the spring, when few other large insects are about, and which it very closely resembles; *Arctophila mussitans* and *Criorrhina oxyacanthæ*, both of which, the former especially, so closely resemble *Bombus muscorum* as to constantly deceive the collector; *Merodon equestris*, which not only resembles *Anthophora furcata* in appearance, but flies in exactly the same manner, and has a similar and very characteristic high pitched note; he also showed the species of *Psithyrus*, with their hosts, *Bombus lapidarius* and *terrestris* ♀, a more

interesting and decided case of mimicry, the parasites resembling their hosts very closely, undoubtedly for protection, and probably to enable them to enter the nests of their hosts unobserved, as their entrance is frequently disputed when detected. Mr. G. T. Bethune-Baker showed a species of *Arhopala*, most of which genus are quite typical Lycænids, which mimicked undoubtedly *Danis apollonius*, a widely different and somewhat aberrant Lycænid.—C. J. WAINWRIGHT, *Hon. Sec.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: December 9th, 1897.—Mr. R. ADKIN, F.E.S., President, in the Chair.

Col. Partridge exhibited specimens of *Ephyra trilinearia*: (1) Female parent, typical; (2) Specimen of brood from above, dwarfed, very red, and annulated; (3) Specimens of same brood which stood over in pupal stage. The last were not so red, nor dwarfed, and the annulated spots could only just be traced. Mr. McArthur, a box of varieties captured or bred this year, including *Arctia Caja*, yellow; *Abraxas grossulariata*, radiated and coalescent; *Bombyx rubi*, with the transverse lines lighter and wider than usual, and others. Mr. Mera, a box of *Abraxas grossulariata*, bred at Forest Gate in 1897, separable into two distinct groups, a light and a dark one. Mr. Montgomery, specimens of *Smerinthus ocellatus* and *Cossus ligniperda*, which had been extremely affected by grease, and which were admirably cleansed, even to the fringes of the abdomen, by the use of benzine collas and a blowpipe. Mr. Clark, a photo-micrograph of a mite, which, with others, he had found on a humble bee. Mr. Adkin, series of *Epione parallelaria* (*vespertina*) from Sutherland, and specimens of *Abraxas grossulariata*, where the usually yellow markings were of a dull ochreous. They were bred by the Rev. Joseph Greene, of Clifton. Mr. Step, specimens of eight species of swimming crab, chiefly of the genus *Portunus*, and made remarks on their habits, relationships, and occurrence; he also exhibited specimens of the hermit crab, which he had found in holes in rocks. Rev. Joseph Greene sent drawings of some seventy varieties of *Abraxas grossulariata* bred during the last six years near Bristol, and communicated notes on the same. Mr. Turner, eight species of the genus *Libythea*, and read notes on their relationships, characteristics, and distribution. It was announced that Part I of the Proceedings was published, and ready for distribution.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON—SIXTY-FIFTH ANNUAL MEETING: January 19th, 1898.—Mr. R. TRIMEN, F.R.S., President, in the Chair.

It was announced that the following had been elected as Officers and Council for the Session 1898-99:—President, Mr. R. Trimen, F.R.S.; Treasurer, Mr. R. McLachlan, F.R.S.; Secretaries, Messrs. W. F. H. Blandford, M.A., F.Z.S., and F. Merrifield; Librarian, Mr. G. C. Champion, F.Z.S.; and as other Members of the Council, Sir G. F. Hampson, Bart., B.A., Dr. T. A. Chapman, M.D., and Messrs. W. Bateson, M.A., F.R.S., M. Jacoby, A. H. Jones, P. B. Mason, F.L.S., O. Salvin, M.A., F.R.S., J. W. Tutt, G. H. Verrall, and C. O. Waterhouse.

The President appointed Sir G. F. Hampson and Messrs. McLachlan and Verrall Vice-Presidents for the Session.

An address by the President was read. Lord Walsingham proposed and Mr. Godman seconded a vote of thanks to the President, who replied. Prof. Poulton proposed and Col. Yerbury seconded a vote of thanks to the other Officers. Messrs. McLachlan and Blandford replied, and the meeting terminated.—W. F. H. BLANDFORD, *Hon. Secretary*.

SOME NEW SPECIES OF *TRICHOPTERA* BELONGING TO THE
EUROPEAN FAUNA, WITH NOTES ON OTHERS.

BY ROBERT McLACHLAN, F.R.S., &c.

The following descriptions, &c., and the figures that accompany them, were mostly written and drawn some years ago, and formed part of materials accumulated for a "Second Additional Supplement" to my "Revision and Synopsis;" but having been compelled to relinquish *camera lucida* drawing, the proposed second supplement had to be abandoned. It is, however, advisable, for several reasons, that the descriptions of the new species should appear, not the least of which is that the types were returned to their owners with MS. names attached: moreover, I recently saw one of the species here described figuring in a trade catalogue under the name originally bestowed, but not, until now, published.

Reference is several times made to Albarda's collection. It is well known that my esteemed correspondent, Mr. H. Albarda, was compelled, owing to failing eyesight, to give up the study of entomology, and that he generously presented his collections to the Leyden Museum, where they now are.

LIMNOPHILUS PONTICUS (*n. sp.*).

Head and thorax above dull ochreous; hairs yellow; orbits of ocelli blackish; posterior warts very large, oval, transverse; a fine median impressed longitudinal line, which is sometimes blackish. Antennæ brownish-testaceous, with paler annulations. Palpi and legs yellowish, the latter with black spines; coxæ, femora, and sides of thorax occasionally fuscous. Abdomen fuscous (greenish in life?); the margins of the segments (especially beneath), the lateral lines, and the terminal segment, paler. Anterior-wings long and rather narrow, gradually dilated to the apex, which is not very sharply truncate; pale greyish, clothed (but not densely) with pale golden pubescence mixed (microscopically) with blackish, without markings of any kind, but there are sometimes indications (hardly visible) of paler irrorations; thyridium and arculus whitish transparent; neuration fine, pale testaceous, with sparse, short, blackish hairs, which become stronger and testaceous on the postcosta and its basal branches; no "beard" on the 1st apical sector in the ♂; discoidal cell longer than its footstalk, all the apical cellules broad at the base. Posterior-wings hyaline, iridescent, pterostigmatic region slightly tinged with yellowish; neuration pale testaceous; discoidal cell shorter and broader than in the anterior, much shorter than its footstalk; upper branch of cubitus furcating on a level with the commencement of the discoidal cell, or slightly after.

In the ♂ the last dorsal segment is rather thickly covered with small tubercles, whence arise long pale hairs; its margin is deeply excised if viewed in front, and on either side is a large swollen projection densely covered with short black setæ, leaving the excision between them pale. Superior appendages concealed in the cavity of the apex, broadly ear-shaped. Intermediate appendages likewise concealed, broad

at the base, triangular, the produced apices black. Side-pieces of the 9th ventral segment moderate. Inferior appendages large, directed upward, the base broad, yellow, and furnished with very long black hairs, the outer apical edge produced upwardly into a somewhat long, black, nearly uncinat spine. Penis sheaths (unexserted) short and broad, and between them in the slender penis which about equals them in length, all being testaceous. No ventral teeth.

In the ♀ the 9th dorsal segment is rather broad, its outer margin triangularly produced at the apex, on either side of which are placed the broad, rounded, hairy appendages. Tubular piece projecting slightly beyond the appendages, broad, concave above, its outer edge slightly truncate and finely black. Side-pieces of 9th ventral segment excised. Vulvar-scale with broad side lobes, which are rounded externally, straight internally, and arcuate at the apex; the middle lobe scarcely longer, elongately triangular. No ventral teeth.

Length of body, ♂, 8½—to 9 mm., ♀, 7—9 mm. Expanse, ♂, 23—24 mm., ♀, 20—23 mm.

Asia Minor (Amasia, *Staudinger*, 2 ♀ in my collection); Mesopotamia (Malatia, 3 ♂, 1 ♀, in Albarda's collection; 1 ♂ generously presented to me).

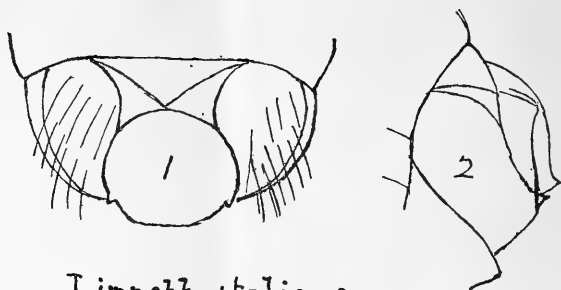
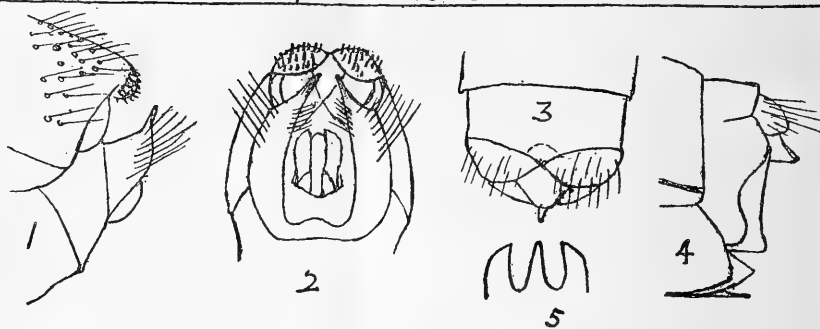
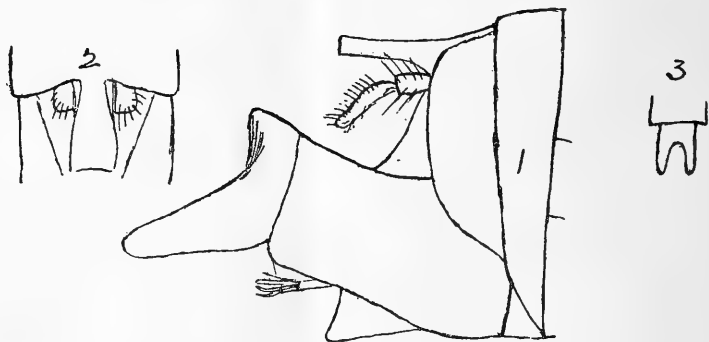
The examples from Amasia are those alluded to in "Revision and Synopsis," Supplement, Pt. ii, p. xx (at bottom of page). Having now seen the ♂, it appears to me that the affinities of the species are with *L. extricatus* (especially the anal structure of the ♂), notwithstanding that the pale colours show more resemblance to *L. luridus*. I think it should follow or precede *extricatus*, especially as the strong resemblance of *hirsutus* to *extricatus* is more a case of analogy than of affinity.

Fig. 1, apex of abdomen of ♂ from side; 2, same beneath; 3, same of ♀ from above; 4, same from side; 5, vulvar scale.

LIMNOPHILUS CENTRALIS, Curt., *var. ITALICUS*, McLach., First Add. Suppl., p. 6.—I have seen a further ♀ of this form, from Vallombrosa, Central Italy (*A. Costa*). It is of large size (expanse, 26½ mm.), much larger than any example I possess of the type-form, and the anterior-wings are strongly marked with fuscous, including a well-defined pterostigmatic spot, which is unusual in the type-form.

Upon comparing this ♀ with that previously noticed, and also with the same sex of the type-form, I find differences in the anal parts equivalent to those that exist in the ♂, so that it is probable this Central Italian form represents a good species (*italicus*) rather than a variety, but it is desirable to see more materials, especially from Southern Italy.

In the ♀ the tubular piece, viewed from above, is nearly obsolete, leaving a nearly circular concave disc, the side plates of which are swollen and hairy, and

*Limnoph. italicus.**Limnoph. ponticus.**Seric. flavicorne. Seric. mesopotamicum. Ser. Selysi.**Rhyacoph. appennina.*R.M.^c Lachlan del.

having their angles (viewed laterally) only very slightly produced into a small tooth, the structure being analogous to that existing in the type-form, but the open disc is much larger, and the production of its side-pieces very much less.

Fig. 1, apex of abdomen of ♀ from above; 2, same from side.

SERICOSTOMA FLAVICORNE, Rev. and Synops., p. 230, Suppl., p. xlviii, and First Add. Suppl., p. 20.—I am of opinion that examples in Albarda's collection (whereof he presented me with one ♂) from Beirut, Syria, certainly pertain here. The penis-sheaths (see figure) show an approach towards a condition sometimes present in *S. personatum*, and it is probable that the species should more immediately follow it. The antennæ are slightly annulate. I have a note that in the ♀ the anterior wings are wholly *cinereous* with blackish fringes, in which is a whitish spot at the termination of the 7th apical sector. There now seems no reason to doubt its distinctness from *S. Schneideri*.

SERICOSTOMA SELYSII, Rev. and Synop., p. 231; First Add. Suppl., p. 20.—I have seen in Albarda's collection 4 ♂ and 1 ♀ of this from San Ildefonso, Spain (E. Pictet's locality). The species (or "form") is near *S. Schneideri*, and differs chiefly therefrom in the antennæ, which are darker and much more distinctly annulate. I give a figure of a penis-sheath.

SERICOSTOMA MESOPOTAMICUM (*n. sp.*).

Of the group of *turbatum*. Antennæ blackish-fuscous, not very distinctly annulate with greyish-yellow. Hairs of head and prothorax almost wholly black (there are indications of a slight admixture of reddish-golden). Maxillary palpi of ♂ very prominent (the internal "fluff" nearly white). Labial palpi blackish, but the terminal joint dingy yellowish. Legs bright yellow, the femora tinged with fuscous. Wings (♂) clothed with black pubescence.

In the ♂ the anal parts are yellow (the inferior appendages clothed with black hairs). Penis sheaths (see figure) remarkable for the disproportion in the length of the branches, *the lower being only one-third the length of the upper*; both branches are stout, the upper slightly upturned at the apex.

Expanse, ♂, 22—25 mm.

Mesopotamia (Malatia, 4 ♂, Albarda's and my collection).

A very distinct form, in consequence of the great disproportion of the two branches of the penis-sheaths. A very black species, allied to *Selysii* and *Schneideri* by the annulate antennæ.

SERICOSTOMA SUBÆQUALE (*n. sp.*).

It seems to me that the examples from North Italy and South Tyrol alluded to at p. 21 of the First Add. Suppl. under *S. pedemontanum*, and of which three figures (20 to 22) were given on Pl. ii in

connection with that species, should be considered to have claim to specific rank and a name. The designation above given has reference to the sub-equal condition of the branches of the penis-sheaths, which is the most salient character.

SCHIZOPELEX FESTIVA, Rev. and Synop., p. 235, and S. GRANJÆ, p. 236, and First Add. Suppl., p. 23.—I am now quite confirmed in an opinion I have long held to the effect that *granjæ* is only a colour-condition of *festiva*, in which the anterior-wings are wholly yellow. In Albarda's collection there exist from San Ildefonso (E. Pictet's locality) several examples of typical *festiva* and two of the yellow form. There is apparently no structural difference whatever in these two forms. It is singular that nearly all the numerous examples from Portugal examined by me (*cf.* First Add. Suppl., p. 23) pertain to the unicolorous yellow condition, and that, as I now see, not one of them is a typical *festiva*, although some few are intermediate. *S. granjæ* must sink as a species, though it may be retained as a varietal name for the unicolourous yellow condition.

SILO GRAELLSI, Rev. and Synop., p. 249, and Suppl., p. lii.—A ♂ from San Ildefonso, Spain, in Albarda's collection, quite agrees with those previously seen, but there is a small triangular apical ventral lobe, which in all probability is retracted in the other examples.

THEMMA GALLICUM, Rev. and Synop., Suppl., p. lviii.—From San Ildefonso, Spain (Albarda's collection), I have seen two ♂ that I incline to refer here, but the penis is not strongly exerted as is the case in the Pyrenean types. There is no ventral tooth, the presence of which is insisted upon by Brauer in the type of *Th. anomalum* (*l. c.*), so they cannot pertain to that species.

CYRUS INSOLUTUS.

Philopotamus urbanus, Ramb., Névrop., p. 503, *nec* Pict. *C. insolutus*, McLach., Rev. and Synopsis, 406, pl. xliii, fig. 1, neuration (1878). *C. fenestratus*, Ris, Mitth. schw. ent. Gesell., ix, p. 53 (1893).

Fuscous. Head and pronotum clothed with golden-grey hairs, which become almost whitish between the antennæ, and fuscous on the sides of the pronotum. Antennæ strong, distinctly crenate within after the basal third, the joints strong, separated (almost moniliform); fuscous, but nearly the basal half of each joint is whitish-yellow, so that they are sharply annulate. Palpi fuscous, clothed with grey hairs. Legs dingy testaceous; tibiæ and tarsi fuscous externally (the latter slightly annulate), and clothed with grey hairs. Anterior-wings elongate, with pale grey membrane, very strongly and uniformly clothed with golden-grey pubescence,

strongly intermingled with fuscous (but not irrorated with spots); the usual whitish spots on the transverse nervules are large and distinct, and there are other large pale spots in the membrane, especially towards the middle of the inner margin and at the base of the apical cellules; fringes dark greyish-fuscous; neuration as detailed at p. 406. Posterior-wings dark smoky-grey, with concolorous fringes and fuscous neuration.

In the ♂ the anal parts resemble those of *C. flavidus* rather than those of *C. trimaculatus*. The dorsal plate is subquadrate, with its apical margin deeply excised, leaving the outer angles rounded, and there are (apparently) none of the intermediate appendages and sheaths so prominent in *C. trimaculatus*. Also the superior appendages are quite as large as the inferior, therefore much as in *C. flavidus*.

In the ♀ the anal parts appear to be much as in *C. trimaculatus*.

Expanse, ♂, 12 mm.; ♀, 12—15 mm. (Rambur's type, ♀, expands only 12 mm.).

France (Paris, *Rambur*, 1 ♀ type in De Sely's collection; 1 ♂, 1 ♀, *P. Mabil*, the ♂ is from Meudon, near Paris, 22nd June). Switzerland (Katzensee, *Ris*, 31st July).

Having been able to compare Rambur's type ♀ with the ♂ collected by Mabil, I feel sure they are specifically identical, and that a larger ♀ taken by Mabil also belongs here. I also feel sure that *insolutus* is a good species. At first sight it might be passed over as a variety of *trimaculatus*, in which the irrorations of the wings were absent, but the numerous transparent spots in the membrane (which show through the pubescence if the wings be held against the light), the neuration, and the anal parts (especially) differ; in the anal parts there is some amount of resemblance to *flavidus*, but all other characters differ; finally, in the presence of the numerous pale spots in the membrane there is resemblance to *crenaticornis*, but in no other point, for *crenaticornis* is a very delicate pale species, with the antennæ strongly crenate for nearly their whole length.

It will have been seen (Rev. and Synopsis, p. 407) that I was formerly not inclined to place much stress upon Rambur's words, "paraissant avoir de petites marques plus pâles vers le milieu et sur l'extrémité" of the wings, but viewed in the light of further materials these words had greater significance. Dr. *Ris*'s description is very full, and is accompanied by figures of the wings and appendages of the ♂; he generously presented me with a series of types, which are darker than the Parisian examples.

RHYACOPHILA APPENNINA (*n. sp.*).

Of Division A, and may provisionally be placed in the Group of *Hageni*.

In general form similar to the Group of *intermedia*, and also to that of *torren-*

tium, &c. Head, prothorax, and antennæ pale, the latter only slightly darker at the sutures of the joints. The vague markings of the anterior-wings approach those of *rupta* and others; the pale dorsal blotch tolerably distinct. Anal parts pale yellow.

In the ♂ the dorsal process is elongate-oblong in form, slightly narrowed towards the base, the apex broadly truncate, nearly straight. The lateral lobes small, hairy. Immediately beneath the dorsal process is a deeply furcate process. Inferior appendages very large, the basal joint broad (viewed laterally); second joint almost two-branched, the upper short and broad, obtuse at the apex, the lower broad, but much produced, and also obtuse, the upper edge of this joint forming a deep excision between the two branches. Lower penis-cover deeply concave. Penis small (uncertain without dissecting the example), not produced. Sheaths in the form of two short straight spines, each of which has nearly straight bristles at its apex. Tooth of the 7th ventral segment nearly obsolete.

♀ unknown.

Length of body, 10 mm. Expanse, 32 mm.

Central Italy (Vallombrosa, *Costa*, 1 ♂ in the Naples Museum).

Once again it may be said that the species of *Rhyacophila* are endless! And in the present instance we have to deal with a species that has apparently no very close allies, and of large size. In the form of the dorsal process there is some analogy with *rectispina*. The second joint of the inferior appendages has some resemblance to that of *evoluta*, also to that of *Hageni* and *obliterata*. The short penis-sheaths with bristles at the tips are suggestive of the Group of *Hageni*, but the other inner anal parts do not accord therewith (so far as can be made out without dissection). The discovery of the ♀ might serve to define the position.

Fig. 1, apex of abdomen of ♂ from side; 2, the same above; 3, apex of furcate process beneath the dorsal process, above.

Lewisham, London:

September, 1897.

SOME REMARKS ON THE *BAGOUS LUTOSUS*, GYLL.,
AND *B. GLABRIROSTRIS*, HERBST (*LUTULENTUS*, GYLL.), OF
BRITISH COLLECTIONS.

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

There is a good deal of confusion regarding these two species, the only representatives of the genus on our list with dilated and bilobed 3rd tarsal joint (apart from *B. alismatis*, Marsh.), in British collections. All the specimens I have seen as yet (including those of Stephens and Power) doing duty for *B. lutosus* are either *B. glabrirostris*, of which a large well-marked form occurs in the south of England, or *B. binodulus*, Herbst. It is, therefore, highly probable that all the

British records of *B. lutosus* are incorrect. The characters used by Thomson and Bedel to distinguish these species are somewhat contradictory; Bedel, moreover, placing particular stress upon the coarser sculpture of *B. glabrirostris*, a peculiarity not mentioned by Thomson. Both authors, however, mention the beak-like posterior prolongation of the elytra in *B. lutosus*, and by this character alone the two species may be readily distinguished: *B. glabrirostris* having the elytra abruptly declivous and much more obtuse behind, their general shape thus being more quadrate. Thomson separated from *B. lutosus* a smaller form under the name *B. caudatus*, Th., and from *B. lutulentus* a form with black tarsi, *B. nigratarsis*, Th.; but his species have not been accepted by subsequent writers. He groups them by the following characters:—

Elytra with the interstices flat, equal, the suture elevated posteriorly; the apex acute, inflexed, and rostrate. Legs rufous.....*lutosus*, Gyll., *caudatus*, Th.

Elytra with the alternate interstices raised, the suture not elevated posteriorly; the apex inflexed and scarcely rostrate; the 3rd interstice with a white spot a little beyond the middle, the 5th callous posteriorly...

lutulentus, Gyll., *nigratarsis*, Th.

Bedel (Faune Col. Bassin de la Seine, vi, p. 106) separates the two species thus:—

Hind body attenuated in a rather long beak. Sculpture finer; granules of the elytra more numerous, usually 4×4 upon the base of the 1st interstice; 3rd interstice not raised, with a yellowish badly-defined spot...

lutosus, Gyll.

Hind body somewhat abruptly declivous behind. Sculpture coarser; granules of the elytra less numerous, usually 3×3 upon the base of the 1st interstice; 3rd interstice with a whitish, well-defined spot. Tarsi sometimes black (var. *nigratarsis*, Th.), sometimes red...

glabrirostris, Herbst (*lutulentus*, Gyll.).

The large form of *B. glabrirostris*—of which I have seen about a dozen examples, including one from Merton in the Power collection (captured in July, 1864, with a number of the smaller form), several in Mr. W. H. Bennett's collection, all from Pevensey or Rye, and one captured by myself at Sandown, in June, 1888—seems to be quite constant, and to differ from typical specimens in the relatively longer tarsi; it has the tarsi constantly reddish. The specimen representing *B. lutosus* in Mr. S. Stevens's collection is larger and more robust than any of these; but if the shape of the apex of the elytra is to be relied upon as a specific character, the insect must be referred to *B. glabrirostris*.

The small form of *B. glabrirostris* is sometimes common where it

occurs, and I have seen long series of it from Merton (*Power*), Camber and Pevensey (*W. H. Bennett*), &c., as well as from Armagh (*Johnson*).

Of *B. nigratarsis*, Thoms. (= *binotatus* and *tibialis*, Steph.), I possess numerous examples captured by myself at Sandown in June, 1888, and others from Barnes; it has been found by Mr. Johnson at Armagh, by Mr. S. Stevens at Hammersmith, and by Mr. Bennett at Pevensey, and specimens of it are to be found in most collections, including that of Stephens. This insect is usually regarded as a variety of *B. glabrirostris*, but is perhaps distinct, the tarsi and antennæ being piceous or black, and the sculpture coarser.

It may be noted that *B. glabrirostris* is known to be a very variable species on the continent, and has numerous synonyms.

I am indebted to Prof. C. G. Thomson, of Lund, for typical examples of *B. lutosus*, *B. lutulentus*, and *B. nigratarsis* for examination. Of the first mentioned there is also a specimen from Gyllenhal in the British Museum, and Mr. J. J. Walker has sent me two of it from Besika Bay.

Horsell, Woking :

February 1st, 1898.

ON THE OCCURRENCE IN SPAIN OF
LYCÆNA (TARUCUS) THEOPHRASTUS, FAB., A BUTTERFLY NEW
TO THE FAUNA OF EUROPE.

BY PERCY H. GRIMSHAW, F.E.S.,

Natural History Department, Edinburgh Museum of Science and Art.

Among a collection of insects from Spain, recently acquired by the Edinburgh Museum of Science and Art, are five butterflies of exceptional interest, inasmuch as they represent a species which does not appear to have been hitherto recorded as occurring in Europe. The species in question is *Lycæna (Tarucus) Theophrastus*, Fab., and considering that all the insects in this collection were captured by my friend Mr. John Gray himself, from whom we received them direct, there can be no possible doubt of their Spanish origin. The five specimens of this beautiful little butterfly are all males, and were obtained in the summer of 1897 in the neighbourhood of Aguilas, a town on the Mediterranean coast, about 40 miles west of Cartagena.

The only European species with which the present one could possibly be confounded is *L. balcanica*, Frr., which is a native of S. E. Europe (Sicily and Dalmatia to the Caucasus), Asia Minor and Persia. From this it differs in the following respects:—size rather larger,

measuring in expanse of wings about 22 mm. ; upper surface of male of a somewhat brighter blue, with only a single discal spot on the fore-wings and a much narrower black hind margin in both wings ; under surface with the black markings much more distinct, especially those of the fore-wings ; hind-wings with a row of distinct and well defined black spots running parallel to the hind margin, as in *balcanica*, but the spots are somewhat larger ; the black line immediately interior to these, which in *balcanica* is pretty continuous, is in the present species more or less broken up into lunate or subquadrate spots ; the spots about the middle of the wing much more irregular and not forming such regular lines as in *balcanica*.

Lycæna Theophrastus is fairly widely distributed in North Africa, as will be seen below. Mr. J. J. Walker, R N., in an interesting paper, entitled, "Notes on *Lepidoptera* from the Straits of Gibraltar," published in the Transactions of the Entomological Society of London for 1890, says (p. 365), "Among the butterflies . . . *Lycæna Theophrastus*, F. (etc., etc.) . . . appear to be confined to the Moroccan portion of the region," and again, on p. 373, he says that he can find no previous record from Morocco. In regard to the latter statement I may point out that the species was originally described (female sex only) by Fabricius from that country.

In conclusion, it may be interesting to give a brief summary of the extra-European localities recorded for this butterfly, and considering the wide distribution of the species here shown, the present extension of its range does not seem so very striking after all.

The following are the records referred to :—

MAROCCO : Fabricius, Ent. Syst., iii, p. 281, n. 82 (1793).

ALGERIA : Lucas, Exploration Scientifique de l'Algérie, t. iii, Lépidoptères, Paris (1848) ; Lang, Butterflies of Europe, p. 140 (1884) ; Constantine, Sebdou, Biskra, Collo, Nemours, Oran, &c., Rühl, Die Palæarktischen Grossschmetterlinge, pp. 227 and 749 (1895).

TUNIS : Rühl, *op. cit.*, p. 749.

BARBARY and EGYPT : Godart, Encycl. Méthodique, ix, p. 658, n. 139 (1823?).

SOMALI-LAND : Butler, P. Z. S., 1885, p. 764 ; Sharpe, P. Z. S., 1896, pp. 524 & 533.

ARABIA : *Lahej*, Aden, Butler, P. Z. S., 1884, p. 484.

INDIA : *India*, Kanara and *N. India*, Horsfield and Moore, Cat. Lep. Mus. E. I. C., vol. i, p. 25 (1857) ; *Bengal*, Moore, P. Z. S., 1865, p. 772 ; *Mhow*, Butler, P. Z. S., 1883, p. 148, and Swinhoe, P. Z. S., 1886, p. 428 ; *North Sind*, Sukkur, Shikarpore, Swinhoe, P. Z. S., 1884, p. 506 ; *Poona* and *Bombay*, Swinhoe, P. Z. S., 1885, p. 134 ; *Haldwani*, at foot of Kumaon Hills, Doherty, Journ. As. Soc. Beng., vol. lv, pt. 2, pp. 112 and 132 (1886).

CEYLON : Moore, Lep. Ceylon, vol. i, p. 81, pl. xxxvi, fig. 3 (1881).

Edinburgh : February, 1898.

COLEOPTERA IN FLOOD RUBBISH IN THE ISLE OF SHEPPEY.

BY J. J. WALKER, R.N., F.L.S.

Monday, November 29th, 1897, will long be memorable here as the date of one of the greatest disasters which has befallen Sheerness and the Isle of Sheppey during the last century at least; though there is a tradition of a similar catastrophe, of equal magnitude, having taken place about ninety years ago. On that day a severe northerly gale caused the afternoon tide to rise seven or eight feet above its normal level, accompanied by a heavy sea even in the sheltered waters of the estuary of the Medway. Our clay-built sea walls, which were much cracked and fissured by the prolonged dry weather, fairly melted away before the rising waters in many places, and through the breaches thus formed vast volumes of sea water poured over our meadows and pasture lands. Some thousands of acres, comprising practically the whole of the low-lying part of the Isle of Sheppey, were thus inundated in a few hours, and four-fifths of the town of Sheerness was laid under water from one to three feet deep. My own house was invaded by the flood, and I was barely in time to remove my collections and other valuables from the ground floor to a place of safety.

As one result of the deluge, almost every beetle on the Sheppey marshes must have been served with an uncereemonious "notice to quit" its winter quarters; and the profusion of insect life in the "flood rubbish" which the waters have left behind in quite embarrassing quantity, is such as I have rarely, if ever, seen before. Two or three small bags of siftings, which were brought home for leisurely examination, teemed to such an extent with creeping things, that I was perforce obliged to conduct the inspection of the stuff out of doors. Even now, after a lapse of six weeks, the rubbish still repays examination, though most of the better species have gone out of it. As may be imagined, the majority of the *Coleoptera* were of the commonest description, and very few were new to the Sheppey list; but a good many interesting species (and even such bulky forms as *Carabus*, *Dytiscus*, *Hydrophilus*, *Geotrupes*, &c.) were found among the mass. Some species which I had fully expected to meet with, such as *Anisodactylus pæciloides*, *Stenolophus elegans*, &c., failed to put in an appearance, and the genus *Bagöus* (several members of which are so plentiful in our ditches) was represented by a solitary example of *B. argillaceus*. Perhaps the most interesting find was *Amara strenua*, which was unfortunately very rare. There is a fine series of this

extremely local insect from the Isle of Sheppey in the Power Collection, taken in 1857—8 (*cf.* Entom. Annual, 1858, p. 53); I have reason to believe that these were obtained in a spot which has long ago been built upon, and no further examples appear to have been found here until the present record. A good many species were most readily obtained, in bare sandy or clayey spots free from grass, by rolling back the stuff and closely examining the ground beneath; in this way I found *Achenium humile*, hitherto scarce in Sheppey, in very large numbers, and *Polystichus vittatus* on Christmas Day, when the rubbish was thickly covered with hoar frost.

Among the large number of species taken the following are perhaps worthy of record :—

Dyschirius salinus and *æneus*, *Licinus silphoides*, and *Stenolophus consputus*, all scarce. *Harpalus rubripes* (not previously noticed by me in Sheppey), *attenuatus* and *depressus*, the two latter not uncommon. *Pterostichus picimanus*, common, and *inæqualis*, in great profusion, a reddish variety of the latter species, quite hard and mature, occurring frequently. Thirteen species of the genus *Amara* were met with, of which the best were *convexiuscula*, *ovata*, *communis*, *lunicollis*, all more or less common; *lucida*, very plentiful; *strenua*, three or four examples only, and a few *plebeia*. *Bembidius riparium*, *assimile*, *minimum*, *normannum*, and *ephippium*, all fairly common. *Trechus secalis*, new to Sheppey, very sparingly. *Dromius nigri-ventris*, abundant. *Polystichus vittatus*, a few specimens in a large accumulation of rubbish barely half a mile out of the town. *Cnemidotus impressus*, rather common; *Agabus conspersus*, a few, and *Rhantus notatus*, fairly plentiful. *Dytiscus circumflexus* and *Hydrophilus piceus*, one or two of each. *Hydrobius oblongus*, *Philhydrus maritimus*, and *Helochares punctatus*, all three common; *Helophorus intermedius*, scarce. *Ocypus morio* (small form), *ater*, and *Philonthus intermedius*, occasional. *Xantholinus tricolor*, a few; *Achenium depressum*, two specimens only, and *humile*, locally very abundant. *Cryptobium fracticorne*, *Bledius tricornis* and *spectabilis*, sparingly. *Agathidium marginatum*, common; *Choleva angustata*, *nigrita*, &c. *Hister quadrimaculatus* (formerly common in Sheppey, but not seen alive by me since 1874), *neglectus*, and *bissexstriatus*, a few of each; *Carcinops* (*Kissister*) *minima*, *Coccidula scutellata*, and *Scymnus testaceus* (*Mulsanti*, Wat.), occasionally met with. *Syncalyptra hirsuta*, very plentiful and in fine clean condition; *Heterocererus obsoletus*, *marginatus*, and *lævigatus*. *Aphodius consputus*, common. *Throscus obtusus*, a few specimens. *Cassida sanguinolenta* (new to Sheppey), *vittata* (*oblonga*, Ill.), *nobilis*, and *obsoleta*, all rare. *Anthicus humilis* and *instabilis*, in numbers. *Apion lævicolle*, *Schönherri*, *limonii*, *pubescens*, &c. *Strophosomus faber*, scarce; *Hypera murina*, very common; *Eirirrhinus scirpi*, *Thryogenes nereis* and *scirrhosus*, scarce. *Bagöus argillaceus*, one very fresh specimen only; *Ceuthorrhynchidius frontalis*, a few. *Amalus hæmorrhous*, *Litodactylus leucogaster*, and *Phytobius notula*, two or three specimens of each species.

23, Ranelagh Road, Sheerness :

January 10th, 1897.

NOTES ON THE GENUS *CHLORIONA*, FIEBER; WITH DESCRIPTION
OF A NEW SPECIES.

BY JAMES EDWARDS, F.E.S.

In the course of a recent review of my material in this genus I found that we have in this country a third species, which has not, so far as I know, hitherto been recognised; and also that one of our two known species has been wrongly identified. The object of these notes is to put matters straight with regard to our native species, and with the view of rendering them more useful, I have included a notice of all the described European species.

No species of this section of the old genus *Delphax* appears to have been known to the Rev. T. A. Marshall at the date of his "Essay towards a knowledge of British *Homoptera*" (Ent. Mo. Mag., ser. i, vol. i, p. 199, Feb., 1865); but Scott (*op. cit.*, ser. i, vol. vii, p. 25, July, 1870) introduced two species, the macropterous males of which he distinguished as follows:—

Greenish-grey; abdomen black, genital segment yellowish-white...

smaragdula, Stål.

Green; abdomen and genital segment black *unicolor*, H.-S.

I have not seen any of Scott's specimens, and the above particulars do not, unfortunately, enable one to decide with certainty what species he had before him.

In my Synopsis of British *Homoptera-Cicadina* (Trans. Ent. Soc. Lond., 1886, p. 58) I dealt with the two British species then known to me, retaining the names used by Scott, and separating them by the characters employed by J. Sahlberg, and so the matter remained. The species resemble one another very much in facies, and Dr. Melichar (Cicadinen von Mittel-Europa, 1896, p. 63) says that they are only to be distinguished from each other by the form of the face. The differences in the proportions of the face, however, are, for me, very difficult to appreciate, and in practice I find that characters taken from the male genitalia are much more satisfactory; this seems also to have been the experience of Fieber.

As the male anal tube in particular affords more prominent characters than usual, it is necessary that its structure should be thoroughly understood; and the fact that it is capable of considerable vertical motion must be borne in mind. It is furnished on each side of its lower edge with a large pointed tooth, which is always more or less cephalad in direction, and in most species, when the posterior face of the anal tube is vertical, lies parallel to the long axis of the body, and

consequently is invisible in the cephalad aspect of the specimen. The only exception to this formation at present known to me occurs in *C. prasinula*, in which the teeth are decumbent as well as divergent, and therefore are always visible in the cephalad aspect of the specimen, at least in their distal half. It frequently happens that the anal tube is raised, so that its posterior face is horizontal, in which case, of course, the teeth are quite exposed. The function of these teeth appears to be that of keeping the ædeagus in place.

The differential characters of the males of the species which I have examined are given below; I am not able to identify female specimens taken apart from the males.

1. Scutellum, beyond the side keels, with a black subtriangular patch on each side.
Apex of style obliquely truncate, with both the upper and lower angles produced into a sharp triangular tooth.....*dorsata*, n. sp.
Scutellum entirely pale 2.
2. Posterior face of the anal tube with a very small, sharp, recurved tooth or hook at each lower corner.....*glaucescens*, Fieb.
Posterior face of the anal tube unarmed at the lower corners 3.
3. Teeth of the anal tube curved, directed obliquely outward, forward, and downward, their distal half, therefore, visible in the same aspect as the posterior face of the anal tube*prasinula*, Fieb.
Teeth of the anal tube straight, directed almost horizontally cephalad, and, therefore, not visible in the same aspect as the posterior face of the anal tube... 4.
4. Periphery of the pygofer, in the cephalad aspect, suborbicular...
smaragdula, Stål.
" " " " " " transversely elliptic ..
unicolor, H.-S.

C. DORSATA, n. sp.

♂. 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 semi-circular, 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 both the upper and lower angles produced into a sharp triangular tooth. Scutellum with a black subtriangular patch on each side beyond the side keels. Otherwise like *C. glaucescens*.

I describe this species from two males from "Haute Savoie," France, sent to me by M. E. Autran, under the name *unicolor*, H.-S.

C. GLAUDESCENS, Fieb.

♂. Abdomen above black, narrowly yellow at the sides; pygofer above pitch-brown, with the hind margin narrowly yellow, beneath yellow-brown, with the hind margin paler.

Pygofer: upper and lower notches as in *C. dorsata*, its outline in the cephalad aspect transversely elliptic, the aperture somewhat hexagonal, the lining and partition whitish, the styles and anal tube brownish-yellow, the hind margin in the lateral aspect somewhat convex. Styles feebly sinuate, gradually narrowed from the base to the apex, where they are slightly produced into a short blunt lobe on the upper-side. Anal tube with the aperture transversely elliptic, the lower part much widened with a wide angular notch reaching from side to side, and bearing at each lower corner a very small, sharp, recurved tooth or hook; the teeth proper straight, parallel, and directed cephalad in a nearly horizontal position, not visible in the cephalad aspect of the pygofer.

This species is the *unicolor* of J. Sahlberg and myself; I have found it commonly on reeds in coast marshes in Norfolk and Suffolk. Ranworth, June 16th, 1887; Cley, July 14th, 1887; Southwold, August, 1896 (*Edwards*); Bohemia (*Fieber*); Sweden and Finland (*J. Sahlberg*); Holland (*Fokker*).

C. PRASINULA, Fieb.

♂. Abdomen above black, narrowly yellow at the sides, the hind margin of the last segment narrowly, the hind margin of the pygofer in its upper half, and the anal tube, white; pygofer beneath and the partition black; styles pitch-brown, becoming yellow beyond the middle.

Pygofer: upper and lower notches as in *C. dorsata*, its outline in the cephalad aspect transversely elliptic, the aperture irregular, owing to the infolding of a bluntly triangular whitish piece on each side of the upper half, the hind margin in the lateral aspect convex. Styles sinuate, gradually narrowed from the base to the apex, where they are truncate. Anal tube with the aperture roundish, the lower part not broader than the sides, the lower corners blunt right angles; the teeth curved, divergent, and visible in the cephalad aspect of the pygofer.

Black Gang Chine, Isle of Wight (*Thouless*); Dersingham, Norfolk, July 30th, 1885; Cley, July 14th, 1887; August 5th, 1889; Whitwell Common, June 26th, 1890 (*Edwards*); Galicia, Austria (*Fieber*); Donau-auen, Austria (*Löw*); Bjelobodo (*Melichar*); Kendytau, Central Asia (*J. Sahlberg*).

C. SMARAGDULA, Stål.

♂. Abdomen above black, sides rather broadly yellow, the hind margins of the

segments very narrowly yellow; pygofer pitch black, anal tube brownish-yellow; styles pitch-brown, passing into yellow beyond the middle.

Pygofer: upper notch large and wide, forming about four-fifths of a circle, lower notch as in the other species, outline in the cephalad aspect suborbicular, the aperture square, with rounded angles, but contracted at about half its height by reason of the projection inwards of the sides, hind margin in the lateral aspect straight. Styles slightly sinuate, gradually narrowed from the base to the truncate apex, where the inner angle is produced into a long sharp tooth. Anal tube: aperture suborbicular, lower margin much widened, the lower corners forming two wide, somewhat acute, angles, owing to the wide angular notch of the lower edge, the teeth invisible in the cephalad aspect of the pygofer.

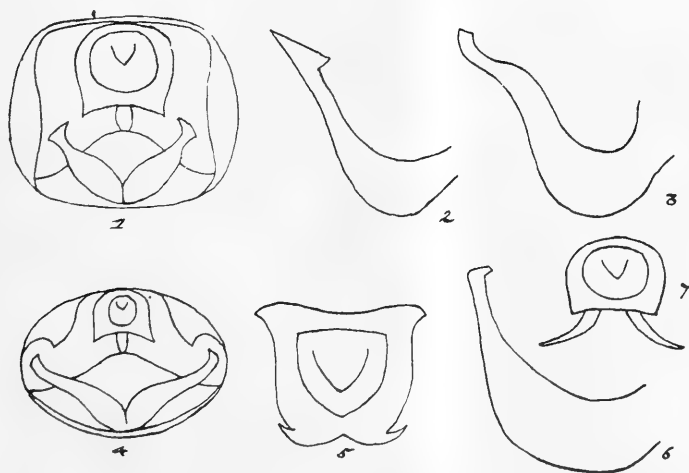
Ranworth, June 16th, 1887 (*Edwards*); Galicia, Austria (*Löw*); Crefeld (*Mink*); Sweden (*J. Sahlberg*).

C. UNICOLOR, H.-S.

♂. Abdomen above black, its sides narrowly yellow, the hind margin of the last segment narrowly white.

Pygofer dark brownish-yellow, the upper and lower notches as in *C. dorsata*, the hind margin, when viewed from the side, rounded; the periphery, in the cephalad aspect, transversely elliptic. Anal tube brownish-yellow, its aperture suborbicular, somewhat contracted below, its lower edge scarcely perceptibly widened, the lower angles blunt, somewhat rectangular. Styles pitch-brown, yellow at the apex, nearly straight, gradually narrowed from the base to the apex, where they are slightly produced into a short blunt lobe on the upper-side only. Teeth of the anal tube not visible in the cephalad aspect.

Eichkogel, Lower Austria (*Melichar*); Levico, Tyrol (*Then*); Issy-kul, Central Asia (*J. Sahlberg*).



C. STENOPTERA, Flor.

Delphax stenoptera, Flor, Rhyn. Liv., ii, p. 40 (1861); *Chloriona stenoptera*, Fieber, Grundz. Delp., p. 523, pl. viii, fig. 6 (1866), Cicad. d. Eur., pt. iii, p. 28 (1878).

This species, of which the type male appears to remain unique, I have not seen. Judging from Fieber's figure the processes on the lower edge of the anal tube form a sort of recumbent X with curved limbs.

Kudling, Livonia (*Flor*).

C. FARINOSA, Buckton.

Buckton, Mon. Brit. Cicad., i, p. 75, pl. xxi, figs. 1, 1a, 1b, 1c.

This is nothing but *Liburnia lineola*, Germ.; I had a specimen from the author.

EXPLANATION OF THE FIGURES.

- Fig. 1.—*Chloriona smaragdula*, Stål, male genitalia seen from behind.
 „ 2.— „ *dorsata*, n. sp., male genital style.
 „ 3.— „ *prasinula*, Fieb., „ „ „
 „ 4.— „ *unicolor*, H.-S., „ genitalia seen from behind.
 „ 5.— „ *glaucescens*, Fieb., male anal tube seen from behind.
 „ 6.— „ „ „ „ genital style.
 „ 7.— „ *prasinula*, „ „ anal tube seen from behind.

(All diagrammatic and much enlarged).

Aculeates taken at Sutton Coldfield in 1897.—The following Aculeates were taken last season at Sutton Coldfield; several of them are additions to the district, and as records from the Midlands are few and far between, I thought it would be desirable to publish them. *Pompilus spissus* (3); *Diodontus tristis* (3 ♂, 5 ♀); *Psen pallipes* (3); these three species are all recorded for the first time from this district; *Myrmosa melanocephala* (8 ♂, 3 ♀); *Sphecodes pilifrons* (3), *affinis* (1), new to our list. *Crabros* were fairly represented, but nothing new occurred: *tibialis* (1), *clavipes* (4), *palmipes* (3), *elongatulus* (very common). Of *Odynerus* the following were found: *parietum*, *trifasciatus*, *spinipes* (2), *sinuatus* (1). At the end of June *Prosopis communis* and *hyalinata* occurred on parsley bloom, the last named commonly. *Halictus atricornis* (2); *Anthidium manicatum*, 2 ♂ of this grand bee were captured; this is the first time I have met with it, and I do not know if there is any other Warwickshire record. *Anthophora pilipes* and *furcata*, of the latter 2 ♂; *Osmia cærulescens*, an addition to our list, one ♀ taken, July 12th; *Megachile centuncularis* (5 ♂, 2 ♀), also a first record. The only *Nomadas* taken were *Lathburiana* and *solidaginis*, the latter being new. In a small field close to my house, *Psithyrus rupestris* and *campestris* were very common, one specimen of the latter is

almost black. *Bombus hortorum*, one ♀ taken; intermediate between the type and var. *Harrisellus*, having pale hairs on the 4th segment, all the others black.—RALPH C. BRADLEY, Sutton Coldfield: February, 1898.

Cynomyia alpina, Ztt., in Warwickshire.—The claim of this species rests as British, I believe, on an old Scottish record, and one brought forward by Mr. P. Grimshaw (Edinburgh Museum), who records a ♂ from Aberdeenshire in 1896.

Warwickshire can now be added as a locality, and as the species is so little known, a short account of its capture may prove interesting. On August 2nd I took two males in my garden, and coming to the conclusion it must be a good thing I worked systematically for it day by day until September 6th, capturing in all sixteen ♂s. All were taken between 8.30 and 10 o'clock, sunning themselves on raspberry and currant leaves, in company with *Nemoræa radicum*, *Lucilia Cæsar*, *Musca vomitoria* and *erythrocephala*. They only appeared in bright sunshine, and were very skittish, seldom allowing one to approach within a couple of yards, and at that distance were difficult to separate from the *Muscæ*, unless one caught sight of the bright face, or obtained a glimpse of the last abdominal segments, not an easy matter with the wings closed. One could also see that it is a more compactly built insect, narrower than *erythrocephala*, yet many times I swept up the *Muscæ* by mistake, being very anxious to take the ♀, and, therefore, let nothing doubtful pass.

I forwarded the species to Mr. E. E. Austen, who reported the naming as correct, and kindly supplied the record of previous captures.

A single ♂ taken in the garden, July 25th, 1891, remained unrecognised in my collection until last autumn. All the records appear to be males, so we have yet to find the female.—ID.

Diptera in the New Forest: a correction.—For *Urophora cardui* please read *Tephritis miliaria* in my list of *Diptera* (last line, page 42, of the February number).—FRED. C. ADAMS.

Hystricopsylla talpæ, Curt. (*obtusiceps*, Rits.), at Chatham.—On the afternoon of the 15th, while hunting for *Brachysomus hirtus* in its locality close to Chatham, I came across the nest of a field-mouse among dead leaves at the roots of a small chestnut bush. It was deserted by its owner, which was hardly to be wondered at, for on shaking it over paper out tumbled no fewer than seven specimens (3 ♂, 4 ♀) of the giant flea, *Hystricopsylla talpæ*, Curtis, as well as several of the small pallid, *Typhlopsylla musculi*, Dugès. Both species were lively enough, and ran over the paper with great speed, most of the *Typhlopsylla* effecting their escape; but (perhaps fortunately for me) the saltatory powers of the *Hystricopsylla* were of the most limited description, and it seemed unable to jump more than an inch at the utmost. Hitherto I have met with this great flea very rarely in haystacks, tufts of grass, moss, and heaps of hedge-clippings, and on one occasion on a living field-vole, *Arvicola agrestis*, but never more than one, or at most, two at a time, so the capture of so many specimens at once may be worth recording. The largest ♀ measures a trifle over 5 mm. in length. The only beetle found in the nest was a fine example of the rare Staphylinid, *Oxyptoda spectabilis*, Maerk., which has occurred to me only once before in the Chatham district, in the spring of 1873.—JAMES J. WALKER, 23, Ranelagh Road, Sheerness: January 17th, 1898.

Coleoptera in the Colchester district in 1897.—My brother and myself having taken a large number of species of *Coleoptera* in the neighbourhood of Colchester during the past year, some account of the less common among them may be of interest. They were all captured in the north-east corner of Essex. In order to avoid repetition, those found under similar circumstances are grouped together.

In fungi we found a good many local insects, including *Liodes orbicularis*, *Daene humeralis*, *Triplax aenea* and *T. russica*, *Cyrtotriplax bipustulata*, *Cis alni* (on one log only), *Hypophlæus bicolor*, *Hallomenus humeralis*, *Heledona agaricola* (in white fungus on willow, with *Quedius cruentus*, and other commoner species). In dead leaves, during the early part of the year:—*Notiophilus rufipes*, *Ocalea badia*, *Atemeles emarginatus* (1), *Mycetoporus clavicornis*, *Bythinus Curtisi* (scarce), *Neuraphes elongatulus*, *N. Sparshalli* and its var. *minutus*. In flood refuse, tufts of grass, rushes, &c.:—*Cychnus rostratus* (also one in a fungus), *Oodes helopioides* (scarce), *Pterostichus inæqualis*, *Platyderus ruficollis*, *Stenus circularis*, *Choleva morio*. In salt marsh ditches and their vicinity, at intervals during the season:—*Bembidium Clarki*, *Berosus spinosus*, *Trogophlæus foveolatus*, *Hæmonia Curtisi* (1), *Thryogenes festuæ*, and *Bagous tempestivus*. In ants' nests, during the early part of the summer:—*Aleochara ruficornis* (1), *Myrmedonia humeralis* (with both *Formica rufa* and *F. fuliginosa*), *M. funesta*, *M. laticollis*, *M. lugens*, *Quedius brevis*, *Anisotoma calcarata* (1), and *Amphotis marginata*. In manure heaps and animal droppings:—*Philonthus ebeninus*, var. *corruscus*, *Euplectus signatus*, *E. sanguineus*, *Nitidula rufipes*, *Mycetophagus 4-guttatus*, *Aphodius porcus*, *Xylophilus populneus*. Under bark and in moss:—*Pristonychus subcyaneus*, *Megacronus inclinans*, *Oxygoda exoleta*, *Euplectus nigricans*, *Cryptarcha strigata*. On the coast, under stones, maritime plants, &c.:—*Panagæus 4-pustulatus*, *Harpalus servus* (scarce), *Masoreus Wetterhali* (scarce), *Xantholinus tricolor*, *Castus sericeus*, *Helops pallidus*, and *Cænopsis Waltoni*. On various trees and bushes:—*Lebia chlorocephala*, *Toxotus meridianus*, *Strangalia 4-fasciata*, *Liopus nebulosus*, *Pogonochærus dentatus*, *Zeugophora flavicollis* (rare), *Cryptocephalus lineola* (scarce), *C. 6-punctatus* (1 only), *Crepidodera nitidula* (1 only, where a fine series was taken last year), *Byctiscus betuleti*, *Rhynchites cupreus* (scarce), *R. ophthalmicus* (common on one occasion), *R. pubescens*, *Anoplus plantaris*, and *A. roboris* (scarce). In dead animals:—*Staphylinus stercorarius*, *Necrophorus ruspator*, and *N. vestigator*. On flowering plants, by sweeping and searching:—*Harpalus punctatulus*, *H. sabulicola*, *Malachius marginellus*, *Anthocomus fasciatus*, *Dolichosoma lineare*, *Hedobia imperialis*, *Orsodacna cerasi*, *O. lineola* (both sparingly), *Cryptocephalus bilineatus*, *Apion limonii*, and *A. fuscirostre*, *Polydrosus chrysomela* (scarce, on sea plants). On the wing:—*Tachinus elongatus* (in a wood), *Deleaster dichrous* (within a few yards of a main street), and *Saprinus virescens*, three of our best insects. Among the miscellaneous species were:—*Zabrus gibbus* (running on pathways), *Homalota hygrotopora*, *Encephalus complicans*, *Oxytelus insectatus* (in decaying vegetables), *Melasis buprestoides* and *Ptinus germanus* (in oak trees), *Prionus coriarius* (on a tree trunk), *Callidium variabile* (one bred), *Scaphidema æneum* (under birch bark), *Melandrya caraboides* (on willow and ash), *Otiorrhynchus raucus*, and *Rhinoncus inconspicuous*.—BERNARD SMITH HARWOOD, 94, Station Road, Colchester: January 15th, 1898.

Silvanus similis near Southampton.—On December 28th I found a single specimen of *Silvanus similis* at the bottom of a haystack. As this species is always found under fir bark, the insect must have been hibernating. At what time of year is the insect usually found? Perhaps it would be a good thing to cut down fir branches and place them near the spot to attract the beetles when they come out in the spring. I should be glad of any information regarding this species.—L. M. BUCKNILL, Thornfield, Bitterne, Southampton: *February*, 1898.

[I have taken this insect in great profusion by shaking cut fir-branches at Esher, in August and September; also singly at Cobham, Kent, from a heap of faggots, but I have never found it under bark.—G. C. C.].

The genus Erebia.—We are requested to state that the specimens of the genus *Erebia*, exhibited by Mr. H. J. Elwes, F.R.S., in illustration of his remarks at the last meeting of the Entomological Society of London, will, by arrangement with Sir William Flower, Director of the British Museum (Natural History), be on view at that institution for a few weeks. The series contains, almost without exception, representatives of all the known species and more prominent varieties, and should be seen by all students of this difficult and interesting genus.—EDS.

Erebia lappona in the Upper Engadine.—I find that I omitted to include this species in the list of butterflies recorded in last month's Magazine as occurring in the Upper Engadine. It was fairly plentiful and in fine condition at about 7000 feet near the Hannen See. This addition does not alter the total arrived at of 72 butterflies. —A. H. JONES, Eltham: *February 1st*, 1898.

Taniocampa munda in the autumn.—I should like to report the capture of *Taniocampa munda* at ivy. One evening last autumn my son and I tried once more what has been very unsuccessful in this neighbourhood as a rule for many years, namely, searching ivy blossoms; and we captured two moths, one *Orthosia macilenta* and one *T. munda*. Having the opinion of Mr. Chas. G. Barrett that the insect is certainly *T. munda*, and its capture at ivy not noticed, I put this on record. —JOHN F. CHURCHILL, Chesham, Bucks: *February 7th*, 1898.

[The specimen is unquestionably *T. munda*, though not larger than *T. stabilis*. When one takes into consideration that this and the allied species are fully perfected as moths within the pupa-skin as early as October, the great matter for surprise is that autumn emergences do not frequently take place. Yet nothing is much more rare!—C. G. B.].

Observations on the pairing of Dasycampa rubiginea, Fb.—*Dasycampa rubiginea* having, I believe, very rarely been seen in cop., even by those who have kept the imagines alive through the winter and watched them carefully, a few observations on the subject will probably prove of interest. My first attempt to keep the moths alive was made in the winter of 1893—4, but they all gradually succumbed, owing to my not properly understanding their likes and dislikes. In the three following winters, however, my efforts were crowned with success, and I could doubtless have continued the brood if so inclined. Whenever I have kept the moths in confinement—their numbers varied in different winters from six to thirteen—they have been watched pretty closely in the evenings, and at night, in the hope of seeing

them paired, but only on three occasions have I been rewarded, viz., February 27th, 1896, March (beginning, but exact date uncertain), 1897, and March 21st, 1897. Each time they were found *in cop.* at 10 30 p.m., and had separated by 7 or 8 a.m., and on each occasion the female was clinging to the muslin which covered the top of the box, with her abdomen hanging nearly perpendicularly downwards, while attached to it, and suspended head downwards in mid air with closed wings, was the motionless male. The box containing the moths was always kept in a fireless room facing south; on February 27th, 1896, the window was open, and the outside temperature was 42 F., but on the other occasions the window was shut and the temperature not ascertained, though the nights were fairly warm.—EUSTACE R. BANKES, The Rectory, Corfe Castle: *January*, 1898.

Phlogophora meticulosa, L., in mid-December.—On December 18th last I took a male specimen of *Phlogophora meticulosa* at rest on a gorse bush on the top of one of the hills near here. It was in fine condition when captured, but was left alive in a box in a warm room for three or four days, and had in consequence battered itself about considerably before it was killed. This is surely a remarkably late date for the occurrence of any individual, and particularly of a male, of a species that hibernates in the larval state.—ID.

Psocus major, Loens, in Surrey.—Recently, in looking through my *Psocidæ* Mr. McLachlan detected a specimen of this rarity, which was taken by myself on Bookham Common, Surrey, on August 3rd, 1895. I believe that the only previous British record of the species is that in Ent. Mo. Mag., vol. xxx, p. 243.—C. A. BRIGGS, Rock House, Lynmouth: *February 7th*, 1898.

Early Neuroptera, &c., in North Devon.—On returning here on January 20th, after ten days' absence, I found that on the 17th my brother had taken *Nemoura Meyeri*, and on the 19th my niece had an imago of *Baëtis rhodani*. On the 22nd, along the banks of the East Lynn, we took three more *N. Meyeri*, one *B. rhodani*, one *Chrysopa vulgaris* (ordinary condition), two *Philopotamus montanus* (others seen), and a few ants. Hive bees were common in the garden on the 21st.—ID.

Excess of Naphthaline injurious to collections.—A few of the *Lepidoptera* in my collection having been more or less damaged, as the result of my having used too much naphthaline, a word of warning may perhaps be useful to those, if any, who are as little versed in chemistry as I am. The cells all round my cabinet drawers were nearly filled with pure naphthaline crystals, whilst each of my store boxes contained two small muslin bags filled with naphthaline, either in crystal or lump form. The cabinets and boxes are kept in a room where there is always a fire by day during the winter, but are well away from the fire itself. After a time I found to my dismay that fresh naphtha crystals had formed here and there, not only on the paper at the sides and bottoms of several of the drawers and boxes, and in some cases on the pins and labels, but also on the wings of some of the specimens themselves, as well as on the glasses over the drawers. When the enclosed air becomes too highly saturated with fumes of naphthaline, the excess is evidently deposited in the form of crystals on any substance inside the drawers. It is curious that although all the cells were charged equally highly and at the same time, only a

certain proportion of the drawers are affected in the way described. I tried removing the crystals from the wings, but only with disastrous results, as they were adhering so firmly; now, however, I am emptying the cells of the affected drawers of all the naphthaline, in the hope that the recently-formed crystals will gradually evaporate as the air becomes purer. Naphthaline has decided advantages over camphor and the like, but it is clearly possible for one's collections to have too much even of such a very good thing!—EUSTACE R. BANKES, The Rectory, Corfe Castle : *January 20th*, 1898.

[Compare my notes on the evils resulting from the excessive use of naphthaline at Ent. Mo. Mag. (2), vii, p. 218. It is distinctly inadvisable to fill the cells *all round* English-made cabinet drawers with naphthaline (or camphor either). One cell, partially filled, is (if properly attended to) quite sufficient. Probably no drawers are sufficiently "air-tight" to preclude the escape of the results of volatilization of a moderate quantity of preservative. But if the air in the drawers become supercharged, it naturally follows that precipitation must result.—

R. McLACHLAN.]

Lively halves of a bisected insect.—I noticed a few months ago a paragraph in your Magazine (vol. viii, 2nd ser., p. 160) relating to the antics of the leg of a "daddy" that had been burnt in the gas. A similar instance of muscular energy after death (?) came under my notice a short time ago, while I was cutting card braces for moth-setting in my bedroom. The windows were open, and being much annoyed at the persistent attentions of a number of large reddish-brown Ichneumons, I made a vicious snap at one of them, and, much to my surprise, divided it neatly into two parts, one of which comprised the abdomen and hind pair of legs, and the other the very lively remainder of the unfortunate insect. This occurred on a Friday at 11 p.m., and as neither half showed the slightest inclination to die, so to speak, I placed them for company's sake under the same tumbler, and the following table shows, as briefly as possible, the way in which they behaved respectively under their novel and trying conditions:—

Friday.	Front part.	Hind part.
11 p.m. and midnight—Walking about and examining tumbler with antennæ.		Opening and shutting ovipositor every few seconds.
Saturday, 2 a.m.—Ditto ditto		Ditto about twice per minute.
2.15 —Resting on side of tumbler.		Ditto ditto
2.40 —Walking and examining tumbler as at first.		Ditto about once a minute.
7.30, 8, 9, and 12.30—Resting on side of tumbler.		Motionless, but twisted violently on being touched.
1.30 —Standing on card beneath tumbler.		Ditto ditto
4.0 —Lying on its back, struggling furiously when touched.		Ditto ditto
5.30 —Ditto feebly.		Ditto very violently.
7.30 and 10.15—Front half apparently dead.		Twisted considerably when touched.
Sunday, 1 and 2 a.m.		Ditto slightly.

Here I went to bed, and next morning the tail part had ceased to move.

C. H. MORTIMER, Wigmore, Holmwood, Surrey : *January*, 1898.

Obituary.

James Thomson, who died towards the end of last year, was an American by birth, but passed the greater part of his long life in France, and especially in Paris. He amassed large collections of the more striking *Coleoptera*, especially *Longicornia*, *Buprestidæ*, *Cetoniadæ*, and *Lucanidæ*, in acquiring which he spared no expense. His publications, which date from 1856, are very numerous, and of considerable importance, largely in the "Annales" of the French Entomological Society, of which he became a Member in 1854; also in the "Archives Entomologiques," which he established in 1857, and which lasted two years, and in the "Arcana Naturæ," published in 1859. Subsequently, in 1867, he brought out a serial, under the name of "Physis, recueil d'histoire naturelle," which also lasted two years; this latter contained an odd mixture of science and metaphysics, and may be classed amongst the eccentricities of entomological literature. He was a Member of the Entomological Society of London from 1856 to 1888. Latterly he published very little, having, some years ago, sold his collections to M. René Oberthür.

We need not remind some of our readers that Thomson married a sister of the late Charles Stewart Parnell, and that it was ostensibly in order to allow him to attend the funeral of a nephew (a son of Thomson) that the Irish leader was released from prison in April, 1882.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *December 20th, 1897*.—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. E. J. Denham, of 31, High Road, Small Heath, was elected a member.

Mr. R. C. Bradley showed *Hadena glauca* and *Anaitis plagiata* from Sutton, and *Ephestia Kühniella* from his office. Mr. P. W. Abbott, a nice little series of *Cymatophora fluctuosa* taken in Wyre Forest last June, rather pale in colouring; also a specimen of *Sesia culiciformis* with a white band, also from Wyre; this last was a rather black looking specimen, darker than usual, excepting the band, which was quite white. Mr. C. J. Wainwright, a box of Aculeate *Hymenoptera*, including four *Odynerus lævipes*, ♂, a rare insect, which, however, seems well established in Wyre Forest; *Andrena humilis*, ♂, from Wyre Forest, and some wide-banded vars. of *Apis mellifica* from Eisenach, Thuringia. Mr. A. H. Martineau remarked that Mr. Saunders gives as a character of *O. lævipes*, yellow patches on both the middle and hind pairs of legs, but on all the Midland specimens he has seen they were on the middle pair only. Mr. Martineau, sticks containing the cells from which he had bred several *O. lævipes* from Malvern; also sticks containing cells of *Pemphredon lugubris*, *Anthophora fucata*, Panz., and *Osmia leucomelana*. Mr. G. T. Bethune-Baker, two drawers of *Pieridæ*, containing a fine series of *Anthocharis*, including *A. Pecki* from Algeria, and other rare species, and the genera *Zegris*, *Leucophasia*, &c.

January 17th, 1898.—The President in the Chair.

Mr. R. C. Bradley showed *Theriopectes solstitialis*, taken before 8 a.m.,

hovering in the road opposite his house at Sutton, a male. Mr. A. H. Martineau, a set of specimens illustrating the life history of *Andrena cineraria*, L., larvæ, young and full-fed, pupa, pupal skin, cells, male and female. Mr. P. W. Abbott, a series of *Bryophila glandifera* from Devon, one very beautiful specimen being of a much richer and more beautiful green than usual, with the markings less sharply defined; also a *Lycæna Egon*, ♀, with the red marks absent from right upper wing, and blue shadings over them all; and a *L. bellargus*, ♀, also shot with blue, both from Midhurst, Sussex. Mr. G. T. Bethune-Baker showed two drawers from his collection, containing a portion of the genus *Colias*, and including many rare species. —COLBRAN J. WAINWRIGHT, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *February 2nd*, 1898.—Mr. G. H. VEREALL, Vice-President, in the Chair.

Mr. L. C. Chawner, of Forest Bank, Lyndhurst; Mr. F. A. Heron, B.A., of the British Museum (Natural History); Mr. Henry Stebbing, of The Shawe, Jarvis Brook, Tunbridge Wells; and Mr. E. J. Burgess Sopp, of Saxholme, Hoylake, Cheshire; were elected Fellows of the Society.

A letter was read from the Secretaries of the International Congress of Zoology, calling attention to the meeting to be commenced at Cambridge on August 23rd, and extending to the Fellows of the Society the cordial invitation of the Executive Committee to be present. The Secretary also read a letter from Mr. A. D. Michael, F.L.S., of 9, Cadogan Mansions, S.W., asking if any entomologists, who might find insects attacked by mites (*Acari*) among their disused boxes, would be willing to send him such insects, with the mites still on them or accompanying them, or at least, the mites themselves, with the name of the insect given in all cases, for the purpose of his forthcoming monograph of the *Tyroglyphidæ*. Mr. J. W. Tutt showed a fine series of forms of *Hemerophila abruptaria*, Thunb., captured and bred by Mr. W. S. Pearce at Holloway, varying from the normal colour, through mahogany-brown to dark umbreous, some of the specimens of the second brood showing a purplish hue. One gynandromorphous example was shown, with the wings and right antenna of the female type, the left antenna being strongly pectinated. He also exhibited two specimens of *Dianthæcia luteago*, bred by the Rev. F. Lowe, from larvæ obtained in Guernsey, and of a very distinct character, having a tendency to the ochreous coloration of the type-form, but being differently marked. On behalf of Mr. Heyne, Mr. Jacoby exhibited a series of temperature-varieties of *Lepidoptera*. Mr. G. H. Carpenter read a paper by himself and the Rev. W. F. Johnson on "The Larva of *Pelophila borealis*," describing its structure and life history. On the larval characters the genus, hitherto considered as of doubtful relationship, was regarded as being closely allied to *Elaphrus*. Papers were communicated by Mr. F. D. Godman, F.R.S., and Mr. O. Salvin, F.R.S., on "New Species of American *Rhopalocera*," and by Mr. M. Jacoby, "On some Phytophagous *Coleoptera* (*Eumolpidæ*) from the Islands of Mauritius and Réunion."—W. F. H. BLANDFORD and F. MERRIFIELD, *Hon. Secs.*

LOZOPERA FRANCILLONANA, F., COMPARED WITH ITS ALLIES.

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

Throughout the progress of entomological study, and especially in countries where that study has reached a point at which all obvious distinctions relied upon for separating the known species are quickly recognised by the initiated, much labour and minute observation has been devoted to the recognition of critical differences between obscurely coloured, closely allied species frequently regarded as mere varieties, until their constant and consistent variation, supplemented by some knowledge of their earlier stages, has enabled us to separate them from among a mixed series. Where the markings are clear and distinct, consisting of darker bands, blotches or spots, upon a pale ground, less attention has been devoted to them, and provided that these bands or spots are found to be approximately in the same position, it has less frequently occurred to students to seek for persistent differences.

That such persistent differences are easily overlooked becomes perhaps more apparent in the examination of the Australian *Micro-Lepidoptera* than in those of any other part of the world. In the *Ecophoridae* and in the *Xyloryctidae* Mr. Meyrick and other authors have rightly described as distinct a large number of species of conspicuous pattern and very similar colouring, which differ from one another in a very minute degree, but whose differences are persistent and consistent throughout long series obtained from the same and different localities. In many cases this apparently somewhat courageous differentiation has been justified by the subsequent discovery of their food-plants, and by a comparison of their larvæ.

The late Monsieur Ragonot [Ent. Mo. Mag., XII, 87—88 (1875)] corrected the synonymy of the *francillonana* group as given in Staudinger's Catalog, and I will now venture to submit conclusions that have forced themselves upon me after comparing large numbers of specimens which would undoubtedly have been placed by those who have confined their studies to British *Lepidoptera* in the single species known under the name of "*francillana*, F."

As an introduction to these notes, I desire to call attention to the fact, that the late Carl von Heyden, writing 32 years ago [Stett. Ent. Ztg., XXVI, 100 (1865)], expressed his opinion on the species belonging to this group of *Conchylis* in words that were thus translated by Stainton (Ent. Ann., 1867, 39)—"I believe that amongst *C. sanguinana*, Tr., *flagellana*, Dup., and *francillana*, F., there are still different species, very closely allied, to be distinguished. It is probable that the larvæ and their different habits may help us in this respect."

Although *sanguinana*, Tr. (which is not a *Lozopera*), is wrongly included in this group, von Heyden's conjecture is amply justified in the possibility of critically distinguishing several species hitherto confused, although their larval habits, so far as we know them, are extremely similar, as might well be expected in a natural and well-defined genus.

I have purposely omitted in the following descriptions any reference to the form of the genital armature, which it would be exceedingly difficult to express in words. The accompanying accurate illustrations by Mr. Hartley Durrant will enable a comparison to be made, and will amply justify the separation of the species on *structural* grounds—several specimens of each having been carefully examined and found to be alike. Will some specialist in comparative anatomy kindly supply the *correct* terminology of this philogenetic puzzle?

LOZOPERA FRANCILLONANA, F.

(Pl. II, fig. 1).

Antennæ pale primrose above, greyish beneath. *Palpi* very pale primrose, shaded with pale chestnut externally. *Head* and *thorax* pale primrose. *Fore-wings* pale primrose, with a pale chestnut shade along the base of the costa and two very oblique transverse fasciæ varying from pale chestnut to nut-brown, with a few silvery scales around their margins; the upper end of the first fascia, which commences on the middle of the costa, is somewhat quadrangular, the fascia varying in width reaches the dorsum at one-third, without noticeable excrescences, but expanding somewhat in width to the margin; the second fascia arising from the dorsum at about two-thirds sends out a noticeable bulge immediately above the fold (this excrescence is not, however, diffused towards the tornus), thence the fascia reaches the costa before the apex in an unbroken band of about equal width throughout, although slightly enlarged at the costa; cilia whitish-primrose. Under-side greyish-brown, cilia slightly paler than above. *Exp. al.*, 14—18 mm. *Hind-wings* greyish-brown, with a slight tawny tint; cilia whitish, with a faint tawny shade along their base. Under-side pale tawny-grey. *Abdomen* greyish-brown; anal tuft paler. *Legs* whitish-cinereous.

Hab.: ENGLAND. FRANCE, Cannes. Larva in stems of *Daucus carota* and *Ferula communis* (Wlsm.).

Type, Coll. Francillon (? in Oxford Mus.).

Varieties occur in which the fasciæ are more or less interrupted below the costa, and some care is required to avoid confusing such varieties with the *Eryngium*-feeder *flagellana*, Dp., which can be separated by the more curved dorsal half of the first fascia, being invariably separated from the costal spot above it. The species was described by Fabricius from British specimens, but I am unable to separate the common South European form occurring in stems of

Ferula (noticeably in the Ile Ste. Marguerite, S. France) in great abundance, but I have no evidence that the true *francillonana* has been taken elsewhere on the continent.

This species was first described by Fabricius in 1794, and was originally named *francillana* in honour of "Dom. Francillon." It will be obvious that this name is not orthographically correct, and should be lengthened to *francillonana*, a form adopted by Westwood (Br. Moths, II, 177): such "clipping" was not uncommon in the time of Linnæus and Fabricius, *e. g.*, *christiernana* (Christiernin), *geoffrella* (Geoffroy), *oliviella* (Olivier), &c.

LOZOPERA BILBAËNSIS, Rsslr.

(Pl. II, fig. 2).

Conchylis francillana, F., + *bilbaënsis*, Rsslr., Stett. Ent. Ztg., XXXVIII, 372 (1877).⁽¹⁾ *Cochylis francillana*, F., + *bilbaënsis*, Seebold, An. Soc. Esp. Hist. Nat., VIII, 119 (1879).⁽²⁾

Antennæ greyish-cinereous. *Palpi* pale ochreous, shaded with brownish at the sides externally. *Head* and *face* pale ochreous. *Thorax* brownish-ochreous, the tegulæ pale ochreous. *Fore-wings* very pale ochreous, suffused and faintly mottled with brownish-ochreous; with two oblique brownish fasciæ, the first arising on the dorsum at one-fourth and reaching nearly to the middle of the costa, but partially disconnected by evanescence below the costa from a slightly inverted brownish shade thereon, the second arising from the dorsum before the tornal cilia and reaching the costa before the apex, where it is outwardly produced, is slightly angulated outward near its dorsal origin, but runs parallel with the termen above the angle; cilia very pale ochreous, with a slender brownish-ochreous line running through them near their base (sometimes so faint as to be scarcely distinguishable). Under-side dark brownish-grey; cilia pale primrose-yellow. *Exp. al.*, 13—16 mm. *Hind-wings* shining tawny-grey; cilia shining whitish-cinereous, with a pale grey shade running through them near their base. Under-side leaden-grey; cilia very pale grey. *Abdomen* dark greyish, anal tuft whitish-cinereous. *Legs* whitish-cinereous.

Hab.: N. SPAIN, Bilbao,^(1,2) VIII.^(1,2) S. FRANCE, St. Aygulf, excl. 13, VIII, 1896. CORSICA, Ajaccio, Bastia, excl. 8—10, X, 1896. SARDINIA (Staudinger), Zell. Coll. *Larva* in stems of *Crithmum maritimum*, IV—V.

I had at first regarded this species as merely a variety of *Lozopera francillonana*, F., but the uniformity existing between specimens from Corsica and those from the opposite French coast, combined with the more plainly apparent mottling of brownish-ochreous between and beyond the brown fasciæ as well as near the base, and moreover the fact that these fasciæ tend to converge towards the dorsum even in a greater degree than in *francillonana*, convinced me that it was worthy of special recognition.

I first met with the larva in company with my friend Monsieur A. Constant on the rocky coast at St. Aygulf, near St. Raphael (Var), on April 24th, 1896, feeding in the pith of the stems of *Crithmum maritimum*; subsequently I found the larvæ in Corsica, near Ajaccio, in the beginning of May, and at Bastia towards the end of the same month. The imago appeared from the French larvæ on August 13th, those from Ajaccio emerging on October 8th and 10th. There are two specimens in Zeller's series of *francillana* collected in Sardinia by Staudinger, which must be referred to this species.

Rössler notes in his brief description of *bilbaënsis* that the first fascia is uninterrupted, whereas, in the Corsican form, although traceable throughout, it is partially broken below the costa.

LOZOPERA MAURITANICA, *sp. n.*

Antennæ pale brownish-grey, with some primrose scales above. *Palpi* very pale primrose, externally entirely suffused with bright chestnut. *Head* and *thorax* very pale primrose. *Fore-wings* pale primrose, with a noticeable strong chestnut streak along the base of the costa, and two broad oblique rich chestnut fasciæ sprinkled over their surface with silvery scales; the first commencing in a triangular spot on the middle of the costa, decidedly widened on the lower half of the cell, and again somewhat widened on reaching the dorsum at one-third, the dorsal space between this and the second fascia is less than half the width of the costal space and the second fascia, more oblique than the first, is slightly narrowed above the dorsum with a strong bulged excrescence (the margins of which are clearly defined) outward above the tornus, above this the fascia is somewhat widened before reaching the costa near the apex, but not on the costa itself, one or two small chestnut spots occur about the middle of the termen; cilia very pale primrose. Under-side dark greyish-brown, a dark spot in the costal cilia before the apex; cilia paler than on the upper-side. *Exp. al.*, 16 mm. *Hind-wings* tawny brownish-grey; cilia whitish-cinereous, a slight shade running through them near their base. Under-side brownish-grey. *Abdomen* dark grey; anal tuft paler. *Legs* whitish-cinereous, tarsi mottled with brownish-grey.

Type, ♂, Mus. Wlsm.

Hab.: MOROCCO, Mogador, III, 1885 (J. H. Leech), unique.

The species may be said to approach *bilbaënsis*, Rsslr., in appearance, but is easily distinguished by its paler colour, by the more abundant silvery speckling on the fasciæ, and by their greater width and the abrupt termination of the outer fascia on the costa before the apex—the structure of the genital armature being also entirely distinct from that of all other allied species.

I regret that I am unable to figure the genitalia of this species owing to lack of space, but as I still possess two more species, one from Algeria (Rev. A. E. Eaton) the other from Chang Yang (China), I may hope to do so on some future occasion.

LOZOPERA TORNELLA, *sp. n.*

(Pl. II, fig. 4).

Antennæ brownish-grey. *Palpi* pale straw-whitish, strongly shaded with chestnut-brown on their outer sides. *Head* straw-whitish above. *Thorax* whitish-stramineous, the base of the tegulæ chestnut-brown. *Fore-wings* whitish-stramineous, shining with a primrose gloss, the base of the costa narrowly stained with chestnut-brown and with two pale chestnut-brown oblique transverse fasciæ parallel with the termen; the first commencing at the middle of the costa (where it is slightly produced inwards), is narrowed but not broken beneath, and reaches the dorsum at about one-third; the second, arising before the tornus, is dilated outwards to the tornus, thence attenuated upwards and slightly enlarged again on the costa and costal cilia—a few silvery scales are visible around the margins of these fasciæ; cilia concolorous with the fore-wings, slightly shaded with chestnut-brown at the base near the tornus. Under-side dark brownish-grey; cilia pale primrose-yellow. *Exp. al.*, 14—19 mm. *Hind-wings* dark grey, with a slight tawny gloss; a distinct broad grey shade along the base of the shining whitish-cinereous cilia. Under-side leaden-grey; cilia very pale grey. *Abdomen* dark grey; anal tuft pale primrose. *Hind legs* whitish-cinereous.

Type, ♂, Mus. Wism.

Hab.: CORSICA, Corté, 17, V. ITALY, Pratolino, IV, 1893. FRANCE, Cannes, III, 1897 (Chapman). GERMANY, Jena (Schläger), Zell. Coll.

Seven specimens taken flying among *Umbelliferae* to the north of the town of Corté where no *Crithmum* grows; had I at the time recognised the differences which separate them from *francillonana*, a larger number would have been secured. I had previously met with *tornella* at Pratolino, where a single specimen occurred in April, 1893, and have also seen a specimen taken by Dr. Chapman at Cannes in March, 1897. There are four specimens of this species in the Zeller Collection from Jena, sent by Schläger as "*flagellana*?"—one of them is a unicolorous variety having no trace of the fasciæ.

This species differs from *francillonana*, F., in the fasciæ being less oblique and more precisely parallel, and in the lower extremity of the outer fascia being enlarged to cover the tornal angle, not merely sending out a short spur above it. It differs also in its paler, more washed out colouring, which does not possess the rich primrose suffusion of that species; the hind-wings are decidedly greyer, not exhibiting a brownish tinge, moreover, the basal line in the cilia is much more distinct and strongly marked, while the cilia themselves are slightly greyer, and the abdomen is decidedly darker than in average specimens of *francillonana*. As compared with *beatricella* it differs in the more parallel and paler fasciæ, in the diffusion of the lower extremity of the outer fascia to the tornus, and in its extension on the costa towards the apex, also in the darker under-side of the fore-wings and in the chestnut spot at the base of the tegulæ.

LOZOPERA BEATRICELLA, *sp. n.*

(Pl. II, fig. 5).

Antennæ pale primrose above, brownish-cinereous beneath, basal joint brownish-ochreous. *Palpi* pale primrose-yellow, shaded externally with pale nut-brown. *Head* and *thorax* pale primrose-yellow. *Fore-wings* rather shining, primrose-yellow, with two oblique nut-brown transverse fasciæ (having a few leaden-grey scales visible around their margins), and a smear of the same colour along the base of the costa; the first fascia starting from the middle of the costa is bent (almost broken) at the upper edge of the cell, where it is slightly diffused outward, starting afresh from its inner margin it throws out a slight excrescence on the middle of the cell, and is again sometimes attenuated at the lower edge of the cell, thence dilated again to the dorsum before the middle; the outer fascia is equal in average width to the first (both being broader than in *francillonana*), and leaving the costa before the apex passes obliquely to the dorsum before the tornus, it is slightly indented beyond the upper angle of the cell, and considerably widened outward above the tornus, expanding again on the dorsum before it; the space between these fasciæ is slightly attenuated from costa to dorsum as in *francillonana* (in which species, however, the fasciæ are more oblique, whereas, in *tornella*, they are almost invariably parallel, and are less oblique than in *francillonana*); *cilia* pale primrose-yellow. Under-side greyish-brown; *cilia* very pale primrose. *Exp. al.*, 14—16 mm. *Hind-wings* brownish-grey; *cilia* whitish-cinereous, with a slight shade line running through them near their base. Under-side grey, with a slight tinge of darker grey towards the apex; *cilia* lacking the primrose tint of those of the fore-wings. *Abdomen* grey; anal tuft primrose. *Legs* whitish-cinereous.

Type, ♂ ♀.

Hab.: ENGLAND, Leiston (Suffolk). Larva in stems of *Pastinaca sativa* (?), IV. Twenty-three specimens.

This species is named after my sister, Mrs. Carpenter (the re-discoverer of *Antispila rivillei*, Stn., who bred a good series in either 1879 or 1880 from larvæ found at Leiston (Suffolk) in April in stems of an Umbellifer, believed at the time to be *Pastinaca sativa*. She appears to have noticed then that the species differed from *francillonana*, but it had escaped my attention until now.

LOZOPERA FLAGELLANA, Dp.

(Pl. II, fig. 3).

Hab.: GERMANY. Larva in stems of *Eryngium campestre*.

This species is probably more widely distributed, but this cannot be assumed from mere records of captures which may really refer to some of the other species of the group. A specimen from Sarepta (S. E. Russia) in the Zeller Collection, unfortunately with the abdomen missing, is apparently *flagellana*.

LOZOPERA DILUCIDANA, Stph.

(Pl. II, fig. 6).

= *Tortrix flagellana*, Dp. + c, Z. Is., 1847, 663.

Hab.: ENGLAND. SICILY, Syracuse, 11, V (var. *c*, Zell. Coll.).
Larva in stems of *Pastinaca sativa* and *Heracleum sphondylium*.

The specimen which Zeller records in the Isis as *flagellana*, var. *c*, from Syracuse is really *dilucidana*, Stph. This species has probably been overlooked in intermediate localities, and I cannot say with certainty that it occurs elsewhere.

These two species are easily separable from those above described by the first fascia being invariably broken below the costa in both, and the second also in *flagellana*.

EXPLANATION OF PLATE II.

- | | |
|--|--|
| Fig. 1— <i>Lozopera francillonana</i> , F. | Fig. 4— <i>Lozopera tornella</i> , Wlsm. |
| „ 2— „ <i>bilbaënsis</i> , Rsslr. | „ 5— „ <i>beatricella</i> , Wlsm. |
| „ 3— „ <i>flagellana</i> , Dp. | „ 6— „ <i>dilucidana</i> , Stph. |
- (a, lateral aspect ; b, dorsal aspect ; c, ventral aspect ; d, anal aspect).

Merton Hall, Thetford :

February, 1898.

NOTE ON THE LARVA OF *CIDARIA SAGITTATA*.

BY HERBERT FORTESCUE FRYER.

In looking through an old volume of the Ent. Mo. Mag. (vol. xii, 1875-6) I came across a note by Mr. William Saunders on a habit of the larva of *Cidaria sagittata*.

Mr. Saunders says, on the authority of Mr. Alfred Fryer, confirmed by his own observations, that these larvæ have a habit of "gnawing the stems of their food-plant and feeding on the withered leaves."

For some years I bred this species annually, and I have had it feeding naturally in my garden on three species of *Thalictrum*, *T. flavum* (its food-plant in a wild state) *T. aquilegifolium* and (but only occasionally), on *T. minus*. Eventually I lost it, and I then transplanted some of the food-plant from the locality given by Newman to a ditch on one of my farms, and founded a colony, now some five or six years old.

I have entered into these particulars to show that I have had some opportunity of watching this very retiring species (I say retiring,

for the imago is rarely seen in its natural state, and then only by the light of the lantern, when the ♀ is depositing her eggs). Even under these favourable conditions for observation I have, however, not noticed the habit above referred to.

In the following notes I must hope for the indulgence of your readers, should I be merely a purveyor of stale news, indulgence towards an old collector who, in his mature years, is beginning again ostensibly "just to start the boy in the right way."

The egg of *C. sagittata* has a very close resemblance to the stamens of *T. flavum*, on which it is often deposited, both in shape and in its bright yellow colour. The young larva, when first hatched, is of the same colour, still in imitation of the stamens among which it conceals itself while feeding on the flower-parts. As it increases in size it turns to a light brown, the stamens having by this time fulfilled their office and faded to the same colour. Here, again, the resemblance is maintained. Later still, when the seeds are formed, the larva feeds on them, and as each seed is cleaned out or partially eaten it becomes brown, giving the panicle a variegated appearance of yellow-green and brown. The larva has now acquired its well-known rich banded colouring of brown and shades of green, imitating respectively the empty brown seed-husks and the untouched green seeds of the food-plant. So close is this imitation that it requires a quick eye to detect the larva, sitting as it nearly invariably does, in a curved position in the panicle.

As far as I have observed the seeds form the most usual food of *C. sagittata* in a state of nature, and the larva only touches the leaves when compelled to do so from lack of its proper food, and possibly when on its way down the stem when descending for pupation.

Returning for a moment to the question of colour, I have been puzzled by the occurrence in some seasons of a type of larva, in which the brown tones become a rich purple and the green a deep shade of apple-green. It may possibly be, however, that this is a reversion, caused by seasonal influence, to an earlier form which had for its food-plant one of the more richly-coloured species of *Thalictrum* such as *T. aquilegifolium*.

I hope this season to make more accurate notes on this subject, and if I find I am wrong, to cry *peccavi* with the best grace I have at command.

The Priory, Chatteris :

February 18th, 1898.

P.S.—After writing the above it occurred to me, before sending it to you to send it to my uncle, Mr. Alfred Fryer, for his remarks, and I think I cannot do better than send these *in extenso*, on the principle that "every poison has its antidote."—H. F. F.

"I can confirm all you have said about the early state of the larva, but none the less it is a fact that in its more mature state it feeds on the partial leaf-stalks and leaves, as described in Newman. Saunders called it the 'Trade-Mark,' and we used to look for the bitten leaf-stalks and dangling leaves as the readiest guide to the larvæ.

"I cannot call to mind a single instance in which I have found the mature larva in any considerable quantity on a plant which was not thus bitten, and I have collected, and seen collected, many hundreds. This last season I noticed the larva of another species feeding on the seeds of *Thalictrum flavum*, so we must not credit *C. sagittata* with all the gnawed seeds.

"I have noticed that when the mature larvæ feed on or inhabit the leaves and stems, they are more brightly coloured than when confined to the panicles. In conclusion, I must remind you that the 'bitten' state of the plant with dangling leaflets all over it betrayed, in the first instance, the existence of a larva, and led to the discovery of the larva of this species heretofore unknown.—A. F."

A NEW MARINE HYDROMETRID.

BY GEORGE H. CARPENTER, B.Sc., F.E.S.

Through the kindness of my friend Mr. J. E. Duerden, Curator of the Museum of the Institute of Jamaica at Kingston, I have received for examination adult and larval specimens of a new and highly interesting marine bug belonging to the family *Hydrometridæ*, and allied to *Halobates*. The insects were collected by Mr. Duerden in January, 1897, skimming over the surface of smooth water beneath mangrove trees, near the head of Kingston Harbour, Jamaica. They resemble *Halobates* in the absence of wings, and in general appearance; but the abdomen is of more normal development than in the oceanic genus, while there is no fringe of hairs to the tibial and tarsal segments of the second pair of legs. Instead of this, the tarsi of the second pair are provided with an exquisite arrangement of long branched ciliated hairs, which can be spread out like the spokes of a wheel, and thus afford two disc-like areas of support to the insect as it rests on the surface film.

TROCHOPUS,* *gen. nov.*

Antennæ two-thirds as long as the body; first segment the longest, but only half as long as the other three together; third segment longer than the second, and second slightly longer than the fourth. Body rhomboidal in form, broadest at region of middle coxæ; wingless; abdomen with reflexed margins, longer than head and thorax together. Femora of equal thickness in all three pairs of legs; coxæ of second pair inserted at middle of body, femora reaching just beyond tip of abdomen; femora of third pair barely reaching tip of abdomen. All tarsi with two segments,

* *Trochos*, a wheel; *Pous*, a foot.

but the basal segment in first and third pairs exceedingly small; terminal segment deeply cleft in all three pairs; on the front and hind feet two claws and a stiff bristle are inserted in the tarsal cleft, and a delicate leaf-like process beneath the foot; within the exceedingly deep cleft of the middle foot are inserted two claws and a branched series of long ciliated hairs.

Type : *T. marinus*, *sp. n.*, from Jamaica.

TROCHOPUS MARINUS, *sp. nov.*

Length, 3 mm. Black, covered with dense greyish pubescence. Basal parts of first antennal segments and of the front femora, the pronotum, a dorsal longitudinal central line on the mesonotum, the under surface of the thorax, and the trochanters of all the legs, yellow. Tibia of leg of second pair as long as the two tarsal segments together, proximal tarsal segment half as long again as distal, which bears in its cleft a set of ciliated hairs, with sixteen to twenty branches.

Locality : Kingston Harbour, Jamaica.

The head of this insect is rounded in front, the antennæ being inserted beneath and in front of the eyes. The first segment of the antenna is curved and slightly club-shaped, bearing three or four spines towards the tip; the second segment is thickened distally; the third is cylindrical; and the fourth is fusiform; there are no "jointlets" as in *Halobates*. Ocelli are wanting. The rostrum is of the form usual in the group, with four segments, of which the first two are short and the third the longest; the tip reaches beyond the insertion of the front legs (figs. 1, 2, 7).

The thorax shows the normal threefold segmentation above. The pronotum is narrow and transverse; the mesonotum large and hexagonal, with sinuate hind margin; the metanotum narrow and transverse. Beneath, the prothorax and mesothorax are fused together, while the metasternum is transverse and similar to the abdominal sterna. The front pair of legs are inserted close together near the centre of the body. The mesothorax and metathorax are expanded laterally to receive the large globular coxæ of the second and hind pairs of legs.

The abdomen is composed of nine visible segments above and below, the first sternite being largely hidden by the metasternum. In the female the broad reflexed margins reach back to the hinder edge of the seventh segment (fig. 1). The eighth segment is divided beneath by a longitudinal cleft (fig. 7), the ninth is hemispherical. In the male the reflexed margins are continuous with the pleuræ of the ninth segment (fig. 8). The eighth segment beneath has a concave hinder edge with a small central prominence (figs. 9, 10), from which project a pair of claspers with bluntly curved tips armed with numerous short spines, joined together above by a chitinous bar (fig. 8), and surrounded by a fine delicate membrane. Whether these claspers are normally in the protruded condition shown in the single specimen which I have figured (figs. 8, 9, 10) must remain doubtful for the present. I can detect no other sexual distinction in the specimens before me.

The front legs are of moderate length, the femora evenly cylindrical and furnished with a series of long, fine hairs (fig. 1). The tibiæ are thickened distally and clothed with numerous hairs, some of which, overhanging the foot, are club-shaped (fig. 3). The tarsus has two segments, of which the proximal is very small and hard

to make out; the distal segment has a deep cleft, wherein are inserted two stout claws and a bristle, as in *Halobates*, but the delicate leaf-like appendage beneath the foot (fig. 3) is unrepresented in any genus of the family known to me. The tarsus of the third pair is very similar in form, only more elongate (fig. 6), and carries corresponding appendages, the bristle being clubbed. The hind legs are comparatively short; the femur bears three prominent spines distally, while the tibia is rather strongly spinose throughout its length. The legs of the middle pair are provided only with hairs and bristles; in these legs the first tarsal segment is longer than the second, which is cleft for the greater part of its length. Within the cleft are borne two claws, one of which, scimitar-shaped and ending in a sharp point, projects from the cleft, while the other, upturned and quadrifid at its extremity, lies in the cleft (figs. 4, 5). The bristles of the other feet seem to be represented by the set of branched ciliated hairs. The individual hairs spring at excessively close intervals from a common stem (figs. 5, 13), and each bears more than a hundred fine cilia. Apparently the whole apparatus can be withdrawn within the cleft, or expanded to form a wheel-like disc (fig. 5). It is to be hoped that the use of this unique and wonderful organ in the living insect may be studied by Mr. Duerden and his fellow naturalists in Jamaica.

The smallest larva before me measures 1.5 mm. in length (fig. 11). The tarsi have but one segment (fig. 12), but the cleft and ciliated hairs of those of the middle pair hardly differ from the same structures in the adult. The body of the larva is pale and soft, the chitinous tergites of the various segments appearing as paired plates, with a median space between the two plates of each pair (fig. 11). In a somewhat older larva than that figured the abdominal paired plates have united to form single tergites, while the thoracic tergites remain divided down the middle line.

Trochopus is differentiated from all allied genera* by the remarkable structure of the feet of the second pair. It is also readily distinguished from the majority of the *Halobatinæ* by its elongate abdomen. In this respect it seems to come nearest to the female of *Rheumatobates*,† in which the coxæ of the hind legs are opposite the fifth abdominal segment. In the male of the same genus these coxæ are pushed back opposite the hind extremity of the abdomen, as in *Halobates* and its nearer allies (*Metrocoris*, *Platygeris*, &c.), while in *Hermatobates* they project beyond the abdominal tip. From this point of view, therefore, *Trochopus* presents a generalized type of structure (indeed, its abdomen recalls that of *Veliinæ*), while in the complexity of the appendages of the feet, it shows higher differentiation than can be found in any other genus of the group.

* See Lethierry and Severin, "Catalogue Général des Hémiptères," Tome iii, Berlin, 1896 (pp. 64–66). Also Bianchi, "Annuaire du Musée Zoologique de l'Acad. Imp. des Sciences de St. Pétersbourg," Tome i, 1896 (pp. 69–74), who gives a useful synopsis of all the genera of the subfamily except my *Hermatobates* (type, *H. Haddonii* from Torres Straits), which is easily characterized by the extreme reduction of the abdomen, the immensely thickened front femora, and the three-segmented tarsi on all the legs.

† See Riley, *Insect Life*, vol. v, 1893, pp. 189–194.

The specimens from which the above descriptions are made have been divided between the Science and Art Museum, Dublin, the British Museum (Nat. Hist.), London, and the Museum of the Institute of Jamaica.

EXPLANATION OF PLATE III.

- Fig. 1—*Trochopus marinus*, gen. et spec. nov.; female, $\times 12$, upper view.
 „ 2— „ „ head, prothorax, rostrum and basal segment of antennæ, side view, $\times 24$.
 „ 3— „ „ end of tibia, and tarsus of front leg, $\times 100$.
 „ 4— „ „ second tarsal segment of second leg, from above, $\times 100$.
 „ 5— „ „ „ „ „ from side, $\times 50$.
 „ 6— „ „ end of tibia and tarsus of third leg, $\times 100$.
 „ 7— „ „ female, under view, $\times 12$.
 „ 8— „ „ male, hinder abdominal segments, from above, $\times 12$.
 „ 9— „ „ „ „ „ from below, $\times 12$.
 „ 10— „ „ „ genital segments, from below, $\times 48$.
 „ 11— „ „ larva, $\times 12$.
 „ 12— „ „ „ front foot, $\times 100$.
 „ 13— „ „ system of branched ciliated hairs from foot of second pair, $\times 200$.

Dublin: January, 1898.

FRAUENFELDIA RUBRICOSA, Mg.: AN ADDITION TO THE BRITISH MUSCIDÆ (TACHINIDÆ OF VERRALL'S LIST).

BY ERNEST E. AUSTEN.

FRAUENFELDIA RUBRICOSA, Mg.

Tachina rubricosa, Mg., Syst. Besch., iv, p. 305 (1824). *Rhinophora rubricosa*, id., l. c., vii, p. 210 (1838). *Tachina nigritarsis*, Zett., Dipt. Scand., iii, pp. 1169, 1170 (1844); viii, p. 3249 (1849); *hirticornis*, id., l. c., pp. 1172, 1173 (1844); viii, p. 3250 (1849). *Dexia tachiniformis*, id., l. c., iii, p. 1280 (1844); viii, pp. 3250, 3266 (1849). *Tricogena Truquii*, Rond., Dipt. Ital. Prodr., v, pp. 157, 158 (1862). *Phyto rubricosus*, Schin., Faun. Austr. Dipt., i, p. 548 (1862). *Frauenfeldia* (gen. nov.) *rubricosa*, Egger, Verh. z.-b. Ges. Wien, xv, pp. 297—298 (1865); *rubricosa*, Brauer and von Bergenstamm, Denkschr., math.-naturw. Cl. k. Akad. Wiss. Wien, lvi, p. 121, Taf. vii, fig. 172 (1889); lviii, p. 413; lx, p. 224; *rubricosa*, Brauer, Verh. z.-b. Ges. Wien, xliii, p. 499 (1893).

A single male of the above species was taken at Tring, Herts, at the beginning of July, 1897, by my friend Mr. A. Piffard, who has most unselfishly presented it to the British Museum. As the species is only mentioned, but not described, by Schiner, while, owing to Brauer and von Bergenstamm having overlooked the fact that its facial

angles are distinctly convergent, it is impossible to run it down into its proper "Section" by means of Brauer's "Table I" (Verh. z.-b. Ges. Wien, xliii, p. 463, *et seq.*), the following summary of its principal characters may, perhaps, be found useful, since the original description by Meigen, and the subsequent one by Egger, are probably inaccessible to most British Dipterists.

♂. *Length*, 6 mm. ($2\frac{3}{4}$ lines). *Face with a row of bristles on each side between the facial ridge and the eye; arista distinctly pubescent to the tip; palpi, tip of scutellum, tips of femora beneath, and tibiæ (except at the base) orange-rufous; abdomen cylindriciform, shining black, orange-rufous on sides of second segment and on those of the first posteriorly, rather more than the anterior halves of the second, third, and fourth segments occupied by transverse bands of yellowish-silvery pollen, interrupted by a shining black median stripe; hypopygium shining black, beneath it two vertical orange-rufous lobes.*

Head squarish when seen in profile, clothed with greyish pollen; front broad, slightly narrower than the eye, with black median stripe occupying one-third of its width; *orbital setæ*, three on each side; antennæ black, tips of first and second joints orange on inside; the pubescence on the arista easily seen when examined with a platyscopic lens of medium strength; the row of setæ on the face is formed by the continuation downwards of the frontal series on each side; it terminates a little above the lower margin of the eye, and the three lowest bristles are the strongest; eyes bare; facial angles convergent, contracting the clypeus immediately above the oral margin in front; vibrissæ stout, oral setæ confined to the facial angles; oral margin, and the depression behind the facial angle on each side rufous. *Thorax* grey, with three black stripes, and clothed with strong bristles. *Abdomen* without discal macrochætæ, the marginal ones confined to the second, third, and fourth segments; first segment with a shimmering pollinose patch on each side of the median stripe, which is here broader. *Hypopygium* shining black; immediately below it *two vertical spatulate lobes*, which are *orange-rufous posteriorly*. *Wings* somewhat greyish; terminal portion of fourth vein but slightly concave outwards; first posterior cell narrowly open, or closed on margin of wing, which it reaches shortly before the tip; *no appendix to angle of fourth vein*; costal spine (*Rand-dorn*) conspicuous; setæ on the third vein confined to one or two (one of which is of considerable size) at its extreme base, where a thickened spot marks the point of divergence of the second and third veins. *Legs* black, the tips of the femora beneath (in the case of the middle and posterior pairs more extensively than in that of the front pair), and the tibiæ, except rather more than the basal third, orange-rufous; anterior claws long and slender.

♀. For the sake of completeness, I translate the following remarks from Egger's paper (*loc. cit.*, p. 298): "In the female, which was unknown to Meigen, the basal joints of the antennæ are yellow, the abdomen is flattened oval in shape, shining dark brown, with bright white bands on the anterior margins of the rings, and a black dorsal stripe. The sides are not translucent; the legs are for the most part yellow, only the anterior femora are black right to the extreme tip; the tarsi brown."

That the older authors were in doubt as to the true systematic position of this species will have been inferred already from the synonymy given above. Meigen himself, after describing it, wrote: "Perhaps this species would stand better with *Sarcophaga*, to which it has great similarity." The ♂, at any rate, certainly possesses a general likeness to a small *Sarcophaga*, especially in the contour of the body when the insect is viewed from above, and the resemblance is of course enhanced when the face is seen to be setigerous; but it is distinguished at once by the arista being pubescent right to the tip, by the broader front, the convergent facial angles, and the absence of an appendix to the angle of the fourth vein. On subsequently assigning the species to *Rhinophora*, Meigen placed it in a division of the genus which he characterized by the absence of a stalk to the first posterior cell (*Mittelzelle*), and the presence of a costal spine. In describing the species as a *Dexia*, Zetterstedt was doubtless influenced by the pubescent arista, though he heads his description, "*Species dubia*." The true systematic position of *Frauenfeldia* is next to the genus *Brachycoma*, which it resembles, owing to the face being setigerous, and by reason of other characters. In Prof. Brauer's final arrangement of the genera of the "*Muscaria schizometopa*" [Verh. z.-b. Ges. Wien, xliii, pp. 510—516 (1893)], *Frauenfeldia* is reduced to the level of a *sub-genus* of *Brachycoma*, but for this step I can find no justification; the pubescent arista, different shape of the palpi, different shape of the first posterior cell, and the fact that it is closed, or nearly so, on the margin of the wing, and also that on the third vein bristles are confined to the extreme base, instead of clothing it from the base to the anterior transverse vein; and last, though by no means least, the remarkable lamelliform appendages to the male genitalia—all these are characters which render it impossible that *Frauenfeldia rubricosa*, Mg., can be congeneric with *Brachycoma devia*, Rond. Owing to the fact that, as has been mentioned above, the facial angles in *Frauenfeldia* are convergent, it will be necessary to modify Brauer and von Bergenstamm's definition of their "Group" or "Section" RHINOPHORA, which includes the genera *Brachycoma*, *Frauenfeldia*, *Rhinophora*, and certain non-British forms.

In conclusion it may be remarked that as the host of *Frauenfeldia rubricosa* is at present unknown, breeders of *Lepidoptera* might add to our knowledge by keeping a look out for the fly.

British Museum (Natural History),
Cromwell Road, London, S.W.
February 11th, 1898.

HARPALUS FRÆLICHII, STURM (*TARDUS*, Pz.): AN ADDITION
TO THE BRITISH LIST.

BY E. A. NEWBERRY.

This interesting addition to our list was taken in some small numbers by Mr. Claude Morley and Mr. Ernest Elliott on the 4th and 29th of May last, beneath stones and logs on what Mr. Morley calls "Foxhall Plateau," a barren wind-swept field just a mile from Martlesham Heath and four miles from Ipswich. The locality appears to be a good one for *Carabidæ*, Mr. Morley having taken as many as 13 species of *Amara* there.

H. Frælichii, Sturm, is regarded by M. Bedel and other continental authorities as the true *tardus*, Pz., the species standing as *tardus* in our lists and collections being called *rufimanus*, Marsh. It is very probable we shall have to make this correction.

H. Frælichii, by its short broad form, thorax not narrowed behind, and shining black colour, is very nearly allied to *H. serripes*, Quens., and among British *Harpali* can only be mistaken for that species or *rufimanus*, Marsh. (*tardus*, Brit. Cat.). It may readily be separated from both by the characters given by Bedel. I have made use of these in the following table :—

A. Posterior femora having numerous setigerous punctures on the internal margin.

Thorax strongly transverse, form short, broad and convex, antennæ short, yellow-red, elytra nearly as shining in ♀ as in ♂ *H. Frælichii*, Sturm.
(*tardus*, Pz.).

B. Posterior femora having from 3 to 8 punctures.

I. Antennæ and palpi having the middle joints spotted with black, form broad and convex, elytra nearly as shining in ♀ as in ♂ ... *H. serripes*, Quens.

II. Antennæ and palpi entirely yellow-red, form narrower and but little convex, ♂ shining, ♀ dull..... *H. rufimanus*, Marsh.
tardus, Brit. Cat.

With regard to these setigerous punctures, they are by no means confined to the posterior femora ; all the femora and the intercoxal prominence being much more hairy than in the two allied species. Fauconnet, in his tables, gives 12 to 14 as the number on the femora of *Frælichii*, and 3 to 4 in *serripes* and *rufimanus*. The latter hardly appears to be correct, but is worth mentioning as an approximation.

British insects are usually carded, and it is therefore as well to mention that in *Frælichii* the thorax is remarkably short and broad, being almost double as broad as long, with its sides narrowed from the base to the apex and not rounded, as in the two allied species.

The size is about that of average *rufimanus* (*tardus*, Brit. Cat.).

We have received the following additional note from Mr. C. Morley.—EDS.

Foxhall is a tiny little village upon a gentle acclivity on the banks of a small stream, a tributary of the River Deben. The parish includes a part of the sandy heath, upon the border of which is the "Plateau" on the north, and some poor marsh land on the south. Parallel with the stream through Foxhall and Brightwell, but extending in the north to Waldringfield and Martlesham, runs a narrow strip of the Red Crag from the Deben to the Orwell, resting at this point upon the London Clay at a depth of forty-two feet from the surface, and capped by the Glacial Drift and rubble. In this neighbourhood is a wide stretch of sandy soil, of which there is little in the county, and wherever the crag is present the soil appears of a light and unstable nature. Beyond the Deben the crag broadens out, reaching as far as Dunwich and Southwold, and throughout this district it is quite probable *H. Frølichii* is to be sought with tolerable chance of success. The particular spot of capture is a field just 100 feet above sea-level, upon which many attempts have been made to raise corn, but all have failed dismally, and copious manuring has raised nothing but fine crops of bracken! The major part of the field, as a last resource, has just been ploughed and planted with *Coniferæ*, much, I fear, to the detriment of the propagation of our *Harpalus*. A curious fact is that I have searched the same spot for several consecutive seasons, and in 1896 turned over the same stones beneath which *H. Frølichii* occurred last year without obtaining a single specimen, Mr. Elliott and I secured in all fifteen specimens, twelve males and three females. Two of the former are now in the British Museum, and I hope to obtain it and distribute it among my friends again this year. Sandhill species, such as *Sitones griseus*, *Cneorhinus geminatus*, *Calathus flavipes*, *Brosicus cephalotes*, *Coccinella 11-punctata*, &c., occur on the "Plateau," and it was my friend Dr. Taylor's opinion that marine plants are attracted by the soda which enters into the drift sand of the felspar, and hence the occurrence of such species at a distance of six miles from the sea at its nearest point. About a mile distant Kirby first took *Cicindela sylvatica* in Britain.*

Harpalus Frølichii, Sturm, would appear to be a somewhat scarce species upon the continent. Fairmaire says it is rare on sandhills in Northern France, but Bedel has found it occasionally in numbers, especially in April, in the Seine basin. It is recorded from a number of localities throughout Germany, though occurring apparently commonly nowhere. Its southern distribution seems to be limited by the Austrian mountain ranges, whence it is recorded by Sturm in his original description ("Deutschlands Insecten," 1815), and Dr. Seidlitz mentions Transsylvania. It is included in Thomson's "Skandinaviens Coleoptera," but does not probably occur much further north than the Riga district. The three specimens of this species (females) in the British Museum have the margins of the thorax red; they were taken at Stettin, and acquired in the collection of the late Herr Braasche in October, 1857.†—CLAUDE MORLEY, Ipswich: *March*, 1898.

* "Capta in ericeto dicto Martlesham Heath, juxta Woodbridge, in Suffolciâ, Septembre ineunto, 1797, D. Kirby."—Marsham.

† Dr. Seidlitz (Fauna Baltica; die Käfer, 1891) says:—*Frølichii*, Sturm., = *segnis*, Dej., = *tardus*, Bedel; and adds, "Panzers Beschreibung u. Abbildung des *C. tardus* giebt durchaus keinen Anlass ihn auf *Frølichii* anstatt auf die bisher von allen Autoren als *tardus*, Pz., beschriebene Art zu beziehen.

Micro-Lepidoptera in Cumberland.—*Crambus sylvellus (adipellus)*.—Not uncommon on very wet and boggy heath ground at Bolton Fell on June 26th. They were flying among thousands of *Pleurota bicostella*, and were difficult to separate from that species while on the wing. Two specimens came, later, to our sugar. The ground which it frequented was so wet as to be difficult to travel over.

Eudorea truncicolella.—In woods. *E. muralis* and *E. cratægella*.—Not common.

Cryptoblabes bistriga.—A single specimen beaten out of birch in a large wood.

Peronea mixtana.—On the heaths.

Sciaphila conspersana, Dougl.—We took over twenty specimens on July 17th in a corner of a large damp meadow, bordered by woods; they appeared to frequent black knapweed (*Centaurea nigra*), for wherever that plant was thickest the moth was most readily disturbed. A few were beaten out of birch trees along the edge of the woods. *S. hybridana*.—Found in the same woods.

Penthina marginana.—Once taken in one of our woods, but locality uncertain.

Sericoris conchana.—In marshy meadows. *S. micana*.—This species used to be taken by the old collectors many years ago, but for the last ten years had not been seen until last year, when Mr. Day and I found it in profusion, in one corner only, of a meadow which was sheltered by a wood. It was flying among various grasses, black knapweed, yellow rattle, and scabious; the females seemed to outnumber the males.

Phoxopteryx Mitterbacheriana, *P. uncana*, *P. biarcuana*.—Found in various places on the hills.

Mixrodia rubiginosana.—Beaten singly from fir, in May, in two of our larger woods.

Phlæodes tetraquetra.—In woods. *P. immundana*.—In damp spots among alder.

Grapholitha trimaculana.—Very few taken, and these all on walls in the town; one is an exceedingly fine dark variety.

Carpocapsa splendana.—In oak woods.

Halonota scutulana.—In marshy meadows.

Retinia pinivorana.—Among fir trees in various woods.

Stigmonota dorsana.—Four beautiful specimens of this rare species were taken on May 23rd, flying among rough herbage on a railway embankment. *S. internana*.—Six specimens were taken early in May, flying in the sunshine over furze bushes; with them was one specimen of *S. coniferana*, and another was beaten out of fir on May 20th. *S. nitidana*.—Also in woods.

Coccyx splendidulana.—Also in woods.

Heusimene fimbriana.—One specimen only, beaten out of oak.

Dierorampha herbosana.—Very common among furze bushes.

Lobesia permixtana (reliquana).—In woods.

Eupæcilia ciliella.—Common, flying among heather and coarse grasses, at the end of April and in May.

Scardia arcella.—A single specimen beaten out of hazel.

Tinea misella.—Very common in a stable in the town, where it appears to feed on the horse-corn, consisting of crushed oats, beans, peas, &c. *T. fuscipunctella*, *T. biselliella*, in houses.

Swammerdamia griseocapitella, *S. pyrella*.—In woods.

Adela rufimitrella.—About a dozen specimens seen sitting on flowers of ladies' smock (*Cardamine pratensis*) in a reedy, marshy place.

Cerostoma vittella.—Among elms close to the town.

Harpella scabrella.—In woods, among crab.

Gelechia æthiops.—On open heaths, May 15th. *G. notatella*, *G. sororculella*, *G. politella*.—In marshy meadows and heaths surrounded by woods. *G. viscariella*.—Three specimens taken from a bed of nettles. *G. desertella*.—On the sea coast. *G. ericinella*.—On open heaths. *G. dodecella*.—among fir in the woods.

Anarsia spartiella.—On heaths among the woodlands.

Ecophora fuscescens.—In the town, not common.

Gracilaria elongella, var. *stramineella*.—Varies much and into beautiful forms ; not uncommon among birch in damp woods. *G. tringipennella*.—less common.

Ornix Loganella.—Common in woods among mountain ash.

Onerostoma pinariella.—Common among fir.

Batrachedra præangusta.—In profusion upon two willow trees, sitting among the lichen on their trunks.

Cedestis farinatella.—Common among fir.

Laverna atra.—Common in hedges.

Elachista apicipunctella.—Common in damp woods. *E. atricomella*, *E. zonariella*, *E. ochreella*.—Less common in similar woods

Nepticula argentipedella, *N. æneofasciella*.—Also in the woods.

Micropteryx semipurpurella, *M. purpurella*, *M. unimaculella*.—Common in extensive woods and heaths among birch. *M. Sparmannella*.—Much less frequent.

Eriocephala Allionella.—In moist woods and meadows. *E. calthella*.—Common in mosses.—G. WILKINSON, 18, East Norfolk Street, Denton Holme, Carlisle : *March 7th*, 1898.

Deilephila galii bred by forcing.—I succeeded in forcing out a perfect specimen of *Deilephila galii* from pupa, the larva recorded last summer (Ent. Mo. Mag., vol. xxxiii, p. 212). It emerged on December 8th. My previous attempts at forcing had failed, so I was somewhat surprised ! Sand seems to be the best medium, as it lets off excess of water yet is porous for moisture from below.—C. F. BENTHALL, Cofton Vicarage, Starcross, Devon : *March*, 1898.

Polyommatus Alexis (?) in February.—On Tuesday of last week (the 15th inst.) a blue butterfly was seen by my son in the grounds of Dover College, where it settled for an instant upon the ground near him. He did not know the species, but from its resting thus I should not think it to be *Polyommatus Argiolus*, but a prematurely emerged *P. Alexis*, the larva of which must have fed up instead of hibernating during this extraordinarily mild winter.—SYDNEY WEBB, Dover : *February 22nd*, 1898.

Bembidium punctulatum, Drap., in the Lea Valley.—Canon Fowler (Col. Brit. Islands, i, p. 119) records this species as "rare in the London district," and gives three localities in Surrey in which it has been taken. I am pleased to be able to add a new locality for it on the northern side of the metropolis, as on February 6th last

I found a single specimen at the base of a willow at Chingford Ferry, Lea Valley. I have since searched in vain for further examples in this spot, but I do not despair of being able to turn up the species elsewhere in the Valley. The individual agrees with others sent me by Mr. J. H. Keys of Plymouth.—F. B. JENNINGS, 152, Silver Street, Upper Edmonton: *March 19th*, 1898.

An additional character in the male of Homalota marcida, Er.—An apparently overlooked and good distinguishing character is to be found in the male of this species. In this sex the head is furnished in the centre between the eyes with a small but distinct shining tubercle, which appears somewhat keel-shaped, and varies slightly in size in different specimens, but is always sufficiently distinct to be easily observed with a Coddington lens. A structural development of this nature on the head would appear to be decidedly unusual among the *Aleocharinæ* at all events. I can find no reference to this sexual peculiarity of *H. marcida* in Canon Fowler's British *Coleoptera*, nor in the *Genera et Species Staphylinorum* (Erichson), or the *Coléoptères de France* (Brévipennes) (Mulsant and Rey); the last mentioned authors remark upon and figure the thickening of the third joint of the antennæ, which is a further distinguishing mark of the male of this species.—E. GEORGE ELLIMAN, Chesham, Bucks: *March 11th*, 1898.

A new way of packing Coleoptera sent long distances.—To save damage to specimens when sent long distances by post, or otherwise, careful packing is of course always necessary, and the following method having been suggested to me, and found to work well in practice, I think the description may be of use. The specimens are placed unmounted in a tin, one on the other till it is full, and then melted best paraffine wax poured in till it covers all the beetles. On receipt warm the tin till the wax becomes fluid, drain the insects on blotting paper, and remove any of the superfluous wax with a camel's hair pencil well moistened in spirit of chloroform. *Hairy* specimens had better be *soaked* in ether instead of brushing with chloroform, and dried in a draught. Whether the method of packing in wax would be applicable to the tropics depends upon the sample employed, as the melting point varies (I believe) from 110° to 145° Fahr.—T. A. GERALD STRICKLAND, 28, Elm Park Gardens, S.W.: *February*, 1898.

[In reply to doubts expressed by us as to the feasibility of subjecting *hairy* beetles to this method, Mr. Strickland has sent us a Cockchafer treated by it. The result is fairly satisfactory, but the pilosity on the sternum is somewhat "laid."—EDS.]

Oxycera dives, Loew, at Rannoch, and notes on the genus.—I was fortunate enough to take a specimen of this large dark winged fly at Rannoch on June 18th, 1896. It has been seen by Mr. Austen, who thinks it is probably referable to this species. Walker records a specimen in the collection of the Entomological Club, but gives no locality.

The species of *Oxycera* appear to fall naturally into four sections, thus—

Females with yellow stripes on the thorax—*rara*, *pardalina*, *formosa*, &c.

Females with yellow spots on the head—*Morissii*, *longicornis*, &c.

Both sexes of the same colour— *analis*, *terminata*, &c.

Females with yellow collars—*trilineata*, *muscaria*, &c.

This was my father's favourite genus, and he took all the recorded species at Glanvilles Wootton, except *dives* and *Falleni*.—C. W. DALE, Glanvilles Wootton: *January 5th*, 1898.

Injury to cloth by Sirex juvenus.—I was told the other day by a tweed merchant that he had had some cloth destroyed by a new insect pest, so voracious as to eat the very boards on which the cloth was rolled. I called at the warehouse and was shown about six yards of cloth pierced with two parallel rows of round holes. I did not see the flies at the time, but have had two sent me since. An examination of the board, which is of fir and much worm eaten, shows that they have emerged from the board, and that the destruction of the cloth is merely the result of their endeavour to escape, in accomplishing which the smaller fly had pierced twelve and the other no less than fifteen plies, or more than an inch in thickness of solid cloth.—W. GRANT GUTHRIE, 6, Lockhart Place, Hawick, N.B.: *February*, 1898.

[The two flies are males of *Sirex juvenus*, one of them of remarkably small size.—EDS.].

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *February 7th*, 1898.—ANNUAL MEETING.—MR. G. T. BETHUNE-BAKER, F.L.S., President, in the Chair.

The Annual Reports of the Council, Treasurer, and Librarian were received, and the Officers and Council elected. Mr. G. T. Bethune-Baker being re-elected President; Mr. P. W. Abbott, Vice-President; Mr. R. C. Bradley, Treasurer; Mr. A. H. Martineau, Librarian; and Mr. C. J. Wainwright, Hon. Secretary.

Mr. P. W. Abbott showed *Hemerophila abruptaria*, one of the ordinary pale form, from Sutton, and a short series from North London, all more or less dark; one of these latter was caught on the door of a coal cellar, and was very dark, quite evenly suffused with dark umber, with the black transverse lines distinct, and some of the pale lines showing, also the thorax remained pale; the remainder were bred by Mr. W. A. Southey, and one of them was quite as dark as the caught one, the rest showing the usual arrangement of colours and markings, but the ground-colour was throughout darker. Mr. R. C. Bradley showed *Diodontus tristis* (1 ♂ and 2 ♀); 1 *Pemphredon lethifer*, ♂; 1 *Psen pallipes*, ♀; and 1 *Sphecodes pilifrons*, ♂; all from Sutton, 1897.—COLBRAN J. WAINWRIGHT, *Hon. Secretary*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *January 13th*, 1897.—MR. R. ADKIN, F.E.S., President, in the Chair.

Mr. Mansbridge exhibited a photograph of an ash and an elm tree, taken in winter, to show the destructive character of their branching. Mr. Adkin, minor varieties of *Pararge Megæra*, and contributed notes thereon. Mr. W. G. Pearce brought a series of very dark *Hemerophila abruptaria*, bred from ova laid by a female captured in north London. The Secretary read a paper communicated by

Prof. A. Radcliffe Grote, A.M., entitled, "The wing and larval characters of the Emperor Moths," and exhibited the following species in illustration:—*Saturnia pavonia*, *Agria tau*, *Automeris Io*, *Hemileuca Maia*, *Citheronia imperialis*, and *Attacus speculifer*, kindly lent by Mr. C. G. Barrett.

January 27th—ANNUAL MEETING.—The President in the Chair.

Reports of the satisfactory condition of the Society were read from the Council and Treasurer. The balance was somewhat smaller than usual, owing to the first part of the 1897 Proceedings being printed in the current year. The following Officers and Council were then elected:—President, J. W. Tutt, F.E.S.; Vice-Presidents, R. Adkin, F.E.S., W. Mansbridge, F.E.S.; Treasurer, T. W. Hall, F.E.S.; Librarian, H. A. Sauzé; Curator, W. West; Hon. Secretaries, Stanley Edwards, F.L.S., H. J. Turner, F.E.S.; Council, T. A. Chapman, M.D., F.E.S., F. Clark, A. W. Dennis, A. Harrison, F.E.S., F.C.S., W. J. Lucas, B.A., R. South, F.E.S., H. Tunaley, F.E.S. The retiring President then read his Address: he dealt at length with matters concerning the well-being of the Society, summarized the entomological work of the past year, referred in detail to the more important works which had recently been published, and then passed on to a general consideration of the bearing of the theory of evolution on our views of nature. Mr. Lucas exhibited a specimen of the earwig, *Forficula Lesnei*, taken at Reigate in October, 1897, by Mr. West (Greenwich), of which only two specimens had previously been recorded in Britain, and contributed notes on its structure, habits, and occurrence.

February 10th.—Mr. J. W. Tutt, F.E.S., President, in the Chair.

Mr. E. J. Crow, of Brixton, and Mr. E. R. Hillsworth, of Stratford, were elected Members.

It was announced that Mr. Mansbridge had resigned, owing to his leaving England, and that Mr. Tunaley, F.E.S., had been chosen to fill the vacancy as Vice-President, and that Mr. H. Moore had been elected on the Council. Mr. McArthur exhibited under-side varieties of *Polyommatus bellargus* and *P. Corydon*, the latter being almost devoid of ocelli. Mr. Dennis, three parts grown larvæ of *Callimorpha Hera*, from ova sent by Mr. Tutt while collecting in the Alps in 1897. They had fed all the winter. Mr. Tunaley, long bred series of *Retinia resinella* from Aviemore. Mr. Routledge, a variety of *Enodia hyperanthus* from Carlisle, having a broad whitish submarginal band on the under-sides of the hind-wing, embracing the ocelli, and also two females of *Acosmetia caliginosa* taken in the same locality by Mr. Day. Mr. Lucas, imagines and living nymphs of *Calopteryx splendens* from Fleet, and contributed notes on the specific characters and habits of the nymphs. Mr. Adkin, specimens of *Dianthæcia luteago*, v. *Barrettii*, from Howth. Major Ficklin, the same species taken in Cornwall, and which form Mr. Tutt had named v. *Ficklini*. Mr. Tutt, on behalf of Rev. F. E. Lowe, of Guernsey, a third form, bred from pupa, taken under *Silene maritima*, and which he had named v. *Loweii*. A considerable discussion ensued on the singular variation shown in this species, practically invariable in the same locality, but each locality possessing a distinct race. Mr. Tutt also exhibited, on behalf of Mr. Lowe, a fine aberration of *Melanippe sociata*, in which the central band of the wings was almost completely obliterated; and, on behalf of Mr. Pearce, of Hackney, all the melanic specimens

of *Hemerophila abruptaria* bred by him during the last three years, some dozens, including extremes and intermediates, and one partially gynandrous.—H. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: February 16th, 1898.—Mr. G. H. VERRALL, Vice-President, in the Chair.

Mr. G. C. Champion exhibited specimens of *Isodermus Gayi*, Spin., from the Straits of Magellan, and *I. planus*, Er., from Tasmania, both found by Mr. J. J. Walker. The genus *Isodermus*, belonging to the *Aradidae*, afforded an interesting case of geographical distribution, the only known species occurring in Chili, Australia, and Tasmania. Mr. C. O. Waterhouse referred to the similar distribution of other species of insects, which went to support the theory of a former connection between South America and Australia. Mr. Champion also showed an example of *Bagous lutosus*, Gyll., from Sweden. This insect had been on the British list since the time of Stephens, but possibly in error, as all the examples he had seen in collections were wrongly so named. Mr. Jacoby exhibited a pair of the singular weevil, *Apoderus tenuissimus*, Pasc., from the Philippines. Mr. Burr, species of *Orthoptera*, of the family *Eumastacidae*, resembling dead leaves. This was the only family of *Acrydiidae* in which such resemblances were found. Dr. Chapman, a specimen of *Zygæna exulans* with six wings, the supernumerary pair arising between the normal left fore-wing and the corresponding leg on the same side. The uppermost wing appeared normal in every respect, the second was a reduced copy of the basal half of a fore-wing, and the third a portion of crumpled wing-structure. Mr. O. E. Janson, a pale variety of the rare *Papilio mikado* taken in south Japan. Mr. Tutt, a variety of *Enodia hyperanthus* taken by Mr. F. H. Day near Carlisle, and banded on the under-side like a *Cænonympha*; also two moths from the same neighbourhood, which, after careful comparison, he regarded as females of *Hydrilla palustris*. This sex was almost or quite undiscovered in Great Britain, and the occurrence of the species so far from the fen district was remarkable. Mr. H. J. Elwes read a paper, entitled, "A Further Revision of the Genus *Erebia*," which was illustrated by the exhibition of examples of every known species. Tracing the geographical distribution, he stated that the principal European centres of the genus were the Pyrenees, and especially the Alps, only a few forms occurring in Scandinavia, while the Ural Mountains and Caucasus were almost destitute of species. The genus became abundant in E. Siberia, from which region a few N. American forms appeared to have been derived. Dr. Chapman also read a paper "On the Species of the Genus *Erebia*, a Revision based on the male Appendages," illustrated with drawings of these organs in about sixty species. In connection with the above papers, Mr. Tutt exhibited and made remarks on long series of *Erebia Nerine*, *E. glacialis*, *E. Euryale*, *E. ligea*, &c., chiefly from the Alps.—W. F. H. BLANDFORD and F. MERRIFIELD, *Hon. Secretaries*.

March 2nd, 1898.—Mr. G. H. VERRALL, Vice-President, in the Chair.

The following were elected Fellows of the Society:—Miss Margaret Fountaine, 7, Lansdowne Place, Bath; Mr. J. H. Carpenter, Shirley, St. James's Road, Sutton, Surrey; Mr. G. O. Day, Parr's Bank House, Knutsford; Mr. F. E. Filer, 58, Southwark Bridge Road, S.E.; Mr. R. Hamlyn Harris, The Conifers, Hambrook,

Bristol; Mr. E. J. Lewis, 4, Elwick Road, Ashford; Mr. T. Maddison, South Bailey, Durham; Mr. W. H. Mousley, Orchard House, Mundesley; and Prof. Enzo Reuter, Helsingfors, Finland.

Lord Walsingham exhibited a series of the larger and more striking species of *Xyloryctinae*, a sub-family of the *Gelechiidae*, especially characteristic of the Australian fauna. The series illustrated the life-histories and the great disparity in colour and form between the sexes of many species. He also gave an account of the family, chiefly from notes by Mr. Dodd, of Queensland, with especial reference to the habits of the larvæ, which live in holes in tree-trunks, to which they drag leaves in the night for the next day's consumption. Mr. Gahan, a locust, *Acrydium ægyptium* (= *tartaricum*), taken in a house in Hanover Square, and probably imported in vegetables. Mr. Kirkaldy, species of water-bugs, including *Enicocephalus culicis* and *Gerris robustus*, both taken for the first time in Mexico. A discussion arose on the reported occurrence of the San José scale, *Aspidiotus perniciosus*, in Great Britain. Mr. R. Newstead stated that during nine years' work on *Coccidæ*, he had never once met with this species among scale-insects taken in this country and sent to him for identification. It was impossible even for an expert to distinguish it, without careful microscopical preparation and examination, from among the thirty or more known species of *Aspidiotus*, and any attempt to identify it on imported fruit by naked-eye observation, or with a hand-lens, was, therefore, quite impracticable. The risk of its distribution by being imported on fruit was small; there was, however, much more likelihood of its introduction on plants. At the same time, he saw no reason to suppose that it would be more injurious in this country than the common *Mytilaspis pomorum*; in America the San José scale had several generations in the year, sometimes as many as five, but in this country it would probably conform with the habits of all other scale-insects at present investigated, and become single-brooded.—W. F. H. BLANDFORD, *Hon. Secretary*.

OBSERVATIONS ON COCCIDÆ (No. 17).

BY R. NEWSTEAD, F.E.S.,

CURATOR OF THE GROSVENOR MUSEUM, CHESTER.

GYMNASPIS, *n. g.*

♀ puparium without larval exuviae or secretion; composed entirely of the naked moulted skin of the second stage ♀. ♂ puparium with larval exuviae and secretionary margin as in *Aonidia*.

GYMNASPIS ÆCHMEÆ, *n. sp.*

♀ puparium composed entirely of the naked moulted skin of the 2nd stage ♀, which completely envelopes the adult insect, as in *Aonidia* and *Fiormia*; high convex, more or less circular, anal extremity usually pointed; margins produced and convex, entire, or constricted at the spiracles; the constrictions irregular and frequently assymetrical; irregularly and widely punctate; shining bronzy-black, opaque, very strong; the ventral surface as much so as the dorsal. The ventral surface is usually covered with a delicate white secretion, which bears impressions of the leaf-structure, and sometimes projects a little beyond the margin of the puparium.

Diam., 50-90 mm.

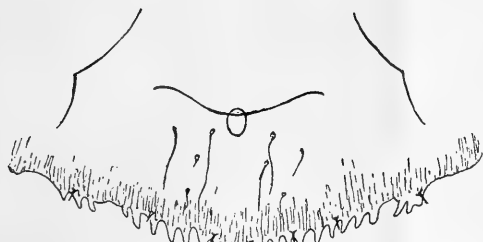


Fig. 1.

(fig. 1) without circumgenital glands; vaginal opening, and anus opposite; margin with a series of projecting tubercles or extensions of the body wall, and a few short spines. And there are a few very slender tubular spinnerets arising from the extreme margin.

Puparium of second stage of ♀ purplish-brown, circular, with a broad marginal secretion; larval exuviae central, naked, black or bronzy-black. Diam., .50 mm.

Larva comparatively large, short-ovate, pale mauve; eyes black. Antennae of five joints. Pygidium with two pairs of lobes; median lobe largest, and notched towards their distal extremity. There is a pair of broad, deeply fringed plates between the median lobes; and one of the same character between the median and second pair of lobes; and two others beyond them, the last being much the smallest, often taking the form of a series of simple plates.

Hab.: on *Æchmea aquilega*, Royal Gardens, Kew, April 24th, 1897.

Mr. Green has included in the genus *Aonidia* his *A. bullata*, an insect which resembles my own in the character of the ♀ puparium; but it is anomalous in the genus, and should, I think, be removed.*

In all other known species of *Aonidia*, the larval moult, and a varying quantity of secretory matter forms part of the puparium. *Gymnaspis* is distinguished by the absence of both.

ASPIDIOTUS BRITANNICUS, *n. sp.*

Aspidiotus hederæ, Newstead, Ent. Mo. Mag. (1896), p. 279, *nec* Vallot.

Puparium of adult ♀ circular, or approximately so, moderately convex. Colour, dusky ochreous, with a broad smoky-brown central zone. Exuviae central, or a little to one side; those of the larva dark yellow or dull orange, secretory covering very thin. Second secretory covering smoky-brown. Diam., .75–2 mm.

Adult ♀ translucent yellow, short-ovate; with distinct segmentation. Pygidium (fig. 2) with four or five groups of circumgenital glands; the anterior group (rarely present) consists of 2–3, the anterior laterals from 7–10, the posterior laterals from 7–8. Vaginal opening a little cephalad of the centre. Subdorsal groups

* Under date December 12th, 1897, Mr. Green writes—"there are certainly good grounds for separating *Aonidia bullata* from that genus, now that we have a second species to go with it."



Fig. 2.

of the margins ; third pair smallest. Plates comparatively short ; median, second and third pairs narrow, with one to three apical divisions. The position of the spines are indicated in the figure.

Puparium of the ♂ similar to that of the second stage ♀ ; more or less circular, contracted forms elongate or widely ovate. Colour, bright pale fulvous ; larval exuviae central, usually bright orange-ochreous ; secretory covering thin, smooth and transparent.

Diam., 1 mm.

Hab. : on holly (*Ilex aquifolium*, L.) at Teddington, near London.

This is the species which was provisionally recorded (Ent. Mo. Mag., 1896, p. 279) under the name of *Aspidiotus hederæ*, Vall. As the latter is now considered a var. of *A. nerii*, Bouché, the Teddington insect appears to be an undescribed one, and quite distinct.

I am indebted to Mr. R. McLachlan for the liberal supply of specimens.

MYTILASPIS CITRICOLA, Packard.

On Citrus ; Lekie Lagos, 1897.

Received from Major Ewart. I believe this and the following species have not previously been recorded from the West Coast of Africa. The scales almost covered the small branches which were sent to me ; judging from this I should imagine the insects to be injurious to the trees.

ISCHNASPIS FILIFORMIS, Douglas.

Abundant on stems of coffee ; Lekie Lagos.

Received from Major Ewart. The scales looked remarkably like small, narrow, black scars or dead stomata.

CEROPLASTES PERSONATUS, *n. sp.*

Waxy covering of adult ♀ dirty white, much stained with rusty-brown ; the

of tubular spinnerets long, the longest extending almost to the base of the pygidium, connecting pores towards the margin on both dorsal and ventral surface. Margin of pygidium with three pairs of well developed and widely separated lobes ; the median and second pairs subequal, are deeply notched, or emarginate at the extremity

lateral plates (six in number) are flat, and slightly reflexed at the extremities; anterior pair short and broad, lateral pair largest, posterior pair much the smallest. I can find no trace of neuclei in the plates, but there is a single neucleus on the low convex dorsum.

Long, 3 mm. ; wide, 3.50 mm.

Adult ♀ short-ovate; derm, after treatment with potash, transparent, is thickly set with triangular spinnerets, bearing markings which give them the appearance of miniature grotesque masks (fig. 4); there are also many small circular spinnerets. Antennæ (fig. 3) of six joints; the third joint very long, forms nearly one-half of the whole antennæ; formula 3216 (45). Legs ordinary. Rostral filaments short. Anal dorsal lobes flat and triangular, as in *Lecanium*; apex with a single short hair, and just within the apex a very long one. Anal ring with six long stout hairs. Stigmatic area (fig. 5) above with a large, blunt, bidentate spine; extreme margin with a series of short spines; and on the ventral area a group of spinnerets extending to the spiracles.

Long, 2 mm. ; wide, 1.25 mm.

Hab.: Lagos, West Africa. Collected by Mr. Cyril Punch and kindly forwarded to me from Kew by Mr. W. F. H. Blandford.

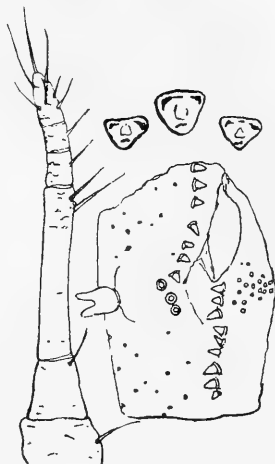


Fig. 3.

Fig. 4.

Fig. 5.

Mr. Punch says the insect is "not very prevalent; nor does it increase greatly as the *Lecanium* and **Pseudococcus*. Mostly attaches itself to the midribs and secondary nerves on the upper surface of the leaves. Its presence is accompanied by some *Triphosporum*? on the leaves, but not in damaging quantities. Ants do not affect its company; trees do not suffer apparent weakening from its presence. Also seen in Liberia."

The ♀ of this species may be readily distinguished by the flat form of the waxy covering; by the large, bidentate, stigmatic spine; and the curious mask-like spinnerets. Only two examples were sent; but the characters are so well marked that I do not think I have erred in describing it as new.

LECANIUM VIRIDE, Green.

var. *africanum*, n. var.

♀ adult differing from the type in having very broad, unequal digitules to the claw, and eight jointed antennæ, of which the third is the longest. Mr. Cyril Punch, who collected the specimens, says the insect is "green in colour," and that it is a "blight which does considerable damage all the year round."

* Mr. Punch probably refers to *Dactylopius longispinus*.

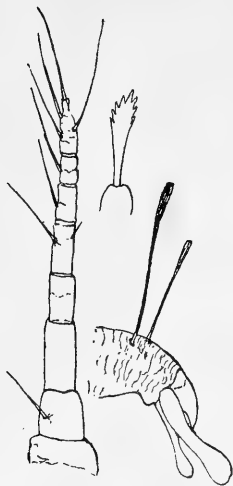


Fig. 6. Fig. 8. Fig. 7.

Hab.: Lagos, West Africa, on coffee leaves; 1897. Forwarded with the preceding by Mr. Blandford.

Unfortunately only three specimens were sent to me, but these show a decided departure from typical *L. viride* as described by the author (Ent. Mo. Mag., 1889, p. 248), and may prove a distinct species, but until more adequate material comes to hand I have considered it advisable to place it as a var. In the margin are given a figure of the antennæ (6), the tarsus showing the character of the digitules (fig. 7), and one of the marginal hairs (fig. 8).

ERIOCOCCUS GREENI, *n. sp.*

Sac of adult ♀ not separable from *E. insignis*, Newst. Adult ♀ elongate. Derm thickly set with large, sharp spines, but more especially so at the margins; interspersed with them are an almost equal number of long, fine hairs, and large simple spinnerets. Anal lobes normal, with 3-4 spines, and the terminal setæ, which equal in length the tibia and tarsus together. Antennæ (fig. 9) of six joints, of which the third is much the longest; formula 3126 (45). Legs with a few spinose hairs; posterior pair longest, digitules long and slender. Anal ring with eight long hairs; intervening spaces of the ring with large circular convex discs.

Long, 2.50 mm.; wide, 1.20 mm.

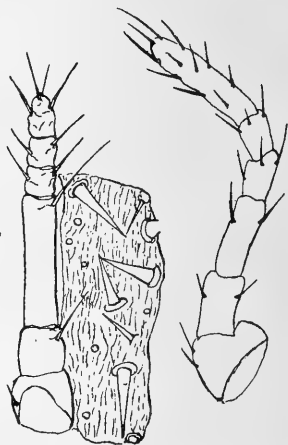


Fig. 9.

Fig. 10.

Hab.: on grass, at Budleigh Salterton, Devon; Sept. 20th, 1896.

Discovered by Mr. E. Ernest Green, to whom I have great pleasure in dedicating the species.

The character of the antennæ is almost identical with that of *E. insignis*, but easily separable from the latter by the spinose character of the dermis.

RIPERSIA FILICICOLA, *n. sp.*

♀ adult rather short ovate; pale ochreous-yellow, or red-pink; almost covered with white secretion, which forms broad irregular plates on the abdominal segments, but on the anterior portion of the body it is confluent and narrow, but presenting

always a broken, jagged edge; the caudal appendages are about three times the length of the marginal plates, and rather stout. Derm thickly set with short tubular spinnerets, more numerous at the extremities and the margins. Space between the antennæ with many very long hairs, and at the margin two groups of short, stout spines. There is also a group of spines at the margin of each segment. Anal lobes rather strongly chitinized, bear several spines, 2-3 short hairs and one very long one, and tubular spinnerets. Anal ring with six hairs, slightly longer than the caudal setæ; both margins of the ring with cell-shaped pores, similar to those in *Dactylopius longifilis*, T. T. Antennæ (fig. 10) of six joints, of which the sixth and third are longest; formula 6321 (45). Legs are without clubbed hairs to the tarsi and claws; hair on coxa apical is nearly as long as the femur. Mentum bi-articulate, attenuated, apical joint twice the length of the first, has many fine hairs at apex and margins; filaments a little longer than the mentum. Long, 1.10 mm.

Immediately prior to the formation of the sac the ♀ secretes a quantity of long, straight, glassy, iridescent filaments, which radiate from the margin, but are not attached to the body. These filaments are very characteristic and beautiful objects under the microscope. Sac of the ♀ narrowly elongate and attenuated at the extremities, is composed of a rather loose but toughish fibre, somewhat resembling the silken cocoon of *Cemistoma laburnella*. In the old weathered sacs the iridescence disappears, leaving the filaments a delicate pale blue. Long, 2-2.50 mm.

Sac of the ♂ similar to that of the ♀, but much smaller.

Pupa yellowish-pink or bright flesh colour; it is semiactive and shaped as in *Dactylopius citri*. Wing cases long, and extending to first abdominal segment.

Hab.: on fronds of *Trichomanes spicatum*, a West Indian filmy fern. Received from the Director of the Royal Gardens, Kew; January 27th, 1897.

The species may be recognised at a glance by the iridescent filaments which surround the sac.

I found a portion of a male, which unfortunately was much too imperfect to serve any scientific purpose. This is to be regretted, as we know so little of the ♂ of this genus. But, judging from the character of the pupa, I am convinced this insect is much more closely allied to *Dactylopius* than is *Ripersia fraxini*, Newst. In the latter the pupa is quite of a different form and absolutely inactive; and the larva is abnormal in the genus. I think, therefore, this insect may form the type of a new sub-genus under the name of *Apterococcus*. I shall state my reason for doing so in a later communication.

RIPERSIA MONTANA, n, sp.

♀ adult elongate-ovate. Antennæ (figs. 11, 12) stout, of six or seven joints (usually six); all with many short, stiff hairs; the formula for the six-jointed examples is 6321 (45), for the seven-jointed 721 (346) 5. In fig. 2 the hairs are broken away. Mentum biarticulate, apex widely rounded, bears a few fine hairs; filaments

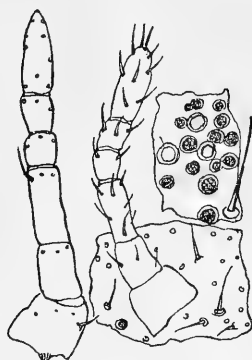


Fig. 11. Fig. 12. Fig. 13.

a little longer than the mentum. Legs stout, and longer than the antennæ; digitules of the tarsi very slightly dilated, those of the claw more strongly so. Anal ring of six hairs, which are about half the length of the long caudal setæ. Dermis (fig. 13) thickly set with tubular spinnerets, having compound orifices, which are smaller and concentrated at the marginal hairs near the posterior extremity of the body; there are also numerous hairs of varying length. Long, 2.75-3 mm.; wide, 1.25-1.75 mm.

Sac of the adult ♀ composed of a thick white felting; is of a more or less globular form, but frequently much distorted by contact with the roots and stems of its habitat.

Longest axis, 4-5 mm.; narrowest, 2 mm.

Hab.: on roots of grass and composites; Argentières, Haute Savoie, at 5000 feet; August, 1897. Collected by Mr. Brockton Tomlin, to whom I am indebted for the specimens.

In its large size and the character of the ovisac the species resembles *R. Tomlinii*, Newst.; but is distinguished by its stronger antennæ and legs, and by the numerous spinnerets and hairs on the dermis. The specimens examined were all old adults, I cannot, therefore, account for the variation in the number of antennal joints.

DACTYLOPIUS LONGIFILIS, T.-T.

The Director of the Royal Gardens, Kew, has kindly forwarded to me a quantity of coffee leaves and stems infested with this pest, together with the following extract from a letter addressed to him from Mr. A. Whyte, British Central African Administration, dated April 26th, 1897:—"I am sending you by this mail a small tin containing coffee leaves affected with the white bug, which has been very destructive to coffee this season wherever it appears, the branches get perfectly covered with it, and the leaves and berries fall off. What has been done by Mr. Mallock on Buchanan's Estates here is to cut the tree (which is not actually killed) down to within a short distance of the root, stump it in fact, carefully collecting and burning the affected leaves and branches, and burying the bugs which may have dropped off during the process. By this means it is checked, but at a great sacrifice, large black patches appearing here and there in what was formerly a fine regular plantation. New suckers are soon thrown up from the stump, and the one selected for the future tree, generally under such circumstances, gives a crop the second year * *."

The examples submitted to me for identification were collected at

Zomba, February 20th, 1897. In all my experience with *Coccidæ* I never saw a species so completely infested with parasites as this; quite 90 per cent of the females had been destroyed, and only shell-like fragments of their bodies and the ruptured ovisacs were left. A careful search among the *débris* at the bottom of the box revealed a couple of minute Hymenopterous insects and a small brown beetle. Whether the work of destruction can be assigned entirely to these insects is doubtful. Judging from the ruptured ovisacs I am inclined to think a larger insect had taken part in the work; but this could easily be verified in the field by a careful observer. We sincerely trust that Mr. Whyte will give this matter his attention, and be able to clear up this important part in the economy of the pest.

Chester: November 25th, 1897.

OAK GALLS.

BY G. C. BIGNELL, F.E.S.

Are small oak-trees comparatively free from gall-flies the year following an attack; or in other words, will a small oak-tree be attacked year after year by gall-flies?

I should like to know the opinion of readers of this Magazine on the above subject.

From my own observations I believe spring-gall-flies will not deposit their eggs on a small tree that had borne bud or bark galls the previous year.

In 1896 two young oaks, grown in pots over 20 years, were punished by my placing on them several flies of *Andricus corticis*, with the result that nearly all the young shoots were occupied by *Andricus gemmatus*; during the autumn after the departure of the flies the trees appeared to have recovered, and produced a fine lot of buds for the next year's growth; accordingly, in the spring of 1897, I placed on the same trees several *Andricus Sieboldii*; observing these did not take kindly to the surroundings, I placed a second lot on them, but to my surprise not a single one attempted to deposit an egg, neither would they remain on the trees, the only thing that both lots did was to try to escape from their confinement, apparently trying to avoid something very obnoxious.

Last autumn I obtained from a nursery some stunted young oaks, and placed them in pots with a view of carrying out some gall breeding; these, however, had borne a few *Cynips Kollari* galls, and

to my great disappointment I found neither *Andricus ostreus* nor *Dryophanta longiventris* would attempt to deposit eggs on them, nor would they condescend to remain on the trees.

It appears to me that those buds which are converted into galls, and remain on the tree some time, as well as those formed on the bark, leave behind them something objectionable to gall-flies; but this is certainly not the case when the galls are produced on the catkins and leaves, which soon drop to the ground.

Dr. Adler mentions that in carrying on his experiments with breeding gall-flies on small oak-trees in pots, he often could not induce flies to deposit eggs; was it because the trees had borne galls the previous year?

Stonehouse: April 7th, 1898.

DIAGNOSES OF SOME NEW *ARADIDÆ*.

BY E. BERGROTH, M.D.

Full descriptions of the following species will be given in another place.

PROXIUS GYPSATUS, n. sp.

Subovato-elongatus, castaneus, sed maxima parte crusta cretacea obvolutus; capite superne area triangulari caelata instructo, antennis capite vix longioribus; lobo antico pronoti medio caelamine antice fortiter dilatato et in duos lobos divaricatos diviso supra basin capitis producto instructo, lobo postico pronoti vestimento cretaceo destituto, exceptis lateribus ex parte carinulisque nonnullis disci; caelatura T-formi et marginibus lateralibus scutelli incrustatis.

Long., ♀, 4, 3 mm.

Venezuela.

NANNIUM, n. g.

Brachyrrhyncho affine genus, sed spiraculis, imprimis segmentorum posticorum, ad margines laterales abdominis valde approximatis.

Species hujus generis sunt omnes minoris magnitudinis habitu similes, capite lato, antennis brevibus, harum articulo secundo brevi, pronoto basi subtruncato, membrana albo-livida fuscovenosa præditæ.

Typus: N. parvum.

N. PARVUM, n. sp.

Oblongum, retrorsum leviter dilatatum, fusco-nigrum, margine apicali segmentorum connexivi angusta rufescente; articulo primo antenarum dimidio suo apicem capitis superante; lobo antico pronoti lateribus angulato dilatato et reflexo, lobo postico crista transversa undulata instructo.

Long., ♂, 3 mm.

Venezuela.

N. ELONGATULUM, n. sp.

Elongatum, præcedenti colore simile, articulo primo antennarum apicem capitis levissime superante, lobo antico pronoti lateribus haud angulato, lobo postico crista destituto. Long., ♂ ♀, 4, 2 mm.

Venezuela.

N. SUBOVATULUM, n. sp.

Elongato-ovatum, fuscum, articulo primo antennarum apicem capitis attingente, pronoto ut in *N. elongatulo* constructo. Long., ♀, 5 mm.

Brasilia.

ANASPIS LATIPALPIS, SCHILSKY:

AN ADDITION TO THE BRITISH LIST, WITH REMARKS ON
VARIOUS OTHER SPECIES OF THE GENUS.

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

Two well-marked species have hitherto been confused under the name *Anaspis subtestacea*, Steph., in my British collection; one of these is correctly named, and the other is referable to *A. latipalpis*, Schilsky, which must therefore be added to our list. His diagnosis [Die Käfer Europa's, xxxi, No. 73 (1895)] applies perfectly to the British specimens before me. It is as follows:—

A. LATIPALPIS, Schilsky.

A. elongata, sericea, testacea, oculis antennisque apice nigris, tarsorum articulis apice obscurioribus, thorace subtilissime elytrisque subtiliter transversim strigosis, illis angulis posticis acutis, antennis gracilibus, articulis 3° et 4° æqualibus, articulis 6—10 obconicis, palpis valde securiformibus, latis, elytrorum epipleuris longis.

Long., 2·5—3·0 mm.

Mas.: segmento abdominis 3° medio valde producto, laciniis binis subparallelis, basi approximatis, abdominis apicem attingentibus, instructo, segmento 4° brevissimo, simplice, 5° medio foveolato, apice leviter emarginato, tarsis anticis subdilatatis, articulo 1° sequente fere duplo longiore.

The two species are apparently about equally common in Britain, as I have specimens of *A. latipalpis* from Shirley, Caterham, and Darenth Wood, and of *A. subtestacea* from the New Forest, Ashtead, and Sevenoaks.

The male characters of the two insects are very different: *A. subtestacea* having two widely separated laciniae at the apex of the second ventral segment, and also laciniae at the apex of the third and fourth segments, the fifth segment deeply cleft at the apex; the anterior tarsi much more strongly dilated, &c. The apical joint of

the maxillary palpi is strongly securiform in both sexes of *A. latipalpis*, it being distinctly narrower in *A. subtestacea*. They have the antennæ very similarly formed; this character separating them from the allied *A. Costæ*, *A. maculata*, &c., which have moniliform outer joints. The intermediate tibiæ are sinuous on their inner edge in the males of both species. Schilsky's specimens were from various parts of Germany. He notes that Emery had confused it with *A. subtestacea*.

A. SUBTESTACEA, Steph.

British examples of this species are testaceous in colour, with the elytra fusco-testaceous, sometimes a little darker at the apex, and the abdomen usually more or less black. Mr. Saunders possesses a single (♀) specimen of it, from Bromley, Kent, with the base and apex of the elytra, and the hind coxæ, blackish.

A. MACULATA, Fourcr.

I have seen two females of a dark variety of this common species, from Ashted and Woking, closely resembling the paler forms of *A. Geoffroyi*, but separable therefrom by the moniliform outer joints of the antennæ.

A. COSTÆ, Emery.

The insect known in British collections under the name of *A. flava*, Linn., var. *thoracica*, Linn., is really the *A. Costæ* of Emery and Schilsky, and must bear that name. Schilsky's diagnosis (*Die Käfer Europa's*, xxi, No. 80) fits it exactly. It is as follows:—

A. elongata, fusca, fusco-pubescent, palpis, capite, prothorace, antennarum basi pedibusque testaceis, antennarum articulis 7—10 moniliformibus (♂) vel submoniliformibus (♀). Long., 2·8—3·6 mm.

Mas. : angustior, abdominis segmento 3 medio subproducto, laciniiis duabus basi approximatis, leviter introrsum curvatis, medium segmenti 5ⁱ superantibus, 4^o parum brevior, medio emarginato, appendicibus longis, 5^o apice inciso, bilobo.

He enumerates several varieties, including one with a reddish humeral spot, the latter being not uncommon in Britain. In the widely distributed continental *A. flava*, Linn., the anterior tarsi are dilated, and the abdomen is without lacinia, with the last ventral segment cleft, in the male sex. In *A. thoracica*, Linn. (= *lateralis*, Thoms., and *confusa*, Emery), the outer joints of the antennæ are subconic, and the abdomen in the male is furnished with lacinia. Schilsky records *A. Costæ* from France, Germany, Sweden, Austria, and Italy.

A. GEOFFROYI, Müll.

Two forms of *A. Geoffroyi*, Müll., are abundant in Britain, one with a large humeral spot on each elytron, the other with a humeral and an apical spot on each elytron. The 4-spotted form, with the basal and apical margins of the thorax fulvous (= *subfasciata*, Steph., and *vulcania*, Schilsky), is apparently rare, but I have found it at Ashted, Surrey. Schilsky enumerates five varieties, including one with a fulvous thorax, and I have recently seen another, found by Mr. Harwood near Colchester; this latter having the legs, antennæ, palpi, and body black, the elytra with only the faintest indication of a paler humeral spot. An entirely black specimen has already been recorded by me.*

A. Garneysi, Fowl., and *A. septentrionalis*, Ch., are not noticed in any way by Schilsky; I cannot identify either of them with any of the numerous species so well described by him.

Horsell, Woking:
April 1st, 1898.

FURTHER NOTES ON THE DIRECT PHOTOGRAPHIC ENLARGEMENT
OF ENTOMOLOGICAL SPECIMENS,
WITH DESCRIPTION OF A NEW APPARATUS.

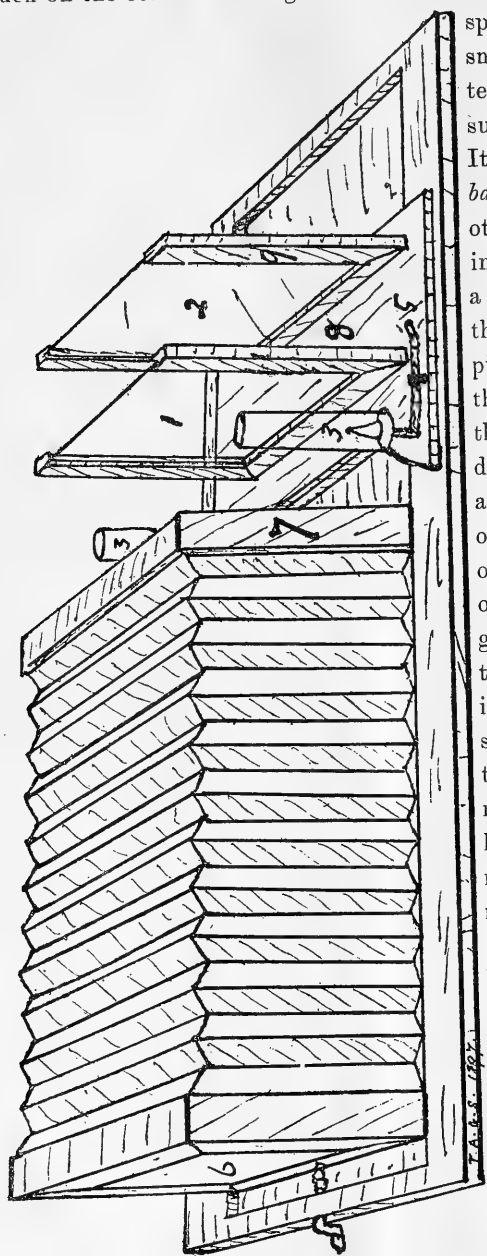
BY T. A. GERALD STRICKLAND, F.E.S.

Since writing on this subject in the April, 1897, number of the Entomologist's Monthly Magazine, I have been experimenting with incandescent gas as an illuminant with satisfactory results. I find it easier to light the subject evenly; smaller insects, such as some of the *Diptera*, single wings showing the nervures, &c., can be enlarged (which is of course most useful for the illustration of books, articles, etc.); and last, but not least, we are independent of daylight. I have had an apparatus made specially for the work, which can be used with gas, oil lamps or daylight (see diagram). It is a large instrument, taking a plate 12 × 10 ins., and its greatest length is 6 feet, stretch of bellows 4 feet, focal length of lens (Ross' Universal Sym.) 6 ins. It is made this large size as I shall use it for many other things besides Entomology. A good size for doing insects solely would be, greatest length 6 feet, stretch of bellows 4 feet, and size of plate 4½ × 3½ ins. (quarter plate).

I will now proceed to describe the apparatus. The numbers of course refer to the diagram. (1) is a sheet of plate glass on which the specimen to be photographed is fastened. A *small* insect is lightly

* Ent. Mo. Mag., xxxi, p. 207 (1895).

stuck on the centre of the glass with some adhesive, but for larger



specimens I first gum a small (the smaller the better) piece of cork on the support and pin it on that. It must be pinned from the *back* and not quite through otherwise the pin will show in the enlargement and be a decided blemish. I find the best plan is to push the pin through the back of the little piece of cork till the point protrudes a short distance from the front, and then press the insect on that. The advantage of fastening the specimen on to a support of clear glass, some way in front of the background (2), is that it entirely does away with shadow, and so saves the trouble of blocking out the negative as described in my last paper. This idea is not original, as I saw it mentioned in Mr. Watkin's (of Exposure Meter fame) little book, "Exposure Notes." Dr. H. G. Knaggs also gives some instructions as to photographing without shadow in the October No. of the "Entomologist." Unique (or otherwise valuable) specimens that it is not considered advisable to unmount from their cards,

can be enlarged without shadow if particular care is taken as to the arrangements of the lights.

Now for the background (2). When taking insects by artificial light the background is simply a piece of white cardboard, but for doing transparent wings a special arrangement has to be brought into play, as I will explain presently. (3) are incandescent gas lamps, which may be changed to oil lamps if more convenient, though the exposure will be much longer, the light from oil being slightly yellow, consequently less actinic. (5) is the end of a brass tube to be joined to ordinary india rubber gas tubing, which is connected with the nearest gas bracket. The two tubes from the lamps are connected by a brass Y, so that one bracket does for both lights. (4) is an archimedean screw for fine focussing, but the front part of the camera (7), and the base board (8) of background, &c., both move backwards and forwards by hand for rough focussing and to get the desired amount of enlargement. (6) is the focussing screen. The lamps have reflectors that are not shown in the diagram, as they would hide some of the details.

The way to use the instrument in daylight is somewhat different. It is put facing a window, *i. e.*, the source of light is *behind* the background. The sheet of white cardboard (2) is left in the frame (9). (The frame is of course grooved to enable the backgrounds to slip in and out). The lamps are removed, and in their places are put two small mirrors (about 8 inches in diameter) on stands facing the window. They reflect the light on to the specimen, and the backboard being white makes the insect stand out nicely. It is well to have the mirrors fastened to their respective stands by a ball-and-socket joint, so as to enable them to be arranged at any angle, something like a stand bull's eye condenser for a microscope. The greater the enlargement the more difficult it is to get a nice even lighting, as the specimen has to be so close to the objective. This difficulty is more easily overcome by artificial light.

Of course an ordinary camera can be utilized for this kind of thing if the bellows is of sufficient length, in conjunction with oil lamps, by the display of a little ingenuity as explained in the April, 1897, number.

For bright and multi-coloured specimens it is necessary to use a yellow screen and orthochromatic plates to procure the proper value of the colours in monochrome.

Capt. Abney, R.E., F.R.S., says in one of his works:—"The object of orthochromatic photography is to render the image produced on a print of the same relative luminosity that the colours in the objects appear to the eye." The yellow screen is a necessity, for, to again quote Capt. Abney:—"Orthochromatic plates, without the ex-

traneous aid of absorbing media, can hardly be distinguished from negatives taken on ordinary plates. If, however, a yellow glass be interposed between the lens and the object photographed, there is a distinct difference in resulting negatives, even when an ordinary plate is used."

The length of exposure is of course a matter of experience and judgment. So much depends on the colours of the insects, the *amount of enlargement*, and the actinic quality of the light. A point to be remembered is *that for each diameter the object is enlarged* the exposure must be *increased* accordingly. A full exposure is, as a rule, advisable, and careful development to avoid harshness.

Supposing the amount of enlargement obtained *direct* in the apparatus is not considered sufficient, the film of the resulting negative can be stripped from its support and remounted on a glass plate in a much enlarged condition by the aid of the "Cresco-Fylma" Co.'s enlarging solution. I find this process answers well in practice, and the necessary density and sharpness does not seem to be reduced in any way.

To make enlargements of wings (showing the nervures) I use no reflectors, but simply stick the wing on the plate glass (1), and having put in the place of the cardboard (2) a sheet of ground glass, allow daylight (or artificial) to shine *through* the semi-transparent background *and* the wing.

EXPLANATION OF PLATE IV.

- Top fig. Wing of *Chrysops cæcutiens*, L.
 Right hand fig. „ *Ascia podagrica*, F.
 Left hand fig. „ *Scatopse notata*, L.
 Middle fig. *Crepidodera chloris*, Foud.
 (Original length of *C. chloris* = 1-).
 Bottom fig. Wing of *Rhaphidia maculicollis*, Steph.

28, Elm Park Gardens, S.W. :

February, 1898.

RESULTS OF PROTRACTED PUPAL CONDITION IN *ASPHALIA* *RIDENS*.

BY C. G. BARRETT, F.E.S.

Some time in the autumn or winter of 1895 a friend sent me a dozen or more pupæ of this species in their neatly constructed cocoons of silk and moss; but the following spring brought something of disappointment, since only two or three moths emerged, and these of the

most ordinary type. There seemed to be reason to hope that the remainder of the pupæ were living, and they remained where I had previously kept them—against the north wall of the house—a sufficiently cool place. The next spring (April, 1897) half a dozen more moths emerged, every one of them handsome and of fuller deep green, black, and brown-black colouring. Still there appeared to be living pupæ, and they were left undisturbed, with the result that within the last few days have appeared three specimens much darker, jet-black mixed with green-black, and except the green indented transverse lines, with very little paler colour about them, I think among the handsomest I have ever seen. This seems to be a striking instance of intensifying of colour in accordance with duration of the pupal stage.

39, Linden Grove, Nunhead, S.E. :

April 8th, 1898.

TWO NEW *HYDROPTILIDÆ* FROM SCOTLAND AND ALGERIA RESPECTIVELY.

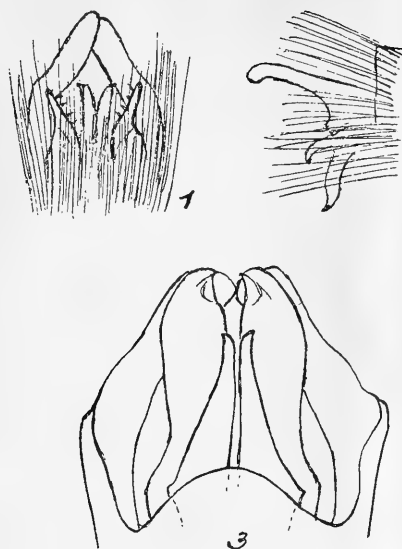
BY KENNETH J. MORTON, F.E.S.

Since the summer of 1896 I have had in MS. the description of a new Hydroptilid, taken by Mr. J. J. F. X. King and myself near Aviemore in that year. It seems undesirable to delay its publication longer.

At the same time I give a description of another new species taken by Mr. Eaton in Algeria. This species forms part of a further collection of these insects sent by Mr. McLachlan, and containing additional examples of several of the species mentioned at p. 102 (2), vol. vii, but apparently nothing else new, although one or two isolated females remain doubtful.

HYDROPTILA SYLVESTRIS, *n. sp.*

Antennæ variable, usually pale, with a long median and a shorter subapical fuscous space. Vertex densely clothed with yellowish-white hairs. Legs testaceous, with pale pubescence; posterior legs with long, silky, greyish fringes. Fore-wings blackish (probably becoming, as in other species, brownish with age), with yellowish-white hairs, which are partly grouped into vague interrupted fasciæ, median, subapical and apical, the interruption of the apical fascia forming a strongly marked black pencil at the extreme tip of the wings; anterior fringes dense and black, save where interrupted by the pale fasciæ; posterior fringes long, iridescent, dark grey interrupted with white. Posterior wings grey, iridescent, with concolorous fringes.



In the ♂ those appendages that are visible consist of three pairs: the superior are large, flat, turned inwards, and touching or crossing each other at their rounded tips; the inferior are shorter, broad at their origin, but becoming pointed at the tips; the median pair in the examples before me vary (as do the inferior pair) according to their position, they seem to be flattened and are ordinarily applied against one another, but the flat surface is sometimes exposed, giving them a broad appearance. Seen from the sides the appendages appear forcipate when the lower pair is upturned; they are, however, sometimes open as in fig. 2. Ventral lobe moderate.

Expanse of fore-wings, ♂, about 6 mm.; the ♀ slightly larger.

Taken in July by beating pine trees on the shores of Loch Morlich, Glen More, Inverness-shire, 1046 feet (*Morton and King*), a large and beautiful lake surrounded by extensive pine forests.

Apparently a true *Hydroptila*, with well developed lobes on the head. It is a very distinct species, from its genital appendages, although in the closed forcipate condition of these it simulates *H. forcipata*, and might, on a cursory glance, be confused with that species. The differences are, however, abundant; in the present species the superior appendages are broad and flat at the apex, whereas in *H. forcipata* they are slender and acute; the inferior appendages are relatively shorter than in *H. forcipata*.

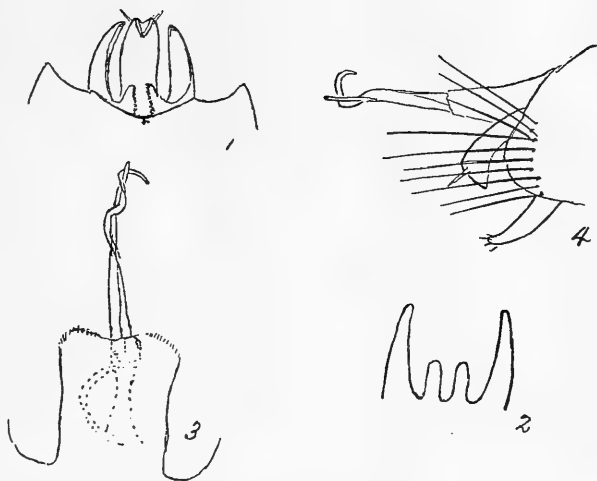
Fig. 1, apex of abdomen from beneath; 2, apex of abdomen from side (both from dry examples); 3, apex of abdomen from beneath, more enlarged (from an example prepared and mounted in Canada balsam).

HYDROPTILA SERRATA, *n. sp.*

Antennæ blackish-fuscous, with a pale ante-apical space. Vertex densely clothed with yellowish-white hairs. Palpi yellowish-white. Legs testaceous. Anterior wings dark grey, raised hairs yellowish, costal fringes blackish, with a yellowish patch before the apex, tip of the wing within the fringes also yellowish; posterior fringes dark grey. Hind-wings dark grey with nearly concolorous fringes, those on the costa being darker.

In the ♂ the inferior appendages seen from beneath are of moderate length, tapering, and very slightly turned inwards; between their bases and apparently

connected with them are two shorter processes, the inner margins of which are (as seen in prepared examples) finely serrate. Lying above these is a broad penis cover (?) turned down at the apex. Superiorly is an oblong dorsal plate with rounded corners. A moderately long ventral lobe.



Expanse of wings, 7 mm. in ♂, 8 mm. in ♀.

Four examples from Bône, April 7th, 1896 (*Eaton*).

Also apparently a true *Hydroptila*.

Fig. 1, apex of abdomen from beneath (from prepared and mounted example); 2, inferior appendages (from a dry example); 3, dorsal plate and penis (mounted example); 4, apex of abdomen from side (dry example).

13, Blackford Road, Edinburgh:
March 4th, 1898.

TROCHOPUS AND RHAGOVELIA.

BY GEORGE H. CARPENTER, B.Sc., F.E.S.

I am greatly indebted to Mr. G. C. Champion for kindly calling my attention to the similarity of the genus *Trochopus* (which I described and figured in last month's issue of this Magazine) to *Rhagovelina* of Mayr* (of which he has generously sent me several species for comparison), as well as for informing me that, after examination of the types in the British Museum, he considers my species *T. marinus* to be undoubtedly identical with *Rhagovelina plumbea*, Uhler,† described from specimens found on salt water off the islands of Grenada and St. Vincent, and also around the inlets of the Florida Keys.

On carefully reading Prof. Uhler's description I must admit that it agrees sufficiently well with my types. Yet, even if I had noticed this similarity when writing my paper, I should not have thought it possible that my Jamaica specimens could be referable to Prof. Uhler's species, since he makes no mention whatever of the conspicuous and characteristic "wheel" of ciliated hairs in the cleft of the intermediate

* Verh. zool.-bot. Ges. Wien, 1865, p. 445.

† Proc. Zool. Soc. Lond., 1894, p. 216.

foot. The genus *Rhagovelia* contains at present eight or nine species, and so far as I can discover none of the authors who have described these species appear to have noticed the "wheel." The only reference to it which I am able to find is an imperfect description in a short note by Signoret* on the species of *Rhagovelia* known to him, when he writes of "un long appendice plumeux, ressemblant à une longue plume de marabout, garantie par deux longs crochets courbes. Cette pièce n'est visible que lorsque l'insecte nage; pour l'apercevoir, il faut le laisser macérer et se ramollir pendant assez longtemps."

Perhaps this last remark explains the failure of so many observers to notice the structure which to me seemed the most characteristic feature in the insects I described. My specimens were preserved in spirit. Yet on examining a couple of dried *Rhagovelia infernalis*, Butler, from Rodriguez in this Museum, I find that the "wheel" is undoubtedly present, though, for the most part, folded and drawn into the tarsal cleft.

According to Mayr, *Rhagovelia* is characterized by the presence of three segments in all the tarsi, the basal one in each foot being exceedingly minute. At Mr. Champion's suggestion I have cleaned and mounted in balsam a set of the legs of *Trochopus*. I find that in the front foot there are two minute basal segments (not one only as I described and figured). But the tarsi of the second and third legs are undoubtedly two-segmented. The long proximal segment of the second tarsus articulates directly with the tibia, there being no minute basal segment as in *Rhagovelia*, while in the hind leg the foot consists of a small basal and an elongate distal segment as shown in my fig. 6.

It is possible that these distinctions, together with the characteristic form of the body, the lateral insertion of the second and third legs close together, and the shortened abdomen, may render it advisable to retain *Trochopus* as a distinct genus from *Rhagovelia*, its type being *T. plumbeus*, Uhler (= *marinus*, Carpenter). The "three prominent spines" on the hind femora of *Trochopus*, to which I referred in my description, are merely appendages of the cuticle situated on the outer edge of the femur, as shown in my figure 1. There is, I now find, one similar but much smaller spine at the distal end of the second femur.

Prof. Uhler in his description refers to the portion of the thorax which I called the "mesonotum," as the "posterior lobe of the pronotum." Comparing the specimens before me, not with *Velia*, but with *Halobates*, in which the prothorax is a narrow transverse segment (the mesothorax being much elongated)†, I adopted a corresponding

* Bull. Soc. Ent. France, 1877, p. lv.

† F. Buchanan White, Pelagic Hemiptera, in Rep. Voyage Challenger, Zoology, vol. vii.

view as to the thorax of *Trochopus*, which I find confirmed by an examination of the immature stages. In my figure of the young larva of *Trochopus* (fig. 11) it can hardly be doubted that the small paired tergites behind the head represent the pronotum, and the much larger pair, some distance further back, the mesonotum. In older larvæ I find that this latter grows forward in the neighbourhood of the longitudinal central suture, until in the adult it overlaps the pronotum with the central projection shown in fig. 1. Hence it seems that in *Trochopus* we have the persistence in the adult of an early stage of development, before the backward growth of the pronotum over the mesothorax (so prominent a feature in the winged species of the group and represented to some extent in most apterous forms) has begun. This primitive thoracic structure is another character by which *Trochopus* may be separated from *Rhagovelia*.

In my previous remarks on the affinities of *Trochopus* I took it for granted (now it seems too hastily) that the insect was referable to *Halobatinæ*. Yet it appears to show as much resemblance to *Halobates* and its allies as to *Velia*, and the study of such a type makes it doubtful if the various sub-families of the *Hydrometridæ* can be definitely marked off from each other. Prof. Uhler, in the paper in which *Rhagovelia plumbea* is described, mentions that a West Indian species of *Microvelia* (*M. longipes*) "helps to bridge over the gap between this group and the *Hydrobatinæ*."

Prof. Uhler writes that males and females of his *R. plumbea* were secured *in cop.*, and that the male is very much smaller than the female. This observation shows that the specimen which I supposed to be a male is really a female with ovipositor extruded, and that my figures 8, 9 and 10 must be referred not to the male but the female genital apparatus.

As no detailed figures of *Rhagovelia* seem ever to have been published, I hope that the editors and readers of the Entomologist's Monthly Magazine will forgive me for having made use of its pages to publish a specific, if not also a generic, synonym.

Science and Art Museum, Dublin :
April, 1898.

[The name *Trochopus* can, perhaps, be retained for the salt water insect described by Prof. Uhler and Mr. Carpenter. An allied species—found by myself on salt water, in small creeks, on the Isla del Rey, or San Miguel, the largest of the Pearl Islands, in the Bay of Panama—which I intend to describe elsewhere, possesses all the structural peculiarities of *R. plumbeus*. In the male of the Panama insect the

posterior femora are armed with a row of minute teeth, with a longer and rather prominent tooth at the middle, and the anterior trochanters are armed with an acute spine. The males of *T. plumbeus*, of which there are several in the British Museum, also have the posterior femora toothed on their inner edge. The salt water species are found gregariously in sheltered inlets or creeks, and they are probably never winged. The fresh water *Rhagovelia*, on the contrary, are frequently winged, it being necessary for them to migrate when the small streams dry up. It may be noted that the genus *Neovelina*, Buchanan White, containing a single species from the Amazons, is certainly cogenetic with *Rhagovelia*, Mayr, notwithstanding the discrepancy in the tarsal structure, Dr. White describing the tarsi as 2, 3, 1 (? 2) jointed, he probably having overlooked one of the minute basal joints of the anterior tarsi and the faint suture between the second and third joints of the hind tarsi.—G. C. C.].

Pyrrhocoris apterus on the Orestone Rock.—I have this day received a batch of *Pyrrhocoris apterus*, consisting of 34 males and 49 females, taken from the Orestone Rock at the entrance of Torbay. Parfitt, in his "Fauna of Devon," mentions the insect as abundant on this isolated rock in 1865. The reason of my recording this is to show the continuity of the species in one locality for the past 33 years; how long they occupied the situation before that is not on record.—G. C. BIGNELL, Stonehouse: April 16th, 1898.

Acanthia inodora, Dugès.—As a pendant to my note (Ent. Mo. Mag., viii, 2nd s., p. 208) I have now the pleasure of saying that, by the kindness of Mr. G. C. Champion, I possess some of the specimens of *A. inodora* that were lately sent to him by Dr. Dugès. It is certainly a perfectly distinct species, both *prima facie* and structurally, and easily recognised.

I cannot, however, congratulate our country on immunity from this pest to poultry until it is certain what the detrimental species of *Acanthia* noted in the same volume (p. 185) really is. The subject is not only of interest entomologically, but is also very important economically to the rearers of poultry, not so much perhaps, in the first place, to those who have adopted the modern and cleanly system of keeping fowls, though from the immense rate of production and spreading this race of insects possess, it may be only a question of time before the most carefully attended hen-houses are infested. The greatest probability of the presence of some of the species of these noxious insects lies in the old fashioned method of keeping fowls, followed by many farmers and cottagers, where the rule is "go as you please," followed year after year, the nests never renewed, and the poultry too often regarded as an *accessoire négligeable*; and this in face of the fact that the British consumption of imported foreign eggs and poultry is enormous, and that the whole of the value thereof might be easily secured for the benefit of the supine British.—J. W. DOUGLAS, 153, Lewisham Road, S.E.: April 5th, 1898.

Coleoptera in the Plymouth district.—I have pleasure in recording the following *Coleoptera* taken in the Plymouth district, mostly additions to the local list. In damp moss on boulders in the rivers, *Homalota currax* (taken by Mr. G. C. Champion last year, when, on a passing visit, I had the pleasure of his company for a few hours in Bickleigh Woods), *H. cambrica*, *H. pavens*, and *H. hygrotopora*; *Gnypeta cærulea* (not common), *Ancyrophorus aureus* (frequent), and *A. omalinus* (one); *Quedius auricomus* (several in the river at Ivybridge and also in a small tributary of the River Lyd, Dartmoor), *Q. longicornis* (one specimen, in hedge clippings, in the lane leading to Ugborough Beacon, Dartmoor); *Homalota longula* (taken by Mr. Champion at Bickleigh, and by Mr. E. A. Newbery beside a small stream at Mount Edgumbe last August), *H. elegantula* (one, in garden refuse). *Gyrinus urinator* (River Plym). *Exomias pyrenæus* is again appearing in its habitat of last year. I found that the species was more or less immature in March—April, 1897, whilst in June—July damaged specimens occurred, when the insect suddenly disappeared, and I could not get a single example. In March—April this year the same conditions occurred, so that probably the beetle is single brooded and passes the winter in the pupal state. *Ceuthorrhynchus viduatus* (one, by sweeping).—JAMES H. KEYS, Sea View Avenue, Lipson, Plymouth: April, 1898.

Læmophlæus ater, Oliv., &c., at Chilbolton, Hants.—The following species of *Coleoptera*, amongst others, were found by Mr. Champion and myself at Chilbolton, near Andover, on April 8th—11th:—*Læmophlæus ater*, Ol. (*spartii*, Curtis), in plenty in the burrows of *Phlæophthorus rhododactylus*, under the bark of dead stems of furze. Westwood and Curtis record it from the stems of broom. The *Læmophlæus* is said to be parasitic on the *Phlæophthorus*, but we were unable to verify this, both beetles being in the perfect state. *Philonthus lucens* (1), *P. decorus* (in plenty), *Bythinus Burrelli* (♂), *Silpha quadripunctata*, *Tropiphorus carinatus*, &c., in moss in Harewood Forest, where the usual run of *Coleoptera* occurring in the nests of *Formica rufa* were met with, including *Dinarda Märkeli*, *Quedius brevis*, *Xantholinus atratus*, *Myrmetes piceus*, *Dendrophilus pygmæus*, *Monotoma conicicollis* and *M. formicetorum*, &c. In the marshy ground by the River Test we noted *Calodera riparia*, *Ocyusa picina*, *Tachyusa atra*, *Lathrobium filiforme*, *Pæderus riparius* and *P. fuscipes*, *Bagous tempestivus*, *Hydræna riparia*, *Hydroporus marginatus*, *Agabus paludosus* and *A. didymus*, &c.—R. W. LLOYD, St. Cuthbert's, Thurleigh Road, Balham, S.W.: April 15th, 1898.

Coleoptera on a Yorkshire moor.—About eight miles west of Scarborough, in a hollow among noble hills, lies the little hamlet of Langdale End. A mountain stream runs on either side of it, and a few hundred yards to the north of it a long and peculiar looking ridge rises with singular abruptness to a considerable height. West of this great ridge lie extensive low moors, wearing a particularly barren and lifeless appearance, especially in the spring months, before the ling has begun to grow. I found them, however, productive of some very interesting beetles at the close of April, when I spent a few hours fishing the streams and turning over the loose stones which are scattered over them in profusion. Almost the first stone I turned over revealed a specimen of *Pterostichus lepidus*, and a few minutes after I took

Carabus arvensis. *Dyschirius globosus* occurred on damp sand. I proceeded about a mile, and then met with *Cymindis vaporariorum*, in company with *Calathus flavipes*. These beetles only occurred under stones which lay upon heather, never under those which lay upon the bare peat or sand. In a small puddle I found a drowned *Carabus nitens*, and close by, under stones, two examples of *Pterostichus vitreus*. *Bradycellus cognatus* was very abundant at this spot. A small rill crossed the moor at this point, out of which I fished three black *Hydropori*, which proved to be *H. celatus*. A patch of wet *Sphagnum* yielded *H. melanarius*, often considered a rarity, but I have taken numbers of it lately on the moors near Scarborough.

I spent half an hour fishing in the stream called the Black Beck, which runs at the foot of the moor. Here I took *Hydroporus rivalis* in quantity, many *H. septentrionalis*, and a few *H. latus*; *Hydræna gracilis* and *Elmis parallelopipedus* were also abundant. Under stones by the side of the stream were *Bembidium tibiale*, *atrocaruleum*, and *monticola*, with quantities of *Nebria Gyllenhali*.

About a mile to the south of Langdale End the hills rise very abruptly, and are crowned by a moor which must be two or three hundred feet more elevated than the one I have just described. This has produced several species of beetles not seen on the lower moor. The long coarse moss which grows between the ling is full of *Calathus micropterus*. In a very sandy place I took a single example of *Amara spreta*, a very unlooked-for find. One day when I was riding along a sandy road which crosses this moor I encountered a single specimen of *Pterostichus æthiops* taking its walks abroad; I have searched in vain for a second example. There is very little water on this moor, but I have taken *Hydroporus morio* here in abundance. A trench round a tumulus is generally full of water, and it is here that the beetle occurs, along with *H. tristis* and *H. Gyllenhali*.

The other most interesting beetles I have met with on these moors and in the moorland streams are: *Amara consularis*, *Henicocerus exsculptus*, *Hydræna angustata*, *Orectochilus villosus*, and *Elmis subviolaceus*.—W. C. HEY, West Ayton, near Scarborough: April, 1898.

A new locality for Aëtophorus imperialis, Germ.—I met with a few specimens of *Aëtophorus imperialis* on the 19th inst. at Funton, Kent, at the edge of the marshes on the right bank of the Medway, about half-way between Chatham and Sheerness. They were found in a small stack of reeds and bulrushes by the roadside, in company with *Dromius vectensis*, *Myrmedonia limbata*, *Coccidula scutellata*, *Stilbus oblongus*, *Telmatophilus Schönherri*, &c.; the last-named three species being plentiful. *Aëtophorus* is so local an insect in our islands that its occurrence in a new place is perhaps noteworthy; the present record, as far as I am aware, being the first for the county of Kent.—J. J. WALKER, R.N., 23, Ranelagh Road, Sheerness: March 26th, 1898.

Habits of Heptaulacus testudinarius.—In a recent number of the "Naturalist's Journal" I called attention to the fact of the occurrence of *Heptaulacus testudinarius* in some numbers in the burrows of *Geotrupes mutator*. Since then I have received from Miss Burgess, of Ferndown, a further series from East Dorset, together with some remarks by Mr. Cecil Stroud, who has been mainly instrumental

in their capture. He says that during January and February they were only to be met with in the dung quite at the bottom of the *Geotrupes* holes, but towards the latter part of March they "simply swarmed" in cow-dung on the top of the ground; and that although he dug out and carefully examined a large quantity of burrows, he was unable then to discover any beetles in the dung carried down by the *Geotrupes* as before. I noticed that the females amongst those sent me, taken when the beetles were "swarming" above ground, were evidently about to lay their eggs.—E. J. BURGESS SOPP, Saxholme, Hoylake: April, 1896.

Some recent captures of Lepidoptera around Norwich.—*Limacodes testudo*.—I bred a specimen on June 28th from a larva which I beat out of a beech tree at Horsford in the previous autumn. I think that this is new to the Norfolk list. I visited the same locality last September, and got some more larvæ, from which I have six pupæ.

Orgyia gonostigma.—On August 21st the larvæ were rather common on sallow at Ranworth. *O. fascelina*.—I visited Burgh Castle on September 14th, and found the young larvæ not uncommonly upon the sallows there. At the same time I met with a pupa of *Plusia festuæ*, and also a larva of *Lasiocampa rubi* on *Poa aquatica* growing in a ditch. I had previously only seen this last species in the very driest situations.

Eriogaster lanestris.—Larvæ were common in June in the St. Faith's district, and I have bred a nice series. In two instances two larvæ spun up in the same cocoon, but no moths have emerged from these double cocoons.

Stauropus fagi.—On June 7th I took one at rest on a beech trunk at Stratton Strawless. I beat out a larva a few years ago from beech in the same neighbourhood, but it was ichneumonised. I have seen a fine black example of the moth taken in 1896 at the Carrow electric lights.

Dicranura vinula was very common round Norwich last year; I turned out about 200 young larvæ on the poplar bushes in my garden. They did well for about ten days, when they were discovered by the sparrows, who cleaned them all off one morning. I have heard that sparrows will not eat caterpillars, but they certainly ate these! *D. bifida*.—On June 19th, by searching aspen, I obtained twelve eggs of this species, eleven of them were laid on the under-side of the leaves. With them were young larvæ of *Pterostoma palpina* and *Notodonta ziczac*, of which last several produced moths in August.

Notodonta trepida.—On June 12th I noticed at Horsford a patch of conspicuous white eggs on the under-side of a branch of an oak near the trunk. They were empty, but by searching I obtained a number of the young larvæ, which turned out to be this species. Thirteen of them are now pupæ. *N. chaonia*.—On July 10th I beat a larva from oak at Drayton; in the previous year I met with a moth of this species at Howe. *N. cucullina*.—On August 2nd I beat four larvæ out of maple at Ronton, and on August 14th found another at Arminghall.

(I think that *Dicranura bicuspis* should be included in the Norfolk list, since Mr. F. Norgate recorded in the "Transactions of the Norfolk and Norwich Naturalists' Society," 1881-2, the capture of two larvæ at Cawston).

Boarmia rhomboidaria.—On June 24th I met with an example quite black in colour in Norwich.—H. J. THOULESS, 48, Grove Avenue, Ipswich Road, Norwich: April, 1898.

Society.

ENTOMOLOGICAL SOCIETY OF LONDON: *Mar. 16th, 1898.*—Mr. R. McLACHLAN, F.R.S., Vice-President and Treasurer, in the Chair.

Mr. Champion exhibited specimens of *Acanthia inodora*, A. Dugès, from Guanajuato, Mexico. This insect, a congener with the common bed-bug, was found in fowl-houses, where it attacked poultry. Mr. Wainwright, a locust found alive in broccoli at Birmingham. The insect was identified by Mr. Burr as *Aceridium ægyptium*. Mr. Tutt, a series of captured examples of *Calligenia miniata*, varying in colour and the amount of black markings, one example being a clear yellow and another orange. The Secretary, part of a series of holograph letters, &c., which he had discovered among old papers in the Society's Library, including communications from Kirby, Spence, Darwin, Hope, Yarrell, and many other entomologists. A paper by Mr. E. E. Green, of Punduluoya, Ceylon, entitled, "Further notes on *Dyscritina*, Westwood," was read, and illustrated by specimens and drawings. The author had discovered two distinct species of *Dyscritina*, which he was able to keep in captivity, and rear from the early larval stage to that of the imago. The characteristic abdominal cerci increased in length with successive moults, until in *D. longisetosa* they became much longer than the body. In the penultimate stadium they were lost without a moult, being probably bitten off by the possessor, the long basal joints alone remaining. The imago was a typical earwig, the forceps being developed within the basal joints of the cerci. Sensory organs on the antennæ and palpi were described, as well as the habits of both species. In the ensuing discussion Mr. M. Burr referred the imagos to the genus *Diplatys*, that of Mr. Green's new form being, he believed, a known species. The genus *Dyscritina* must therefore be sunk. Mr. Gahan observed that the fact of the forceps being developed within the basal joints of the cerci alone did not prove that they were not homologous with the entire cerci; perhaps the internal structure of the latter was retracted by a histolytic process before amputation. In *Forficula* he had found evident traces of meristic division in the forceps of embryos which were nearly on the point of hatching. Dr. Chapman read a paper, entitled, "Some remarks on *Heterogynis penella*," giving a full account of its life-history. The female was destitute of all appendages whatever, and only left the pupal case for pairing, returning within it about ten minutes later. It possessed an organic connection with the pupal case in the situation of the legs. The larvæ were hatched within the case and devoured the remains of the mother. On anatomical characters he assigned to the insect a place near the *Zyganidæ*.

April 6th, 1898.—Mr. R. McLACHLAN, F.R.S., Vice-President and Treasurer, in the Chair.

Sir Archibald Buchan-Hepburn, Bart., of Smeaton-Hepburn, Prestonkirk, E. Lothian, N.B., was elected a Fellow of the Society.

On behalf of Mr. Greenshields, Mr. Jacoby exhibited specimens of the longicorn beetle, *Micropsalis Durnfordi*, Burm., from Patagonia. Mr. Greenshields, who was present, stated that this species, remarkable for the great development of the palpi, was originally taken by Darwin; his own examples were taken hiding in thorny bushes in a dry water-course. Mr. Champion, continental examples of *Harpalus Fröhlichii*, a newly-discovered British species. Mr. B. A. Bower, living

larvæ of *Caradrina ambigua*, an insect which had recently occurred in England in countless numbers. They were bred from ova laid by a female taken on the South Devon coast, and fed indiscriminately on low plants. Mr. M. Burr read a paper supplementary to Mr. Green's previous communication on *Dyscritina*, and definitely referred the imagos to the genus *Diplatys*, *D. longisetosa*, Westw., being a good species, and Mr. Green's new form proving to be *D. nigriceps*, Kirby. Dr. Chapman communicated a paper on the larva of *Eriocephala Allionella*, which he stated to be essentially similar to that of *E. calthella*, previously described by him.—W. F. H. BLANDFORD, *Hon. Secretary*.

SUPPLEMENT TO "A SYNOPSIS OF BRITISH *PSYCHODIDÆ*."

BY THE REV. A. E. EATON, M.A., F.E.S.

(Continued from 2nd series, vol. viii, page 125, June, 1897).

PSYCHODA, Latreille (1796), restricted (Hal., MS.), Walker (1856).

Syn. *Psychoda*, Lat., Précis d. caract. gen. d. Ins., p. 152 (1796); [Hal., M.S.], Walk., Ins. Brit. Dipt., iii, 254 (1856); Schiner, Ins. Aust. Dipt., ii, 635 (1864); Van der Wulp, Dipt. Neerl., i, 314 (1877). *Tinearia*, *Schill. (*fide* West.). *Maruina*, F. Mül., MS., Trans. Ent. Soc. London for 1895, p. 480 (part); Etn., *op. cit.*, p. 489.

The major divisions of *Psychoda*, established *ante*, 2nd ser., vol. iv, 33, steps 7 and 7a, and the tabulation of species of the 1st Section, *op. cit.*, p. 129, illustrated in vol. v, pl. iv, Ps. 1—6, are here adapted for wider application.

Affinities nearest with *Pericoma*, Section III, if judged according to the distribution of the bristling hair of the wings; but in certain features of the neurulation an approach is made to the 4th and 5th Sections of that genus, as may partly be inferred from the tabulation cited, and comparison of the figures. *Maruina*, because of the form of the male genitalia, is here scheduled as an additional Section of *Psychoda*, on the assumption that the neurulation towards the base of the wing was inaccurately represented by Müller, and will be found conformable in its main features to that of *Psychoda*. Figures of densely hairy, undenuded wings *in situ*, have invariably overtaxed the ability of artists to illustrate with exactitude the details of neurulation near the wing-roots; and in this particular the most recently published figures of *Psychodæ* are as worthless in critical value as those of Leeuwenhoek and Frisch, cited by Linné and De Geer.

Males of *Psychoda* (probably immature), with stunted antennæ are frequently met with: the beaks of joints in the flagellum not having attained their full length, cause the verticils of long hair to be

more deeply imbricate, or more widely spread, than in fully developed specimens. Flies of *Pericoma*, Section III, are liable to the same deformity.

MAJOR SUB-DIVISIONS OF PSYCHODA.

A. Wing lanceolate, acuminate at the end of the præbrachial nervure, and with a shallow sinus in the posterior margin from near the anterior pobrachial to near the anal nervure; neuriation, towards the base of the wing, imperfectly explored. Inferior ♂ genital appendages longer than their basis and unitenacular, as in *Ps. phalænoides*, L. Hair of the dorsum, bristling hair of the wings, and structure of ♂ antennæ unrecorded. No species* described. Syn. *Maruina*, F. Mül., MS., Trans. Ent. Soc. London for 1895, p. 480, pls. x and xi (part). Type, *M. pilosella*, *idem*, *loc. cit.* (undescribed). Refer, *op. cit.*, pp. 483—493 (1895) *Psychoda*, Section O.

B. Wing ovate-lanceolate, acute at the end of the præbrachial nervure; radius forked beyond the bifurcation of the pobrachial nervure, or else the posterior radius short and free; bristling hair, in some parts of the wing, extended beyond the shortest line drawn from the end of the subcosta to the end of the anal nervure. Antennæ in both sexes liable to individual variation in the number of joints beyond the 13th, and comprised with it in the 11th or terminal, globose or ovoid, compound verticil of hair of the flagellum; when 16-jointed, the last three joints are minute, subequal to each other, and closely moniliform, without beak or apiculus; when 14-jointed, the terminal joint, smaller than the 13th, is globular and apiculate; when 15-jointed, a terminal joint of this last form is preceded by a small globular joint; 13th joint globular, with hardly any beak; 12th to 3rd joints bulbous, usually with long subfiliform beaks and globular bulbs, the latter sometimes slightly oval in the baseward joints; scape short, clad with short scales; the 2nd joint stout and globular. Hair of the flagellum arranged in eleven verticils of long hair, each involucre at the base by a whorl of much shorter, appressed, but reversible hair, and constituting, when the beaks of the joints are long, a closely moniliform series; but short beaks cause the verticils to be wide and cupuliform. Articular appendages present from the 3rd to the 13th joint, hyaline, linear or tæmoid, with seemingly thickened edges, one pair to a joint (or rarely two pairs), inserted close together at the inner base of the verticil of long hair, but widely divergent in elongate, opposed, subspiral curves of about one turn each in length, that bring them near together again towards their extremities.

b. Bristling hair present on the subcosta, ending in proximity to the wing-margin. Dorsal hair bristling on all the abdominal segments. Ovipositor rostrate, horny, exerted, but in repose erect or subreclinate, as in *Pericoma* and *Ulomyia*. Beneath the wing-base in the ♂, on the nervures bounding the basal cells, also on the margin between the

* *Psychoda nigra*, Banks, The Canadian Entomologist, xxvi, 331 (1894), judging by what is mentioned of its wings, may possibly be a *Maruina*; but this Section of *Psychoda* is unknown in Europe.

alula and the posterior fringe, and again very sparingly at the extreme bases of the costa and axillar nervures, are lanceolate or linear scales, succeeded for only a very short distance by flattened hairs; these are followed by ordinary hair. Type, *Ps. phalanoides*, L. . .

Psychoda, Section I.

- b. Bristling hair wanting on the præbrachial, posterior pobrachial, and anal nervures; its endings on the others lie in the circumference of a slightly truncate, semi-ellipsoidal curve, approximate to the wing-margin, and with the ending on the cubitus directly opposite that on the anterior pobrachial, considerably beyond that on the postical.

† Inferior ♂ genital appendages distinctly longer than their basis, and uni-tenaculate; tenaculum relatively short...

Species Nos. 2—4, Brit.

†† The same appendages subequal in length to their basis, short and stout, tri-tenaculate in the British species, but uni-tenaculate in the Algerian; tenaculæ relatively long...

Species No. 1, Brit.; XVI, Alg.

- bb. Bristling hair wanting on the posterior radius, præbrachial, posterior pobrachial, and anal nervures; its endings on the cubitus and anterior pobrachial distant from the margin, but on the other nervures adjacent thereto; those on the cubitus and postical directly opposite each other, and a little beyond the ending on the anterior pobrachial nervure. Inferior ♂ genital appendages very little longer than their basis, slender and uni-tenaculate; the tenaculum hardly one-fourth the length of the appendage...

Species No. 5, Brit.

B.B. Bristling hair wanting on the subcosta. Dorsal hair bristling on only the first abdominal segment, smooth on the remainder. External ♀ genitalia valvular, short and obtuse, somewhat as in *Sycorax*. Beneath the wing-base in the ♂, on the nervures bounding the anterior basal cell, and at the extreme base of the mediastinal nervure, are rather short, obovate, appressed scales; the other nervures thereabouts are clad either with flattened hairs, or with linear or acicular scales. Type, *Ps. humeralis* (Hoffmegg, MS.), Meig... *Psychoda*, Section II.

- b? Bristling hair also wanting on both branches of the radius, on the præbrachial, posterior pobrachial, and on the anal nervures; its ending on the radius conterminous with the stem, subopposite that on the cubitus, both distant from the wing-margin and far interior to its ending on the anterior pobrachial; this last is farther from the margin than the endings on the postical and axillar nervures, which approach nearer and nearer thereto. Inferior ♂ genital appendages subequal in length to their basis, stout and bi-tenaculate; the tenaculæ slender and relatively long Species, No. 6, Brit.

SECTION O OF PSYCHODA (*Maruina*, F. Mül., MS.).

If (as is probable) the insect be virtually unicolorous, or without wing-markings, like many species of the next Section, Müller's omission to describe the typical species is intelligible. Characters of importance, that should be recorded, are noted in the preceding tabulation, in step **A**.

SECTION I OF PSYCHODA; British species, Nos. 1—5,
and Algerian, No. XVI.

Refer *ante*, 2nd ser., vol. iv, p. 33, step 7, and p. 129; also vol. v, pl. iv, Ps. 1—5 (details), and the above tabulation, steps **B**, **B**.

Affinities nearest with the preceding Section, but approaching the 3rd Section of *Pericoma* in the distribution of the bristling hair upon the wing; the British species scheduled *b*, †, in the tabulation of Major Sub-Divisions of *Psychoda* (just above) making a near approach to the Algerian *Pericoma*, No. X (*ante*, 2nd ser., vol. vii, p. 130, step d^2d^2); and those tabulated *b*, ††, approaching less closely *P. advena* (*loc. cit.*, step d^2). The affinity of *Psychoda* to the 5th Section of *Pericoma*, and to *Ulomyia*, in another feature, has been referred to already in connection with that Section (*ante*, 2nd ser., vol. vii, p. 120).

The species are here arranged in their revised order, but their original numbering is retained: hence the sequence Nos. 2, 3, 4, 1, and 5.

2. PSYCHODA PHALENOIDES, Linné.

Tipula alis deflexis cinereis ovato-lanceolatis ciliatis, Linn., Fn., Suec. [ed. i], p. 336, No. 1148 (1746).—*T. phalænoides*, *id.*, Syst. Nat. [ed. x], p. 588, No. 32 (1758); *id.*, Fn. Suec. [ed. ii], p. 438, No. 1771 (1761); Müller (1764); Linn., Syst. Nat. [ed. xii], ii, 977, No. 47 (1767); Fabricius (1775, &c.); De Geer, Mém. p. serv. à l'Hist. d. Ins., vi, 422, No. 30, tab. xxvii, 6—9 (1776); *id.*, Abhandl. z. Gesch. d. Ins., vi, 158, taf. xxvii, 6—9 (1782); Retz., C. De Geer, Gen. and Sp. Ins., p. 196, No. 1297 (1783); Gmélin, Linn. Syst. Nat. [ed. xiii], i, par. v, p. 2825, No. 47 (1788); Rossi, Fn. Etrusc., p. 273 (1790); Berkenhout (1795, &c.)?; Schrank, Fn. Boica, iii, 82, No. 2349 (1803); and any other authors attributing spotless wings to the species thus named.—*T. nervosa*, Schrank, *op. cit.*, l. c., No. 2350.

Bibio phalænoides, Geoff., Hist. Abrég. d. Ins., ii, 572, No. 4 (1762); Fourcroy, Ent. Paris, ii, 515, No. 4 (1785); Olivier, Encyclop. Méthod.

Psychoda muraria, Latreille, Hist. Nat. d. Crust. et Ins., xiv, 293 (1805).—*Ps. phalænoides*, Fab., Syst. Antl., p. 49 (1805); Lat. (1809, &c.); Lamarck (1816, &c.); Walker, Ins. Brit. Dipt., iii, 255 (1856); Schiner, Fn. Aust. Dipt., ii, 637 (1864); v. d. Wulp, Dipt. Neerland., i, 315 (1877); Etn., *ante*, 2nd ser., vol. iv, 129 (1893), and vol. v, pl. iv, Ps. 2 [details] (1895).—*Ps. nervosa*, Meig., Syst. Besch. [ed. i], i, 106 (1818), and *id.* [ed. ii], i, 84 (1851); Macquart, Ins. Dipt.

Nord, France, p. 168 (1824); Haliday, Ent. Mag., i, 148 [list] (1833); Macq., Hist. Nat. Ins. Dipt. [Suites à Buffon], i, 164 (1834); Perris, Ann. d. Sc. Nat. France (2), xiii, 346—8, pl. vi, fig. B [pupa, not larv.] (1840); Rossi, Dipt. Aust., p. 6 (1848); Curt., Journ. Roy. Agricult. Soc., x, part i [No. xxiii, July], p. 103, pl. v, 47—50 [pupa] (1849); Zetterstedt, Dipt. Scand., ix, 3706 (1850).

♂. Antennæ usually 14-jointed, and, when fully developed, reaching nearly to the middle of the wing, but often stunted; in the former condition the verticils of long hair of the flagellum compose a smooth moniliform series of subspherical cupules, the open end of one cupule fitting the base of the next. Hair of head and body impure white, or whitey-brown anteriorly, but light brown from certain standpoints posteriorly. Wings in the living fly blueish ash-grey, or dove colour, the blue and reddish iridescence of the membrane mingling with the colour of the hair, which changes with posture from white to whitey-brown; wing-margin in transmitted light opaque, but otherwise concolorous with the disc; fringes shifting from satiny-white to whitey-brown or greyish when turned about, the costal fringe in suitable positions becoming dark, independently of the posterior fringe. At the base of the wing, viewed from in front, the hair of the tegulæ appears white or whitey-brown, but the "humeral tuft" arising from the thickened portion of the costa opposite the mediastinal (this thickening is sometimes piceous in dried specimens), and overlying the costal fringe thereabouts, although matching with the fringe from certain standpoints, readily shifts to dark brown or grey, and even to blackish towards the roots of the hairs. Bifurcation of the radius perhaps always interior to the end of the axillar nervure. Genital segment often inverted, probably by torsion during copulation (an accident that frequently occurs in *Pericoma exquisita*); basal joint in the superior appendages sub-cylindrical, subequal in length to the forceps-basis; apical joint subulate, very slightly curved. Inferior appendages neatly forficulate, at first very shortly convergent from their insertions and thereabouts rounded off beneath, then for a short space subparallel with each other, slightly arcuate upwards throughout, and finally gently incurved towards their tips; each of them subulate with the extreme point suddenly acute, nude dorsally, but elsewhere beset with rather long, dense, spreading hair; tenaculum exactly apical, slightly foreshortened by perspective in the cited figure; from other standpoints more slender and subspatulate, or narrowly ob-triangular and rounded off at the obtuse angle. Indumentum of legs glossed with dull satiny-white; the appressed scales narrowly linear.

♀. In dried specimens of this species the legs are usually rather darker, and the wing-neuration a little more distinct than in *Ps. albipennis*, but the body is not always more opaque; in fact, the specific identity of *Psychoda* of this sex, unaccompanied by males from the same localities, cannot always be guessed at with certainty. The name *nervosa*, Schrank, was probably applied to worn specimens of the female.

The larvæ feed upon all sorts of decaying vegetable substances, and the geographical dispersion of this species is doubtless extensive. The flies abound in the British Islands, Haliday being the authority for Ireland, and Mr. J. J. F. X. King's collection for Scotland (Loch Maree, 1890, 4 ♂, 1 ♀). A Maltese ♀ specimen in the British

Museum (Nat. Hist.) possibly belongs here; but this is doubtful, since the species has not yet been met with in northern Africa. Faded specimens of *Ps. humeralis* in windows are liable to be mistaken for *phalænoides*, if the distribution of bristling hair on the wing be disregarded. When the wings are denuded as well as the body, a difference in the gait of the flies, and in the form of the verticils of hair of the antennæ, suffice for their distinction.

The females of *Ps. phalænoides* are common agents in the fertilization of *Arum maculatum*, L., creeping down into the spathes, often in considerable numbers, when the pollen ripens. Once at the bottom they have to remain until the sterile filaments wither and set them free. Meanwhile, through fluttering and tumbling about, they soon become miserable objects denuded of hair, and many perish. The dead are usually eaten by other insects, and by *Oniscidæ*. Where Curtis speaks of *Ps. nervosa* sometimes swarming about drains (*loc. cit.*, 1849), there may have been some confusion of the species with *Ps. sexpunctata*, seen with the naked eye.*

3. *PSYCHODA ALBIPENNIS*, Zetterstedt.

Ps. albipennis, Zet., Dipt. Scand., ix, 3708 (1850); Schiner, Fn. Aust. Dipt., ii, 637 (1864); v. d. Wulp, Dipt. Neerland., i, 315 (1877); Etn., *ante*, 2nd ser., vol. iv, 130, step 3a, and vol. v, pl. iv, Ps. 3 (details).

Similar to *Ps. phalænoides*, but, sex for sex, on an average smaller. Easily distinguished by differences in the ♂ genitalia, illustrated in *loc. cit.* from a dried preparation; for comparison with the superior appendages of freshly killed specimens, the upper fig., Ps. 3a, is the best. Inferior appendages much the same as in the former species.

♀ Hardly separable, when faded, from dried specimens of *Ps. phalænoides* of this sex; but when in prime condition, newly killed, and correspondingly illuminated, the wings appear whiter; the costal fringe and the tuft of hair on the thickened portion of the base of the costa, by which the fringe thereabouts is overlain, do not, on being shifted about, assume quite so dark a grey tint as in that insect; the callus nearer the base of the costa is of a lighter colour; and the fleshy parts of the body beneath the hair are of rather a light colour, although (like the callus) often quite as dark when dried. Besides what is said about the wing-neuration in the explanation of the figures cited, given in *op. cit.*, vol. v. 27, it is noteworthy that the variations illustrated are independent of sex, and that the radial fork is sometimes as short as in the fig. Ps. 1, *loc. cit.* Both species are liable to be represented in collections of *Diptera* by females exclusively, no doubt through these being larger, and therefore easier to pin than males.

A species of wide foreign distribution, abundant in England, and

* It may be stated here, once for all, that the bibliographical references to old authors given in this article under the head of particular species are limited each to the author cited, and do not extend to his citations of earlier authorities. It would demand more space than the matter is worth, to note every instance where the synonymy of palæographic entomology is at fault.

obtained by Mr. King in Scotland (Loch Maree, 1890, 2 ♂, 13 ♀). It occurs in Algeria, and perhaps even at the Cape of Good Hope, a ♀ of this, or of a closely allied species, now in the British Museum (Nat. Hist.), having been captured by the author in 1874 at Rondebosch, in the grounds of the Governor's country house at the foot of Table Mountain.

The larvæ feed on decaying vegetable matter; in 1894—5 the fly was reared upon rotten turnip by Mr. C. O. Waterhouse.

Psychoda degenera! Walker, List Dipt. Ins. Brit. Mus., part i, 33 (1848), described from a single ♂ from St. Martin's Falls, Albany River, Hudson's Bay, and likened to *Ps. nervosa* (*phalænoides*), approaches *Ps. albipennis* in structure of the genitalia. This indication may suffice for the identification of the species in that locality without actual comparison of specimens with the type; the description is "catalogical," and of no account, but cannot well be added to without fresh material.

Psychoda cinerea, Banks, "The Canadian Entomologist," xxvi, 331 (1894), may rank doubtfully in this Section, assuming the black colour of the scales on the tarsi to be dependent upon the direction of the light. The genitalia of the male seem from the description to have been shrivelled up by overpowerful fumes of something in the killing-bottle—a common accident that cannot be too carefully guarded against by collectors, especially in hot weather.

4. *PSYCHODA SXPUNCTATA*, Curtis, = *ALTERNATA*, Say.

Tipula ‡ *phalænoides*, var., Scop., Ent. Carn., p. 324, No. 864 (1763).

|| *Trichoptera* ‡ *phalænoides*, Meig., *Klassif. d. Zweifl., Bd. i, 43 (1804).

Psychoda ‡ *phalænoides*, *id.*, System. Besch. [ed. i], i, 104 (1818); *id.*, *op. cit.* [ed. ii], i, 82 (1851); Macq., Ins. Dipt. Nord France, p. 116 (1824); *id.*, Hist. Nat. Ins. Dipt. [*Suites à Buffon*], i, 164, pl. iv, 12 and 13 (1834); Bouché, Naturgesch. d. Ins. [Act. Nov. Acad. L. Cæs. Nat. curios.], p. 28, tab. ii, 20 [larva and head] and 22 [pupa] (1834); Zett., Ins. Lappon., 824 (1840); *id.*, Dipt. Scand., ix, 3702 (1850); Siebke, Nyt Mag. f. Naturvid., p. 53, No. 823 (1850); Lucas, Bull. Soc. Ent. France (1885), p. xliii [habit].—*Ps. alternata*, Say, *W. Q. R., ii [Long's 2nd Exped.], p. 358 (1824); *id.* [ed. Le Coute], i, 242 (1859); ? Williston, Ent. News, iv, 114 (1893); Banks, Ca. Ent., xxvi, 330 (1894); ? Willist., Trans. Ent. Soc. London (1896), p. 283, pl. ix, 49 [wing undenuded].—*Ps. sexpunctata*, Curt. Brit. Ent., xvi, 745 (1839); Walker, Ins. Brit. Dipt., iii, 255, pl. xxvi, 1a to i [details] (1856); Schiner, Fn. Aust. Dipt., ii, 636 (1864); v. d. Wulp, Dipt. Neerl., i, 314, pl. ix, 12 and 13 [details] (1877); ! Etn., Ent. Mo. Mag., 2nd ser., iv, 130 (1893), and v, pl. iv, Ps. 4 [details] (1894).—*Ps. marginepunctata*, *Roser, *vide* Walker [*inter synon.*, *op. supra cit.*, iii, 255 (1856)].

Wings light brownish-grey, with whitish markings on the disc in the bristling hair (seen best when the wing is pointed towards the light over a dark background), and with six or seven small spots at the margin, formed of dark hairs inclined outwards, viz., a brown or blackish spot, interior to the fringe, at the end of every nervure that has bristling hair (except the mediastinal), set off by a whitish spot that marks the ending of the bristling hair; also, in or about the middle of the

wing, a transverse series of whitish spots, forming a broken zigzag fascia, commencing with one of the former whitish spots on the subcosta, and ending with that on the axillar nervure, advancing obliquely over the base of the radial fork and over the cubitus, to its salient angle on the anterior pabrachial, opposite the end of the axillar nervure, and having its re-entering angle on the postical nervure, opposite the radial bifurcation, or interior to this in the male; also a whitish spot on the axillar nervure, nearly midway between the end of the fascia and the fold of deflection. Over white paper, from certain positions, a portion of the base of the wing also appears whitish, and the ground colour of the wing shifts from light brownish-grey to light grey. When resting on a wall, in the evening, the insect is apt to appear blackish-grey. Fringes match with the prevailing tint of the wing, but readily shift to a darker tint, or reflect a lighter dull satiny gloss. The dark spots, above mentioned, at the margin are relatively small and rarely equal in size, the three at the posterior margin being usually more distinct than those at the costa, and the spot of the axillar often slightly larger and more strongly marked than either of the other two; that of the subcosta blending with some dark hair on the anterior radius, appears to be the biggest of all, but lacks sharpness of definition, and is often nebulous; and when there are only six spots instead of seven, it is usually the spot of the posterior radius which is missing. Tints of iridescence of the wing-membrane chiefly red, green, and yellow. Hair of head, antennæ, body, and legs whitish, with the same changeable tints of grey and brown as the wings; the parts underlying the hair, light coloured in life, grow darker in drying. Antennæ (usually 14-jointed) reach in the ♂ only to the base of the wing. Joints of palpi enumerated in the order of lessening length, 4, 2, 3, 1. Basal joint in the superior ♂ appendages short and moderately stout; apical joint longer, and, when dried, narrowly and acutely falcate, with a slight median dilatation. Inferior ♂ appendages similar to those of the preceding species; the limb in profile subulate-acuminate; hair dense and long; tenaculum short and slender.

Common in England in the resorts of *Trichomyia urbana* and pigsties during summer and autumn, and also at cattle-drinking places. In Algeria, abundant in all French towns, and by streams in their neighbourhood, not excepting Biskra, on the border of the Sahara; found frequently on board passenger steamers in the harbours, flying in at the port-holes. The possibility of its following commerce to different parts of the world is obvious, and may account for its occurrence in N. America, if the species described by Say, cited above, be the same as the European insect. Unless disproved on comparison of specimens from both these continents, their specific identity may be assumed on the authority of Banks's description.

1. *PSYCHODA LUCIFUGA* (Hal., MS.), Walker.

Pericoma lucifuga, [Hal., MS.], Walker, Ins. Brit. Dipt., iii, 257 (1856).—*Psychoda lucifuga*, Verrall, List Brit. Dipt., p. 10 (1888); Etn., ante, 2nd ser., vol. iv, 129, step 2, and vol. v, pl. iv, Ps. 1 (detail).

Resembles *Ps. phalanoides* (2) in the colour of the wings, but may be dis-

tinguished therefrom in the net by having light brown pubescence on the thorax, through which (under a lens) the sutures appear as dark lines. Hair of the dorsum also dense and brownish. Fringe of the wing (when pointed towards the light over a dark background) light brownish, like the hair of the nervures in dried specimens; the wing-margin, from certain standpoints, defined by a dark line; when newly killed, the fringes, from certain directions, appear blackish-grey; but when shifted, the fringe of the alula and the tuft on the thickened portion of the costa by the fold of deflection become concolorous with the pubescence of the thorax. Haliday's description is good, but the markings attributed to the legs are entirely dependent upon illumination. Antennæ 15- to 16-jointed, reaching in the ♂ to about the middle of the wing. Basal joint in the superior ♂ appendages short and moderately stout, convex externally, and flattened or subconcave on the inner side; apical joint twice the length of the first, tapering from the base to a slender point, or claw-like, acuminate and obliquely decurved. Inferior ♂ appendages stout, narrowly ovoid-oblong; tenaculæ moderately divergent, equal, slender, relatively long, wiry, or very narrowly linear-cuneate.

Discovered by Haliday in Ireland at Holywood and Blarney. Abundant locally in miry places under trees, especially in wet coppices, in hilly parts of East and West Somersetshire; ascending to 1300 ft. under Dunkery Beacon. September and October.

(To be concluded in the next No)

ON THE HABITS OF *LIOTHULA OMNIVORA*, FÉREDAY.

BY W. W. SMITH, F.E.S.

During the last two years my boys have collected a considerable number of the case-dwelling larvæ of this interesting apterous moth. When brought home it is their custom to tie fresh twigs of wattle and willows to the end of long pieces of strong thread, and suspend them from the ceiling over the sitting room table, and attach the larval cases to them. The experiment has proved very interesting and instructive to the boys, while it has also revealed some new and hitherto unknown habits of these larvæ.

When first attached to the suspended twigs the more matured larvæ inhabiting the larger cases occasionally remain motionless, and do not commence feeding for a week or a fortnight after. When they become hungry they generally feed well, but consume very little food for their size. They generally feed all over the twigs, and occasionally reach the thread which they ascend to the ceiling, and attach their dwelling to it, or to the paper on the walls. We have had several remain crawling over the ceiling or the papered walls for a

week before making any attempt to leave them. One of them nibbled off minute pieces of paper, and attached them neatly to the exterior of its case. On November 5th last, we were seated around the table in the evening, when one of these larvæ came down, looper-like, close to the lamp, suspended by a strong silken thread. It was the first occasion on which we observed this habit in *L. omnivora*. We watched it patiently letting go the thread, and descending gently by slow, short jerks. Although it was in no way molested, it only descended about nine inches further, when it ceased to descend, withdrew into the case and closed it. It was somewhat difficult to note its actions accurately, as while it was descending the case kept revolving at a good pace. We observed that the thread passed up the right side of the head from between the two front legs, which, along with the mouth, were kept active during the process of descent. After resting about half an hour, it again gently opened the case, and slowly commenced to ascend the thread by a hand-over-hand-like process. It would ascend for an inch and half or two inches, and then stop instantly to manipulate the accumulated thread, sometimes jerking slightly down before recommencing the ascent. When we left it at 11 o'clock it had ascended about twenty-one inches. By 6.30 in the morning it was on the ceiling, several feet away from the place the thread was attached to the previous night. The full length of the thread was about five feet.

Two years ago *L. omnivora* appeared in another new character in this district, viz., a garden pest. In August, 1896, a farmer friend brought me a handful of large specimens of the cases containing healthy larvæ, and at the same time enquired what they were. I informed him that they were the native basket moth, and that they were interesting and harmless creatures. My friend, who hails from the Emerald Isle, strongly repudiated my remarks, and declared that they were "well named," as they had "put all the buds on his raspberry canes in their basket." A week afterwards I visited his garden, and found them numerous on the well grown canes, which they had severely injured by consuming the healthy buds.

Judging from the number of non-parasitized larvæ, I believe they are now less subject to attacks than formerly. *L. omnivora* furnishes a striking example of hyperparasitism among native moths. The subject has been accurately and perfectly dealt with by Mr. G. V. Hudson (N. Z. Journal of Science, 1885), and should be studied by all who prosecute this line of research. In confining these larvæ to certain plants, we find that larger cases and finer moths of both sexes are

developed by feeding only on the *Salix alba* and *S. caprea pendula*. They also thrive well on the Australian black wattle (*Acacia decurrens*) and *Cupressus macrocarpa*. In their natural state they appear to become parasitized when about half grown, and do not attain to the size, before dying, of those of non-parasitized larvæ. Several of the cases of those fed, as described, in our sitting room, attained the size of $3\frac{3}{4}$ to 4 inches. Mature examples found in their natural state do not generally attain to more than $3\frac{1}{4}$ to $3\frac{1}{2}$ inches in length. Both in a natural state and in captivity they are extremely sensitive, and instantly withdraw into the case and close the opening on the slightest disturbance.

Notwithstanding the present long and intense drought experienced on the Canterbury Plains, *L. omnivora* has flourished concealed in the dense willows growing on the margins of the lakes and streams in our district. In looking over my scanty captures of other insects for the season, I fear, unless matters improve greatly, it will result in a "winter of discontent" when autumn has passed.

Ashburton, N. Z. :

March 9th, 1898.

SOME NEW BRITISH *TENTHREDINIDÆ*.

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

Among a number of saw-flies taken by Mr. W. H. Harwood near Colchester, three species of *Dolerus* occur, which are (I believe) additions to the British list, viz. : *gibbosus*, Htg., *fumosus*, Zadd., and *rugosulus*, d. Torre.

All three species are black. *Gibbosus* and *fumosus* are large insects, about the size of *Dolerus niger*, L., from which they both differ in having no distinct transverse furrows on the tempora above (behind the eyes). *Fumosus*, also, has no definite longitudinal furrows bounding the vertex laterally; but in *gibbosus* such furrows are conspicuous.

Gibbosus in the above characters resembles *nigratus*, Müll. (= *fissus*, Htg.) ; but it is larger, the ♂ 8th abdominal segment above is not triangularly excised at the apex, and the ♀ saw-sheath (seen above) is widest not at the apex, but some way before it. The ♀ abdomen has a decided tinge of metallic-blue. *Rugosulus* (= *rugosus*, Knw.) is a smaller species, about the size of *aneus*, Htg. It has, also, the sharply margined temporal furrows of that species. But in both sexes the

antennæ are decidedly shorter, the head is more strongly and rugosely punctured, and is also more constricted immediately behind the eyes, which gives a curiously swollen appearance to the tempora. The ♀ saw-sheath in *rugosulus* dilates gently to the apex, while in *æneus* on the contrary it narrows. Another of Mr. Harwood's captures, not previously recorded from this country, is *Amauronematus viduatus*, Zett. (= *vagus*, Zadd.). It belongs to Konow's subgenus *Brachycolus* (Term. Fuz., 1895, p. 167), has the 3rd joint of the antennæ shorter than the 4th, and the eyes unusually near the base of the mandibles. In the paper just referred to Konow remarks that it is strange the species should not occur in Britain, but that no Nematid described by Cameron can possibly belong to it, unless indeed it is "*unter hæmorrhoidalis*, Cam., verbirgt."

On July 31st of last year I took a ♂ of *Emphytus cingillum*, Klug, at Woking. The species is recorded from France, Germany, and Sweden, but seems not to have been noticed hitherto in this country.

It is a very pretty and distinct kind. The posterior legs have white trochanters, very broad red femora, red tibiæ, dusky knees and tarsi. On the anterior and intermediate pairs the trochanters and bases of the femora are black, the rest of the femora and the tibiæ red. The abdomen is black, with a rather ill-defined white apical band on the 5th segment. The apical joints of the antennæ are short, the 3rd joint a little longer than the 4th or the 5th, which are subequal. The "*nervus transversus ordinarius*" (Thoms.), is received before the middle of the "*cellula furcata*."

Herr Konow has kindly examined all these insects, and the determinations given above have his authority.

Brunswick, Woking:

March, 1898.

THE SEXUAL CHARACTERS OF THE BRITISH SPECIES OF *TOMOXIA*, *MORDELLA* AND *MORDELLISTENA*.

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

The sexual peculiarities of most of the European species of these genera (including all our British forms) are described at length by Herr J. Schilsky (Die Käfer Europa's, xxxi), and as he has detected several characters that have been previously overlooked, it seems worth while calling attention to them, so far as our British species are concerned, those of *Anaspis* alone having been fully noted by English authors. The ciliation of the palpi I have not been able to verify, as it cannot be seen properly unless the specimens are mounted with their heads free. It may be stated that in the males of *Mordella* and

Mordellistena the second joint of the maxillary palpi is often more or less dilated, and the anterior femora ciliate. Schilsky apparently treats the maxillary palpi as 3- instead of 4-jointed, hence his first joint (the first visible from above when the palpi are extended) is really the second, and his second the third.

TOMOXIA BIGUTTATA, Gyll.

♂. Anterior femora, the base of the anterior tibiæ, and the second and third joints of the maxillary palpi, ciliate within; anterior tibiæ strongly curved.

♀. Antennæ slightly shorter than in the ♂; anterior tibiæ feebly curved.

In both sexes the apical joint of the maxillary palpi is strongly securiform, and the pygidium is truncate at the apex and rather short. The hairs on the anterior femora in the male are long and conspicuous.

MORDELLA FASCIATA, Linn.

♂. Apical joint of the maxillary palpi broad and triangular; anterior femora and the second and third joints of the maxillary palpi ciliate within.

♀. Apical joint of the maxillary palpi subcylindrical, with the inner apical angle rounded; antennæ a little shorter than in the male.

In both sexes the anterior tibiæ are feebly curved.

MORDELLA ACULEATA, Linn.

♂. Apical joint of the maxillary palpi broad and triangular, the second joint dilated; anterior femora and the second and third joints of the maxillary palpi ciliate; anterior tibiæ curved; pygidium elongate.

♀. Apical joint of the maxillary palpi subtriangular; pygidium shorter.

Like *M. fasciata*, this is a very variable species on the continent.

MORDELLISTENA (MORDELLOCHROA) ABDOMINALIS, Fabr.

♂. Narrow; thorax black, or black with the hind angles rufescent; antennæ with the third joint much shorter than the fourth or following joints; maxillary palpi black, the apical joint long and boat-shaped (cylindrical according to Schilsky), testaceous at the tip, the second and third joints stout and ciliate; abdomen fulvous, blackish in the middle.

♀. Broader; thorax and abdomen fulvous; antennæ with the third and fourth joints subequal; maxillary palpi testaceous or black, the apical joint oblong-ovate and truncate at the tip (gourd-shaped according to Schilsky), the second and third joints narrow.

The sexual differences in the form of the palpi have already been described and figured by me (*cf.* Ent. Mo. Mag., xxvii, p. 287). The male of this species appears to be very much rarer than the female.

MORDELLISTENA HUMERALIS, Linn.

♂. Anterior tibiæ strongly curved; apical joint of the maxillary palpi subtriangular, the second joint dilated towards the apex and curved.

♀. Apical joint of the maxillary palpi oblong-subtriangular, the second joint triangular, with the inner apical angle acute, the third joint narrow.

I have never seen a British example of *M. lateralis* (Oliv.), as defined by Schilsky, regarded by some authors (including Schilsky) as distinct from *M. humeralis*, and by others as a variety of that species. British specimens of *M. humeralis* vary a good deal in the colour of the thorax and in the extent of the fulvous humeral patch of the elytra. Olivier's figure agrees better with *M. humeralis* than with Schilsky's definition of *M. lateralis*.

MORDELLISTENA NEUWALDEGGIANA, Panz. (*brunnea*, Fabr.).

♂. Apical joint of the maxillary palpi oblong-subtriangular, the second joint slightly dilated towards the apex; anterior tibiæ strongly curved; antennæ moderately long.

♀. Apical joint of the maxillary palpi more rounded on the inner side; antennæ shorter.

In this species the antennæ appear to be constantly much longer in the male than in the female. Panzer's name antedates that of Fabricius by five years, and it is adopted in the "Munich Catalogue," as well as by Schilsky and other writers.

MORDELLISTENA BREVICAUDA, Muls.

♂. Anterior femora ciliate; anterior tibiæ slightly thickened near the base; pygidium about twice the length of the hypopygium.

♀. Pygidium about one-half longer than the hypopygium.

MORDELLISTENA PUMILA, Gyll.

♂. Anterior tibiæ slightly thickened near the base; antennæ moderately long.

♀. Antennæ shorter.

Some authors also use the relative width of the fourth and fifth antennal joints as a sexual character, but I am unable to verify this. The pygidium is long and acute in both sexes.

MORDELLISTENA PARVULA, Gyll.

♂. Narrow; anterior tibiæ strongly curved, a little thickened near the base; second joint of the maxillary palpi slightly swollen; pygidium moderately long.

♀. Broader; second and third joints of the maxillary palpi narrower than in the male; pygidium shorter.

Horsell, Woking:

April 28th, 1898.

NEW CORSICAN MICRO-LEPIDOPTERA.

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

PYRALIDINA.

PTEROPHORIDÆ.

ALUCITA, L. (Wlsm. and Drnt.).*ALUCITA* ACARNELLA, *sp. n.*

Antennæ minutely biciliate; whitish. *Palpi* projecting less than the length of the head beyond it; apical joint short, basal joint with short brush-like scaling beneath; whitish. *Head* and *face* brownish-grey, with a paler frontal band between the eyes. *Thorax* whitish-ochreous, with a slight brownish-grey suffusion not reaching the end of the tegulæ. *Fore-wings* pale brownish-grey, the dorsal margin whitish throughout, narrowly before the middle, but extending to the whole width of the tornal lobe beyond it; there is a scarcely appreciable darker, elongate, costal shade-spot above and beyond the base of the fissure; cilia on the lower margin of the apical lobe, as well as on the upper margin of the tornal lobe, white, tipped with greyish-brown, with some faint whitish streaks running through them before and about the middle of the lobe. *Exp. al.*, 21—24 mm. *Hind-wings* bronzy-brownish, the abdominal lobe paler than the other two; cilia of all the lobes bronzy-brownish. *Abdomen* very pale yellowish-ochreous, with a distinct brownish-grey line along the dorsum. *Hind legs* whitish, a slight shade of brownish-grey along the outer sides of the tibiæ and first tarsal joints; spurs whitish, with brownish-grey lines throughout their length beneath. (On the under-side the cilia of the apical lobe of the hind-wings, as well as the outer half of the lobe itself, are distinctly whitish, in other respects the cilia are as above, but no pale line is visible along the dorsum of the fore-wings).

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Restonica Valley (above Corté). Larva, *Picnomon acarna*, 26, V, excl. 18—28, VI, 1896. Three specimens.

The larvæ feed on *Picnomon acarna* in the Restonica Valley, above Corté, where they were not rare upon the few plants I found during a hurried visit on May 26th. They are pale greenish, covered with long white hairs, and both in their appearance and manner of feeding reminded me at the time so forcibly of those of *Alucita punctinervis*, Const., that I thought they could belong to no other species; three specimens, however, were bred during the month of June, and at once recognised as distinct, although not remotely allied to *tetradactylus*, L., and others of the same group.

TINEINA.

GELECHIADÆ.

ARISTOTELIA, Hb.

ARISTOTELIA FRANKENIÆ, *sp. n.*

Antennæ delicately annulated with black and white. *Palpi* whitish, with two blackish bands round the second joint and three on the apical joint. *Head* whitish-cinereous. *Thorax* orange-ochreous, spotted anteriorly with coppery-brown. *Fore-wings* bright orange-ochreous, a rich coppery-brown triangle reaching to one-third of the costa from the base fills the space above the fold, and is margined obliquely outward from the costa by a silvery-metallic band reaching to the fold, a few jet-black scales on its inner edge near the lower extremity; a similar silvery band crosses the narrow end of the triangle near the base; below the fold is a narrow silvery line running outward from the base nearly to the dorsum; a little beyond the middle a silvery-metallic band crosses somewhat obliquely outward from costa to dorsum, its upper extremity showing a few white scales and an elongate jet-black spot lying at its outer edge about the middle; another silvery band follows this, inverted from costa to dorsum, but not touching the previous one, its costal extremity distinctly white; beyond this is a small white costal spot, with another at the apex not reaching through the leaden-grey cilia; the costa beyond the median fascia is shaded to the apex between the markings with rich coppery-brown, a few metallic scales are visible on the termen. *Exp. al.*, 8—9 mm. *Hind-wings* somewhat shining, pale grey; cilia leaden-grey. *Abdomen* leaden-grey, banded with white beneath. *Legs* cupreous, hind tibiæ and tarsi banded with white.

Type, ♂ ♀, Mus. Wlsm.

Hab.: CORSICA, Punta Parata, Iles Sanguinaires. Larva, *Frankenia pulverulenta*, 5, V. *Imago*, 5, V—22, VI, 1896. Eighteen specimens.

This species is nearly allied to *Aristotelia brizella*, Tr., but is quite distinct. I found it attached to *Frankenia pulverulenta* among the rocks at Punta Parata and the Iles Sanguinaires, near Ajaccio, at the beginning of May. The moths were with difficulty disturbed from among the matted growth of this low plant, on which I found several larvæ feeding among the shoots, closely collected together by their webs; from these larvæ the moths emerged from the middle of May until the end of June.

ŒCOPHORIDÆ.

DEPRESSARIA, Hw.

(SIGANOROSIS, Wlgrn.).

DEPRESSARIA RADIOSQUAMELLA, *sp. n.*

Antennæ brownish-fuscous. *Palpi* pale cinereous, with two blackish bands on the second joint externally, the apical joint almost entirely covered with blackish scales, except at its apex. *Head* rosy-cinereous above, face shining whitish-cinereous. *Thorax* pale cinereous, with a slight rosy tinge, tegulæ shaded with fuscous. *Fore-wings* pale cinereous, with a rosy tinge, smeared with fuscous, especially towards the base of the fold and dorsum, beyond which are a number of slightly radiating, short, blackish streaks following the line of the cell and the veins above and beyond it;

these are interrupted by groups of whitish scales, some placed obliquely outward between the middle of the costa and the end of the cell, some parallel with the outer extremity of the cell, others preceding the termen and apex parallel to the margin of the wing, one group more conspicuous than the others forms a rounded white spot at the outer end of the cell, preceded by a few whitish scales at a little distance from it, also on the cell; cilia shining bronzy-cinereous, with a rosy tinge and darker speckling along their base. *Exp. al.*, 20 mm. *Hind-wings* shining pale bone-colour; cilia the same colour, with a faint greyish shade-line running through them near their base. Under-side with four or five dark fuscous spots visible at and beneath the apex, but not running through the cilia. *Abdomen* shining pale brownish-cinereous. *Legs* brownish-cinereous, hind tibiae banded externally with bronzy-fuscous, the tibiae also with three bronzy fuscous annulations, diminishing in proportion to the size of the joints.

Type, ♀, Mus. Wlsm.

Hab.: CORSICA, Tavignano Valley (Corté), 28, V, 1896. One specimen.

A single specimen occurred in the Tavignano Valley, at Corté, on May 28th, evidently freshly emerged from the pupa. It belongs to the group of *albipunctella*, Hb., and *chærophylli*, Z., and is decidedly darker than *floridella*, Mn. I can find no species from which it is not actually distinct.

DEPRESSARIA RADIOSQUAMELLA, Wlsm.?

A second specimen, possibly referable to the same species, but less distinctly marked, occurred on May 12th, at Ponte-alla-Leccia. It differs in the apical joint of the palpi having two distinct dark rings instead of being darkly scaled throughout, and the second joint shows no division between its external dark shading as in the type. The fore-wings are somewhat less rosy, the discal spot is inconspicuous, and the blackish lines are scarcely traceable, the whole apical portion being covered by a smoky shade. It bears, however, sufficient resemblance to the type to prevent me from regarding it in the absence of a series as anything more than a suffused variety. *Exp. al.*, 24 mm.

Hab.: CORSICA, Ponte-alla-Leccia, 12, V, 1896. A single ♀.

BORKHAUSENIA, Hb.

=**ECOPHORA*, auct. (*vide ante*, p. 34).

BORKHAUSENIA PULVERISQUAMIS, sp. n.

Antennæ ($\frac{3}{4}$) biserrate on their outer half, basal joint with strong pecten; brownish-cinereous. *Palpi* slender, recurved, reaching scarcely as high as the vertex, not thickly clothed; apical joint shorter than the second; brownish-cinereous. *Head* and *thorax* smooth, brownish-cinereous. *Fore-wings* pale greyish-fuscous, profusely dusted with pale brownish-cinereous scales, evenly distributed throughout, but leaving two discal spots and one plical spot somewhat ill-defined, the plical spot is almost exactly under the first discal, but if anything a little farther

from the base; cilia pale greyish-fuscon, sprinkled along their base with pale brownish-cinereous. *Exp. al.*, 15 mm. *Hind-wings* dark greyish; cilia brownish-cinereous. *Abdomen* leaden-grey. *Legs* pale brownish-cinereous; hind tibiae hairy above.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Corté, 22—27, V, 1896. Two specimens taken flying among low herbage.

(To be continued).

TEN WEEKS AT THE FOOT OF BEINN DOIREANN (BEN DOHORAN) IN SEARCH OF CADDIS FLIES IN 1897.

BY JAMES J. F. X. KING, F.E.S.

The summer of 1897 proved to be a very poor one for *Trichoptera*, as far as Bridge-of-Orchy and neighbourhood was concerned; during the latter part of June *Trichoptera* were fairly common flying about, but during July and August they were very scarce; many reasons might be adduced for this, the bad weather which prevailed during those two months having much to do with the scarcity, although the want of good shelter for the insects during wet weather being to me the main cause. Trees, except a few along the River Orchy, and those which form Loch Tulla Wood, do not exist in the district, undergrowth, unless we count stunted heather, being wanting. In fact, the whole country-side, when we think that it lies between Loch Awe and Loch Rannoch, was very disappointing.

One good insect was taken, I refer to *Limnophilus elegans*, this is the second captured Scottish specimen; the other species taken, with the exception of *Polycentropus Kingi*, being such as might be found in any Highland locality.

A list of species follows.

Limnophilus lunatus, at Loch Tulla, and also on the sides of Ben Dohoran; *elegans*, one specimen beaten out of alder along the River Orchy on June 17th, although I worked hard to get more of this species I was not fortunate; *ignavus*, not uncommon along the River Orchy, and also along the Burn sides up Ben Dohoran; *centralis*, common all over the district; *auricula*, beaten out of firs in Loch Tulla Wood and Cranach Wood; *griseus*, a few on the River Orchy, and a few specimens were taken in Cranach Wood; *extricatus*, not uncommon along the River Orchy; *luridus*, very common along the River Orchy by beating the trees; *sparsus*, along the river sides.

Stenophylax stellatus, not uncommon both on Ben Dohoran and along the rivers; *latipennis*, only found in the neighbourhood of Cranach and Loch Tulla woods.

Micropterna lateralis, on Ben Dohoran.

Ecclisopteryx guttulata, small specimens of this species were taken near the River Orchy.

Sericostoma personatum, this species was taken along with the last.

Lepidostoma hirtum, not uncommon along the rivers.

Leptocerus alboguttatus, Loch Tulla; *annulicornis*, common along the rivers; *cinereus*, on Ben Dohoran; *commutatus*, not uncommon along the Orchy; *bilineatus*, Loch Tulla, not uncommon.

Mystacides azurea, along with the last species.

Hydropsyche instabilis, this species abounded everywhere, on still evenings it might be seen dancing in scores above every little knoll.

Philopotamus montanus, on various mountain streams.

Plectrocnemia conspersa, along with last species.

Polycentropus flavomaculatus, common on the rivers; *multiguttatus*, Loch Tulla; *Kingi*, on little streams flowing into the River Orchy.

Rhyacophila dorsalis, common.

Agapetus comatus, common.

Hydroptila femoralis and *forcipata*, both species very common on the rivers.

207, Sauchiehall Street, Glasgow:

May, 1898.

REVISION OF THE NOMENCLATURE OF *MICRO-LEPIDOPTERA*.

BY THE RIGHT HON. LORD WALSLINGHAM, M.A., LL.D., F.R.S.,
AND
JOHN HARTLEY DURRANT, F.E.S., MEMB. SOC. ENT. DE FRANCE.

(Continued from page 35).

ALABONIA, Hb.

= **HARPELLA*, Meyr.

Meyrick, Pr. Lin. Soc., N.S.W., IX, 723 (1884), when describing his genus *Peltophora* pointed out that *forcicella*, Sc., differed in neuration and in the structure of its palpi from the other species included in the European list under *Harpella*, Schrk. For this reason he constituted *forcicella* one of the types of his new genus *Peltophora*, and consequently restricted the genus *Harpella* to the species included in the European lists. Unfortunately *forcicella* is the type of *Harpella*, being cited by Schrank himself [Fn. Boica, II (2), 168 (1802)], and consequently *Harpella* = §*Peltophora*, Meyr., while **Harpella*, Meyr. (*nec* Schrk.), requires another name, and should in future be known as *Alabonia*, Hb., moreover, *Peltophora* is pre-occupied in *Hemiptera* (Burm., 1835).

ALABONIA, Hb.

Type, *Tinea geoffroyella*, L. (†*geoffrella*, L.), Steph., 1834.

ALABONIA, Hb., Verz. bek. Schm., 418 (1826).

1. **geoffroyella**, L., Hb., 123. 2. *bracteella*, L., Hb., 156.
3. *olivierella*, F. (= *æmulella*, Hb., 222).

Stph., Ill. Br. Ent., Haust. IV, 226—7 (1834), 422 (1835).

1. **geoffroyella**, L.

Westw., Syn. Gen. Br. Ins., 110—11 (1840); Westw. and Humph.,
Br. Moths, II, 196 (1854).

= *ENICOSTOMA, Dp., Lp. Fr., XI, 22—3, 413—4 (1838), [*nec* Stph., Ill.].

geoffroyella, L. (*geoffrella*, L., Dp.).

= HARPELLA (auct. partim, Stgr. Cat., &c.).

= *HARPELLA, Meyr., HB. Br. Lp., 632 (1895), *nec* Schrk.

HARPELLA, Schrk.

Type, **Tinea forficella**, Sc. (Schrk., 1802).

HARPELLA, Schrk., Fn., Boica, II (2), 168 (1802).

Type, **forficella**, Sc. (= *proboscoidella*, Sulz., Schrk.).

Z. Is., 1839, 191. HARPELLA, Schrk. (LAMPROS, Tr.), Z. Is., 1847, 823.

= LAMPROS, Tr., Schm., Eur., IX (2), 57 (1833).

1. **forficella**, Sc. (= *majorella*, Hb., Tr.); 2. *stipella*, L. (= *sulphurella*, Hb., Tr.); 3. *similella*, Hb.; 4. *rupella*, Schiff. (= **capitella*, Tr.); 5. *bracteella*, L.; 6. *denisella* (Schiff.), F.; 7. *citrinalis*, Sc. (= *christiennella*, Hb., Tr.); 8. *quercana*, F. (= *faganella*, Tr.).

Dp., Hist. Nat. Lp. Fr., XI, 17—18, 257—8 (1838).

1. **forficella**, Sc. (= *majorella*, Hb., Dp.).

= OROPHIA, Hb., Verz. bek. Schm., 405 (1826), *partim*.

1. **forficella**, Sc. (= *majorella*, Hb., 120), and two other species now included in *Rhinosia*.

Type, **Cryptolechia privatella**, Wkr. (Wkr., 1864).

= CHEZALA, Wkr., Cat. Lp. Ins. B. M., XXIX, 787 (1864).

Type, **privatella**, Wkr. (= *allatella*, Wkr.).

Type, **Cryptopeges fulvia**, Btl. (Btl., 1882).

= CRYPTOPEGES, Btl., Ann. and Mag. N. H. (5 s.), IX, 100—1 (1882).

Type, **fulvia**, Btl.

= §PELTOPHORA, Meyr., Pr. Lin. Soc., N.S.W. [VII, 421 (1883)], IX, 722—3 (1884). Twenty-three species, including—

1. **forficella**, Sc. (Type of HARPELLA, Schrk.).

14. **fulvia**, Btl. (Type of CRYPTOPEGES, Btl.).

22. **privatella**, Wkr. (Type of CHEZALA, Wkr.).

The name *Peltophora* is pre-occupied in *Hemiptera* (Burm., 1835).

(To be continued).

Diptera from Suffolk, Aberdeen, &c.—During the last two or three years a good many *Diptera* have passed through my hands. They have been principally received from Mr. Claude Morley of Ipswich, Mr. W. H. Tuck of Tostock, Bury St. Edmunds, Mr. J. Mearns of Aberdeen, and Messrs. W. W. Esam and L. B. Hall of Hastings. It may be of interest to enumerate some of the more conspicuous species.

LIMNOBIDÆ.—*Phalacroceræ replicata*, L., both imago and larvæ from Aberdeen; the larva is covered with hairs, and feeds among submerged mosses (*cf.* Trans. Ent. Soc. Lond., 1897).

STRATIOMYIDÆ.—*Pachygaster ater*, Pz., Ipswich; *Chrysonotus bipunctatus*, Scop., and *Actina tibialis*, Mg., Ipswich and Tostock; *Sargus flavipes*, Mg., Tostock.

TABANIDÆ.—*Hæmatopeta crassicornis*, Whlbg., ♂ & ♀, and *Theriopectes montanus*, Mg., ♂ & ♀, Aberdeen.

ASILIDÆ.—*Laphria flava*, L., ♂ & ♀, taken near Banchory, September, 1889, these specimens are now in the British Museum; *Epitriptus cingulatus*, F., Ipswich and Aberdeen.

BOMBYLIDÆ.—The beautiful *Anthrax fenestrata*, Fln., Chobham.

SYRPHIDÆ.—*Syrphus punctulatus*, Verr., Aberdeen; *S. tricinctus*, Fln., Winchelsea, Woking and Aberdeen; *Xanthogramma ornatum*, Mg., Tostock; *Brachyopa bicolor*, Fln., Guestling; *Sericomyia borealis*, Fln., bred, and *S. lappona*, L., Aberdeen; *Helophilus transfugus*, L., Southwold and Winchelsea; *H. vittatus*, Mg., Winchelsea; *Criorrhina berberina*, F., Guestling; *C. floccosa*, Mg., Tostock; *Pocota apiformis*, Schrk., this rare and handsome insect was bred by Mr. W. H. Tuck from the nest of a *Bombus*, the larva is said to feed on decayed wood; *Xylota lenta*, Mg., Southwick, Hants; *Eumerus lunulatus*, Mg., Ipswich, Tostock and Guernsey.

CONOPIDÆ.—*Conops ceriiformis*, Mg., ♂ & ♀, Ipswich; *Oncomyia atra*, F., Ipswich, Tostock and Guernsey.

CESTRIDÆ.—*Cephenomyia auribarbis*, Mg., larvæ from Aberdeen, imago from Mr. Percy Grimshaw of Edinburgh.

TACHINIDÆ.—*Gonia ornata*, Mg., Ipswich and Tostock; *Chetolyga quadripustulata*, F., Guernsey.

CORDYLURIDÆ.—*Ceratinostoma ostiorum*, Hal., Ipswich.

SCIOMYZIDÆ.—*Lucina fasciata*, Mg., Guernsey; *Elgiva dorsalis*, F., *E. cucularia*, L., and *Tetanocera punctata*, F., Winchelsea, the latter species also from Ipswich; *Sciomyza Schænherri*, Fln., Ipswich, Pevensey and Winchelsea.

PSILIDÆ.—*Chyliza atriseta*, Mg., Ipswich.

ORTALIDÆ.—*Ulidia erythrophthalma*, Mg., Winchelsea; *Chrysomya deman-data*, F., Ipswich and Tostock.

TRYPETIDÆ.—*Gonyglossum Wiedemanni*, Mg., Ipswich; *Carphotricha guttularis*, Mg., St. Leonards; *Tephritis formosa*, Lw., Ipswich.

LONGHEIDÆ.—*Palloptera ustulata*, Fln., and *Toxoneura muliebris*, Harris, Tostock.

HETERONEURIDÆ.—*Trigonometopus frontalis*, Mg., Ipswich.

CHLOROPIDÆ.—*Platycephala planifrons*, F., Ipswich and Benacre Broad.

These last two interesting species, though figured by Curtis in his "British Entomology," are not described by Walker in the "Insecta Britannica *Diptera*," although figures (copied from Curtis) of the heads and other details are given in

the plates to vol. ii of that work. The same may be said of *Lucina fasciata*, Mg., which I have received from Guernsey, as mentioned above.—E. N. BLOOMFIELD, Guestling Rectory: April, 1898.

Scolopostethus grandis, Horv., at Tunbridge Wells.—I found about a dozen of this species on Easter Monday among dead leaves on Rusthall Common; all but one female were brachypterous. It is in all probability not uncommon, but I have only met with it previously on one occasion near Woking and once at Chobham. It is darker than the common *affinis* and somewhat larger, and I rather hoped at first that I was catching *S. pilosus*, Reut., a species which has not yet occurred in this country, but I was undeceived as soon as I was able to examine them at home. *S. pilosus* should be looked for, as it occurs in Sweden and France, and may very probably turn up here. It is like the other forms in general colour and pattern, but rather duller than most of them, and with distinct projecting hairs on the pronotum and elytra; the mesosternum has no tubercles in front of the intermediate coxæ. I believe it is found amongst dead leaves, &c.—EDWARD SAUNDERS, St. Ann's, Woking: May 11th, 1898.

Acanthia on tame rabbits.—Mr. C. W. Dale writes to me—"Do you know that Kirby and Spence in their introduction to Entomology mention a *Cimex* being attached to tame rabbits. I have never heard of such; have you?" The passage referred to is at p. 89 (7th ed.), and is as follows:—"Our domestic rabbits sometimes swarm with the bed-bug. This was the case with some kept by two young gentlemen at my house last summer to such a degree, that I found it necessary to have them killed." Well, I had marked this in the margin of my copy of the book with a !, and my wonder has not become less during the more than forty years that have elapsed since. At the time the passage was written there was but one species of *Cimex* (*A. lectularia*) known, and its ubiquitous tramps abroad and at home did not seem wonderful. But now that (the said power of travel not being impaired) several species of the genus, each specially attached to other creatures than man are known, it appears to me to be doubtful if the species referred to, as stated, was really *A. lectularia*, this idea being strengthened by the remark of Kirby and Spence, at p. 87 previous, that "pigeons often swarm with the bed-bug," that kind being now well known to be the distinct *A. columbaria*, Jenyns. The investigation of the identity or dissimilarity of *Acanthia* infesting different animals is not inviting to the unscientific mind, and considering that by the class of persons who would have the greatest chance of observing them in nature the insects would at once be put beyond the power of scientific observers, it is not wonderful that so few discoveries in this direction have been made. Perhaps, now that attention to the subject is being awakened, some endeavours may be made to determine in some degree how many more species of *Acanthia* are still awaiting the distinction of being called up and named.—J. W. DOUGLAS, 153, Lewisham Rd., S.E.: May 13th, 1898.

Aphodii in the burrows of *Geotrupes*.—Apropos of Mr. E. J. Burgess Sopp's note on the habits of *Aphodius* (*Heptaulacus*) *testudinarius* (ante p. 114), it may be worth while to call attention to Dr. T. A. Chapman's record of *Aphodius porcus* ovipositing in the burrows of *Geotrupes stercorarius* (cf. Ent. Mo. Mag., v, p. 273, and vi, p. 230).—G. C. CHAMPION, Horsell, Woking: May 10th, 1898.

Philonthus fuscus, Grav., in Chatham Dockyard.—A small black poplar tree in Chatham Dockyard, much infested by the larvæ of *Cossus*, which for the last two years I have passed twice nearly every day, and have often examined for *Coleoptera*, unexpectedly yielded five specimens of this very rare *Philonthus* on April 27th and 28th. They were found among last year's damp *Cossus* frass under small pieces of loose bark where a good sized limb had been broken off the tree, and were exceedingly active, reminding me not a little, in their general aspect and manner of running, of one of the bark-frequenting species of *Quedius*—*scitus* for example. In the same tree I have recently taken *Silusa rubiginosa*, Er., rather freely.—JAMES J. WALKER, 23, Ranelagh Road, Sheerness: May 9th, 1898.

Review.

BRITISH ORTHOPTERA (Earwigs, Grasshoppers and Crickets): by MALCOLM BURR, F.Z.S., F.E.S., with 6 plates by S. L. MOSLEY, F.E.S. Pp. 69. Huddersfield: The Economic and Educational Museum. 1897.

This work first appeared in the "Naturalist's Journal." The still youthful author is well known as an enthusiast in *Orthoptera*, and we cannot help wishing he had matured his ideas by a year or two before committing himself to print, still the work will prove useful on account of its genuine nature. We are sorry not to be able to praise the plates; the drawing is not very bad, but the colouring leaves very much to be desired. A mistake has been made in admitting species that at present can be only considered as unestablished casuals. An odd, but evidently innocent, inversion of fact occurs in the opening lines of the "Introduction." The price of the work is almost nominal, and to those of our readers who possess Mr. Eland Shaw's "Synopsis," published in this Magazine, vol. xxv, and second series, vol. i (1889-90), it will form a useful supplement.

Obituary.

William Miles Maskell, Registrar of the University of New Zealand. Information has been received by telegram of the death on May 1st (unexpected we think) of our esteemed correspondent and contributor, Mr. W. M. Maskell, so well known for his researches in *Coccidæ*, and who also published on *Aleurodidæ* and *Psyllidæ* amongst insects, and on Desmids in Microscopic Botany; in fact, it is possible he began originally as a microscopist in a general sense, afterwards limiting his researches with the beneficial results to science and economic entomology so widely familiar. The majority of his papers have appeared in the "Transactions of the New Zealand Institute," the first having been published in 1879. At first he restricted himself to the species found in New Zealand, but later on those of Australia (especially the curious gall-making *Brachyscelidæ*), Asia, &c., came under his notice, he having become a recognised authority on the subject of *Coccidæ*. He usually published at least one paper a year in New Zealand, the later ones being lengthy, and all copiously illustrated by his own drawings. We think there is no one to take up his work in New Zealand, though perhaps he may find a successor in Australia. Of his age and early life we at present know nothing: possibly we may be able to supply these details later on.

Jules Migneaux, the celebrated French entomological artist, died at Billancourt (Seine) on March 2nd, 1898, after a short illness. He probably first came into note as an insect draughtsman by the plates illustrating Jacquelin Duval's *Genera des Coléoptères*, and for many years the "Annales" of the Entomological Society of France have been largely enriched by his pencil. Beginning as simply a draughtsman he latterly (for more than ten years) engraved his own figures, showing a delicacy of touch and beauty of finish that has been rarely equalled.

Prof. Mariano de la Paz Graëlls, an entomologist of considerable merit, and a Spanish Senator, died at Madrid on February 13th in his 80th year. He was Professor of Comparative Anatomy in the University of Madrid, and at one time paid much attention to entomology, publishing his papers in the *Annales de la Soc. Ent. de France*, of which Society he had been a Member since 1832.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *February 21st, 1898.*—Mr. G. T. BETHUNE-BAKER, F.L.S., President, in the Chair.

Mr. R. C. Bradley showed *Capua favillaceana*, which had been common in Sutton Park last year, though in previous years he had only seen occasional specimens. Mr. P. W. Abbott showed a very fine and well marked bright series of *Lycæna Arion* from Cornwall, also *Gnophos obscuraria* from Lewes, with var. *calcalceata* and an intermediate form. Mr. Bethune-Baker showed two drawers from his collection, containing a portion of the genus *Colias*.

March 21st, 1898.—The President in the Chair.

Mr. J. T. Fountain showed a locust found in imported vegetables at King's Norton; it had been identified by Mr. Malcolm Burr as *Acridium ægyptium*. Mr. P. W. Abbott, a short series of *Phorodesma bajularia* from Wyre Forest; a specimen of *Grammesia trigrammica* with the outer half of the wings, from the median bar, very dark, and the inner half light; also a series of *Hecatera dysodea* from the Fens: he likewise showed a series of the Cornish *Lycæna Arion*, for comparison with some exhibited by Mr. G. T. Bethune-Baker from the Gloucester locality. The Cornish ones were decidedly and conspicuously brighter and handsomer looking specimens, with quite a distinct type of blue, quite different not only from the Gloucester ones, but also from all of a long series shown by Mr. Bethune-Baker from Switzerland and the Amur, &c. Both the Gloucester and Cornish specimens were taken in the same year (1896), and all were in very good condition. Mr. Bethune-Baker also showed some of distinctly darker colour belonging to well defined varieties, var. *obscura* from the Alps, and var. *abralensis* from the Urals; in the latter specimens the blue colour had nearly disappeared: also a number of other Palearctic species of *Lycæna*, including those most nearly allied to *Arion*. Mr. R. C. Bradley read a paper on the Aculeate *Hymenoptera*, illustrating it with eight boxes of insects and some very good diagrams, which had been drawn by Mr. A. H. Martineau; Mr. Martineau also showed in connection with the paper a collection of nests, &c., of Aculeates in wood, pierced stems, &c.—COLBEAN J. WAINWRIGHT, *Hon. Secretary*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
 February 24th, 1898.—Mr. J. W. TUTT, F.E.S., President, in the Chair.

Mr. Kaye, Worcester Park, Surrey; and Mr. Chatterton, F.E.S., 7, Clissold Road, Stoke Newington, were elected Members.

Mr. G. Stevens exhibited several fine varieties of Lasiocampid moths, including bright yellow-brown *B. trifolii*, *B. quercus*, with semitransparent hind-wings, a dark, well banded *B. rubi*, and a remarkably light *L. quercifolia*. Mr. J. A. Clarke, his series of the *Lasiocampidæ*, including many fine and extreme forms of variation. Mr. R. Adkin, fine series and varieties of many of the same family. Mr. Tutt, an inbred series of *Zygæna filipendulæ*, showing the gradual coalescence of the spots, and the usual order of this joining; a *Brephos parthenias* from Leicester, having yellow hind-wings; and a yellow variety of *Arctia fuliginosa*. Mr. F. Clarke, Photo-micrograph of the curious scales of the aberrant Lepidopteron, *Pseudopontia paradoxa*. Mr. Tutt read a paper, entitled, "The Lasiocampid Moths," illustrating it with specimens, diagrams, and the blackboard. A discussion ensued, Dr. Chapman, Messrs. J. A. Clarke, R. Adkins, J. Stevens, Hillsworth, McArthur, and Tutt taking part.

March 10th, 1898.—The President in the Chair.

Mr. Donisthorpe, F.E.S., 73, West Cromwell Road; Mr. F. Bouskell, F.E.S., Leicester; Mr. F. Lemann, F.E.S., Plymouth; Mr. Parkins, Battersea; and Mr. Bevins, Clapham Common; were elected Members.

The evening was devoted to the exhibition of a large number of admirable Photo-micrographs, made by Mr. Fred. Clark, together with a number of slides showing details of the *Odonata* (dragon-flies) made by Mr. Lucas. The slides were of particular interest, as the objects were shown in many cases by other members and handed to Mr. Clark, who photographed and most skilfully manipulated them for exhibition in the Society's lantern.

March 24th, 1898.—The President in the Chair.

Mr. Adkin exhibited specimens of *Grammesia trigrammica* (*trilinea*), in which the ground colour was so darkened as to obliterate the usual transverse lines; these were known as the Lewes form. Mr. Moore, a pale pigmented variety of *Anosia Menippe* (*Archippus*) from the Malay Archipelago; it was noted that such a variation of this species was hitherto unknown. Mr. Cant, a series of strongly marked specimens of *Hybernia defoliaria* from Dean Forest, and a dark costal form specimen of *Xylomyges conspicularis* from Worcester.

April 14th, 1898.—Mr. R. ADKIN, F.E.S., Vice-President, in the Chair.

Mr. Harrison exhibited a number of living specimens of a Coleopteron from Bombay; it was a species of the *Cassida* group, and looked like a piece of pure gold; it was stated that this appearance was lost after death. Mr. South, on behalf of Rev. A. Snell, a curious specimen of *Leucania littoralis*, having darkened hind-wings; specimens of *Leptogramma ferrugana* and *Cerostoma radiatella* taken this spring at Oxshott, having hibernated. Mr. Ashby, specimens of the spring-tail, *Machilis polypoda*, taken under wood and stones in the New Forest. Mr. Adkin, various specimens of the *Tephrosias*; Mr. South and Mr. McArthur both gave details of the occurrence of very closely allied forms occurring in Japan and Assam respectively. Mr. South, a large number of specimens of Japanese *Lepidoptera* kindly lent by Mr. Leech to illustrate his (Mr. South's) paper, entitled, "British Species of *Lepidoptera* occurring in Japan."—H. J. TURNER, Hon. Secretary.

THE *TINEINA* OF NORTH-WEST KENT AND ADJOINING PORTION OF SURREY.

BY BENJ. A. BOWER, F.E.S.

It has been suggested that as there does not appear to have been any account published of the *Tineina* occurring in the above-named district, it would be interesting to those studying this group of *Lepidoptera* if the species were put on record that have come under my personal notice during the time, *i. e.*, the past ten years, I have given attention to it.

The number of species taken is 380, out of a total of 759 included in the British list, which, bearing in mind the restricted distribution of some, the great rarity of others, and the smallness of the district worked, appears a very fair proportion. The number might have been considerably increased by extending the area under notice, but I have thought it best to confine it to one that I have pretty thoroughly worked, and so have a good idea of its productiveness. It must not be supposed that some species are as local in the district as might be inferred from this list—many must necessarily have a far wider range—but to the localities given only being such as are found in my note books, or on labels attached to specimens in my collection.

The localities mentioned are within about twelve miles of Lee, so are easily accessible to London entomologists; and can be visited even by those having very limited leisure, all being within an hour's railway journey from town. A considerable portion of the district is given up to hops, fruit, and game, so that it is virtually beyond the reach of the entomologist, unless outside influence can be brought to bear on his behalf. Being so near London, farmers, game-keepers, etc., are very suspicious of an insect-net, as it is sometimes carried by those whose pursuits are most distinctly not entomological. Some species, I regret to say, are year by year becoming less widely distributed, if not being exterminated; this is chiefly due to the speculative builder, and so-called improvements. And I cannot help fearing that several which are recorded as having been taken in the district are no longer to be found there, as many most careful searchings in their old haunts, by myself and friends, have ended in utter failure.

The ground worked is fairly variable and undulating, though no great altitude is reached, the highest point (Sanderstead) being only 523 feet above sea-level. It comprises pasture and arable lands, large

tracts of woodland, chalk downs, heaths, and a small extent of marsh along the rivers Thames, Darent, and Cray.

I hope this list may induce more Lepidopterists to turn their attention to this most interesting and much neglected group, and so, very shortly, make it require a supplement.

Lemnaphila phryganella—generally distributed.

Exapate congelatella—locally common, Eltham.

Diurnea fagella—generally abundant, and very variable in colour.

Epigraphia avellanella—generally distributed, but nowhere common; *Steinkellneriana*—scarce, Bexley, West Wickham.

Talaporis pseudo-bombycella—common as larvæ in many places, imagines seldom seen.

Solenobia inconspicuellæ—uncommon, Bexley.

Diplodoma marginipunctella—rare, Bexley.

Xysmatodoma melanella—local and uncommon, Eltham, Lee, Chislehurst, Greenhithe.

Ochsenheimeria Birdella—locally common, Lee; *bisontella*—abundant, Dartford Heath; *vacuella*—common, Lee, Lewisham, Shooter's Hill, Mottingham.

Scardia boleti—rare, Bexley; *corticella*—locally common, Lee, Bexley, Blackheath; *parasitella*—common some seasons, Eltham, Bexley, West Wickham, Chislehurst, Greenhithe; *granella*—in most granaries and flour mills visited; *cloacella*—generally abundant; *arcella*—uncommon, Bexley, Lee, Eltham, Greenhithe, Chislehurst.

Tinea ferruginella—generally distributed and not uncommon; *rusticella*—generally abundant; *tapetzella*—not common, Bexley, Eltham, Beckenham; *misella* in most granaries visited; *pellionella* and *fuscipunctella*—too generally common; *lapella*—generally common; *biselliella*—far too common; *semifulvella*—generally distributed and common; *bistrigella*—local and uncommon, Bexley, Eltham; *argenticmaculella*—local and scarce, Blackheath, Sidcup, Eltham.

Lampronia quadripunctella—not common, Lee, Bexley, Eltham; *luzella*—fairly common some years, Eltham, Bexley, Greenhithe; *prælatella*—scarce, Bexley; *rubiella*—abundant, Lee, Eltham, Bexley, Greenhithe.

Incurvaria masculella—generally distributed and abundant; *tenuicornis*—a single specimen, Chislehurst; *Ählmanniella*—moderately common, Chislehurst, Eltham, Bexley, West Wickham; *capitella*—locally abundant, Lee, Chislehurst, Greenhithe, Bexley, Eltham.

Micropteryx calthella—generally common; *Seppella*—locally common, Greenhithe, Eltham, near Farningham, Bexley, Sanderstead; *Allionella*—scarce, Chislehurst; *Thunbergella*—not uncommon, Bexley, Greenhithe, Addington, Eltham; *purpurella*, *semipurpurella*, and *unimaculella*—abundant amongst their food-plant; *Sangii*—scarce, Bexley, Chislehurst; *Sparmannella*—not common, Chislehurst, Bexley, Eltham; *subpurpurella*—generally distributed and abundant.

Nemophora Swammerdamella—common, Bexley, Eltham, Chislehurst; *Schwarziella*—not uncommon, West Wickham, Eltham, Bexley, near Farningham.

Adela fibulella—common, West Wickham, Greenhithe, Shirley, Eltham, Bexley; *rufinitrella*—uncommon, Eltham, Lee, Bexley, Greenhithe; *Degeerella*—common

some seasons, Eltham, West Wickham, Greenhithe, Bexley; *viridella*—generally distributed and abundant.

Nemotois scabiosellus—not uncommon, downs south of Croydon; *fasciellus*—locally common, Greenhithe.

Swammerdamia combinella—scarce, Eltham; *griseocapitella*—generally common amongst its food-plant; *oxyacanthella* and *pyrella*—generally common; *spiniella*—not uncommon, Lewisham.

Scythropia cratægella—scarce, Bexley.

Hyponomeuta plumbellus—common, Bexley, Darenth, Blackheath, Greenhithe; *padellus*—generally abundant; *cognatellus*—common, Lee, Bexley.

Prays Curtisellus—generally abundant.

Eidophasia Messingiella—scarce, Eltham.

Plutella maculipennis—generally common; *porrectella*—not common, Lee, Greenhithe.

Cerostoma sequella—scarce, near Farningham; *vittella*—widely distributed and common; *radiatella*—generally abundant; *costella*—fairly common generally; *sylvella*—not common, Chislehurst, Bexley, Eltham; *scabrella*—common, Beckenham, Bexley, Eltham, Chislehurst, Bromley; *nemorella*—uncommon, Bexley; *xylostella*—generally abundant.

Theristis caudella—not common, Eltham, Darenth, Bexley.

Orthotalia sparganella—common, Lee.

Enicostoma lobella—abundant, Kidbrooke, Lee, Greenhithe.

Phibalocera quercana—generally common.

Depressaria costosa—generally abundant amongst its food-plants; *liturella*—common, Chislehurst, Lee, Bexley, Bromley, Eltham; *assimilella*—common, Lee, Dartford Heath; *nanatella*—not uncommon, near Foot's Cray, near Farningham; *scopariella*—scarce, Lee; *arenella*—generally common; *propinquella*—common, Bexley, Eltham, near Foot's Cray, Darenth, Greenhithe; *subpropinquella*—scarce, Darenth; *rhodochrella*—rare, Darenth; *Alstrameriana*—not common, Darenth, Swanley; *purpurea*—uncommon, Darenth, Green Street Green, Bexley; *hypericella*—common, West Wickham, Lee; *conterminella*—generally abundant; *carduella*—rare, Bexley; *ocellana*—uncommon, Eltham, Bexley; *applana*—generally abundant; *rotundella*—common near Farningham; *pulcherrimella*—common, downs south of Croydon; *Douglasella*—uncommon, downs south of Croydon; *Weirella*—common, Eltham; *chærophylli*—fairly common generally; *badiella*—uncommon, downs south of Croydon, Dartford Heath, near Foot's Cray; *heracleana*—generally common.

Gelechia nigra—local and scarce, Lee, Bexley; *ericetella*—abundant on most heaths; *mulinella*—common, Lee, Chislehurst, Greenhithe; *sororculella*—common, Lee, Bexley, Eltham, Chislehurst, Shooter's Hill; *suppeliella*—very local, but not uncommon, West Wickham; *diffinis*—uncommon, Bexley; *rhombella*—common, Lee, Bexley; *distinctella*—uncommon, Dartford Heath; *scalella*—common, Greenhithe, Bexley, Shooter's Hill, West Wickham, Chislehurst.

Brachmia Mouffetella—common, Lee, Eltham, Bexley, Chislehurst.

Bryotropha terrella—abundant throughout district; *senectella*—not common, Lee, Greenhithe, near Farningham; *similis*—rare, Lee; *affinis*—not uncommon,

Lee, Charlton, Bexley, Mottingham; *basallinella*—not uncommon, Greenhithe; *domestica*—scarce, Dartford Heath.

Lita acuminatella—not common, near Farningham, Bexley, downs south of Croydon; *artemisiella*—fairly common, Bexley, near Farningham; *costella*—common, but very local, Lee; *maculea*—generally common; *tricolorella*—generally abundant; *fraternella*—locally common, Lee, Chislehurst, Purley, Eltham; *maculiferella*—fairly common, but very local, Lee, Eltham; *obsoletella*—scarce, Lee; *atriplicella*—generally common.

Teleia proximella—Generally abundant; *notatella*—not uncommon, Chislehurst, Eltham; *vulgella* and *luculella*—generally common; *scriptella*—locally abundant, Lee, Eltham, Kidbrooke; *fugitivella*—abundant throughout the district; *sequax*—locally common, Bexley, Greenhithe, near Farningham, Purley; *dodecella*—not uncommon, Lee, near Farningham, Bexley; *triparella*—fairly common, Lee, Darenth, Kidbrook, West Wickham.

Recurvaria leucatella—common, Bexley, Lee, Eltham, Blackheath; *nanella*—locally common, Lee, Bexley, Charlton, Blackheath.

Pæcilia nivea—common, Darenth, Bexley, Eltham; *albiceps*—uncommon, Eltham, Lee, Ladywell, Bexley.

Nannodia stipella—common, Bexley, Lee, Chislehurst, Lewisham; *Hermannella*—common, Lewisham, Lee, Eltham, Bexley, Greenwich.

Apodia bifractella—common, near Dartford.

Sitotroga cerealella—common in all granaries visited.

Ptocheuusa inopella—not uncommon amongst its food-plant; *subocellea*—uncommon, near Farningham.

Ergatis ericinella—abundant, Dartford and Shirley Heaths.

Monochroa tenebrella—common, West Wickham, Eltham, Lee.

Lamprotes atrella—uncommon, Chislehurst, Bexley, Lee.

Aproærema taniolella—common, near Farningham, Lee, Bexley, downs south of Croydon; *anthyllidella*—common, Chislehurst, near Farningham, Lee, Eltham, Bexley, downs south of Croydon.

Acanthophila alacella—rare, Bexley.

Anacampsis populella—abundant throughout the district.

Acompsia cinerella—common, near Farningham, Bexley.

Ceratophora rufescens—generally abundant.

Cladodes gerronella—scarce, Chislehurst, Lee, Dartford Heath.

Parasia lappella—uncommon, Bexley.

Paltodora cytisella—uncommon, Bexley, Dartford Heath.

Chelaria Hübnerella—common, Chislehurst, Bexley, West Wickham, Eltham.

Anarsia spartiella—abundant, Plumstead, Chislehurst; *genistæ*—rare, Lee.

Ypsolophus marginellus—common, Purley; *Schmidiellus*—not uncommon, but very local, near Darenth.

Sophronia parenthesella—uncommon, Bexley, near Farningham.

Pleurota bicostella—abundant on most heaths.

Harpella Geoffrella—generally common.

Ecophora sulphurella—generally abundant; *Oliviella*—not uncommon, Bexley, Lee, Greenhithe, Blackheath.

Borkhausenia minutella—common, Greenhithe, Bexley, Eltham; *tripuncta*—not uncommon, Lewisham, Greenhithe; *augustella*—scarce, Bexley, Mottingham; *lunaris*—not common, Chislehurst, Bexley, Eltham; *Panzerella*—common, Greenhithe, Bexley; *unitella*—not common, Lee, Blackheath, Bexley, Darenth; *flavifrontella*—scarce, Chislehurst, Eltham, West Wickham, Bexley; *fuscescens*—common, Bexley, Lee, Mottingham, Purley; *pseudo-spretella*—generally abundant.

Ecogenia quadripuncta—scarce, Lee, Eltham.

Endrosis fenestrella—too generally common.

Butalis senescens—common, downs south of Croydon, near Farningham.

Pancalia Leuwenhæckella—common, Greenhithe, Bexley, near Farningham.

Röslerstammia Erxlebenella—uncommon, Eltham, Chislehurst, Shirley.

Glyphipteryx fuscoviridella—generally abundant; *thrasionella*—generally common, Lee; *Fischeriella*—common, Lee, Eltham, Greenhithe.

Æchmia dentella—common some seasons, Bexley, Greenhithe.

Perittia obscurepunctella—scarce, Lee.

Heliozela sericiella—generally abundant; *resplendella*—common, Eltham, Chislehurst; *betulæ*—not uncommon, Chislehurst.

Argyresthia nitidella—abundant throughout the district; *semitestacella*—common, West Wickham, Bexley, Sanderstead; *albistria*—generally common; *conjugella*—common, West Wickham, Bexley, Addington; *semifusca*—not uncommon, Bexley, Chislehurst, Lee, Eltham, Dartford Heath; *mendica*—uncommon, Bexley, Greenhithe; *glaucinella*—scarce, Bexley, Eltham; *retinella*—generally abundant; *abdominalis*—not common, downs south of Croydon; *dilectella*—common, downs south of Croydon, Blackheath, Lee; *curvella*—common, Charlton, West Wickham, Lee, Bexley, Chislehurst; *pygmælla*—fairly common, Chislehurst, Eltham, Lee, Bexley; *Gædartella* and *Brockeella*—generally abundant; *Atmoriella*—uncommon, Chislehurst, Bexley; *arceuthina*—downs south of Croydon; *præocella*—scarce, downs south of Croydon; *aurulentella*—common, downs south of Croydon.

Cedestis farinatella—common, Bexley, West Wickham, Chislehurst, Lee, Eltham.

Ocnorostoma pinariella—abundant, West Wickham, Bexley.

Gracilaria alchemiella—generally abundant; *stigmatella*—common, Lee, Eltham, Chislehurst, Bromley, Blackheath; *elongella*—not common, Bexley, Eltham, Chislehurst; *tringipennella*—common, Chislehurst, Lee, downs south of Croydon; *syringella*—generally common; *omissella*—common, Darenth, Bexley, Eltham, Greenhithe; *auroguttella*—fairly common, Lee, West Wickham, Bexley, Eltham.

Coriscium Brongiardellum—scarce, Bexley,

Ornix avellanella—abundant, Plumstead, Chislehurst, Kidbrooke, Darenth, Eltham; *anglicella*—common, Lewisham, Eltham; *betulæ*—common, Chislehurst, Eltham, Bexley; *guttea*—common, Lee, Charlton, Eltham, Mottingham.

Coleophora Fabriciella and *deauratella*—scarce, Lee; *fuscocuprella*—fairly common some seasons, Bexley, Plumstead, Darenth, Greenhithe, Eltham; *alcyonipennella*—common, but very local, Eltham, Lee, Mottingham; *potentilla*—locally common, Chislehurst; *paripennella*—common, Lee, Chislehurst, Kidbrooke, Bexley, Darenth; *ochrea*—not uncommon, Purley; *lixella*—not uncommon, near Farningham; *pyrrhulipennella*—uncommon, Dartford Heath; *albicosta*—abundant, Dartford Heath, Chislehurst; *anatipennella*—common, Lewisham, Lee, Eltham, Bexley,

Greenhithe; *palliatella*—fairly common, Eltham, Bexley, Greenhithe, Darenth, West Wickham; *ibipennella*—common, Eltham, Chislehurst, West Wickham, Bexley; *ardeapennella*—scarce, Eltham, West Wickham; *discordella*—not common, near Farningham, Forest Hill; *genistæ*—common, Chislehurst, Dartford Heath; *saturatella*—fairly common, Lee, Greenhithe; *inflata*—not uncommon, Dartford, Greenhithe; *therinella*—locally common, Lee, Mottingham; *maritimella*—scarce, near Greenhithe; *troglydytella*—common, Eltham, Lee; *lineolea*—generally abundant; *caespitiella*—generally common; *laripennella*—not uncommon, Lee, Lewisham; *artemisiella*—common, near Greenhithe; *argentula*—common, Lee, Mottingham; *virgaurea*—generally abundant; *hemerobiella*—local and uncommon, Charlton, Bexley; *juncicolella*—abundant, Dartford Heath, Chislehurst, Shirley Heath; *laricella*—abundant, West Wickham, Chislehurst, Bexley; *albitarsella*—locally common, Lee, Chislehurst; *nigricella* and *fuscedinella*—generally abundant; *gryphipennella*—common, Lee, Lewisham, Kidbrooke; *siccifolia*—scarce, Lewisham; *bicolorella*—abundant, Lee, Eltham, Greenhithe; *viminetella*—common, Eltham, Lewisham, Lee; *olivaceella*—common some seasons, Lee, Lewisham, Bexley, West Wickham, St. Mary's Cray; *solitariella*—generally abundant; *lutipennella*—abundant, Eltham, Chislehurst, Bexley; *Wilkinsoni*—not uncommon, Chislehurst, Bexley, West Wickham, Darenth.

Batrachedra præangusta—generally abundant; *pinicolella*—not uncommon, Bexley, Blackheath.

Oinophila v-flava—scarce, Beckenham.

Chauliodus insecurellus—not common, Purley.

Laverna propinquella—uncommon, Bexley; *miscella*—common, Greenhithe, Downs south of Croydon; *Stephensi*—common, Tooting; *fulvescens*—generally abundant; *ochraceella*—common, Lee, Eltham; *subbistrigella*—common, Bexley, Darenth, near Foot's Cray; *Hellerella*—common, Lee, Bexley, Eltham, Greenhithe; *rhamniella*—not uncommon, Sanderstead, Greenhithe.

Chrysoclysta Linneella—common, Lee, Eltham, Blackheath; *bimaculella*—a single specimen, Eltham; *aurifrontella*—abundant, Eltham, Lee, Bexley, Charlton.

Cataplectica fulviguttella—common, Lee.

Asychna modestella—fairly common, Greenhithe, Eltham.

Chrysocorys festaliella—not uncommon, Sidecup.

Antispila Pfeifferella—common, Eltham, Bexley, Chislehurst, Lee, Greenhithe; *Treitschkiella*—common, Lewisham.

Elachista Gleichenella—not common, Bexley, Downs south of Croydon; *albi-frontella*—common, Lee, Eltham, Bexley, Darenth; *atricomella*—uncommon, Lee, Eltham, Greenhithe, Sanderstead; *luticomella*—common, Lee, Beckenham, Eltham, Bexley; *poæ*—scarce, Lewisham; *stabilella*—scarce, Bexley, Eltham; *nigrella*—common, Eltham, Beckenham, Greenhithe; *subnigrella*—rare, Eltham; *obscuraella*—common, Lee, Mottingham, Eltham, Bexley, Tooting, near Farningham; *zonariella*—uncommon, Lee; *gangabella*—a single specimen, Greenhithe; *taniatella*—not common, Dartford Heath; *Megerella*—fairly common, Eltham, Greenhithe, Lee, Darenth; *adscitella*—scarce, Eltham; *cerussella*—uncommon, Southend; *biatomella*—common, Lee, near Farningham, Downs south of Croydon; *pollinariella*—not common, Bexley; *rufocinerea*—generally abundant; *subalbidella*—common, Chislehurst; *cygnipennella*—generally common.

Tischeria complanella—generally abundant; *dodonæa*—scarce, Eltham; *marginæa*—abundant, Chislehurst, Eltham, Bexley, Shooter's Hill, Mottingham.

Lithocolletis lantanelle—abundant, Bexley, Darenth, Greenhithe; *Bremiella*—common, Bexley, Darenth; *lautella*—uncommon, Eltham, Chislehurst; *cavella*—fairly common, Chislehurst, Bexley, West Wickham, Darenth; *pomifoliella*—generally common; *coryli*—abundant, Kidbrooke, Bexley, Eltham, Darenth; *spinicolella*—common, Eltham; *faginella*, common, Mottingham, Bexley; *torminella*—locally abundant, Lewisham; *cerasicolella*—abundant, Bexley, Greenhithe; *salicolella*—common, Eltham, Chislehurst; *viminetorum*—common, Lewisham, Chislehurst; *carpinicolella*—common, Mottingham, Lewisham, Bexley; *ulmifoliella*—common generally; *spinolella*, common, Chislehurst, Eltham; *quercifoliella*—generally abundant; *messaniella*—common, Charlton, Lewisham, Greenhithe; *corylifoliella*—common, Bexley, Lee, Lewisham; *viminiella*—common, Chislehurst, Eltham; *scopariella*—scarce, Lee, Dartford Heath; *ulicicolella*—uncommon, Dartford Heath; *alnifoliella*—abundant, Beckenham, Bexley, Eltham, Chislehurst; *Cramerella*—generally abundant; *tenella*—not uncommon, Bexley, Mottingham, Lewisham; *sylvella*—abundant, Bexley, Mottingham, Kidbrooke, Eltham; *emberizæpennella*—common, West Wickham, Bexley, Eltham, Darenth; *Nicellii*—not common, Plumstead, Bexley, Eltham; *stettinensis*—not uncommon, Eltham; *Schreberella*—abundant, Lee, Eltham, Lewisham, Mottingham; *tristrigella*—local and not common, Lewisham; *trifasciella*—fairly common, Darenth, Bexley, Lee, Dartford Heath; *scabiosella*—not uncommon, Downs south of Croydon; *comparella*—abundant, Beckenham, Lee, Eltham, Blackheath.

Lyonetia Clerckella—not uncommon, Greenhithe, Bexley.

Phyllocnistis suffusella—abundant, Beckenham, Lee, Bexley, Chislehurst, Mottingham, Bromley, Darenth; *saligna*—common, Chislehurst.

Cemistoma spartifoliella—abundant, Lee; *laburnella*—abundant, Lee, Eltham, Blackheath; *scitella*—abundant, Lee, Bexley, Lewisham.

Opotege salaciella—not common, West Wickham, Bexley, Lee.

Bucculatrix nigricomella—abundant, Mottingham, Lee, Chislehurst; *cidarella*, local and uncommon, Eltham, Bexley; *ulmella*—abundant, Bexley; *cratægi*—not common, Bexley; *Boyerella*—uncommon, Eltham, Bexley, Greenhithe, Sideup, Lee; *frangulella*—abundant, Darenth, Sanderstead; *thoracella*—scarce, Bexley; *cristatella*—abundant, Lee, Bexley.

Nepticula atricapitella and *rusticapitella*—common, Eltham; *anomalella*—abundant, Lee, Lewisham; *pygmælla*—common, Mottingham; *oxyacanthella*—abundant, Mottingham, Lewisham; *viscerella*—not uncommon, Lewisham; *catharticeella*—abundant, Sanderstead, Darenth, Lee; *subbimaculella*—uncommon, Chislehurst; *trimaculella*—abundant, Lee, Bexley, Eltham, Beckenham; *floslactella*—common, Bexley, Darenth, Eltham; *salicis*—common, Eltham; *microtheriella*—abundant, Darenth, Eltham; *betulicola*—abundant, Chislehurst, Darenth; *argentipedella*—abundant, Chislehurst, Darenth, Eltham, Bexley; *plagicolella*—common, Lewisham, Darenth, Eltham; *tityrella*—abundant, Bexley; *marginicolella*—not uncommon, Lewisham; *alnetella* and *glutinosa*—locally common, Eltham; *fragariella*—uncommon, Chislehurst; *aurella*—generally abundant.

Trifurcula atrifrontella—rare, Bexley; *immundella*—abundant, Lee; *pulverosella*—scarce, Eltham.

So as to make this list as representative as possible, the species that have at various times been recorded from the district, but have not occurred to me, are given below.

Scardia ruricolella—Swanscombe Wood, Ent. Mo. Mag., 2nd series, viii, p. 80 (1897); Lewisham, abundant, Man., ii, p. 292 (1859). *Tinea caprimulgella*—Blackheath, Ent. Wk. Int., viii, p. 147 (1860). *Nemotois cupriacellus*—Sanderstead, Man., ii, p. 301. *Micropteryx mansuetella* and *salopiella*—West Wickham, Man., ii, p. 303. *Hyponomeuta vigintipunctellus*—Beckenham, Man., ii, p. 307. *Anesychia decemguttella*—Darenth Wood, Man., ii, p. 309. *Cerostoma alpella*—Lewisham, Man., ii, p. 314. *Depressaria atomella*—Charlton, Man., ii, p. 322; *caprolella*—Sanderstead, Man., ii, p. 323; *pimpinella*—near Croydon, Nat. Hist. Tin., vi, p. 150 (1861). *Gelechia immaculatella*—once at West Wickham, Man., ii, p. 343; *lutulentella*—Dartford Heath, Man., ii, p. 345; *arundinetella*—Lee, Ent. Wk. Int., iii, p. 91 (1857). *Cleodora striatella*—Lewisham, Man., ii, p. 348. *Hypercallia citrinalis*—Darenth Wood, Greenhithe, Man., ii, p. 353. *Oecophora lambdella*—Charlton, Man., ii, p. 357; *tinctella*—West Wickham, Man., ii, p. 358. *Butalis incongruella*, West Wickham, Ent. Mo. Mag., i, p. 22 (1864). *Acrolepia perlepidella*—Darenth Wood, Man., ii, p. 363; *pygmaeana*—Lewisham, abundant, Man., ii, p. 363. *Zelleria hepariella*—Dartford Heath, Man., ii, p. 364. *Gracilaria populetorum*—Birch Wood, Man., ii, p. 377. *Coriscium cuculipennellum*—Dartford Heath, Man., ii, p. 379. *Ornix scutulatella*—Dartford Heath, Man., ii, p. 381. *Coleophora niveicostella*—Dartford Heath, Man., ii, p. 390. *Bedellia somnulentella*—Lewisham, Man., ii, p. 395. *Stathmopoda pedella*—Lewisham, Ent. Wk. Int., viii, p. 118 (1860). *Cosmopteryx eximia*—Lewisham, Man., ii, p. 395. *Asychna æratella*—near Dartford, Man., ii, p. 402, and Sanderstead, Ent. Wk. Int., i, 163 (1856); *terminella*—West Wickham Wood, Man., ii, p. 402. *Stephensia Brunnichella*—Sanderstead, Man., ii, p. 403. *Elachista trapeziella*—West Wickham; *magnificella*—West Wickham, common, Man., ii, p. 404; *humilis*—West Wickham Wood, Man., ii, p. 407; *perplexella*—Beckenham, Man., ii, p. 408; *cinereopunctella*—Sanderstead, common, Ent. Ann., 1855, p. 78; *Bedellella*—Sanderstead, abundant, Nat. Hist. Tin., iii, p. 124 (1858). *Lithocolletis irradiella*—Beckenham, Ent. Ann., 1855, p. 81. *Bucculatrix Demaryella*—Darenth Wood, Ent. Mo. Mag., v, p. 104 (1868), and West Wickham, Nat. Hist. Tin., vii, p. 84 (1862). *Nepticula pomella*—Lewisham, common, Man., ii, p. 431; *aucupariella*—West Wickham, Ent. Wk. Int., ix, p. 13 (1860); *septembrella*—West Wickham, abundant, Man., ii, p. 432, and Lewisham, Beckenham, Nat. Hist. Tin., i, p. 174 (1855); *subapicella*—near Beckenham, Man., ii, p. 433; *sericopeza*—Dartford Heath, Man., ii, p. 433; *quinquella*—West Wickham, once plentiful, Man., ii, p. 433; *luteella*—Dartford Heath, common, Man., ii, p. 434; *ignobilella*—Lewisham, common, Man., ii, p. 434; *arcuata*—West Wickham, Man., ii, p. 434; *angulifasciella*—Lewisham, abundant, Man., ii, p. 435; *atricollis*—Lewisham, common, Man., ii, p. 435; *malella*—Lewisham, abundant, Man., ii, p. 436; *gratiosella*—Lewisham, common, Man., ii, p. 437; *regiella*—Dartford Heath, Man., ii, p. 437; *continuella*—Lewisham, Man., ii, p. 437. *Trifurcula squamatella*—Charlton, Man., ii, p. 438.

STRAY NOTES ON SOME *MICRO-LEPIDOPTERA* OF THE READING DISTRICT.

BY THE REV. C. R. DIGBY, M.A.

The localities in which the species mentioned below were taken are in no case more than three miles from my door, and do not include any part of either the pine district round Wokingham, or the beech woods and chalk downs of the Oxfordshire side; in fact, none of them are more than a mile from either the Thames, or its tributary the Loddon, and may therefore be considered as belonging strictly to the valley of the Upper Thames. In former times Windsor Forest reached to Reading, and the grand stag beetles which may be seen flying about the old elms in Sonning itself on warm June evenings are no doubt the descendants of its inhabitants. With the exception of *Alispa angustella* and *Ptocheuusa inopella*, which were taken in Oxfordshire, all the species referred to occurred in Berkshire in the seasons of 1896—97.

ALISPA ANGUSTELLA, Hb.—The larva is locally common on the Oxfordshire side of the Thames, feeding from the end of July to October. It is a most aggravating species to breed, and as three-cornered in its ways as the fruit it feeds on; any one who has bred or tried to breed it will have a very clear perception why it is not often offered for exchange.

TERAS FERRUGANA, Tr.—I bred a pale, small and very distinct variety of this from oak last year, which emerged on July 1st, and I also took several more of the same pattern in the New Forest among oaks on July 12th. The birch bushes in this district were being devastated by the larvæ of this species in September, but from a number gathered I bred nothing but the ordinary varieties.

COCHYLIS SMEATHMANNIANA, F.—In this district this is certainly attached to *yarrow*, among which it flies at late dusk, and the females may then be noticed depositing their ova on the flower heads. I have taken the imago as early as May 3rd and as late as August 5th.

PENTHINA SELLANA, Hb.—A specimen taken by a road side rivals in size and beauty those found on the Norfolk "breck," having the same admixture of rich blue which, so far as my experience goes, is totally wanting in the small dull coloured specimens taken on the S.W. coast.

GRAPHOLITHA SERVILLANA, Dup.—I have found the larva of this species widely but very sparingly distributed throughout this district feeding in willow twigs, and even twice in those of the common willow; the tits have a great liking for it, and split open the swellings to get at the larva.

PHTHORBLASTIS JULIANA, Tr.—Bred from acorns; the newly emerged imago may also be found sitting on oak trunks, but must be approached with caution as it is very wary.

DICHORAMPHA SEQUANA, Hb.—This occurred commonly among *yarrow* last year; the nearest tansy grows in cottage gardens two miles distant.

DIPLODOMA MARGINEPUNCTELLA, Stph.—I have taken one specimen of this widely distributed species here, elsewhere I have taken it in Dorset, Norfolk and Surrey. It is easily recognised when taken by the odd way it has of buzzing head downwards at the bottom of the net.

BLABOPHANES FERRUGINELLA, Hb.—For the last two years I have got this commonly for two or three days in the early part of July flying along a stretch of about five yards of a long thorny hedge; just at this spot there is a small water hole, and the grass on the bank above grows very rank and tufty. I noticed that the moths often settled on the panicles of the grass, but could not make out that they were depositing ova. I used to take the variety *lombardica* commonly in Dorset at the side of a ditch in a saltmarsh, the bank of which was clothed with rank tufty grass far from any trees or hedges; in Portland last year I also took a series of this variety as they flew along a stone wall at dusk, also at a distance from any bushes.

TINEA CAPRIMULGELLA, H.-S.—I take this occasionally on a fence between two old elms.

LITA FRATERNELLA, Dgl.—Is there not a confusion about the food-plant of this species? I have found it commonly both here and elsewhere feeding on *Stellaria graminea*, but never on *S. uliginosa*, which is also common in the district in wet ditches.

PTOCHEUUSA INOPELLA, L.—This feeds in the heads of *Inula dysenterica* along the banks of the Thames, where it must often be submerged for a week together in the winter.

DASYCERA OLIVIELLA, F.—Here it is certainly attached to the ancient elms, round the trunks of which it flies in the hot sun from 10 a.m. till noon for the purpose of pairing.

CECOPHORA LUNARIS, Hw.—I take this species regularly, though not commonly, by sweeping hedges composed of hazel, alder, dogwood and such like broad leaved shrubs, not necessarily near old trees; no doubt the larva feeds under the bark of dead sticks and twigs in the same way that *C. lambdella* feeds on furze.

CORISCUM BRONGNIARDELLUM, F.—Two broods of this occur, the larva feeding in June and August.

ORNIX FAGIVORA, Stt.—In September of 1896 I found an *Ornix* larva here on beech which had folded down the edge of the leaf in the same way that *O. betulae* does, and I thought it might be a stray of that species, but a very fine *O. fagivora* emerged. Last August I found empty domiciles on the same bushes, and at the end of September half a dozen larvæ all feeding in the same way, which differ very much from the figure in Stainton's "History of the *Tineina*." Up to now (May 18th) three imagines have emerged. This is on the Berkshire side of the Thames; no doubt the species would be found more commonly in the Oxfordshire beech woods.

COLEOPHORA LIMOSIPENELLA, Dup.—I found full-fed cases of this on alder in June, on elm in August, and on birch in October.

C. ANATIPENELLA, Hb.—I found two cases of the variety *albidella* on willow last year from which the insects duly emerged. I have also found the typical cases here on willow, which produced the usual type *anatipenella*.

C. PALLIATELLA, Zk.—Both cases and imagines were common last year; I picked 35 of the former from oak bushes in an hour and a half one morning while hunting for the cases of the following species; from these I bred 31 moths and 3 parasites. The species was also common in July in the New Forest.

C. ARDEÆPENELLA, Scott.—I was glad to find this on the oak bushes mentioned above, but they were decidedly scarce, and still on the move on June 14th, when *C. palliatella* had already fixed themselves for pupation. I only got 11 cases after a good search (they are of course much less conspicuous than those of *C. palliatella*), and from these I bred 4 imagines and 5 parasites, so they would seem to be more attractive to the latter than the other species is, for the larvæ were feeding on the same bushes.

LAVERNA SCHRANKELLA, Hb.—This was common in the larva state on July 22nd in *Epilobium palustre* not twenty yards from where I had a little earlier found *A. epilobiella*, but no *L. Schrankella* had wandered to the plants of *E. montanum*.

ANYBIA EPILOBIELLA, Roem. (*Langiella*, Hb.).—The larva was fairly plentiful on June 28th in the leaves of *Epilobium montanum* growing in a deep ditch, but many had already gone down; most of those I found were quite at the top of the plants, almost among the flowers.

ÆCHMIA DENTELLA, Z.—I have found this here, as elsewhere, attached to *Charophyllum* (*Anthriscus*) *sylvestre*. The larvæ are full-fed by the middle or end of July, and pupate before winter.

HELIOZELA RESPLENDELLA, Stt.—The larvæ of this had already fed up and cut out their cases on some alders on June 26th of last year, and from the same bushes I swept the perfect insect in good condition on July 18th, so the period during which they continue to emerge must be a long one.

ELACHISTA CERUSELLA, Hb.—I find the larva of this most commonly on *Phalaris arundinacea*, but a few bred from *Poa aquatica* were much more highly marked.

CEMIOSTOMA SPARTIFOLIELLA, Hb.—Last year I came upon a few bushes of broom which, at sunset, were literally covered with this species; I never saw it in such enormous numbers before. I may mention in passing that I found the larva of *L. lotella*, Stt., feeding in *Lotus major* near Eversley, but in Berkshire.

BOHEMANNIA QUADRIMACULELLA, Boh.—I find this interesting species on alder trees and bushes, but sparingly, in several places in this district. It does not seem easy to sweep from the leaves with the net, and searching has been more productive; they stow themselves away behind a stout rib near the stalk on the under-side of the leaf.

Sonning, Berks. : May 18th, 1898.

NOTES ON THE EARLY STAGES OF *PRESTWICHIA AQUATICA*, LUBBOCK.

BY FREDERICK ENOCK, F.L.S.

Noting that *P. aquatica* had the habit of minutely and methodically examining every millimetre of decayed and decaying vegetable

matter taken from the ponds, I did so likewise, with the result that I found several insect eggs, some attached to rotten stems. One appeared almost black, but upon examination I found it contained several black insects. Finding another egg, I cracked the shell, and out poured a number of fully matured *P. aquatica*, which, when put into a phial of water, swam about actively; one male and eight females were bred from this egg, and from another I bred six males and twenty females. These eggs were those of *Notonecta*. A larger egg (that of *Dytiscus marginalis*) produced thirty-four parasites, and I have others that appear to contain more. In all I have examined at least a dozen eggs containing parasites, and in each there were one or two pairs *in copulâ inside the egg-shell* (!!); the male is the last to leave.

I have already watched oviposition, and have the larvæ from one to five days old, so am in a fair way towards elucidating the complete life-history.

13, Tufnell Park Road, N.:

June 14th, 1898.

[The above short communication is of great importance on two points. Firstly, as establishing the fact that one parasitized egg may contain a multitude of parasites, and secondly as showing that pairing takes place within the egg-shell. Mr. Enock is to be congratulated on his success in working out the biology of this and other microscopic Hymenopterous parasites.—Eds.]

A FEW *PSOCIDÆ* FROM THE EASTERN PYRENEES.

BY ROBERT McLACHLAN, F.R.S., &c.

During my visit to Vernet-les-Bains (Pyrénées Orientales) in July, 1886, when I had the privilege of the hospitality and guidance of my friend Mons. René Oberthür, I collected, amongst other *Neuroptera*, a few *Psocidæ*, which have remained not worked out and unincorporated until now. There are only 25 specimens in 6 species, and more than half belong to one species. Nothing of special importance is amongst them, and the only interest attaching to them is that, in all probability, this is the first record for the Family from the district.

The country is far too dry for *Psocidæ* in July, and possibly only few occur at any time. I retained no special indications of locality, but I remember that the greater part occurred in a fir wood (apparently planted) more than half way up the slopes of Mount Canigou.

The species are as follows:—

PSOCUS FASCIATUS, F.—One. In southern examples the pretty markings on the anterior-wings are pale brown instead of almost black.

PSOCUS LONGICORNIS, F.—A pair.

PSOCUS SEXPUNCTATUS, L.—One.

ELIPSOCUS CYANOPS, Rost.—Six.

CÆCILIVS FLAVIVS, Steph.—Two.

CÆCILIVS OBSOLETUS, Steph.—Thirteen.

Lewisham, London :

June 4th, 1898.

SUPPLEMENT TO "A SYNOPSIS OF BRITISH *PSYCHODIDÆ*."

BY THE REV. A. E. EATON, M.A., F.E.S.

(concluded from page 125).

5. *PSYCHODA* *ERMINEA*, Etn.

Psychoda erminea, Etn., *ante*, 2nd ser., vol. iv, 130, step 4a (1893), and vol. v, pl. iv, Ps. 5 (detail), also p. 261 (1894).

Wings very light brownish-grey, approaching whitey-brown or light drab, with a satiny gloss and fringes to match (these shifting with changes of posture to whitish and to blackish-grey), and marked in the disc with ten or twelve small dark hair-spots, viz., six tufts, each marking the end of a row of the bristling hair; one on the mediastinal confluent with some dark hair at the base of the costa, and extending into the costal fringe; another immediately beyond the basal cells, on the bases of the longitudinal nervures thereabouts; and another larger spot at the base of the axillar nervure and the adjacent portion of the wing-margin. The remaining tufts intervene between the first six and these three, and comprise a spot by the pobrachial fork on the anterior pobrachial, and another spot on the subcosta and radial stem (præfurca) in an oblique straight line with the one just mentioned and the tuft marking the end of the bristling hair on the axillar nervure. In addition, a very small, obsolescent, 12th dark tuft is distinguishable on the cubitus, a little before the middle of the wing. The outermost tufts on the subcosta, anterior radius and cubitus, occupy three angles of an oblong, quadrilateral, faintly greyish cloud; and beyond the bristling hair, a narrow transverse fascia of the same tint, interrupted at the præbrachial nervure, extends from the end of the posterior radius to the end of the posterior pobrachial, matching the hair towards the end of the præbrachial. Antennæ in ♂ 14—15-jointed, reaching to about the middle of the wing; hair of the flagellum arranged in a moniliform series of smooth oval verticils, nearly as in *Ps. humeralis* (6), pearl-grey or greyish-white. Hair of head and thorax greyish-white; that of the abdomen very light brownish-grey. Indumentum of the legs grey, with a satiny gloss. Basal joint in the superior ♂ appendages short, slightly dilated below; apical joint very little longer than the other, narrowly falcate, with a slight dilatation near the base in the dried insect; figured from a specimen freshly killed. Inferior ♂ appendages slender, rather similar to those of *Ps. sexpunctata*, and more acute than acuminate.

Length of wing, 1.6 to 2.25 mm.

As noted in connection with an English locality, *ante*, 2nd ser., vol. v, 261 (1894), specimens of this species in good condition are distinguishable in the net from other *Psychodæ*, without a lens, by an appreciable difference in their appearance, due to the wing-markings. In deportment they approach *Ps. humeralis*. Worn and faded examples of either sex are liable to be mistaken for *Ps. albipennis*; but, unless too much denuded, the difference in the distribution of the bristling hair of the wings can be made out, and usually some scant vestiges of the dark spots remain. The dark spots on the axillar and postical nervures, being formed of *bristling* hairs *before* their terminations, enable aged specimens to be distinguished readily from *Ps. sexpunctata* in ill-condition, which has dark spots of hair *inclined outwards* at the end of these nervures.

Apparently rare in England, about four examples only having been captured in Somerset and Dorset, in localities recorded *ante*, l. c., and vol. iv, p. 25 (1894). Local in Algeria, frequenting cool, shady places by streamlets in wooded valleys at the foot of hills and mountains in the Mediterranean Zone of botanists.

SECTION II OF PSYCHODA; British species, No. 6.

Refer *ante*, 2nd ser., vol. iv, p. 33, step 7a, and vol. v, pl. iv, Ps. 6 (details).

Affinities in general with the preceding Section, especially with regard to the distribution of the bristling hair in the posterior half of the wing, approaching in particular the species scheduled *b* ††, in the proportions of the inferior ♂ genital appendages, and the species scheduled *bb* in the contour of the verticils of hair of the antennæ. More distantly related to *Pericoma*,* Section IV, **B**, having the same distribution of bristling hair in the anterior half of the wing as *P. revisenda*, scheduled B.B.B., *b*²³ (wherein both differ from the 1st Section of *Psychoda*), and having such hair on corresponding nervures in the posterior half of the wing (only to a greater extent), besides resembling it somewhat in the relative shortness of the inferior ♂ genital appendages.

Antennæ in both sexes 14—16-jointed, as described, *supra*, in step **B**. of the tabulation of Major Sub-Divisions of *Psychoda*. Verticils of hair of the flagellum dense and smooth; the first 10 oval-cupuliform, or cask-shaped; the 11th in combination with the terminal jointlets, a complete oval. Articular appendages linear, tænoid, membranaceous, transparent, perhaps built up of concatenate cells, and difficult to distinguish without previous removal of some of the hair; the 12th joint with two pairs of them, opposite and convergent near the tips, but with the extreme points everted.

More extended observation is needed to ascertain whether all of the insects of this Section here reckoned as varieties of one species

* Cf. *ante*, 2nd ser., vol. vii, p. 115 (May, 1897).

are accorded due rank, or whether any of them is really entitled to specific distinction. Hitherto no structural difference between them has been detected; and it is, therefore, deemed not improbable that their colour-peculiarities may be the result of differences in the nature of the food of the larvæ.

6. PSYCHODA HUMERALIS (Hoffmannsegg, MS.), Meigen.

Psychoda humeralis (Hoffmgg., MS.), Meig., Syst. Besch. [*ed. i], i, 106 (1818); ? [*Ps. sp.* —, Westw., Introd. Mod. Class. Ins., ii, 521, foot-note, Thwaites, MS., pupa (1840)]; Rossi, *Dipt. Aust., p. 6 (1848); Walk., List Dipt. Ins. Brit. Mus., part i, 32 (1848); Zet., Dipt. Scand., ix, 3707 (1850), and xii, 4887 (1855); Meig., Syst. Besch. [ed. ii], i, 84 (1851); Schiner, Fn. Aust. Dipt., ii, 636 (1864); v. d. Wulp, Dipt., Neerl., i, 315 (1877); Etn., ante, 2nd ser., vol. iv, 33, step 7a, and vol. v, pl. iv, Ps. 6 (details).—‡ *Pericoma bullata* (Hal., MS.), Walk., Ins. Brit. Dipt., iii, 257 (1856).

Wing (over black cloth and pointed towards the light) rich dark brown, with bronzy and bluish reflections from the membrane, and with fringes to match; but the humeral tuft (directed longitudinally from the thickening at the base of the costa), some erect hairs on the nervures of the basal cells, and the fringe of the alula, very light brown ochreous-yellow; shifted (pointing transverse to the light and rocked to and fro), the fringes become glossed with a lighter tint than the disc, and the bristling hair appears blackish or black-brown; shifted again (pointing away from the light nearly horizontally), the fringes match in tint with the humeral tuft, and the bristling hair appears slightly darker than the smoother hair, while the disc is margined either by a narrow, light-glossed line, or (as in some other postures) by a narrow, dark line, set off with a light gloss externally. Over white paper, the wing (in the first and last of these phases of illumination) appears thinly hairy, with fringes to match, the humeral tuft alone differing in being of the original colour; shifted (costa toward the light), the greater density of the anterior fringe is very apparent, and the disc is margined by a dark line, while the bristling hair is not denser at the endings of the rows than elsewhere, except on the radius. Pubescence on the upper part of the head and front of the thorax impure whitish, or, when shifted about, yellowish-white, inclining to flaxen, matching, from certain standpoints, with that on the sides of the thorax, and with the fringe of the costal callus interior to the fold of deflection; hair of the antennæ, from most standpoints, darker and either greyer or inclining to brown-ochre. Pubescence of the thorax elsewhere denser, brown-ochreous in the dried insect, but light ferruginous-brown in the living fly, matching with the dorsal pubescence of the 1st abdominal segment, and, from certain standpoints, with the humeral tuft, and with the other items mentioned as matching this in the above description of the wing. Indumentum of the remainder of the abdomen and legs concolorous with the darker hair of the wings, approaching intense burnt umber-brown in certain lights, but dark graphite-grey in others; the tips of some scales at the apical margins of the tibiæ and of the tarsal joints readily assume a light gloss, which can be made to extend over the whole, and, when suitably posed, acquires a dull silvery lustre; the smooth hair of the abdomen, especially towards the extremity, likewise shifts to the same almost flaxen tint as the hair at the sides of the thorax.

Length of wing, 2' to 2'25 mm.

Var. *a.*—*mauritanica*.

Pubescence of the head and thorax, from certain standpoints, concolorous with the humeral tuft, fringe of the alula and the other hair that usually matches these at the base of the wing, and with the dorsal hair of the 1st abdominal segment, the colour being very light brown-ochre, approaching flaxen; shifted and viewed from above, the pubescence of the metanotum, and of most of the anterior part of the thorax becomes tinged with light bistre-brown, the humeral tuft, &c., keeping their original colour. In the wings, from the radius to the pabrachial, and sometimes to a much smaller extent on the axillar nervure, the bristling hairs tend to constitute a dark spot at the end of each rank. The legs (correspondingly posed) display a more silvery gloss than those of specimens of the normal British form above described; but the difference is probably attributable to the employment of a minimum charge of fluid ammonia (instead of a small lump of potassium cyanide), in the collecting-bottle, and to the timely expulsion of the vapour directly its work was done.

Length of wing, 1·75 to 2·5 mm.

Var. *β*.

Wings, from many standpoints, similar to those of *Ps. phalaenoides* (2), especially when the humeral tuft and fringes are posed so as to exhibit a uniform whitish or a dark grey tint; but, from certain positions, the humeral tuft is whitish, and the fringes light grey, or the former whitey brown-ochreous, and the latter concolorous with the disc, or partly dark grey and partly light glossed, the tints readily shifting and interchangeable. But, by suitable posing, the colour of the wings can be made to approach that of the typical form in most particulars, although (owing to the fineness of the hair) the blue reflection of the membrane is more distinct, and the bristling hair less apparent. In the colouring of the thoracic pubescence, var *a* is approached, but rather as if it were faded; and the darker tints induced, by change of pose, are more greyish than bistrous, nowhere approaching light ferruginous-brown.

Length of wing, 1·25 to 1·5 mm.

Haliday's description, and that in the volume of this Magazine for 1893, *loc. cit.*, apply to what is here assumed to be the typical form in prime condition. This has been bred from putrid snails* by Mr. Verrall; his specimens (12 ♀, Lewes, 1885) have the light ferruginous-brown colour well preserved in the parts above specified. Gimmerthal, Arb. d. Naturf. Ver. zu Riga, i, 326 (1848), recorded the breeding of the fly from larvæ found in rotten potatoes—a fact referred to by Zetterstedt, Dipt. Scand., xii, 4888 (1855), who, like other continental authors, applies the term *albus* or its equivalent to the humeral tuft. The form described as var. *a* is the Algerian race; localities will be recorded in a separate supplementary article. Var. *β* is found by streams in Somersetshire; the specimens described, captured with others that have been distributed, are 1 ♀ (Compton Pouncefoot, 1, viii, 1892) and 1 ♂ (Beer's Plantation, Redlynch Park,

* Refer also to Westwood (1840), cited above in the bibliography of this species.

Bruton, 23, v, 1892). Both sexes of all the forms are represented in the author's collection. The attitude of the living fly in repose, and its gait in walking, are described in Trans. Ent. Soc. London (1895) p. 491.

Woodlands, Seaton, Devon.

ISOPTERYX TORRENTIUM, PICTET, AND *I. BURMEISTERI*, PICTET;
WITH NOTES ON OTHER SPECIES OF THE GENUS.

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

While the genus *Isopteryx* does not present the same difficulties as do some of the other genera of small *Perlidae* (to wit, *Nemoura* and *Leuctra*), there is no doubt some confusion still exists with respect to the minor species. This is especially true regarding *I. torrentium*, Pict., and *I. Burmeisteri*, Pict., and, in a less degree, with respect to *I. tripunctata*, Scop., and *I. apicalis*, Newman. The primary object of the following notes is to set forth the distinguishing characters of the first-named two species, but it may be useful to allude briefly to the other members of the genus.

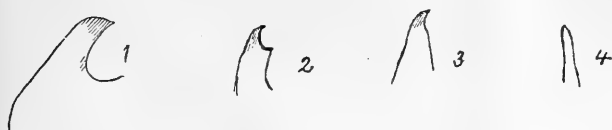
Besides the four above mentioned, there are only two other European species known to me, namely, *I. serricornis*, Pict., and *I. montana*, Pict.

I. serricornis stands quite by itself. One of the largest species, it may be separated at once by its somewhat serrate antennæ, large folded portion of hind-wings (the generic name is rather a misnomer, as all the species have a folded portion, although relatively not so large as in the present species), and the pronotum has in each half a dark bar.

I. montana is also a large species, probably as large as the preceding on an average, and separable from it by the antennæ and the pronotum, which has no bars, but sometimes a fine streak on either side. The head is quite devoid of markings, and the ocelli seem to be relatively closer to one another than they are in the other species. The parts of the ♂ genitalia which are most useful for specific determination consist of a chitinous tooth, which is usually visible dorsalwards between the setæ, and which is connected with a plate anterior to itself. In *I. montana* the tooth is not unlike that of *I. Burmeisteri*, but it seems to be stronger and shorter on its inner edge (fig. 1). There should be little difficulty in knowing this large Alpine species, numerous examples of which I have seen from the collections of Mr. McLachlan and Dr. Fr. Ris.

Coming to the smaller species, *I. tripunctata* and *I. apicalis* have short setæ, and the vertex of the head unmarked. There should be no confusion between them, as even in small pale examples of the former the prothorax should serve to identify them, that part being

longer and narrower in *I. apicalis* than in any of the other species.



I. apicalis is also usually a very delicate-looking little insect.

The tooth in *I. tripunctata* is short and very simple (fig. 4); I have no male of *I. apicalis* fit for figuring.

I. torrentium and *I. Burmeisteri* belong to a group with longer setæ, and the following are their more distinctive points:—

I.—*I. TORRENTIUM*.

“Jaune verdâtre” (Pictet).

Markings on head absent, or with a nebulous marking on vertex and frons in the dry insect.

No distinct black median vertical line on pronotum.

Dorsal abdominal stripe rather narrow in its whole length.

Tooth of ♂ genitalia, seen from side, distinctly excised (fig. 2).

Tooth, seen from behind, dilated before the apex.

II.—*I. BURMEISTERI*.

“Fauve, un peu rougeâtre” (Pictet).

“Viridis, post mortem testacea” (Burmeister).

Usually with a sharply-defined dark marking between the ocelli.

Black median line on pronotum usually well marked.

Stripe apparently broader, especially at the beginning.

No such deep excision (fig. 3).

Tooth, seen from behind, broadest at the base, and tapering towards the apex.

With regard to the colours, I have simply introduced them as broad indications; in dry specimens it is difficult to say what is and what is not the effect of desiccation. As far as the specimens before me go, *torrentium* is more greenish-, *Burmeisteri* more reddish-yellow, but the material is unequal. In Scotch examples of the first-named the head is often much clouded, while in Swiss examples there is hardly a trace of darker marking thereon. The genital tooth of the male is decisive however. Klapálek has figured this most characteristic tooth as belonging to *I. tripunctata* (Sitzungsber. der Kais. Akad. der Wissensch. in Wien, Mathem.-Natura. Classe, 1896, taf. i, figs. 19 and 20); Rostock (Neuroptera Germanica, 1888, p. 160) gives a very brief diagnosis of a new species, *I. neglecta*, and he also refers to a species, *I. tubulosa*, briefly described by Stein (Mitt. Münchener Ent. Vereins, 1879) unknown to him. Stein says out of a tube at the end of the abdomen proceed two fine bristles, which Rostock says also occur in his *I. neglecta*. These may be what Klapálek figures (*loc. cit.*, taf. i, fig. 23), and they may be found in all the species.

In the mean time I cannot say much about geographical distribution. Excepting *I. torrentium* and *I. tripunctata*, my remarks are based on continental material received for the most part from time to time from Professor Klapálek (Bohemia), Dr. Fr. Ris (Switzerland), and Dr. John Sahlberg (Finland and Finnish Lapland).

13, Blackford Road, Edinburgh :
May, 1898.

Rhinomacer attelaboides, F., at Ipswich.—I was most agreeably surprised at taking a pair of this Scotch insect here, whilst beating in a fir wood for *Pezomachi*, on the 11th of May last. They were not, however, in copul'd, but beaten from two different trees of *Pinus sylvestris* some hundred yards apart. Its most southern locality previously recorded is near Ripon, in Yorkshire, where, I believe, Mr. Waterhouse took it many years ago. Mr. Brockton Tomlin, however, informs me that a specimen was found by a lad in Delamere Forest last year, and brought for his inspection. At the time of capture the pines were in full blossom, and the female, doubtless, was about to deposit her eggs therein. It is curious that so essentially northern an insect should appear here before being noted in the intervening counties. Possibly our versatile climate may be responsible; at all events it is both a most curious and interesting addition to the Suffolk fauna.—CLAUDE MORLEY, Ipswich : June, 1898.

[The occurrence of *R. attelaboides* in Suffolk is certainly interesting, but the case is not without parallel: a considerable number of Scotch forms have been found by Mr. W. G. Blatch and others in the Midlands, and *Asemum striatum*, which used to be regarded as exclusively a Scotch species, has occurred several times in the New Forest district; possibly in some cases insects have been transplanted from one part of the country to another, but this explanation by no means covers all the instances, and it would seem that we have yet very much to learn regarding the distribution of even our British insects.—W. W. F.].

Homalota (Dilacra) pruinosa, Kraatz, at Guildford.—I have during the past week captured three specimens of this peculiar little *Homalota* on the downs at Guildford. They were found running on the bare chalk, in the bright sunshine, after a shower, in a sheltered place, where, by chance, I sat down for a few moments' rest. *Syncalypta spinosa*, Rossi, occurred abundantly, as well as *Platystethus capito*, Heer, sparingly, at the same place. *H. pruinosa* was introduced by me as a British insect last year (Ent. Mo. Mag., xxxiii, p. 274), upon specimens found at Chesham, Bucks, by Mr. E. G. Elliman, who also found it running upon the chalk in the bright sunshine.—G. C. CHAMPION, Horsell, Woking : June 4th, 1898.

Coleoptera in the neighbourhood of Chesham, Bucks.—During February and March of this year, I found the following species in moss, gathered in the neighbourhood of Chesham: *Oxyptoda lentula*, abundant, in a marshy wood; *Ocyusa incassata*, *Homalota clancula*, very sparingly; *Philonthus fumigatus* (1), *Bythinus validus*, *B. Burrelli* (all females), *B. Curtisi*, *Colon latum* (2), *Thyamis anchusæ* (3), *Mniophila muscorum*.

In the early part of April several captures were made in a sandpit, among them being *Orypoda exoleta*, *Homalota agra*, several, *H. indubia* (2), *Cassida nobilis* (2), and *Sibinia prinita* (1). *Meligethes symphyti* was found about April 15th in flowers of *Lamium album*, *Taraxacum*, and, rarely, *Stellaria holostea*; this insect seems very restricted in its times of appearance, I have taken it during three successive seasons, from about the foregoing dates till the first or second week in May, after that time it seems to disappear altogether.

Lathrobium punctatum (8 or 9), *Stilicis subtilis*, *Homalota oblongiuscula* (2), under dead rabbits, and *Balaninus villosus*, were also found during April. Nests of *Formica fusca* yielded four specimens of *Homœusa acuminata* during the first week of May.

Other insects occurring in May and up to this date in June have been *Harpalus azureus*, *Brachinus crepitans*, very common, in many hedgerows and waste places round the town, *Medon fuscus*, a few under stones, *Stenus subæneus*, more abundant than usual, at roots of grass, &c., on chalky ground, *Ocypus similis* (1), on roadway, *Homalota immersa* (2), under bark of oak; *Trichonyx Märkeli*, walking about in the vicinity of nests of *Formica flava* and *F. fusca*; *T. sulcicollis*, three specimens taken in the wet rotting wood of an old elm stump, no ants being noticed about the spot; *Meligethes umbrosus* (2), on broom; *M. serripes*, on many flowers; *Cartodere elongata*, in numbers under sappy oak bark; *Apion fuscirostre*, several on broom; *A. cruentatum* (1), in damp meadow. Out of siftings, from dead reeds, collected during Easter in marshy ground just within the county, near Tring, several interesting species were sorted out, including the following:—*Homalota fallax* (30), *Tachyporus pallidus* (6), *Hypoceytus discoideus* (2), *Lathrobium filiforme* (2), *Calodera riparia* (1), *Tachyusa concolor*, a few.

At Tring, in the adjoining county of Hertford, I captured a few evenings ago forty-two examples of *Comptoschilus palpalis*. They were obtained by sweeping short grass beneath a grove of elms in a marshy field, between 6.30 and 7.30 p.m. The wind was blowing freshly from the N.W. at the time.—E. GEO. ELLIMAN, Chesham, Bucks: June 7th, 1898.

Otiorrhynchus raucus, *F.*, and other *Coleoptera* in the Chatham District.—On Saturday, June 11th, I found *Otiorrhynchus raucus* in some numbers at Cobham Park, in heaps of recently cut grass. This weevil is usually by no means common, and I had hitherto only taken a single specimen in the Chatham district, as long ago as 1873. Mr. W. H. Harwood informs me that he finds *O. raucus* at Colchester under similar circumstances.

As on the corresponding Saturday of last year (cf. Ent. Mo. Mag., xxxiii, p. 160), my afternoon's collecting, on practically the same ground as was traversed on that occasion, was so successful as to induce me to give a list of the principal species of *Coleoptera* obtained, chiefly by general sweeping. These include *Harpalus punctatulus*, several in the above-mentioned heaps of grass; *Staphylinus latebricola*, *Neuraphes longicollis* (*præteritus*, Rye), *Colon serripes*, *Trachys pumila*, *Corymbites tessellatus* (new to district), *Malachius marginellus*, *Tetratoma ancora*, and *Smicronyx Reichei*, single specimens of each; *Ceuthorrhynchus urticæ* (10) and *C. suturellus* (2), in the old locality at Snodland, where *Donacia affinis* was abundant on a small patch of rushes; *Cryptocephalus lineola*, locally common on hazel on

the Cuxton downs; *Anisotoma punctulata*, *Telephorus fuscus*, *Ernobius mollis*, *Drilus flavescens*, ♂, *Molytes coronatus*, &c.

Both sexes of *Osphya bipunctata* have again occurred to me at Chattenden, by beating hawthorn blossom at the end of May; and on the same day *Clytus mysticus* and *Grammoptera analis* were taken, both these being interesting additions to the Chatham list of *Coleoptera*.—JAMES J. WALKER, 23, Ranelagh Road, Sheerness: June 13th, 1898.

Euphorus ornatus, Marshall, at Ivybridge.—The Rev. T. A. Marshall, in part ii, page 63, of his Monograph of the British *Braconidæ*, observes that he has only a single example of *E. ornatus*, which was taken in a wood at Nunton, Wilts. Having taken a specimen of this rare insect on May 28th, I think the capture is worth recording; I obtained it at Ivybridge by beating holly.—G. C. BIGNELL, Stonehouse: June 1st, 1898.

Forficula auricularia in New Zealand.—Two years ago Mr. Peter Anderson, a local gardener, brought me three mature specimens of this common European species of earwig. They were found in his greenhouse among some plants which were procured some months before from Christchurch. I have recently procured more specimens in the larval stage from an old established garden a few miles from Christchurch, to which plants have been imported for many years direct from London. I am not aware that this troublesome insect has previously been recorded as occurring in New Zealand, and without further enquiry I cannot say approximately when it was first observed in New Zealand.—W. W. SMITH, Ashburton, N. Z.: May, 1898.

Birds and Butterflies.—As this subject is now occupying considerable attention I note that, when seated in my study this afternoon, I saw a sparrow dart out of a tree and give chase to a passing *Pieris rapæ*, which easily escaped. From the bird's half-hearted manner of chase it occurred to me that it was possibly only an exhibition of pugnacity, or that the butterfly was for the moment mistaken for an article suitable for its nest. One often sees sparrows persistently chasing moths (especially *Geometridæ*) disturbed in the day-time, but I do not think I ever before saw a butterfly attacked.—R. McLACHLAN, Lewisham, London: June 5th, 1898.

Albinic aberration of Amphisbatis incongruella, Stn.—Although somewhat late in the day, I should like to record the fact that on April 22nd, 1886, I captured a very fine albinic aberration of *Amphisbatis incongruella* on a heath near here; it is a male specimen, and was taken in company with a series of typical examples. The fore-wings, together with the head, thorax, and tegulæ, are unicolorous pale greyish-white, while the hind-wings and abdomen are pale whitish-grey. I have never seen or heard of a similar aberration, nor in fact of any other aberration or variety worthy of notice, though I have taken some hundreds of specimens, and have seen many others in collections.—EUSTACE R. BANKES, The Rectory, Corfe Castle: May 19th, 1898.

Observations on the habits of Amphisbatis incongruella, Stn.—Perhaps a few notes on the habits of the imago of *Amphisbatis incongruella* may be useful to those

in search of this early species, with which my experience has been very considerable. It occurs, but very locally, on our heaths amongst its food-plant, *Calluna vulgaris*, and is fully out with us in the middle of April, for I have taken it, and sometimes plentifully, on almost every date between April 3rd and April 24th. It flies freely from about 10.30 till noon, but only in hot sunshine, and when there is an entire absence of wind. When the moth is not inclined to fly freely, the bag may often be increased by sweeping, but only during sunshine, for the moment that any clouds obscure the sun sweeping becomes quite useless; the insect is at all times a wonderful adept at feigning death, and my belief is that in the intervals when the sun is obscured it drops straight down before the net can overtake it. On mornings that are either sunless or in the least degree windy, it is, in my experience, mere waste of time to try for the moth, which, doubtless, never stirs from its hiding place near the ground.—ID.

Reviews.

TWELFTH REPORT ON THE INJURIOUS AND OTHER INSECTS OF THE STATE OF NEW YORK, for the year 1896: by J. A. LINTNER, Ph.D., State Entomologist. Pp. 399, with 15 plates and numerous figures in the text. Albany: University of the State of New York. 1897.

It has always been a pleasure to us to notice Dr. Lintner's Reports. The *last*, that now before us, is fully equal to its predecessors in interest and utility, and treats of such a variety of subjects that it is impossible to allude to them here in detail. As bearing on the subject of the "San José Scale," and its possible introduction into this country, it may be some satisfaction to read that the greater part of the State of New York seems unsuited to it. The much abused English Sparrow is given the credit of doing good by destroying the "Army Worm;" on the other hand "that notorious public pest" is said to be an important agent in distributing the "Elm Tree Bark Louse," through the active young larvæ clinging to its feathers. The plates and the numerous text illustrations are excellent.

THE INSECTS OF ALDERNEY: by W. A. LUFF. Reprinted from the "Transactions of the Guernsey Society of Natural Science" for 1897. 8-pp. 8vo.

The compiler of this list deserves great praise for the assiduous manner in which, for many years, he has made known the insect productions of the Channel Islands in the face of manifest discouragement, for on the one hand they are not recognised as "British," and on the other are not always considered to pertain to the fauna of France although our Botanists do not hesitate to include the plants in the British List. From its out of the way position Alderney is the least frequented of all the islands, so the greater is the credit due to any one who puts together a List of the species observed. All Orders are included, yet the List is only short, and manifestly will be greatly added to if the island is visited by specialists in the less worked Orders. Only one species (*Eubolia peribolata*) is indicated as not "British," but there may be others to which the indication is not added; this, however, is doubtful. In some cases (in *Diptera* for example) it is evident that the names require verifying by experts.

A TEXT BOOK OF ENTOMOLOGY, including the Anatomy, Physiology, Embryology, and Metamorphoses of Insects: by ALPHEUS S. PACKARD, M.D., PH.D. Pp. 729 royal 8vo. New York: the Macmillan Company; London: Macmillan and Co., Limited. 1898.

This work is indispensable to the Entomologist who cares to study his subject beyond its systematic and classificational aspects; it is also indispensable to every student of the anatomy and physiology of Invertebrates. Dr. Packard's "Guide" and "Entomology for Beginners" are in the hands of many of our readers: we cordially recommend those interested to invest in this volume also. It is not our purpose here to go into the details in noticing the work; neither do we care to analyse it with a view to detecting possible omissions or errors: it is a vast storehouse of information compiled (in addition to what is original) from all writers on the varied and complex subjects dealt with, giving, where necessary, opposed opinions, with copious bibliographies under the main divisions. The illustrations (many of them full page) are all in the text, and there is scarcely a page on which they are not to be found. Owing to the vastness and diversity of the subjects, it was formerly necessary to consult many works in order to arrive at definite conclusions: the pith of these is here concentrated, and the capital Index serves as a guide to the special information desired. It strikes us that the illustrations are somewhat unequal in execution, but as the majority of them are reproductions this is a matter impossible to avoid.—R. McL.

Obituary.

Osbert Salvin, M.A., F.R.S., &c.—To the loss of science and the great grief of numerous friends, Osbert Salvin passed away, at his residence at Fernhurst, Sussex, from heart disease, on June 1st. Those who knew him intimately were aware that such an event had been possible at any time for several years, nevertheless, the end was so sudden as to make its realization difficult. He was born at Finchley in 1835, and was the only surviving son of Mr. Anthony Salvin, a well known architect. His preliminary education was received at Westminster School, whence he passed to Trinity Hall, Cambridge, of which he was elected Honorary Fellow last year. He graduated in 1857, and immediately afterwards proceeded to Tunis and Algeria in company with two friends, Mr. W. H. Hudleston and Mr. (now Canon) Tristram (both of whom survive), on a Natural History expedition; in the autumn of the same year he made his first expedition to Central America, remaining till the middle of 1858, but revisiting it in about a year, and for the third time in 1861 in company with Mr. F. D. Godman, and it is probable that soon after their return from this journey the idea of the great work—the *Biologia Centrali-Americana*—on which both were occupied to the time of his death, originated. In 1865 he married Caroline, daughter of Mr. W. W. Maitland, of Loughton, Essex, and with her undertook a fourth journey to Central America. In 1874 he accepted the office of Strickland Curator of Natural History in Cambridge University, and held it until 1883. He was elected a Fellow of the Zoological Society in 1860 (and was a Vice-President at the time of his death), of the Linnean in 1864, of the Entomological in 1866 (and was on the Council of both when he died), and of the Royal in 1873 (since when he had served on the Council for two separate terms); on all Councils and Committees he was always an acquisition on account of methodical business habits in addition to his scientific knowledge. On the death of his father in 1883 he succeeded to the family estate at Fernhurst, near Haslemere (which in default of male issue now

passes to a nephew). In his early days Mr. Salvin was more exclusively an Ornithologist, and a prominent member of the British Ornithologists' Union, in connection with which he helped to found the "Ibis," the third series of which he edited. With Dr. Selater he published numerous Ornithological papers and a magnificent work on exotic Ornithology, and one of his last labours was the completion of the late Lord Lilford's "British Birds." As an Entomologist he restricted his work to exotic *Rhopalocera*, and most of his publications in this department were in conjunction with Mr. Godman, the joint names becoming inseparably connected on the "Biologia," of which 141 parts have now appeared, the *Rhopalocera* being contributed entirely by Salvin and Godman, and now completed, excepting a portion of the *Hesperiidæ*. In this work they have enumerated 1482 species of Central American Butterflies, 256 of which were new, and 46 new genera, illustrated by 90 plates. All will accord their sympathy with the survivor in the sudden and practically irreparable loss of his coadjutor. It is well known that the type collections of the "Biologia" have been presented to the British Museum on the completion of each group, and that a portion of the duplicates of the *Rhopalocera* including "co-types" of the majority of the species have been given to the Hope Museum at Oxford. Mr. Salvin leaves a widow and three daughters, one of whom is married. He was buried in the small cemetery not far from the quaint little parish church at Fernhurst, representatives of the Councils of most of the Societies to which he belonged being present.—R. McL.

Joseph Albert Lintner, Ph.D.—Information has been received of the death, on May 5th, at Rome, while on a tour in Europe, of Dr. Lintner, the State Entomologist for New York, whose 12th Report is noticed in the present No. He was born in New York State on February 8th, 1832, and after completing his education was engaged in commercial pursuits until 1868, when he became an Assistant in the Museum at Albany, and in 1880 was appointed State Entomologist; he took a prominent position amongst the Economic Entomologists of America.

William Miles Maskell.—Since the notice appeared in our last No. we have received from Mr. W. W. Smith, of Ashburton, and Mr. G. V. Hudson, of Wellington, N. Z., some additional information about Mr. Maskell, from which we make extracts. He was born in Hampshire about 58 years ago, and died after a surgical operation. He was educated at the Roman Catholic College at Oscott, and at Paris. After serving in the Army for a short time he went to New Zealand in 1860, and was for some years a sheep farmer. In 1874 he became Provincial Secretary and Treasurer of the Canterbury Province. All his life he remained a staunch Roman Catholic, and anti-evolutionist, and was a man of strong bias, of which we, editorially, more than once had very convincing proof, as we always had of his untiring energy, and ardent love of science.

Martial Jean Maurice Noualhier, of Puymaud (Haute Vienne), France, died at Arcachon on April 7th, aged 37. The premature decease of this French Hemipterist is much to be regretted. He had amassed a large collection of *Hemiptera*, which included Lethierry's (in which were some of Fieber's types), and was specially interested in the water bugs. The collections have been bequeathed to the Museum of Natural History at Paris, to which they will form an important addition, especially having regard to the fact that those of Signoret were allowed to leave France. His publications were not numerous, mainly no doubt on account of his bad health, which caused him to stay in the Canary Islands, in the Fauna of which he took much interest. He joined the Entomological Society of France in 1882.

NEW CORSICAN MICRO-LEPIDOPTERA.

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

(Continued from page 134).

ELACHISTIDÆ.

COLEOPHORA, Hb.

COLEOPHORA FEMORELLA, *sp. n.*

Antennæ white, distinctly annulated with black beyond the basal joint which is somewhat strongly tufted in front. *Palpi* not tufted; white. *Head* white, shaded posteriorly with yellowish. *Thorax* yellowish, mixed with white scales. *Fore-wings* straw-yellowish, the costa narrowly silvery-white throughout, including the first half of the costal cilia; a silvery-white streak runs along the fold from the base but does not reach the dorsum; a somewhat wider streak commencing on the cell at about one-fourth from the base, where it is almost contiguous to the fold, extends outward nearly to the apex, and is scarcely disconnected from a white line running along the base of the terminal cilia to the apex--along the margin of these silvery streaks some slender brownish scales are sparsely distributed, becoming more plentiful towards the apex itself, especially about the base of the costal and apical cilia; the dorsum at the extreme base is also marked by a silvery-white line; cilia pale brownish. *Exp. al.*, 16 mm. *Hind-wings* shining, pale grey; cilia pale brownish. *Abdomen* dark brownish. *Hind legs* whitish, the somewhat hairy hind tibiæ having a slight brownish tinge, the inner sides of the posterior femora being distinctly dark brown.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Restonica Valley (near Corté), 27, V, 1896. A single specimen was beaten from *Genista corsica* in the Restonica Valley above Corté. This species belongs to the *lixella*, Z., group, although somewhat reminding one of *congeriella*, Stgr.

COLEOPHORA VENTIFUGA, *sp. n.*

Antennæ white, delicately annulate, the basal joint not tufted. *Palpi* dependent, straight; dirty whitish. *Head* and *thorax* pale brownish-cinereous. *Fore-wings* pale brownish-cinereous, with a faint indication of dirty whitish lines (not traceable along any particular vein), the only one at all clearly defined running along the costa from base to cilia, another appears to follow the fold; some minute greyish-fuscous atoms are sprinkled over the wing-surface, especially along the cell and towards the apex; cilia at the apex pale cinereous, beneath the apex brownish-cinereous. *Exp. al.*, 10 mm. *Hind-wings* pale cinereous; cilia pale brownish-cinereous. *Abdomen* pale brownish-cinereous. *Legs* pale cinereous.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, near Corté. Larva, *Santolina chamæcyparissus*, V—VI, excl. 20, IX, 1896. Two specimens. The larval case is about 10 mm. long, it is not evenly cylindrical throughout, but be-

comes rather larger towards the middle, and has a slightly woolly appearance. It is dirty whitish, with narrow furrows along its surface showing a slightly darker colour. The mouth of the case is turned over almost at right angles to the case itself, so that if feeding on a flat surface the hinder extremity, which is somewhat triangular, would be but slightly raised.

The larva feeds during the months of May and June on *Santolina chamæcyparissus*, on the white leaves of which the case is very inconspicuous. I collected a fair number of these cases by beating the plants at the end of May in the Tavignano Valley at Corté, as well as along the road to the north of the town, but as they were evidently not full-fed I had almost given up the hope of breeding them when two specimens appeared in the latter half of September.

COLEOPHORA HERMANNIELLA, *sp. n.*

Antennæ white, distinctly annulated with blackish, basal joint with a short spreading mouse-grey tuft. *Palpi* (apical joint about half the length of the second) white on their inner sides, mouse-grey externally. *Head* mouse-grey, whitish at the sides and on the face. *Thorax* mouse-grey with some whitish scales. *Fore-wings* narrow; dark mouse-grey, a slender whitish line along the costa throughout, blending with the pale mouse-grey costal cilia; a broken line of whitish scales is visible on the fold, and another line from the outer portion of the cell to the apex, a few similar scales occur also on the base of the dorsum (these lines would not be noticed in a worn specimen, as the scales are very thinly distributed and probably fugitive); cilia brownish-cinereous. *Exp. al.*, 13 mm. *Hind-wings* grey; cilia brownish-cinereous. *Abdomen and legs* mouse-grey.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Vizzavona. Larva, *Anthyllis hermannii*, 6, V, excl. 4, VI, 1896.

A single specimen of this species, which appears to be allied to *gnaphalii*, Z., and to *odorariella*, Fuchs, was bred from *Anthyllis hermannii* collected at Vizzavona on May 6th, for larvæ of a species of *Scythris*, Hb. (= *§Butalis*, Tr.); the specimen appeared on June 4th in the glass cylinder where the *Anthyllis* was placed, no other plant being present in the cylinder. Although a very careful search was made, I was unable to find the larval case among the *débris*, but no reasonable doubt can exist that *Anthyllis* was the plant on which the larva fed.

COLEOPHORA CORSICELLA, *sp. n.*

Antennæ white, delicately annulated with blackish. *Palpi* slender, porrect, apical joint somewhat unusually short; whitish on their inner sides, brownish ex-

ternally. *Head* and *thorax* mouse-colour, with paler lines on the margins of the tegulæ. *Fore-wings* dull brownish-ochreous, with whitish lines running through them; one along the costa to the commencement of the cilia; one along the fold nearly to its outer end; one along the dorsum; one from the outer end of the fold, slightly oblique towards the termen, and bent up along it; two or more others, somewhat confluent, below the outer half of the costa; costal cilia hoary, terminal cilia mouse-grey with a brownish tint at the apex. *Exp. al.*, 11 mm. *Hind-wings* and cilia mouse-grey. *Abdomen* dark brownish. *Hind legs* with slender mouse-grey lines along the outer sides of the tibiæ.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Corté. Larva (on —?), V, excl. 11, VI, 1896.

Case white, with lines of greyish dusting along it nearly to the apex, which is somewhat flattened laterally, but is not triangular. The mouth is circular, somewhat dilated at the edges, and obliquely placed. A single case found on a rock at Corté in May produced the type on June 11th. This species appears to be allied to *artemisiæ*, Mhlg., but apart from other differences the shorter apical joint of the palpi at once distinguishes it.

COLEOPHORA FUSCOLINEATA, *sp. n.*

Antennæ pale cinereous, annulated with fuscous; not tufted. *Palpi* with a few projecting scales beneath from the end of the median joint, apical joint more than half the length of the median; pale cinereous. *Head* and *thorax* pale cinereous. *Fore-wings* pale cinereous, with speckled lines of dark fuscous scaling at the base of the dorsum, along the fold and along the outer half of the cell to the termen below the apex; a good deal of similar dark scaling is visible about the apex and on the veins running to the costa before it, a narrow costal shade from the base is of a slightly paler fuscous tinge than the lines below it; cilia mouse-grey. *Exp. al.*, 12 mm. *Hind-wings* and cilia mouse-grey. *Abdomen* dark fuscous. *Legs* pale cinereous.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Vizzavona, 9—15, V, 1896.

Four specimens of this small, dark, but very distinct species were taken at Vizzavona among dwarf juniper on the slopes of the high mountains flying at sunrise, but I have no clue to their food-plant.

SCYTHRIS, Hb.

(= §*BUTALIS*, Tr.).

SCYTHRIS CONSTANTII, *sp. n.*

Antennæ greyish-fuscous. *Palpi* slender, erect, reaching above the vertex; greyish-fuscous externally, paler on their inner sides. *Head* and *thorax* shining fawn-ochreous. *Fore-wings*: the colour is very peculiar and difficult to describe (it is of a pale clay-colour with almost an æneous tinge in some lights; clay is found of many colours, and the term is one which does not clearly define the tint we wish to

describe), it appears to be a mouse-grey entirely overlaid with pale cinereous scales having a slight yellowish gloss; cilia mouse-grey. *Exp. al.*, 17—18 mm. *Hind-wings* rather dark grey, somewhat shining; cilia glossy brownish. *Abdomen* shining leaden-grey; cinereous beneath. *Legs* glossy, brownish-cinereous.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Corté, Restonica Valley. Larva, *Genista corsica*, 26—27, V, excl. 21—25, VI, 1896, two specimens; three specimens (Constant), "Genua, Dietze, 12/70, No. 3" (one specimen, Zell. Coll.).

This has been regarded as *Butalis tabidella*, H.-S., but on comparison with authentic specimens of that species in the Zeller collection it is found to be obviously distinct.

SCYTHRIS MUS, *sp. n.*

Antennæ mouse-grey. *Palpi* slaty-grey externally, with a few whitish scales at the end of the median joint, much paler on the inner sides; apical joint somewhat shorter than second. *Head* slaty-grey. *Thorax* slaty-grey, with a slight admixture of paler scales. *Fore-wings* slaty-grey, profusely sprinkled with elongate hoary-whitish scales, which are almost entirely distributed over the surface, but perhaps more thickly collected in a patch crossing the fold at about one-third, immediately before and behind which they are almost absent on the fold itself; these whitish scales extend through the slaty-grey apical cilia, below which the terminal cilia are mouse-grey with a slight brownish tinge. *Exp. al.*, 14 mm. *Hind-wings* pale grey; cilia mouse-grey. *Abdomen* pale slaty-grey, whitish beneath. *Legs* slaty-grey, hind tibiae with brownish mouse-grey hair above.

Type, ♂ ♀, Mus. Wlsm.

Hab.: CORSICA, Ajaccio, 4, V, 1896, three specimens.

I met with this species near Ajaccio on the north side of the town; it is very near *glacialis*, Frey, but the fore-wings are certainly narrower than in that species, it also appears to approach *focella*, Cst., but I am unable to regard it as belonging to any hitherto described species.

TORTRICIDÆ.

PHALONIANÆ.

PHALONIA, Hb.

PHALONIA CORSICANA, *sp. n.*

Antennæ minutely biciliate in ♂; cinereous. *Palpi* brownish-cinereous. *Head* and *thorax* brownish-cinereous. *Fore-wings* shining pale cinereous, with dark chestnut-brown mottling and transverse fasciæ, all of which are sprinkled, especially towards the costa, with blackish scales; there is no defined basal patch, but the first transverse fascia is near the base, ill-defined except on the costa, and immediately succeeded by a more clearly defined and wider fascia of the same chestnut-brown colour at about one-fifth; this is slightly bowed outward below the middle, and is

succeeded by a narrow half fascia from the costa, reaching the lower margin of the cell, where it almost touches the inner edge of a broad median band which is diverted inward to the dorsum below its middle, throwing off a semi-detached fragment also to the dorsum beyond the middle; a subapical band, slightly sinuate and of irregular width, descends from the costal cilia to the tornus, a line of chestnut and blackish scales descending from the costa half way between this and the median band; before the apex are two blackish costal spots with some chestnut scales below them, and five inverted groups of chestnut scales are visible along the termen; a small black spot lies at the end of the cell; cilia pale cinereous, with a line of mixed blackish and chestnut scales running through them, beyond which they are tessellated with greyish-fuscous—the markings above described are all distinctly separated on the costa (to the number of eight), alternately larger and smaller. *Exp. al.*, 15 mm. *Hind-wings* rather shining leaden-grey, cilia somewhat paler, with a grey line running through them near their base. *Abdomen* dark leaden-grey. *Legs* leaden-grey.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Tavignano Valley (Corté). Larva in swellings on shoots of *Santolina chamæcyparissus*, V—VI, excl. 17, X, 1896, one specimen.

This species is nearly allied to *Cochylis pontana*, Stgr., Stett. Ent. Ztg., XX, 228 (1859), Stgr. & Wk. Cat., 819, = *Cochylis ædemana*, Cst., Ann. Soc. Ent. Fr., LXII, 402—3 (†*Cochylis ruficinctana*), Pl. XII, 1 (1894), but differs in the absence of a fleshy tint in the ground-colour, in the absence of a basal patch, and in the more streaky appearance of the fore-wings, owing to the presence of narrower markings between the three more conspicuous bands which in *pontana* are represented only by a few scattered scales, moreover in *pontana* the subapical band is wider, not sinuate, and not equally attenuate towards the tornus. The cilia of the fore-wings are slightly paler in *corsicana*, but the hind-wings are decidedly darker throughout. [It should be observed that through an error in numbering the figures on the plate which illustrates M. Constant's paper, *ædemana*, fig. 1, is called "*ruficinctana*, Cst." (laps. cal. *fulvicinctana*, Cst., p. 403), while *fulvicinctana*, fig. 2, is named *ædemana*, Cst. !]

The larva of *corsicana* feeds in May and June in swellings on the shoots of *Santolina chamæcyparissus*. The larvæ were very young when collected near Corté on May 21st, and I only succeeded in breeding a single ♂, which emerged on October 17th. *Phalonia pontana* (= *ædemana*), which feed in a similar manner on *Artemisia campestris* in August and September, pupates after hibernation, the imago appearing in May and June.

Staudinger describes [Berl. Ent. Zts, XIV, 279—80 (1870)], *Conchylis santolinana* from Old Castile, taken among *Santolina ros-*

marinifolia at the end of April and beginning of May, and mentions that later he found larvæ in swellings on stems and twigs of that plant, which he suggests were probably the larvæ of *santolinana*, but he failed to rear them. The Corsican form being entirely distinct from this Spanish species, which has more the general appearance of *epilinana*, Z., I am disposed to think that the larvæ he mentions may have belonged to *corsicana*, although Staudinger did not meet with it in the perfect state.

TINEIDÆ.

BUCCULATRIX, Z.

BUCCULATRIX SANTOLINELLA, *sp. n.*

Antennæ white, annulate with fuscous. *Head* white, mixed with olive-brown above; face white, speckled with greyish-fuscous; haustellum whitish. *Thorax* white. *Fore-wings* white, with patches of olive-brown speckling mixed with blackish scales, this mixed speckling commencing at the base runs narrowly along the costa terminating in an ante-median quadrate patch, which is succeeded by a large post-median patch of the same sprinkling, tending obliquely outward and scarcely disconnected from a similar tornal patch in which some of the blackish scales form a minute dot; on the middle of the dorsum is a somewhat more conspicuous olive-brown patch reaching to the fold, where it includes a minute blackish dot, the sprinkling towards the base and apex is more sparsely diffused but extends to the base of the white apical cilia, which contain near their outer extremity a curved olive-brown line, beyond which they assume a cinereous tinge. *Exp. al.*, 8 mm. *Hind-wings* shining brownish-cinereous; cilia pale brownish-cinereous. *Abdomen* shining, pale brownish-cinereous. *Legs* pale brownish-cinereous.

Type, ♂, Mus. Wlsm.

Hab.: CORSICA, Tavignano Valley (Corté). Larva, *Santolina chamæcyparissus*, V, excl. 6—13, VI. Imago, 17—28, V. Ten specimens.

Bred from larvæ feeding in May on *Santolina chamæcyparissus* in the Tavignano Valley at Corté, where the species was also flying in company with its near ally *helichrysellæ*, Cst., from which it may be distinguished by its more mottled and sprinkled appearance, the few specimens of the perfect insect which I succeeded in rearing emerged during the first half of the month of June.

POSTSCRIPT.

BORKHAUSENIA LAVANDULÆ, Mll.

n. synn. = *fuscifrontella*, Cnst., = *pulverisquamis*, Wlsm.

Ecophora lavandulæ, Mll., Verh. Z. B. Ver. Wien, V, Abh., 562—3 (1855); Stn., Tin. S. Eur., 117, 122 (1869); Stgr. and Wk. Cat.

Lp. Eur., 307, No. 2264 (1871). *Æcophora fuscifrontella*, Cnst., Ann. Soc. Ent. Fr. (6, S.), IV, 262, Pl. X, 24 (1885). *Borkhausenia pulverisquamis*, Wlsm., Ent. Mo. Mag., XXXIV, 133—4 (1898).

Since the first part of this paper was published I have had opportunities of enlarging my acquaintance with *B. pulverisquamis*, Wlsm., and have become fully convinced that it has already been at least once described. M. Constant founded his *Æcophora fuscifrontella* on a single specimen, and although he omits to notice a third dark spot on the disc, these spots are all so vague that one might easily escape attention; in all other respects, including the figure of the palpi (which are not mentioned in the description), it agrees sufficiently well with my supposed new species. Mann's description of *Æcophora lavandulæ* is so similar and so convincing as regards the roughened appearance caused by the sprinkling of grey scales, that I have more than a suspicion of having erred in good company, and unless a comparison of the actual types should afford convincing evidence to the contrary, the synonymy should be as above.

Merton Hall, Thetford :

June, 1898.

ARISTOTELIA SERVELLA, Z., AN ADDITION TO THE BRITISH
FAUNA (*LEP. TINEINA*).

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

In the Entomologist's Monthly Magazine, XXX, 51 (1894), two specimens of a *Gelechia* taken near King's Lynn by Mr. Atmore were mentioned as probably belonging to the species *Xystophora servella*, Z., but I thought it desirable to await the capture of further examples before expressing a positive opinion. Mr. Atmore has again met with the species, and has since submitted further material for examination, enabling me to confirm the identification and to justify the insertion of the name in our lists. Following Mr. Meyrick's definition (HB. Br. Lp., 572), this species should now stand in the genus *Aristotelia*, Hb., which has rightly supplanted the *preoccupied* name *Doryphora*, Hein., as well as the n. n. *Xystophora*, Hein. and Wk., by which it was subsequently replaced [Schm. Deutsch. Tin., Tabelle der Gattungen, 6 (1876)].

Merton Hall, Thetford :

June, 1898.

AN ECONOMIC USE FOR WATERBUGS.

BY G. W. KIRKALDY, F.E.S.

The use of certain waterbugs, in the egg stage and in the perfect state, as food both for man and for birds, &c., is no new thing. As early as 1625 Thomas Gage, a traveller in Mexico, mentions the sale of cakes made of a "kind of froth" from the Mexican lakes, which had an extensive sale amongst the inhabitants, a custom which had doubtless descended from a remote antiquity. In 1832 Thomas Say, in his description of a new American species of *Corixa* (Heteropterous Hemiptera, p. 39), states that the perfect insects are made use of as food in the City of Mexico, and in 1857 a long account was published by Guérin-Ménéville in five French journals almost simultaneously, in which three species (of *Notonecta* and *Corixa*, two of which were presumed by the author to be new) were enumerated. The most important paper, however, was contributed in the following year to the Bull. Soc. Geol. France, pp. 187--205, by Virlet d'Aoust, in which he summarizes the previous literature, and adds numerous details which will be referred to in part later. The employment of these creatures for food is not confined to the New World, for de Motschulsky mentions (*Etudes Entom.*, v, p. 77, 1856) an Egyptian species of *Corixa* whose ova are used for this purpose.

During the last few weeks arrangements have been made for the importation into this country both of imagines and ova in large quantities, not indeed for human consumption, but for the food of insectivorous birds, game, fish, &c., and it may not be uninteresting, especially as the previous records are not readily available to British readers, to give a short account of these insects and their economy.

Guérin-Ménéville enumerates four species, but the three hundred specimens which (through the courtesy of the importers) I have examined up to the present time, belong to two species only (disregarding a small water-beetle and two examples of a species of *Anisops*, whose presence is merely accidental), viz., *Notonecta americana*, Fabr., and *Corixa mercenaria*, Say, the latter being very largely in the majority. Guérin-Ménéville's very insufficiently described *N. unifasciata* is doubtless the former, while I am unable to identify his *C. femorata* by the equally unsatisfactory description. The third species mentioned by him is *C. mercenaria*, which forms the bulk of the "food;" it is readily distinguished from all other species of *Corixa* by the large, almost immaculate, pale area at the base of the elytra. While *C. mercenaria* appears to be confined to Mexico and one of the United

States adjacent, *i. e.*, New Mexico, *N. americana* is widely distributed over Mexico, the Antilles, and the Northern two-thirds of South America.

The species of both genera, although water inhabitants, usually leave the element during the night, either for "love meetings," or merely for change of residence. They are captured with nets, dried, and (according to Virlet d'Aoust) sold as "bird food" under the name of "moschitos," although Clavigero states that the Mexicans eat them dried and dressed with saltpetre!

The minute ova, however, are employed entirely as a fillip to human appetites, and therefore merit a closer consideration. The shape and external structure of the two kinds are very different. The ova of *N. americana* are oblong-oval, very slightly broader at one end, and the surface is reticulated with irregular pentagons and hexagons, the whole surface being minutely and densely but superficially punctured. I have not seen any of these ova *in situ*, but they appear to be rather loosely fastened by a "gummy" substance to the external surface of water plants, &c., as in the case, under unfavourable circumstances with the British *N. glauca*, although the latter usually partially inserts them in an incision made in the stem of some suitable plant. Now, as *Notonecta* is most certainly derived from a Corixid stock, and as the *Corixæ* do not employ the incision method, it is probable that this is a fairly recent acquisition on the part of *N. glauca*.

The ova of *C. mercenaria*, which occur close together in large numbers, are much smaller, and irregularly ovate; they are always connected by an extensile, translucent, colourless "stalk" to a large disc which is affixed to a leaf or plant-stem. There is no surface structure (except a slight rugosity) visible with a one-quarter inch objective, although Meczinkov describes and figures (*Zeitschr. für Wiss. Zool.*, xvi, p. 422, pl. xxvi, fig. 18 [1866]) a reticulation composed of regular (!) hexagons, in an unnamed European species (probably *C. Geoffroyi*). At the proper season bundles of rushes are placed in the lake shallows, and upon these the ova—named by the Mexicans "Axayacatl" or "waterface"—are deposited, gathered by the natives and made with meal into cakes; these are eaten *au naturel* or with green chilies! They are also cooked without further preparation, having then the appearance of fish roe, when they are called "Ahuahtli" or "waterwheat;" they are said to have a delicate flavour and not to be disdained at fashionable tables, Virlet d'Aoust comparing it to Caviare.

I sampled these ova myself, but I cannot endorse the above tribute, as (owing doubtless to their being somewhat stale) they had a flavour (faint, but decided) of sulphuretted hydrogen and decayed animal substance! The perfect insects, also, are unsuitable in their imported condition for human food, having a noticeable "buggy" flavour; for the purposes for which they are imported, however, I do not doubt that they would be satisfactory.

Some idea of the enormous swarms of *C. mercenaria* may be gathered from the fact that it is being imported *by the ton!* and I have calculated, somewhat roughly, that each ton will contain little short of 250 millions of individuals!! As to the ova, they are beyond computation.

In conclusion, I wish to express my acknowledgments to Mr. R. McLachlan and to Mr. G. C. Champion, who have kindly informed me of this importation; and also to Mr. Prashkauer, who has been good enough to furnish me with a large amount of material, both in imagines and ova.

St. Abbs, Worple Road, Wimbledon, S.W.:
June, 1898.

SOME REMARKS ON THE COLOUR-VARIETIES OF THE SPECIES OF *ORSODACNA* OCCURRING IN BRITAIN.

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

The numerous varieties of these species are tabulated at considerable length by Weise [Naturg. Ins. Deutschl., vi, pp. 4—7 (1882)], but he does not seem to have noticed that some of the forms are restricted to one sex only. As one of our British species, *O. lineola*, Panz., has been fairly common this year, in nearly all its varieties, on the hawthorn blossom, at Ashted, Surrey, in the same spot where I first met with it in 1878, some account of its various forms will be of interest to British Coleopterists. Of the second species, *O. cerasi*, Linn., which may be readily distinguished from *O. lineola* by the almost glabrous and more sparsely punctured upper surface, I possess very little material, but still sufficient to be able to add one of the known European varieties (*glabrata*, Fabr.) to the British list.

O. LINEOLA, Panz.

Of this species the following forms are represented in my British collection:—

1. Testaceous, a dorsal vitta on the prothorax, the head and breast, and sometimes the suture of the elytra, black (*O. lineola*, Panz.)—Ashted [♀].

2. Entirely testaceous above, the breast sometimes infusate.—Ashted [♂], Paisley [♀].
3. Testaceous, the head and breast infusate or black (*O. nigriceps*, Latr., *O. mespili*, Lac.).—Ashted, Gravesend, Paisley [♀].
4. Bluish-green, the elytral humeri, and sometimes the sides of the prothorax, rufescent or fulvous (*O. humeralis*, Latr.).—Ashted and Paisley [♂].
5. Bluish-green, the sides of the prothorax broadly, the base of the femora, and the tibiæ, fulvous.—Ashted [♂].
6. Entirely bluish-green above (*O. cœrulescens*, Duftschm., and *O. nematodes*, Lac.).—Ashted and Paisley [♂].

Eight varieties are enumerated by Weise, one only of these, his form *c*, not being known to me as British. It is black, with the elytra testaceous, the lateral margins excepted, or entirely piceous (*O. nigricollis*, Oliv., and *O. marginella*, Duftschm.). Nos. 3 and 6 represent the prevailing form in the south of England, No. 3 being the ♀, and No. 6 the ♂, these constantly occurring together. The males, therefore, are usually bluish-green, and the females testaceous, the latter sometimes having a slight greenish lustre on the upper surface. The legs are constantly pale in the female. Of the testaceous form, 2, one male only has been seen. The Paisley specimens were sent to me in 1877 by Mr. Dunsmore.

O. CERASI, Linn.

This species appears to be equally variable in colour on the continent, but amongst the specimens in my British collection four forms only are to be found; these are:—

1. Above and beneath testaceous (*O. chlorotica*, Oliv., *O. fulvicollis*, Panz.). [♂].
2. Testaceous, the suture of the elytra at the base and the under surface infusate or black (*O. lineola*, Lac.). [♂ ♀].
3. Testaceous, the apex of the elytra and the under surface blackish (*O. melanura*, Fabr.). [♂].
4. Black, the prothorax and the front of the head rufo-piceous, the legs obscure ferruginous (*O. glabrata*, Fabr.). [♀].

The specimens belonging to No. 2 are from Coleford and Matlock, and that of No. 4 is also from Matlock (*Garneys*). The others are not labelled with any definite locality. I am unable to say, from insufficiency of material, whether the sexes of this species usually differ in colour, like those of *O. lineola*; but it is not likely to be the case, as the darkest example seen (*O. glabrata*) is a female, and all the males are more or less testaceous.

Horsell, Woking:
June, 1898.

ON ORTHOPTERA COLLECTED BY REV. A. E. EATON IN ALGERIA.

BY MALCOLM BURR, F.Z.S., F.E.S.

I am indebted to the Rev. A. E. Eaton for a very interesting collection of *Orthoptera* made by him in Algeria in 1896—7.

Although the *Orthoptera* of this country have recently been so exhaustively treated by Finot, and although the collection is not large, nor absolutely representative, yet the list of the species may be of interest, especially with the numerous field notes so conscientiously recorded by the collector. The number of species is not great, being forty-two, and there are no novelties, but there are several fine specimens of the rather rare *Sphodromerus decoloratus*, Fin., and *Quiroquesia Brullei*, Bol.

I have to acknowledge my gratitude to M. Finot for his invaluable assistance in determining certain species, as to the identity of which I was doubtful.

FORFICULARIA.

1. *Labidura riparia*, (Pall.).—Observed on the sea shore at Sidi Ferruch in May, and at Tunis in December; nymphs plentiful on the shingle, and sometimes covered by the sea.

BLATTODEA.

HETEROGAMIIDÆ.

2. *Heterogamia aegyptiaca*, (L.).—Occurs locally in the neighbourhood of Biskra in sandy places where the subsoil is damp; nymphs were taken on the road to Tolga at the foot of the dunes, and opposite St. Germain.

MANTODEA.

MANTIDÆ.

3. *Mantis religiosa*, L.—Common on the low lying ground at the mouth of the Seybouse at Bône in September.

4. *Sphodromantis bioculata*, (Burm.).—In the public gardens at Biskra in December. Common on *Nitraria tridentata* and other shrubs near the river above the barrage.

EMPUSIDÆ.

5. *Blepharis mendica*, (Fabr.).—Biskra in March; on dry stony slopes and low lying hills. The nymphs run about the ground, but the imagines resort to shrubs, as *Damia cordata*, *Salsola tetragona*, &c., and sometimes in the early spring to the leaves of *Ferula vesceritensis*.

LOCUSTODEA.

DECTICIDÆ.

6. *Rhacocleis neglecta*, (Costa).—Common on the hillsides near the suburbs of Bône in November among *Ampelodesmos tenax*, a coarse grass, and *Chamærops humilis*—"palmetto."

7. *Decticus albifrons*, (Fabr.).—Less common than the above on the hillsides, where it frequents bushes, but more common on the low ground; plentiful near Biskra in cornfields and amongst *Amuria visnaga* in May and June. Many dead specimens were found on the waste ground in November in bushes of *Zizyphus latus*.
HETRODIDÆ.

8. *Eugaster Guyoni*, Serv.—El Kantara, a station on the railway to Biskra at the confines of the desert in August.

ACRIDIODEA.

TRUXALIDÆ.

9. *Truxalis nasuta*, (L.).—On the border of the sea coast across the Seybouse, Bône, in September.

10. *Truxalis miniata*, Klug.—Near the abattoir, Bône, in September; abundant in the low lying pastures and hayfields near the town. Occurs locally at Biskra among stony hills and among the dry grass in the sandy dunes.

11. *Phlæoba (Duronina) Lucasi*, Bol.—Bône, in September.

12. *Stenobothrus pulvinatus*, (Fisch. de W.).—Abundant on the border of the pasture between the Aïn Mokra railway and the Seybouse, and also near the sea among rushes, Bône, in August.

13. *Stauronotus Genei*, (Oesk.).—Abundant on the sandy borders of the sea near the Seybouse, Bône, in September.

14. *Stethophyma hispanicum*, (Ramb.).—Not common; taken among *Ampelodesmos tenax* on the railway Route de Bugeaud at the fourth kilomètre from Bône, in October.

15. *Epacromia thalassina*, (Fabr.).—Abundant on the irrigated pastures near the oasis, Fort St. Germain and Parc de Beni Mora, Biskra, in November.

16. *Epacromia strepens*, (Latr.).—Abundant by the Seybouse and by the coast north of Bône, in August and September. Taken in winter on the banks of the river near Hippone amongst *Smyrnum olusatrum*.

ÆDIPODIDÆ.

17. *Ædipoda fuscocincta*, Luc.—Abundant on the cliffs along the Chemin de la Corniche beyond the harbour, Bône, in August. Also in October, on the Route de Bugeaud.

18. *Æ. cærulescens*, (L.).—Much more common and wide spread than the above, Bône, in September; common everywhere.

19. *Quiroguesia Brullei*, (Sauss.).—Biskra, in May, near the railway by the 200th kilomètre and also on the north border of the Champ de Manœuvres.

20. *Scintharista Wagneri*, (Eversm.).—One specimen taken near Bône, in May.

21. *Thalpomena algeriana*, (Luc.).—Taken sparingly among *Cistus* and *Ampelodesmos tenax* on the hillside over the Route de Bugeaud, near the fourth kilomètre from Bône, in October.

22. *Acrotylus longipes*, (Charp.).—Common at Bône and Biskra from September to December.

23. *A. insubricus*, (Scop.).—Abundant at Bône and Biskra from September to December.

24. *A. patruelis*, (Sturm.).—North of Bône, on the Route de Bugeaud, and Biskra, from August to December; very common.

25. *Sphingonotus cærulans*, (L.).—Very common on the low stony hills north of Biskra, in November.

26. *S. Savignyi*, Sauss.—On the alluvial flat ground near Hamman-es-Salahin, Biskra, in April.

27. *S. azurescens*, (Ramb.).—Abundant on the sands near the sea shore beyond the Seybouse, Bône, in September.

28. *S. octofasciatus*, (Serv.).—Abundant near Biskra on the railway in April and May.

29. *Edaleus nigrofasciatus*, (De Geer.).—One at the mouth of the Seybouse near Bône, in March; one in November at Biskra, but from May locally abundant.

30. *Pachytylus danicus*, (L.). (= *cinerascens*, Fabr.).—Near Bône it is common on the coast and on the slopes of the spur of Mt. Edough among the grass in September. At Biskra it is fairly common on the pastures in the same month. "The males in play sometimes spring up to a height of 10 or 12 feet into the air, making a noise with their wings as if their hind legs were struck against them, and alighting nearly in the same spot whence they sprang."

EREMOBIDÆ.

31. *Eremobia Claveli*, Luc.—Hamman-es-Salahin, a hot spring five miles from Biskra, in April; local, inhabiting sandy places among *Limoniastrum Guyonianum*.

32. *Eremocharis insignis*, (Luc.).—Common on the low stony hills north of Biskra in June, and difficult to distinguish when motionless among the grass.

PYRGOMORPHIDÆ.

33. *Pyrgomorpha grylloides*, (Latr.).—Occurs here and there on patches of sandy soil not incrustated with salt, near the Parc de Beni Mora, Biskra, in February to April, and in November; nowhere abundant.

ACRIDIDÆ.

34. *Dericorys Millieri*, Finot.—On the alluvial soil near the Biskra railway, about kilomètre 200, frequenting bushes of *Salsola tetragona* in the hollows, in April and May; moderately common.

35. *Acridium ægyptium*, (L.).—Fairly common near Biskra in October, frequenting gardens and irrigated pastures.

36. *Schistocerca peregrina*, (Oliv.).—"In 1897 hordes of this species began to be mentioned in Algerian newspapers soon after Christmas as troublesome in the extreme south. Moving in northerly directions, some arrived during February at Tougourt, about 100 miles south of Biskra, whence consignments were sent fried in oil to the Biskra market, three weeks or so ahead of the immigration into this oasis. Another fortnight sufficed for their extension to the coast. They take some time to mature their eggs, . . . and undergo a change of coloration with advance of age." The yellowest specimens appear to be the oldest.

37. *Euprepocnemis plorans*, (Charp.).—Abundant near Bône from September to November, along the coast beyond the Seybouse, among *Chamærops humilis*, and on

the spur of Mt. Edough, north of the town. At Biskra it is plentiful in November among *Nitraria tridentata*.

38. *Thisiocetrus littoralis*, (Ramb.).—Abundant at Bône beyond the Seybouse in September, among *Ononis natrix*. Common at Biskra in November on the low stony ridges and hills north of the town.

39. *Caloptenus italicus*, (L.).—Abundant near Bône in September along the coast, and on the stony hills north of Biskra, in November. The very large cerci hang down during life, but become nearly erect in dying.

40. *Sphodromerus decoloratus*, Finot.—Common on the stony wastes north of Biskra in November and December, seeking refuge between or beneath stones when alarmed.

OPOMALIDÆ.

41. *Opomala cylindrica*, (Marsch.).—Abundant near Biskra among *Phragmites communis*. "When they take refuge among the reeds, they crouch close along the stem, and can be caught by a sudden grab with the hand."

TETTIGIDÆ.

42. *Paratettix meridionalis*, (Ramb.).—Among coarse grass, *Imperata cylindrica*, in the Parc de Beni Mora at Biskra, in November.

Bellagio, East Grinstead:

May 29th, 1898.

NOTE ON GOEZE'S BEITRÄGE.

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

AND

JNO. HARTLEY DURRANT, F.E.S.

Hagen, Bibl. Ent., I, 291, No. 26 (1862), when collating Vols. I, II and III (pts. 1—3) of this work, remarked, "Engelmann p. 484 führt noch, P. IV. von T. III. ibid. 1783 an. Ich habe ihn nirgends gesehen, finde ihn aber in einem antiquar. Catalog mit dem Beisatz: selten ausgebauten." Having lately acquired a complete copy, it may be useful to publish its collation.

GOEZE (Joh. Aug. Ephraim).

"Entomologische | Beyträge | zu | des Ritter Linné | zwölfteu Ausgabe | des Natursystems" | . 8vo. Leipzig (Weidmanns Erben und Reich), 1777—83.

I. pp. xvi + 736 (1777).

II. pp. lxxii + 352 (1778).

III. (1) pp. xl + 390 (1779); (2) pp. xxiv + 350 (1780); (3) pp. xlviii + 439 (1781); (4) pp. xx + 178 (1783).

Merton Hall, Thetford:

July 1st, 1898.

BUTTERFLIES SEEN IN AND AROUND JERUSALEM.

BY A. H. SWINTON, F.E.S.

The hill country of Judea rises as a saddle back of conical hills and hillocks of limestone and chalk, in places horizontally stratified or terraced so as to present the appearance of being turned out of box-wood; and Jerusalem "the waterless" stands upon a declivity in a hollow on the water shed of these Downs, which, in their wildest aspects, resemble those of Surrey and Wilts, and which are clothed with similar plants, whose species, sometimes identical, are commonly more spiny, woody or woolly;* and a few have an aroma which is fugitive.

Around Jerusalem a diversified shade is absent, for the trees and bushes have been replaced by olive yards that seem to have outlived the crude-fruited date palms, and consequently insects, as on the Mendips, are erratic and phenomenal rather than local, save when the food-plant of the butterflies grows on the walls of the towns or in garden plots; and then such kinds are suburban.

The species which I noticed between April and September, 1896, Mr. Kirby has kindly identified for me as follows:—

PAPILIONIDÆ.

Papilio Machaon, L., 23/5, 1/8.—The European type of the Swallow Tail Butterfly, which extends as far as the Euphrates. There are two annual generations at Jerusalem, I think, as in Europe, and I recall that one morning when I called on Miss Fitzjohn, who resides in the suburbs, she showed me the caterpillars feeding on rue in her garden. As regards the coloration of the chrysalides she said, "I have several in a box which is of a light and unstained wood, two of these are of the same age, the one is a brownish-grey and the other a light green."

Thais Cerisyi, B.—Appears early in the spring. I found the caterpillars feeding in Mrs. Reardon's garden at Jerusalem on *Aristolochia parviflora*, a plant with a gourd-shaped seed pod that grew under the stone walls. They became chrysalides in July, and the butterflies emerged at Redbridge in England on the 15, 21, 26, 28, and 29 of the following April.

Doritis Apollina, Hbst.—Appears earlier than the preceding. I found the caterpillars feeding, in company with those of *T. Cerisyi*, on *Aristolochia parviflora*. They became chrysalides in July, and the butterflies emerged at Redbridge in England the 23 and 25 of the following March.

PIERIDÆ.

Gonepteryx Antonia, Butl., 19/5—2/6.—This Brimstone Butterfly is on the wing at the commencement of February; it flies wildly in the gardens at mid-day, and I have no doubt but what its caterpillars feed on the hawthorns (*Crataegus azarolus*) that may be seen here and there in the gardens and olive yards.

* I have followed Dr. Post's Flora of Syria.

Aporia cratægi, L.—On arriving at Jerusalem I took a walk to the summit of the Mount of Olives to get a glimpse of the Dead Sea and the trees that indicate the track of the Jordan, and in a barley field I saw some black veined butterflies. Miss Fitzjohn subsequently found me a specimen of the butterfly whose caterpillar I have no doubt feeds on the *Cratægus azarolus*.

Belenois Mesentina, Cramer.—Appeared on the caper flowers in company with the *Idmais Fausta* in August. It oviposited on the caper plant (*Capparis spinosa*), and a new generation disclosed in September. The continuation of these butterflies in the egg during the summer heat is remarkable.

Pieris brassicæ, L., 19/5.—Miss Fitzjohn leads me to suppose that its caterpillars feed on the caper as well as on the cabbage, which, in the winter, grows very large at Jerusalem. The caterpillars of this butterfly are attacked by an ichneumon that forms a heap of cocoons as in Europe.

Pieris rapæ, L., 23/5, 2/6, 10/8.—Flies among the pot herbs in company with *brassicæ*. It has been said that the chrysalis of the "Small White" takes the colour of the surface on which it rests. This is unaccountable, but I think that its skin, like that of the chameleon, reflects it, and to prove this it is only necessary to detach it.

Pieris Daplidice, L., 8—19/5, 14/7—15/8.—Plentiful during the summer, and flying about everywhere in the gardens and vineyards; and according to the Rev. F. A. Walker, over the sand hills down to the banks of the Jordan.

Anthocharis Gruneri, H.-S., var. *armeniaca*, Chr.—One female.

Colias Edusa, F., 9/5—10/7.—The English "Clouded Yellow" with nothing of the fiery colour of the Indian *C. Fieldii*.

Idmais Fausta, Oliv., 13/7—25/8.—This charming butterfly appears at the end of July, and during August it flocked to the caper plants, enlivening the ancient Temple area with its melon coloured wings, and flying in droves along the northern wall of Jerusalem. It came in the sirocco weather to the gardens and brought a thrill of joy, when the dogs lay panting at the door, the ravens flew with gaping mouths, and the only green grass on the surface of the cauldron of brazen hills was a tuft of *Cynodon dactylon* under the shadow of a wall.

NYMPHALIDÆ.

Melitæa Trivia, Schiff., var. *Persea* and var. *Catapelia*, 8/5—8/7.—During the month of May this butterfly was fluttering at the historical paved and stony north road; and in the autumn it was omnipresent on the hills. It is difficult to distinguish it from *M. Didyma*; both have the O-shaped spot on the fore-wing, but when flying it seems smaller. The caterpillar feeds on mullein, but I saw none on the *Verbascum sinuatum*, which grows over six feet high, and forms a conspicuous object on the waste spots around Jerusalem.

Grapta Egea, Cr., 10/5, 19—16/6, 15/7, 7/8.—A spring and summer generation or a summer disclosure that hibernates. I saw one of these butterflies on a thistle in May, and another generation emerged at the commencement of June, when numbers were to be seen in the ravine on the south side of the town, where on the ridge over the problematical "Potter's Field" the caper earliest expands its rose-like snow-white blossoms; and shortly afterwards individuals were to be seen sunning

themselves on the walls in its alleys. About this time I met with this butterfly in the small town that is springing up around the Baptist's Fountain, its urban partialities suggesting that its caterpillars had fed on the pellitory.

Pyrameis cardui, L.—An almost cosmopolitan butterfly flying everywhere during the summer. I found its caterpillars on the thistles, and the butterflies appeared in June.

Limenitis?—A glade gliding butterfly visited a fig tree when the *Cicadetta atra* was churring on the *Echinops viscosus*, and *Cicada orni* croaking on the olives grey with the red-fruited *Viscum cruciatum*.

SATYRIDÆ.

Melanargia Titea, Klug, 14/5.—Plentiful as you left Jerusalem in May and June, on the level rock-ridged waste to the right of the Jaffa road.

Lasiommata Mæra, L., 23/5—17/8.—Flew zigzag along the walls of the vineyards during the summer, and might have been mistaken for the English "Wall" Butterfly, which, when the apical eye on the fore-wing has one pupil, it resembles sometimes a variety (*orientalis*, Ruhl.) that has the fulvous colour deeper, and whose appearance is somewhat startling, was wafted over.

Hipparchia fatua, Lederer, 6/7.—Was sometimes seen flying along the walls of the vineyards. It is easily mistaken for the European *statilinus*.

Hipparchia Thelephassa, Klug, 10/5, 23/5.—Flies and settles in the manner of the European "Grayling" upon the rocks. During the summer it collected in companies at the mouths of the caves and rock-hewn sepulchres that border the valleys, and hid among the pellitory, maiden hair, and *Podonosma syriacum*.

Epinephile Hispulla, Esp.—The female of this butterfly has purple tints on the under-side instead of the sandy ones of the English "Meadow Brown." These match the shades of the limestone rocks on which it reposes and favour its concealment.

Epinephile Telmessia, H.-S., 21/7.—Despite the two eye-spots on the fore-wing, this butterfly is not easily distinguished from the previous one as it flies over the grass.

Ypthima Asterope, Klug, 16, 21, 23/6.—This darts in zigzag about the walls and suns on the ground in the shady corners of the vineyards. I previously had a specimen of this butterfly sent me from Northern India, and also a large winged ant (*Dorylus*), which came to the lights on the supper table at Jerusalem on the 6th of the month; both butterfly and ant reminding me that I was in Asia.

LYCÆNIDÆ.

Spindasis Acamas, Klug, 21/7.—For the sake of its associations I one day got as far as Kolonieh on the Jaffa road, supposed to be Emmaus, where there is an old wall with bevelled stones, and a tavern with a multilingual signboard. The dell in which it was situated recalled a heathery nook in England, for the *Thymra spicata* that mimics the heather was coming into bloom at the roadside, and on it I saw this butterfly resembling a hair streak. I afterwards startled another from the *Poterium spinosum* and scrub on the hill side, but more I did not see.

Chrysophanus Omphale, Klug, 8/5, 1/6—30/6, ♂, 8—6—9, ♀.—I noticed a worn female upon a thistle head in May. A new generation commenced to emerge

in the dry water courses empurpled with *Eryngium creticum* that scar the eastern slope of the Mount of Olives on the first of June, and which, in September, had disappeared.

Chrysophanus stygianus, Butl., 19/5—20/7.—A dusky Mediterranean form of the "Small Copper," which has the tails of the hind-wings more or less long, but little of its gem-like beauty when seen reposing on a grass plot in an English lane. Like its prototype it flew away and returned to settle on the sunny ground under the wall of the vineyard.

Plebeius Trochilus, Freyer, 30/6—18/8.—This minute butterfly fluttered over the sunburnt grass in July, and settled on the sparse flowers that had braved the drought.

Polyommatus baticus, L., 2/6—9/6.—Settled on the bushes in the garden in June, in the manner of a hair-streak.

Scolitantides Baton, Berg., 2/6.—Flies in company with *Icarus* among the rocks on the hill slopes that border the left side of the Jaffa road as you leave Jerusalem.

Cupido Icarus, Rott., a variety that is near *pusillus*, Garb., 29/5—28/7.—This common "Blue" is plentiful in the gardens and vineyards during the summer.

HESPERIIDÆ.

Pyrgus althea, Hb., var. *baticus*, Ramb., 8/8—12/8.—Flies here and there in the ravines at the end of summer. I saw one at Bethlehem.

Hesperia orbifera, Latr., 16/6—29/7.—Flies here and there in the ravines during the summer. I saw one among the sand hills in the Wilderness of Judea.

Thymelicus lineola, O., 2/6, 16/6.—I saw one on the top of the Mount of Olives on the second of June, and later on I discovered a group collected under the stone wall near the windmill that overlooks the Railway Station at Jerusalem.

At Jaffa, in April, I captured *Euchloë Belemia* and *Azamus Gamra*, a little "Blue" with green eye spots on the under-side of the hind-wings.

Redbridge, Southampton :

April, 1898.

NOTE ON *ASPIDIOTUS GREENII*.

BY PROF. T. D. A. COCKERELL, F.E.S.

In Bull. 6, Tech. Ser., Div. Ent., U. S. Dept. Agriculture, p. 27 (fig. 7), I named as *A. Greenii* a species on *Cycas* from Kandy, Ceylon, sent to me by Mr. Green as *A. cyanophylli*. I now learn from Mr. Green that there were three species on the *Cycas* at Kandy, and by mistake he sent me, not the species he called *cyanophylli*, but the one he referred to *cydoniæ*.

I now believe that the *A. cyanophylli* of Green's "*Coccidæ* of Ceylon," and the insect reported by me (*l. c.*, p. 27, footnote) from Mazatlan, Mexico, are the true *cyanophylli* of Signoret. Comstock's *cyanophylli* is doubtless the same, as I learn from Mr. Pergande that

his specimens show the incisions with thickened edges, as in *Diaspidiotus*, notwithstanding that his account in the Cornell Univ. Report (1883) leaves it to be understood that they are absent.

The true *A. Greenii* is the species described and figured in the "Coccidæ of Ceylon" as *A. cydoniæ*, Comst. A short time ago I found specimens of it on a house palm at Mesilla, New Mexico, agreeing excellently with Green's Ceylon insect. The convex greenish scale with orange exuviae, as figured by Green, is very characteristic. I do not believe this can be Comstock's *cydoniæ*. Mr. Pergande tells me that the type scales of *cydoniæ* are light grey or yellowish-grey, the exuviae dark brownish and covered more or less with secretion. As for the ♀ insects, the reader may compare the figures on pp. 11 and 12 of my bulletin cited, that of *cydoniæ* being from one of Comstock's types.

Mesilla Park, N. M., U. S. A.:

June 15th, 1898.

Food-plants of Gelechia fraternella, Dgl.—The Rev. C. R. Digby (*ante*, p. 151) asks whether there is not some confusion about the food-plant of *Gelechia fraternella*, because he has always found the larva on *Stellaria graminea*, but never on *S. uliginosa*, which is recorded as the plant on which it is usually found. It will, therefore, interest him to know that the records are quite reliable, and that in some localities the larva does feed in nature on *S. uliginosa*; in proof of this I may mention that on May 13th, 1888, I received from Mr. H. T. Stainton some larvæ of this species found feeding on *S. uliginosa* at Lewisham, which yielded a series of imagines in the following July. Again, in the Nat. Hist. Tin., x, pl. xi, the plant there figured with the shoot spun together by the larva of *G. fraternella* is certainly *S. uliginosa*; and as, in the account of its habits (*op. cit.*), Stainton says that it occasionally also feeds on *Cerastium vulgatum*, we now know that it has three separate food-plants. Mr. Digby refers *fraternella* to the genus *Lita*, but Messrs. Durrant and Meyrick both agree that *Lita* cannot stand as a separate genus, and must be merged in *Gelechia*, Hb.—EUSTACE R. BANKES, The Rectory, Corfe Castle: July 5th, 1898.

Food-plants of Dichrorampha sequana, Hb.—I am glad to see that the Rev. C. R. Digby (*ante*, p. 150) calls attention to the occurrence of this species among yarrow, for although I do not think it has ever yet been recorded as having been bred from this plant in Britain, it also flies commonly amongst it in the only spot in this district where I have ever met with it, and obviously feeds in the roots of this plant, tansy being entirely absent from the locality. In Germany they seem to have done better, and to have already bred it from yarrow as well as tansy, for Sorhagen, in his "Kleinschmetterling der Mark Brandenburg," p. 137 (1886), says: "The larva in *Achillea* and *Tanacetum*."—ID.: July 6th, 1898.

Narycia melanella, Hw.: a point of nomenclature.—This name appears in Mr. Meyrick's "Handbook," p. 776, in place of the familiar "*Xysmatodoma*" *melanella*, but with no reason for the change. Modern change in the nomenclature of British *Lepidoptera* has ceased to interest me as a rule, but this is a case on which I can probably throw as much light as any one. Stephens, in his "Illustrations," *Mandibulata*, vi, p. 154, pl. xxxii, fig. 4 (1836), described and figured a new genus and species of supposed *Trichoptera* as *Narycia elegans*. His description and figure were reproduced by Kolenati in his "Genera et Species Trichopterorum," pt. ii, p. 293, tab. v, fig. 62. When Dr. Hagen, in 1857, made an examination of Stephens' collection for his "Synopsis of British *Phryganidæ*," he detected that *Narycia elegans* was undoubtedly *Lepidopterous*, and a note by Mr. Douglas in the "Ent. Weekly Intelligencer," ii, p. 59, identified it with the insect then, and generally, known as *Xysmatodoma melanella*. Dr. Hagen alluded to it himself in the "Entomologist's Annual" for 1859, p. 108. Later on, in 1865, I called attention to it in my "Trichoptera Britannica" (Trans. Ent. Soc. Lond., ser. iii, v, p. 169), but no attempt was made by the *Lepidopterists* to change the generic appellation of the moth. *Xysmatodoma* was founded by Zeller in the "Linnæa Entomologica," vii, p. 352 (1852), sixteen years later than *Narycia*. I may remark that Stephens had previously described the insect as *Lampronia melanella*, Hw., in the "Illustrations," *Haustellata*, iv, p. 358 (1835), but it is in no way typical of *Lampronia*, which was made to contain 22 incongruous species. Much as I dislike change, I think Mr. Meyrick, with a knowledge of the circumstances (mainly communicated by myself), had no alternative in the course he adopted; but if, in all the numerous changes he has made, there was one more than another that demanded an explanation, it was probably this, considering that different Orders of insects were involved, and that few occupy themselves with more than one.—R. McLACHLAN, Lewisham: June 20th, 1898.

Cynomyia alpina in Warwickshire.—In the March number (*ante*, p. 63), I recorded the capture of sixteen ♂s of this rare species in my garden during August, 1897. This year I met with it in Sutton Park so early as June 19th: one specimen taken, and a second missed; on July 3rd six were captured, and, to my delight, two of them proved to be females—this being the first record of that sex for Britain. On the 5th, four ♂s and one ♀, making twelve in all. Ten of the twelve were taken on bramble leaves, imbibing the honeydew from *Aphides*, the other two on the ground. They vary considerably in size, the ♀s appear to be smaller than the ♂s.—RALPH C. BRADLEY, Sutton Coldfield: July 12th, 1898.

Ischnomera sanguinicollis at Leigh Woods, Bristol.—Having a couple of hours to spare during a hurried visit to Bristol on June 10th, I made my way to Leigh Woods, and was fortunate in beating from a hawthorn two specimens of *Ischnomera sanguinicollis*. Other species included *Cistela murina* (1), *Tetrops præusta* (1), from hawthorn; *Cistela luperus* (1) from birch; and *Scymnus capitatus* (3) from oak. Two specimens of *Magdalinus armiger* and one of *Hylastes opacus* occurred crawling on the walls of the approach to the Clifton Suspension Bridge.—J. HAROLD BAILEY, Pendleton: July 7th, 1898.

Obituary.

Ernest Candèze, M.D., F.E.S., the learned monographer of the *Elateridae*, an accomplished entomologist and writer, died at Liège on June 30th, after a short illness from *angina pectoris*, in his 72nd year, deeply mourned by a large circle of personal friends, not a few of whom are in this country. This is a preliminary notice; a more extended memoir will appear hereafter.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *April 18th, 1898.*—Mr. R. C. BRADLEY in the Chair.

Mr. P. W. Abbott showed a very fine series of *Heliothis peltigera* taken in South Devon last year. Mr. R. C. Bradley, a small lot of insects collected during a holiday spent in Norway last year; he occupied most of his time cruising in the Fjords, &c., and was only able to collect a very little at times when on shore; amongst his captures were *Boarmia repandata*, with pale blotches in the disc of the fore-wings, and very fine vars. of *Bombus agrorum*. Mr. Martineau, a fine large *Sirex gigas*, ♀, taken in a grocer's shop at Solihull.

May 16th.—Mr. G. T. Bethune-Baker, F.L.S., President, in the Chair.

Mr. R. C. Bradley showed a Trypetid which he had taken on a window in his house at Sutton; it had been sent to Mr. G. H. Verrall, who said it was *Rhacochlæna toxoneura*, a genus and species new to Britain, and very rare. Mr. P. W. Abbott, *Tæniocampa opima* and a series of *T. stabilis*, all from Wyre Forest; the *stabilis* were rather peculiar, the orbicular and reniform tending to coalesce in all; in one specimen they had coalesced on the right wing, but had not quite done so on the left. Mr. G. T. Bethune-Baker, the remainder of his collection of the genus *Colias*, also *Meganostoma* and *Rhodocera*; he pointed out the manner in which *Colias* ran naturally into *Rhodocera* through *Meganostoma*.

June 20th.—Mr. R. C. Bradley in the Chair.

Mr. H. Willoughby Ellis, Park Grove, Solihull, was elected a Member of the Society.

Mr. C. J. Wainwright exhibited a short series of *Orthoneura elegans* (four males, four females) and *O. brevicornis* (nine males) from Sutton, taken on May 15th and 22nd this year, and said that both species were exceedingly rare, and that they had previously been known as British only from a few odd specimens. Mr. Bradley showed *Anthophora pilipes* and *Andrena Gwynana*, both of which species had been very common at Droitwich in the first week of April this year. Mr. Martineau said that *Anthophora pilipes* occurred at Solihull, and was damaging the red sandstone church wall by burrowing freely in it. Mr. Fountain, a collection of insects made in Herefordshire on Whit Monday, including *Epione advenaria*, *Ligdia adustata*, *Minoa euphorbiata*, *Hadena genistæ*, &c. Mr. Martineau showed *Andrena cingulata*, ♂ and ♀, from Wyre Forest, taken on May 9th; they were the first local specimens he had heard of.—COLBRAN J. WAINWRIGHT, *Hon. Secretary*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
April 28th, 1898.—Mr. R. ADKIN, F.E.S., Vice-President, in the Chair.

Mr. Bishop exhibited a very varied series of bred *Taniocampa miniosa*, and remarked that a large proportion of the brood had the claws of the front legs undeveloped, and were thus unable to cling to vertical surfaces. Mr. Sauzé, a series of *Brachinus crepitans* from Swanage, very variable in both size and colour. Mr. Edward Saunders sent a series of *Hemiptera-Heteroptera*, comprising examples of most of the genera of this group, to illustrate his paper. Mr. West (Greenwich), a drawer comprising a large number of *Hemiptera* taken by himself during the last three years. Mr. Adkin, a series of bred *Eugonia quercinaria*, including a gynandromorphous specimen, together with mounted examples of the genitalia and enlarged photographs of the same, and read detailed notes. A paper, written by Mr. Edward Saunders, F.L.S., entitled, "Notes on Collecting British *Hemiptera*," was then read.

May 12th.—Mr. J. W. TUTT, F.E.S., President, in the Chair.

Mr. J. W. Downing, of Tooting Graveney, was elected a Member.

Mr. Adkin exhibited red specimens of *Cidaria unidentaria*, and Mr. Tutt said there was no doubt as to this form occurring in the species as it had recently been bred. Mr. Moore, specimens of *Anasa tristis*, the squash-bug, *Murgantia histrionica*, the harlequin cabbage-bug, *Anophthalmus tenuis*, a blind cave beetle, and *Blissus leucoptenis*, the chinch-bug, all from the U. States of N. America, and contributed notes; the blind beetle was from the famous Wyandotte caves. Mr. Tutt, a specimen of *Libythea celtis* taken in S. France after hibernation, and set to show the protective resting habit; the veins and marking of the lower side, and the palpi and antennæ, admirably resembling a dead but still attached leaf and its stalk. Mr. Jones, a very large number of European *Lepidoptera*, mostly bred and in the finest condition, to illustrate his paper on the subject of "Collecting in the Riviera." Mr. Tutt and Dr. Chapman gave details of their recent experiences in the district.

May 26th.—The President in the Chair.

Mr. Edwards exhibited two very large Prawns from Madras, and also a living specimen of a Scorpion, found by himself in the neighbourhood of Cannes, where it was abundant; it fed readily upon young cockroaches. Mr. West, of Greenwich, a series of the smallest British water-bug, *Microvelia pygmaea*, and stated that it ran readily over the surface of the water. Mr. Turner, a life-history series of *Coleophora genistæcolella* from Carlisle, showing imagines and cases made by the larvæ on the food plant, *Genista anglica* (the Petty Whin). He stated that the larvæ were noticed at Oxshott on May 21st, during the Field Meeting.

June 9th.—The President in the Chair.

Mr. Lucas exhibited coloured drawings of *Libellula fulva*, showing details. Mr. Bishop, a bred specimen of *Brepbos parthenias*, having a gap in the wing due to an injury to the pupa; the gap was ciliated. He also exhibited specimens of *Thecla rubi*, and remarked on the variability of the androconial marks in this species, while in all the rest of the genus they were notably constant; specimens of *Rumia luteolata*, showing considerable range of variation in the red spotting; and

larvæ of *Tæniocampa munda*, *T. incerta*, and *T. instabilis*. Mr. Tutt, ova of *He-pialus lupulinus*, and said that under a glass they looked like little black sloes. Mr. West, of Greenwich, series of *Trapezonotus agrestis* and *Tropistethus holosericeus*, obtained by shaking moss in Headley Lane. Mr. Shortridge Clarke gave an account of a remarkable occurrence of thousands of larvæ and imagines of *Caradrina quadripuncta* (*cubicularis*) in a large hay store in the Isle of Man.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: May 4th, 1898.—MR. R. TRIMEN, F.R.S., President, in the Chair.

MR. H. G. PALLISER, of 6, Mount Park Road, Ealing, W., was elected a Fellow of the Society.

Colonel Yerbury exhibited a series of *Diptera* collected at Hyères during March and April, 1898, and including *Brachypalpus valgus*, Panz., *Callicera Fagesii*, Guér., and a species of *Platystoma* which appeared to be undescribed. Mr. Barrett, aberrant forms of British species of *Lepidoptera* from Gloucestershire and Warwickshire. Mr. Waterhouse, two burnished golden beetles, *Anoplognathus aureus* from Queensland, and *Plusiotis resplendens* from Panama, which he stated to be interesting examples of a similar result being attained by a process of natural selection in two species of the same family in widely separated localities; many members of the family had a slight tendency to show metallic colours. It would be interesting to ascertain whether there were any similarity in their surroundings in the two countries which would make this golden appearance an advantage, or whether it might be considered a "warning colour." Allied species, however, appeared to be edible. Mr. Walker, specimens of the rare *Philonthus fuscus*, Grav., found in the *Cossus*-eaten poplar in Chatham Dockyard at the end of April. Mr. R. McLachlan communicated a paper on "*Neuroptera-Planipennia* taken by the Rev. A. E. Eaton in Algeria."

June 1st, 1898.—The President in the Chair.

Prof. B. Grassi, M. Hippolyte Lucas, and Dr. August Weismann were elected Honorary Fellows. Mr. C. H. A. Brooke, of 67, Holland Park Avenue, Kensington, W.; and Mr. G. B. Dixon, of St. Peter's Road, Leicester, were elected Ordinary Fellows of the Society.

Mr. P. B. Mason exhibited a specimen of the rare *Lathridius filum* found in his own herbarium. It had been previously taken at Edinburgh by McNab, and he understood that an example had been found in a sealed envelope containing *Marchantia* from Franz Josef Land. Mr. J. J. Walker, a singular blue variety of *Carabus monilis*, Fabr., resembling in colour *C. intricatus*, and taken at Iwado, Kent, in flood-rubbish in May. Mr. F. Merrifield forwarded for exhibition from Riva on the Lago di Garda larvæ of the "Corsican form," var. *ichnusa*, of *Aglais urticae*. Mr. G. C. Champion called attention to Mr. A. Somerville's recently-published sheet of the County and Vice-County divisions of the British Isles for biological purposes, and a discussion ensued thereon. Papers were communicated by Sir G. F. Hampson, Bart., on "The Moths of the Lesser Antilles," and by Mr. J. H. Leech on "*Lepidoptera-Heterocera* from Northern China, Japan, and Korea."—W. F. H. BLANDFORD, *Hon. Secretary*.

A REVIEW, WITH SOME CRITICAL NOTES,
OF "THE *PTEROPHORIDÆ* OF NORTH AMERICA.
C. H. FERNALD, A.M., PH.D.

MASSACHUSETTS AGRICULTURAL COLLEGE. JANUARY, 1898."

[*sep.* pp. 80, pagination including cover and Pl. I—IX.]

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

Dr. Fernald has recently issued an excellent monograph of the *Pterophoridae* of North America. Descriptions of all the genera and species are published with synoptical tables and full synonymy, moreover, it is accompanied by a good series of uncoloured plates, representing the structural characters, especially the neuration of the genera, and the male genitalia of a large number of species. It would have greatly facilitated comparison if references to the figures had been given in the text. The first ten pages are devoted to the history of the family, wherein the more important literature of the subject is referred to; the structure, habits, early stages, systematic position, and general characters of these insects being set out in detail.

The paper has been issued in separate form, but no reference is given to the title of the original publication, and it is evident from a reference to the index, wherein the page numbers run from 95 to 140, that this excerpt of pp. 3 to 80 (including the pagination of the plates) is not paged in accordance with the original publication.

We cannot too frequently repeat the objections to such variation, which is apt to cause the utmost confusion in tracing out subsequent references given by other authors.

Personally, I am very desirous to incorporate the references to Dr. Fernald's paper in my MS. Index of the *Pterophoridae* of the World, but it is impossible to do so before obtaining a copy of the publication in which it was issued. The editors must be held responsible for the issue of wrongly paged separate copies, which cannot be regarded or cited as an independent edition; but Dr. Fernald may be acquitted of all blame for this unfortunate blunder.

With regard to the systematic position of this family, the author appears to be in sympathy with the view that it forms an aberrant group of the *Pyralidæ*, as suggested by Dr. Jordan, Ent. Mo. Mag., VI, 152 (1869), and his adoption without reserve of the classification proposed by Meyrick, is no mean tribute to the accuracy of that author whose methods and conclusions have thus received the sanction and support of so high and painstaking an authority.

His reference to the genus *Chrysocorys*, Crt. (more properly *Schreckensteinia*, Hb.), p. 12, which had been placed among the *Pterophoridae* by several English

entomologists, shows that following Meyrick he very properly excludes this from the family.

Dr. Jordan, at the conclusion of his "Notice of the Skandinaviens fjädermott of H. D. J. Wallengren," gave a list of the British *Pterophoridae* [Ent. Mo. Mag., VI, 151 (1869)], commencing with *Chrysocorys*; from this it would at first sight appear that Wallengren had included *Chrysocorys* in the *Pterophoridae*, which was not the case, and Dr. Jordan appears to have misled Mr. Tutt, who wrote, Pter. Br., 10, "Herr Wallengren first removed it to the *Pterophori*." This mistake in classification probably originated with Curtis [Guide, 188 (1831)], where we find,

"1039 N.G.....*1. *angustipennella*. *Festaliella*, Hüb. ?

1040 PTEROPHORUS, 161."

and in Curtis' Guide (2 edn.), 216 (1837).

"1039 CHRYSOCORYS, Curt....*1. *scissella*, Hw., *angustipennella*.

1039b ADACTYLUS, 471*1. *Bennetii*, B.E.

1040 PTEROPHORUS, 161."

In Brit. Ent., XIV, Pl. 663, expl. p. (2), (1837), Curtis, referring to Hübner's figures of the larva and pupa of *Chrysocorys festaliella* which he had copied, wrote: "It is clear from them that this moth is closely allied to the *Pterophori*."

The late Dr. Jordan [Ent. Mo. Mag., VI, 152 (1869)] quoted the "high authority of Mr. Stainton" in support of his opinion as to the location of *Chrysocorys*, and in the "*Pterophoridae* of California and Oregon" (1880), I followed this lead apparently somewhat on the principle of the jumping sheep, and others of the flock have done likewise, but there can be no doubt that this genus should be included in the *Elachistidae*, in which it is scarcely an aberrant form.

Dr. Fernald is quite right in eliminating *Lineodes*, Gn. (= *Scoptonoma*, Z.), from the *Pterophoridae*; *Stenoptycha*, Z., a South American genus allied to *Lineodes*, but differing in neuration, should also be excluded, and both should be referred in the *Pyraustidae*.

On pp. 4--5 we are told that Latreille in 1796 "separated *hexadactyla* from the group, and established for it the genus *Orneodes*." This is hardly correct; "Latreille, Prec. Gen. Ins., 148 (1796), created the genus *Orneodes*, omitting to cite the type; subsequently, however, Hist. Nat. Crust. Ins., III, 418 (1802): XIV, 258 (1805), this omission was remedied, and *hexadactyla*, L. (F. Geoff., &c.), was cited as the type" [Wlsm. and Drnt., Ent. Mo. Mag., XXXIII, 41—2 (1897)].

p. 5.—"Samoulle" is a misprint for "Samouelle," and the published title of Hübner's work is "Verzeichniss bekannter Schmettlinge (not "Schmetterlinge").

p. 6.—I am unable to find that Stephens "adopted the genus *Agdistis*, Hüb.," in his Catalogue (1829); indeed, he would have had no reason for doing so, as the only British species, *bennetii*, Crt., was not described until 1833; but, according to the "Illustrations" (IV, 370), he adopted *Agdistes* for *bennetii* in his "Nomenclator" (2nd edition), which was published in 1833. I have not been able to verify this reference.

p. 7.—It is true that Vol. II, Part 2, of "Die Schmetterlinge Deutschlands" is dated on the title 1877, but Kirby, Zool. Record, XIII (1876), Ins., p. 187 (1878), stated that it "was published not later than November, 1876."

p. 8.—The date of Hofmann's "deutschen Pterophorinen" (not "Pterophoriden") is given as 1895. I have not yet been able to examine the original publication,

and the Zoological Record does not give the exact date. It could, however, hardly have been published in 1895, for on the reverse of the last page is a reference to "Kneuckers Allgem. bot. Zeitschrift Jhrg., 1896, Nr. 3."

A few notes upon the different species described may perhaps be useful, although a critical review was scarcely intended when commencing this reference to the work before me.

Trichoptilus ochrodactylus, Fish.

I have a specimen from Arizona, and it suggests a comparison with *centetes*, Meyr. (? = *oxydactylus*, Wkr.), a species which occurs in the West Indies, and which shows very slight variation throughout what appears to be a somewhat cosmopolitan range of distribution.

Trichoptilus lobidactylus, Fitch.

Fernald regards *californicus*, Wlsm., as a synonym. I have the darker form from Colorado, and in spite of the colour which makes them look very distinct (the Californian series showing no dark varieties), I am not prepared to dispute his opinion without further study. This species also runs very close to *oxydactylus*, Wkr. (Ceylon).

Oxyptilus periscelidactylus, Fitch.

Fernald omits to recognise in this the genus *Sphenarches*, Meyr., to which it undoubtedly belongs [*vide* Wlsm., Pr. Z. Soc. Lond., 1897, 57].

Oxyptilus tenuidactylus, Fitch.

My suggestion that this is *nigrociliatus*, Z., is here confirmed, and it is recorded that it feeds on blackberry.

PLATYPTILIA, Hb.

The author follows Meyrick and myself in uniting *Platyptilia*, Hb., and *Amblyptilia*, Hb.

Platyptilia pica, Wlsm.

This species also occurs in Vancouver, whence I have lately received it from Dr. Fletcher.

Platyptilia acanthodactyla, Hb.

Fernald records a single specimen from New York. Intermediate varieties between this and *cosmodactyla*, Hb., undoubtedly occur, and it is very hard to separate these two species with any certainty in a long series of captured specimens from various localities. Both forms seem to me to be included among my specimens from California and Oregon, although Dr. Jordan, Ent. Mo. Mag., XVIII, 117 (1881), confirmed my identification made at the time. The last word has not been heard upon the subject, and it would not surprise me to find that at least three distinct species are included in our American series; I bred one of the many varieties from *Orthocarpus* in Oregon.

Fernald's figure of *cosmodactyla* (Pl. IX, 1) and Hofmann's figure of *acanthodactyla* (Pl. III, 5) might well have been taken from the same species.

Platyptilia carduidactylus, Riley.

The author has here restored the original mongrel name which was corrected by Zeller to *cardui*. Would he also justify the retention of *millieridactylus*, Bruand, *britanniodactylus*, Gregs., and *schmidtiiiformis*, Freyer?

This species should be very carefully compared with the European *zetterstedtii*, Z., which my specimen, Pl. I, 6 (Pter. Cal. and Or.), most strongly resembles. It is possible that here again two species have been united under one name in the American lists, but in any case *cardui*, Riley, is undoubtedly variable.

Platyptilia tesseradactyla, L.

I am unacquainted with any previous record of this species from America, but am able to confirm its occurrence, having received several specimens from Loveland, Colorado (W. G. Smith). Two specimens, collected by myself at Scott's Valley (Lake Co., California, 17—19, VI, 1871), were not included in my monograph, being in poor condition, but the longer series now received enables me to identify and record them.

Platyptilia orthocarpi, Wlsm.

A specimen from Custer County, Colorado, sent by Professor Cockerell, might easily be regarded as a variety of this species, but it differs slightly in the darker ante-apical shade on the anterior lobe of the fore-wings, and in the greater obliquity of the white transverse line which follows it. It was bred from *Castilleja pallida* + *acuminata*, and probably represents a nearly allied species.

Platyptilia modesta, Wlsm.

Alucita belfragei, Fish.

I can add Arizona to the localities for these species; they were collected many years ago by the late H. K. Morrison.

PTEROPHORUS, Geoffr. (Wlgrn.).

In this genus the difficulties are perhaps greater than in others, many species approaching the European forms so closely as to be doubtfully separable; they are, moreover, variable, and possibly polyphagous.

Pterophorus bipunctatus, Mschl.

Pterophorus bipunctatus, Mschl., Ab. Senck. Nat. Ges., XV, 346, 354 (1890) ⁽¹⁾.
Alucita bipunctatus, Wlsm., Pr. Z. Soc. Lond., 1891, 496, 542 (1892) ⁽²⁾. *Leioptilus microdactylus*, Hdm., Stett. Ent. Ztg., LVII, 9 (1896) ⁽³⁾. *Pterophorus bipunctatus*, Wlsm., Pr. Z. Soc. Lond., 1897, 61, No. 15 ⁽⁴⁾.

Hab.: UNITED STATES—Florida ⁽⁴⁾; WEST INDIES—Portorico, 1, 2, 4; St. Croix, 4; St. Thomas, 3, 4; Grenada, 4.

Fernald omits this West Indian species, which I recorded from Florida (Morrison), l. c., No. 4.

Pterophorus homodactylus, Wkr.

Fernald adds, " ? *Leioptilus hololeucus*, Z."

Zeller's types are before me together with better specimens, also from Chile, in all of these four spots can be distinguished on the anterior lobe (two costal, followed by one dorsal and one apical), there are also two on the posterior lobe (one dorsal and one apical); even in bred specimens of *homodactylus*, Wkr., there is no trace of any similar pattern of spots on the first lobe. The two species are decidedly distinct.

Pterophorus subochraceus, Wlsm.

Fernald adds, " ? *Pterophorus lacteodactylus*, Chamb."

I have a specimen received some years ago from Mr. Fish, under the latter name, which is certainly identical with *subochraceus*. This name would therefore be entitled to take precedence if (as I have no reason to doubt) Fish was rightly acquainted with Chambers' species, but the name is incorrectly formed, and cannot be emended to *galactodactylus* or to *lacteipennis*, as these names have already been used. It would appear, therefore, that the name *subochraceus* should be retained.

Pterophorus sulphureodactylus, Pack.

Here, I venture to think, the protest against a mongrel name formed in defiance of a well-acknowledged rule of zoological nomenclature founded on orthography should be sustained. The proper correction to *thiododactylus* cannot be made, for Hübner published a *theiodactyla*, and therefore (Pter. Cal. and Or., p. 49), I suggested the substitution of *sulphureus*.

Pterophorus paleaceus, Z.

This species was recorded from Portorico by Möschler, Ab. Senck. Nat. Ges., XV, 346, 354 (1890), and included in my West Indian lists, Pr. Z. Soc. Lond., 1891, 495, 542 (1892): 1897, 60, No. 14. The synonymy = *Leioptilus sericidactylus*, Mrtf., is undoubtedly correct, and was accidentally omitted from my papers.

Pterophorus agraphodactylus, Wkr.

Fernald omits to mention the synonymy, = *aspilodactylus*, Wkr., under which name the species was recorded from Jamaica by Butler, Pr. Z. Soc. Lond., 1878, 495, vide Wlsm., Pr. Z. Soc. Lond., 1897, 61, No. 17.

Pterophorus parvus, Wlsm.

I recorded this from Grenada, Pr. Z. Soc., Lond., 1897, 60, No. 10, and the distribution of this, rather peculiar species may now be extended as follows:—Arizona (Morrison), Peru, Callao (J. J. Walker). Two specimens in the Zeller collection (unnamed) were evidently collected by Petersen in Colombia.

Pterophorus cretidactylus, Fitch.

Here, again, the author omits to adopt the suggested correction of a mongrel name [*gypsodactylus*, Fitch, Wlsm. (emend), Pt. Cal. and Or., 35]. In the "Canadian Entomologist" [XXV, 96 (1893)] Dr. Fernald pointed out that *occidentalis*, Wlsm., was a synonym of this species, and his description now published tends to confirm this view, which cannot be well disputed since he has Fitch's types. I am under a strong impression that up to the date 1885 (or thereabouts, if not much later), he shared the view of Zeller and myself, that the species afterwards described as *eupatorii*, Fern., was the true *cretidactylus*, Fitch. I have again carefully studied the original description, and the correction should be accepted.

In this genus there are several groups of recognised species, which run very closely one with another, and where further study may reduce some of their number to mere synonyms. These are respectively as follows:—

{	<i>rogenhoferi</i> , Mn.	}	connecting links.
	<i>griseszens</i> , Wlsm.		
	<i>lugubris</i> , Fish.		
	<i>lithodactylus</i> , Tr.		
	<i>constanti</i> , Rag.		

eupatorii, Fern.
guttatus, Wlsm.
mathewianus, Z.
cretidactylus, Fitch.
giganteus, Mn.
grandis, Fish.
baroni, Fish. ?

Pterophorus cineraceus, Fish.

Originally printed thus, but probably a mere printer's error for "*cinerascens*."

Pterophorus lugubris, Fish.

This should be carefully compared with the European *rogenhoferi*, Mn., and the same remark must also apply to *grisescens*, Wlsm., which Dr. Jordan professed himself unable to separate from it [Ent. Mo. Mag., XVIII, 118 (1881)].

I reserve for the present any discussion of their possible identity, but would add Arizona and Colorado to the localities for *P. grisescens*.

Pterophorus inquinatus, Z.

= *Edematophorus ambrosiæ*, Mrtf.

The neururation of *inquinatus*, Z., is figured, Pl. III, 5—6, and the genitalia, Pl. IV, 3—4, while the genitalia of *ambrosiæ* are figured, Pl. VI, 14—17. These two sets of figures certainly do not belong to the same species, and an unfortunate error, either of synonymy or of name, has been made, which doubtless Dr. Fernald can easily explain.

Reference is omitted to Coquillett's description of the larva of *Edematophorus inquinatus* [Papilio, II, 61—2 (1882)], and to the West Indian records of Hayti and St. Thomas; Hedemann, Stett. Ent. Ztg., LVII, 9 (1896); Wlsm., Pr. Z. Soc. Lond., 1897, 59, No. 7. Fernald confirms me in sinking *ambrosiæ* as a synonym of *inquinatus*.

Stenoptilia pumilio, Z.

This species also occurs in Jamaica, St. Croix, St. Vincent, and Grenada.

Stenoptilia (?) *pumilio*, Wlsm., Pr. Z. Soc. Lond., 1891, 495, 542 (1892).
Mimæseoptilus gilvidorsis (partim.), Hdm., Stett. Ent. Ztg., LVII, 8—9 (1896).
Stenoptilia (?) *pumilio*, Wlsm., Pr. Z. Soc. Lond., 1897, 58, No. 6.

Having ventured on so many friendly criticisms, the more pleasant duty remains to record the strong sense of obligation which all students of the *Pterophoridae* must feel towards the author of this most useful monograph. It represents the result, so far as it goes, of an almost life-long study of this intricate subject, and Dr. Fernald has been particularly fortunate in obtaining the types of both Fitch's and Fish's species, thus giving to those who follow his descriptions the utmost confidence in the conclusions at which he arrives. There is little doubt that were he to publish all that he knows on the subject he would be justified in adding further discoveries to the list of

species. We may fairly hope that at some future time he will feel himself at liberty to do so, but his many duties in connection with the work of the Massachusetts Agricultural College, where he holds a high and distinguished position, must undoubtedly limit the time at his disposal: indeed, it is difficult to understand how he has so successfully completed his preparation of the numerous important papers on various families of the *Lepidoptera* which from time to time have issued from his pen. No one who is not well acquainted with the enormous amount of labour involved in catalogue work can appreciate the significance of ten pages of bibliographical references such as lately accompanied his monograph of *Porthetria dispar*. We congratulate him on his latest effort, and look forward with confidence to further contributions.

Merton Hall, Thetford :
June, 1898.

GELECHIA CONFINIS, STN., A NORTHERN FORM OF
G. SIMILIS, STN.

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

The probable specific identity of *Gelechia confinis* with *G. similis* occurred to me a few years ago, when comparing specimens of the former, bred from tufts of moss collected on old walls at Perth, with bred and caught examples of the latter from various English localities, including Co. Durham, Wicken, Corfe Castle, &c., and after carefully studying the question, I have no hesitation in saying that they are forms of one and the same species, and that the synonymy should be:

GELECHIA SIMILIS, Stn., Ins. Brit. Lep. Tin., p. 115 (1854).

„ „ „ var. *confinis*, Stn., Ent. Ann., 1871, pp. 98-9.

G. similis is usually attributed to Douglas, but it should be assigned to Stainton, whose description in I. B. Lep. Tin., p. 115 (1854), although headed “31. *Similis*, Dougl., *n. sp.*,” is the earliest that was published. Through Mr. P. B. Mason’s kindness, I have been able to examine in the Douglas collection the series of *G. similis* from which Stainton’s original description, founded on specimens taken by Douglas in July at Stoat’s Nest, Charlton, and Mickleham, was presumably made: it consists of eight individuals, taken at these localities, and all except the third, which is certainly *G. senectella*, Z., are *similis*, Stn., and specifically identical with the series of *similis* in the Stainton British collection.

Gelechia confinis was brought forward as *n. sp.* by Stainton in Ent. Ann., 1871, pp. 98-9, from specimens bred from moss collected

on old walls near Perth: I imagine that his diagnosis was founded on the examples which he says were bred by Mr. C. G. Barrett in June, 1870, for his own series only contains four specimens, of which one is unlabelled, while the other three are labelled respectively, "C. G. P. 24/11/71," "e. l. 15/6/71. Moss. Perth. F. B. White," and "e. l. 1/6/71. Moss. Perth. F. B. White," and it seems certain that he possessed none of these last three at the time when his paper was written. He there differentiates it from *affinis* and *umbrosella*, but fails to notice its much closer relationship to *similis*, probably owing to the fact that his series of this last, which is almost free from interlopers, includes only caught specimens, which are much older and browner: their history is unknown to me, for eleven are unlabelled, while the remaining one is ticketed "1019," but not in Stainton's writing, so that his notebooks afford no explanation of it. Southern and eastern *similis*, bred from similar tufts of moss collected on old walls and roofs, agree absolutely with specimens from the north of England and Perthshire, except that they are on the whole not so black, though fully as dark as *some* even of those bred from Perth: it may, therefore, be as well to retain the name *confinis* for the blackest form of the insect.

Owing to the difficulty of finding individual larvæ sparingly scattered among masses of moss, I have been unable to compare together those of southern *G. similis* and northern var. *confinis*, so can only say that they feed at the same time on similar mosses, and that the moths emerge simultaneously.

Meyrick, HB. Br. Lep., 589 (1895), sinks *confinis* as a dark northern form of *G. affinis*, Dgl., but this is clearly erroneous, for the former never shows the peculiar characteristics by which all the forms of the latter may be readily recognised, and which include a pale ochreous spot at the extreme base of the fore-wing, an additional (*i. e.*, a fourth) black spot which lies on the fold towards the base, the presence of numerous pale ochreous scales scattered over the ground colour, and of some longitudinal dashes of pale ochreous scales following each of the three anterior black stigmata. *Affinis* also has all the pale scales and the pale fascia much more ochreous, and the latter much more constant and more strongly pronounced than *similis*.

Although in I. B. Lep. Tin., p. 115 (1854), Stainton correctly attributes *G. affinis* to Haworth, he says in Nat. Hist. Tin., ix, 158 (1865), "The *affinis* of Haworth and Stephens can, of course, now only be quoted as doubtful synonyms," and in the synonymy ascribes it to Douglas, notwithstanding that in the paper to which he (Stainton) refers (Trans. Ent. Soc. Lond., N. S., i, 17 [1850]), Douglas particu-

larly says, "The Entomological Society has Haworth's specimen," clearly implying that he knows *affinis*, Dgl., to be identical with *affinis*, Haw. Meyrick also, HB. Br. Lep., 589 (1895), credits Douglas with the species, but I have frequently examined Haworth's original type specimen, which bears his MS. label "*affinis*," and is now in the British Museum collection, and it is without doubt the same species referred to under that name by Douglas, Stainton (in Nat. Hist. Tin.), and Meyrick. I do not know to what species Stephens applied the name, but his collection contains a specimen of *affinis*, Hw., bearing his MS. label "*Diffinis*"!

G. umbrosella was only added to the British List by Stainton in 1866 (Ent. Ann., 1866, pp. 170-1), so that the earlier British examples of it were mixed up in collections with *affinis* and other allies, and Stainton, in Nat. Hist. Tin., ix, 158, says that he himself described *umbrosella* under the name *affinis* in Ins. Brit. Lep. Tin., p. 115 (1854). The Stainton British series of *affinis* consists of that species alone except for one broken individual, which appears to be *similis*, but the Douglas series is a mixture of *affinis* and *umbrosella*, all the last six specimens being referable to the latter: in spite of this, Douglas' description (Tr. Ent. Soc. Lond., N. S., i, 17 (1850) was clearly taken from *affinis* only, though I have no doubt that when giving "the Chesil-bank, Weymouth," as a locality for it, he was really referring to *umbrosella*, which swarms there. Douglas (*l. c.*) tells us, without however stating upon what evidence Zeller's remark was based, that Zeller said of "this species" (*i. e.*, *affinis*, Hw., Dgl.), "*certissime mea umbrosella*" (which we can well understand if the last six* specimens in the Douglas series were submitted to him!), but Stainton, in Nat. Hist. Tin., ix, 160 (1865), says, "The *umbrosella* described by Zeller in the 'Isis' of 1839 belongs to the sand-hill species; I saw the original specimens when at the meeting of naturalists at Stettin," and his remarks there prove that by "the sand-hill species" he meant the one clearly defined by him as *umbrosella* in Ent. Ann., 1866, pp. 169-170, which is now well known under that name in Britain. It has the opposite marginal spots of the fore-wing very large and very white as compared with *similis* and *affinis*, and they rarely unite so as to form a fascia.

The Rectory, Corfe Castle :

June 29th, 1898.

* Owing to the method of labelling and mounting employed by Mr. Douglas, it is a matter of great risk and trouble to ascertain the data of any of the specimens: I, therefore, never attempt it except in cases of considerable importance, so do not know the year of capture of these *umbrosella*.—E. R. B.

DIANTHÆCIA LUTEAGO, VAR. *BARRETTII*, AND *POLIA*
XANTHOMISTA IN CORNWALL.

BY ALFRED FICKLIN.

In the early summer of 1897 I was sketching in one of the many fishing coves of the Land's End District, when my interest was aroused on seeing the luxuriant growth of the *Silene maritima*, which hung in masses of flowers from every crevice in the rocky wall of the garden of my lodgings. As much time as can be spared from Art I devote on these occasions to Entomology, and as dusk fell and the brush was laid aside, the net was unfolded, and I stood, motionless and expectant, before the breadth of blossom which exhaled its delicate perfume on the evening air. I took amongst many of the commoner species four specimens of a moth that was new to me, and which proved, on being referred to Mr. Barrett, to be identical with the *Noctua* which bears his name, but of a brown-grey form not previously observed in this country.

Early in June of this year I again visited the locality, and although I worked the flowers diligently every evening during my stay, I took but four worn specimens, the first on June 10th (a week after my arrival), and the last on the 27th, this specimen being the most perfect of the four. All were taken between 10 and 11 p.m., at which last hour I usually "turned in." "Early to bed and early to rise" being the invariable custom of the fisher-folk of this district, I was unwilling to disturb the household, or I might possibly, by working through the night, have taken more specimens. *D. conspersa* was on the wing quite early enough in the evening for me to observe the markings on its wings, but I never caught sight of *D. Barrettii* until it was too dark to identify it without the use of the lantern. Of course, on this wild coast, many nights, even in June, were unproductive, the high wind, which is rarely still in this rough quarter of the land, lashes the blossom to such an extent that the eye can with difficulty follow the movements of any moth hurrying past or entangled amongst the flowers. One's patience is sorely tried also by the swarm of *P. gamma* passing over the bloom from daylight until far into the night; the later arrivals must in almost every instance be taken, lest *Barrettii* should be amongst them. It is, however, not necessary to bestow more than a glance at the long-legged *gamma* scrambling up the net before freeing it, the rarer moth always hanging motionless with folded wings. There is, to my mind, a fascination in standing before a sheet of the starlike white blossom in the growing darkness, not knowing what the next moment may reveal to one's gaze, which all who have tried this mode of capture will have felt; but in dangerous localities I confess to a somewhat eerie sensation when alone on the cliff side with the distant thunder of the surf beating in measured cadences against the granite promontories of the Land's End, and in calm weather when the dreaded sea fog is rolling landwards, and the boom of the warning signal from the "Longships" heard at intervals adds to the mysterious noises of the night.

Before leaving the District in 1897 I gathered and took home with me a quantity of *Silene* flowers in the hope of finding young larvæ in the capsules, and I was not disappointed, for a number of young *D. conspersa* larvæ matured and became pupæ in due course. Moths began to emerge from these about the middle of last June, and have continued to do so until a fortnight ago, the last emergence being on July 31st; a number of these pupæ are still alive in the cage, and side by side with these

are pupæ of a new brood reared from larvæ taken in June this year. It would appear, therefore, that this insect is somewhat erratic in its development, since a dead specimen of *conspersa* was brought me by a village boy, who found it in his father's garden as early as the middle of May.

On June 24th, when driving the spike of my sketching umbrella deep into the *Armeria* which carpets the slopes high up on the seaward face of the cliffs, I disturbed a larva, which, from its glossy red-brown head and transparent green body mingled with pale violet, I judged might be *Polia xanthomista*; it quickly strove to re-enter the clump of thrift from which it had been driven, but I secured it, and after feeding for a few days it pupated, without forming a cocoon, in a tuft of the *Armeria*. To-day (August 14th) I have had the pleasure of seeing my expectations realized, as a lovely specimen of *P. xanthomista* lies before me, slightly yellower in appearance than the Isle of Man specimens.

The only other species taken by me at the flowers in June were *Cucullia umbratica*, and a few common species, such as *Xylophasia polyodon* and *Agrotis exclamationis*, the latter was crawling, apparently stupefied, over the blossoms.

Newlyn, Norbiton :

August 14th, 1898.

A NEW SPECIES OF *SPHENOGONA* FROM JAMAICA.

BY PERCY I. LATHY.

SPHENOGONA ADAMSI, *sp. nov.*

♂. Fore-wings white, hind margin bordered with black. Costa black, with four white elongated spots near apex. Marginal black border commences on costa at termination of second subcostal nervule, runs parallel with hind margin as far as 1st median nervule; between 1st and 3rd median nervules the border is narrower, below 3rd median nervule it widens and terminates on inner margin. Base yellowish near costa, and black near inner margin. Fringes short and blackish. Hind-wings white, hind margin bordered with black, inner margin yellowish. A straight black mark at base, commencing at subcostal nervure, crossing cell and following submedian nervure for about one-third of its length. Marginal black border commencing at 1st subcostal nervule, and terminating on hind margin just beyond 2nd median nervule; a very narrow yellow line beyond the marginal black border. Fringes yellowish. Abdomen, thorax and palpi blackish. Antennæ dark brown, indistinctly ringed with paler.

Under-side. Fore-wings bright yellow. Costa alternately spotted with black and white. A black spot at upper end of cell. A few minute black markings above subcostal nervure, and reddish markings at apex, these being denser inwardly. Black border of upper-side faintly showing through; inner margin below submedian nervure shining white and devoid of scales. Hind-wings orange-yellow, profusely speckled with reddish-purple. A minute black spot at upper end of cell. A small reddish-purple blotch at termination of costal nervure. Abdomen white; palpi bright yellow.

♀. Fore-wings white. Costa black, spotted with white. Apex black. Apical black commences at termination of 2nd subcostal nervule, and runs in a slightly indented curved line to hind margin, where it terminates on 3rd median nervule. Hind-wings white, with very minute black spots at termination of nervules, slightly yellowish at anal angle. Fringes yellowish.

Under-side of both wings as in male, but paler.

Hab.: Port Royal Mountains and Blue Mountains, Jamaica.
In Coll. H. J. Adams, ♂ ♀. Nat. Hist. Mus., ♂.

In a series of six males and three females of this species the males exhibited considerable variation in the width of the black marginal borders, two or three having these narrower than in the specimen described. In one example the border of the hind-wings is very narrow, and only extends as far as the 2nd discoidal nervule, and on both the 1st and 2nd median nervules is a black spot. The females appear to be constant.

This does not appear to be a common insect. I first met with it this year, early in March, at Cold Spring on the Port Royal Mountains; I afterwards found it at Content and Guava Ridge on the Port Royal Mountains, and at Cinchona, Resource and Berwick, on the Blue Mountains. I never saw it on the plains, all that I captured being taken at elevations of from 2500 to 5500 feet; there is, however, a specimen in the Nat. Hist. Mus. labelled "Kingston, Jamaica." During the whole of March and April, when I was collecting on the Port Royal and Blue Mountains, I only managed to get about a dozen specimens; they are difficult to capture, owing to the mountainous nature of the country and their swift flight, not unlike that of a *Colias*.

I have named this very distinct new species after Mr. Herbert J. Adams, of Enfield, the well known collector of Exotic *Lepidoptera*.

Lynton Villa, Sydney Road, Enfield:

August, 1898.

SPRING BUTTERFLIES IN PROVENCE.

BY THE REV. H. C. LANG, M.D., &c.

Encouraged by the success of some of my friends in their collecting at Digne, and having been posted up, as regards this locality, by Mr. W. E. Nicholson, I determined to visit Provence early this season, the *Rhopalocera* of the district being my chief object. Starting from home on the 18th of April, I arrived at Digne on the 21st, *viâ* Paris, Lyons, and Grenoble, accompanied by my wife; leaving behind an unusually dispiriting spring, we experienced the agreeable sensations generally felt by travellers on finding themselves trans-

ported from the fog end of winter to delightful summer surroundings, even though the weather in the south of France was not at first all that could be desired; generally the mornings were fine with hot sunshine, but about mid-day the clouds began to gather on the mountains, and the afternoons were generally dull. Whenever the sun shone there were butterflies in a profusion, such as one sees in the most favoured parts of Switzerland. My collecting began on April 22nd. The commonest butterfly everywhere was *Thecla rubi*, next to that *Lycæna melanops*, which also seemed universal. On the Col de Notre Dame *Papilio Machaon* and *Podalirius* were in great abundance, sometimes to be seen in flights of half a dozen or so. I noticed that the two species seemed really to dwell apart, *Machaon* on the north side of the hill, near the top, *Podalirius* on the south side; they would, however, sometimes mingle in flight. *Erebia epistygne* was common on the top of the hill until I left at the end of the month; it is quite invisible unless the sun is shining brightly (I have noticed the same habit with several *Erebie* in Switzerland, notably *E. Pronœ*). It is not an easy insect to take, especially if there is any wind blowing. We certainly missed more specimens than we caught.

During our stay at Digne till April 29th we saw very few examples of *Thais Medesicaste*, though almost every locality in the immediate neighbourhood was visited, I fancy that the steep cliff on the right bank of the Bleoze is the best place; here I saw, but could not capture, the var. *Honoratii*, the "pièce de résistance" of Digne. I was told that very few have been taken there this year. The two specimens I brought home were taken on the Col de Notre Dame. Four specimens only of *Lycæna Sebrus* fell to my lot, and two of these were taken at rest on flowers in dull weather. *Rhodocera Cleopatra* was fairly common; as to this I cannot agree that it is co-specific with *R. rhamni*; both forms occur at Digne and are utterly unlike in their habits and mode of flight in both sexes. Only a few examples of *Anthocharis Belia* were taken, and but two of *A. euphenoides* at this time. Most of the common European spring butterflies were to be seen, including many specimens of *Vanessa Antiopa*, but nothing special except *Melitæa Aurinia* var. *provincialis*, which was common everywhere.

On the 29th of April we left Digne for the Riviera, and during our journey halted for a few minutes at Entrevaux. I should imagine this to be a very good place for butterflies, though not an inviting town to stay in. The day was hot and fine, and I observed several *Grapta Egea* and one specimen of *Apatura Clytie*, which settled close

by me. This last is probably the var. *Metis* referred to by Mr. Kane (European Butt., p. 56) as occurring in S. France in May. I do not think that this French form is anything more than an early brood of *Clytie*, resembling the September brood found on the Italian lakes. var. *Metis*, Fvv., figured by H.-S., is quite different, and is not found further west than S.E. Russia. At our next stopping place, Mentone, where I collected for a week, I was struck with the small number of species of butterflies. *Lycæna melanops*, *Rhodocera Cleopatra*, and *Pararge Egeria* (the southern form), were common; *Anthocharis Belia* and *Lycæna Orion* not rare; but nothing else worth notice was found except *Syrichthus Sao*. On May 7th we went to St. Martin Lantosque, a small town in the Maritime Alps, situated at an elevation of 3000 feet, in the midst of beautiful alpine scenery, with extensive pine forests and snowy mountain tops. The contrast between this place and the summer vegetation and climate of the Littoral was very striking; indeed, at first I thought it would be too cold to find any butterflies; the sun, however, on fine days, had its usual southern power, and there were a good many things about. It is, I should think, a place well worth collecting in later in the year. (*Papilio Alexanor* is common in July). Here I took *Erebia Evias* in abundance; also a form of *Anthocharis Belia*, which I must refer to the var. *simplonia*. *Leucophasia sinapis* was common, but *Duponcheli*, which occurs here, had not yet appeared. In the meadows and on the slopes, near the town, I found *Melitæa Deione*, *Parthenia*, *didyma*, *Phæbe*, and *Cinxia*; also, to my surprise, *Parnassius Apollo* as early as May 9th. In the higher regions where the snow was yet thick on the forest paths, in spite of the hot sun, there were no butterflies.

Descending once more to the coast to Nice, some collecting was done in that district; *Melanargia Syllius* was abundant, especially on the Cornichi Road and at St. Jean. *Anthocharis euphenoides* was more frequently seen in this part than in any of the others visited. On our return to Digne on the 19th of May, butterfly life was found to be much more abundant than before, but only a few new species were about. *Lycæna Cyllarus* was abundant, and *Erebia epistygne* was replaced by *E. Evias*; but what more pleased me was to find *L. Duponcheli* very common in places, and in perfect condition. I also found *Anthocharis Bellezina* still good on the Col de Notre Dame, and the splendid *Polyommatus Gordius*, which is much finer here than in Switzerland. On May 22nd we left for home. Collecting butterflies in Provence at the above early period of the year involves

constant diligence and hard work, but is well worth the trouble. The number of species seen (that is verified) and taken amounted to 62.

I should recommend those who contemplate collecting *Lepidoptera* in Provence to procure a copy of Donzel's "Notice Entomologique sur les Environs de Digne," Lyon, Dumvolan et Ronet, 1851.

All Saints' Vicarage, Southend-on-Sea:
July 12th, 1898.

ECONOMY OF *LAVERNA VINOLENTILLA*, H.-S.

BY CHAS. G. BARRETT, F.E.S.

In the middle of June last I received from Mr. W. Drury a number of shoots of apple, distorted by the presence of some internal feeder. In sending them he remarked, "Generally blossoms on spurs are the parts selected; the flower shrivels, and the larva makes its way down the flower stalk into the spur itself, where it mines through the centre pith down to the main branch, in some cases for an inch or two in length. The wood then swells and throws out excrescences." These larvæ when received were very nearly full-fed; they had apparently also mined under the bark of the spurs, devouring the alburnum, and this appeared more especially to have caused the swelling, some of the spurs being thus quite roughened and disfigured.

The larva is rather sluggish, moderately stout, and very even in thickness throughout, yet the segments rather deeply divided; head decidedly smaller, shining umbreous; dorsal plate similar, but paler and divided in the middle; anal plate, and a slender transverse bar placed behind it, darker umbreous; general colour dull yellowish-white, with a faint pink tinge over the dorsal region; legs dark umbreous; prolegs ten in number, of the colour of the body.

When full-fed it leaves the mine to spin up in a corner of a dead leaf or any suitable substance, but probably upon the ground, since it appears to have but little hold upon the twig in which it had fed.

The moths emerged in July, of the usual deep black, and with the two buttons of raised scales on the fore-wings most conspicuous, indeed, I know of no species in which the raised tufts are proportionately so large. It must be plentiful in some districts, yet is not very commonly captured, indeed, so casually, that it was long looked upon as a melanic variety of *L. atra*, Haw., *Hellerella*, Dup. From observation of these reared specimens, I think that it, very soon after emerging, flies to the tops of the trees and there remains, resting upon the twigs.

39, Linden Grove, Nunhead:
August 12th, 1898.

DESCRIPTION OF THE LARVA OF *ARISTOTELIA LUCIDELLA*, STPH.

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

Long and slender, when young (*long.*, 4 mm.) very pale bone-ochreous, with a small round black head; prothoracic and anal plates concolorous with the body.

The more mature larva (*long.*, 8 mm.) assumes a more greenish-grey tinge, being a little darker than in the earlier stage. Head black; prothoracic plate not visibly divided, convex posteriorly, of a brownish olive-grey colour, anal plate slightly darker; the usual spots indicated by minute blackish dots; the sides and under-side of the larva perceptibly paler than the dorsum, which retains a slight ochreous tinge; thoracic legs banded with greyish, abdominal and anal legs concolorous with the under-side of the body. The larva has a tendency to become paler when full grown.

Mining in the centre of the stems of *Scirpus lacustris*, commencing near the top and descending before maturity usually *below* the level of the water; it does not, however, enter the root, and eventually pupates head upwards a little above the level of the surface of the water.

The stems affected are not difficult to observe through the yellowish discolouration which takes place, and through their failure to reach the same height as the surrounding growth, but one must be prepared to wade in order to obtain a supply.

The species is very abundant where it occurs, and the larvæ are to be met with in various stages of growth from the middle of May until the time of the appearance of the perfect insect, and even after. A few specimens are on the wing at the end of June and the beginning of July.

Merton Hall, Thetford :
June, 1898.

PHOTOGRAPHIC ENLARGEMENTS (PLATE V).

BY G. C. BIGNELL, F.E.S.

I was very pleased to read Mr. Strickland's paper on photographing insects, being an old hand at that amusement. I say amusement for two reasons, the first is that a professional will not undertake the work, and the second that it must be for recreation to the naturalist to try to overcome the great difficulty there always will be in *enlarging direct from the subject*; the reason for this being that all lenses have a focal point, and will not allow for depth, or in other words, one part of the subject will be in focus and the remainder out of focus; the figure of the beetle is a beautiful photographic production, but utterly useless to any person wishing or trying to

identify the species by it. I think it must be over 20 years since I discarded this same ingenious arrangement; my photographic friends were so taken up with the novelty that they photographed it and sent it to one of the Photographic Annuals, where it was reproduced.

Photography can assist the Entomologist very materially, the object must, however, be mounted flat, *i.e.*, as a microscopic object would be; and from many years' experience I find that transmitted light will give the best results.

The photographs illustrating this paper were taken since reading Mr. Strickland's paper, *ante* p. 103, on imperial plates, with six minutes' exposure, and developed with *Glycin-Hauff*. The light was obtained from a small Argand lamp burning petroleum oil. The lens, a two-inch microscopic. The small one is natural size, the negative made by contact, object placed direct on the plate.* This, I believe, would be found of great value in illustrating a work when placed by the side of the enlarged wing; figures with the length shown merely by the usual line will not give so good an idea as to the natural size of the wing as the above method, exception, however, must be made when they are too small for reproduction by the printing press. Figures of moths and butterflies, if with distinct markings and *not enlarged*, can be photographed direct with some degree of success.

Photography is rather expensive as an amusement to a person of limited means, and it may be interesting to some to know how I modify my expenditure on plates. The small wing is printed from a small negative, the size of which is 1 inch \times 1½. If I am going to do, say half a dozen, photographs, I first take into consideration the size I wish to make them, and cut the plates of whatever size I have on hand to the size required, so as to allow only a small margin; for instance, I have photographed the wings of about 100 species of the *Tipulidæ*, and these are all magnified to a uniform size, *viz.*, 2¼ inches in length, consequently a half-plate will cut into six for that purpose, 3¼ \times 1½, and each of these I again cut into three for the small negatives previously mentioned.

I make carriers out of thick cardboard according to the size required.

Before I commence cutting the plates I make a gauge, and to do this I obtain a piece of flat board about eight inches square; on one edge of this I nail a piece of wood about half an inch wide and a quarter of an inch thick; this is for the glass to rest its back edge against. I

* The wing mounted as a microscopic object.

then get another piece the width of the glass required (allowing for the cut of the diamond), put this on the glass, bringing both edges to rest against the piece nailed on; with this little contrivance you can cut up your plates in your dark room with a certainty that they are the correct size. If you have any doubt about the size, you can practise in the daylight with a waste plate.

Stonehouse :

August 15th, 1898.

CRYPTOHYPNUS MERIDIONALIS, LAP., AN ADDITION TO THE
BRITISH LIST OF *ELATERIDÆ*.

BY PHILIP B. MASON, M.R.C.S., F.L.S.

In the collection of the late Rev. A. Matthews there is a specimen of *Cryptohypnus meridionalis*, Lap. This is black, with the thorax uniformly rugose, and is easily distinguished from *C. dermestoides* Herbst, by its dark antennæ and legs, the trochanters and apices of the tibiæ only being reddish. It is labelled as having been taken at Pegwell Bay.

Burton-on-Trent : August 4th, 1898.

[The recorded localities for this species are Austria, Switzerland, Lombardy, Piedmont, and Southern France. I have taken it in the interior of Corsica, from beneath stones, on the sandy banks of the River Tavignano. *C. meridionalis* is hardly likely to prove indigenous in Britain, and the only fear is that Mr. Matthews' specimen may have been an accidental introduction. The insect is apparently not known from Northern France or Germany.—G. C. C.].

Coleoptera at Porlock.—During a fortnight spent at Porlock in the early part of May I did a little collecting; but the weather was not very favourable, and beetles were far from plentiful. My best captures were seven examples of *Ischnodes sanguinicollis* from a decaying ash stump, the interior of which was overgrown with black fungus, and twelve of *Platyrhinus latirostris*, from hard black fungi on the stem of a dead but standing ash. In company with the latter (which is not so easy to see as its great size would lead one to expect) were *Mycetophagus atomarius* (6), *Diphyllus lunatus* (25), and three species of *Cis*. *Dianous cærulescens* was common in the long moss bordering on the waterfalls; but I only got a single *Quedius auricomus*. *Q. riparius* I could not find at all, though I looked for it long and carefully.—THEODORE WOOD, 157, Trinity Road, Upper Tooting, S.W.: July 25th, 1898.

Lathridius filiformis, Gyll., at Upper Tooting.—I have recently taken four examples of this rare little beetle in a corner of my dressing room, where they appeared to be feeding upon mould growing on the wall. *Lyctus brunneus*, which I recorded as taken from a drawing room table at Wandsworth two years ago, has been more plentiful this year, and I have been successful in securing about twenty-five specimens.—Id.

Coleoptera, &c., in the Blean Woods, Kent.—Some half-dozen visits to the Blean Woods this summer have served to confirm and enhance the very high opinion which I had formed respecting this beautiful and extensive tract of Kentish woodland as a resort for the Entomologist. Between May 18th and July 21st the following species of *Coleoptera* were met with by me, among very many others of less interest.

General sweeping and beating produced *Homalota scapularis*, *Syntomium æneum* (also in faggots), *Colon serripes* (1), *Coccinella distincta* (much scarcer, but apparently more widely distributed than it was last year), *Platynaspis luteorubra*, *Triplax Lacordairei*, one example brushed out of a small birch bush, July 6th (I have taken this species under similar conditions this summer at its old locality, Darenth Wood. *Thalyrea sericea*, two specimens in one sweep, July 6th); *Antherophagus pallens* and *nigricornis*, *Cryptophagus setulosus* and *pubescens*. *Microrrhagus pygmaeus*, about a dozen specimens, mostly ♂, by sweeping grass and bracken under oak trees; this insect appears to be generally but sparingly distributed throughout the woods. *Throscus obtusus*, in profusion, and accompanied by *Apion pomonæ* in equal plenty, by sweeping under an old hedge on a cold damp evening in May. *Agrius laticornis*, *Rhagonycha translucida* (not rare), *Ochina hederæ*, *Ernobius mollis*, *Liopus nebulosus* (common); *Strangalia 4-fasciata*, on bracken, and flying, July 21st; *Cryptocephalus fulcratus* and *lineola*, sparingly, on birch. *Mordella aculeata*, four taken on June 23rd and one on July 6th, on flowers of dog-rose and *Euphorbia amygdaloides*, all in the same very limited space where I found it last year. *Mordellistena parvula* (large form) and *pumila*, not uncommon. *Rhynchites æneovirens*, in great profusion on young oaks in May, with *Cæliodes ruber*, *Balaninus villosus*, &c. *Apion Hookeri* and *ebeninum*, *Strophosomus retusus*, *Tanymecus palliatus*, *Anthonomus ulmi*, *Cæliodes exiguus*, *Rhinoncus denticollis*, *Ceuthorrhynchus cochlearia* and *melanarius*; *Xyleborus Saxeseni*, in numbers by sweeping under oaks on July 6th.

By persistent working at the young aspens I obtained a good series of *Rhytidomus globulus*, and from the same tree came *Zeugophora subspinosa* in plenty, *Goniocтена rufipes*, *Polydrusus flavipes* (sparingly), *Dorytomus costirostris* and *tortrix*, &c.

Faggots, chiefly of birch and hazel, produced *Myrmedonia humeralis*, *Conosoma immaculatum* (common), *Quedius lateralis* and *peltatus*, *Bythinus puncticollis*, *Lepidus testaceus* (1), *Choleva nigricans*, *Agathidium varians* and *rotundatum*, *Amphicyllis globus*, *Epuræa parvula*, *Coniopora orbiculata*, *Tetratoma ancora*, *Rhinosimus ruficollis* (common), *Trachodes hispidus*, common and fine, and *Exomias pellucidus*; the latter species was subsequently found in plenty, trapped in the rain water in wheel ruts, but by no means improved in condition thereby.

Beating dead sticks in hedges yielded *Hedobia imperialis*, *Cis alni* and *festivus*, *Callidium alni*, *Brachytarsus fasciatus*, *Acalles misellus* and *ptinoides*, and two examples of a small *Anthonomus*, apparently to be referred to *rosinæ*, Des Gozis.

I confined my attention to one only of the very numerous nests of *Formica rufa*, and obtained from it *Thiasophila angulata* (abundant), *Dinarda Märkeli*, *Homalota flavipes* and *anceps*, *Quedius brevis*, *Xantholinus atratus*, *Leptacinus formicetorum*, *Dendrophilus pygmaeus*, *Myrmex piceus*, *Monotoma conicicollis* (abundant) and *formicetorum*, and one specimen of *Eutheia plicata*, which last I had the misfortune to lose.

In view of the scarcity of late years of *Melitæa Athalia* in the home counties, I was greatly pleased to meet with it on July 6th in tolerable plenty and fine condition; the last occasion on which it was seen alive by me in England being fully a quarter of a century ago, in its long lost locality at Chattenden. On July 21st I saw, but failed to secure, a beautiful fresh specimen of *Argynnis Paphia*, var. *Valezina*.—JAMES J. WALKER, 23, Ranelagh Road, Sheerness: August 11th, 1898.

Re-occurrence of Pionosomus varius, Wolff, at Deal.—On Saturday last, August 13th, I had the good fortune to take three specimens of this apparently very rare little bug under *Erodium cicutarium* growing on the top of a high sand-hill close to the Coast Guard Station between Deal and Sandwich, and about half a mile from the spot where the species was met with some years ago by Mr. A. Piffard (cf. Ent. Mo. Mag., ser. 2, vol. i, p. 221). *Pionosomus* is an exceedingly active little creature, and its rapid movements and bright markings render it much more conspicuous than would be imagined from its very small size.—ID.: August 15th, 1898.

Metatropis rufescens, H.-S., &c., at Woking.—I beat a fully mature specimen of this rare bug from hawthorn blossom in a wood near here on May 30th. It seems to have been recorded from very few British localities. Mr. Moncreaff once found it upon *Circæa lutetiana* at Portsmouth.* *Triarthron Märkeli* was taken on the wing on the edge of a pine wood on the evening of June 5th. This is the first specimen I have met with for some years, the old locality being now built upon. The date was an earlier one than usual. On May 22nd Mr. J. J. Walker caught an example of *Deleaster dichrous* flying along the road just before dark, Woking being a fresh locality for it. *Bledius fracticornis* was not uncommon here in May, flying at about sunset. Yesterday evening I captured a specimen of *Anisoxya fuscula* with my hat, just before sunset—G. C. CHAMPION, Horsell, Woking: August 15th, 1898.

Hemiptera in the Channel Islands.—In August, 1891, in the course of a short visit to the Channel Islands, I met with the following species of *Hemiptera-Heteroptera*. Guernsey—*Geotomus punctulatus*, Costa, at a sandy spot north of L'Erée Hotel, and near Fort L'Angle; *Syromastes marginatus*, various localities; *Alydus calcaratus*, L., on furze (*Ulex europæus*), S.E. face of the cliff, Jerbourg; *Trapezonotus Ullrichii*, Fieb., Jerbourg; *Beosus luscus*, Fab., Jerbourg; *Metacanthus punctipes*, Germ., Cobo; *Aphanus Rolandri*, L., Cobo, in a sandy spot; *Dictyonota crassicornis*, Fall., Ancresse, near Fort L'Angle. Alderney—*Emblethis verbasci*, Fab., four examples, Braye Harbour; *Heterogaster urticae*, Fab.; *Henes-taris laticeps*, Curt.; *Drymus pilicornis*, Muls. Sark—*Lygæosoma punctato-guttata*,

* Ent. Mo. Mag., viii, p. 136.

out of a patch of "wall pepper" (*Sedum acre*), on top of a stone fence, 200 yards S. of Dixcart Hotel; *Orthotylus concolor*, Kb.—JAMES EARDLEY MASON, Norfolk House, Monk's Road, Lincoln: June 20th, 1898.

Gerris najas, DeG., in the north.—In a small stream in the parish of North Hykeham, Lincolnshire, I came across, on the 6th inst., a pair of *Gerris najas*, DeG., in cop. This seems to have been taken in extreme southern counties only up to now.—ID.

Correction respecting Ornix fagivora—On p. 151, line 9 from the bottom, of this vol., "differ" should read "differs," and refers not to the larva itself but to its way of constructing its domicile. In Stainton's "Nat. Hist. of the Tineina," vol. viii, pl. 3, the larva is represented to the best of my recollection as living in a rolled leaf of beech, those I found here had folded back the edge of the leaf so that the turned down portion remained almost flat and fitted closely to the under surface of the leaf; owing to this the domiciles were very inconspicuous and difficult to detect. A larva which I placed on a seedling beech growing in a flowerpot crept on to the upper surface of a leaf to pupate and turned up a little corner of the leaf to construct its cocoon in; acting on this hint I searched the bushes where I had found my larva and got two cocoons spun up in the same fashion near empty domiciles, but I cannot say whether this is their usual way of pupating.—C. R. DIGBY, Sonning: August, 1898.

[Mr. Stainton says that the leaf has "a piece of the edge turned down and fastened to the under surface;" but the figure referred to seems to convey the idea of a rolled leaf.—EDS.]

Psithyrus rupestris, F., var. *arenaria*, Panz., at Brighton.—Mr. Alfred Brazenor, of 39, Lewes Road, Brighton, has sent for my examination a ♀ of the above named variety taken on the downs near Brighton. As it is, I believe, of considerable rarity in this country, I think it may be worth recording. F. Smith, in his *British Hymenoptera*, 2nd ed., p. 221, says that the late Mr. Wing had a specimen, and that Mr. Bridgman, of Norwich, had taken specimens near that city. It would be interesting to ascertain whether the *Bombus lapidarius* with which these varieties of *P. rupestris* associate show any tendency towards a similar coloration of the pronotal hairs—the variety of *lapidarius* (♀ and ♂) with the pronotal hairs pale being as rare or rarer in this country than the var. *arenaria* of *rupestris*.—EDWARD SAUNDERS, St. Ann's, Woking: August, 1898.

Crabro gonager, &c., at Putney.—I had the opportunity this August of searching for insects in the wood of an Acacia I had cut down in my garden. I found in burrows in the wood *Pemphredon lugubris*, *Crabro leucostomus* (abundantly); besides one ♂ and one ♀ of *Crabro gonager*, their burrows were stocked with a small green Aphis. There were a great many holes of *Anobium* in one part of the tree, and in two of these I found the male of *Stigmus Solskyi*; here again there were the remains of small green Aphides at the bottom of the burrow.—HAROLD SWALE, Meadowside, Putney: August 15th, 1898.

Andrena proxima at Osmington.—While at Osmington, near Weymouth, this July I was struck by the fuss and flurry a rather small dark *Andrena* was making over pollen gathering. She hummed like a hive bee, and tore the florets of an umbelliferous plant in the hedge. On examining the capture I found it to be *Andrena proxima*, which Mr. Saunders tells me is worth recording.—ID.

Vespa austriaca, Panz., inquiline in the nest of *Vespa rufa*, L.—A most interesting article on the above wasp by Mr. Charles Robson, of Newcastle-on-Tyne, appeared in the August number of "Science Gossip," vol. v, pp. 69—73. Although *Vespa austriaca* has long been suspected of inquiline habits, no actual proof of this has been produced so far as I know until now, when its presence in a nest of *V. rufa* has been satisfactorily discovered.

Mr. Robson having lately turned his attention to the subject of *austriaca*, brought out for examination a nest of *Vespa rufa* which he had taken in 1887, and in the cells of this he succeeded in finding perfect females and males of *austriaca*, and has thus proved beyond doubt that it is the inquiline of *V. rufa*. His own account should be read, as he goes into careful detail as to the position of the cells in the nest, &c., which contained the rarity. Some of the specimens he found were practically ready to emerge; the subdentate clypeus, the yellow scape of the antennæ, the long 1st abdominal segment, and the hairy tibiæ, were all clearly observable. This is one of the most important recent discoveries among the Aculeate Hymenoptera, and its author may well be complimented on it. Hymenopterists who want to secure specimens of *austriaca* should evidently search for them in the neighbourhood of nests of *rufa*. Now is the time for capturing ♂ wasps, and should be made use of in neighbourhoods where *rufa* abounds to search for the much wanted ♂ of the rarity.—EDWARD SAUNDERS, St. Ann's, Woking: August 9th, 1898.

Rare Aculeate Hymenoptera taken on the Kent Coast this year.—So far the summer of 1898 has been an unusually cold and sunless one in East Kent, still I have taken several good things, of which the following are additions to my local list.

Mutilla rufipes, Ltr.—♂ Kingsdown.

Myrmosa melanocephala, Fab.—♂ Kingsdown, St. Margaret's Bay.

Tiphia miuta, V. d. L.—At Ripple, in some numbers on a particular patch of parsley bloom in the beginning of July. One ♀ taken had only one submarginal cell in one of the wings, the first submarginal nervure being absent. A ♀ of *T. femorata*, taken on August 9th at St. Margaret's Bay, had both the first and second submarginal cells absent in both wings.

Astatus stigma, Panz., occurred plentifully in a certain spot on the sandhills to the east of Rye Harbour, near the coastguard station, July 14th. Also a ♂, Deal Sandhills, July 26th.

Tachytes unicolor, Panz.—♂ Deal Sandhills, June 21st.

Spilomena troglodytes, V. d. L.—St. Margaret's Bay.

Gorytes tumidus, Panz.—Common at Kingsdown and St. Margaret's Bay.

Nysson dimidiatus, Jur.—Also common at Kingsdown and St. Margaret's Bay.

Odynerus melanocephalus, Gmel.—Common between Deal and Dover, extending some way inland.

Prosopis cornuta, Smith.—I took three ♂ of this very rare and singular bee, by sweeping in a strip of weeds (in which wild carrot predominated), between Walmer and Kingsdown, in the latter part of July and August 1st. *P. dilatata*, Kirb.—Two ♀ of this scarce species turned up in my net in the same spot as the above, and under similar conditions.

Sphecodes spinulosus, v. Hag.—Both sexes of this rare and distinct species appeared quite unexpectedly in the beginning of June, at St. Margaret's Bay. This seems to be the first occasion on which the male of this species has been taken so early in the year in this country. I could not, however, find any males of *H. xanthopus* out at the same time, they did not appear the autumn before until very late (Sept. 13th to 20th). The only other British *Sphecodes* having a spring male is *S. rubicundus*. It is parasitic on an *Andrena*, and this fact would account for the unusual time of appearance in its case.

Nomada lineola, Panz.—One ♂, Betteshanger, near Deal, May 25th. *N. flavoguttata*, Kirb.—One ♂, Betteshanger, April 23rd.

Podalirius retusus, Linn.—A large colony of this species was found nesting in a bank at Betteshanger, where I took both sexes in excellent condition.

Osmia bicolor, Schrk.—Two ♀, St. Margaret's Bay, on *Lotus corniculatus*. *O. aurulenta*, in many places the commoner species of the two, is abundant all along the coast, but these are the only captures of *O. bicolor* I have made in the district.

The following notes may also be of interest. My capture of a ♀ of *Pompilus (Aporus) unicolor* at the foot of the cliff at St. Margaret's Bay was recorded in Ent. Mo. Mag., vol. xxxiv, page 20. The species is very rare in this country, only one or two isolated specimens having been taken over a long period of years. To-day (Aug. 11th), however, I found it to be quite the representative of its family all along the sea front, where I took no less than twelve ♂ and three ♀, mostly on wild carrot, besides several ♂ which escaped through the meshes of my net. The ♂s varied in length from 5 to 9 mm.

The other rarities I recorded from St. Margaret's Bay last year (Ent. Mo. Mag., vol. xxxiii, page 229), have occurred again this year at their respective habitats.

The much-prized *Andrena Hattorfiana* was less rare at its well-known habitat between Walmer and Kingsdown than I have previously known it to be, and I secured some really good specimens of the ♂ through visiting the spot, I believe, exactly at the right time, *i. e.*, when the *Knautia* was just commencing to come out. The males are difficult to see and catch, as they seldom settle and "go to sleep" like the ♀s on the flower heads, their plan being to dart from flower to flower searching for their mates thus engaged. By taking up my position near a conspicuous fully-opened flower while the latter were still scarce, I did not have to wait long before a ♂ came up, and then with a quick stroke of the net I was generally able to secure him. By this means I took about a dozen splendid specimens in one morning. Three days afterwards, however, the same plan did not produce a single specimen good enough to keep.

I observed *Anthidium manicatum* busy gathering the down from off the flower stalks of *Achillea millefolium* at Kingsdown. I have seen it similarly employed on *Stachys sylvatica*, but not on this plant before. Another female of this species which had evidently made its nest in a hole between two bricks in our garden wall at Ripple, I noticed filling up the crevice with lumps of dry earth which she picked

up from the ground below. She worked rapidly, taking about half-a-minute over each pellet.—F. W. L. SLADEN, Ripple Court, Ringwould, Dover: Aug. 11th, 1898.

[*Sphecodes spinulosus* is quoted by Perez in his "Catalogue des Mellifères de Sud Ouest," as having a spring male—"♂ printanier," and of *Halictus xanthopus* he remarks, "le ♂ quelquefois, hiverne comme la ♀," possibly with us both sexes of the *Sphecodes* hibernate. If this be so it looks as if the ♂ of the inquiline had learnt how to prolong its life by hibernation before its host.—E.S.]

Sirices in Suffolk.*—Until the present year the destructive *Sirex gigas* appears to have been rare in the county, the only specimens recorded ("Ent. Weekly Int." [vol. ix]), being those taken by Mr. Richard Tyrer at Eye, in September, 1860; and many years ago at Great Glenham by Rev. E. N. Bloomfield. This year, however, there appears to be an influx, since specimens have been noted at Orford, Bury St. Edmund's, Eye (1883 and 1893), Bungay, Lowestoft, Ipswich, and Sudbury. I have been attempting to ascertain what proportion of these are indigenous and those occurring at Bury (Tostock) and Orford (Gedgrave) are put beyond all doubt by the larval borings being in the former case so numerous as to render the spruce-firs incapable of resisting a gale, and in the latter the larches, felled five years ago for firing, are full of the larvæ in all stages of growth. Those from Glenham are said to be indigenous, but the examples from the five last mentioned localities have probably been for the most part imported from Germany, Austria, &c., since only single specimens have been found at different times. As regards *S. juvenus*, the only records, as far as I am aware, are from Mr. W. H. Tuck, who now and then takes it at Tostock, from timber felled for firing in the immediate neighbourhood.—CLAUDE MORLEY, Ipswich: July, 1898.

P.S.—Since the above was written *S. gigas* has turned up in many more localities, and although such a thing is, I believe, not recognised, one may call the present a "*gigas* year," at all events as far as Suffolk is concerned. The Rev. Foster Melliar has seen one or two on palings at Botesdale, and Mr. Duncan Parker has found it at Rattlesden and Clapton. Single specimens have also occurred at Woolpit, Aldeburgh and Bentley. Mr. Bloomfield further informs me that he remembers noticing *S. juvenus* at Great Glenham, but this appears to have been very rarely seen with us.—C. M., August.

Aculeate Hymenoptera at Littlehampton.—I spent four weeks this summer at Littlehampton, from June 7th to July 5th, and hoped to have been able to record a fair number of good captures, but I regret to say the result of my collecting was on the whole distinctly disappointing. Only two really rare species turned up. One, *Astacus stigma* in some numbers and in both sexes, the males being decidedly more numerous than the females. They occurred on the sandy tract of coast across the Ferry, apparently preferring the ground on the immediate north of the sand hills, between them and the gravel pits; there they delighted to sit and bask on the sand, and the males could be easily detected by the ivory-white spot on the face, which was distinctly visible even at some distance. A small fly with a silvery face and dusky wings was abundant over the same ground, flying and moving almost exactly

* Vide "East Anglian Daily Times," July 12th, 16th, and 19th, &c., 1898.

in the same style as the *Astatus*, and often deceiving one for the moment as to its identity. Mr. Bloomfield, who sent a specimen to Dr. Meade for examination, tells me that it is *Scopolia carbonaria*, Pz.

I watched very carefully to try and discover what the prey of *Astatus stigma* might be, but I could not catch one either carrying off anything or in the act of seizing it. There were larvæ of *Trapezonotus agrestis*, *Plinthisus brevipennis*, and *Nysius thymi*, any of which *Hemiptera* would probably have been suitable to its wants, but they are all members of the family *Lygæidæ*, whereas *Astata boops* always selects larvæ of *Pentatomidæ*, and it would have been interesting to have found out if these allied species differed in the style of food they provided for their young. I learn from Mr. F. W. L. Sladen that he has also been taking *A. stigma*, so that this year seems to have been favourable to it. The only other *fossorials* I found on the sand hills were the two species of *Tachytes*, *Pompilus plumbeus* rarely!, *P. gibbus* ♀ 2!, and *Diodontus minutus*. This seems to me an extraordinarily poor record. The locality appears to be a perfect one for *Hymenoptera*, and although June and early July is not the best season for Fossors, still six species only, ought to make any respectable locality blush!

The other rarity I found was *Sphecodes rubicundus* (♂ and ♀) flying about, and on one occasion entering, the burrows of *Andrena labialis*, which bee simply swarmed along the low cliffy banks of the shore to the east beyond Rustington. Mr. Sladen, in this Magazine (vol. xxiii, p. 256), records its capture in a bank at Ringwould, near Devon, in company with *Eucera*, *Andrena labialis* and *nigroænea*. The banks in which I took it were also tenanted by *Eucera* and *A. nigroænea*, but *Andrena labialis* was present in the proportion of at least 200 to 1 of either of these, in fact, the *Sphecodes* itself was more abundant than either the *Eucera* or the *A. nigroænea*, so that I think it may be taken for granted that *labialis* is its host, even if it occasionally visits the others. On rather a higher piece of the bank nearer Littlehampton *Eucera* was fairly abundant, but there I found only *Sphecodes gibbus* and *pilifrons*, these no doubt associating with their usual hosts, *Halictus rubicundus* and *leucozonius*, both of which were nesting on the same spot.

—EDWARD SAUNDERS, St. Ann's, Woking: August 2nd, 1891.

Obituary.

John Van Voorst, F.L.S., &c.—As announced on the cover of our last No. Mr. Van Voorst, the publisher of this Magazine from its commencement in 1864 down to his retirement in 1886, died at his residence in Queen's Road, Clapham Park, on July 24th, at the patriarchal age of 94, from simple decay of nature. He had practically been confined to bed for several months, but his intellect remained clear almost to the last moment. He was the last male descendant of a Dutch family that had been settled in England for many generations; being unmarried, the family name is now extinct. He was born on February 15th, 1804, and early in life was apprenticed to a bookseller at Wakefield, and was afterwards for some years in the great publishing house of Longmans and Co.; establishing himself at No. 1, Paternoster Row in 1833. He commenced by associating the highest class of wood engraving with literary works, and later on with those on Natural History and other branches of science. As examples of the success of this we need only allude to Yarrell's

Birds and Fishes and Bell's Quadrupeds. These, and many others, were his own ventures, but later his business aid as publisher was sought in many directions, and the list of authors of entomological works who were proud to see his name on their title pages is too long for reproduction. Almost all his own ventures were eminently successful from a financial point of view, for he was a keen man of business and strictly honourable. Possibly his worst speculation was the "Zoological Record," which, in face of heavy losses, he continued for a good many years, until means were found for carrying it on by extraneous help. For this the zoological world owes him a deep debt of gratitude. The little room on the first floor in the old house at Paternoster Row became the scene of many pleasant little réunions of scientific and literary men, its condition being sometimes similar to that of a third class railway compartment at holiday times. He liked to have his friends about him, and was always entertaining and chatty, with a fund of dry humour. Almost to the last he had one or two social gatherings every autumn at his house in Clapham Park, which were always most enjoyable. In 1886 he gave up his business to Messrs. Gurney and Jackson, who had been in his service from boyhood; and not long after the old house was pulled down and a more commodious one erected in its stead. To the many the name of Van Voorst was only that of a well known publisher; to a smaller number it was associated with one of the sharpest men of business that probably ever existed, ever ready to give his advice, and not infrequently more substantial help to those deserving it. There has gone from amongst us an honourable man, a true friend, a jolly good fellow!—R. McL.

Ernest Charles Auguste Candèze, M.D., F.E.S.—Dr. Candèze died at his residence at Glain, near Liège, on June 30th; although his health had declined latterly, there had been nothing to indicate the approach of the attack that carried him off after a few days' illness. He was born at Liège on February 27th, 1827, and after his preliminary education, studied medicine in his native city and at Paris. At Liège he was a pupil of the celebrated Lacordaire, and this may possibly have influenced his career as an entomologist. He subsequently became assistant medical officer in a large establishment for the insane at Glain, and married the daughter of the proprietor, eventually succeeding to the directorship, which he relinquished a few years ago. His first entomological publication appears to have been a Catalogue of the Larvæ of *Coleoptera* known down to 1853 (in conjunction with Dr. Chapuis). But it was in connection with the *Elateridæ* that Candèze was best known. His monograph of that family extended to three volumes, and appeared in 1857, 1859 and 1860, and for many years he continued to supplement them chiefly in the Annals of the Belgian Entomological Society, of which he was one of the founders. He also published a Catalogue of the species of the family described subsequently to Gemminger and Von Harold. He formed at intervals several collections of *Elateridæ*: the first and probably most important passed into the possession of the late Mr. E. W. Janson, and is now in the British Museum. Latterly he had occupied himself on a collection of Belgian *Diptera*, and had amassed much material, and he also took great interest in a Society ("Cercle entomologique Liégeois") of which he was the leading spirit, in his native city, consisting for the most part of young men and youths. Let us hope this Society will continue to flourish: there is room for such in an important city like Liège. He was also the author of several romances, of which the ground work was more or less

entomological, and one of these was translated into English ("The Adventures of a Cricket"). The deeply humorous side of his nature occasionally found its vent in anonymous publications, and certainly one of the best and most amusing of them was "La Doryphora en Belgique," which appeared at the time of the Colorado Beetle scare in 1877. Candèze was a many-sided man: at one time he was deeply devoted to photography, and perfected a hand camera when such appliances were but little known; he was attached to horticulture, and passionately fond of music. His extreme vivacity and gaily of spirits made him a charming companion. To the writer of this notice, who met him so frequently in Belgium at the chateau of Baron de Selys, and several times on excursions occupying two or three days (to say nothing of his occasional visits to London), his death comes as that of a personal friend: to his Belgian colleagues, and especially to the venerable Baron, whose friendship with him existed for more than half a century, and who pronounced a touching "discours" at his funeral, his loss is irreparable. Candèze was an Officer of the Order of Léopold, a Member of the Belgian Academy, and of the Academy of Sciences of Liège, and one of five Commissioners for the Natural History Museum at Brussels; he was also Member of many foreign Entomological Societies, including that of London since 1860, and of France from 1856 to 1882, and subsequently on the honorary list. His wife long predeceased him, but he leaves two sons and three daughters, all of whom are married. His second son, Léon, inherits his father's taste for Entomology.—R. MCL.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *July 18th, 1898.*—Mr. A. H. MARTINEAU in the Chair.

The Chairman showed larvæ of *Dytiscus marginalis* from Ribberford; also a *Nematus*, one antenna of which had a white ring near the tip and the other was all black; he believed it to be gynandromorphic. Mr. Bradley, *Megachile Willughbiella* and *M. centuncularis*, ♂ and ♀ of both, obtained from a post at Sutton. Mr. W. Bowater, a specimen of *Odynerus pictus*, which had made its nest behind a picture in his bedroom at Edgbaston; the cells, which were broken, contained about three dozen larvæ of one of the sawflies. Mr. Willoughby Ellis recorded the occurrence at Haywood, near Solihull, of *Strangalia armata*, *Pterostichus striola*, *Aphodius fossor*, *Clythra quadripunctata*, *Melanotus rufipes*, and *Serica brunnea*, the last having been taken at sugar.—COLBRAN J. WAINWRIGHT, *Hon. Secretary*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *June 23rd, 1898.*—Mr. J. W. TUTT, F.E.S., President, in the Chair.

Mr. Broome, Christchurch, Oxford, was elected a Member.

Mr. Filer exhibited living larvæ of *Thecla rubi* feeding on rock-rose (*Cistus*), and called attention to their remarkable protective colouration. Mr. Adkin, larvæ of *Acidalia marginepunctata* (*promutata*), and read notes on their habits; some were nearly full-fed, while others were small; the ova had hatched in the early autumn. Mr. Moore, two fine varieties of *Arctia Caja* bred from ova by Mr. Cooke. 1. Fore-wings uniformly dark chocolate, without the usual cream markings. 2. Fore-wings with a very considerable decrease in the area covered by the dark markings. The larvæ, some sixty in number, fed all the winter on cabbage. Mr. West, the *Coleoptera* he had taken at the Reigate Field Meeting. Mr. Barnett, a specimen of *Venilia maculata*, having the dark blotches irregularly joined and blurred on one side only.—HY. J. TURNER, *Hon. Sec.*

THE FOURTH INTERNATIONAL CONGRESS OF ZOOLOGY.

The Meeting of this Congress was held at Cambridge from August 23rd to 27th, and, thanks to the exertions of the Executive Committee and the magnificent weather, was a great success.

Amongst British entomologists we noticed the following:—Adkin, Bateson, Beare, Bouskell, Burr, O. P. Cambridge, G. H. Carpenter, Champion, Chapman, Crowley, Dixey, Donisthorpe, Durrant, W. H. B. Fletcher, Gorham, Jenkinson, Jordan, Kane, Kirby, Latter, Sir John Lubbock, McLachlan, Merrifield, Meyrick, Nevinson, Newstead, R. C. L. Perkins, Richardson, C. Rothschild, W. Rothschild, Sharp, Trimen, Verrall, Vice, J. J. Walker, Lord Walsingham, and Wilson. This is a respectable number, and there were probably others with whom we did not come in contact personally.

Of foreign and colonial entomologists we met—Prof. R. Blanchard (Paris), Prof. Bouvier (Paris), Caracciolo (Trinidad), Dollfus (Paris), Fauvel (Caen), Gadeau de Kerville (Rouen), Prof. Gilson (Louvain), Baron de Guerne (Paris), Dr. Horváth (Budapest), Janet (Paris), Piepers (The Hague), Kräpelin (Hamburg), Prof. Lameere (Brussels), Olivier (Moulins), and Simon (Paris). Many of these visited England for the first time, and took advantage of the occasion to consult the British Museum and other large public and private collections. All expressed themselves much gratified at the reception accorded them.

The entomological papers read were not numerous. The discussion on the “burning question” of nomenclature was postponed, to the gratification of some and the disappointment of others.

On the afternoon of Saturday, the 27th, there was a reception in the Zoological Gardens, Regent’s Park, and on the same evening the President (Sir John Lubbock) received the Members at the Natural History Museum. On Monday, the 29th, about 150 Members visited the Hon. Walter Rothschild’s Museum at Tring, and were hospitably entertained.

The next Congress will be held in Germany (probably Berlin) in 1901.—Eds.

PLOIARIA BÆRENSPRUNGI, DOHRN: AN ADDITION TO THE
LIST OF BRITISH *REDUVIIDÆ*.

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

I possess two specimens of this species, one captured at Esher by myself on August 30th, 1874, and the other taken in the New Forest in June, 1894. The Esher example was beaten from a stack

of cut pine branches, in company with numerous representatives of *P. vagabunda*. *P. Bærensprungi*, the type of which was found in Germany, is very like *P. culiciformis*, De Geer (*erratica*, Fall), but may be easily separated from it, and from *P. vagabunda* (Linn.) also, by the short, erect, blackish, spiniform elevation on the disc of the pronotum immediately before the base. The anterior coxæ are entirely whitish. The legs and the basal joints of the antennæ are whitish, annulated with fuscous or black. The elytra have a long and conspicuous, subtriangular, fuscous patch just beyond the first oblique whitish nervure. The connexivum is in great part ochraceous, with alternate black and yellowish marks along the outer margin. The anterior femora have a row of short spines extending from the base to beyond the middle. There is a long slender spine on the scutellum, another on the post-scutellum, and a third on the base of the abdomen. *P. brevispina*, Puton, from Algeria and Madeira, is probably nothing more than a variety of this species. I have captured a very closely allied form in Central America. The Madeiran insect was found upon pine. The genus *Ploiariodes*, Buch. White, was based upon a single species from the Hawaiian Islands, with a similarly formed pronotum.

Horsell, Woking :

September 9th, 1898.

COLEOPTERA, &c., IN THE ISLE OF WIGHT.

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

During a recent visit to Sandown, Isle of Wight, from June 24th to July 22nd, I have once more been able to visit some of my old entomological haunts. As it is ten years since I have had an opportunity of collecting there, it is perhaps worth while noting some of the species that were met with, though nearly all have already been recorded by me from the Island.* Several, however, did not put in an appearance, such as *Harpalus cupreus*, *Thinobius brevipennis*, &c. The following species may be now noted amongst the captures in 1898 :—*Cicindela germanica*, plentiful in its old locality at Chale. *Lymnæum nigropiceum*, Ventnor. *Bembidium saxatile* and *Tachys bistriatus*, Luccombe. *Ocys quinquestriatus*, *O. rufescens*, and *Acupalpus flavicollis*, rarely, Sandown. *Taphria nivalis*, in the roads, towards evening, Sandown. *Æpus marinus* and *A. Robini*, in their usual habitat, near Sandown, &c. *Pogonus littoralis*, Sandown. *Amara*

* cf. Ent. Mo. Mag., xxiv, pp. 136—138 ; xxv, pp. 133, 134.

lunicollis, Chale. *Sipalia testacea*, rare, with *Aëpus marinus*, at Ventnor, but not found at Sandown this year. *Diglossa mersa*, *Phytosus balticus* and *P. spinifer*, Bembridge, Sandown and Ventnor. *Homalota languida*, one small specimen, Luccombe. *Tachyusa scitula*, two specimens on damp sand, Luccombe, probably a fresh locality for the species. *Myrmedonia limbata*, Sandown. *Actobius villosulus*, Luccombe, and *A. signaticornis*, Sandown, in damp sandy places. *Cafius fucicola*, Sandown and Ventnor. *Ocypus pedator*, Bembridge Downs, under stones. *Lathrobium angustatum*, Sandown and Ventnor, rare. *Bledius bicornis*, one specimen under seaweed, near Sandown, a species not previously met with by me in the Island; *B. atricapillus*, Ventnor; *B. longulus*, Luccombe, in damp sand, not rare. *Syntomium æneum*, Sandown. *Oxytelus maritimus*, in company with *Aëpus marinus*, Ventnor. *Micralymma brevipenne*, abundant, on and beneath large stones resting on soft mud, at low water, near Sandown. *Dianous cœrulescens*, in plenty in its old locality, Ventnor, in company with *Stenus providus*, *S. picipennis*, *Quedius maurorufus*, &c. *Nitidula rufipes* and *N. quadripustulata*, Bembridge Downs, under a bone, the first mentioned not previously met with by me in the Island. *Anisotoma dubia*, Luccombe. *Cyrtusa pauxilla*, Ashy Downs, near Sandown, by evening sweeping. *Heterocerus fuscus*, *Georyssus pygmæus*, and *Limnichus pygmæus*, Sandown and Luccombe, on wet sand. *Drilus flavescens*, Bembridge Downs and Freshwater, not rare, by beating. *Helodes minuta*, Ventnor, with *Dianous*. *Mordellistena parvula*, Sandown, rare. *Cathormiocerus socius*, sparingly, in its old very restricted locality, near Sandown, in company with *Cænopsis Waltoni* and various *Trachyphlæi*. *Otiorrhynchus rugifrons*, Sandown. *Sibinia arenariæ*, on its usual food-plant, Ventnor and Alum Bay. *Bagous lutulentus*, var. *nigritarsis*, Luccombe, on wet sand, all in very dirty condition. *Liophlæus nubilus*, Sandown, &c. *Sitones meliloti*, rarely, and *Tychius meliloti*, abundantly, on their usual food-plant, Luccombe. *Ceuthorrhynchus trimaculatus*, Freshwater, on thistles. *Hylastinus obscurus*, Sandown, beaten from furze, with *Luperus circumfusus*. *Leptura livida*, Sandown, almost the only Longicorn seen. *Psylliodes chalcomera*, Freshwater.

Of *Hemiptera-Heteroptera* the following were noticed:—*Sehirus dubius*, Freshwater. *Lopus sulcatus* and *Strongylocoris leucocephalus*, Sandown.

Of *Hymenoptera*:—*Mutilla rufipes*, Luccombe, running on the sand.

COLEOPTERA, &c., AT CHIPPENHAM AND WICKEN FENS.

BY J. J. WALKER, R.N., F.L.S.

The beautiful weather which prevailed during the meeting of the International Congress of Zoology at Cambridge tempted some of the entomologists present to embrace the opportunity of doing a little work in the field; and to the kindness of Mr. G. H. Verrall I owe my first experiences—and very pleasant, too, they were—of collecting in the Fen District of Cambridgeshire.

On August 24th a party, consisting of Mr. G. C. Champion, the Rev. H. S. Gorham, and myself, started from Newmarket for Chippenham Fen, under the guidance of Mr. Verrall and his nephew. An hour's drive brought us to our destination, and the first sight of this beautiful little fen, almost entirely surrounded by woodland, with its dense and luxuriant vegetation, and its wealth of rare and local plants, gave sufficient promise that its Coleopterous productions would rival, if not excel, its already well known Lepidopterous riches—a promise which was fully borne out by the result of several hours of steady collecting.

Sweeping in the open fen produced a considerable variety of beetles, among which the brilliant scarlet *Anthocomus rufus*, Herbst (*sanguinolentus*, F.), was the most abundant and conspicuous, occurring chiefly on flowers of *Spiræa ulmaria*, *Angelica sylvestris*, and the rare and local Umbellifer, *Selinum carvifolium*, which grew in profusion in several places. We also obtained in this way *Amara spinipes*, *Meligethes umbrosus* and *M. fulvipes*, *Galeruca viburni* (not uncommon on *Viburnum opulus*), *G. lineola*, *Aphthona lutescens*, *Longitarsus castaneus*, *L. lycopi*, and *L. Waterhousei*, *Cassida vibex*, *Mordellistena brunnea*, *Apion vicinum* (not rare on *Mentha*), *Sibinia primita*, *Anthonomus comari*, *Orchestes pratensis*, &c.; and in paths in the wood, *Phytobius Waltoni*, *Ceuthorrhynchus melanostictus* (not rare on *Lycopus europæus*), *Hylesinus oleiperda*, &c. *Apion simile* turned up in some numbers on the birch trees bordering the Fen, with a few *Deporaus megacephalus*; and *Hylesinus crenatus* was taken walking on the trunk of an ash tree, the bark of which was much riddled by its burrows.

In heaps of damp decaying herbage and grass we obtained three specimens of *Staphylinus fulvipes*, along with such ordinary species as *Stomis*, *Cryptobium*, *Scydmænus hirticollis*, *Silpha atrata*, var. *brunnea*, *Parnus auriculatus*, &c.

On and about a decayed ash stump in the wood we found more than a dozen *Platycis minuta*; and in very rotten stumps of birch,

besides *Sinodendron cylindricum*, the remains of one of the "red *Elaters*" were occasionally met with; but only one living example was taken by Mr. Gorham, and it appears to be the unicolorous form of *E. sanguinolentus*.

On the following day our party, reinforced by Mr. R. Adkin, set out for Wicken, our principal object being to obtain *Oberea oculata*, which earlier in the week had been taken rather freely by Mr. Donisthorpe and other Coleopterists. It was not long after our arrival on the Fen that the first specimen of this beautiful Longicorn was met with, and during the day we had the satisfaction of capturing eleven examples in all. One or two of these were caught on the wing, but the greater number were found sitting on the topmost sprays of the willow bushes, very much on the alert, and unless carefully "stalked," flying off with great activity to some inaccessible spot, more than one being lost in this way.

Other beetles were by no means as plentiful as at Chippenham Fen: *Anthocomus rufus* occurred sparingly by sweeping, but we were evidently too late for *A. terminatus*; we also got *Meligethes fulvipes*, *Donacia limbata*, *Aphthona nonstriata*, *Galeruca lineola*, *Limnobaris T-album*, &c. *Lina populi* was common in all its stages on the dwarf willows, and on the leaves of the same shrub the curious spiky pupa cases of *Chilocorus similis* were frequently met with, as well as the perfect beetle in all stages of maturity. A single example of *Harpalus sabulicola* was found running on a pathway outside the Fen, and a large fungus knocked off an ash tree produced *Triphyllus suturalis*, *Triplax russica*, *Orchesia micans*, &c. A belated straggler of *Papilio Machaon* in good condition, taken by Mr. Adkin, was the only Lepidopterous insect of any note seen during the two excursions.

Amongst the *Hemiptera* Mr. Champion obtained *Drymus piceus* (*Lamploplax Sharpi*) from heaps of cut grass at Chippenham, and *Nabis lineatus* at both Chippenham and Wicken, by sweeping.

23, Ranelagh Road, Sheerness:

September 15th, 1898.

ANCHOMENUS GRACILIPES, DUFTELM., IN BRITAIN: AN ADDITIONAL RECORD.

BY CLAUDE MORLEY, F.E.S., &c.

In a box of insects recently sent me for identification by Mr. Ernest Bedwell, of Lowestoft, I find a single specimen of this ex-

trremely rare species. It was taken beneath some fallen boulders at the base of the cliffs near Corton, a village some two miles north of Lowestoft, Suffolk, on July 11th, 1898.

The species was first introduced as British by J. F. Dawson in the Entomologist's Annual for 1857, under the name "*Agonum elongatum*, Dej.;" a ♀ example of which was captured as long ago as 1831 by Rev. C. Kuper on the banks of the Wisbeach Canal, near Lowestoft. Dawson states that the insect, being a native of Greece, and met with in none of the intermediate districts (at that time), is probably only an involuntary visitant. Bedel includes it, however, among the *Coleoptera* of the Seine basin, but only on the strength of a single specimen taken on the wing in the Rue de Médecis, Paris, on July 5th, 1872. In the Entomologist's Annual for 1860, p. 96, there is a very good description of the insect by Mr. E. W. Janson, drawn from a ♀ specimen taken by Mr. Brewer in the spring of 1859 near Southwold, Suffolk. Mr. Janson goes on to add that a supposed example of this species was taken by Mr. Bissell at Hornsea, Yorkshire, in June, 1859. The latter specimen, however, is, as Fowler says (Col. Brit. Isles, vol. i, p. 91), very doubtful, as it was lost soon after it was captured, before it had really been identified.

Mr. Edward Saunders took (*cf.* Ent. Mo. Mag., vol. i, p. 75) one specimen at roots of grass near Kessingland, a village about three miles south of Lowestoft (and six north of Southwold); and his father found a second beneath a stone about a mile north of Lowestoft. These two specimens, one of which, Mr. Saunders informs me, is now in Mr. Champion's collection, and the other he gave to Mr. Janson, who named it for him, were taken at the end of June, 1861, since which time it has not occurred in England, though the Rev. W. F. Johnson includes "one specimen on estuary shore under stones" among other *Coleoptera* taken at Ardara, Co. Donegal [*cf.* Ent. Mo. Mag., vol. xxviii, p. 311 (1892)]. May I be permitted to ask Mr. Johnson in a spirit "*la plus courtoise*" if he is quite sure of his Irish record? There is, as far as I see, no reason why it should not occur in that locality, and particularly in the environment mentioned, and it is only in the selfish hope that we may possibly claim all the British examples as having occurred in Suffolk that I put the perhaps unnecessary question.

These would appear to be the only British examples, and, excepting the accidental specimen referred to above, the insect does not seem to have occurred in France. I am inclined to fear that the British records are, in every case, those of "involuntary visitants," but it

may be that it is to be found with us, like many other *Geodephaga*, only in the early summer, since Messrs. Ernest Elliott, E. A. Butler, E. C. Bedwell, and myself have assiduously searched in the spot first mentioned during August with no result, and I have, together with Rev. E. N. Bloomfield and other friends, carefully worked the sandhills, &c., from Kessingland to Dunwich, paying especial attention to Southwold, in late July and August, of recent years, with no better success. I am indebted to Mr. E. A. Newbery for calling my attention to Mr. Johnson's record, which I had overlooked. With regard to the distribution of *A. gracilipes*, v. Heyden, Reitter, and Weise say simply, "Northern and Middle Europe," but Bedel gives Sweden, Belgium, Germany, England, Russia, and Siberia; it is not, however, I believe, recorded from Holland, whence probably came Curtis's *Chlœnius sulcicollis*, Payk., Dawson's reputed *Licinus cassideus*, F., and, more doubtfully, Mr. B. Tomlin's recent specimen of *Chrysomela (Orina) gloriosa*, F., var. *superba*, Oliv. (cf. Ent. Rec., vol. x, p. 104).

Ipswich: September, 1898.

[I have seen Mr. Bedwell's example of *A. gracilipes*, and it agrees perfectly with the one in my possession.—G. C. C.]

A NEW SPECIES OF *TERIAS* FROM HAITI.

BY PERCY I. LATHY.

TERIAS PRIDDYI, *sp. nov.*

♂. Fore-wings yellow, hind-margin bordered with black. Marginal black border commences on costa at termination of 1st subcostal nervule, runs obliquely towards the hind margin as far as 1st median nervule, then paralld with hind margin, and terminating just before 3rd median nervule. Three minute yellow spots on costa within black border. Fringes yellow.

Hind-wings yellow, nervules marked with black on hind margin, those nearer anal angle less so than the upper ones.

Under-side: fore-wings yellow, very faintly dusted with brownish in cell, along costa, and at apex. A minute black spot at upper end of cell, and an indistinct brownish spot near apex. Marginal border of upper-side faintly showing through. Inner margin shining white.

Hind-wings yellowish-white, speckled with brownish. A brownish spot on costa not far from apex. A slightly curved brownish band commencing near apex and terminating at end of cell; below this another shorter and very indistinct brownish band; an indistinct brownish spot between 3rd median nervule and submedian nervule.

♀. Similar to male, but with marginal black border of fore-wings extending just beyond 3rd median nervule, and black markings of hind-wings more pronounced at apex.

Hab. : Haiti. In Coll., H. J. Adams, ♂ ♀.

From the pattern of the markings on the under-side, the best place for this species appears to be near *T. Elathea*, Cram., but it may easily be distinguished from this and allied species by the absence of the orange and black marking along the inner margin of the fore-wings of the male.

I have named this species after the collector.

Lynton Villa, Sydney Road, Enfield :

August 15th, 1898.

NEUROTERUS SCHLECHTENDALI BRED.

BY G. C. BIGNELL, F.E.S.

I have the pleasure of recording that I am now breeding *Neuroterus Schlechtendali*. The first flies appeared on August 6th, two in number; since then they have been coming out daily; to this date I have bred sixteen; they appear to be all females.

These small galls appeared on the catkins of the Oak, and on May 23rd, 1895, they were mature and falling to the ground. To give the readers of this Magazine some idea of their size and colour, I will relate my experience of them. On the date mentioned I collected some thousands, and, as usual, put them in a flower pot on some earth, covered them with moss, and placed them in the garden; unfortunately, in September, I was suddenly called away from home, by the death of the late Major Still, the same day was appointed for the removal of my belongings into my present address. In packing, the men, to prevent breakage, removed the glass cylinders which protected my precious collection, and the flower pots got mixed, so that for the life of me I could not say which contained the galls. I searched the different pots daily for a week, but could not get the slightest clue, although I was quite certain they were in one of them; at last I gave it up in despair, consoling myself that having found the locality I might get another supply the next spring. In the middle of May following we had a frost one night, and only very few catkins escaped destruction; consequently I only obtained a few galls in 1896, the flies from which are now coming out.

In size and colour these galls are like so many grains of earth; when on the ground, during the winter, they must be kept moderately

damp, and then they adhere together, which makes them still more like the ground they lie upon.

I should like to know if any other person in England has bred it before; I do not know of any record of the fact.

Dr. Mayr says the flies appear in July of the second year. The drought of the past month might be the cause of the flies not appearing earlier; the galls, however, were watered about once a week, and kept in the garden out of the rays of the sun.

Stonehouse:

August 15th, 1898.

NOTE ON THE SECOND EDITION OF CURTIS' BRITISH ENTOMOLOGY

BY THE RIGHT HON. LORD WALSINGHAM, M.A., LL.D., F.R.S.,

AND
JNO. HARTLEY DURRANT, F.E.S.

Stainton, Ent. Mo. Mag., XXIII, 221—3 (1887) collated the first and second editions of Curtis' British Entomology, and wrote:—"This second edition bears no date; but references are made in the reprint of folio 16 to Stephens' 'Illustrations,' and a description is copied from that work, which, by a reference to the page of the Illustrations, we learn was published 'August 30th, 1834.' The date must, therefore, have been subsequent to that, and before the completion of the last (the 16th) volume of the British Entomology, the dedication page of which bears the date December 1st, 1839."

Stainton was doubtless right, from internal evidence, in assigning a date later than August 30th, 1834, to the reprint of folio 16, but his deductions do not apply to the whole of the second edition. For in the Zoological Journal, IV, 496 (January—May, 1829) the following note occurs:—"The publication of a second edition of the first number of Mr. Curtis's work, affords evidence that it has met with the encouragement and support it deserves. This is distinguished from the first edition by the increased quantity of letter-press, the genera being illustrated more fully, and the whole of the species contained in each of them being characterized, their habitats and times of appearance mentioned, &c., so as to form succinct Monographs, so far as the British Entomologist is concerned, of the groups comprehended in it."

It would appear that Lovell Reeve's edition is a reprint of the second edition of Curtis, but we are at present unable to collate them.

Merton Hall, Thetford:

June, 1898.

ÆSCHNA BOREALIS, ZETT. (1840), = *Æ. CÆRULEA*, STRÖM (1783),
BUT NOT *Æ. SQUAMATA*, MÜLLER (1764).

BY ROBERT McLACHLAN, F.R.S., &c.

As the name *Æschna borealis*, Zett., is still in common use for an insect that has lately been much and successfully sought for in its Scottish localities, it may be well to point out that it was described more than a century ago by Hans Ström, a Norwegian Provost, in the "Nye Saml. af K. Danske Vid. Selskabs Skrifter," ii, p. 90 (1783), under the name of *Libellula cærulea*. All who have had the pleasure of seeing the insect alive will agree that the specific name is strikingly fitting, but unfortunately there is very little of the "blue" left in dead individuals.

This is no new discovery; it was brought forward by Wallengren in 1880, in an article in the Christiania "Videnskabselskabs Forhandler," 1880, No. 2; again by Schöyen in the same publication for 1887, No. 13; and once again by Wallengren, in a Synopsis of Scandinavian Dragon-flies, published in the "Entomologisk Tidsskrift" for 1894, p. 255, who there went so far as to propose a new name (*Cnemophila*) for a section of *Æschna*, of which this is the sole European exponent. From specimens before me, and from the remarks of Wallengren and Schöyen, it would appear to be common in Norway, extending far within the Arctic Circle. That Ström's name for the insect was not sooner recognised is no doubt due to the fact that his works remained almost neglected until recently (on this point see Hagen, in the Stett. ent. Zeit., 1873, p. 225), and appear to have been quite unknown to Zetterstedt when he published his "Insecta Lapponica."

I have lately attempted an analysis of the literature concerning the three names at the head of this article, and submit a few remarks.

No one, I think, has doubted the correctness of the identification of Zetterstedt's *Æ. borealis* (Ins. Lap., col. 1040), and it was probably confirmed by a comparison of type specimens. Zetterstedt states that it can scarcely be a variety of *juncea*, L., which latter he does not include, but which also occurs in Lapland, according to more modern research. According to him, *borealis* occurs from June 16th to 28th. In Scotland it sometimes commences to appear at the end of May, and is commonly over before the end of July.

Ström's diagnosis (*l. c.*) is as follows:—" *Libellula (cærulea)*; alis aqueis, corpore atro, maculis ceruleis." Then follows a detailed description in Danish, which I do not reproduce, but which, in the distribution of the blue markings, quite accords with our insect.

The matter would rest here, but in 1890 Mr. W. F. Kirby, in his "Catalogue of *Odonata*," p. 87, admits the right of Ström's name over that of Zetterstedt, but considers that a still older name exists in *squamata*, Müller ("Fauna Insectorum Fridrichsdalina," p. 62, 1764). The diagnosis of the latter is briefly as follows:—"Alis albidis puncto marginali lutescente: lineis thoracis quatuor cæruleis." Later on, in 1766, in the Nov. Act. Acad. Leopold. Carol., vol. iii, a more detailed description appeared to this effect:—"Facies fusca, albo-variegata. Oculi fusci. Thorax fuscus, lineis utrinque 2 albo-cæruleis. Pedes nigro-fusci, squamula ad basin posteriorum alba. Abdomen cylindricum, fusco albo-nigroque mire mixtum, subtus fuscum. Medio Septembris." It seems probable that the description was taken from an old and faded example. The "squamula" I presume represented the "oreillette" of the ♂. This description might apply equally well to *juncea* and *mixta*, and possibly others. I incline to the opinion that *mixta* was intended thereby. My objections to any connection with *cærulea* are chiefly circumstantial. (1) I am not aware that *cærulea* has ever been recorded from Denmark by any modern writer, and it is an insect one would scarcely expect to find in so flat a country; in Scotland it frequents sub-alpine moors and mountain sides, and it is only in the north of Scandinavia that it seems to occur near the sea level. (2) The middle of September seems to me at variance with the usual time of appearance of *cærulea*. I urge, therefore, that whereas Ström's name seems free from objection, the right of Müller's is decidedly "not proven," to say the least. Hagen, in his "Synonymia Libellularum Europæarum," compiled when a very young man, suggested (p. 53) that *squamata* might be identical with *mixta*, which latter does not occur in Scandinavia. Hagen in those days seems to have confused *cærulea* and *mixta*, for he stated that he possessed the latter from Upsal.

One or two collateral matters arise out of the foregoing remarks. De Selys, in 1850 ("Revue des Odonates," p. 122), gives reasons why *borealis* (*cærulea*) cannot be the same as the *coluberculus* of Harris ("Exposition," p. 91, tab. xxvii, fig. 1, 1782), one of which, however, viz., the furcation of the sub-nodal sector in the figure, is of no great importance, viewed in the light of the variation seen in *cærulea*. I might add we would not expect to find *cærulea* on an English common, by a hedge-side, as stated by Harris for *coluberculus*. Kirby, without comment (*l. c.*), gives *coluberculus* as identical with *mixta*, and having priority. The objection that De Selys used in 1850, viz., the long pterostigma and the very short appendages as seen in the figure, are

opposed, so it seems to me, to the connection urged by Kirby, and one seldom sees *mixta* in this country in June. Here, again, I think the case is "not proven."

While I am on the subject of the nomenclature of British species of *Æschna*, I may as well allude to a third change in Kirby's Catalogue. *Æ. rufescens*, V. d. L., becomes *Æ. isocles* (which should be corrected to *isosceles*), Müller (Nov. Act., iii, p. 125, 1767). The name occurs amongst named varieties of "*quadrifasciata*," Müll. This particular "variety" distinctly represents our *rufescens*, and indeed has long been recognised as such; the excuse for not giving the name precedence being that it was originally applied to only a "variety." I do not consider this objection a valid one, and am of opinion the species should be termed *Æ. isosceles*.

I am painfully aware that great laxity existed, and still exists, in connection with species of "*Neuroptera*" described by the "old authors." Much as I dislike change, I accept it when a good case is made out, but I object to change made without any given reasons, and apparently often solely for the sake of the application of some old name.

Lewisham, London :

September, 1898.

WHAT IS *LIBELLULA ÆNEA*, LINNÉ? : A STUDY IN NOMENCLATURE.

BY ROBERT McLACHLAN, F.R.S., &c.

Having occasion to consult the original descriptions in Linné's works with regard to another species, I was struck with the discrepancies that existed in connection with *L. ænea*, and though I found afterwards that they had not escaped the notice of Charpentier and Hagen (and perhaps others), the subject seemed sufficiently interesting to allude to in detail, and more especially as it concerns the names now in common use for two species, viz., "*Cordulia ænea*, Linné," and "*Somatochlora flavomaculata*, Van der Linden." I propose to deal with the works in chronological sequence.

FAUNA SUECICA, ed. i (1746), p. 231.

768. Lib. thorace viridi nitido : lineis flavis alis pallidis abdomine nigro.

Descript. : Caput et thorax viridia, nitida ; lineæ duæ flavæ ad latera thoracis. Abdomen cylindricum nigrum subtus flavum marginis colore dentato ; cauda di-phylla angusta.

769. Lib. viridi inaurata; pedibus nigris.

Descript.: Præcedentis simillima, sed alia. Mas cauda quadridentata, dentibus superioribus pilosis inferioribus singulis duplicis denticulo. Feminae cauda foliolis 2 lanceolatis; caput, thorax, abdomine cupreo inaurata, thorax pilosus absque maculis. Abdomen subtus hinc inde pallide albescent.

Here and elsewhere I have omitted words in the "descriptions" that do not specially concern the question at issue.

No. 768 applies to what we now term "*Somatochlora flavomaculata*," and 769 (admirably) to "*Cordulia ænea*." But as no specific terms were given in this work, the nomenclature is not immediately concerned.

SYSTEMA NATURÆ, ed. x (1758), p. 544.

ænea. 8. L. thorace æneo viridi.

And then is added as a reference—

Fn. Suec. 768, 769. L. thorace viridi, nitido, lineis flavis.

The specific name is here applied for the first time. The former two species are united, the term "æneo" appears in the diagnosis, and the words "lineis flavis" in the reference seem to be apologetic and considered necessary in the altered conditions.

FAUNA SUECICA, ed. ii (1761), p. 373.

1466. L. ænea thorace æneo-viridi.

With a reference to ed. i and quotation from No. 768. Then follows the description, which is practically the same as in ed. i.

β. L. viridi-inaurata; pedibus nigris. Fn., 759 (a printer's error for 769).

The description is again practically as in ed. i (769).

Here is a new departure. The type form is our "*Somatochlora flavomaculata*," and the unnamed var. β is "*Cordulia ænea*"!

SYSTEMA NATURÆ, ed. xii (1767), p. 902.

ænea. 8. L. thorace æneo-viridi. Fn. Suec., 1466.

Then follows a reference to Fn. Suec., i, 768, 769, with the same quotation as in S. N., ed. x.

It results from the above that if the detailed descriptions in the "Fauna," ed. ii, of *L. ænea* were considered literally, it would be absolutely necessary to apply the specific name to the "*Somatochlora*," and to find or coin a new one for the "*Cordulia*." But the Syst. Nat. ed. x, is now considered the starting point for zoological nomenclature, and Linné there united both species under the same name "*ænea*," so I think we can conveniently be spared the intolerable nuisance

of a change such as would be here involved. We may fall back upon the person who applied names to *both* species. Apparently this was done by Van der Linden, who, in his "Monograph" in 1825, applied the same specific names for the two insects that are now in common use. But I think he does not show that he had critically studied the Linnæan descriptions, and I venture to believe that had he done so he would have reserved the term "*ænea*" for the species he named "*flavomaculata*," for Linné distinctly had the latter in view as his type form.

Hagen in his "Synonymia," and Charpentier in his "Lib. Europ.," followed Van der Linden, but both called attention to the apparent discrepancy.

And now as to the Linnæan Collection. There exists in it a specimen with a label "*ænea*" in Linné's hand that is distinctly a ♂ of *flavomaculata*, V. d. Linden; and below it is another specimen, on the same kind of pin, but with no label, that is as distinctly a ♀ *ænea* of V. d. Linden and modern authors. De Selys ("Revue des Odonates") supposes there may have been an accidental changing of the label; but there is no necessity for such a supposition, for the collection only exemplifies the intention according to the detailed descriptions by Linné, but which was left vague in Syst. Nat., ed. x, where the name was first given.

RECAPITULATION.

In 1746 Linné, before he adopted the binomial system, described two insects, now placed in different genera, as distinct species.

In 1759 he united them as one, and applied the specific name *ænea* for the collective "species."

In 1761 he described the first of his two species of 1746, that now known as *flavomaculata*, as *ænea*, and described that now known as *ænea* as an unnamed variety of the type.

In 1767 he adopted the same course as in 1759.

RESULT.

The present application of the name *ænea* is in direct opposition to the views of Linné as expressed in his detailed descriptions of 1746 and 1761, and in order to maintain it we have to fall back upon an implied "rule" of nomenclature upon which all are not agreed. In legal phraseology there has been "a miscarriage of justice."

Colias Edusa in 1898.—Where is *C. Edusa* this year? The usual records are silent. No doubt it has occurred somewhere in England, but apparently nowhere in sufficient quantity to attract attention, and yet the weather has been such as it usually delights in. A correspondent writing from the coast of East Devon where the insect is often abundant, says:—"I have not seen *Colias Edusa* this year. I attribute its absence to the prevalence of winds adverse to immigration from the Continent. The wind was mostly between N.N.W. and N.E., and hardly ever S.E. or S." A change has come over British entomologists. Thirty years ago the "blown over" theory was commonly scouted, and theories were rife to account for the erratic appearance of this insect, and others here; the one probably most in favour being continuance in the egg or pupal stage more than one season. "Blown over" had a disagreeable sound, and there were probably some who would have refused to place the specimens in their collections if they carried with them the slightest suspicion of being voluntary or involuntary immigrants.—Eds.

Acronycta alni at Gloucester.—On Monday, August 15th, I found a full-fed larva of this species in a garden close to Gloucester; it was provided with a bit of hollow stick, and spun up in it the same night.—W. W. FOWLER: *Aug. 18th, 1898.*

Singular habit in Brepheos parthenias—In March of this year, my son, who had been out in the early morning in Richmond Park in search of *Brepheos parthenias*, came to me with what I thought at the time sounded very much like a "yarn." He had seen the *Brepheos* (more than one of them) sitting on the sandy margin of a rivulet which runs through the Park at this point, and they were imbibing the moisture, holding their wings in an upright position over the back "just like a butterfly." As this habit of this species had never in my recollection been recorded, I visited the Park a day or two later about 11 a.m., and, overlooking the little brook, where my boy had seen the moths, I tried the edge of the pond near the Isabella Plantation and there, on the moist earth at the edge of the water, a couple of *B. parthenias* were enjoying themselves exactly as described, sitting upon the wet sand, wings erected and lowered at intervals, in the bright sunshine, precisely as butterflies are in the habit of doing when imbibing moisture.—ALFRED FICKLIN, Norbiton: *August 15th, 1898.*

Occurrence of Lozopera Beatricella, Wlsm., in Kent.—Having in mind Lord Walsingham's recent discoveries in the genus *Lozopera* (*Conchylis*, Tr. part.), it was with no little satisfaction that I heard, some weeks ago from Mr. W. Purdey, of Folkestone, that he had found in that neighbourhood a number of moths belonging to this genus, which he could not reconcile with any species known to him. These he was kind enough to send to me for examination, when it was at once obvious that he had come upon a species quite strange to me, but which, after careful comparison with his lordship's descriptions, I found to be referable, without doubt, to his *Lozopera Beatricella*, reared seventeen or eighteen years ago in Suffolk by the Hon. Mrs. Carpenter. The occurrence of this interesting species on the south coast is extremely gratifying, and that this should take place in a locality which has been, for the past thirty years, so incessantly worked as Folkestone, is not a little remarkable.

Mr. Purdey writes, "I watched this species very closely for nearly a fortnight in the middle of July. It was on the wing from about 8 p.m. till dark, flying over alder and privet bushes, possibly attracted by the blossoms of the latter. It struck me as being quite distinct from the other species, and having different habits. *C. Francillonana* was to be found at a distance of forty or fifty yards about some wild carrot, from the blossom of which also I swept it with the net."

To me this pretty species seems to be more closely allied to *L. sanguinana* from Hungary than to *L. flagellana*, Dup., = *eryngiana*, Heyd., or to *L. Francillonana* or *dilucidana*, its more erect transverse stripes being placed exactly as in that species, and in some degree similarly constricted and broadened, but it does not approach that species in the width and richness of these bands. There is no reason to suppose that either *L. sanguinana* or *L. flagellana* exists anywhere in these Islands, and the occurrence of this allied and, to all appearance, absolutely new species, and its present extension of range, is of extreme interest.—CHAS. G. BARRETT, 39, Linden Grove, Nunhead, S.E.: *September 17th*, 1898.

Orthotania ericetana in Scotland.—I found this very abundantly on Ben Lawers on one particular afternoon about 5.30, at a height of about 700 feet above the sea level. Having no net I could only manage to secure six specimens, a work of no little difficulty, as they were flying very actively and restlessly, to all appearance in anticipation of a thunderstorm, which, however, did not come off. An hour and a half later I revisited the slope, but the weather had become windy, and not a specimen was to be seen. These examples are not so darkly coloured as those from the South of England.—C. T. CRUTTWELL, Kibworth Rectory, Leicester: *August 27th*, 1898.

The List of Yorkshire Coleoptera.—On behalf of the Yorkshire *Coleoptera* Committee appointed at the last Annual Meeting of the Yorkshire Naturalists' Union, I am at present engaged in collecting information on the beetles of Yorkshire, for the purpose of preparing the continuation of the List of Yorkshire *Coleoptera* commenced some years ago. The list having been published as far as the end of the *Brachelytra* (*Staphylinidæ*), the *Clavicornia* are now to be dealt with. I shall, therefore, be glad to receive local record-lists and scattered information on this and the succeeding groups from entomologists who have conducted researches in the County in former years, and those who may at the present time be engaged in similar investigations. In incorporating the results of their work in the list, suitable acknowledgment will be made of all such assistance. It is desired that the list shall represent, as far as possible, the state of our knowledge on the subject at the time of its publication.—M. L. THOMPSON, Hon. Secretary for the Yorkshire *Coleoptera* Committee, Diamond Street, Saltburn-by-the-Sea: *July 19th*, 1898.

Platystethus alutaceus, Thoms., at Chobham.—In looking over some *Platystethi* the other day I found an example of this species which I had captured at Chobham in 1878, and put aside as doubtful. The entirely black coloration and the peculiar surface make it easily recognisable. Mr. Champion has seen the specimen, and agrees with me in referring it to the above species.—EDWARD SAUNDERS, St. Ann's, Woking: *August 15th*, 1898.

Langelandia anophthalma, Aubé, &c., at Broadstairs.—As I am not likely to have another opportunity of taking *Langelandia* and its companion rarities in the district where I first turned them up, it may be of interest to record the result of my investigations in decaying seed potatoes in July of last year (1897). Staying with the friends to whom I had paid a previous visit (*vide* Ent. Mo. Mag., vol. xxxii, p. 259), I again relieved the gardener of the task of lifting the early potatoes, and spent several mornings in examining the decaying seed. The result was eminently satisfactory, as I managed to take no less than 107 specimens of *Langelandia*, which was more abundant than I have ever known it. So too was *Anommatus 12-striatus*, of which over 80 specimens put in an appearance, while *Oxytelus insecatus* was common, and *Bathyscia Wollastoni* tumbled out in dozens from almost every potato. These four beetles are probably spread all over the surrounding district, and it would be very interesting to learn whether other Coleopterists have succeeded in finding them in the same way elsewhere.—THEODORE WOOD, 157, Trinity Road, Upper Tooting, S.W.: August 30th, 1898.

Sparrows and Hive Bees.—A curious case of the destruction of hive bees by sparrows has lately been brought under my notice, and I think it is worthy of record. A friend of mine residing at Reigate finds that the sparrows in his garden kill a considerable number of his bees. The birds alight somewhere in the neighbourhood of the hive, and as the bees fly in and out dart at them and seize them much in the same way as a flycatcher seizes flies. He has lost so many bees in this way that he is obliged to keep the sparrows down by shooting them. I should be glad to learn if this habit has been observed in sparrows by others.—EDWARD SAUNDERS, St. Ann's, Woking: September 13th, 1898.

Mecostethus grossus, L., in the New Forest.—Towards the end of July and early in August this large grasshopper could be obtained in fair numbers if diligent search was made for it in any of the bogs around Lyndhurst and Brockenhurst. I noticed that although we tramped well over the ground during dull weather, or when the sun was obscured by clouds, very seldom was one of this grasshopper to be found on the move; but as soon as the sun shone out brightly it was easily disturbed, being borne along with wings extended in the direction of the wind, at times a single flight covering a distance of thirty or forty feet; whenever they flew against the wind the flight was of a much shorter length. The female does not take to the wing as readily as the male, but when it does the flight is much stronger and more rapid; being a much larger insect it is rather a conspicuous object on the wing. I had no difficulty in taking a fairly long series.—JAMES J. F. X. KING, 207, Sauchiehall Street, Glasgow: September, 1898.

Bittacus Hageni, Brauer, in Wallachia.—During his recent tour in Eastern Europe Mr. Malcolm Burr took one example of a *Bittacus* at Comana, Wallachia, on July 12th, that proves to be *B. Hageni*, ♂. This species is still little known. It was discovered at Stockerau, Austria, by Dr. Brauer, in August, 1860; subsequently it was found at Hoym in Saxony; I took a single example at Ronquières in Belgium on July 19th, 1881; and I believe M. Poujade found it at St. Cloud, near Paris, according to an old note published by me, but which I should now like to confirm.—R. McLACHLAN, Lewisham, London: September 19th, 1898.

Reviews.

FURTHER COCCID NOTES : with Description of New Species, and Discussion of Points of Interest : by W. M. MASKELL, Registrar of the University of New Zealand ; Corr. Mem. Roy. Soc. of South Australia. Trans. New Zealand Institute, 1897, pp. 219—232, five plates.

The majority of the new species recorded in this paper form part of a collection of *Coccidæ* made by Mr. A. Koebele, in China and Japan, in 1896 and 1897, and an advance list of all these briefly mentioned therein was published in this Magazine in October, 1897 (vol. viii, 2nd ser., p. 239).

Besides this matter, three pages are occupied with a critical notice of two publications which appeared in 1897, dealing with the genus *Aspidiotus*, both proposing to divide it into a number of sub-genera. One is merely a preliminary synoptical key, without detailed descriptions, by Dr. G. Leonardi, of the Laboratory of Economic Entomology at Portici, Italy. This suggests nine sub-genera, all founded upon the anatomical features of the female insect, without taking any notice of the puparium ; but, says Mr. Maskell, "unless Dr. Leonardi proposes to give much fuller details when defining completely his sub-genera, I think that some of his characters are scarcely valid."

Of Mr. Cockerell's work, of which the great industry and acumen are willingly acknowledged, Mr. Maskell says that "the general question of generic subdivision seems to be entirely premature. In my opinion it will be none too late twenty years hence to begin the work. The total number of species of all the genera of *Coccidæ* now known to science does not exceed one thousand, and it is absurd to imagine that we have discovered more than a fraction of those existing in the world. It results, as a matter of course, that any scheme of subdivision of so small a genus of insects as *Aspidiotus* must be continually subject to revision, to re-revision, to revision a fourth or a tenth time, as new forms are found to obliterate the boundaries laid down by this or by that author. There is not the least cause for hurry. If all the species now known are left in *Aspidiotus* no harm can be done, whereas if all the suggested sub-genera have to be again divided, split into minute fragments, shifted about to suit the needs of the day, the future student must be subjected to confusion and trouble quite annoying and wearisome." These words will be thoroughly endorsed by all students.

It is very sad to know that these "Notes" are the last by their author, and that *Coccid*-students all the world over have been deprived by death of a friend and guide through the intricacies inherent in their subject.—J. W. D.

FAUNA REGNI HUNGARIÆ, &c., &c., in memoriam regni Hungariæ mille abhinc annis constituti, Ordo Hemiptera conscripsit Dr. G. HORVÁTH, Editio separata, pp. 1—72, with coloured map. Buda Pest : 1897.

In this work the author, so well known as one of the leading authorities on the *Hemiptera*, commences with a history of the study of this Order in Hungary. Aloys. Ferd. Marsili is the first author mentioned, he, in 1726, figured a Pentatomid under the name of "*Cimex*" in "*Danubius Pannonicus Mysicus*," vol. vi, p. 121, as well as three "*Tipulas*," of which one, according to Dr. Horváth, is probably *Corixa coleoptrata*, Fab., and the other two *Plea minutissima*. In 1783 Piller and Mitter

pacher described four species in their *Iter per Posaganam*, but Tobias Koy appears as the first Entomologist who accurately and diligently studied the *Hemiptera* of Hungary: he published in 1800 a list of eighty-six species, entitled, "Alphabitisches Verzeichniss meiner Insecten-Sammlung," of which all except seven were collected in the neighbourhood of Buda Pest; from this date the list has gradually been built up by various Entomologists, and now, thanks to the indefatigable labours of the present author, appears as probably the most perfect national list on record, and a model for lists of a similar nature. An excellent map is given, dividing the country into eight regions, Centralis, Pannonica, Septentr. occidentalis, Septentr. orientalis, Transylvanica, Banatica, Croatica, and Adriatica. The author says that the greater part of the species are those generally distributed throughout the Palæartic Region, and that of these the majority are of the Mediterranean type. Some, however, have crept in from warmer and more southern climes, others from the East, whilst some of the species found quite in Northern Europe occur even in the tolerably hot parts of the country. After the historical, &c., sketch, a list of the literature bearing on the *Hemiptera* of Hungary is given, and then follows a systematic list of species, with notes of the distribution of each in the eight regions. There are enumerated 814 *Heteroptera*, 726 *Homoptera*, and 103 *Aptera*.—E. S.

INSECT LIVES, as told by themselves: by EDWARD SIMPSON. Pp. 128, small 8vo, with 23 illustrations. London: The Religious Tract Society, 1898 (but not dated).

Of this class of books there is no end. This purports to consist of a series of autobiographies of some of our common insects, and is pleasantly written, yet evidently compiled: the "author" has managed to escape very serious errors, which is more than can be said for many similar works. The best feature consists in the happily chosen headings; but in one case at least, "A Home under Water," the depth has been miscalculated, and has resulted in a hopeless confusion of nomenclature. The chapter devoted to "An Unwelcome Guest" (*Stylops*) is lamentably incomplete. The illustrations are fair, so far as they go: we need scarcely add that we recognise them as old friends. The marvel to us is who buys books of this nature; yet we suppose they serve some useful purpose, and pay, otherwise they would not be written.

INSECTS: foes and friends: by W. EGMONT KIRBY, M.D., with preface by W. F. KIRBY, F.L.S., F.E.S. Pp. 138, 12mo, with 32 chromo-lith. plates. London: S. W. Partridge and Co., 1898.

This book is a small manual of Economic Entomology, tolerably well illustrated. The position held by the writer of the preface should be a guarantee as to accuracy; but there is no editorial note explaining that the "Vine Tortrix" (*Eupæcilia ambiguella*) does *not* feed on vine in this country. It is stated that the work is an English adaptation of a little book that "has had a large circulation in Germany," but what little book is not mentioned. We venture to suggest that the title of the original was "Insektenbüchlein;" that the author was H. Schütte; and that it was published at Stuttgart in 1897. Those who require a small elementary pocket manual of Economic Entomology at a price that is only nominal will find this useful.

Society.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: *March 14th*, 1898.
—S. J. CAPPER, Esq., F.L.S., F.E.S., President, in the Chair.

Mr. F. N. Pierce called attention to some remarkable articles in the popular literature of to-day on "Insect Grafting." Mr. Webster read one of these articles, but the Members considered the subject unworthy of discussion, the idea being contrary to all experience. Mr. Mosley read a paper on "A new method of forming a collection, with special reference to *Lepidoptera*." This system may be entitled "The Tablet System." He pointed out the four main objects to be kept in view in forming a collection—(1) economy of space and expense; (2) facility of exhibition and examination (with a lens); (3) preservation from destructive agencies; (4) avoidance of unlimited destruction of life. In expounding his four main points, he especially disclaimed any idea of diminishing existing collections, except possibly by amalgamation; he was of opinion that every town should have a large students' collection, public or private, arranged in the ordinary cabinet form, but he claimed that the tablet system should satisfy the wants of local collectors. He showed three tablets, containing ♂ and ♀ and life-histories of species in a flat tray with sealed glass covers. He touched upon the use of this form of tablet to teachers, and the limit it was likely to put upon wholesale destruction of local species; he then showed how the tablet collection could be used as an index to the larger (town) collections. Drawings of "varieties" were exhibited, set up in the same form; notes could be written on the back. A discussion followed, after which the following exhibits were shown:—The President showed a fine variety of *Zygana lonicera* with remarkably wide borders to the under-wing. Mr. F. N. Pierce, a living exotic *Blatta*, taken from an *Orchid*.

April 4th.—The President in the Chair.

Mr. F. W. Saxby gave a Demonstration Lecture on Photomicrography of Insect Structures. He used for illuminant acetylene gas. After describing the apparatus and illustrating its manipulation, he photographed a vertical section through the eye of *Eristalis tenax*. The negatives were very successful. Messrs. Pierce and Freeman exhibited other slides and unmounted specimens. The ordinary exhibits consisted of *Papilios* from Lagos, Mr. Webster; captures during 1898, Mr. F. C. Thompson; first year's captures, 1897, Dr. J. Cotton; amongst the latter was a very long series of *Grammesia trilinea*, var. *bilinea*, also a *Chærocampa Elpenor* captured at sugar. After a few remarks by the President, a vote of thanks was accorded to Mr. Saxby, and the Meeting closed.

May 9th.—The President in the Chair.

Mr. F. R. Dixon Nuttall, F.M.S., was elected a Member of the Society.

It was decided to adjourn till October, and to start next season with a Meeting entirely devoted to Exhibits.

Mr. F. F. Pierce read a paper on "Recent investigations of the hair-pencils on certain male *Noctua*." After a rough summary of the immense field of morphological research open to the entomologist, and a short reference to his own work and

that of others in insect anatomy, he turned to the subject directly in hand. Describing how he had been led to a study of this subject by what was considered a unique specimen of *Epunda nigra* in the collection of the President, he showed how he had examined all the male *nigra* available, and found it to be the rule and not the exception with that species, and with many other *Noctuina*, that the males have a pair of chitinous flaps, one on each side of the ventral surface of the abdomen. These flaps arise from the base of the abdomen, and from them proceeds a pencil of hairs tightly agglutinated at the base, separating and individually tapering towards the extremity. These extremities fit into a pocket which lies more towards the centre of the ventral surface of the abdomen. Illustrating his remarks by excellent diagrams and carefully mounted microscopic slides, he then contrasted these pencils with the tarsal tufts of the *Herminidæ*, pointing out that these organs are pencils of hairs joined at the base, separating towards the apex, while the *Herminidæ* tufts are lamellæ of scales, and separate almost (if not entirely) their whole length. With a diagram of one of these hairs under high power and one of the scales of the *Herminidæ*, he pointed out the entire difference between the markings on the two appendages; those on the hairs being a kind of network of diamonds raised in the centre, those on the scales of the *Herminidæ* being ordinary scale-pittings and striations. He proved the existence of these little-known organs to be specific, not accidental; but at the same time disproved the suggestion that they are vital by their absence in the females, and also in the males of certain species of even the *Noctuina*. Referring to the writings of previous authors on this subject, he explained their ignorance of the *very frequent* presence of these pencils by the fact that they have the apical portion enclosed in the pocket, and therefore require careful teasing before they are visible to the naked eye. Dealing with the suggestion that they are breathing organs, he pointed out that they only occur in males, and not of *all* species, and therefore could hardly perform such an important function as respiration. He mentioned (1) that they occurred in *most Noctuina* but not in *all*; (2) that they varied in size and form in different species, but were fairly constant for the same species; (3) that they always occurred in the same situation, and the tips were or had been always enclosed in pockets. He attributed to them some unknown sense, probably of use to the male in its search for the female. Some useful suggestions and leading questions were made by the President, and Messrs. Cotton, Freeman and Locke. The Rev. R. Freeman suggested that these were *scent* not *sense* organs, and attempted to associate their absence with the presence of *pectinated* antennæ. The exhibits were—the original specimen of *E. nigra* which may be said to be the initial cause of Mr. Pierce's study, by the President; slides of hair-pencils by Mr. Pierce; a night's captures at Delamere, by Mr. F. C. Thompson; spring captures, by Dr. Cotton; *Miscodera arctica* and other allied species from Llangollen, by Mr. F. Birch; recent emergencies, &c., by Rev. R. Freeman and Mr. H. B. Prince; and a fine box of *Bombyx rubi*, by Mr. J. E. Robson, for distribution. The next Meeting, an Exhibitional Meeting, will be held on October 6th.—R. FREEMAN, *Hon. Secretary*.

STRAY NOTES ON SOME SOUTH AFRICAN *LEPIDOPTERA*.

BY C. G. BARRETT, F.E.S.

I have been lately much interested in the remarks made on the habits of insects in South Africa by a sister who, with her young niece and nephews, devotes much time to collecting *Lepidoptera* for me, sending over some new and very many interesting species, a few of which are also European, and even British. I am not so selfish as to desire to keep the information quite to myself.

Deiopeia pulchella, L.—“I was going to tell you about the pink-spotted white moths which you say you have never seen at large. We went out for a walk one day after a heavy rain among the lands (cultivated grounds), and in one which had not been ploughed, and was covered with weeds in blossom, there were many common butterflies enjoying the bright sunshine. One of us (I think Harry) noticed that one of the “small whites” looked a little different. On netting it we found that it was one of these pretty moths, and we got a good many others. They are wonderfully like the white butterflies when flying, but alight very differently. They are seldom (if ever) found except in these old ‘lands.’”

The numerous specimens sent present exactly the same degree of variation in the proportion of pink or black spotting observable in European specimens. One extremely pretty form, which seems rare, has the black dots replaced by oblique black streaks, forming incomplete transverse lines. The ground colour also varies occasionally to cream colour or even pale ochreous; but I see no tendency toward pectination of the antennæ, such as is said to occur in some parts of Asia.

Pelochita vitrea, Plötz.—This is a very curious and beautiful species; the fore- and hind-wings being, with the exception of the margins, nearly transparent and glassy, the scales with which they are clothed being extremely minute and thinly scattered; the margins, however, and especially those of the fore-wings, are opaque and of a soft yellow-brown; the thorax similar, but dotted with black; antennæ long and slender. The portion which gives this insect its striking appearance is the abdomen, of which the whole dorsal portion is broadly and richly *purplish-scarlet* of a most gorgeous hue, the legs partaking of the same colour. Palpi remarkably small and slender, of the same brilliant colour, but dotted with black, the tongue horn-coloured, strong, and in no way sheltered by the palpi. Attention was the more drawn to this species from a remark that it affected the

orange trees, and I asked for further information. "You ask about the 'Soldiers.' I have only found them twice. The first, perhaps two specimens, were at the *Lantana*, an aromatic shrub in full blossom. The last on the orange trees, also in full bloom; I beat them out of the trees at night, using a lantern, and netted them. They are not hard to catch, as their flight is heavy. I have only seen them at night, and have an idea that they and many other species come from some distance attracted by the scent, which is sweetest at night. I never beat them out at dusk, but later; indeed, I do not think that I have caught one before nine o'clock."

Hypocala deflorata, Fab.—"Along with the last I caught that varied series of moths with yellow under wings; but the latter were the earlier to appear."

This is also a remarkable species—a "yellowunder-wing" of about the size and in some degree the appearance of *Triphæna janthina*, Esp., or more resembling the smaller *Catocalæ* with yellow hind-wings. Its head is prominent, with the palpi rather long, very thick, conical and conspicuously porrected. The yellow hind-wings have the usual central spot black and very large, black clouds running down the costal and dorsal margins, and the usual broad black band on the hind margin, in which are two large yellow spots. But its fore-wings are the most remarkable, from their strange variation. Ordinarily they are of a rather uniform grey-brown dusted with ashy-grey, either without markings or marbled with black, or in the middle area with orange-yellow, or having the reniform stigma blackened or black margined, with or without a yellow subterminal line. But sometimes a large round pale yellow cloud lies behind the reniform stigma, or a large similar oblong cloud along the discal cell, or both; while in more extreme forms the ground colour is whitish-grey or yellowish-grey, and a very broad angulated and hollowed stripe, of slate colour or grey-black, lies the whole length of the wing in zigzags from base to apex.

Margarodes unionalis, Hb.—"The first that I saw was in a quince hedge by a stream at dusk, and when searching the orange trees in the same garden at night I caught several. When I shook or beat the tree they fell to the ground as though intoxicated, and I could bottle them easily. The orange tree was in full bloom." These do not differ from the very few British examples.

Deilephila capensis, L.—"These are the hawk moths that look so lovely at night around the blossoming orange trees. Their eyes are like living coals. I think that they like any blossoming trees. They

have a lovely green shade over the fore-wings when freshly emerged ; when older they are more of a drab-brown." This insect when it arrives here is rarely other than olive-brown, but in one or two of the freshest specimens the green is still visible.

The range of this species seems to be severely limited, in that respect showing a strong contrast to the closely allied *D. livornica*, Esp., and *Chærocampa celerio*, L., both of which are common South African species. On the other hand *C. nerii*, L., and *C. Æson*, Cram., seem to be rare. Another widely distributed species, not too common in that district, is *Sphinx convolvuli*, L. ; and *Acherontia Atropos*, L., is as usual in ill repute with bee keepers ; and not only with them, for the "bite" of the poor harmless creatures is there believed to be poisonous !

Sphingomorpha Monteironis, Butler.—My correspondent speaks of this as the "fruit moth," and says that there is a legend that it damages the fruit, but in what way does not seem clear. It is a grand creature, in some degree allied to the *Plusiæ*, but of more than double the size of almost any of them, the fore-wings sienna-brown marbled with black, the transverse lines black, angulated and looped to a great degree, the thorax and abdomen dark brown, but with a dividing pale yellow stripe commencing on the head and ending at one of the hinder segments of the abdomen. But its most extraordinary ornament is an enormous tuft of yellow hair-scales upon the under-side of the fore tibiæ of the male, spreading out like a fan when the leg is drawn forward, and almost as long as the portion of the leg to which it is attached.

Metachrostis nigrivitta, Hampson.—"You can shake these out of the cypress trees at any time ; they hide during the day always on these trees, but they fly by choice at dusk." This is one of a group of small broad winged *Noctuæ* which is very fully represented in South Africa. Its attachment to the cypress appeared to me to be rather curious, but a portion of the tree sent with a dozen of the moths seemed convincing.

Cerocala vermiculosa, H.-S.—"One of the little boys caught this on the ground in the open veldt in bright sunshine." This beautiful moth, something like the European *C. scapulosa*, Hb., but having handsomer and more elaborate markings, does not seem a likely species to seek the sunshine. Perhaps it was hiding upon the ground.

Osteodes turbulentata, Gn.—"This moth is very common upon our side of Middle Drift. I do not remember to have seen it at the other.

I was seeking a little shade under the gum trees (which, by-the-by, are planted Australian trees, not native), and these moths fairly obtruded themselves. They fly up, and then quickly settle again upon the ground, both fore- and hind-wings raised quite perpendicularly and close together over the back. At this time there was no grass to speak of; since then there has been rain, and I find the moths, not upon the ground, but clinging to the grass under a bush with the wings in the same perpendicular position, flying up and settling quickly in the same manner." This moth is extremely plain on the upper-side, pale straw colour, without markings, except a broad smoky hind marginal band to the fore-wings, and sometimes to the hind; but the under-side is often much more ornamental, the broad band of the fore-wings repeated, and the hind-wings beautifully striped in a longitudinal direction with reddish-brown dusted with darker. This, however, is not invariable, some specimens are devoid of markings on the under-side, while others possess them in a small degree. When well marked this species readily calls to mind our *Fidonia pinaria*, L., which places its wings when at rest in precisely the same manner.

Some of the remarks upon butterflies seem also to be worthy of record.

Sarangeza motozoides, Holland.—"It led me a pretty chase. I was going down the steep river bank this afternoon to cross the river on stepping stones, when a small butterfly flew past and alighted where I could scarcely reach it on the sunny bank; I tried, and almost succeeded, but not quite! I saw it again, but could not get it, so crossed the river to the native kraal for which I was bound. Coming back after crossing the river with fear and trembling, I bethought me to look again for the butterfly that had puzzled me—disturbed it from the sunny bank, it settled, and I nearly had it, but it flew away and I started for home; but had the curiosity to examine another warm sunny spot on the other side, and there secured it." This calls to mind another occasion in which one of the boys *catapulted* a magnificent moth which was flying on the opposite side of the river, and, leaving his brother to watch, went round to the ford, crossed and secured it. It proved to be *Pleretes bellatrix*, Dalman; rich tawny-yellow or orange with blue-black stripes, a veritable "Tiger" moth, and, considering the treatment it received, in very fair condition.

Danais Misippus, L. (*Diadema bolina*, L.) ♀ var.—"We found the larva on a fleshy flat weed in the 'lands;' it was of a sepia tint with darker bristles, each bristle branched into tufts of four or five. It

spun up almost at once, suspending itself. I took the butterfly at first for *D. Chrysippus*, but it is quite different from the common form."

This is a splendid example of one of those curious brown varieties of the female *D. Misippus*, which bear so startling a general resemblance to *D. Chrysippus*, L. It, however, has the sub-apical spots of the fore-wings pale brown; other examples have them white, and still more nearly resemble *D. Chrysippus*. The pupa is very similar to that of a *Vanessa*, but stouter, and has projecting bristly horns nearly a quarter of an inch in length. The food plant was probably a *Portulaca*.

Planema esebria, Hew.—"I send the chrysalis and food plant. Harry brought these home. The plant is like a thin straggling nettle, with bristles all along the stem, and the caterpillars bear a comical resemblance to the plant. They are greenish-brown, thin and wiry, with rows of spines like those on the plant stem. The plant grows in a deep ravine, clematis growing up into the trees, and the butterflies sporting round it. The change from caterpillar to butterfly occupied nearly a month."

This butterfly, closely allied to *Acræa*, with long fore-wings, has all the wings brown-black, except an oblique white or yellow bar beyond the middle of the fore-wings, and a large similar dorsal blotch which is continued across the hind-wings as a very broad white or yellow band. Its pupa must be very pretty, for the dried skins are pellucid white, the head, eyes, palpi, tongue and legs all narrowly outlined in slender black lines, and the wing cases plentifully striped with the same, while down every side of the abdominal portion is a row of conspicuous black rings or loops. The hairs on the cast larva skins are extremely branched and bristly.

39, Linden Grove, Nunhead, S.E.:

September, 1898.

ON A NEW SPECIES OF THE GENUS *APROÆREMA*, DENT.
(= *ANACAMPSIS*, AUCT., NEC CRT.), FROM ENGLAND.

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

APROÆREMA VINELLA, spec. nov.

Antennæ fuscous-black, strongly and sharply annulated to the tips with bright pale ochreous. *Palpi*, middle joint externally fuscous-grey, internally pale greyish-ochreous, terminal joint long, recurved, pale greyish-ochreous, conspicuously striped longitudinally with blackish-fuscous. *Face* pale grey or pale greyish-ochreous. *Head* greyish-fuscous. *Thorax* and *tegulæ* concolorous with fore-wings. *Fore-*

wings rather glossy, fuscous-black, tinged with violet and minutely speckled more or less with pale scales; cilia, basal half fuscous-grey, speckled with black, apical half paler grey, unspeckled. *Exp. al.*, 10·5—11 mm. *Hind-wings* satiny-grey; cilia brownish-grey. *Abdomen* greyish-fuscous. *Legs*, externally deep fuscous, very distinctly ringed with white at all the tarsal and the hind tibial joints, internally much paler.

Type, ♂ ♀ (selected out of 16 specimens), Mus. Bnks.

Hab.: ENGLAND—Sussex (Brighton).

An examination of the very long series of examples bred and caught by Mr. W. H. B. Fletcher shows that this species is decidedly variable, but only in one direction. In the commonest form, which has been selected as the type, the fore-wings are unicolorous except for the minute pale scales which a lens reveals, but individuals occur in which there is a small white spot on the costa at about two-thirds of its length. Another form shows a small dorsal white spot opposite this costal one, which latter is then the more strongly pronounced, whilst in the rarest and most remarkable variety yet known, for which I propose the name *fasciata*, these opposite spots are replaced by a complete but rather obscure whitish fascia: the tendency towards this form of variation seems stronger in the female than in the male sex.

A. Vinella, which I have so named in compliment to my friend, Mr. A. C. Vine, of Brighton, who was the first to discover it and has done much excellent work among the *Lepidoptera* of Sussex, is closely allied to *anthyllidella*, Hb., but is easily separated from it by its *uniformly darker colour*, which is more particularly noticeable in the hind-wings, and by the fact that it has *not* as a rule any pale costal or dorsal spots, and when these are present they are *white*, whereas *anthyllidella* as a rule *has* pale opposite spots which are *ochreous*. *Vinella* is also obviously distinct from all the allied foreign species that are to be found in the Frey, Stainton, Walsingham, and Zeller collections.

The larva, which I have not yet seen, feeds on *Genista tinctoria*, and Mr. W. H. B. Fletcher, who believes that there are two broods in the year, tells me that it spins two leaves of its food-plant either flat together or attaches them to the stem, and feeds on their inner surfaces, readily moving from one such habitation to another. Larvæ which he found near Brighton in October and November, 1892, were sleeved out in his garden on a plant of *Cytisus racemosus*, which, however, was killed during the winter by severe frost, and in March, 1893, it was found that the surviving larvæ had already pupated, and the moths emerged early in the following summer. It is probable that

such early maturity was due to the abnormal conditions under which the larvæ were kept, for Mr. Vine believes that in nature they hibernate in that stage, since he finds them nearly full-fed at the end of April. Mr. Vine first made the acquaintance of the insect in 1886, when he both bred and captured specimens in the neighbourhood of Brighton in July. By sweeping amongst *Genista tinctoria* in the late afternoon and evening in the same locality Mr. Fletcher has taken the imagines at large on August 2nd and 7th, 1890, June 15th, 1893, August 23rd, 1895, and July 29th, 1896, and on August 2nd, 1890, he swept up a pair *in cop*.

Mr. Vine, assuming that *A. Vinella* must be *immaculatella*, Dgl., has sent out a few specimens under this name, but in a paper by myself, which will shortly follow this one, and will clear up the mystery surrounding *immaculatella*, I shall be able to prove that these two species are totally distinct.

The Rectory, Corfe Castle :
July 16th, 1898.

P.S.—Since the above was in print, Mr. Vine has kindly supplied me with some further information about the life-history of *A. Vinella*. He says that the larvæ which he finds becoming full-fed in the latter part of April pupate at once, and produce imagines during May, and that the larvæ of the second brood feed in June and July, and the moths emerge in July and August, worn examples occurring at large even in September. There seems no doubt that in Nature the insect hibernates in the larval state.—E. R. B., October 16th, 1891.

“HORN-FEEDING LARVÆ.”

[*vide* “Nature,” LVIII, 140-1, figs. (No. 1493 : 9, VI, 1898)].

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

(WITH NOTE BY J. HARTLEY DURRANT, F.E.S.).

Mr. W. H. McCorquodale contributed a note under the above title to “Nature,” and figured the skull and horns of a Hartebeeste showing the protruding cocoons of a *Tinea* which he identified as *Tinea vastella*, Zeller. He stated that the skull of the Hartebeeste figured was received from West Africa, and yet he wrote on p. 141—“The habitat of the moth was generally supposed to be Africa, but Sir George Hampson showed me some specimens which he had collected in various districts in India.”

Micro-Lepidopterists had “generally supposed” the habitat of this moth to be Africa for the following reasons:—

(1). In 1852 Zeller described it as *Euplocamus* (*Scardia*) *vastellus*, his type is before me and is labelled "Caffraria," which confirms Zeller's published note, "Habitat in tractibus fluviorum Limpoponis et Gariepis."

(2). In 1860, when Stainton redescribed this species as *Tinea gigantella*, he stated that his types were from Knysna (Cape Colony).

(3). Walker, in 1863, created another synonym when he described specimens of the same species from the Cape as *Tinea lucidella*.

(4). Specimens received from Africa are not uncommon; the labels on the long series in my collection show that the species occurs in the Sudan, Natal, Cape Colony, Mashonaland, and Delagoa Bay (specimens from Kilima Njaro perhaps represent a closely allied species). I have seen others from the Transvaal, it is known to occur in Gambia, and the skull and cocoons figured by Mr. McCorquodale were obtained from West Africa, while a pair of horns from Natal with protruding cocoons (similar to those figured) has long been exhibited in the British Museum (Natural History) presented by myself.

Before adding *Tinea vastella* to the Indian list a careful study of the maxillary palpi is necessary; a critical examination of the Indian specimens will probably convince Mr. McCorquodale (as it has already convinced me, and I may now add Sir George Hampson also) that they differ in structure from the true *vastella*.

I am acquainted with at least five Indian species closely allied to *vastella*, one of which (*orientalis*, Stainton) is also a horn-feeding species, and the others probably have similar habits. *Micropteryx*? *unicella*, Walker, is a *Tinea* belonging to this group, and *sacerdos*, Walsingham, has probably light coloured varieties; two species are at present undescribed, but they are provisionally labelled *hockingi*, MS. (this is probably the same as the Indian specimens in the British Museum series of *lucidella*), and *minchini*, MS.

It would be rash to say that *vastella* does not occur in India, but there is not an Indian exponent of that species in my collection, nor have I been able to recognise *vastella* among the numerous Indian specimens of this group that I have seen.

So far I have only dealt with a statement which, as it stands, conveys an impression contrary to fact; but nearly all the remainder of Mr. McCorquodale's note is also misleading.

It is not stated whether he observed the larva, but as he describes the imago it would at first sight appear that he had bred it. Believing that the Kilima Njaro specimens, referred to above, represent a species with similar habits closely allied to but distinct from *vastella*, the de-

scription was studied with care in the endeavour to ascertain whether Mr. McCorquodale's species was *vastella* or *jacksoni*, MS. On reading "pale gilded ochraceous," and again "abdomen extending much beyond the hind-wings," the language struck me as familiar, and the description of a mere accident of setting was obviously "Walkerian." A reference to Walker's description of *Tinea lucidella* [British Museum Catalogue of Lepidoptera Heterocera, vol. XXVIII, p. 474 (1863)] proved that the description given by Mr. McCorquodale is a copy word for word of Walker's original, but the punctuation has been slightly varied; the author should certainly have stated this, if only to prevent unnecessary research. At the conclusion of his communication he remarks:—"I am indebted to Lord Walsingham, who kindly gave me some very useful notes, he having himself written a few years ago on the subject." The reference to my paper "On the *Tortricidæ*, *Tineidæ* and *Pterophoridæ* of South Africa" [Trans. Entomological Society of London, 1881, pp. 238-42] was distinctly useful, for Mr. Haliday's remarks on Dr. Fitzgibbon's observations were given in a compact form, and from this paper was obtained the information given to me by Lieut.-Col. the Hon. Wenham Coke and Mr. Roland Trimen (not "Truman"). The use of the inverted commas are very misleading, for the passages are not exact quotations but précis-work.

With the exception of the figures and a few unimportant remarks Mr. McCorquodale's note is not in any part original; even the conclusion that "the question must, however, remain *sub judice*" was anticipated in 1881 by my remark "the question must be considered to be 'sub judice.'"

Merton Hall, Thetford:
30th September, 1898.

[Those who devote their time to compiling Indexes willingly give references from their MSS., and they have a right to expect that the information obtained by their help should be published in such a form as will render it unnecessary for the Indexer to reduplicate his work by analysing the paper to rediscover the origin of his own references. When, at Lord Walsingham's request, I extracted from our MS. Index of the *Micro-Lepidoptera* the references, &c., to *Tinea vastella*, I apparently omitted to state that Mr. Trimen exhibited on May 4th, 1881, at a Meeting of the Entomological Society of London, specimens of this species, "the larvæ of which had fed in an inkstand fabricated from a hoof of the late Prince Imperial's horse, from which multitudes of the insect appeared" [*vide* Entomologist's Monthly Magazine, XVIII, p. 20 (1881)].—JNO. HARTLEY DURRANT].

HYPERETES GUESTFALICUS, KOLBE, A GENUS AND SPECIES OF
APTEROUS *PSOCIDÆ* NEW TO BRITAIN.

BY ROBERT McLACHLAN, F.R.S., &c.

Within the last twenty years several new genera and species of apterous *Psocidæ*, allied to *Atropos* and *Clothilla*, have been described in Germany, chiefly by Kolbe and Bertkau. No doubt these are still passed over as only immature conditions of winged forms. But in addition to differences in thoracic structure, the number of joints in the antennæ is always greater. The tarsi are always three-jointed, and it is stated that in the early conditions of the winged forms the tarsi are always two-jointed, even where they are three-jointed in the imago. One of the most conspicuous of these apterous forms is *Hyperetes guestfalicus*, Kolbe (Jahresb. westfälischen prov. Vereins für Wissenschaft, 1879—80, p. 132, fig. 22). I have little doubt this insect is to be found almost anywhere in Britain. It was originally supposed to be attached to *Abies excelsa*. Conifers always afford grateful shelter to *Psocidæ*, but this species has since been found in Germany on various trees.

One day this autumn when Mr. C. A. Briggs visited me, I called his attention to the figure of *Hyperetes*, and he soon after found the insect plentifully on an old beech in the Valley of the Rocks near Lynton; and acting on my suggestion that it was probably in his own garden at Lynmouth, he succeeded in finding it there on *Quercus ilex*. September, October and November are given as the months for its appearance. Kolbe's original description of the genus is as follows (translated):—

HYPERETES.

Without rudiments of wings. Antennæ 23-jointed. Head large. Eyes prominent. Palpi short, last joint short, securiform. Mandibles short, bi-apical, internally much sinuate with a moveable tooth at the base. Labrum narrow, semi-circular. Meso- and metathorax separated. Abdomen with nine segments.

The description of the species I take from Kolbe's appendix to Rostock's "Netzflügler Deutschlands," p. 190, because it is later than the original.

H. GUESTFALICUS.

Grey to brownish, dappled in a variegated manner. Vertex whitish-grey, with two brown longitudinal lines and a small marking in the middle. Palpi whitish, last joint brownish. Thorax above with brown lateral lines. Metathorax with a short median longitudinal line. Abdomen above with scale-like spots, which are arranged in longitudinal lines: these spots are variable, red, brown and white. Two median pale longitudinal lines. Legs whitish, femora at the apex with one, and tibiæ with two, brown rings: tarsi whitish.

Length, 2 mm.

From the few examples I have examined it would appear to be a variable insect, but very remarkable from the peculiar *dappled* nature of the markings on the abdomen.

A more critical generic description is given by Hagen* in the Stett. ent. Zeit., 1883, pp. 315, 316, and he there describes a North American species (*H. tessulatus*), which he suggests may not improbably be identical with the European. In fact, in some points Hagen's description suits the British insect better than Kolbe's; the specific description (pp. 316—319) is gone into with great detail, and includes many points that are more of generic than specific value.

Now that attention is called to these minute forms in this country, it is reasonable to suppose that others will be discovered here.

There exist also mature apterous forms more closely allied to the winged forms, and with about the same number of joints (13) in the antennæ (such as *Bertkauia*, Kolbe, *Leptella*, Reuter, &c.), and these have two-jointed tarsi. The risk of confusion with immature conditions of winged forms is here greater, and the distinction seems mainly to lie in the thoracic structure. Moreover, it must be remembered that occasionally (*Kolbia*, Bertkau, *Mesopsocus*, Kolbe, &c.) the ♂ has ample wings, whereas the ♀ is apterous, or nearly so, and is also without ocelli. Our very common *Elipsocus* (*Mesopsocus*) *unipunctatus* is a case in point.

Lewisham, London :
October, 1898.

ON *NEUROPTERA* COLLECTED BY MR. MALCOLM BURR
IN WALLACHIA, BOSNIA, HERCEGOVINA, &c., IN JULY AND
AUGUST, 1898.

BY ROBERT McLACHLAN, F.R.S., &c.

During a tour this summer in Eastern Europe, that energetic young entomologist, Mr. Malcolm Burr, collected a few *Neuroptera*, which he has presented to me, and which I have pleasure in noticing here, because there are two or three species of special interest, and also because very little is known of even the most common species of the districts visited.

PLANIPENNIA.

BITTACUS HAGENI, Brauer:—Comana (sometimes spelt Komana), Wallachia, July 12th, 1 ♂. Of special interest in the local distribution of the species (*cf. ante* p. 233).

* Hagen (p. 318, pl. ii, fig. ii, 2) describes and figures a bristly knob on each side of the mesothorax at the outer angles, which probably represents an aborted wing stump. This is clearly indicated in a *camera lucida* sketch sent to me by Mr. Morton, who was unacquainted with Hagen's description, but it is not alluded to by Kolbe.—R. McL.

PALPARES LIBELLULOIDES, L.:—Blagaj near Mostar, Herzegovina, August 3rd, 3 ♀.

MACRONEMURUS APPENDICULATUS, Latr.:—Blagaj near Mostar, August 3rd, 1 ♂, 1 ♀.

ASCALAPHUS KOLYVANENSIS, Laxm.:—Comana, July 12th, 1 ♂.

CHRYSOPA VULGARIS, Schnd.:—Bufta near Bucarest, Wallachia, July 14th, one example.

ODONATA.

ORTHETRUM ALBISTYLA, Selys.:—Comana, Wallachia, July 12th, 2 ♂. Not, I think, previously recorded from the district.

ORTHETRUM CANCELLATUM, L.:—Bucarest, July 11th, 1 ♀; Comana, July 12th, 1 ♀; Blagaj, August 3rd, 1 ♀.

This and the preceding species are closely allied structurally. The males of *albistyla* noticed above are fully adult, and have the slender form and pale appendages peculiar to the species, whereas the females appear to be very decidedly *cancellatum*, having all the characters of that species; the female example from Comana is immature, and yet has the anal styles deep black, whereas they remain pale in all stages of maturity in *albistyla*.

ORTHETRUM BRUNNEUM, Fonsc.:—Illidzo, Bosnia, July 26th, 1 ♂.

ORTHETRUM RAMBURI, Selys.:—Illidzo, Bosnia, July 26th, 1 ♂; Bufta, Bucarest, July 14th, 3 ♀. Probably not before recorded from the district.

The male seems to agree entirely with others from Algeria: the females are immature, but I think the identification is correct, though it would have been more satisfactory to have had both sexes from each locality.

SYMPETRUM FLAVEOLUM, L.:—Igmán near Slidze, Bosnia, July 21st, 1 ♂; Illidzo, July 26th, 1 ♂, 1 ♀.

SYMPETRUM SANGUINEUM, Müll.:—Blagaj, August 3rd, 1 ♀.

ANAX FORMOSUS, V. d. L.:—Blagaj, August 3rd, 1 ♂.

HEMIANAX EPHIPPIGER, Burm.:—In a street at Cetinje in Montenegro, second week in August, 1 ♀. An interesting capture.

The home of this species is Africa (but extending into Asia), and it has to be proved that it breeds in Europe. It has been recorded from Moldavia, from Mar-seilles, and a large migratory swarm was observed in Piedmont by the late M. Victor Ghilliani. Quite recently an example was caught near Zürich by Dr. Ris, and another in the street at Brussels.

CALOPTERYX SPLENDENS, Harris.:—Bosna Brod, Bosnia, July 17th, 1 ♂ of the form having the apex of the wings narrowly pale, intermediate between the "race septentrionale" and the "race méridionale" (*xanthostoma*, Charp.).

AGRION PUELLA, L.:—Igmán near Slidze, July 21st, 1 ♂.

ERYTHROMMA NAJAS, Hansm.:—Bucarest, July 11th, 2 ♀.

LESTES VIRENS, Charp.:—Comana, July 12th, 2 ♂.

LESTES BARBARA, F.:—Bucarest, July 11th, 1 ♂, 1 ♀; Comana, July 12th, 1 ♀.

At Budapest (Hungary), *en route*, Mr. Burr took *Chrysopa phyllochroma*, Wesm., *Sympetrum meridionale*, Selys, and *Lestes barbara*, F.

Lewisham, London:
September 24th, 1898.

NOTES ON A NEST OF *BOMBUS HORTORUM*, RACE
SUBTERRANEUS.

BY EDWARD SAUNDERS, F.L.S.

I have recently (September 10th) received from Mr. W. H. Tuck, of Tostock, Bury St. Edmunds, the contents of a nest of *Bombus hortorum*, race *subterraneus*. The bees had selected a mole's nest to rear its young in, which was situated "quite five feet away from the entrance hole," and, according to a diagram sent me by Mr. Tuck, about a foot and a half beneath the surface of the ground; the nest, which was formed of dried leaves, he says swarmed with Dipterous larvæ of all sizes, and also contained two *Cryptophagi*, and two other beetles. The bees sent consisted of eight large ♀, 20—22 mm., of the usual dark variety, having traces of paler hairs on the pronotum and scutellum, and the fourth abdominal segment only clothed with dusky whitish hairs; three large ♀, 20—22 mm., entirely black (var. *Harrisellus*), fourteen smaller (♀) (var. *Harrisellus*), varying much in size from 15 down to 9 mm., and a corresponding series of nineteen ♀ of the white-tailed form, having, besides the pale hairs on the pronotum and scutellum, a more or less defined band on the apex of the first abdominal segment. All the specimens of this latter variety of the ♀ have both the 4th and 5th segments of the abdomen clothed with white hairs, differing in this respect from the ♀s, which have pale hairs on the 4th segment only, and these hairs of a more yellowish tint than those of the ♀; in looking at the specimens in my collection, I find this character holds good in all I have; I cannot find any ♀ of the *subterraneus* race which has the 5th segment white, nor any ♀ with it black. In the nest were two males, one a brightly coloured one of the ordinary *hortorum* and *subterraneus* type, and the other a *Harrisellus*. Unfortunately, the whole contents of the nest were not secured, as the bees were not stupefied on account of the distance the nest was from its entrance hole. Mr. Tuck had poured in a wine-glass full of turpentine the previous evening, but it had very little effect on the bees, and he had to catch them as they emerged; he thinks, however, that he secured most of the females and workers, but that many of the males escaped. The brightly banded ♂ was taken *in cop.* with a *Harrisellus*, ♀; I have a similar pair in my collection found together by the late Mr. C. G. Hall at Dover. It would be interesting to ascertain whether the colour difference between the females and workers observed in this nest are always maintained. Of course it is a very variable species, and every shade of variation

between the black and banded forms occurs, but it was new to me to find the workers of a nest all alike, and of a different type of colouring to the females; it is possibly an analogous case to that of the effects of stylopization. In the latter, where the ovaries are affected by the parasite, and more or less atrophied, the tendency is for the ♀ to resemble the ♂, and it is not, therefore, improbable that the workers of a nest, which are only females with undeveloped ovaries, should in the same way tend to assume the ♂ livery; this, of course, in this case being on the assumption that the male was of the banded white tailed var., and not a *Harrisellus*.

St. Ann's, Woking:

September 16th, 1898.

XYLOCORIDEA BREVIPENNIS, REUTER: A NEW GENUS AND SPECIES TO THE LIST OF BRITISH *HEMIPTERA*.

BY EDWARD SAUNDERS, F.L.S.

For the capture of this very interesting addition to our fauna we are indebted to Mr. Claude Morley, who took three specimens of it under the bark of hawthorn bushes in Richmond Park on the 2nd of last March. It was first described by Reuter in *Petites Nouvelles Entomologiques*, ii, p. 55, and subsequently in his *Monographia Anthocoridarum Orbis terrestris*, p. 146, in which its capture is recorded from France (Paris and Hyères), Spain and Italy (Naples and Vorno p. Lucca).

Generically it may be distinguished from *Xylocoris*, its nearest British ally, by the shorter 1st and longer 2nd joints of its rostrum, by the long 4th joint of the antennæ, which is much longer than the 3rd (this latter being unusually short), and by the more remote position of the eyes from the anterior margin of the pronotum, as well as by its abbreviated elytra.

It is an elongate, rather flat insect, with very shining black head, thorax and abdomen with a few scattered long hairs, and dull, slightly paler elytra; the eyes are situated nearly in the centre of the sides of the head, being about equidistant from the apex of the pronotum and of that of the face; the 2nd joint of the antennæ is pale and slightly thickened, and dusky towards the apex; pronotum narrow, with a slight apical constriction, lateral margins carinated, slightly reflexed and curved, tending to become sinuate just before the posterior angles, which are acute, base widely emarginate; elytra, about as long as the pronotum and half the head, dull, with the embolium alone shining, clothed with a sparse suberect pilosity, membrane reduced to a mere strip; abdomen a good deal wider than the elytra, suboval; legs, with the femora, blackish-brown, tibiæ slightly paler.

L., 2·5 mm.

St. Ann's, Woking:

October 18th, 1898.

COLIAS EDUSA, &c., IN THE ISLE OF SHEPPEY.

BY JAMES J. WALKER, R.N., F.L.S., &c.

In this locality *Colias Edusa* has been observed in sufficient numbers to constitute 1898 at least a second-rate "*Edusa* year." The first specimen of the season (a ♂) was noticed by me in a busy part of Chatham Dockyard on August 16th; and on the 20th it appeared in our Sheppey lucerne-fields, sparingly, it is true, but I find that more than two dozen examples have been taken by the local collectors up to the middle of September. Of those I have seen, some of the females are remarkable as well for their size as for the width of the dark border of the wings, which, in one instance, is almost devoid of the usual pale spots. *C. Hyale* has not been seen this year, as far as can be ascertained.

Of the other species which are more or less irregular in their occurrence in Britain, a few *Pyrameis cardui* were seen by me on our cliffs on June 12th, their worn and travel-stained appearance bearing eloquent testimony to a long flight from more sunny climes; and, as usual, they were accompanied by *Plusia gamma*, in equally worn condition. The offspring of these immigrants appeared about the third week of August in our lucerne-fields, in abundance and superb condition; and even now stragglers of both species may be seen on bright days.

Some half dozen specimens of *Sphinx convolvuli* have fallen into the hands of the collectors here, and I have heard of several having been taken at Chatham. Nearly all seem to have been picked up casually at rest about the middle of September, and most of them are in worn condition. Two fine larvæ of *Acherontia Atropos*—"tater-dorgs," as the Sheppey rustics invariably call them—have also been obtained this autumn in the potato fields.

The floods of last November have proved very disastrous to two of our Sheppey specialities, *Clisiocampa castrensis* and *Acidalia emutaria*, both of which have been exceedingly scarce this year. The eggs of the former species, which are laid in the same manner as those of *C. neustria* on the stems of salt-marsh plants, were probably washed away, in most cases, into situations quite unsuitable for the larvæ; and the best locality for *A. emutaria* was totally destroyed by the breaking down of the sea-wall, and its subsequent repair.

Porthesia chrysorrhæa has been fairly abundant in all its stages in the locality where it was found last year, and I have seen several

broods of the larvæ on the hedgerows at a considerable distance from the main colony ; while the number of white webs on the sloe bushes, in which the young larvæ are snugly ensconced for the winter, give fair promise that the species will be at least as plentiful in the coming year 1899.

23, Ranelagh Road, Sheerness :

October 7th, 1898.

Colias Edusa near Guildford.—I can answer the editorial question as to the whereabouts of this species, as far as one specimen is concerned, having seen one in a field near Guildford on the 4th of this month.—R. M. PRIDEAUX, 105, Regate Hill : September 30th, 1898.

Colias Edusa near Land's End.—In reply to the query on page 231 of the Ent. Mo. Mag., as to "where is *C. Edusa* this year?" it may be of interest to note that I saw this species on September 2nd and 4th last at Sennen Cove, near Land's End.—C. BARTLETT, Ingleside, 58, Woodstock Road, Bristol : October 4th, 1898.

Acronycta alni at Clifton.—Two larvæ were found this year by a friend of mine ; one in Clifton feeding on weeping willow, the other in Leigh Woods crawling amongst grass. I took a *Plusia festucae* at light on July 23rd ; this is a rare species for this neighbourhood.—ID.

Xanthia ocellaris, Bkh., &c., at Woking.—I had the good fortune to capture a slightly rubbed specimen of this rarity at sugar in our garden about 6.30 p.m., on September 28th. Mr. Barrett has seen the specimen, and agrees that it is the above named species. Amongst other things taken at Woking this year I might mention *Epunda nigra* and *Polia flavocincta*, several of which have been taken at sugar, and *Ennomos erosaria* and *fuscantaria* at light. I have also taken four caterpillars at sugar, one of which was *Dianthæcia capsicola*.—H. A. SAUNDERS, St. Ann's, Woking : October, 1898.

Second brood of Lycæna Alsus.—In Mr. Barrett's work on the *Lepidoptera* of the British Islands, vol. i, he states with regard to *Lycæna Alsus* that evidence of its being double-brooded in this country appears to be wanting. It may, therefore, be of interest to know that I captured several specimens during August of this year on the top of the hill between Swanage and Durlston Head. They were in fine condition, and fully as large as the specimens usually occurring in spring.—GEO. C. GRIFFITHS, 43, Caledonia Place, Clifton, Bristol : October 2nd, 1898.

Lycæna Lycidas in the Zermatt Valley.—I am anxious to make it known that *L. Lycidas* is to be found at St. Nicolas. On July 18th of this year I took six

specimens; Mr. Backmaster also secured some afterwards. Since it has, I believe, on one occasion been reported from Visp, it appears probable that it may be found in suitable localities all along the Zermatt Valley, as well as at Berisal. St. Nicolas is very good hunting ground, and many other good things are numerous. Unfortunately I left the afternoon of the day of my captures, and was not able to follow up my success. But with the railway up to the door of a most comfortable and moderate hotel ("The Grand," Otho Zumofeen, Proprietor), and in the centre of the Zermatt Valley, St. Nicolas is, as some know, a very El Dorado for entomologists.—F. E. LOWE, St. Stephen's Vicarage, Guernsey: *September, 1898.*

Bombus Smithianus near Rye.—I happened to be in the marshes near Rye on August 25th, when the marsh mallow was blooming profusely on the banks of the ditches. The flowers were very attractive to the males of several *Bombi*, the commonest being *B. terrestris*, *lapidarius*, and a bright yellow species which, on examination, proved to be *B. Smithianus*, pale form. I visited these marshes again on September 8th, when this species was again found to be quite one of the commonest on the wing. On neither occasion did I take a single male of the very similarly coloured *B. venustus*, which in most places in the south is the only species of the two met with. I took, however, on the last occasion two workers and a female—the former on marsh mallow, the latter on lucerne, which, under the circumstances, I feel convinced are genuine specimens of *B. Smithianus*. The female is a larger and more heavily built insect than females of *venustus* from this neighbourhood, the hairs are denser and more even, and on the abdomen much more erect than in *venustus*. It is entirely clothed with pale hairs, of a yellower tint than in *venustus*, with the exception of the bright fulvous patch on the dorsal surface of the thorax. This fulvous patch is brighter than in *venustus*, and it extends over a smaller area, being surrounded by the pale yellow hairs, a broad band of which in front and another behind, each shading off into the fulvous, gives both sexes of this pale form of *Smithianus* a very distinct appearance. Two females which I took in a field of late red clover near Kingsdown in September, 1895, agree with the female taken at Rye in the above particulars, and I think there can be no doubt that they are also examples of *Smithianus*, especially as this species is not unknown from this neighbourhood, the Rev. F. D. Morice having taken two males at Kingsdown in August, 1892. A very dark worker of *B. venustus*, with the hairs on the thorax almost black, fell to my net at St. Margaret's Bay in August last. The dark variety of *venustus* is, I believe, rare in this country.—F. W. L. SLADEN, Ripple Court, Ringwould, Dover: *September, 1898.*

Since the above was written my brother has brought me some *Bombi* he has just taken at Mount Cassel, Flanders, amongst them two females exactly similar to the one described above, a male of *Smithianus* being in the batch, while there was not one of *venustus*, though several of *agrorum*. A worker received from Friese, and labelled "*muscorum* (= *cognatus*, Fabr.)"—both of which names seem to be applied to this species on the continent—has also a very distinct ring of yellow hairs surrounding the patch of fulvous in the centre of the thorax, and one might almost be tempted to consider this a specific character by which *B. Smithianus* could be easily recognised, were it not that in its typical form found in Shetland—in which

the shape of the armature seems to be almost the only character common between it and its southern relative—not a trace of any pale yellow setting to the fulvous, which is of a much richer tint, can be found.—F. W. L. S.

Callicera aenea, F., in the New Forest in 1898.—In vol. xxv, p. 126, of this Magazine, Mr. G. H. Verrall recorded the capture of three specimens of *Callicera aenea* in different parts of England during 1888, and remarked he thought this year would rank amongst Dipterists as the “*Callicera*” year. This proved correct for some time, as during the following eight years only two were recorded, but in 1897 seven came under my notice taken in the New Forest alone. This fine record, however, has now been beaten, nine specimens having been secured in the same district during the summer of this year, eight of which were netted by myself and one by Mr. C. W. Dale. Six of my specimens (3 ♂ and 3 ♀) were taken on July 2nd at Rhinefields, where (although so late in the season) most of the rhododendrons were still in bloom, and I netted the first one soon after entering the ride on the same bush where I saw, but did not secure, *Callicera* last year. Then three more were added to the bag in about as many minutes, and the fifth was taken shortly afterwards, when, to use a fly fishing expression, “the rise was over,” and I never saw another until I took the sixth about three hours later. The first five were all taken upon one bush without moving a yard, and so rapidly did they appear that two were netted with two sweeps right and left and boxed together. On July 5th I took one ♀ in Brick-kiln Enclosure on dog rose, and on August 11th another ♀ in the same place on a late flowering bramble which, owing to the very hot and dry weather, was almost the only plant left in bloom.—FREDK. C. ADAMS, 68, St. Ermin’s Mansions, S.W.: October, 1898.

Mallota eristoloides, Lw., in the New Forest in 1898.—This fine Dipteran seems to be spreading in the New Forest, as this year I met with it in three fresh localities, viz., Coxlease, Brick-kiln and Bolder Wood Enclosures. The first two it is true are not far from Park Ground, where I took the first recorded British specimen (a ♀), but the latter is four miles away, and two miles distant from Rhinefields, where Col. Yerbury and myself took several last year, which all proved to be males. This year I collected six, of which three are fortunately females, as follows:—one ♀, June 28th, Coxlease, settled on dwarf oak; one ♀, June 29th, Bolder Wood, on Portugal laurel bloom; two ♂, July 1st, Brick-kiln, on dog rose; one ♂, July 2nd, Rhinefields, on Portugal laurel; one ♀, July 5th, Brick-kiln, on dog rose; and in addition to the above I saw quite as many more, chiefly on dog rose, which were missed through one or other of the temper-trying incidents so well known to collectors. There was a wonderful show of blossom on the wild roses this year, the scent of which seems very attractive to *Mallota*, and the fly was still out when I left Lyndhurst on July 9th, but I did not hear of any being taken during my absence of a month.—Id.

Coleopterous notes for August.—August, more especially in a hot dry summer like the past, is usually considered a very barren month for the collector; I have, however, during the few days I have given to collecting, been very fortunate in my captures.

From August 14th to 19th I was staying at Sandown, Isle of Wight, there I found *Staphylinus stercorarius*, Ol., flying in the hot sunshine, but nothing else worth recording. A day at Blackgang Chine on the 17th, with the help of my wife and niece, secured a good series of *Cicindela germanica*, L., a beetle easily enough seen, but most difficult to secure, from its extraordinary speed in running, especially when the temperature is between 120° and 130° in the sun. The cliffs at Luccombe produced *Bledius atricapillus*, Germ., in all its stages in the utmost profusion, the cliffs being perfectly riddled with the borings; *B. spectabilis*, Kr., occurred with it in more scanty numbers, I have always taken this insect before on sandy marshy flats on the shore.

August 20th was spent at Wicken Fen with Mr. F. Bouskell and Mr. H. Donisthorpe, on a hunt for *Oberia oculata*, L.: we all three secured a good number of this handsome Longicorn by persistent work, the day being exceptionally favourable. During the Zoological Congress, Mr. Donisthorpe and I went out on the 24th to try our luck on the Devil's Dyke, Swaffham, for *Harpalus obscurus*, F., though the hot dry weather was against us, I turned up one after a few minutes' work, and we eventually secured seven in all. I kept mine alive for a few days in glass tubes to allow them to mature, and one of the four ate its way out through half an inch of cork during the night and escaped; he thoroughly deserved his liberty.

From the 27th to 31st I was again at Sandown, here *Aphodii* were becoming very common, and I secured a single specimen of *Geotrupus vernalis*, L. The afternoon of the 31st was spent on the Bembridge flats, here I took a solitary specimen of *Bledius tricornis*, Herbst, while *Tachys scutellaris*, Germ., both species of *Dichirotrichus*, and many other *Harpalini*, were in abundance. Turning over a plank lying in long dry grass I saw a number of beetles, which I at once recognised as something new to me, they bolted off in every direction into the grass, but, helped by my niece (Miss Banks), I managed by careful work to secure five fine specimens of *Anisodactylus pæciloides*, Steph. I have come across no record of the capture of this insect since one by Mr. Champion some 28 years ago (Ent. Mo. Mag., vol. vi, p. 231); it must be very scarce in most of our modern collections.—T. HUDSON BEARE, King's Road, Richmond: September 21st, 1898.

[*A. pæciloides* was found in plenty by Mr. W. Holland last year at Bembridge, but not recorded.—G. C. C.]

Coleoptera near Bridgend.—With the aid of a bicycle, I have been able this season to explore an interesting bit of the Glamorgan coast near Bridgend, in the parish of Merthyr Mawr, the most prolific ground being the sand-hills close to the ruins of Candleston Castle. There is a tiny valley running through the fir woods (which have been planted to prevent the drifting of the sand), with a stream, which in summer loses itself in the sand. All the species mentioned below occurred here:—

Tachypus pallipes, swarming in June and July on the sand; *Bembidium pallidipenne*, common, and preying on the myriads of *Bledius arenarius*; *Dyschirius politus*, a dull var., generally reddish towards the apex of the elytra; *Georyssus pygmaeus*, very common; *Bledius subterraneus*, rare; *Parnus nitidulus*, several, buried in sand at roots of small plants; *Anisotoma dubia*, not uncommon, and a

single *Cyrtusa minuta*; *Saprinus rugifrons*, common under horse-dung and in dead rabbits; *Hippuriphila Modeeri*, very common, on *Equisetum*; *Gronops lunatus* and *Sibinia primita*, fairly common; *Bagous luteiventris*, var. *nigritarsis*, several examples: Mr. Champion has kindly named this for me, as well as several others; *Tychius squamulatus*, rare, on *Lotus corniculatus*.—B. TOMLIN, Llandaff: September 21st, 1898.

Nebria complanata, Linn., at Briton Ferry.—I found this species on September 21st locally abundant near Briton Ferry, in Dillwyn's old locality, under logs, old boots and hats, &c., on the sea-shore. They are very fond of hiding in the crevices of the wood, but do not seem to burrow in the sand as *Broscus* does, which was swarming in the same place. Colonies of 4—6 were frequent, and in one case I got 15 together. When unearthed, they are not in any hurry to run, trusting apparently to their protective colouring, but when once off they go like the wind. The only other species of importance that I got was *Hypera fasciculata*.—ID.: September 23rd, 1898.

Coleoptera at Llanfairfechan, North Wales.—During a stay of a fortnight at the above North Wales resort in June last I spent some time in looking up the Coleopterous fauna of the neighbourhood. No doubt this locality would prove to be rich in *Coleoptera* if worked systematically, as there is no lack of variety in the collecting grounds to choose from. The sands by the sea are extensive, and bordered here and there by marshes of a brackish character, in which *Pogonius chalcus* and *Dichrotrichus pubescens* abound; several streams flow from the hill sides into these marshes, and there are hills of considerable elevation (2000—3000 ft.) within three or four miles of the town. Through the frequency of rain storms I was forced to give up the idea of collecting on the high ground, excepting for a very short time on two occasions, and the only species of interest noticed were *Nebria Gyllenhalii*, *Myllæna infusata*, *M. brevicornis*, and *Lesteva pubescens*, out of moss by the side of a tarn, and *Corymbites æneus* (2), under stones, this latter species being probably about over. About the hill side streams, a short distance from the town, several of the riparial *Homalotæ* were found, including *H. currax*, *H. pavens*, *H. cambrica* (common), *H. fragilis*, *H. eximia*, *H. hygrotapora*, and, besides these, *Gnypeta cærulea* (2), *Bembidium tibiale* and *B. prasinum*, and single specimens of *Agathidium nigrinum* and *Amphicyllis globus*, var. *ferrugineus*, under stones in the bed of a stream, these latter possibly carried there when the stream was swollen by heavy rain. In the marshy ground by the shore the following were taken:—*Trechus lapidosus*, *Cillelus lateralis*, *Homalota orbata*, abundant in marine refuse, and *H. macrocera* (1), in dead bird, *Myllæna Kraatzi* (1), under a stone, *Ocypus ater*, and *Heteroceris sericans*. At those points where the streams from the hills entered the marshes I found *Cryptohypnus dermestoides*, with the variety *quadriguttatus*, very plentiful beneath stones, and they appeared to prefer those stones which covered the closely matted roots of the quitch grass (*Triticum repens*). *Cryptohypnus maritimus* was found very sparingly under stones on the banks of streams. The sweeping-net was not much used, the following being the only species, other than quite common ones, taken by that means:—*Aleochara ruficornis* (♂), *Syntomium æneum*, *Autalia punct-*

ticollis (1), *Throscus dermestoides*, *Corymbites quercus*, *Hydrocyphon deflexicollis*, *Rhinoncus castor*, and *Psylliodes chalcomera*.—E. GEO. ELLIMAN, Chesham, Bucks : October 14th, 1898.

Note on a small varietal form of Dyschirius æneus, Dej., occurring in the Isle of Wight, &c.—Canon Fowler has recorded (Col. Brit. Islands, i, p. 24), the capture by himself at Luccombe, in April, 1885, of a single example of a narrow form of *D. æneus*, with the sides of the thorax less rounded than usual. Last July I found about a dozen specimens of this form in the same locality—in sand, kept moist by a trickle of fresh water—unaccompanied by typical examples, and as they seemed to differ constantly from *D. æneus*, I sent one of them to M. Bedel for examination. He informs me that he does not possess any specimens like them, and suggests that they may be referable to *D. remotepunctatus*, Putz., described from a single individual found by the side of salt water on the coast of Holland, an insect now regarded as synonymous with *D. æneus*. These Luccombe specimens do not quite accord with Putzeys' description of *D. remotepunctatus* (Ann. Soc. Ent. Belg., 1866, p. 83), all of them being smaller than any typical *D. æneus* in my collection, whereas Putzeys gives the length as $4\frac{1}{2}$ millim. They agree, however, in having the thorax and elytra relatively narrower than in *D. æneus*, approaching *D. salinus*, Schaum, in this respect. The elytra are finely striate, the striæ with somewhat widely separated five punctures. Mr. J. J. Walker has also met with this insect at Swanage.—G. C. CHAMPION, Horsell, Woking : October 10th, 1898.

Emesa mantis, Fabr.: synonymical note.—I have recently had occasion to examine the type of this species in the British Museum, and find that it certainly belongs to the genus *Westermannia*, Dohrn, it being, in fact, closely allied to the Central-American *E. annulata*, Dohrn, from which it differs in its smaller size and more slender form, and in having the elytra more mottled with fuscous, and the blackish annulations of the legs not so broad. *E. mantis*, with some other Fabrician species, was not identified by Dohrn in his Monograph of the *Emesidæ*, and Lethierry and Severin, in their Catalogue général des Hémiptères Hétéroptères, iii, p. 76, place it amongst the "species incerti generis." The insect was first described by Fabricius [Ent. Syst., iv, p. 190 (1794)] under the name *Gerris mantis*, no locality being mentioned; subsequently [Systema Rhynogorum, p. 263 (1803)] he included it in his genus *Emesa*, and gave "*Americæ Insulis*" as the locality, in both cases stating that the type was in the British Museum. Confirmatory of this habitat, it may be noted that the Museum also possesses a recently captured specimen of the same species from Jamaica, received from Mrs. E. M. Swainson. The original example is not labelled with any locality.—ID. : September 30th, 1898.

The Stainton Entomological Library.—From the report of the Meeting of the Entomological Society of London that appears in this No., it will be seen that the late Mrs. Stainton bequeathed to the Society such books in the Library that it did not already possess. It is well known that the nucleus of the Library consisted in the books purchased by Mr. Stainton from the executors of J. F. Stephens, but it was largely added to, especially in works treating on *Micro-Lepidoptera*. The Society has made a large selection; but the greater part remains, and we understand that it will shortly be sold by auction by Messrs. Sotheby.—EDS.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *August 1st, 1898.*—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. John Levick, Livingstone Road, Handsworth, was elected a Member of the Society.

Mr. C. J. Wainwright showed a series of males of *Volucella inflata*, taken on hawthorn bloom in the New Forest last June. Mr. R. C. Bradley, a dark specimen of *Cidaria corylata* from Sutton; also a specimen of *Pemphredon*, probably *lugubris*, with a parasite on the disc of each wing. Mr. R. G. B. Chase, *Amphydasis betularia*, var. *Doubledayaria*, from Edgbaston. Mr. G. T. Bethune-Baker, referring to the last exhibit, and the increase of melanism, said that whilst at one time the black variety of *Gracilaria syringella* was a rarity, it is now quite common in the neighbourhood of his house at Edgbaston; also that he remembered a time when the black form of *Miana strigilis* was also uncommon locally, the common form being like the type; now, however, the black form was common. Mr. C. J. Wainwright said that in his experience the black form of the latter species was the only one occurring locally now. Mr. A. H. Martineau, *Ammophila hirsuta* from Tenby, South Wales, where it was taken by Mr. Chase. Mr. G. T. Bethune-Baker a number of species of Palæartic and tropical butterflies, *Charaxes*, *Libythea*, &c.

September 19th, 1898.—The President in the Chair.

Mr. R. C. Bradley showed a specimen of *Brachypalpus bimaculatus* ♀ from Sutton, taken on July 3rd this year, and said that the species was exceedingly rare, almost the only other captures he knew of being two males taken in Sherwood Forest in 1892 by himself and Mr. C. J. Wainwright. Mr. A. H. Martineau, *Ammophila sabulosa*, bred from a pupa found in the New Forest last June; also *Spilomena troglodytes* and *Stigmus Solskyi* from Solihull, two species which he said were amongst the smallest of the British Aculeates. Mr. G. W. Wynn, *Cosmia affinis*, *Numeria pulveraria*, *Cidaria silacea*, *Eubolia cervinaria*, a long, bred and very beautiful series of *Triphæna fimbria*, and a long variable series of *Hydracia nictitans*, all from Hampton in Arden; also a long, bred series of *Cucullia verbasci* from Wyre Forest; and a single specimen of *Acidalia straminata* also from Wyre Forest, which he said was a new record for the district. Mr. H. Willoughby Ellis, a series of beetles from Cannock Chase, including *Orchesia micans*, *Miscodera arctica* and many others. Mr. G. T. Bethune-Baker, two drawers of palæartic *Lepidoptera*, containing the genera *Neptis*, *Junonia* and *Limenitis*.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

The Meetings of this Society will be held from this date in the Norwich Union Chambers, Congreve S. O., Birmingham. Entomologists are at all times made cordially welcome.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *July 14th.*—Mr. R. ADKIN, F.E.S., Vice-President, in the Chair.

Mr. H. Shortridge Clarke, F.E.S., Sulby Vicarage, Isle of Man, was elected a Member.

Mr. South exhibited a series of *Lycæna Corydon* to illustrate the variation in the number and arrangement of the spots on the under surface; also a series of forty-two *Spilosoma lubricipeda*, comprising thirty-five vars. *zatima* = *radiata*, and seven typical males, all reared from ova laid by a dark female *zatima*. Mr. Moore, a dwarf specimen of *Polyommatus Icarus* from Folkestone. Mr. Lucas, specimens of *Libellula quadrimaculata*, showing considerable variation in the size of the dark spot, and also in the amount of the saffron coloration. Mr. West (Greenwich), a short series of the local Hemipteron *Lopus flavomarginatus* from Abbey Wood. Mr. Dennis, the egg of *Polyommatus Icarus* under the microscope. It was comparable to a beautiful white double Dahlia. Mr. Adkin read a report of the Field Meeting held on June 11th at Reigate.

September 8th, 1898.—Mr. J. W. TUTT, F.E.S., President, in the Chair.

Mr. Little, 17, Belgrave Street, King's Cross, was elected a Member.

Mr. F. Clarke exhibited some very admirable photographs of the eggs of *Lepidoptera* sent to him by the President; they included those of *Erebia Embla*, *Chionobas Jutta*, *Polyommatus bellargus*, *P. Icarus*, *Gonepteryx rhamni*, and *Spilosoma menthastris*. Mr. Edwards, specimens of *Abrazas ulmata* var. from York; it was stated that neither on the present occasion nor when the var. was taken years ago did the ova produce dark imagines like the parents. Mr. West, specimens of *Forficula Lesnei* from Box Hill and Reigate, at both of which places it was common. Mr. Lucas, a series of the local grasshopper, *Mecostethus grossus*, from the New Forest, where it had this year occurred in some numbers; he kindly presented a pair to the Society's collections. Mr. R. Adkin, a series of *Smerinthus tilia*, and remarked on the variation to be seen in the central band. Mr. Turner, a yellow variety of *Callimorpha dominula*, bred from a Deal larva this year; bred specimens of *Myelois cribrella* from Benfleet, where the larvæ were most abundant; a bred example of *A. grossulariata* from Camberwell, having the space internal to the marginal spots of a brownish tinge, the rest of the wing surfaces being normal; and a series of *Aglais urtica* bred from larvæ taken at Box Hill, and fed up in a greenhouse, having the usually large black blotch on the inner margin of the forewings either entirely absent or represented by a few black scales. Mr. Moore, a series of well marked blue females of *Polyommatus Icarus* from Folkestone. Mr. Mansbridge, a series of specimens set to show the under-side of the female of *Plebius Ægon*, selected to illustrate the ordinary range of variation in the species as it occurs in St. Leonard's Forest. Mr. Montgomery, an exceedingly fine dark suffused male aberration of *Dryas Paphia*, one of two bred from ova. Mr. Ashby, a tiny aberration of *P. Corydon* from Riddlesdown, and a female of *P. Ægon* from Oxshott showing blue splashes. Mr. Bishop, a beautiful bred series of *Geometra vernaria* from Guildford. During the interval in which the Society could not meet, the rooms have been renovated, and the electric light introduced.

September 22nd, 1898.—The President in the Chair.

Mr. R. Adkin exhibited a short series of *Dianthæcia nana (conspersa)* from Shetland, and read notes on their variation; he also exhibited, on behalf of Mr.

Reid, of Pitcaple, a long series of *Tæniocampa gothica*, the result of breeding from selected parents through some four generations, and read notes on the variation; a very distinct form of variation of *Abraxas grossulariata*, in which the black markings were absent from the central areas of all the wings, the discoidal marks only being present; a series of *Melanthia bicolorata*, v. *plumbeolata*; and very fine examples of *Pachnobia hyperborea (alpina)* from Perthshire. Mr. Lucas, specimens of five of the less common species of British Dragonflies, viz., *Sympetrum sanguineum* and *Libellula fulva* from Sandwich, Kent; *S. flaveolum* and *Æschna mixta* from Ockham Common; and *Agrion mercuriale* from the New Forest. Mr. Tutt, a large number of *Zonosoma annulata (omicronaria)*, bred by Dr. Riding from selected parents, to show the hereditary nature of the absence of the annulus; some 75 % of the imagines bred were without the annulus on the fore-wings. The President, for Mr. Thornhill, a curiously marked specimen of *Euchloë cardamines* from Cambridge, having two wings curiously clouded with black; and, for Mr. Manger, a box of insects of all Orders, captured at sea, among which were *Deilephila livornica*, *Chaerocampa celerio*, *Macroglossa stellatarum*, *Patula macrops*, *Abraxas perampla*, and *Acridium peregrinum*. Mr. Dolman, a wonderful specimen of *Abraxas grossulariata*, taken on a tree trunk by a boy, in which the black markings were normal, but the ground colour of a uniform deep orange; and ova of *Aporia crataegi* from Dover. Mr. Hall, several specimens of an ant found in the burrows of *Sesia sphegiformis*. Mr. West, of Greenwich, bred specimens of *Podisus luridus* and *Gonocerus venator*, both from Box Hill. Mr. Turner, a bred series of *Porthesia chrysorrhæa* from North Kent larvæ, and a larva of *Dicranura bifida*. Mr. Dennis, the ova of *Thecla w-album* under the microscope.—HY. J. TURNER, *Hon. Sec.*

ENTOMOLOGICAL SOCIETY OF LONDON: *October 5th*, 1898.—MR. R. TRIMEN, F.R.S., President, in the Chair.

Mr. T. B. Fletcher, of H.M.S. "Centurion," China Station; Mr. Claude Fuller, of the Department of Agriculture, Cape Town; Mr. Alexander Greenshields, of 38, Blenheim Gardens, Willesden, N.W.; and Mr. Oliver J. Janson, of Cestria, Claremont Road, Highgate, N.; were elected Fellows; and Mr. John W. Downing, of 45, Trevelyan Road, Tooting Graveney, S.W., was re-elected a Fellow of the Society.

The President announced, with deep regret, the deaths of Mr. Osbert Salvin, F.R.S., a Member of the Council; and of Dr. E. Candèze, a Fellow of the Society, which had taken place since the previous meeting. The President also announced that the late Mrs. Stainton had bequeathed to the Society such entomological works from her husband's library as were not already in its possession. This bequest was of great importance, and would add over 500 volumes or pamphlets to the library, many of which, formerly in the library of J. F. Stephens, were old and now scarce. Among the more important additions were copies of Clerck's "Icones insectorum rariorum," Say's "American Entomology" (1817)—a work of extreme rarity, Goeze's "Entomologische Beyträge"—complete, Donovan's "Insects of New Holland," Linnaeus's "Systema Naturæ," ed. x, Godart and Duponchel's "Lépidoptères de

France," Harris's "The Aurelian," ed. i, and Sepp's "Nederlandsche Insecten." There were also numerous modern works dealing with the Lepidopterous fauna of Europe. Mr. J. J. Walker exhibited a black form of *Clytus mysticus*, L. (var. *hieroglyphicus*), taken by Mr. Newstead at Chester, where about one per cent. of the specimens were of that variety; also a black variety of *Leiopus nebulosus*, L., from the New Forest. Mr. Tutt, an example of *Euchlœe cardamines*, irregularly suffused with black markings, and a series of local varieties of *Lepidoptera* from Wigtonshire. Mr. S. Image, a specimen of *Acidalia herbariata*, taken in Southampton Row. Prof. Poulton showed and made remarks on specimens of *Precis octavia-natalensis* and *Precis sesamus*. These strikingly dissimilar insects had been shown by Mr. G. A. K. Marshall to be seasonal forms of the same species; from two eggs laid by a female of the first mentioned (summer) form he had bred one imago resembling the parent, and one which was of the blue *sesamus* form. On behalf of Dr. Knaggs, Mr. South, a series of *Dicrorhampha*, the synonymy of which was discussed by him and Mr. Barrett, *D. flavidorsana*, Knaggs, being shown to be a good species. Mr. Barrett exhibited and made remarks on specimens of *Lozopera Beatricella*, Wals., from Folkestone, and the allied species. Mr. Porritt, examples of *Arctia lubricipeda*, obtained by continued selection of the parents, and probably the darkest ever bred in this country. Mr. Adkin, a long series of *Teniocampa gothica*, to show the results of breeding by continued selection, and some remarkable forms of *Abraxas grossulariata* from Pitcaple. Mr. F. Merrifield read a paper, illustrated by a large number of specimens, on "The Colouring of Pupæ of *P. Machaon* and *P. napi*, caused by exposing the pupæ to coloured surroundings." The pupæ of both species were found to be modified by the surroundings of the larva, the effect being extremely marked in the case of *P. napi*. When the larvæ of the latter species were kept in a cage half orange-coloured and half black, all but four of the pupæ on the roof of the orange-coloured side were green, with very little dark spotting, and all the pupæ on the roof of the black side were bone-coloured, with numerous dark brown spots. He regarded the phenomenon as protective. The exhibit was discussed by Prof. Poulton, who showed a similar series of specimens, and observed that he found the rays near the D line of the spectrum had the greatest influence upon the incipient pupæ, the effect diminishing towards either the red or the violet ends. The effect therefore appeared to be one of luminosity. Mr. Bateson stated that his own experience fully confirmed Mr. Merrifield's results, but he was unable to see how the green coloration of the pupæ could be protective, at least in the winter brood. Mr. G. H. Verrall read a paper on "*Syrphidæ* collected by Colonel Yerbury at Aden," the specimens, together with some rare British *Diptera*, being exhibited by Colonel Yerbury. Papers were communicated by Mr. G. C. Champion on "The Clavicorn *Coleoptera* of St. Vincent, Grenada, and the Grenadines," based on the determinations of M. Grouvelle; and by the Rev. T. A. Marshall, on "The British *Braconidæ*, Part VIII."—W. F. H. BLANDFORD and F. MERRIFIELD, *Hon. Secs.*

NOTES ON THE UNIQUE "*ARGYRESTHIA*" *DECIMELLA*, STN.

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

In his Sup. Cat., p. 10 (1851), Stainton describes as "*decimella*, n. sp.," and doubtfully assigns to the genus *Elachista*, a Tineid of which a single specimen was taken by Mr. J. Jenner Weir on a fence at Camberwell in June, 1850. In the I. B. Lep. Tin., p. 189 (1854), where he treats of it further, he removes it from *Elachista*, and includes it in *Argyresthia*, adding, however, that he is "by no means certain that it should be referred to this genus, but the structure of the palpi, which remove it from *Elachista*, allow of its being placed in the genus *Argyresthia*, and the rough head may have been rendered invisible by the distorted mode in which the insect was pinned." In the Ent. Wk. Int., vi, 9 (1859), we are told that it will be omitted from vol. ii of the Manual because the author's theory is that it is not truly British, but was bred from some imported plant in a greenhouse. When discussing nomenclature, Stainton used to confess how, being at a loss for a name, he christened the insect *decimella* because it was, as he says in the Sup. Cat., "skewered with a No. 10 solid-headed pin"! At the sale of Mr. J. J. Weir's collection at Stevens' rooms in May, 1894, this interesting Tineid passed into my hands, but, unfortunately, the pin had been cut off short close to the thorax, so that there is great risk in trying to thoroughly examine the specimen, and the abdomen had been entirely devoured by mites. The wings, however, are in fine condition, and the head (although almost too much rubbed to help identification), with the antennæ and palpi, is present. A fair idea of the general appearance of the moth may be gathered from the coloured figure of it published in F. O. Morris' Nat. Hist. Brit. Moths, iv, pl. cxvi, fig. 6 (1870). To my great regret, I cannot at present throw any light on the identity of the specimen: it has been examined, as far as we dare to do so, by Lord Walsingham, Mr. J. H. Durrant, and myself, but we cannot decide for certain to what genus it belongs, though Lord Walsingham, probably correctly, believes it to be a *Lithocolletis*; in any case, its facies is totally distinct from that of any species known to us, nor can we suggest any insect of which it might possibly be a queer aberration.

My object, however, in writing this note is to clear up a strange confusion that exists in connection with it. In a paper in the Stet. Ent. Zeit., 1864, p. 215, Dr. Wocke says that he met with a number of specimens of an *Argyresthia* among juniper on a sandy slope on the Romsdalsfjord, near Veblungsnaes, in Norway on July 31st, and

submitted three of them to Stainton, who identified them as *A. decimella*, Stn. : Wocke then proceeds to describe his insect in detail, under the name *decimella*, from five specimens in good condition. Now, in the Stainton continental collection is a single moth standing as "*Decimella*, Sta.," and bearing a reference No. "2870," which is shown by the note book to mean that it is "*Argyresthia decimella*," and was received with other insects from Wocke on September 21st, 1863 : this then is obviously one of, or at any rate con-specific with, the three specimens on which Stainton founded his determination of Wocke's Norwegian species as *decimella*. How he was led into such an error must remain a mystery, for it does not bear even a superficial resemblance to the true *decimella*, Stn. ! At any rate, he cannot have taken the trouble to compare the Norwegian specimens with the original type of *decimella*, which was in the collection of his friend, J. J. Weir. His mistake is the cause of Wocke having entered "Norway" as a habitat for *A. decimella* in Staudinger's and Wocke's Catalogue (1871), and of Meyrick's remark, HB. Br. Lep., 765 (1895), "*A. decimella*, Stt., a North European species, is said to have occurred once near London ; the specimen may probably have been introduced with plants."

I am unable to refer Wocke's Norwegian *Argyresthia* with certainty to any species known to me, but from a comparison of the single example in the Stainton collection with a selected series of continental forms of *A. abdominalis*, Z., it seems possible that it may be a dark northern variety of this species ; the pattern of the markings is exactly identical, though their colour is, in the Norwegian insect, very much browner than in any recognised forms of *abdominalis* that I have seen. It seems clearly advisable for the present to regard it as a possible variety of *abdominalis*, for we have not sufficient justification for describing it as *n. sp.*, and even if, owing to its slender palpi and narrow hind-wings, we definitely exclude the unique *decimella*, Stn., from the genus *Argyresthia*, Wocke's definition of his Norwegian insect as *Argyresthia decimella* cannot stand, because the name is homonymous by erroneous adoption. *A. inauratella*, Tngstr., which Wocke (*l. c.*) says was unknown to him, is very closely allied to *abdominalis*, but I have failed to find specimens of it in any of the European collections in this country, and, from Tengström's description, the markings appear to differ from those of Wocke's insect. The Swiss *A. Huguenini*, Frey [MT. Schweiz., Ent. Ges., vi, 369—70, No. 99 (1882)], which also approaches *abdominalis*, is, as yet, only known to me by name.

The Rectory, Corfe Castle :
September 17th, 1898.

EPHEMERIDÆ TAKEN BY MR. McLACHLAN IN THE DISTRICT OF
THE LAC DE JOUX (SWISS JURA) IN 1898.

BY THE REV. A. E. EATON, M.A., F.E.S.

[The insects noticed below were taken during a stay in a little-known corner of the Canton Vaud from July 25th to August 10th. No systematic search for *Ephemeridæ* was attempted. Some general notes on the district will be given later when dealing with another group.—R. McLACHLAN].

EPHEMERELLA IGNITA, Poda.—2 ♀ im., rather small.

CÆNIS DIMIDIATA, Steph.—6 examples, not all adult. Abundant at Lac Brenet.

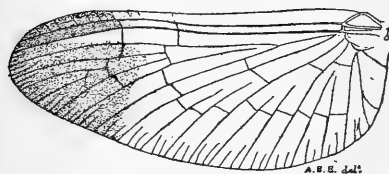
BAËTIS RHODANI, Pict.—1 ♀ im.

BAËTIS sp.—?—1 ♀ im., fragmentary.

BAËTIS NUBECULARIS, *sp. nov.*

1 ♂ im., defective in legs and setæ.

Imago (dried) ♂. Thorax above pitch-black; at the sides browner and varied with a lighter colour. Abdomen pitch-brown; after the 6th segment opaque, but anteriorly translucent with narrowly opaque joinings. Setæ whitish sepia-grey, the joinings from certain standpoints simply opaque or else darker grey. Fore-leg pitch-brown; the femur towards its lower edge lighter or translucent. Wings



vitreous; the fore-wing (as shown in the annexed figure) tinted for some distance at the apex with light pitch-grey, and this more distinctly in the pterostigmatic region, and the adjoining portion of the submarginal area, than elsewhere; the stronger neuration pic-

ceous or bistre-brown, the two exterior ranks of cross veinlets anterior to the præbrachial nervure being of the darker tint. Length of wing, 7.10 mm.

Hab.: Source de l'Orbe, Canton Vaud; 1 ♂ im., August 2nd, 1898 (*McLachlan*). The clouding of the wing is analogous to what is seen in the North American *Blasturus nebulosus*, but is less rounded. In being particoloured the wing differs from that of all other known European species of the genus.

EPEORUS ASSIMILIS, Etn.—19 ♂ im. Absolutely swarmed along the road between the Source de l'Orbe and the town of Vallorbe on the afternoon of August 3rd, during a succession of violent thunderstorms.

RHITHROGENA SEMICOLORATA, Curt.—3 ♂, 1 ♀ im. One ♂ has the wings hardly at all tinted; another ♂ exhibits typical colouration, and is matched by the ♀; the third ♂ is of the variety described as "*Variation I*" (the *semicolorata* of Pictet, not of Curtis) in *Trans. Linn. Soc. London*, ser. 2, Zool., vol. iii, p. 257.

RHITHROGENA AURANTIACA, Burm.—1 ♂ im.

ECDYURUS HELVETICUS, Etn.—3 ♂ and 3 ♀ im., in company with *Epeorus assimilis*.

ECDYURUS VENOSUS, F.—1 ♂ im., and perhaps 1 ♂ and 2 ♀ subim. Lac de Joux.

ECDYURUS FLUMINUM, Pict.—1 ♂ subim. Lac de Joux.

ECDYURUS LATERALIS, Curt.—1 ♀ im.

Seaton, Devon :

September 23rd, 1898.

HOMALOTA (RHOPOLOCERA) CLAVIGERA, SCRIBA (*CLAVICORNIS* EPP.): AN ADDITION TO THE LIST OF BRITISH *STAPHYLINIDÆ*.

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

Some months ago Mr. E. G. Elliman, of Chesham, sent me a specimen of a peculiar *Homalota* for examination, and as the species was quite unknown to me, I suggested that he should try and obtain more of it. This he has now succeeded in doing, five examples in all having been found by him at Tring, in rotten leaves, lying in a ditch, at the base of one of the southern slopes of the Chiltern Hills. The insect proves to be referable to *H. clavigera*, Scriba (Stett. ent. Zeit., 1859, p. 414), subsequently described by Eppelsheim (Deutsche ent. Zeitschr., 1878, p. 40) as a *Gyrophæna*, under the name of *G. clavicornis*, a widely distributed species on the continent, occurring rarely in France (Mareil-Marly, near Paris), Germany, Austria, Hungary, Italy, Transsylvania, the Caucasus, &c. Its principal characters are sufficiently expressed in Scriba's diagnosis: "Nigra, nitida, minus dense griseo-pubescent, antennis validis apicem versus valde incrassatis, antennarum basi pedibusque testaceis, thorace transversim subquadrato, æquali, abdomine supra segmentis anterioribus parce subtiliter punctatis, posterioribus lævigatis." It may also be noted that the head is much narrower than the thorax, and the thorax narrower than the elytra, so that the body appears to be widened from the head downwards, the general shape being very like that of *Gyrophæna strictula*, Er. (as noted by Eppelsheim), except that it is much narrower. The head is small and somewhat rounded, subparallel immediately behind the eyes, and has a shallow longitudinal depression or groove down the centre. The antennæ are very short, not reaching the base of the thorax, and strongly incrassate, joints 4—10 becoming more and more transverse, 11 about as long as 9 and 10 united. The abdomen is comparatively broad and parallel-sided. Some of the specimens have the head more distinctly channelled, and these are probably

males. In von Heyden, Reitter, and Weise's list (1891), the *Staphylinidæ* were dealt with by Eppelsheim, and he places *H. clavigera* in the genus *Atheta*, Thoms., subgen. *Ceritaxa*, Rey, which includes *H. testaceipes*, Heer, *H. dilaticornis*, Kr., &c. Ganglbauer [Die Käfer von Mitteleuropa, ii, p. 192 (1895)] makes *H. clavigera* the type of a new subgenus, *Rhopolocera*, Ganglb.*

Mr. Elliman's researches tend to prove that we have not yet completed our list of British *Homalotæ*, long as it is already, this being the second species he has added from his own neighbourhood.

Horsell, Woking :

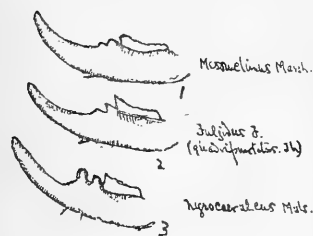
November 1st, 1898.

QUEDIUS NIGROCÆRULEUS, MULS.: AN ADDITIONAL BRITISH RECORD.

BY CLAUDE MORLEY, F.E.S., &c.

In a box of insects recently sent me for identification by Mr.

Ernest Bedwell, of Lowestoft, I find a single specimen of this extremely rare *Quedius*. It was taken beneath a log by a sluice on the beach, near a rabbit warren, at Kessingland, Suffolk, on July 26th, 1898. This is the second recorded British specimen. The first, it will be remembered, was taken by Mr. W. H.



Tuck at Tostock, from the nest of *Bombus hortorum* (*subterraneus*), and recorded by Mr. Champion in the Ent. Mo. Mag., vol. vii, 2nd series, p. 50, who, however, gives no date of capture.

After a careful comparison with its nearest allies I am decidedly inclined to agree with Mr. Newbery, who has seen both the above specimens, that it is a good and distinct species. Its main feature is, of course, the elytral colour (*blue*), possessed by no other member of the genus. From both *Q. mesomelinus*, Marsh., and *Q. fulgidus*, F. (= *quadripunctatus*, Thoms.), it differs considerably in size, reaching nearly 13 mm. in length (Fowler limits the former to 10 mm., and the latter to 9 mm.); the head is proportionately much larger and squarer, and the frons quite differently sculptured, being suddenly scooped out semicircularly between the points of insertion of the antennæ; the two punctures at the postero-interior border of the eyes are present, but I doubt if this be a constant character. The development of the mandibular teeth, of which I give a rough figure (3), is probably a good specific feature. The antennæ are deep black throughout, excepting the base of the second joint, which is clear red, and have joints 4—10 much stouter and decidedly

* Since the above lines were written, M. Fauvel has examined one of the British specimens and confirmed my identification of the species.

more transverse, and this makes the apical joint appear slightly shorter in proportion, their general aspect being fusiform rather than cylindrical. The abdomen is much more sparsely punctured and hairy in the centre of the dorsal segments. From *Q. mesomelinus*, Marsh., it is distinguished by the elytra being shorter in proportion to the thorax, with the sutural furrow slightly shallower, and the puncturation, though scarcely closer, is certainly deeper. The four thoracic punctures are present on the side of the disc. From *Q. fulgidus*, F. (= *4-punctatus*, Thoms.), which appears to have the elytra constantly red, it differs in possessing no long setæ on the lateral margin of the elytra near their anterior angle, and in having the abdomen and scutellum entirely black with black pubescence.

From the above characters it would appear to claim specific rank, which it was accorded by Mulsant and Rey in 1877, and by Acloque, who is by no means too analytical, and prefers rather to unite than to separate, in 1896. But v. Heyden, Reitter and Weise, in both the 1883 and last edition of their Catalogue, consider it a variety of *Q. fulgidus*, F.

Both the British specimens have been found in Suffolk, but under extremely different circumstances, and its habits have yet to be discovered. Possibly the Kessingland example had wandered from a neighbouring rabbit burrow in search of prey, and ensconced itself beneath the board during daylight. There would be little difference to a *Quedius*, probably, between a bees' nest and a rabbits' hole, both are subterranean, and both are dark and cool. The larva and imago are said to live in caves, for which the above are very fair substitutes. Mr. E. A. Butler has kindly sent me the Tostock example to examine, and it agrees in every particular with that described, excepting in length, being not more than 9 mm. long.

In the accompanying figures of the mandibles No. 1 represents *Q. mesomelinus*, Marsh.; No. 2, *Q. fulgidus*, F. (= *4-punctatus*, Thoms.); and No. 3, *Q. nigrocæruleus*, Muls. and Rey.

Ipswich: October, 1898.

[Amongst the *Quedii* sent me at various times from Tostock, Bury St. Edmunds, by Mr. W. H. Tuck, from the nests of *Bombus* and *Vespa*, I have found another specimen of *Q. nigrocæruleus*, passed over by me for *Q. mesomelinus*, it having only the faintest tinge of blue on the elytra. This example certainly has the elytra more closely punctured than any specimen of *Q. mesomelinus* in my possession. The larger and squarer head mentioned by Mr. Morley is no doubt a mark of the male sex, and probably the frontal excavation also, corresponding sexual differences being observable in the allied *Q. ventralis*, Ar. (= *truncicola*, Fairm.); the frontal excavation, however, is deeper than in the male of *Q. mesomelinus*. Unfortunately, I have omitted to label this third example of *Q. nigrocæruleus* with the data supplied by Mr. Tuck at the time.—G. C. C.].

ADDITIONS, &c., TO THE LIST OF BRITISH *COLEOPTERA*
DURING 1898.

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

Several interesting additions to the list of British *Coleoptera* having been recorded during the present year, it is worth while calling attention to them, and also to note some few corrections that have been made in the synonymy of others.

Harpalus Frælichii, Sturm.—Found in some numbers by Messrs. Morley and Elliott near Martlesham Heath, four miles from Ipswich (Ent. Mo. Mag., xxxiv, p. 84). The two specimens given me by Mr. Morley are considerably smaller than the one I have received from M. Bedel, from Northern France.

Homalota (Rhopolocera) clavigera, Scriba (*clavicornis*, Epp.).—Five specimens of this very distinct species, the type of the subgen. *Rhopolocera*, Ganglb., have been captured by Mr. E. G. Elliman near Tring (Ent. Mo. Mag., xxxiv, p. 266).

Quedius Kraatzii, Bris.—Found in numbers by Messrs. Beare and Donisthorpe at Chiddingfold, Surrey (Ent. Record, x, p. 196). An interesting and unexpected addition to our list. I have met with it in its original locality in the Eastern Pyrenees, in the vicinity of Collioure, where it occurred on the banks of a small stream, in company with *Stenus Guynemeri*.

Homalium cæsum, Grav., var. *tricolor*, Rey.—This is the insect known in British collections as *H. nigriceps*, Kies., which name must be erased from our list (Ent. Mo. Mag., xxxiv, p. 16).

Cryptohypnus meridionalis, Lap.—Recorded as British by Mr. P. B. Mason (Ent. Mo. Mag., xxxiv, p. 207), upon the authority of a specimen labelled "Pegwell Bay," in the late A. Matthews' collection. From its known distribution on the continent, it is not likely to prove to be indigenous here.

Clytus mysticus, Linn., var. *hieroglyphicus*, Herbst.—This well-marked variety of *C. mysticus* has been found by Mr. Newstead near Chester, and a specimen of it was exhibited by Mr. J. J. Walker at the October meeting of the Entomological Society of London. It is mentioned by Stephens (Illustr. Brit. Ent., Mand. iv, p. 243), but the varietal name *hieroglyphicus* has not hitherto appeared on our lists. On the continent it is confined to mountainous districts. I have taken the two forms in company, at Campiglio, in the Austrian Tyrol.

Orsodacna cerasi, Linn., var. *glabrata*, Fabr.—This variety of *O. cerasi* has been recorded from Matlock (Ent. Mo. Mag., xxxiv, p. 176).

Corticeus (Hypophlæus) linearis, Fabr.—Found in numbers by Mr. Heasler at Oxshott, Surrey, in pine trees, in the burrows of *Pityogenes bidens* (Ent. Record, x, p. 176). 'An unlooked-for addition to our list.

Mordellistena neuwaldeggiana, Panz.—This name has five years' priority over that of *M. brunnea*, Fabr. (Ent. Mo. Mag., xxxiv, p. 130).

Anaspis latipalpis, Schilsky.—Recorded as British from specimens found at Shirley, Caterham, and Darenth Wood (Ent. Mo. Mag., xxxiv, p. 101). *A. latipalpis* is very like *A. subtestacea*, Steph., with which it is certainly confused in British collections.

Anaspis Costæ, Emery.—This is the insect known to us under the name *A. flava*, Linn., var. *thoracica*, Linn., neither of which is found here (Ent. Mo. Mag., xxxiv, p. 102).

Bagous lutosus, Gyll.—The insect doing duty for this species in British collections is a large form of *B. glabrirostris*, Herbst (*lutulentus*, Gyll.) (Ent. Mo. Mag., xxxiv, p. 52).

It is also worth noting that two of last year's novelties have been recorded from fresh localities during the present season, viz.:—*Homalota (Dilacra) pruinosa*, Kr., from Guildford (Ent. Mo. Mag., xxxiv, p. 160); and *Platystethus alutaceus*, Thoms., from Chobham (*op. cit.*, p. 232).

Horsell, Woking:
November, 1898.

LEPIDOPTERA AT ELECTRIC LIGHT AT ZERMATT.

BY A. HUGH JONES, F.E.S.

Zermatt, like so many towns in Switzerland, is now lighted by electric light, but the lamps are affixed to such high poles as to be quite impracticable as a means for collecting *Lepidoptera*.

In front of the Railway Station, however, I found a solitary lamp which would almost appear to have been erected by some enterprising entomologist, so well was it placed, commanding a wide extent of the valley, and suspended at just a sufficient distance from the ground to be workable with the net. The lamp was of high power, and threw a brilliant light over the square opposite the new Gorner Grat Railway Station.

Taking one's stand under the lamp, it was interesting to watch

the numerous moths as they emerged out of the darkness, at first as mere specks of silver. The electric light had a peculiar effect. Some of the moths on reaching it would fly wildly round, then rest on the metal rims; others would at once take shelter on the ledges and in the crevices of the building; a large number appeared dazed, and fell immediately to the ground. My companion, who worked the ground and ledges, took far more interesting specimens than I captured with the net.

The species observed were of a miscellaneous character—*Sphinges*, *Bombyces*, *Noctuæ*, *Geometræ*, *Pyrales* and *Crambites* were all represented. Some of the *Geometræ* absolutely swarmed, and several *Noctuæ* (especially that beautiful insect, *Plusia v-argenteum*) were abundant. I worked the lamp (alight for about an hour only) for five nights, viz., from August 15th to 19th.

The following is a list of the species captured:—

Deilephila euphorbiæ, two seen, one male captured.

Setina aurita, this day-flying species was not uncommon. *Bombyx cratægi*, one ♀; *B. neustria*, not uncommon. *Crateronyx taraxaci*, one ♂. *Notodonta dromedarius*, one ♀.

Bryophila perla, one, dark form. *Leucania conigera*, several. *Agrotis ocellina*, somewhat common; *A. cuprea*, one only, this is a common species, and is found at rest on flowers in the day-time; *A. segetum*, fairly common; *A. grisescens*, several; *A. decora*, two specimens; *A. rectangula*, one specimen; *A. candelarum*, two specimens; *A. lucerneæ*, a few, a large and fine form. *Mamestra furva*, several. *Hadena Maillardi*, one fine specimen; *H. lateritia*, not uncommon; *H. proxima*, one specimen. *Epunda viminalis*, several, dark form. *Noctua augur*, one specimen. *Xylophasia polyodon*, one specimen. *Triphæna fimbria*, one specimen, light form. *Caradrina cubicularis*, several. *Dianthæcia casia*, one specimen, light form. *Heliothis dipsacæa*, one specimen. *Plusia illustris*, one specimen, very fine; *P. v-aureum*, one specimen, very fine; *P. v-argenteum*, very plentiful; *P. gamma*, several. *Polia flavicincta*, one very fine black form.

Ellopiæ fasciaria, ab. *prasinaria*, two ♀, one exceptionally green in colour. *Crocallis elinguaris*, one ♀. *Metrocampa margaritata*, one ♀. *Boarmia repandata*, several. *Gnophos glaucinaria*, in swarms. *Eubolia bipunctaria*, common. *Lobophora sabinata*, common. *Cidaria simulata*, in swarms, larger and rather darker than Rannoch specimens; *C. variata*, one specimen; *C. galiata*, one specimen; *C. aqueata*, several; *C. cyanata*, one specimen; *C. russata*, very common; *C. populata*, large light form in great profusion. *Larentia cæsiata*, very common. *Eupithecia sobrinata*, in the greatest profusion; *E. laquearia*, one specimen. *Anaitis præformata*, one specimen.

Hercyna phrygialis, one specimen. *Botys aerealis*, var. *cpacalis*, one specimen. *Crambus lithargyrellus*, one specimen; *C. falsellus*, one specimen; *C. myellus*, one specimen.

Eltham, Kent:

October 17th, 1898.

ON TWO SPECIES OF *CALOPTERYGINÆ* FROM THE ISLAND OF LOMBOCK, WITH VARIETAL NOTES.

BY ROBERT McLACHLAN, F.R.S., &c.

EUPHÆA LARA, Krüger.

This species has just been described by Herr L. Krüger (Stett. ent. Zeit., 1898, p. 131) from a ♂ from Sumba Island, and is remarkable for its shining, uniformly brownish-yellow wings. In the point of wing coloration its nearest ally is *E. ochracea*, Selys.

I possess a ♂ example from the same locality that practically agrees with Krüger's description (the apical segments of the abdomen absent). Length of posterior wing, 31 mm. (30 mm. according to K.); 21—23 antenodals in anterior wing (23—24. K.); quadrilateral without nervule in each anterior wing, with one nervule in each posterior (without nervule in three of the wings. K.); nodal sector arising from the oblique nodal nervule in the right wings and slightly before in the left ("ein wenig nach dem Nodus." K.). The markings of the thorax agree with Krüger's description.

Materials from adjacent islands tend to prove that the species is subject to local variation. All my examples are ♂.

EUPHÆA LARA, var. *BALICA*, var. *n.*

♂. Length of posterior wing, 28 mm. (abdomen mutilated); 21—22 antenodals in anterior wing; quadrilateral with one nervule in all the wings; nodal sector arising distinctly after the oblique nodal nervule; markings of the thorax apparently as in the type from Sumba.

Hab.: Bali (*Doherty*, 1 adult ♂).

The principal point in which this appears to differ from the Sumba type-form is its smaller size; the character of the quadrilateral nervule is of little importance, but it is remarkable that in both examples from Sumba there should be a tendency towards the absence of any such nervules.

EUPHÆA LARA, var. *LOMBOCKENSIS*, var. *n.*

I have before me 8 males (7 adult and 1 immature), part of a larger number collected by Herr Fruhstorfer at Sapit, Lombock, in April, 1896. These appear to possess more marked differences than the ♂ from Bali.

Length of posterior wing, 33—35 mm. Abdomen, 39—40 mm. (35 mm. in the type-form. K.); 29—31 antenodals in the anterior wings; one (or occasionally two) nervules in the quadrilateral (absent in both wings on one side in one individual); nodal sector arising distinctly *before* the oblique nodal nervule as a rule (at the same point in one individual). The markings of the thorax are liable to be obliterated

or indistinct in adult individuals, but in the immature it is seen that there is a broad whitish ante-humeral band, which is curved and obtuse at its base, and anteriorly is continued half the length of the thorax as a fine line (not connected with the basal portion as in the type-form); on the sides are two broad whitish bands divided by a black line at the metathoracic suture (in the Sumba form there is a fine humeral line parallel with the ante-humeral, but separated from it by a fine black line on the mesothoracic suture). The wings are only faintly tinged in immature examples.

By its large size and in other respects this seems to be a distinct local form. As a rule I am disposed to deprecate the naming of varieties in *Odonata*, but the *Calopteryginæ* lend themselves so much to local variation, that such a process (especially in insular forms) is here sometimes advantageous.

LIBELLAGO LOMBOCKENSIS, *sp. n.*

♂ (adult). *Head and thorax* deep black, with yellow markings: on the head there is a large semi-ovate yellow spot at the corners of the mouth, almost connected with a short broad line (obliquely divided into two parts) on the orbits; a minute yellow point (sometimes barely visible) on each side of the base of the epistome; on the top of the head are six yellow points, viz., one on each side transversely in the anterior portion, one on each side longitudinally in the median portion, and one on each side posteriorly, subtriangular in form and widely separated, on the back of the dark brown eyes: prothorax having its raised anterior margin yellow in the middle, a yellow point in the middle of its posterior margin, on which is a large reniform point on each side, anterior to each of which is a small (nearly obliterated) spot; the hinder lobe forming a small semicircular lamina fringed with black hairs: thorax having its anterior sinus short, broad and triangular, about one-third of the entire length; the yellow thoracic markings are as follows:—a curved ante-humeral anterior line (broadest anteriorly) scarcely reaching to half the length of the thorax, a narrow posterior humeral line, curved in the opposite direction, commencing above the anterior wings and extending for more than half the length, a short, narrow posterior line below the anterior wings, a broad band on each side (slightly constricted in its middle) above the mesothoracic suture, not extending to the base, followed by a similar, but shorter, metathoracic band abbreviated anteriorly, its end underlying that of the superposed band; on the pectus the coxal insertions, a broad semilunate transverse spot on the metasternal area anteriorly, and a similar narrower one posteriorly, are yellow; interalar area spotted with yellow.

Legs black; trochanters yellowish beneath.

Abdomen slender and attenuate, red (no doubt bright red in life); first segment black, reddish in its middle posteriorly above, and with a large suborbicular yellow spot on each side; genitalia of second segment black, and the sutures of the segments are narrowly black (scarcely evident on the posterior); 10th segment (reddish in its middle above) and appendages black: superior appendages shorter than the 9th segment, slender, forcipate, somewhat geniculate in the middle, beyond which the apical portion is slightly clavate; inferior appendages shorter, subcylindrical, the apices incurved.

Wings narrow, hyaline, with black neuration; pterostigma black, scarcely di-

lated, surmounting 4—5 cellules. 13—14 antenodal and 24—26 postnodal nervules in the anterior wings, 2—4 nervules in the quadrilateral.

♀ (adult). Markings of the head and thorax as in the ♂, but the two anterior yellow points on the top of the head are very much larger (forming rounded spots), and inside each is a linear yellow spot; the posterior prothoracic lobe more pronounced. On the mesothorax the dorsal crest is finely yellow.

Abdomen shorter and stouter, obscure brown rather than red, the sides of the second segment yellowish; the sutures more broadly black than in the ♂, and there are vague indications of subdorsal blackish bands; 8th to 10th segments blackish, marked with brownish. Appendages longer than the 10th segment, black, linear, straight, pointed: ventral valves slightly exceeding the 10th segment, acute, with short black filiform appendages.

Wings proportionately broader than in the ♂, hyaline, uniformly tinged with brownish fuliginous; 11 antenodal, 21 postnodal, nervules in the anterior wings; 2 interquadrilateral nervules in the anterior and 3—4 in the posterior (these are no doubt liable to numerical variation).

Length of posterior wing, ♂ ♀, 27 mm. Expanse, ♂ ♀, 55 mm. Length of abdomen, ♂, 20 mm.; ♀, 18 mm.

Hab.: Lombock (Sapit, 2000 ft., *Fruhstorfer*, April, 1896, 5 ♂, 1 ♀).

There is much in common between *L. lombockensis* and the description of *Rhinocypha Braueri*, Krüger, from Sumba (Stett. ent. Zeit., 1898, p. 133), but the latter is smaller, and appears to differ sufficiently in the colour of the legs, abdomen, &c., &c. The Lombock insect appears to me to be better placed in *Libellago* than in *Rhinocypha*.

The only other described non-African species of *Libellago* is *L. asiatica*, Selys, from the Philippines, introduced in 1879. *L. lombockensis* is abundantly distinct therefrom according to the description.

In comparing the Lombock species with those from Africa, in order to see if there be any radical structural difference, I note that in the neuration of it the only sector that is angulate ("fracturé") for nearly its whole length is the "second of the triangle," whereas in the African forms several of the supplementary sectors are also distinctly angulate. I know not if this difference exist in *L. asiatica*. It is present in several species of the "*tincta*" group of *Rhinocypha*, which generic term should probably be retained only for the species in which there are fenestrate markings in the wings, such as *fulgidipennis* and its allies, the indication of *tincta* as the type by Kirby, in his Catalogue of *Odonata* appearing to be unwarranted, and contrary to the intention of Rambur when he founded the genus.

Lewisham, London :
August 28th, 1898.

OBSERVATIONS ON *DRYOPHANTA DISTICHA*.

BY G. C. BIGNELL, F.E.S.

For many years I have searched for this gall, believing I should recognise it by Dr. Mayr's description, translated by Mr. Fitch in the "Entomologist" for August, 1876, and also described and figured by Cameron in the Ray Soc. Vol. for 1892. This year I collected what I considered, at that time, galls of *divisa*, and from the upright sides I thought they had been distorted by being inhabited by an inquiline or parasite, but to my surprise and delight they proved to be those of *disticha*.

The galls of *disticha* are very much like those of *divisa*, but can be readily separated; the former have their sides perpendicular, while the latter are convex; or, in other words, *divisa* is in form like an orange, while that of *disticha* would be like an orange grown or forced into a cylinder, to make its sides straight, but on the top there is an umbilical depression, which is not present in *divisa*.

In Cameron's description of the fly he says, not easily separated from *divisa*; in that species he describes the abdomen as black. Those that I bred had the abdomen red, with a little black on the upper-side. Seeing this, I sent a specimen to Mr. Fitch, who returned it, confirming my opinion that it was *disticha*; for a further confirmation I sent flies and galls to Professor Kieffer of Bitsch, who in reply said the insects agreed with his specimens, and the gall with the typical form of *D. disticha*.

The gall of *disticha* I have seen annually for many years, as I mentioned at the commencement of this paper. I thought it was *divisa* from its general appearance, but I always observed that they were found singly, very seldom two on a leaf, and more often only a single gall on the same tree, whereas *divisa* is generally found in some numbers on a leaf, and occasionally in quantities sufficient to bend down the branch.

D. disticha occurs on the sapling oaks in Cann, Bickleigh and other woods, covering many miles; I think it must be generally distributed, for I have had about a dozen sent me to name from St. Issey, Cornwall.

The flies are difficult to obtain, as the galls are very much infested with parasites.

In the translation mentioned above it says, "The gall-fly is developed late in the autumn; and, according to Von Schlechtendal, leaves the gall in October and November; while Schenck gives spring

as its flight-time." My first fly I bred on October 1st, and four on the 3rd, since that time I have not bred any; but on cutting open two galls I found in each a full fed larva, I presume, therefore, that some pass the winter in the larva stage.

The Ferns, Home Park Road,
Saltash, Cornwall:
November 10th, 1898.

A NEW BRITISH DIPTERON: *CEROPLATUS SESIOIDES*, WAHLB.?

BY FREDK. C. ADAMS, F.Z.S.

As far back as July 17th, 1894, I took on one of the windows at Fern Cottage, Lyndhurst, a small "Daddy," which I submitted to Mr. E. E. Austen for identification. After careful examination he informed me it belonged to the genus *Ceroplatus*, and he had little doubt the species was *sesioides*, Wahlb., but he did not like to speak positively from a single specimen. This was a ♀, and on September 3rd this year I obtained a ♂, which was also found on another window of the same cottage. Thinking Mr. C. W. Dale might have some types of this genus in his large collection, I wrote to him, and he informs me he has only *C. lineatus*, F., which = *Platyura laticornis*, Mg. This is a well marked insect, figured on Tab. 8, fig. 19, of Meigen's *Diptera*, and my specimens differ from it in every respect, except the distinctive broad antennæ and venation of the wings. Mr. Verrall gives *C. lineatus*, F., in italics in his list, to which I think "*sesioides*" may now be added.

68, St. Ermin's Mansions:
November, 1898.

DESCRIPTION OF THE LARVA OF *CARADRINA AMBIGUA*.

BY GEO. T. PORRITT, F.L.S.

As is well known, *Caradrina ambigua* occurred in great profusion along the South Devon Coast in 1897. One of some specimens which I received alive from Mr. C. M. Mayor, of Paignton, on August 21st had deposited a few eggs in the chip box, and these were supplemented by more each of the two following nights. They were placed in irregular patches, were "urchin"-shaped, and strongly ribbed from summit to base. When first deposited they were pale straw colour, but on the second day a distinct brown spot appeared on the apex, and

some distance below the spot a ring of the same colour; they then gradually changed to purplish, and by August 31st those first deposited had become dull lead colour, and hatched out next day (Sept. 1st).

I took no further notes on the larvæ until January 15th of this year, by which time they were three-eighths to five-eighths of an inch long; the autumn and winter had been exceptionally mild, probably from which cause they had never appeared to quite cease feeding, and the smaller form evidently represented an earlier moult than the others. The larger larva, five-eighths of an inch (or even more) in length, had a stumpy and uneven appearance when at rest, but when crawling were moderately uniform in width, tapering a little anteriorly; the head has rounded lobes, and is a little narrower than the second segment; the skin rather uneven, and the warts being large and raised give it a still rougher appearance; from each warty prominence proceeds a short curved bristly hair.

Ground colour smoky-brown, the space on the dorsal area between the subdorsal lines being paler and more ochreous, or, in some specimens, having a slight purplish tinge; head brown, with five still darker large brown spots or marks. The dorsal stripe is composed of a series of somewhat arrow-head shaped marks, through which runs an interrupted pale line, palest and most conspicuous on the second segment; the two warty tubercles on the posterior part of each segment and nearest the dorsal stripe are usually black, the outer tubercles paler; from each of the outer tubercles a short black streak extends anteriorly, but in a slightly downward direction, into the subdorsal region, and forming broken subdorsal lines; a paler waved stripe extends along the spiracular region, having on its upper-side a fine smoky edging, in which are situate the black and distinct spiracles. Ventral surface, legs and prolegs dingy olive-brownish, with faint indications of an interrupted paler central stripe.

The mild winter apparently did not suit the larvæ, for they gradually died off, and by June 5th I had only one left, and as it had evidently assumed its adult markings, though probably not full grown, I described it as follows:—

Length about three-quarters of an inch, and rather below the average bulk in proportion; head small, the lobes rounded, and is the same width as the second segment; when at rest it is turned downwards, so that when the larva is viewed from above the head cannot be seen; body cylindrical above, flatter beneath, of fairly uniform width, tapering only slightly posteriorly; skin smooth, but the tubercles prominent, and from each of them springs a single short hair. Ground colour stone-grey; head a rather darker shade of the same colour, and having on the face five large very dark marks; of these, two are on the bases of the lobes, two more near the juncture where the lobes meet at the top of the head, and the fifth over the mandibles; the dorsal stripe is composed of a rather conspicuous series of arrow-head shaped olive-brown marks, the tip of each arrow-head black, and the marks pointing posteriorly; these marks are not so well defined on the four anterior segments, where they become more of an olive-brown stripe, having through its centre a whitish line; a double olive-brown line forms the subdorsal stripe, and there is a single line of the same colour along the spiracular region; the space between the dorsal and subdorsal stripes contains a few streaks and dots of the olive-brown colour, and the sides are still more variegated and marbled with the same; the tubercles are greyish-white, with minute central spot of the olive-brown colour;

spiracles large and conspicuous, intensely black ; the short hairs greyish. Ventral surface of a semi-transparent greyish colour, the prolegs having on the outside a large smoky-olive mark, and on the inside tipped with a very delicate pink tinge.

Before hibernation fed chiefly on knotgrass, but also ate a little dandelion, of which they seemed to prefer the withered leaves ; after hibernation, almost entirely on withered dandelion leaves. Probably neither plant is the natural food.

Crosland Hall, Huddersfield :

October 12th, 1898.

A third brood of Pieris brassicæ.—On the morning of October 23rd I watched for some time a white butterfly enjoying itself in the sunshine in a small garden fronting one of the houses in a main thoroughfare of Sheerness. Its small size led me at first to think it was *Pieris rapæ*, stragglers of which species have been seen on the wing well into the present month of November ; but on a closer view it proved to be *P. brassicæ* ♂ in absolutely fresh and perfect condition, but not more than two-thirds of the usual size ; the black apical blotch being much powdered with white scales, giving it the greyish appearance so frequently seen in specimens of the spring brood. It was evidently one of a partial third generation during the present year, as the last of the very numerous specimens of the normal second brood had disappeared before the end of August. In the very fine and warm autumn of 1893 a partial third brood of *Pararge Megæra* was observed here as well as elsewhere in October (*cf.* Ent. Mo. Mag., ser. 2, vol. iv, p. 287, and vol. v, p. 10), but *Pieris brassicæ* apparently did not produce a third generation in that year, and indeed, the present instance is the first in my experience in which it has done so in Britain. On the same day a specimen of *Pyrameis cardui*, apparently just out of pupa, was taken near here by a local collector ; can this have been the produce of the August specimens ?—JAMES J. WALKER, 23, Ranelagh Road, Sheerness : November 10th, 1898.

Late appearance of Pyrameis cardui.—On November 1st I had the pleasure of seeing two specimens of the above busy at the flowers of valerian at Salcombe, South Devon ; a third being noticed settling on some lofty cliffs. A specimen of *P. Atalanta* was observed on the same day.—R. M. PRIDEAUX, 105, Reigate Hill : November 8th, 1898.

Sphinx convolvuli, &c., in North Devon.—In September of the present year *S. convolvuli* was quite common in my garden at Morthoe. Sometimes five or six were in sight at once hovering over the flowers of the white tobacco ; they were so bold that a moth sucked honey from a flower held in my hand ! *Colias Edusa* was conspicuous by its absence. *Vanessa Atalanta* and *V. urticæ* were unusually common, but *Cynthia cardui*, often very common in that locality, rarely put in an appearance. *Plusia gamma* and *Phlogophora meticulosa* were both extremely abundant ; and *Pararge Egeria* was much commoner than I have known it. I mention these facts

because the abundance or otherwise of common insects in a succession of years in the same place may throw light on the movements of rarer species.—G. B. LONGSTAFF, Highlands, Putney Heath, S.W. : *October 31st, 1898.*

Bucculatrix Demaryella, Stn., feeding on hazel.—Dr. J. H. Wood informs me that in the Tarrington district (Herefordshire) he breeds *Bucculatrix Demaryella* from hazel (*Corylus avellana*) as well as birch, which latter is its only recorded food-plant. This interesting fact throws a new light upon Stainton's statements [Zool., 1848, p. 2157 ; Ins. Brit. Lep. Tin., 293 (1854)] about the occurrence of specimens among hazel bushes in the south of Scotland, for after Mr. T. Wilkinson's discovery of the larva on birch (Ent. Wk. Int., 1856, p. 171), we hear no more about the insect being associated with hazel, and presumably it was supposed that the moths taken amongst it were there merely by accident, which, in view of Dr. Wood's experience, seems highly improbable.—EUSTACE R. BANKES, The Rectory, Corfe Castle : *November 1st, 1898.*

Anchomenus gracilipes: correction.—The date of capture of the specimen I recorded last month (*vide ante* Ent. Mo. Mag., 2nd series, vol. ix, p. 221) should have been *June 11th*, not *July 11th*.—CLAUDE MORLEY.

Xylophilus brevicornis, Perris, at Heathfield, Sussex.—Of this rare British species I captured six specimens, including both sexes, at Heathfield, Sussex, in August last. They were found in the rotten wood of a felled beech tree.—W. A. BEEVOE, 129, Harley Street, W. : *November 10th, 1898.*

Harpalus discoideus, Fabr., at Oxford.—As *Harpalus discoideus* seems to occur in so few places, it may be worth while to note that I have this season been taking it, in company with *H. ignavus*, in the sandpits near Oxford.—W. HOLLAND, 69, Observatory Street, Oxford : *November 16th, 1898.*

Trachys pumila, Ill., and other beetles in Kent.—In 1896 I took three specimens of *Trachys pumila*, Ill., at Dodington, Kent: two in March (one at sallow, and the other under a stone in an adjoining chalk pit), while the third occurred in August by sweeping grass about half a mile off. Other interesting beetles which have recently been found in the locality are: *Panagæus quadripustulatus*, Sturm, *Licinus depressus*, Payk., *Homœusa acuminata*, Märk., *Atemeles emarginatus*, Payk., *Liodes humeralis*, Kug., *Agathidium marginatum*, Sturm, *Amphicyllis globus*, F., *Hydnobius strigosus*, Schmidt, *Anisotoma badia*, Sturm (abundant in the spring of 1894 in partially flooded ground, rare since), *Colenis dentipes*, Gyll., *Colon latum*, Kr., *Nitidula rufipes*, L., *Olibrus pygmæus*, Sturm (at roots of grass), *Pocadius ferrugineus*, F., *Epuræa melanocephala*, Marsh., *Hyperaspis reppensis*, Herbst, *Platynaspis luteorubra*, Goeze, *Aphodius 4-maculatus*, L. (one taken flying this spring), *Zenkeri*, Germ., *obliteratus*, Panz., *nitidulus*, F., *sticticus*, Panz., *fætens*, F., *pusillus*, Herbst, and *consputus*, Cr., *Cænocara bovistæ*, Hoff., *Chrysomela gœttingensis*, L., *varians*, Schall., *hyperici*, Forst. (the latter taken this year on October 23rd in some numbers), *Cassida sanguinolenta*, F., and *vibex*, F., *Stylops melittæ*, Kirby (one male and females abundant on *Andrena Trimmerana* in 1896).

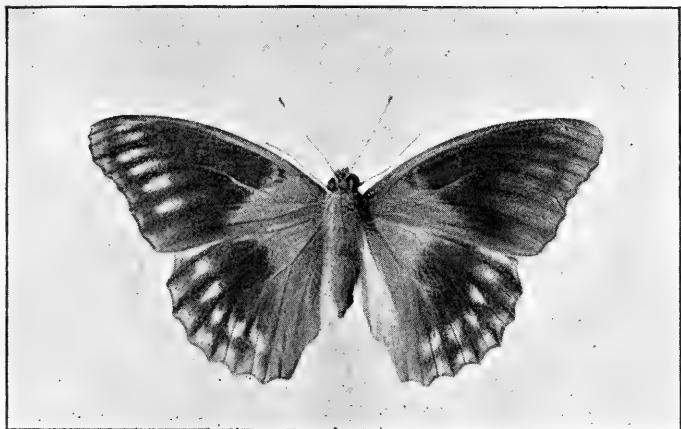
In this locality (Dodington) beetles generally occur singly, but additional species are constantly turning up, thus this October, besides one *Trachys pumila*, I found *Cassida hemisphærica*, Herbst (1), and *Amara patricia*, Duftschm. (1), the latter two new to me, all taken by cutting tufts of grass on a slope within a few yards of the house, where I have collected hundreds of times before.

I may also record during September and October, from Tolehurst Woods, near Staplehurst: *Anisotoma cinnamomea*, Er., *Thiasophila angulata*, Er., *Quedius nigriceps*, Kr., and *brevis*, Er., and *Syntomium æneum*, Müll.; from the Blean Woods: *Dinarda Mærkeli*, Kies., and *Coccinella distincta*, Fald.; from Cobham Park, in dead leaves: *Choleva spadicea*, Sturm (new, I believe, to the Chatham district, as it is not in Mr. Walker's list), *Notiophilus rufipes*, Curt., and *Megacronus inclinans*, Grav. (Mr. Walker has also taken a specimen of the latter insect at the same spot this October).—A. J. CHITTY, 27, Hereford Square, S.W.: November 11th, 1898.

Crabro gonager, Lep., in Kensington.—I took a specimen of this rare insect on a window pane in my house in 1896; possibly it was introduced with mould for flower boxes, as in this way I have received *Cetonia aurata*; but *Hymenoptera* do occur in Kensington and other parts of London, thus I find *Prosopis communis*, Nyl., annually, and this year it literally swarmed on some nasturtiums growing on my flat roof, while a red bellied *Megachile* ? sp., several *Bombi*, and even an *Apis mellifica*, L., visited the flowers. I also observed *Megachile* at the Zoological Gardens this summer.—ID.

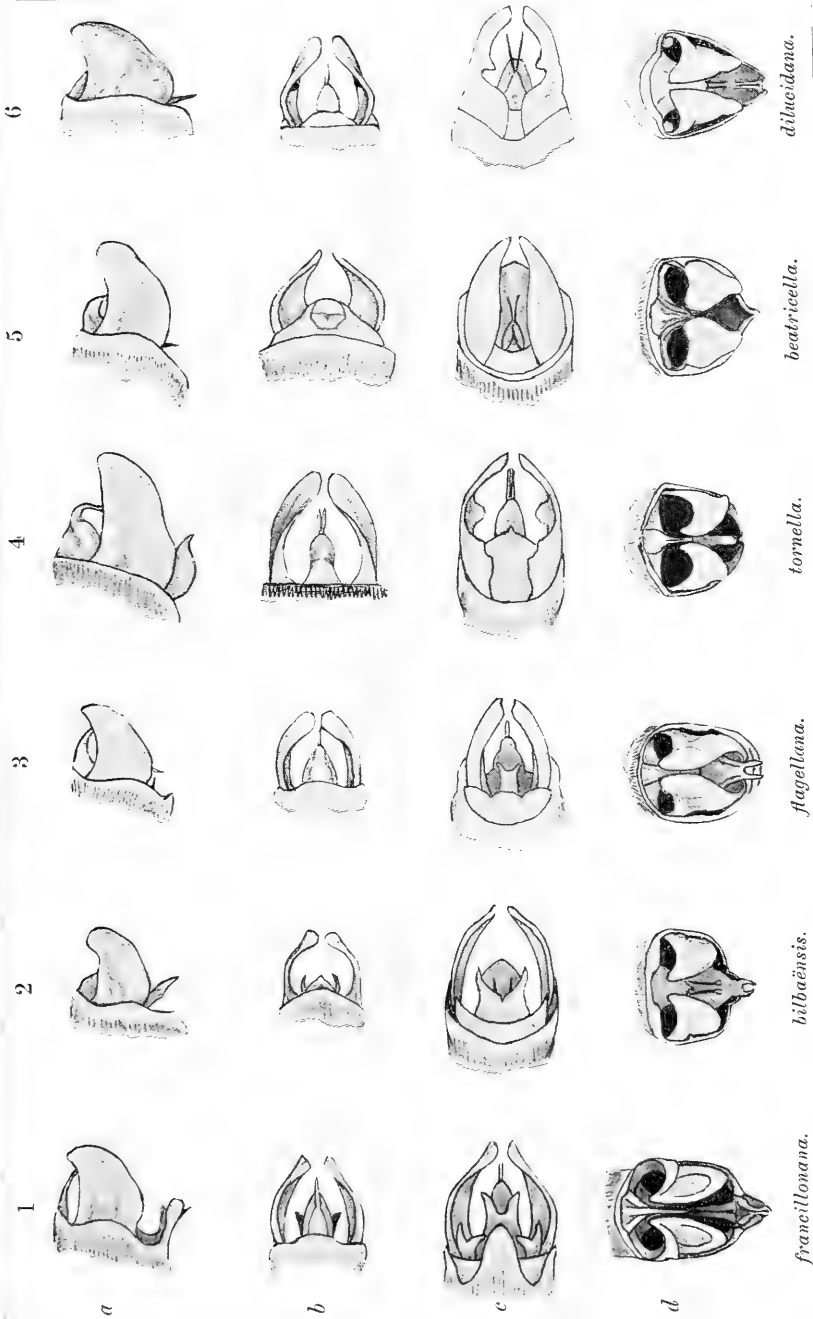
Hystriehopsylla talpæ, Grav., at Dodington, Kent.—I got a few specimens of this grand flea on April 12th last in the woods near Dodington, Kent; they were in a little heap of dead leaves and sticks which had been utilized by some animal as a nest, and along with them was another small flea: a moles' run adjoined the nest. This flea is stated to be blind: I am satisfied from the conduct of one that I kept in a glass-covered box that it is sensitive to light.—ID.

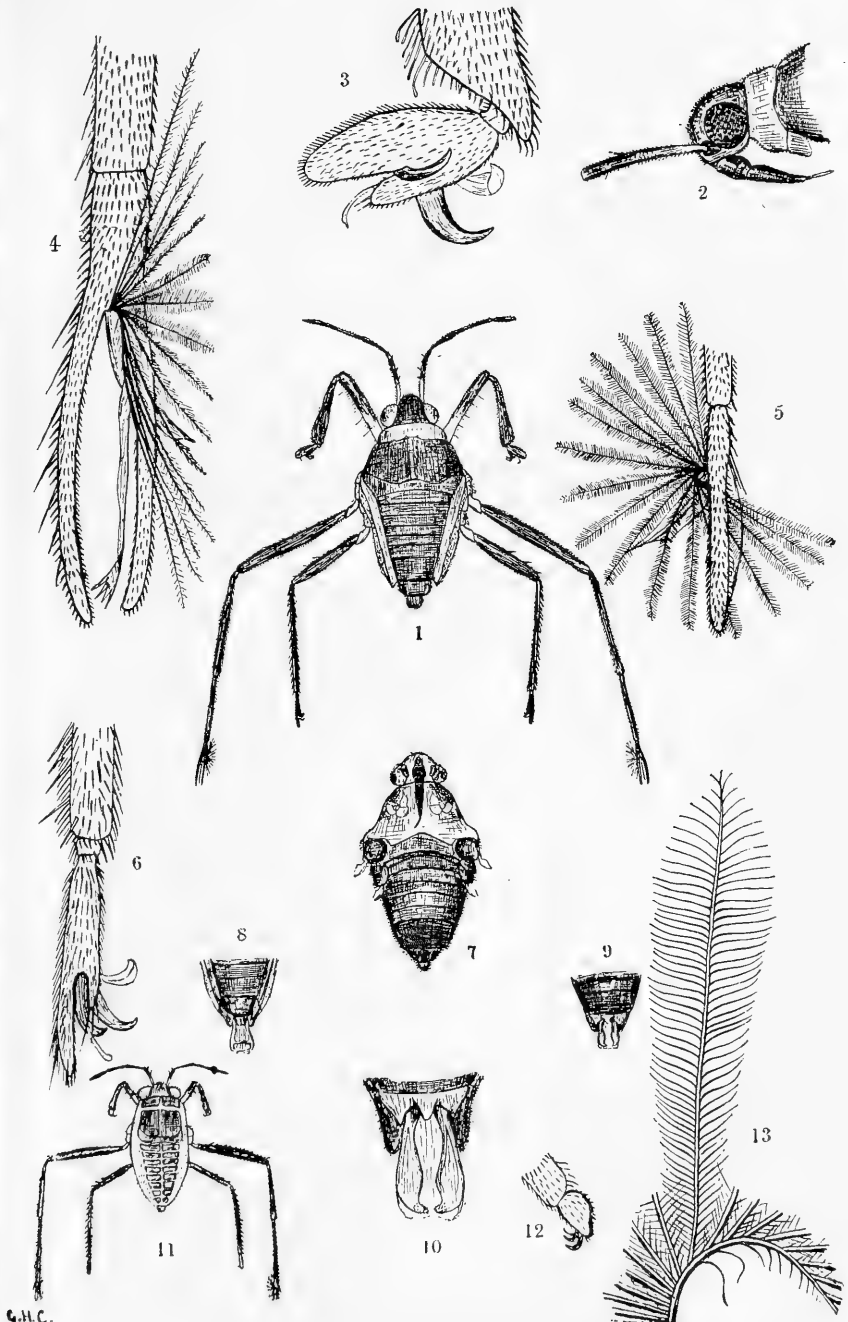
Oxfordshire Diptera in 1898.—The following *Diptera*, which have kindly been named by the Rev. E. N. Bloomfield, were taken in the vicinity of Chesterton during the last three months, and have all occurred sparingly. *Microchrysa polita*, L.; *Chrysops cæcutiens*, L.; *Chrysopilus auratus*, F.; *Leptogaster cylindrica*, Deg.; *Dioctria flavipes*, Mg., one in 1897; *Thereva nobilitata*, F.; *Chilosia pulchripes*, Lw.; *Melanostoma scalare*, F.; *Syrphus auricollis*, Mg., *S. luniger*, Mg.; *Sphærophoria menthastri*, L.; *Volucella bombylans*, L., common, *V. pellucens*, L., one; *Eristalis intricarius*, L.; *Myiatropa florea*, L.; *Helophilus versicolor*, F., one; *Xylota segnis*, L.; *Chrysotoxum sylvarum*, Mg., common, *C. festivum*, L., one; *Physocephala rufipes*, F.; *Calliphora grænlandica*, Zett.; *Pyrellia cadaverina*, L.; *Graphomyia maculata*, Scop.; *Spilogaster uliginosa*, Flin.; *Pegomyia bicolor*, W.; *Toxoneura muliebris*, Harris, one in 1897.—G. C. HUGHES, Chesterton, Bicester, Oxon.: October 19th, 1898.



ARGYNNIS PAPHIA, AB.

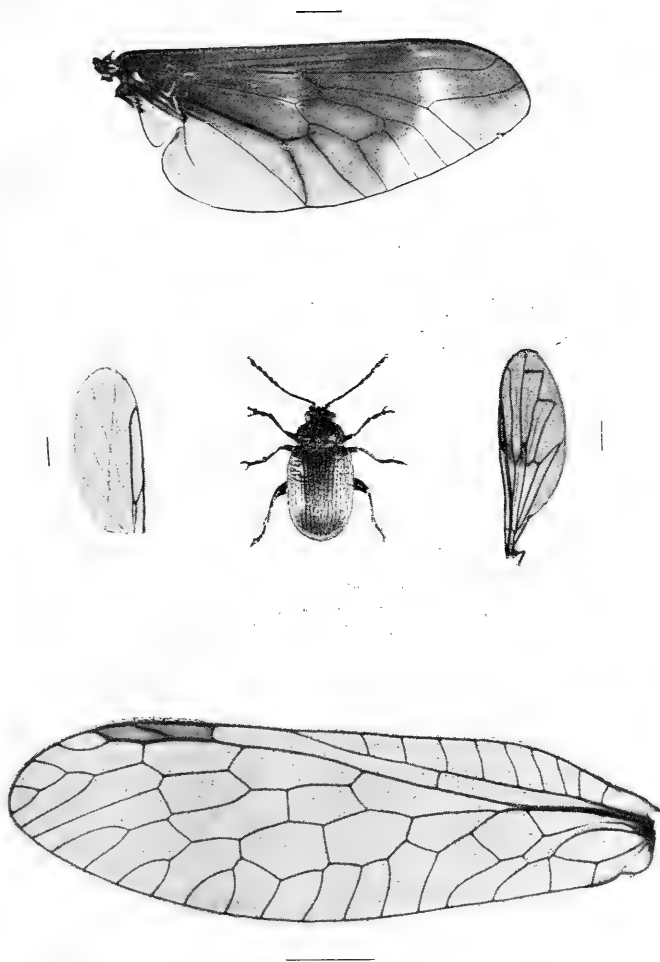
LOZOPERA, Stph.



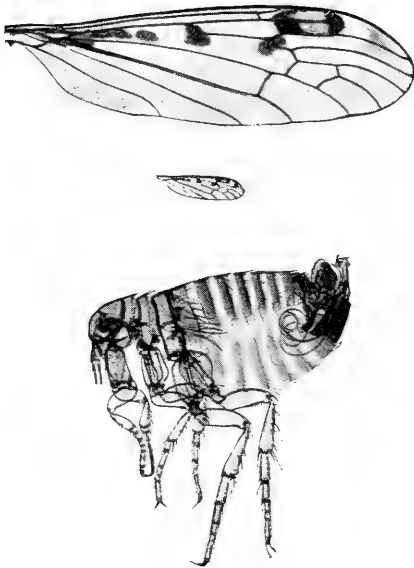


G.H.C.

TROCHOPUS MARINUS, Carp.



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Wing of *Limnobia quadrinotata*.

Same, natural size.

Pulex irritans, ♂.

6.5.
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[VOL. XXXIV.]

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