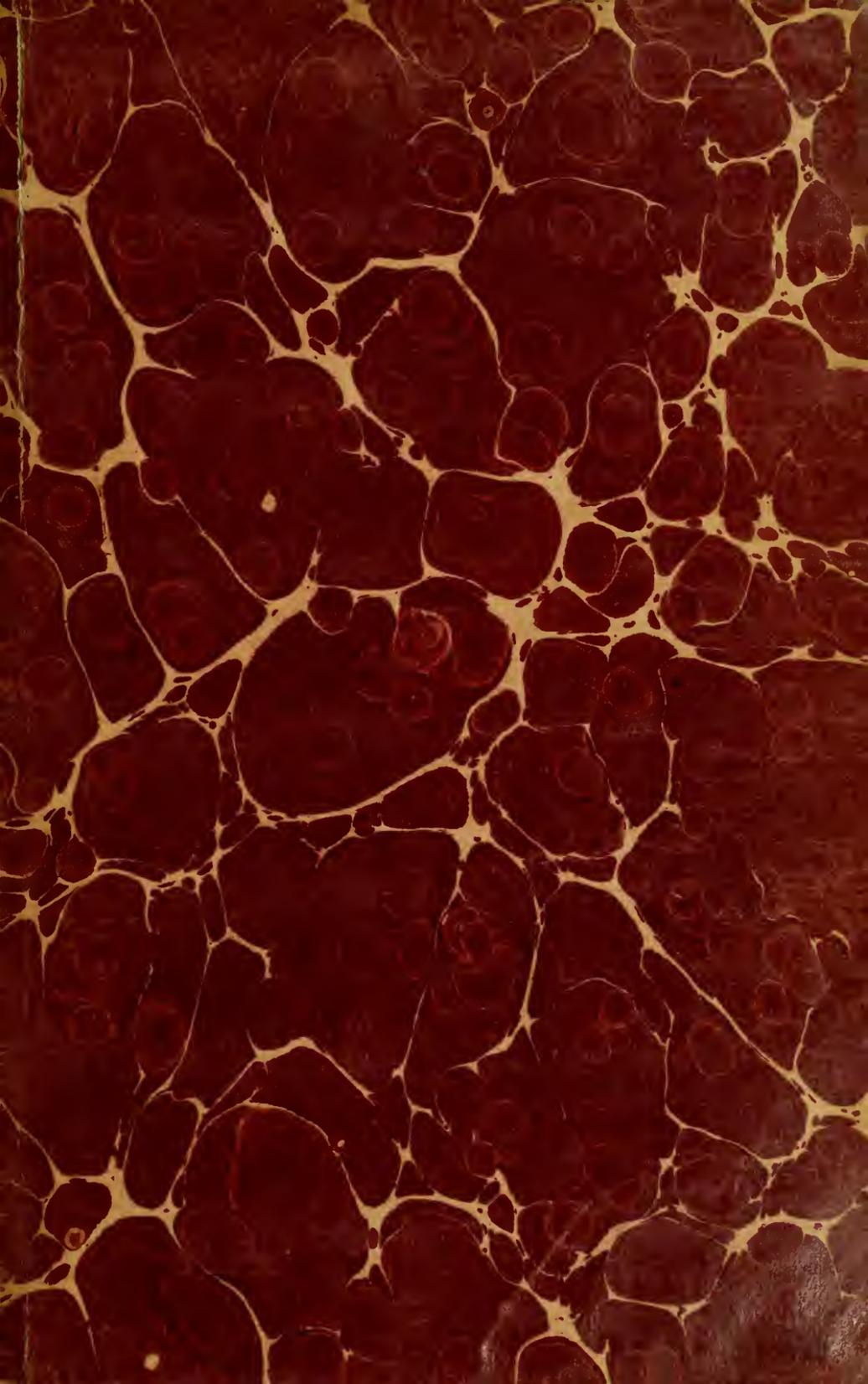


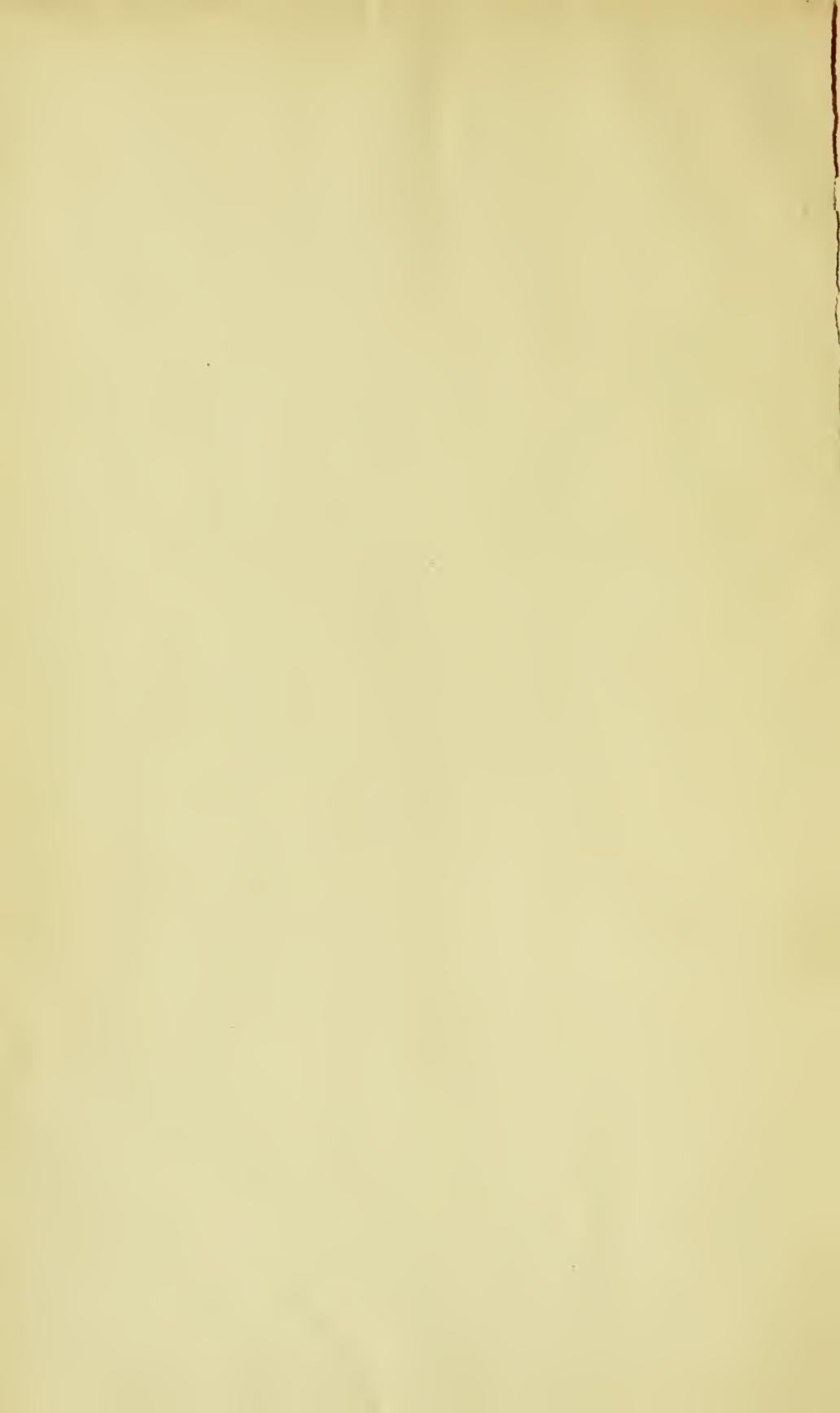


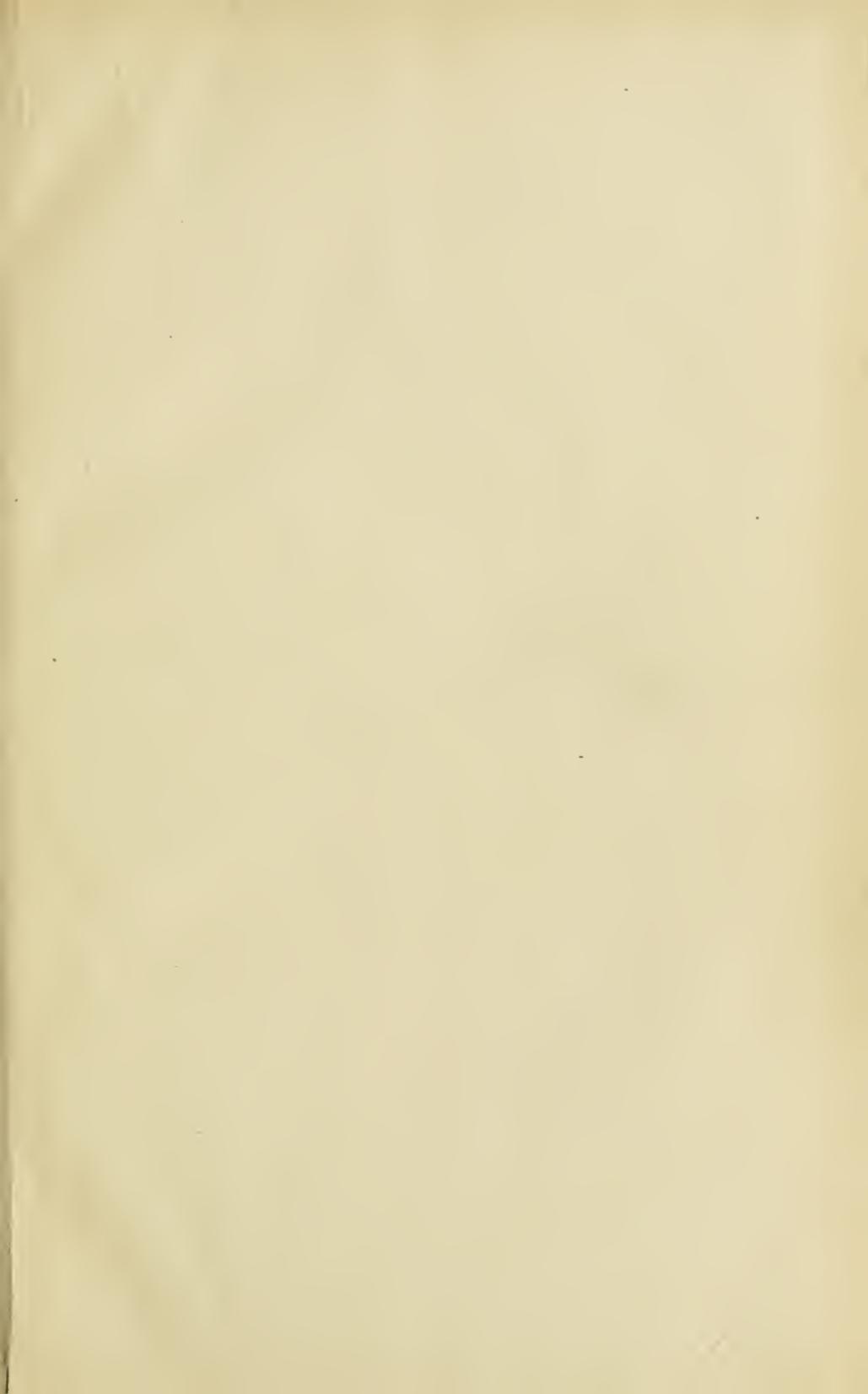
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"He is a thoroughly good naturalist who knows one parish thoroughly."—*Charles Kingsley*, "At Last."



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[VOL. XLVIII.]

— ◆ —

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

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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INTERNATIONAL CONGRESS OF ENTOMOLOGY.

The Second International Congress of Entomology will be held at Oxford from August 5th to 10th, 1912.

The President of the Congress is Professor E. B. Poulton, D.Sc., F.R.S.

The Executive Committee proposes to find for Members of the Congress lodgings in the town, or rooms in one or more of the Colleges at a moderate charge; rooms in College will be available only for men.

The Executive Committee invites an early provisional notice of intention to join the Congress, in order to be able to make the arrangements for the necessary accommodation.

The Proceedings of the First Congress are in the press, and will be published shortly.

All communication and enquiries should be addressed to the General Secretary of the Executive Committee,

MALCOLM BUBB, c/o Entomological Society of London,

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THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE:

SECOND SERIES—VOL. XXIII.

[VOLUME XLVIII].

DESCRIPTION OF A NEW SPECIES OF *XANTHOLINUS*
(SUB-GEN. *VULDA*) FROM TURKEY.

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

XANTHOLINUS OTTOMANUS, *n. sp.*

Head much longer than broad, black, shining, with sides parallel; eyes moderately large, distinctly projecting beyond the level of the sides; forehead impressed with two short, shallow, parallel furrows placed close together, not meeting the oblique impression, which starting near anterior margin of the eye, runs backwards and inwards and ends in a seta-bearing pore; puncturation moderately fine and scattered, closer at the sides, with fine and still more sparing punctures between the larger ones; pubescence yellow, very slight; lateral margins with one or two setæ; posterior angles rounded.

Antennæ long, red, 1st joint about as long as the three following together, 2nd and 3rd of about equal length, 4th quadrate, 5th to 10th transverse. Thorax much longer than broad, narrower than head and elytra, sides almost parallel behind the anterior angles, which, like the posterior, are obtuse; black and shining, narrowly reddish at posterior margin; puncturation double, consisting of—(1) a row of 8 or 9 punctures on either side of disc, and irregular and sparing punctures at sides; (2) a much finer and sparing puncturation over the whole surface, including the space between the dorsal rows; sides furnished with two long setæ—one before and one behind the anterior angles.

Elytra rather longer than thorax, shoulders strongly rounded and slightly widened behind; shining, yellowish red; with irregular rather sparing and shallow puncturation and scanty yellowish pubescence.

Abdomen black, shining, sparingly punctured and pubescent, the apex and hinder margins of the segments reddish; the seventh segment (5th free) furnished at the posterior margin with a narrow white membrane, the last slightly emarginate. Legs red, slender, the middle tarsi as long as the tibiæ, the posterior pair nearly as long. Length, 7 mm.

Taken at Beikos, in August, 1903, under a stone. Type in my collection. The following Table will distinguish the European species of the sub-genus *Vulda* :—

A.—Head and thorax with metallic reflection.

1. Larger and more robust ; thorax widened in front. Head, thorax, and abdomen black. Length, 8–10 mm....

angusticollis, Fvl.

2. Smaller and more slender ; thorax widened behind, reddish-brown ; abdomen brown. Length, 8 mm.... *gracilipes*, Duv.

B.—Head and thorax black, without metallic reflection. Sides of thorax practically parallel.....*ottomanus*, n. sp.

November 22nd, 1911.

NOTES ON THE BRITISH SPECIES OF *LONGITARSUS*, LATR.

(A GENUS OF *COLEOPTERA*).

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND W. E. SHARP, F.E.S.

(Continued from Vol. xlvii, p. 275).

SECT. III.—Species unicolorous, testaceous, brown, pitchy, or black (extreme form of *L. luridus*) with coarse, confused punctuation.

- i. Antennæ short, last six or seven joints darker than remainder.

1. Elytra furnished with distinct white cilia at apex...

L. castaneus, Duft.

2. Elytra without cilia, or with apical cilia minute and inconspicuous*L. luridus*, Scop.

- ii. Antennæ long, entirely testaceous or darker only at extremity.

1. Form larger. Antennæ as a rule entirely testaceous...

L. rubiginosus, Foudr.

2. Form smaller. Antennæ with last five or six joints darker...

var. *ferrugineus*, Foudr.

L. CASTANEUS, Duft. [Faun. Austr. III, p. 260] ; Foudr. [Mon. p. 150] ; Kutsch. [Wien. Monat., 1863, p. 162 (213)].

Syn. *brunneus*, Duft. [Faun. Austr. III, p. 260], teste Weise (Nat. Ins. Deutschl. VI, p. 950) and Bedel [Col. Bass. Seine, V. pp. 190, 308].

In form a regular oval, entirely of a red brown colour, with suture often narrowly darker. Antennæ: testaceous, with last five or six joints slightly darker. Thorax: bordered, transverse, distinctly alutaceous, punctuation distinct, rather remote, and much finer than that of elytra. Elytra: punctuation

variable, but always more or less coarse and confused, weaker at apex, apical angles very feebly rounded. The external apical border of elytra and the pygidium bear long white cilia, those of the latter being visible through the slight dehiscence of the elytral apices. Legs: testaceous with posterior femora sometimes concolorous, but more usually dark brown; first joint of intermediate and anterior tarsi in ♂ very plainly enlarged. Underside black.

According to Foudras both sexes are apterous, but we have seen a ♂ specimen taken in Kent completely winged. Length, 2—2½ mm.

This species is readily separable from all our other British *Longitarsi* by the possession of the apical cilia above described, which, however, appear to be often more or less abraded.

Otherwise it can be distinguished from *L. luridus* by its broader and more oval form, and generally lighter and more constant colour; from *L. rubiginosus*, by its much shorter antennæ, and from both by its weaker elytral punctuation.

It probably lives on a marsh plant. Commander Walker has found it apparently associated with *Aster tripolium* in Sheppey, but if this be a food-plant of the insect at all, it certainly cannot be so exclusively.

Its range appears to be restricted to inland and littoral fens and marshes. We have seen specimens from Wicken, King's Lynn, and Sheppey, and there are records from many other localities in England, but owing to the confusion in which the nomenclature of this and the next species is involved, these records may perhaps be open to some doubt.

L. LURIDUS, Scop. [Ent. Carn. p. 70]; Gyll. [Ins. Suec. III, p. 537]; Redt. [Faun. Austr., Ed. 1, p. 534]; Weise [Nat. Ins. Deutschl. VI, pp. 956, 1018]; Steph. [Ill. Brit. IV, p. 314].

Syns. *brunneus*, Brit. Colls.; Foudr. [Mon. p. 152]; All. [Mon. p. 129].

fusculus, Kutsch. [Wien. Monat., 1863, p. 273 (294)].

The synonymy of this and the preceding species is exceedingly confused, intricate, and uncertain. There appears to be some difference of Continental opinion as to what species Duftschmidt's names really denoted (see Bedel, Col. Bass. Seine, V, p. 307).

We have with some hesitation, although at variance with the latest European catalogue, adopted the name *L. castaneus*, Duft., for the ciliated, and retained *L. luridus*, Scop., for our common species,

deleting "*brunneus*" altogether, feeling that nonconformity with the present Continental usage, although open to objection, is perhaps preferable to the confusion which might be caused by a reversal of names so well known and understood by British students.

L. luridus is one of the most inconstant species of British beetles. The shape is generally narrow with elytra regularly oval, but it varies very much according to the presence or absence of wings, and the degree of maturity of the individual. The colour varies from pale testaceous through all shades of brown, red-brown, or pitchy, to black (*niger*, Brit. Colls.); the darkening of the suture is occasionally distinctly marked, but usually imperceptible; the margin of the elytra is sometimes lighter than the median area, and a form occurs with lighter elytral apices somewhat resembling *L. holsaticus*.

Antennæ: black with first three to five joints testaceous or brown. Thorax: transverse, bordered, exceedingly variable in sculpture, as a rule alutaceous, with distinct scattered punctuation. Elytra: coloured variably as above, alutaceous, with punctuation always strong, sometimes very coarse and almost rugose, sometimes slightly seriate; apices separately rounded. Legs: testaceous with tarsi and posterior femora darker, first joint of anterior tarsi of ♂ slightly enlarged. Underside usually pitchy. Wings present or rudimentary. Length, $1\frac{1}{4}$ — $2\frac{1}{2}$ mm. The most stable character in this species and that by which it can be most certainly recognized is the coarse, strong, elytral punctuation.

From *L. castanens* it may be known by the absence of the long apical cilia, and the very different length and colour of the antennæ will easily distinguish it from *L. rubiginosus*.

The food plant of this, the most abundant of our *Longitursi*, remains unknown. The species is almost certainly polyphagous, and the conjecture may perhaps be hazarded that variety of nutrition may have some relation to its extreme morphological instability.* It is to be swept generally from low and mixed herbage, and appears to be more common in autumn than in spring or summer, and is universally distributed.

L. brunneus, Duft.—This form has had a place in our lists as a species since the Waterhouse Catalogue of 1858, and may be separable from "*luridus*" by its robuster form, lighter colour and possession of wings. In view, however, of the extreme variability of *L. luridus*, we have no hesitation in considering it as a form of that species, and the latest European Catalogue (Heyden, Reitter, and Weise, 1906) adopts

* Apposite to this is a remark by Capt. St. Claire Deville (*in litt.*) viz.: ". . . For example, specimens of *L. obliteratus* taken on *Salvia* are separable at the first view from those taken on *Thymus* and *Satureja*."

the same view; (see also Rye's observations on this point cited by Fowler, Brit. Col. IV, 342).*

L. fusculus, Kutsch., was described from British examples sent him by G. R. Waterhouse in 1862. We have been enabled, by the courtesy of Mr. E. A. Waterhouse, to examine the type specimens now in the "Waterhouse" Collection, and we believe this also to be merely one of the forms of the polymorphic *L. luridus*. The "species" does not appear to have been recognised from anywhere else in Europe, and the European Catalogue (Heyden, Reitter, and Weise, 1906), gives *fuscus*, Kutsch., merely as a doubtful synonym of *L. luridus*, Scop. The Waterhouse specimens differ from the more usual forms of *L. luridus* in being smaller and more parallel-sided, with the elytra lighter in colour than the thorax, and with the punctuation closer and less coarse, but any fairly large collection of *L. luridus* will show a complete gradation to such forms.

An examination of the genitalia of both sexes of these three forms, "*brunneus*," "*luridus*," and "*fuscus*," which Mr. H. Britten has been good enough to dissect out for us, reveals no difference whatever between them. This fact of itself is of course insufficient to prove their specific unity, but it certainly renders impossible their separation on these characters.

L. RUBIGINOSUS, Foudr. [Mon. p. 204]; Weise [Nat. Ins. Deutschl. VI, p. 1005].

Syn. *flavicornis*, All. [Mon. p. 136]; Brit. Colls.

Of a rather long oval shape. Entirely testaceous, lighter or darker. Head: dark testaceous, vertex often black. Antennæ: almost as long as body, light testaceous, often slightly dusky towards apex but never black. Thorax: distinctly transverse, bordered, punctuation variable, but usually fine and remote, alutaceous or smooth between the punctures. Elytra: coarsely, rugosely and sometimes subseriately punctured, very faintly alutaceous, somewhat similar to those of *L. luridus*; apices separately rounded; suture sometimes faintly rufescent. Legs: pale testaceous, posterior femora usually, but not always, somewhat darker, first joint of anterior tarsi in ♂ hardly enlarged. Underside ferruginous. Winged. Length, 2—2½ mm.

The long, light coloured antennæ, combined with the coarse elytral punctuation separate this from all our other species.

Food plants.—This species is attached to *Convolvulus*. One of us has taken it on *C. sepium* at Symonds' Yat and Kerne Bridge, and on

* In the "Entomologist," No. 564 (May, 1910), Dr. Sharp criticises Weise in regard to this or these species. The latter author regards *L. brunneus* as a winged, and *L. luridus* an apterous, form, extending much further north than *L. brunneus*. Dr. Sharp appears to dissent from this view, but holds that the final solution of the problem is still to seek.

C. arvensis at Bradfield, Berks. Mr. H. C. Dollman has met with it abundantly on *C. sepium*, near Ditchling, Sussex, and Bedel quotes M. A. Dubois, of Versailles, as having found it associated with *C. sepium* and (under cultivation) *C. tricolor*. Foudras gives *Eupatorium cannabinum* as the food plant, but Bedel commenting on this says: "l'erreur de Foudras s'expliquerait par ce fait que le *Convolvulus sepium* et l' *Eupatorium cannabinum* sont généralement fort enchevêtrés."

This species appears to be widely, but not very commonly, distributed throughout the south of England. Further records are necessary to establish the certainty of its range north of the Midlands.

Vars.—Weise gives three varietal forms:—

A—*profugus*. Winged, with prominent shoulders and shorter antennæ. Of this form we have seen no British examples.

B—*fumigatus*. Head and thorax ferruginous or more or less pitchy, antennæ brown, prosternum and abdomen brown or pitchy. This form appears in a greater or less degree to occur with, and to be almost as common as, the type, and cannot be considered in any sense as a stable divergence from it.

C—Thorax and elytra finely punctured. This form does not appear to be common, and, in any case, in a group so variable as regards punctuation, seems hardly worth special recognition.

L. ferrugineus, Foudr. [Mon. p. 216].—A few specimens which have been referred to this species exist in British collections. Mr. E. A. Waterhouse has kindly allowed us to examine the exponents in the "G. R. Waterhouse" collection, and Mr. Champion, an example so named for him by E. C. Rye, on the strength of which we believe the species was added to the British list. One of us also possesses a specimen taken at Folkestone. These few examples constitute, so far as we have been able to ascertain, the entire representation of *L. ferrugineus* in British collections. With so small an amount of material available, it becomes difficult to decide on their specific validity, but so far as our examination of them takes us, we have little hesitation in regarding them as a small form of *L. rubiginosus* with antennæ darker than usual.

Of the same shape, but smaller, with similar elongate antennæ,

similar variable thoracic, and strong, almost seriate, elytral punctuation—it is difficult to discover between them and *rubiginosus* any difference which, in a form with so wide a known range of variation, can be considered as specific. The insect seems equally rare on the Continent, and we have been unable to obtain a specimen from any Continental student of the group,—while a careful study of the text of Foudras' description* fails to discover any distinct specific character incompatible with the British specimens we have been able to examine.

Except that the size is $1\frac{3}{4}$ –2 mm. instead of 2–2 $\frac{1}{2}$ mm., that the last five or six joints of the antennæ are fuscous, and that the punctuation of the thorax is perhaps rather more confluent and rugose—the description given above for *L. rubiginosus* may be applied to it, and need not be recapitulated.

(To be continued).

TELMATOSCOPIUS ROTHSCHILDII, A NEW SPECIES OF PSYCHODID
DIPTERA FOUND IN LONDON.

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

One female of this fly was taken by Hon. N. Charles Rothschild off the trunk of a tree in a retired spot by the Serpentine, in the summer of 1909, and other specimens of each sex in the middle of June, off the same tree, the following year. The illustrations of the accompanying textual figure have been delineated with the aid of a Schröder's prism-eye-piece, from preparations in Canada Balsam of detached details of the fly mounted without pressure, derived from specimens forwarded to me alive or in fluid by their discoverer.

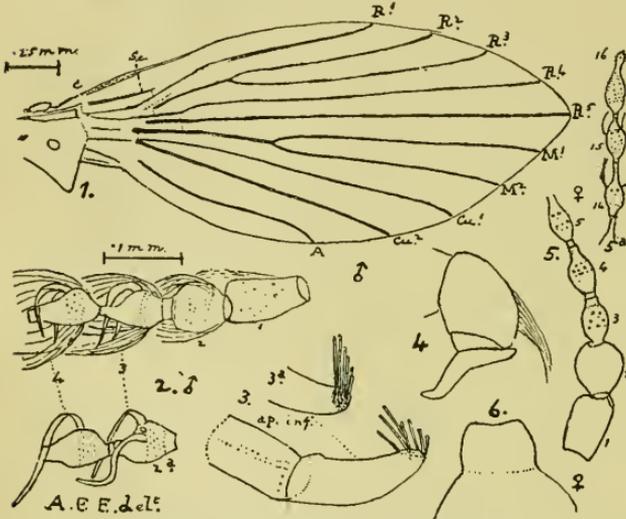
By means of the details selected, the fly's relationship to two species, previously described, of the genus *Telmatoscopus* may be demonstrated: *T. advena*, Etn., captured singly in Somerset, Seaton and Aylesbeare Common, Devon, and near Fort National in Haut-Sebaou, Algeria (1 ♂ ex., 2. xi. 1892., Etn.); and *T. meridionalis*, a species of wide distribution, occurring in Egypt at Ismailia (Biró), German East Africa, Delagoa Bay, Sierra Leone (Austen), and (perhaps, transported in slave ships) in South America (Burchardt).

* Foudras' types, we are given to understand, are, unhappily, no longer available for examination.

DETAILS OF *TELMATOSCOPIUS ROTHSCHILDII*.

The scale of enlargement of the wing is shown by the proportional enlargement of .25 mm., and that of all the other details by the enlargement of .1 mm. (.25 mm. = .01 inch).

1. Wing of male denuded. C., costa; S.c., subcosta; R¹, radius, and R²



to R⁵, its branches, the radial sectors, of which R² and R³ constitute the sectorial fork; M¹ and M², branches of the median vein, the partition vein of the two basal cells, forming the median fork; Cu¹ and Cu², cubital veins, enclosing in this instance a sessile cubital fork; A, anal vein.

Details of *Telmatoscopus rothschildii*.

2. Joints 1 to 4; and 2a, joints 3 and 4, in ♂ antennæ, partly denuded, showing "articular appendages."

3. ♂ Inferior genital appendage and its segmental base, denuded, viewed from the side; and 3a, part of the other, showing the tenaculæ from another stand-point.

4. ♂ Broad-side of a superior genital appendage or gonopod, partly denuded.

5. ♀ Five basal joints; and 5a, the last three joints of an antenna denuded of hair, these last with inconspicuous articular appendages.

6. ♀ Subgenital lobe.

This species is traceable to the section of the genus *Telmatoscopus* containing the two forms referred to above, by the following chain of characteristics:—anterior basal cell delimited in front by the sectorial division of the radial trunk alone; most of the joints of the flagellum in ♂ antennæ narrowed apically into a beak or neck; base of the pedicel of the sectorial fork free, or else linked by a cross-vein to the basal cell; nodosities of the last few joints in the flagellum spaced by beaks or necks; inferior ♂ genital appendages pluri-tenaculate; third joint in ♂ antennæ similar and equal in length to the fourth, even if shorter necked.

The section is characterized by:—wings lanceolate, apically acute

at the end of R^5 ; first joint in antennæ of ♂ shorter than the second and third joints combined; and the nodules of most of the joints of the flagellum largely protuberant on one side.

SHORT DIAGNOSIS OF THE SPECIES: DIFFERENCES IN
WING-NEURATION.

- A. The vein R^1 ends in ♂ directly opposite the end of Cu^2 , but in ♀ just beyond this.

Axils of the sectorial and median forks in a direct transverse line in ♂ with the end of vein A, but in ♀ with a point a little beyond this.

...94, *advena*, Etn.

Axils of the aforesaid forks in an oblique straight line sloping outwards from the sectorial axil to, in ♂ the end of vein A, but in ♀, to a point just beyond this95, *rothschildii*, sp. n.

- B. The vein R^1 ends opposite or almost opposite the end of Cu^1 . Axils of the aforesaid forks in an oblique straight line sloping inwards from the sectorial axil to a point a little interior to the middle of vein A.....

96, *meridionalis*, Etn.

The numerals prefixed to the names are indices to a series of microscopical preparations of *Psychodidæ*, numbered species by species in their systematic succession throughout the family, with letters after the numerals distinctive of individual slides, many of the preparations being of sufficient importance to be cited in the manner of botanical typical *exsiccati*.

TELMATOSCOPIUS ROTHSCHILDII, sp. nov.

Wing-markings similar in style to those of *T. advena*, but the ground-colour darker. Pubescence of frons, vertex and thorax as far as the wings, whitish, but behind this and on the abdomen almost sepia brown. Wings blackish grey, with inconstant markings dependent upon the direction of light, fringes glossed with a shifting whitish-flaxen satiny lustre, involving the humeral tuft and the hair of the alulae, and the tips of the hairs at the ends of R^1 and A; near the dark-outlined apical margin, a narrow chevron of appressed distichous hairs, before the ends of the nervures from R^2 to Cu^2 , is similarly glossed; from some points of view the ranks of bristling hair on R^2 , R^3 , R^4 , M^1 , M^2 , Cu^2 , and A are of the ground-colour, with a few whitish hairs inclined outwards at their ends, but from other stand-points they become wholly whitish; and by turning about, small dark cuneate spots of divergent hairs at the ends of nervures become visible just at the margin. Legs and tibial fringes of a similar dark tint, with a similar shifting whitish gloss; the tibia and the first two or more of the tarsal joints, on their exposed side, edged narrowly at the tips with snow-white glossed scales, this lustre under an oblique light growing more diffused over the further joints. Penis ill-displayed in the preparations. Length of wing, 2 to 2.5 mm.

Hab. England; Hyde Park, London (*Rothschild*), Preps. Etn. 95
a. b. ♂, c. ♀ (15.vii.1910).

November, 1911.

Note on two introduced species of Lathridiidae.—Two introduced Lathridiids have recently come under my notice: (1) *Adistemia watsoni*, Woll.: several living examples of this species were found in the Geological Department of the British Museum in 1907. The insect is probably of American origin, though originally described from Madeira; the other recorded localities for it are North America, Mexico City, Chile, Portugal, and France. An excellent figure of *A. watsoni* is given by Dr. Sharp in the Biol. Centr. Am., Coleopt. ii, pt. 1, t. 19, fig. 5. The genus *Adistemia* is closely related to *Cartodere*, and the single species belonging to it is of peculiar shape, the head and prothorax being small and narrow, and the elytra very elongate. (2) The second species is doubtless a form of *Cartodere elongata*, Curt., with the second and third elytral interstices flattened—the first (sutural) and fourth thus appearing more raised than usual. Amongst a very large number of specimens of *C. elongata* taken by myself at Ashstead and Woking, from under oak bark or from amongst freshly cut oak chips, there are none quite like the variety mentioned. This latter was recently taken in some numbers by Dr. Chapman in his house at Reigate, in sawdust, amongst which some larvæ from the south of France (Amélie-les-Bains) had been placed with their food-plant (*Coriaria*) for pupation.—G. C. CHAMPION, Horsell, Woking: December, 1911.

Oxyptoda soror, Th., and other beetles in Cumberland.—Towards the end of June last, I spent a day on Saddleback, a mountain I had long planned to visit, and had the good fortune to take three specimens of the rare *O. soror*, Th.,* crawling about among the short grass on the summit. This is the first record of the species for the county, and, perhaps, for the North of England, as beyond Fowler's Scotch records and the Forest of Dean, I cannot call to mind its capture elsewhere, except on Snowdon (Ent. Record, 1906, p. 242). On the same occasion *Anthophagus alpinus*, Pk., was not uncommon, also *Geodromicus globulicollis*, Mann., both new to me, although not to the county. Some small pools were tenanted by *Agabus congener*, Pk., *Hydroporus morio*, Dej., and other sub-alpine species, and very sparingly by *H. melanarius*, Sturm, a species I have long searched for. Mr. G. B. Routledge found a specimen on Hayton Moss some years ago, and I know of no other county record. Few other species of interest turned up this season, but I may mention a fine pair of *Clytus areuatus*, L., concerning whose nationality I am not quite sure, as I found them in the timber yard here, where both European and British woods are stored. In flood refuse *Cryptohypnus quadripustulatus*, F.,* occurred, also *C. maritimus*, Curt., and lately I picked up a specimen of *Silpha sinuata*, F.,* on a road. I find among my 1910 captures several which have not yet been recorded from Cumberland, viz.:—*Dyschirius thoracicus*, Rossi,* among the Seascale sand-hills; *Falagria thoracica*, Curt.,* common at roots of various plants, Seascale; *Xenusa sulcata*, Kies.,* two specimens in seaweed, Seascale; *Autalia puncticollis*,* Shp., by sweeping long grass under trees, Matterdale; *Anthobium ophthalmicum*, Pk.,* Matterdale; *Homalota crassicornis*, Gyll.,* in fungi, Gelt Woods; *H. macrocera*, Th., in dung, Wreay; *Corticaria fulva*, Com.,* in hay barn, Great Salkeld; *Eppureia immunda*, Er.* (as determined by Dr. Joy), one in carrion near Carlisle; *Bruchus pisi*, L.,* in a mill in Carlisle; *Batophila rubi*, Pk.,* by sweeping in

Gelt Woods; *Chaetocnema sahlbergi*, Gyll.,* in flood refuse on the Solway marshes; *C. hortensis*, Fourc.,* Seascale; *Linnobaris T-album*, L.,* on marshy ground, Matterdale (previous Cumberland records of this species refer to *pilistriata*, Steph., which is the common *Linnobaris* here); *Tomieus acuminatus*, Gyll.,* amongst freshly cut fir tops, Durdar. As usual all new county records are marked with an asterisk.—F. H. DAY, 26, Currock Terrace, Carlisle: November 4th, 1911.

Molytes germanus, L., and its food-plant.—When collecting *Coleoptera* last July, near Hythe, in Kent, I was so fortunate as to capture three examples of this insect, two of which were in the act of eating leaves of *Heracleum sphondylium*, the "cow-parsnip," presumably the food-plant of the species. The three specimens were taken at some distance apart, and, in each case, on or near this plant. Apparently the best time to capture *M. germanus* is between 6 and 9 a.m. My specimens were all taken between those hours, and diligent search failed to discover any later in the day. As I have been unable to find any reference to the food-plant of this species in any of our accessible text-books, I have thought this observation sufficiently interesting to record. It is also noteworthy that the localities given by Canon Fowler for the species still hold good, Hythe and Sandgate being two out of the four given by him.—K. M. SMITH, 44, Alleyn Road, W. Dulwich, S.E.

[The only specimen of *Molytes germanus* that I have ever seen alive was found on a roadside plant of *Heracleum sphondylium*, near Wye, Kent, early in August, 1898.—J. J. W.]

Additions to the list of Coleoptera of the Scilly Islands.—I spent the last week of July, 1911, in the Scilly Islands, and during that time picked up any beetles that I came across, without however doing very much serious collecting. On working through this material, and comparing the result with the lists of the *Coleoptera* already published (see Ent. Mo. Mag., 1897-1899, 1908-9), I find that out of a total of sixty species collected, fifteen have not hitherto been recorded from Scilly. Most of those enumerated in the following list are from St. Mary's, but I also spent an hour or two on Annet and found a good many specimens, though not in much variety, under drift wood, and the carcasses of young sea-birds that are scattered everywhere about the fore-shore. Considering that none of the species are in any way rare, the percentage of unrecorded names seems remarkably high. The fifteen additions are as follows: *Harpalus anxius*, *Colambus confluens*, *Agabus nebulosus*, *Helophorus æneipennis*, *Homalota melanaria*, *Quedius tristis*, *Q. impressus*, *Gnathoncus punctulatus*, *Saprinus nitidulus*, *Typhæa fumata*, *Aphodius rufipes*, *Anobium fulvicorne*, *Sitones waterhousei*, *S. lineatus*, *S. hispidulus*.—K. G. BLAIR, 23, West Hill, Highgate, N.: December, 1911.

Note on Stenus formicetorum, Mann.—My friend Mr. W. E. Sharp has just called my attention to a recent article by Mr. H. C. Dollman in the "Entomologist's Record," bringing forward the above as a beetle new to Britain. This

statement is, at least, misleading. The insect was introduced into our lists about the year 1864 (*vide* Ent. Ann., 1865), under the name of *S. littoralis*, Thoms., and is mentioned by Fowler (Brit. Col. ii, 343) under the name of *S. crassus*, Steph., var. *littoralis*, Thoms. The error in describing it as new to Britain is the more remarkable, as the 1906 European Catalogue, and also Ganglbauer himself, from whose work the specimen referred to appears to have been originally named, both give *littoralis*, Thoms., as a synonym of *formicetorum*, Mann.—E. A. NEWBERY, 13, Oppidans Road, N.W.: December 8th, 1911.

Olophrum nicholsoni, Donisth., in Scotland.—When examining some flood rubbish sent to me a short time ago from Dalwhinnie, Inverness-shire (elev. 1100 ft.), I came across an *Olophrum* which I thought from its general aspect when alive was *O. consimile*, Gyll., a species I have twice taken in moss brought from the summit of Ben Wyvis, Ross-shire. On closer examination, the hind angles of the thorax proved to be entire, and the specimen is evidently a large dark form of *O. nicholsoni*, Donisth. This is a particularly noteworthy capture, as the latter species has, so far, only been recorded from Wicken Fen, and it is of some interest to note that the insect is apterous. I took a few examples of *O. fuscum*, Grav., some years ago from *Sphagnum* in this neighbourhood, a locality many miles further south than any hitherto recorded. It has been suggested that *O. nicholsoni* is only an extreme form of *O. fuscum*. It appears to me, from external structure alone, to be an abundantly distinct species, and a dissection of the ædeagus confirms this opinion. Although this organ only differs slightly in the three species, *O. piccum*, *O. fuscum*, and *O. nicholsoni*, I think there can be no doubt that these differences are specific.—NORMAN H. JOY, Bradfield, Berks: December 7th, 1911.

Coleoptera at Ealing, 1911.—Two or three evenings during the summer I journeyed Ealing-wards, principally with the idea of again working at the *Cossus*-infected trees. Most of the species typical of this habitat and locality were again observed, and several others not heretofore noticed around Ealing. On June 20th I re-visited the infested poplar in Edge Hill Road, when among the *Tachinus bipustulatus*, F., I picked out one or two *Tachinus scapularis*, Steph., not before recorded as addicted to *Cossus* trees, I believe. On June 26th I discovered an old long-infested poplar on Ealing Common; this tree was partially hollowed out, the interior contained a quantity of larval rejectamenta, old cocoons, and wood-mould. *Tachinus bipustulatus* and both species of *Thamiaræa* were the principal occupants. But I also found *Quedius ventralis*, Ahr., several; *Philonthus fuscus*, Gr., several; and one *Hister merdarius*, Hoffm. *Prognatha quadricornis*, Kirb., was noticed under loose bark of this tree. June 27th found me at Perivale, by the side of the River Brent: here I came across a somewhat recently infected ash. From the small patches of exuding *Cossus* aliments and tree-sap, by very careful manipulation, I secured a nice series of *Silusa rubiginosa*, Er. Under small pieces of bark, I took one specimen of *Opilo mollis*, L., and *Hypophlæus bicolor*, Ol., apparently in no way interested in the *Cossus* burrows or exudations. I submit these records as being of interest on account of the very suburban nature of the locality concerned.—HERBERT C. DOLLMAN, Hove House, Bedford Park: December, 1911.

Oxytelus sauleyi, Pand., at Harrow.—In January I secured a short series of *O. sauleyi* from moles' nests, in the Harrow Weald. *Cholera fuliginosa*, Er., was taken from some of the same nests.—HEREWARD C. DOLLMAN.

Bledius fracticornis, Pk., near London.—By sifting flood-refuse from the River Thames at Kew, during mid-winter, I took this *Bledius* very sparingly.—HEREWARD C. DOLLMAN.

A Notodontid attacked by a wasp.—With reference to the interesting notes by Mr. J. C. Eales White on p. 260 of the November number of this Magazine, I do not remember to have met with any record of wasps attacking *Lepidoptera*. At the end of July last, while entomologizing in the woods near Heidelberg, my attention was drawn to a fluttering object on the path. On examination it proved to be a large moth held securely from escape by a wasp. The moth had evidently got the worst of the struggle. The wasp I removed and killed. The moth, rather damaged by the fight, was found to have a wound in the abdomen, and died shortly afterwards. It was a *Notodonta*, probably *dromedarius*, but specific identity is a little uncertain owing to its damaged condition.—E. O. CROFT, 28, Clarendon Road, Leeds: November 3rd, 1911.

Hemiptera in Dorset and Surrey.—During June and July, 1911, *Salda marginalis*, Fall., was very abundant on Studland Heath, Dorset, in fact so abundant that I took 30 in ten minutes. They were crawling about on patches of damp sand, and were very easily captured as they seldom seemed to jump or run very fast. In August, I swept the *Centaurea* on the Hog's Back above Compton, but only managed to find about fifty *Oneotylus viridiflavus*, Goeze. Probably I was too late for them, as I could find no larvæ, whereas last year all stages were abundant. I might mention also that *Gonocerus venator*, Fab., was not uncommon on Box Hill at the end of August.—H. A. SAUNDERS, B.A., Brookfield House School, Swanage: December, 1911.

Athysanus sejungendus, Kb., and its food-plant.—In August, 1907, while collecting at the estuary of the Yar in the Isle of Wight, I took a few specimens of an *Athysanus* which, though allied to *A. obsoletus*, Kb., were evidently different from any recorded British species. They were subsequently identified by Mr. Jas. Edwards as *A. sejungendus*, Kb. (see Ent. Mo. Mag., xlv, p. 59). I was not able at that time to determine the food-plant, and could only record that it was a salt-marsh insect. Kirschbaum, moreover, gives no information as to the nature of its habitat. But during August, 1911, I was able to pay another visit to Yarmouth, when I succeeded in tracing the insect to its food-plant; I found it also at Lyminster, Hants, in the utmost profusion. It lives on *Spartina stricta*, Roth, a grass that grows on mud-flats which are regularly covered with water, at least at high tide; these flats form in many places the seaward boundary of the Lyminster Salterns. At all parts of this area that were accessible, I found the insect in great abundance. The ♂♂ were mostly over, and their dead bodies, either entire or in fragments, were to be found in

numbers amongst the tidal refuse. The ♀♀ were in prime condition. They vary much in colour, some being quite pale, and others, through the filling in of the areas on the elytra with the characteristic spots of the genus, very dark, the state of affairs being in fact very similar to what obtains in *A. obsoletus*, the var. *piceus* of which could almost be paralleled amongst those of *A. sejungendus*. Some specimens show a slight hoary incrustation like the bloom on a plum. As the food-plant is a very local species, the insect may be expected to be the same, though like the plant, abundant where it occurs. — E. A. BUTLER, 56, Cecile Park, Crouch End, N.: November 29th, 1911.

Orthoptera in Devon and Cornwall, 1911.—Sweeping at Widemouth Bay, near Bude, North Cornwall, during August, proved very successful. *Thamnotrizon cinereus*, L. (*Olynthoscelis griseo-aptera*, De G.), was abundant in thick herbage close to hedges, and *Leptophyes punctatissima*, B. d'A., still more so in similar conditions. Long series of both *Tettix bipunctatus*, L., and *Tettix subulatus*, L., were also taken in the short grass of two fields only. They were very local and possessed the usual varieties of colour, from white to almost black. A specimen of *T. bipunctatus* was taken at Plympton, near Plymouth, early in September. *Locusta viridissima*, L. was uncommon at Bude. I only took one pair. *Stenobothrus bicolor* and *parallelus* were, of course, everywhere. On October 1st Mr. Hodgson, Curator of the Plymouth Museum, took a fine specimen of *Platyceles grisea*, Fabr., at Tregantle, near Plymouth, on the cliffs (sandy soil). The only records for the district are Torquay (at sugar), 1899, and Dawlish. Mr. J. H. Keys has taken the "wild" cockroach, *Ectobia panzeri*, Steph., again this year on the Tregantle and Whitsands cliffs.—C. W. BRACKEN, B.A., 5, Carfrae Terrace, Plymouth.

[The following west-country captures of my own may be added: *T. cinereus*, not uncommonly, near Seaton, in September, 1910, and at Lynmouth, in September, 1907; and *L. viridissima*, at Dawlish, and *E. panzeri* at Dawlish and Slapton, in August, 1907.—G. C. C.]

Sympetrum fonscolombii, Selys, in Scotland.—I see from the report of October meeting of Entomological Society of London, given in the November number of this Magazine (p. 267), that Mr. W. J. Lucas met with this dragon-fly in some numbers in the New Forest, Hampshire, during August last. Its simultaneous occurrence in Scotland, as shown by the following records, is a fact of much interest, and proves, I think, that this country has again been visited by part of a migratory swarm. The Scottish specimens which I have to record are:—(1) a ♂ taken near Aberlady, Haddingtonshire, on 30th July, by Mr. J. W. Bowhill; (2) a ♀ caught by a boy in Edinburgh on 11th August; and (3) a ♀ captured by myself on the Isle of May, at the mouth of the Firth of Forth, on 17th August. I have shown (1) and (3) to Mr. K. J. Morton, who confirms the identification. For the record of Number 2, which is in the collection of the Royal Scottish Museum, I am indebted to Mr. P. H. Grimshaw. Besides those we secured, others were seen by both Mr. Bowhill and myself.—WILLIAM EVANS, Morning-side Park, Edinburgh: December 6th, 1911.

Obituary.

Frank Wray Terry.—We regret to have to chronicle the death of Frank Wray Terry, which took place at New York on November 8th. He was born at Battersea on February 14th, 1877. From his earliest days he took an interest in Natural History, and used frequently to visit the Natural History Museum, and at home kept many strange pets. In 1892 he was appointed to the Insect Room in the Museum, and worked under Mr. Waterhouse. He soon became very efficient in preparing specimens for exhibition, and some of the best mounts in the insect gallery are the work of his hands. He gained a very good general knowledge of insects, and by no means neglected other objects of Natural History. In 1903 an opportunity occurred for him to go with the late G. W. Kirkaldy to undertake entomological research work in connection with the Sugar Planters' Association in the Hawaiian Islands. Here he did much useful work in tracing out the life histories of various pests, a task for which he was peculiarly fitted. After eight years' absence he returned home on leave. He was not in good health, as he was suffering from an ulcerated stomach, but he was anxious to return to his duties, and it was on his way out that he became very ill, and was obliged to stay with a relative in New York, his death occurring a few days after his arrival there. He was buried at Oxford. He became a Fellow of the Entomological Society in 1910. He was unmarried.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at Royal Institution, Colquitt Street, Liverpool, November 20th, 1911.—Dr. JOHN COTTON in the Chair.

Dr. F. P. Tinne read a paper on "The Application of the Lumière Process of Colour Photography to Entomology," and in the course of a most interesting address, exhibited a number of colour-portraits of *Lepidoptera* in their native haunts, as well as pictures of places he had visited when in the pursuit of insects. It is quite evident that there is a great future for this class of work as soon as coloured prints can be taken direct from the negatives. Mr. Robert Tait, Jr., exhibited a fine lot of insects from Braemar, the results of his summer holiday, which was spent in that locality. These included a very fine series of *Plusia interrogatoris*, *Dasydia obfuscaria*, *Cænonympha tiphon*, *Zygæna exulans*, *Nemophila plantaginis*, and var. *hospita*, the last being obtained as a partial second brood in October. Varied, but smaller, series of the following were also shown:—*Cidaria populata*, *C. immanata*, *Coremia munitata*, *Larentia cæsiata*, and *Fidonia brunneata*. Mr. Tait further contributed an interesting account of his holiday, with remarks upon the variation, etc., of the insects captured. Mr. Wm. Mansbridge, a series of *Polia chi*, taken in the Huddersfield district on August Bank Holiday, comprising the melanic forms for which that neighbourhood is famous. —OSCAR WHITTAKER and WM. MANSBRIDGE, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
Thursday, November 9th, 1911.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. H. Page, F.E.S., of New Cross, and Mr. W. S. Coxhead, of Clapton, were elected Members.

Mr. South, on behalf of the Rev. A. P. Waller, exhibited a series of a *Leucania* reared from ova laid by a ♀ *L. favicolor*, half of which are distinctly *L. pallens*, the rest agree with the parent or are intermediate, and numerous captured examples for comparison. Mr. Newman, a long series of *Pyrameis cardui*, bred from ova and fed up in a hot-house. The ♀ was captured at Folkestone on September 2nd, and the last imago appeared on October 16th. Mr. Kaye, bred specimens of *Rumicia phlæas*, forced in a hot-house from ova. Mr. Andrews, the local Diptera *Syrphus vittiger*, *S. lineola*, and *Sciomyza simplex* from North Kent. Mr. Adkin, specimens of *Peronea variegana* taken in or reared from his own garden, including a second brood example on October 6th. Mr. Tonge and Mr. Colthrup, series and specimens of *Xylina socia (petrificata)* and *X. semibrunnea* for comparison. One specimen of the latter species was from the New Forest. Mr. Moore, specimens of the tsetse flies (*Glossina*) from the Lake Chad area, and read notes on them. Mr. Buckstone, series of *Brenthis selene* from Surrey, one small and dark from high ground, gravel overlying chalk, mainly in July; the other large and light, on low marshy ground clay, mainly in June. Mr. Carr, a large number of *Lepidoptera* taken in Shropshire during 1910. Mr. Sich, specimens of *Lithocolletis stettinensis* from Oxshott. Mr. Tonge, lantern slides of imagines, shortly after emergence, of species of the genus *Egeria (Sesia)*, and also the ova. Mr. J. P. Barrett, lantern slides of collecting grounds around Mt. Etna. Mr. Main, lantern slides showing details of the life-history and economy of a common millepede.

Thursday, November 23rd.—ANNUAL EXHIBITION OF VARIETIES, &c.

The Rev. F. D. Morice, M.A., F.E.S., was elected a Member.

Mr. South exhibited an extreme melanic aberration of *Brenthis selene*, a dark-banded *Ephyra linearia*, *Rumicia phlæas* v. *eleus*, *R. phlæas* v. *schmidtii*, a fine series of varieties of *Leptogramma literana*, &c. Mr. R. Adkin, two series of aberrations of *Abrazas grossulariata*—(a) from wild larvæ, (b) from inbreeding, a *Zonosoma orbicularia* with the whole of the wings of a rich red-brown, &c. Mr. Blenkarn, varied series of *Amorpha populi* and *Bupalus piniaria*, and a *Brenthis selene*, almost devoid of transverse markings. Mr. Newman, a series of *Mellinia ocellaris*, including the forms similar to *M. gilvago* and *Citria fulvago*, a large number of the more striking varieties from the "Capper" collection, a lemon-tipped ab. of *Euchloë cardamines*, a *Brenthis euphrosyne* with black hind-wings, a *Pyrameis cardui* with apex of forewings largely black, fine abs. of *Agriades coridon*, &c. Mr. A. Quarrington, *Pyrameis cardui*, with conspicuous blue spots, a yellow *Polygonia c-album*, *A. coridon* with large confluent spots, *R. phlæas* with almost obsolete marginal bands, &c. Mr. Bright, a drawer containing all the finest extreme varieties from the collection of the late Mr. J. A. Clarke, and a drawer of varieties of *Amorpha populi*, including a magnificent gynandromorph. Mr. Turner, a series of *Erebia ethiops* from Scotch (v. *cale-*

donia) and many Continental localities, a long series of *Luperina nickerlii*, including a fine series of the *gueneei* race from Mr. Baxter (St. Annes-on-Sea), a set of the E. Pyrenean race *graslini* from M. Oberthür, and the type form from Bohemia; many forms of *L. testacea* kindly sent him by the same gentleman from France and Algeria, together with a number of *L. dumerilii* from the same localities. Mr. Main, long and fine series of *Boarmia repandata*, bred by the late Mr. Harrison and himself, the results of crossing the dark and *conversaria* forms. The Rev. F. D. Morice, the smallest known bee, *Ceratina parvula*, and the largest bee, *Xylocopa* sp.?, Gilbert White's "Hoop-shaver bee," *Anthidium manicatum*, the famous "upholsterer bee," *Osmia papaveris*, and a Mediterranean snail-shell inhabiting bee, *Osmia ferruginea*, together with micro-photographs of the "saws" of the saw-fly genus *Dolerus*. The Rev. J. E. Tarbat, *Gnophos obscurata* from many localities, including ochreous and almost black forms from the same place. Budleigh Salterton. Mr. Barnett, a fine varied series of *Apamea leucostigma* and v. *fibrosa* from the Fen District. Mr. Schooling, a second brood of *Arctia caja*, with only an imperfect narrow fascia and a few apical and costal spots of cream colour on the fore-wings. Mr. Colthrup, a very long series of this year's *Colias hyale* from E. Kent. Mr. H. B. Smith, a *Melanippe montanata*, almost white; *Catocala nupta*, with smoky brown hind wings; three *Agrius convolvuli* from Warlingham, with specimens of *Phryxus livornica*, *Sterrhia saccharia*, *Laphygma exigua*, *Plusia ni*, and a series of *Polia xanthomistu*, *Rumiclia phleas*, including a partial v. *schmidtii*, all from S. Cornwall in September last. Mr. Sich, the Gelechiid, *Argyritis pietella*, which used to occur on Barnes Common; and for Mr. Green, *Depressaria putridella* from its N. Kent habitat. Mr. W. G. Blair, teratological specimens, *Mimas tilix*, asymmetrical *Carabus calenulatus*, with reflexed margins of thorax excised, and *Pimelia fornicata*, right antenna doubly branched, and for Mr. W. N. Blair, examples of the Medicinal Leech from the New Forest. Mr. Tonge, stereoscopic slides of lepidopterous ova in situ, wild, laid with specimens of the imagines, genera *Trochilium* and *Egeria*, and also varied bred series of *Ciduria truncata* (*russata*) and *Lobophora viretata*. Mr. Pratt, an extreme dark margined form of *Ephyra pendularia*. Mr. Baumann, *Hydriomena furcata* (*sordidata*) bred, from Surrey, with a black series from Manchester, very pale *Dianthæcia carpophaga* from the Sussex Coast, &c. Mr. Scorer, aberrations of *R. phleas* long-tailed, spotless underside, *P. machaon* heavily banded, *Euchloë cardamines* with white streak through the orange patch, *Porthesia similis* with black-edged costa, *Callimorpha dominula* with rounded wings, *P. napi* ♂ heavily spotted, &c. Mr. St. Aubyn, two ab. *flava* of *A. filipendule* from Coulsdon. The Rev. F. M. B. Carr, a collection made in Mid-Wales last June, including *Plusia interrogationis*, a fine varied series, *Acidalia fumata*, *Agrotis lucerneæ*, &c. Mr. Andrews, dwarf Diptera, *Bombylius major*, *Eristalis pertinax*, and *Chrysochlamys cuprea*, and for Mr. Barraud, a teratological specimen of *Spilogaster uliginosa* with missing 4th longitudinal vein. Mr. Stanley Edwards, *Papilionidæ*: *P. polices*, and allied *P. lurlinus* and *P. nyassinus* from Africa, compared with *P. ajax* and *P. marcellus*, American. Mr. Platt Barrett, ♂ and ♀ comparisons of British and Sicilian butterflies, *G. rhamni* and *G. cleopatra*, *Hipparchia semele* and v. *algerica*, *E. jurtina* v. *hispulla*, and v. *fortunata*, a long series of *Euchloë damone*, sets of

geographical forms of *Melanargia galathea*, British, Alpine, Appennine, Calabrian, Sicilian, at various elevations, &c. Mr. Barnett, for Mr. Cannot, a *Wheeleria spilodactyla*, Freshwater, with no cleft in fore-wings, and one only in hindwings. Mr. Pickett, results of breeding *Angerona prunaria* under coloured muslins, red, pink, orange, yellow, and cream, with green pattern, and aberrational series of *M. galathea*, *Agriades coridon* (*semisygrapha*, *obsoleta*, *striata*, *minor*), &c. Mr. Sheldon, European Diurni, taken by himself in the Riviera, S. Spain, Digne, &c., including fine series of *Zegris eupheme* v. *meridionalis*, *Thais rumina* v. *canteneri*, v. *medesicaste*, and ab. *honoratii*, *Araschnia levana* v. *prorsa*, and v. *porima*, &c. Mr. Frisby, nearly all the species of British bees in the genera *Aulrena* and *Cilissa*. Mr. W. J. Kaye, a drawer of species of *Sytomidæ* he had taken at flowers in S. Brazil, and gave notes on their habits.—
 H. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, November 18th, 1911.*—The Rev. F. D. MORICE, M.A., President, in the Chair.

The Rev. Samuel Proudfoot, 6, Lyme Grove, Altrincham, Cheshire, was elected a Fellow of the Society.

Commander Walker exhibited three specimens of *Phædrophilus o'connori*, Broun, a large and handsome weevil from Mount Quoin, Kaitoke, South Island, New Zealand. The specimens were taken by Mr. G. V. Hudson, F.E.S., of Wellington, N.Z., at an elevation of 3,900 feet, in December, 1910. Commander Walker also, a specimen of the rare Tortrix, *Phalonia (Eupæcilia) implicitana*, Wocke, taken by Mr. H. G. Champion at Shoreham, Sussex, August, 1911. Mr. W. C. Crawley, a ♀ and a ♂ of *Leptothorax tuberculum*, Fabr., subspecies *corticalis*, Schenk, new to Britain, found with two larvae in an empty beech-nut at Pangbourne, Berks, April 24, 1904. Mr. N. S. Semett, some Coccinellids, *Chilocorus bipustulatus*, L., as found on *Mimosa* trees at Mont Estoril in Portugal, together with the small exudations of gum, presenting what appeared to be a remarkable, though hitherto unrecorded, ease of Protective Mimicry. Mr. L. W. Newman showed a long series of *Pyrameis cardui*, bred from ♀ ♀ captured at Folkestone on September 2nd last. Ova were laid at once and placed in a hot-house kept at about 80 degrees; they hatched on September 7th, and the larvae fed up very rapidly on stinging nettle, the first pupating on September 30th. Imagines started to emerge about a week later, and all were out by October 16th. Mr. H. W. Andrews exhibited two rare species of *Diptera* from North Kent, viz., *Syrphus lineola*, Ztt., a ♂, taken at Bexley on July 8th, and *Sciomyza simplex*, Fln., both sexes, taken in the Thames Marshes on June 23rd and July 1st, all in the present year. Mr. J. E. Collin remarked that he had only taken the latter species at Ringwood and in Suffolk. Mr. E. A. Cockayne, a Geometer taken at Tongue, Sutherland, July 5th, 1906, closely resembling *Cidaria (Dystroma) concinnata*, Steph., specimens of which were placed below for comparison. Mr. J. Platt Barrett, a drawer of *Melanargia galathea* containing English specimens, specimens from the Alps, from the Appennines, from Calabria, and from Sicily, including var. *procliva* and var. *syracusana*, Zell. Mr. A. E. Tonge, a very fine

Mygale from California. Mr. J. R. le B. Tomlin showed a specimen which he said was not strictly an entomological exhibit, but from its curious resemblance to a caterpillar might be of momentary interest to Fellows. It was in reality a species of West Indian oyster (*Ostrea frons*, L.) which attaches itself to twigs. Professor Poulton remarked that both this and the *Coccinellid* exhibited by Mr. Sennett were probably cases of accidental resemblance. Professor E. B. Poulton exhibited the following specimens of insects captured as prey, sent to him by Mr. C. F. M. Swynnerton, from the outskirts (3,800 feet) of Chirinda Forest, Gazaland, S. E. Rhodesia. (1) The female form *hippocoon* of *Papilio dardanus cenea*, Stoll, rescued, September 8th, 1911, by one of his native collectors from a M'lanje Bulbul (*Phyllostrephus milanjensis*). The head was wanting, and there were symmetrical injuries at the anal angle of the hind-wings similar to those so often seen in living butterflies. (2) Two wings of *Precis archesia*, Cr., and the fragments of a Blattid, probably of the genus *Deropeltis*, taken June 25th, 1911, from a spider's web. Professor Poulton also, specimens showing instances of mimicry, sent by Mr. J. C. Moulton from Sarawak, and read Mr. Moulton's account of them, wished to acknowledge the kind help he had received from Mr. C. J. Gahan, who had compared several of the *Coleoptera* with the types, and had described one new species of *Daphisia*. Professor Poulton, six male examples of a remarkable Lycænid, all captured, November 22nd, 1910, in the Uhehe District (3,000—3,500 feet) of German East Africa, by Mr. S. A. Neave, F.E.S. The pattern and brilliant colours, which were extraordinary in a Lycænid, strongly suggested, on both upper and under surface, the appearance, although on a smaller scale, of an *Acræa* of the type of *A. anemosa*, Hew. Mr. Stanley Edwards, a specimen of *Oxynopterus audouini*, a beetle from Borneo, with abnormal antennae, apparently gynandromorphic, and explained that Mr. Gahan had dissected it and found the genitalia to be entirely ♀. Mr. H. C. Dollman, the following species of *Coleoptera*:—*Philonthus intermedius*, Boisd., ab. *donisthorpei*, Dollman, described in the Ent. Rec., December, 1910; *Stenus formicetorum*, Mann., introduced as British in the Ent. Rec., April, 1911; *Bembidium quadrupustulatum*, Dj., an example from Ditchling, Sussex, August 17th, 1911; *Hypophylæus linearis*, F., retaken at Oxshott, in July of this year; a species hitherto taken in Great Britain only in Surrey, at Oxshott and Woking; *Mycetoporus forticornis*, Fauv., one specimen from the New Forest, with *M. clavicornis*, Steph., for comparison; *Philonthus corruscus*, Gr., taken from a dead rabbit at Ditchling; *Stenus morio*, Gr., from Ditchling, taken in October, 1910. Mr. H. Eltringham, a bred series of *Acræa orestia*, Hew., containing the typical form, and also the *A. humilis* of Miss E. M. Sharpe, thus demonstrating the truth of the conclusion at which he had previously arrived as to the specific identity of these two forms. He also showed three ♂ black and yellow *Acræas*, one of which was the *A. circeis* of Drury from S. Leone. The other two, while differing in appearance from *A. circeis*, were themselves exactly alike, but for the fact that the two tarsal claws of the second and third pairs of feet were equal and similar in one specimen and unequal and dissimilar in the other. A long and interesting discussion followed on the question of the importance of the tarsal claws as a means of specific distinction, and on the possible correlation of uneven claws in the ♂, and the abdominal sac in the ♀. Mr. Champion called attention to a

paper by M. Roger V\'erity in the "Bulletin de la Soci\'et\'e Entomologique de France," S\'eance du 11 Octobre, 1911, on new Scottish races of *Erebia ethiops*, Esp. (race *caledonia*), *Satyrus semele* (race *scota*), and *Parage megeru* (race *caledonia*).

The following papers were communicated:—"Descriptions of South American Micro-Lepidoptera," by E. Meyrick, B.A., F.R.S. "New Species of Hawaiian Hymenoptera, with notes on some previously described," by R. C. L. Perkins, D.Sc., M.A., F.E.S. "Notes on Hawaiian Hemiptera, with descriptions of new Species," by R. C. L. Perkins, D.Sc., M.A., F.E.S. "Experiments in the Formation of Colonies by *Lasius fuliginosus*, ♀ ♀," by Horace Donisthorpe, F.Z.S., and W. C. Crawley, F.E.S.—GEO. WHEELER, *Hon. Secretary*.

ANOTHER HUNDRED NEW BRITISH SPECIES OF DIPTERA.

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

(Continued from Vol. xlvii, page 79).

[These Notes were practically complete at the time the late Mr. VERRALL published the names of the species in the April number of this Magazine for last year, and were only held back by him for the purpose of adding a short description of *Scatopse coxendix*; of this description he left the rough notes which I have written up, and though the resulting description is very short, it is sufficient to distinguish the species.—J. E. COLLIN, *December 18th, 1911.*]

1. *Sciara longiventris*, Zett.: I do not find this rather conspicuous species in our British List, but Mr. R. C. Bradley took several specimens at Sutton Park in May to June, 1895, and I took an example at Colwick in June, 1889. It is rather a farce to add single species of *Sciara* to our Lists, when at least 150 more species of the genus should occur in England.

2. *Leia terminalis*, Meig.: I am bound to consider a male *Leia* taken by Dr. J. H. Wood at Stoke Wood, Herefordshire, as belonging to this species, though I must admit that I should like to see the species of *Leia* in considerable numbers before coming to a certain conclusion about their distinctness.

3. *Boletina basalis*, Meig.: among several unidentified species of *Boletina*, I think this one can be named with practical certainty. I have specimens from Ivybridge, Frant, Westhide, Caswell Bay, and Bettws-y-Coed.

4. *Platyura nigricauda*, Strobl: without expressing any opinion as to the value of the specific characters used at present in this genus, I may, without much doubt, refer two males (which I possess) to this species; one was taken at Llangollan on July 17th, 1888, and the other at Bewdley on September 1st, 1892.

5. *P. modesta*, Winn.: this species is not in our British Lists and is not, in my opinion, well distinguished from *P. flava*, Macq., but I refer to it two males taken at Canford Common, in Dorset, on August 13th, 1904, and a male taken by Col. Yerbury at Much Marele on August 29th, 1902.

P. uigriceps, Walk., was probably correctly identified by Winnertz, as I possess the fragments of a specimen so labelled in Walker's own handwriting, and Col. Yerbury took a male at Goathorn, in Dorset, on June 7th, 1907, and a female at Studland on May 31st, 1907, while I caught a female at Lyndhurst on June 29th, 1885. A specimen labelled Teignmouth was in Rev. T. A. Marshall's collection under the name of *Ditomyia vittata*, and may represent that species of Walker.

6. *P. humeralis*, Winn.: I have but little doubt in referring to this species a male taken by Col. Yerbury at Nairn on May 31st, 1905. I also possess a broken specimen of apparently the same species, taken by the late Rev. T. A. Marshall at St. Albans. Many of the species of this genus are probably widely spread, but are so seldom captured and identified that very little is known about them at present. A large black species has often been taken in the New Forest and other largely wooded districts, which is in our Lists as *P. semirufa*, Meig.; it may be that species, or *P. brunnipennis*, Stæg., or *P. vitripennis*, Meig. (as identified by Zetterstedt), and is almost certainly *P. concolor*, v. d. Wulp; beyond this, it is probably *P. mycetophiloides*, Hardy, in Walker's Ins. Brit. Dipt., but the description is too imperfect for determination.

7. *Scatopse talpæ*, n. sp.: this species has been included in both the previous editions of this "List," but has never yet been described. It is closely allied to *S. inermis* in its venation, but is smaller and has the first costal space not much longer than the second (while in *S. inermis* it is quite twice as long); this distinction in the costal spaces is mainly caused by a more even curve of the second vein, which causes that to end more beyond the middle of the costa; the veins and the pubescence of the wings are blackish (instead of yellowish). Antennæ more clavate. Thorax more compressed, and bearing much less conspicuous dark grey pubescence (instead of yellowish as in *S. inermis*). Abdomen almost dull black, and with black pubescence, hardly widened at genitalia, ending in a sort of terminal flap caused by two black lamellæ touching (instead of the brightly shining widened end of *S. inermis*, from which two narrow lamellæ extend). Hind tibiæ thinner at base, and therefore more clavate, and with no obvious pubescence

(instead of with conspicuous pale pubescence of *S. inermis*); basal joint of hind tarsi thinner. Base of wing, margin of squamæ, and halteres, black.

I first distinguished this species from specimens I found at Reigate (Surrey) on July 5th, 1872, but in June, 1908, my nephew, Mr. J. E. Collin, found it in some numbers about the trunk of a small willow tree at Snailwell (Cambs), and in June, 1911, under similar circumstances at Barton Mills (Suffolk).

8. *S. coxendix*, n. sp.: this species is fairly common, and was returned to me many years ago by Loew under the above name. I believe it has never been described, and, therefore (in order to retain it in the "List"), I give a short description.

Like *S. halterata*, but the first costal space from three to six times longer than the second (instead of less than twice), and the *front coxæ and sides of the basal abdominal segment conspicuously orange*. The antennæ are less clavate, the legs stouter, and the forked vein longer. The male genitalia end in two narrow curved and pointed lamellæ and a central style.

The specimens sent to Loew were taken near Lewes (Sussex) in June, 1870, but I have taken it since at Chippenham (Cambs), Orford and Barton Mills (Suffolk), and Lyndhurst (Hants) in June, near Tarrington (Hereford) in July, and Boyton (Suffolk) in August.

9. *Cricotopus pulchripes*, n. sp.: in order to retain this species in the "List" I give a short description.

Very near *C. tremulus*, but the second joint only of the front tarsi is white, and even the extreme tip of that is black in the male and dull in the female; the thoracic black stripes are well separated, and the hind margins of third to seventh abdominal segments are more definitely luteous; the second joint of the front tarsi is relatively shorter in the male as compared with the first joint.

I caught a pair on Snowdon on June 8th, 1887.

10. *Ceratopogon pallidus*, Winn.: a male was taken at Handcross, in Sussex, on April 12th, 1884, but the species may prove to be common when the genus is well worked out.

11. *C. nubeculosus*, Meig.: this species is very much like the common *C. pulicaris*, but has stronger wing-markings and has the thorax peculiarly dotted. It was abundant near the Worm's Head on September 13th, 1905, and at Aldeburgh on September 9th, 1907, and it subsequently occurred in millions as an intolerable pest on Rempstone Heath and at Wareham, in Dorset.

12. *C. forcipatus*, Winn.: I cannot doubt three males taken at Penzance on May 15th, 1890, even though Winnertz (who only knew it from one male) said nothing about the black bristles on the thorax.

13. *C. versicolor*, Winn.: A rather pretty species which was abundant in my garden on July 14th, 1901, and on various subsequent dates.

14. *C. nobilis*, Winn.: As far as I know this species is only known from a single female described by Winnertz; his description is, however, so good that I cannot doubt the name applying to a male taken by Col. Yerbury at Studland, Dorset, on June 7th, 1907.

N.B.—*C. fulvus* is only the female of *C. spinipes*, Panz.

15. *Dixa nigra*, Stæg.: I am bound to consider a specimen taken by Col. Yerbury at Nairn, on May 18th, 1905, as belonging to this species. I do not consider De Geer's description of *Tipula amphibia* recognizable.

16. *Limnobia decemmaculata*, Lw.: This pretty little species, which was described from Germany in 1873, has been bred by Dr. J. H. Wood from a fungus found on a decaying beech in Stoke Wood, near Tarrington, on September 3rd, 1906. It had been bred in Germany from species of *Dædalea*. Dr. Wood took it again in 1910.

17. *Psiloconopa pusilla*, Schin.: Dr. J. H. Wood found this new genus and species to Britain in numbers in the Monnow Valley, South Herefordshire, on July 17th, 1907. The genus is allied to *Trimiera*, and has almost identical venation, but *P. pusilla* is a small but very distinct species, in which the sharply marked black tips to the femora give an idea of *Cheilotrichia imbuta*.

17A. *Tipula nodicornis*, Meig.: Col. Yerbury has given me a pair of this species which he took at Nairn on June 8th, 1905. He also took a male at Nethy Bridge on June 17th, 1900. I have an impression that this species has already been recorded as British, but I have no note as to when or where.*

18. *Rhamphomyia culicina*, Fall.: Col. Yerbury has taken half-a-dozen stray specimens of this distinct species. One fine male at Nairn on August 1st, 1905, three at Porthcawl in July, 1906, and one at Wroxham Broad in August, 1906, besides the fragments of one at Torcross on August 17th, 1903. It is well distinguished from *R. variabilis* by its blacker thorax and dark brown halteres in the male, and by the almost total absence of any bristles on the legs.

* Recorded by King from Scotland in Glasgow Nat. I, 99 (1910, *v. Zoolog. Record*, 1910, (J. E. C.).

18A. *R. spissirostris*, Zett.: must at present be removed from our Lists. The true *R. spissirostris* is a little known species of which I have seen the types; our species, which is common over brackish water on the Eastern Coast, and which may extend inland (even up to my own garden), is probably *R. dissimilis*, Zett., but I believe it has two or three other synonyms such as perhaps *paradoxa*, Wahlgren, or *erberi*, Mik.

19. *Pachymeria erberi*, Now.: This well marked species was described by Nowicki in 1864 (?) from Galicia, Austria, and subsequently was found by Bezzi in Italy. It occurred in numbers in Butley Decoy Wood in Suffolk on July 11th, 1908, where the males were swinging to and fro in a sort of slow dance, and each one was holding a large Muscid as its prey. Unfortunately its distinctness from *P. femorata* was not noticed, and I only took three specimens, one of which held *Hydrotæa irritans*, and the other two *Pollenia vespillo*, all larger species than itself. I believe I possess specimens from other British localities.

20. *Hilara æronetha*, Mik: I caught a number of this fine species near Leith Hill as long ago as June 25th, 1868, and suspected then that they belonged to an undescribed species. I also took one male at Tunbridge Wells on June 6th, 1886. It has since been described from Styria and Hungary. I have paid close attention to the British species of this genus during the last three or four years, but I find them exceedingly difficult to name; I can, however, introduce a few with confidence, of which this is one.

21. *H. lugubris*, Zett.: Col. Yerbury caught a male of this fine species near Stanford, in Norfolk, on May 21st, 1909.

22. *H. diversipes*, Strobl: I am obliged to refer the Braemar specimens, upon which I introduced *H. nitidula* to the British Lists, to this species, but the true *H. nitidula* (according to Strobl), was taken in numbers by Col. Yerbury at Nairn at the end of May, 1905, and by me at Chippenham near here about the middle of May, 1908. I cannot, however, accept the nomenclature of Strobl's paper without considerable doubt; the species, for instance, which he identifies as *H. matrona*, Hal., is not at present known in Britain, but the true *H. matrona* is one of his forms of *H. spinimana*, Zett.

23. *H. pubipes*, Lw.: Easily distinguished by the dense and fairly long bristly pubescence on the middle tibiæ and tarsi, by the yellow halteres, by the four dark sharply defined thoracic stripes, and

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

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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INTERNATIONAL CONGRESS OF ENTOMOLOGY.

The Second International Congress of Entomology will be held at Oxford from August 5th to 10th, 1912.

The President of the Congress is Professor E. B. Poulton, D.Sc., F.R.S.

The Executive Committee proposes to find for Members of the Congress lodgings in the town, or rooms in one or more of the Colleges at a moderate charge; rooms in College will be available only for men.

The Executive Committee invites an early provisional notice of intention to join the Congress, in order to be able to make the arrangements for the necessary accommodation.

The Proceedings of the First Congress are in the press, and will be published shortly.

All communication and enquiries should be addressed to the General Secretary of the Executive Committee,

MALCOLM BUBB, c/o Entomological Society of London,

11, Chandos Street, Cavendish Square, London, W.

by the comparatively small size. Apparently common in such mountain districts as Dolgelly, the Lake District, and the Scotch Highlands, but I have also taken it at Brockenhurst.

24. *H. beckeri*, Strobl: Another large species of the *H. quadrivittata* group, distinguished by its frons being wholly grey up to the front ocellus, but deep black above that and on the occiput; thoracic stripes blurred together laterally, and the acrostichal bristles 4-wide on at least the front part. Taken by Col. Yerbury at Aviemore, Nairn, and Brodie, from July 18th to August 1st, 1905.

25. *H. carinthiaca*, Strobl: A rather common species which may be known by its yellow halteres, and a peculiar diamond-shaped grey spot on the deep black occiput. Darenth, Martham Broad, Coniston, Porthcawl, Penzance, Lyndhurst, Studland, Oxford, Orford, &c.

26. *H. braueri*, Strobl: I am obliged to introduce this species as British, because I possess an old gummed specimen from the late W. Wilson Saunders' collection, though I do not know its locality. The species is very readily known by the pale three basal joints of the hind tarsi. Only three specimens (all males) have been previously recorded, two being from Lower Austria, and one from Silesia. It is also notable that *H. argyrosoma*, Strobl, of which only five females were known, has also occurred in England, Mr. J. J. F. X. King having taken one at Brockenhurst on July 6th, 1907, and this confirms Strobl's suggestion that the two are only the sexes of one species.

27. *H. cinereomicans*, Strobl: I believe that this is a not uncommon species. It bears some resemblance to *H. manicata* and *H. canescens*, but the male is easily distinguished by the three long bristly dorsal hairs on the long moderately dilated basal joint of the tarsi.

28. *H. heterogastra*, Now.: A male of this large species was caught at Wormsley on July 12th, 1907, and answers well to Strobl's description.

29. *H. cingulata*, Dahlb.: I believe that a fairly common greyish species allied to *H. flavipes* (which is not an *Oreogeton*) should come under this name. I have specimens from Ringwood, Colwick, Orford, and Porthcawl. The undilated basal joint of the front tarsi of the male will distinguish it from all known British species of the genus except *H. flavipes*.

30. *Edalea apicalis*, Lw.: Col. Yerbury took two females, which answer exactly to the description of this very little known species, at

Brockenhurst and Lyndhurst Road on May 27th and 28th, 1910. Even if it should turn out that *E. apicalis* is only a variety of *E. ædalina*, it will still be new to Britain.

31. *Trichina opaca*, Lw. : I am obliged to refer a male caught by Col. Yerbury at Nairn on May 27th, 1905, to this species. I had taken a similar specimen in Wicken Fen on May 13th, 1892. Seven males taken by Col. Yerbury at Mildenhall on May 14th, 1909, are probably the same species, but they have the thorax rather less dull.

32. *Leptopeza sphenoptera*, Lw. : Not uncommon at Porthcawl and Stokenchurch, while I have taken it at Ivybridge and at Exeter as far back as July, 1871.

33. *Clinocera wesmaelii*, Macq. : Dr. J. H. Wood took this species at "Churchyard Dingle" on July 6th, 1907; it is very much like *C. fontinalis*, but has an extra spot on the end portion of the discal vein, and has the radial vein rather undulated.

34. *Ardoptera ocellata*, Costa: There cannot be the slightest doubt that a gummed specimen given me in 1869 by the late Mr. J. C. Dale, and labelled "Isle of Wight," belongs to this species; Dale called it *A. guttata*, but that is a very distinct species which Dale, according to his collection, knew as *A. oblongoguttata*, n. sp.

35. *Tachista tuberculata*, Lw. : An expedition to the Monnow River in Herefordshire, under the guidance of Dr. J. H. Wood, on July 10th, 1909, enabled me to add three females of this species to my collection. Dr. Wood writes me that he has also taken it (including one male) from the Monnow, and also one female from Howle Hill in the extreme south-east corner of Herefordshire.

36. *Psilopus loewi*, Beck. (*P. flexus*, Lw., 1869) : On August 28th, 1907, I caught a male of this very little known species at Scotland Fen, Boyton, Suffolk, and in July, 1908, I found it there in considerable numbers, while I have also seen it from the New Forest. In spite of what Strobl has said, it is a perfectly distinct species, which is very much like *P. wiedemanni*, from which it is distinguished by the absence of any lobe on the front tarsi of the male, and by the only slightly dilated fifth joint. The female may be distinguished from *P. wiedemanni* by the more distinctly banded abdomen, and from *P. contristans* by the narrower frons and by the hind tibiæ having only one antero-dorsal bristle.

37. *Dolichopus cilifemoratus*, Macq. : A little known, but perfectly distinct species, very closely allied to *D. festivus*; the three middle

joints of the front tarsi of the male are, however, shining black, much more curved and ciliated, and with a rather long curved apical bristle on the under-side of each of them. One male was taken by Col. Yerbury at Porthcawl on July 9th, 1906.

The opportunity may be taken here of stating that *D. strigipes*, Verr., is not uncommon on the marshy sides of the Suffolk rivers near Woodbridge and Orford in Suffolk.

38. *Pæcilobothrus comitalis*, Kow.: Many years ago I introduced *P. ducalis*, Lw., as British from a number of specimens taken by me at Seaford, in Sussex, but it was not until 1907 that I recognised the true *P. ducalis* in a long series taken by Col. Yerbury at Walton-on-Naze, in August. The two species are very closely allied, but *P. comitalis* has the antennæ on the underside at the base more extensively orange, and the wings less conspicuously darkened on the fore part. I suspect that another British species of *Pæcilobothrus* occurs at Walton-on-Naze, and possibly still another at Gravesend, but if so, they are closely allied, and I want to see more specimens.

(To be continued).

A NEW AFRICAN FLEA.

BY JAMES WATERSTON, B.D., B.Sc.

CTENOPHTHALMUS CALCEATUS, *sp. nov.*

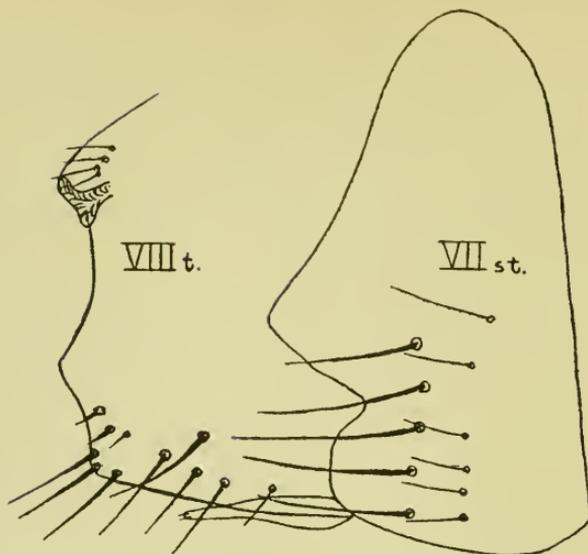
Belonging to the section of the genus characterised by having a pronotal comb of sixteen teeth and three genal spines. Closely related to *Ct. triodontus*, Rothsch. (Novit. Zool., vol. xiv, March, 1907, pp. 330-331, figs. 3 and 4), from which it differs in the following details:—

Thorax.—The met. epim. bears 7 hairs (1. 3. 3.).

Abdomen.—Besides the normal two rows of bristles on tergites 1-7, there is a third on tergites 1 and 2, and traces of the same on 3, 4, and 7

Legs.—3rd segment of fore tarsus, and 4th segment of hind tarsus, much longer than broad.

Modified segments ♀.—7th st. with moderately deep sinus dividing the sternite into an angulated upper and a rounded lower lobe. Post median row of 5 long bristles and an anterior parallel row of shorter ones. 8th tergite with 4 bristles above stigma, 3 short bristles at lower ventral angle, and one or two others on the ventral aspect disposed as in the figure. One or two short stout bristles on the inner surface near ventral angle. Apparently the tergite has the edge naked from this point to the stigma, but the specimen is not perfect in this region.



Type.—A ♀ taken in July, 1911, from *Arvicanthus pumilio*, Pirie Mountains, near King William's Town, South Africa, by Miss Fanny Ross, and forwarded by the Rev. Robt. Godfrey, M.A.

Mr. Rothschild, who has kindly compared this example with his *C. tridentatus*, agrees that the distinctiveness of the species will probably be intensified by the discovery of the male.

The Manse, Ollaberry, Shetland:

December, 1911.

DESCRIPTION OF A NEW SPECIES OF *BLEDIUS* (SUBGEN. *BELIDUS*)
FROM THE RED SEA.

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

BLEDIUS BERNHAUERI, *n. sp.*

Size and build of *B. arenarius*, Payk., but very different otherwise. Black, moderately shining, elytra with the apical third yellow, sharply defined from the anterior black portion. Antennæ, palpi and legs testaceous.

Head with eyes as broad as thorax, black, with four long erect bristles, two on the forehead and one above each eye; rather finely shagreened, not punctured; pubescence yellowish, scanty and rather coarse. Eyes prominent. Labrum not emarginate, bearing two long bristles directed forwards. Mandibles testaceous, slightly overlapping at the extremities, which are bifid, each furnished near the base with a strong tooth directed forwards and inwards towards its fellow. Forehead with well marked prominences at bases of antennæ; the latter testaceous, slightly thickened towards the apex, 1st joint

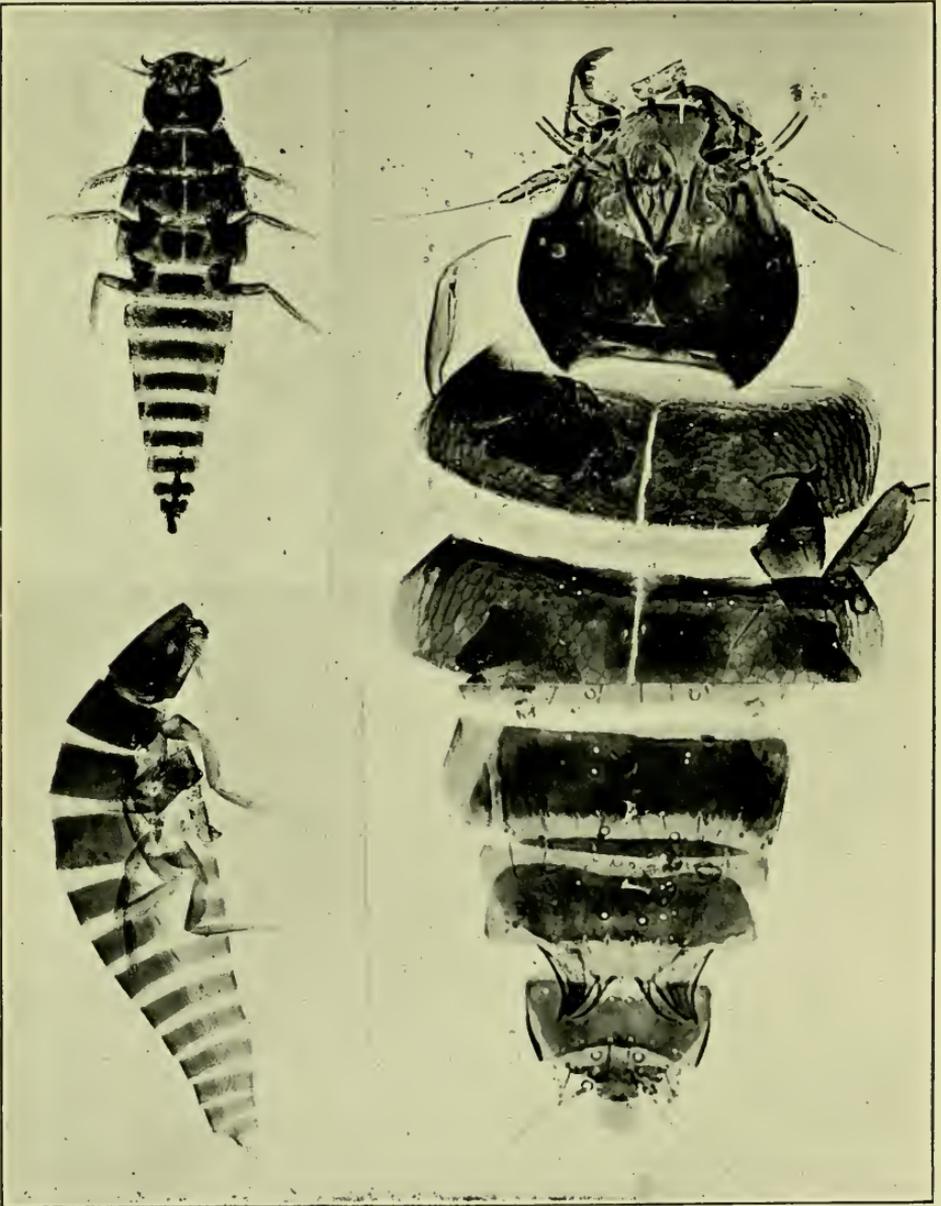


Photo F. N. Clark.

SITARIS MURALIS.

FIRST STAGE LARVA.



Photo F. N. Clark.

METÆCUS PARADOXUS.

LARVA FROM INSIDE WASP-GRUB.

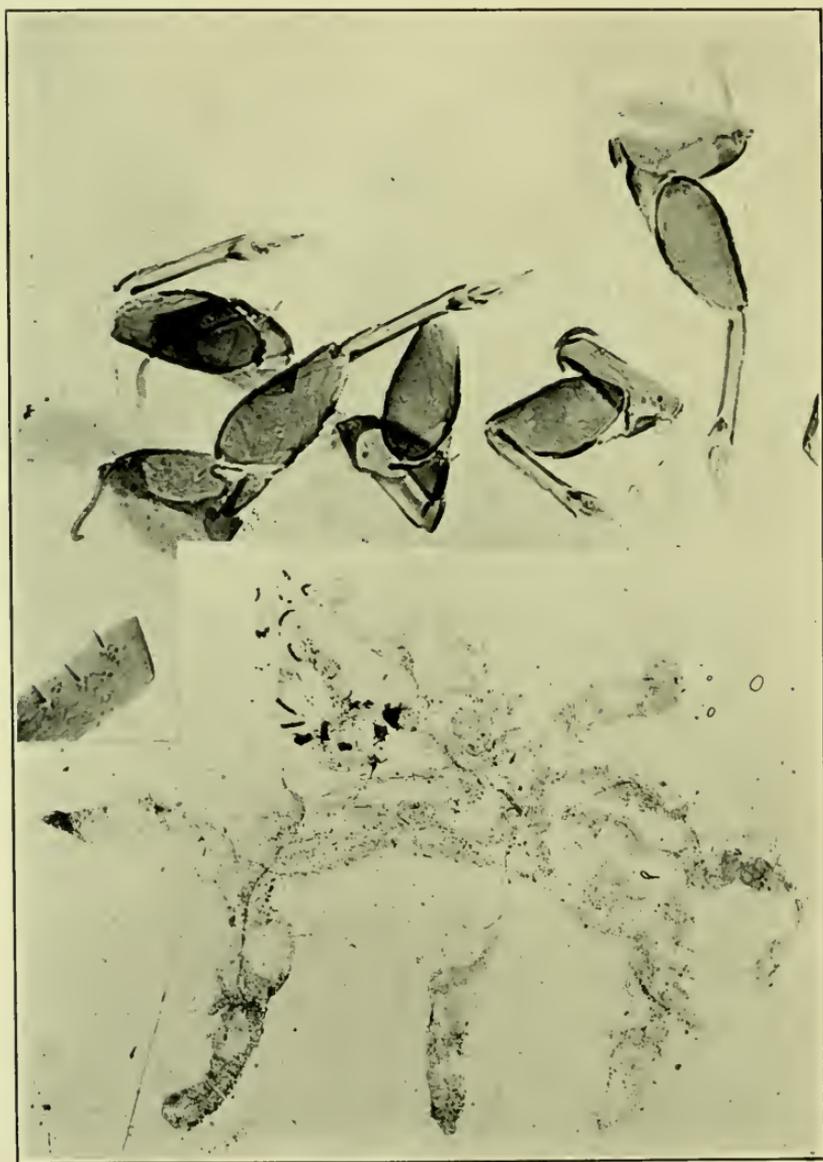


Photo F. N. Clark.

METECUS PARADOXUS.

FIRST STAGE LEGS AND CAST SKIN.

long and slender, gradually thickened towards extremity, about as long as the three following together, 7th, 8th, 9th and 10th joints transverse, but not forming a club. Thorax black, transverse, as broad as elytra, sides not bordered, parallel for anterior two-thirds, then sloping obliquely towards base; posterior angles completely effaced; disc with a fine impressed line, shagreened, puncturation very shallow and sparse; each side with two long bristles. Elytra longer than the thorax, a little longer than broad, moderately shining, puncturation rather close, shallow and large, scarcely shagreened between the punctures; apical third sharply yellow, forming a broad transverse band; pubescence scanty, yellowish. Abdomen black (sometimes with the last two segments reddish), moderately shining, alutaceous, sparingly punctured and pubescent; posterior margin of 8th dorsal segment furnished with a narrow white membrane. Sexual differences unknown. Length 3 m.m.

Attracted to light off the island of Dahlak in the Red Sea. Types in my collection.

January 12th, 1912.

NOTES ON THE FIRST STAGES OF *SITARIS MURALIS*, FORST., AND
METECUS PARADOXUS, L.

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

PLATES I—III.

SITARIS MURALIS, Forst.

Westwood, in the "Introduction," gives a short account and figure of the first stage larva of *Sitaris muralis*, deriving his information from Audouin, who appears to have known a good deal of the life-history of the species as early as 1835. It is, however, to Fabre that we owe a fairly complete knowledge of the habits of the species in all its stages. As this was published no less than 55 years ago, there may be no harm in reverting to the subject, which Mr. Hamm's recent discovery of the species in comparative abundance, at Oxford, has opened up to British observers. My contribution of new matter is so trifling that I have hesitated in saying anything about a batch of first stage larvæ sent me some three years ago by Commander Walker. I may refer also to an account of the life-history of *Sitaris colletis* by the late Prof. Mayet (Annales Ent. Soc. France, 1875, pp. 65-94, pl. 3).

Fabre figures the young larva and describes it, in many respects, minutely; the structure of the jaws appears, however, to have escaped his notice.

He describes how the little larva travels, by holding on the bee most firmly by aid of its mandibles, and says they are "strong, reddish, curved, sharp, meeting without crossing when at rest." When completely flexed, the jaws do overlap very much, but the most interesting item is that the inner margin of each jaw seems to have two deep wide clefts or notches, and a third shallower one.

The photograph of the hind and anterior segments shows the serrated jaw. A close scrutiny of a number of specimens leaves me with the belief that the real structure is not simply three notches, but that there is one deep hollow and one on either side of it (or both on the dorsal side), with an interval between them, two lappets, apparently dividing the space into three portions; if this is so, it probably, in some way, gives even a more secure hold on the hairs of the bee than the simple notches would do.

Prof. Mayet's figure of the mandible of *S. colletis* (a species now placed in *Stenoria*, Muls.) shows six simple notches. He also figures the tarsus as triunguline; in *muralis* there is certainly only one long simple claw. His figures of the antennæ and palpi would serve very well also for *muralis*, giving, *e.g.*, three joints to the antennæ, of which Fabre only mentions two; for the other mouth parts I have not succeeded in making any satisfactory dissection.

There are two hairs about the middle of each thoracic sternite, and all the segments seem to have short hairs along their posterior margins, both dorsally and ventrally, three or four on either side of the middle line.

The spiracles are not described by Fabre or Mayet. They seem to be very much like those of *Meloe*. The meso-thorax carries a pair of large ones on its anterior border and in the lateral membrane. The first abdominal segment has a pair nearly as large, situated in the lateral plate. The following abdominal segments show points that are possibly spiracles, probably obsolete ones, corresponding to the series of small ones existing in the larva of *Meloe*.

The most extraordinary structure that these little larvæ present is what Mayet terms the "*Appareil fixateur*." Mayet describes it as originating at the origin of the eighth abdominal segment, "which it almost entirely covers," and Fabre shows its two corneous points as continuous with the eighth abdominal tergite; but he describes the organ, as I find it in these specimens, as between the eighth and ninth segments. It is difficult to believe that its situation is not the same in both species. Fabre notes that it is quite retractile beneath the eighth

tergite. He only mentions one process on each side, my specimens show two. Mayet describes the outer one as an anchor, the inner as a spinneret, and says these reach the surface of progression (hair of bee, &c.) by the incurving of the further segments, like those of a lobster. Fabre notes the secretion of some gummy substance, but ascribes its origin to the anal extremity.

No such structure appears to exist in *Meloe* or *Metæcus*. The photographs will give some idea of its appearance and position.

It is the tenth abdominal segment that carries the long terminal bristles. In the photograph, the seventh, eighth, and ninth segments show, on the left side, what are possibly the spiracles, of which Newport says there is one on the ninth segment in *Meloe*.

METÆCUS PARADOXUS, L.

The young larva of *Sitaris* revives my memories of the early stages of *Metæcus paradoxus*, of which I once saw a first stage larva at large, without at the time knowing what it was.* It is very like that of *Sitaris*, but only about half the size. No one has since taken the trouble to obtain it. There should be no difficulty about this, wasps' nests, taken at the right season, will supply sufficient imagines to provide pairings and ovipositings if suitable conditions are provided, viz., flowers and sunshine, and wood well-cracked, but not actually rotten. The photographs reproduced (from specimens some 40 years old) show the first stage larvæ when, having fed in the interior of the wasp-grub, they have grown so as to separate their dermal plates. Another photograph shows the front of a wasp-grub after the *Metæcus* larva has become external. It shows the dermal plates of the cast skin, irregularly piled together, where it blocks the hole of emergence in the skin of the wasp larva. The object of the photograph is, however, to present a record of the place of emergence; to do this, the imaginal legs of the pupa are displayed. These are still under the larval skin, a grub attacked by *Metæcus* never assuming the pupal state, though the preparations for doing so, and casting the larval skin, proceeds so far as to make the legs shown in the photograph unmistakable. To display them some little disturbance has taken place, but it can be seen that the cast skin is medio-ventral on the third thoracic segment.

The legs are of interest as showing the three-jointed tarsi, with lateral expansions, possibly in relation to securing a hold on the smooth skin of a wasp, so different from the hairy coating of a bee (though a wasp is not by any means hairless). They contrast with the simple

* Annals and Mag. Nat. Hist., September, 1870, pp. 191-204.

smooth claw of *Sitaris*, triple but not three-jointed in *S. colletis* and in *Triungulinus* (a general name for *Meloe* larvæ). The jaws do not seem modified for holding purposes, but have an extremely acute point, no doubt for piercing the tough skin of the wasp-grub. It appears to possess suckers for holding at the posterior extremity; they belong to the tenth abdominal segment, there being no trace of the curious dorsal organ of *Sitaris*.

EXPLANATION OF PLATES I—III

PLATE 1.—1st stage larva *Sitaris muralis*, × 45 dorsal view.

„ „ „ „ „ × 60 lateral view.

„ „ „ „ „ head and pro-and mesothorax
× 150.

„ „ „ „ „ abdom. segments 7, 8, 9, 10
(and 11 ?), dorsal view. × 300.

In the lateral view the position of the *Appareil fixateur* is distinct but the plate leaves obscure the organ itself, though plain in the original photograph.

„ 2.—*Metacus paradoxus*.

1st stage larva full grown, removed from wasp larva and mounted in balsam. × 25 and × 30.

„ 3.—*M. paradoxus*.

Legs × 300.

Portion of wasp imago as existing within larval skin at date of exit of the *M. paradoxus* larva. Skin of wasp larva removed, pupal legs of wasp spread out.

ON SOME IMPOSSIBLE SPECIFIC NAMES IN MICRO-LEPIDOPTERA.

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

In a paper published in the Transactions of the American Entomological Society, Vol. xxxiii, 1907, by Mr. W. D. Kearfott, on new species of *Tortricina*, are a number of specific names which are openly and obviously based on a barbarous and unmeaning gibberish, and in my opinion must be rejected as null and void. They are given below, and carry their condemnation on their face. If a name is without meaning and only consists of a chance arrangement of letters, memory, deprived of the clue afforded by sense, is unable to recall the name with accuracy, since the letters might just as well have been arranged otherwise; hence on every occasion reference would have to be made

to the original authority for verification, an intolerable burden and great hindrance to scientific work. This is the reason why those American entomologists who accept the illiterate orthography of Chambers (who, as instanced by Lord Walsingham, spelt one of his specific names in eight different ways, all wrong) are unable to remember which misspelling is the original one, and are therefore continually themselves adding fresh misspellings to the heap. An educated man can, however, correct these names, and can remember the corrected name, but a gibberish-name is beyond correction. Perhaps the clearest argument against these names takes the form of a *reductio ad absurdum*; if such names are permissible, then every other combination of letters, whether one or more, constitutes a good name, and as the same name may be used in different genera, these may recur indefinitely often; therefore the names *baracana*, *caracana*, *daracana*, &c., may turn up again and again, or may appear in the varied forms of *boracana*, *barocana*, *baracona*, *beracana*, &c., or equally as *ba*, *ca*, *da*, &c., or even as *a*, *b*, *c*, &c. Surely no practical worker can contemplate such a tangle of absurdity. A line must be drawn somewhere, and for my part I propose to draw it here and now. I refuse to accept these names, and shall quote them as synonyms with the syllable (*van.*) attached, signifying that they are void. I take the responsibility of re-naming the species accordingly, since some one must do it. I regret any apparent discourtesy to Mr. Kearfott, from whom as a correspondent I have received much kind help, but if he were my own brother, I could not act otherwise. I do not attribute to him anything worse than an error of judgment, in failing to perceive that in order to save himself a little trouble, he was causing great inconvenience to future workers.

I take the opportunity to express the opinion that those who would write after such names as are proposed here *n.n.* instead of *n. sp.* are basing an affected accuracy on a logical misapprehension; *n.sp.*, whenever applied, signifies a new specific name only, and *not* a new species; entomologists do not profess to have created the insect they describe; the description is new, but so is any re-description; the specific name is then the only really new thing that is intended by *n.sp.*, and this applies therefore equally well, whether the insect has received another earlier name or not.

Two or three of the following names might have passed for real words, but the context shows them to be false. I have changed also two names formed (as the text shows) from ordinary English words

(not names) treated as Latin. Other misspelt names (such as *pyrusana*, properly *pyrana*; *sandiego*, properly *sandiegana*, and a poor name at that) can be corrected in Catalogue. I quote the generic references without prejudice, reserving my own.

<i>Phalonia bana</i> ,	Kearfott.....	p. 73	=	<i>rhodites</i> , n. sp.
<i>Enarmonia dana</i> ,	„	„ 65	=	<i>æquorea</i> , n. sp.
„ <i>fana</i> ,	„	„ 64	=	<i>ænochroa</i> , n. sp.
„ <i>lana</i> ,	„	„ 59	=	<i>chrysotypa</i> , n. sp.
<i>Olethreutes mana</i> ,	„	„ 14	=	<i>thaliastis</i> , n. sp.
<i>Enarmonia tana</i> ,	„	„ 62	=	<i>cirrhias</i> , n. sp.
„ <i>vana</i> ,	„	„ 62	=	<i>eoleuca</i> , n. sp.
„ <i>wana</i> ,	„	„ 60	=	<i>cupida</i> , n. sp.
„ <i>zana</i> ,	„	„ 61	=	<i>xanthospora</i> , n. sp.
„ <i>dandana</i> ,	„	„ 65	=	<i>ratifera</i> , n. sp.
<i>Eucosma fandana</i> ,	„	„ 19	=	<i>argyraulæ</i> , n. sp.
„ <i>gandana</i> ,	„	„ 20	=	<i>chloroleuca</i> , n. sp.
„ <i>handana</i> ,	„	„ 20	=	<i>ceramitis</i> , n. sp.
„ <i>kandana</i> ,	„	„ 20	=	<i>argillacea</i> , n. sp.
„ <i>landana</i> ,	„	„ 18	=	<i>isospora</i> , n. sp.
„ <i>mandana</i> ,	„	„ 17	=	<i>amanda</i> , n. sp.
„ <i>nandana</i> ,	„	„ 17	=	<i>chersæa</i> , n. sp.
„ <i>pandana</i> ,	„	„ 17	=	<i>sardiopa</i> , n. sp.
„ <i>randana</i> ,	„	„ 21	=	<i>paraglypta</i> , n. sp.
„ <i>sandana</i> ,	„	„ 22	=	<i>griphodes</i> , n. sp.
„ <i>tandana</i> ,	„	„ 23	=	<i>trapezitis</i> , n. sp.
„ <i>vandana</i> ,	„	„ 24	=	<i>pholas</i> , n. sp.
„ <i>wandana</i> ,	„	„ 24	=	<i>eumæa</i> , n. sp.
„ <i>zandana</i> ,	„	„ 24	=	<i>atacta</i> , n. sp.
„ <i>yandana</i> ,	„	„ 25	=	<i>nothrodcs</i> , n. sp.
„ <i>zandana</i> ,	„	„ 25	=	<i>peristicta</i> , n. sp.
<i>Thiodia baracana</i> ,	„	„ 43	=	<i>oxyleuca</i> , n. sp.
„ <i>caracana</i> ,	„	„ 43	=	<i>famosa</i> , n. sp.
„ <i>daracana</i> ,	„	„ 44	=	<i>profana</i> , n. sp.
<i>Proteopteryx faracana</i> ,	„	„ 47	=	<i>ultrix</i> , n. sp.
<i>Enarmonia garacana</i> ,	„	„ 66	=	<i>septicola</i> , n. sp.
<i>Proteopteryx haracana</i> ,	„	„ 46	=	<i>resoluta</i> , n. sp.
<i>Cenopis karacana</i> ,	„	„ 68	=	<i>tempestiva</i> , n. sp.
<i>Proteoteryx laracana</i> ,	„	„ 45	=	<i>navalis</i> , n. sp.
„ <i>maracana</i> ,	„	„ 46	=	<i>præscripta</i> , n. sp.
<i>Proteoteras naracana</i> ,	„	„ 50	=	<i>prasinospila</i> , n. sp.
<i>Thiodia raracana</i> ,	„	„ 44	=	<i>fastidiosa</i> , n. sp.
<i>Cenopis saracana</i> ,	„	„ 68	=	<i>austera</i> , n. sp.
<i>Sparganothis taracana</i> ,	„	„ 66	=	<i>procaz</i> , n. sp.
<i>Polychrosis yaracana</i> ,	„	„ 5	=	<i>signifera</i> , n. sp.
<i>Phalonia zaracana</i> ,	„	„ 74	=	<i>straminiodes</i> , Grote, probably.

<i>Eucosma bobana</i> ,	Kearfott.....	p. 26	=	<i>antichroma</i> , n. sp.
„ <i>cocana</i> ,	„	„ 26	=	<i>rhodophæa</i> , n. sp.
„ <i>dodana</i> ,	„	„ 27	=	<i>spilophora</i> , n. sp.
„ <i>fojana</i> ,	„	„ 28	=	<i>annulata</i> , n. sp.
<i>Olcthreutes gogana</i> ,	„	„ 8	=	<i>crepuscularis</i> , n. sp.
<i>Eucosma hohana</i> ,	„	„ 28	=	<i>syrtodes</i> , n. sp.
„ <i>kokana</i> ,	„	„ 29	=	<i>chortæa</i> , n. sp.
„ <i>lolana</i> ,	„	„ 29	=	<i>leucomalla</i> , n. sp.
„ <i>momana</i> ,	„	„ 30	=	<i>metaschista</i> , n. sp.
„ <i>nonana</i> ,	„	„ 30	=	<i>carphologa</i> , n. sp.
„ <i>popana</i> ,	„	„ 31	=	<i>carcharias</i> , n. sp.
„ <i>rorana</i> ,	„	„ 31	=	<i>sceletopa</i> , n. sp.
„ <i>sosana</i> ,	„	„ 32	=	<i>pelina</i> , n. sp.
„ <i>totana</i> ,	„	„ 32	=	<i>spodias</i> , n. sp.
„ <i>vovana</i> ,	„	„ 33	=	<i>typicodes</i> , n. sp.
<i>Evetria zozana</i> ,	„	„ 2	=	<i>matulina</i> , n. sp.
<i>Eucosma boxcana</i> ,	„	„ 87	=	<i>aspista</i> , n. sp.
<i>Phalonia foxcana</i> ,	„	„ 84	=	<i>liquida</i> , n. sp.
„ <i>toxcana</i> ,	„	„ 85	=	<i>baryzela</i> , n. sp.
„ <i>voxcana</i> ,	„	„ 83	=	<i>omphacitis</i> , n. sp.
„ <i>zoxcana</i> ,	„	„ 86	=	<i>telifera</i> , n. sp.
„ <i>biscana</i> ,	„	„ 75	=	<i>ixenta</i> , n. sp.
„ <i>discana</i> ,	„	„ 78	=	<i>cricota</i> , n. sp.
<i>Thiodia kiscana</i> ,	„	„ 92	=	<i>speculigra</i> , n. sp.
<i>Eucosma miscana</i> ,	„	„ 91	=	<i>semalca</i> , n. sp.
<i>Eulia niscana</i> ,	„	„ 94	=	<i>camerata</i> , n. sp.
<i>Phalonia viscana</i> ,	„	„ 84	=	<i>peganitis</i> , n. sp.
„ <i>wiscana</i> ,	„	„ 77	=	<i>acropeda</i> , n. sp.
„ <i>ziscana</i> ,	„	„ 76	=	<i>fabicola</i> , n. sp.
„ <i>bomonana</i> ,	„	„ 75	=	<i>cyamitis</i> , n. sp.
<i>Carposina comonana</i> ,	„	„ 87	=	<i>euryleuca</i> , n. sp.
<i>Phalonia formonana</i> ,	„	„ 81	=	<i>myrinitis</i> , n. sp.
<i>Eucosma romonana</i> ,	„	„ 90	=	<i>scrangias</i> , n. sp.
„ <i>womonana</i>	„	„ 88	=	<i>semnitis</i> , n. sp.
<i>Olcthreutes islandana</i> ,	„	„ 80	=	<i>insulicola</i> , n. sp.
(“ at Plummer’s Island.”)				
<i>Phalonia elderana</i> ,	„	„ 84	=	<i>helonoma</i> , n. sp.
(“ from swamp elder.”)				

The following, forming part of the same contingent, were published in the Canadian Entomologist, Vol. xxxix, 1907:—

<i>Hysterosia waracana</i> ,	Kearfott.....	p. 122	=	<i>dicax</i> , n. sp.
„ <i>riscana</i> ,	„	„ 122	=	<i>vineta</i> , n. sp.
„ <i>tiscana</i> ,	„	„ 123	=	<i>rigilans</i> , n. sp.
<i>Eucosma domonana</i> ,	„	„ 79	=	<i>efficax</i> , n. sp.
„ <i>gomonana</i> ,	„	„ 78	=	<i>discipula</i> , n. sp.
<i>Hysterosia homonana</i> ,	„	„ 84	=	<i>refuga</i> , n. sp.

<i>Hysterosia komonana</i> ,	Kearfott.....	p. 121	=	<i>fermentata</i> , n. sp.
<i>Tortrix lomonana</i> ,	„	„ 62	=	<i>veneratrix</i> , n. sp.
<i>Phalonia nomonana</i> ,	„	„ 84	=	<i>voluntaria</i> , n. sp.
<i>Proteopteryx momonana</i> ,	„	„ 125	=	<i>sanifica</i> , n. sp.
<i>Phalonia romonana</i> ,	„	„ 83	=	<i>officiosa</i> , n. sp.
<i>Eucosma tomonana</i> ,	„	„ 78	=	<i>limigena</i> , n. sp.
„ <i>zomonana</i> ,	„	„ 80	=	<i>explosa</i> , n. sp.

I apprehend the three following names of Mr. A. Busck are equally bad:—

<i>Lipoptycha kana</i> ,	Busck, Proc. Biol. Soc. Wash. 1906, p. 182	=	<i>planiloqua</i> , n. sp.
„ <i>banana</i> ,	„ „ „ „ „ „ „ p. 182	=	<i>sordescens</i> , n. sp.
<i>Phalonia rana</i> ,	„ Journ. N. Y. Ent. Soc. xv, p. 22	=	<i>funesta</i> , n. sp.

Thornhanger, Marlborough:

December 16th, 1911.

ON THE EGGS OF TWO BRITISH SPECIES OF *COREIDÆ*.

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

On September 19th, 1910, I swept a ♀ *Myrmus miriformis* Fall., amongst *Calluna*, at Gomshall, Surrey. Hoping to obtain eggs, I brought it home and enclosed it in a tube with a twig of *Calluna* blossom. During the next fortnight, about a dozen eggs were laid on the plant; they were placed either singly, or two side by side, some on the leaves and some on the flowers. They were not in any way inserted into the tissues of the plant, but merely attached by a gummy secretion at a small area on the middle of the long axis. They remained in this condition throughout the winter, and it was not till the end of the following May that they hatched. Unfortunately, just at that time, I was unable to examine them daily, and in the interval between inspections they hatched out, and the young larvæ, finding no food, died. Since then, Mr. Hugh A. Saunders has been kind enough to send me some more eggs, which were laid in July last, and which I hoped might hatch in the autumn, for it seemed to me that an oviposition so late in comparison with my previous experience might indicate a second brood. However, as they did not hatch, I must wait in expectation of what the spring may produce.

The egg (Fig. 1a) is a most curious and interesting object. It is about 1.2 mm. long, and 0.3 mm. wide, almost white when first laid, but becoming ultimately of a shining brown colour, and either oval or subfusiform in outline, according to the aspect in which it is viewed.

On that side which is outermost as the egg is attached to its support, there is a slight indentation opposite the point of attachment, and on each side of that a longitudinal furrow for about half the length of the egg. But the most remarkable feature is a pair of processes at the cephalic end (Fig. Ib), each shaped, in a side view, very much like a "note of interrogation." These must, I think, be micropyles, though why they should be of such a bizarre form it is impossible to say. When the egg hatches, an operculum is separated off from this end, leaving a perfectly even edge, and showing an aperture which, by reason of the furrows above-mentioned, has a somewhat pear-shaped outline. The suture of the operculum passes between the two terminal processes, so that one of them is on the operculum itself, looking like a handle to a lid, and the other is on the main shell. The surface of the operculum is roughened by a number of flat rounded papillæ, which are placed more or less regularly in rows following the outline, and arranged concentrically round the micropyle. As this latter is excentric in position, the papillæ become smaller and more closely packed, and in fact almost obliterated in its immediate neighbourhood. The operculum separates from the body of the egg completely, and after the issue of the larva, a delicate iridescent conical pellicle is left protruding from the shell. Very similar phenomena have been described by Mr. Annandale in connection with an exotic Coreid bug, *Dalader acuticosta*, A. & S. (see Trans. Ent. Soc. Lond., 1905, p. 56).

The newly-hatched larva is probably at least 1 mm. long, but as in my specimens the soft abdomen was quite shrivelled up when I found them, it is impossible to say exactly. As usual in the *Coreidæ* the antennæ are inordinately long and stout. The whole insect is covered with long, stout, black setæ, intermingled with fine white hairs, both sets of which are truncately clavate at the apex. The head is large, pale yellowish, with bright red eyes; the thorax is more or less red, and the legs are spotted with black. The rostrum is about as long as the body and has a stout black tip.

Mr. H. A. Saunders has most kindly sent me also two eggs of *Chorosoma schillingi*, Schum. (Fig. II), which he obtained from a ♀ taken at Studland in September. These are much like those of *Myrmus*, differing chiefly in their slightly stouter form and in the shape of the terminal appendages.

The egg has been already described by Capt. Xamben in Ann. Soc. Linn. Lyon, 1904, as follows:—

"Œuf. long 1 mm. diam 0.3 mm. Très allongé, subfusiforme, gris terne,

cerclé de blanchâtre au pôle supérieur, lequel est surmonté d'un pédoncle gris couronné d'un bouton en forme de chapeau de champignon à circuit blanc de lait; une tige semblable surmonte le pôle: de plus, au milieu de l'œuf, est une excroissance noire appuyée sur un circuit à fond plus clair."

The "gris terne" in this description expresses the colour of the eggs when first laid. Later on, they become darker and of a brown colour. The phrase "cerclé de blanchâtre" refers to the suture between the operculum and the body of the egg, which is much more distinct in this species than in *Myrmus*, and which, as in *Myrmus*, passes between the two appendages. The "chapeau de champignon" represents the front view of the appendages; in profile, they are more like those of *Myrmus*, though not so distinctly suggestive of the question mark. I do not find in my specimens any trace of the "excroissance noire," unless it refers to the point of attachment of the egg to the leaf, but there is a pair of longitudinal furrows, which are not quite so long or so deep as those of the allied species.

It will be seen that, notwithstanding the wide difference in size between the imago of the two species, of which *Myrmus* measures 7 to 9 mm., and *Chorosoma* 15 to 16 mm., the dimensions of the eggs are almost identical, that of *Chorosoma* being merely slightly the stouter in build.

The eggs are attached at the side to a thin stalk of *Psamma arenaria*, the plant on which the imago occurs, and in nature they would, therefore, be placed in a more or less vertical position, with the cephalic end uppermost.

For the drawings which accompany this paper, I am indebted to the pencil of Miss Bertha Reid.

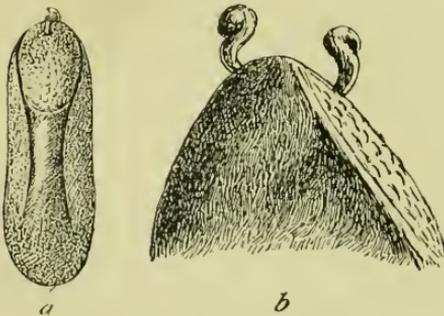


Fig. 1. Egg of *Myrmus miriformis*, Fall.
(a) Front view; (b) Cephalic end more highly magnified.

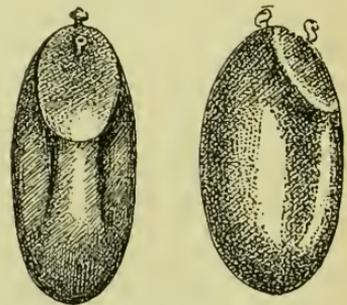


Fig. 11.—Front and side views of egg of *Chorosoma schillingi*, Schum.



Photo, F. Noad Clark.

André & Sleigh.

MALE GENITALIA OF MONOPIS, Hb.

1. ferruginella, Hb.

3. croceicapitella, Cms.

2. imella, Hb.

4. monachella, Hb.

STRAY NOTES ON *MONOPIS CROCICAPITELLA*, CLMS., AND
M. FERRUGINELLA, HB.

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

PLATE IV.

In *Fn. Hawaii.*, i, 728, no. 437 (1907), Lord Walsingham showed that *hyalinella*, Stgr., *lombardica*, Hrng., *heringi*, Rdsn., and *ferruginella*, Dyar (*nec* Hb.), are all identical with the *Monopis* upon which Clemens, as long ago as 1859, bestowed the name *crocicapitella*. Shortly afterwards, in *Proc. Zool. Soc. Lond.*, 1907, p. 1022, the same author published another notice of the species, and included the more important synonyms and references.

The history of the synonym *heringi* is as follows. Count Gianfranco Turati, of Milan, having met with the insect at his country seat at Alzate, Brianza, on the southern side of the Lago di Como, in the division of Lombardy, intended to describe it under the name *heringi*, in honour of Major E. Hering, of Stettin, but subsequently, at the Count's request, the Major himself brought forward the species as new to science (*Stett. Ent. Zeit.*, 1889, p. 295), and called it *lombardica*—modesty not allowing him to perpetuate the former name. Unaware of Major Hering's action, Mr. N. M. Richardson, after finding in the Stainton Collection some continental specimens, forwarded by the Major *before* the publication of his paper (*l.c.*), standing under the MS. name *heringi*, which had been received with them, adopted this name for the insect in *Ent. Mo. Mag.*, Ser. 2, iv. 14-15 (1893), and thus created the fresh synonym *heringi* (Turati MS.), Rdsn. Mr. Richardson there expressed doubts as to whether "*heringi*" was a good species, or only a well-marked local variety of *ferruginella*, but, in *Proc. Dorset. N.H. and A.F. Club*, xvii, 180 (1896), having in the meantime had some correspondence with Major Hering, who, it may be mentioned, confirmed the determination of the Portland insect as *lombardica*, Hrng., here entered it under this name.

M. crocicapitella has not, I believe, been hitherto chronicled from any British localities, with the exception of "Portland" (Dorset), and "Norfolk." It was recorded from these, by Mr. Richardson, under the synonym "*Blabophanes Heringi*," in *Ent. Mo. Mag.* (*l.c.*), but in Mr. Meyrick's *HB. Brit. Lep.*, published upwards of two and a half years after Mr. Richardson's paper, it is not referred to under this or any other name. It is, however, much more widely distributed with us than this absence of records would suggest, and the following summary shows the localities, so far as they are known to me, in

which it has occurred in the British Isles. The late Mr. C. G. Barrett's series of "*ferruginella*," which I acquired at the dispersal of his collection, included many *crociacapitella*, labelled, as was usual with him, merely with locality names—where I am doubtful whether the specimens were taken by him, or feel sure that he was not the captor, I have merely entered "*Mus. Bankes*" after the locality name.

ENGLAND—Cornwall (Penzance, one, *E. R. Bankes*); Devon (Dartmouth, probably common in summer, *E. R. Bankes*; ? Plymouth,* fairly common, *G. C. Bignell*); Dorset (I. of Portland, locally common, *N. M. Richardson*, *E. R. Bankes*; I. of Purbeck, rather common locally, *Rev. C. R. Digby*); Gloucestershire (Bristol, *Mus. Bankes*); Hampshire (Woody Bay, St. Lawrence, I. of Wight, *Lord Walsingham*); Norfolk (King's Lynn, not uncommon, *E. A. Atmore*, *C. G. Barrett*; Norwich, one, *C. G. Barrett*). IRELAND—Co. Dublin (Dublin, *Mus. Bankes*); Co. Sligo (Sligo, *Mus. Bankes*). WALES—Pembrokeshire (Pembroke, *C. G. Barrett*).

It is particularly noticeable that all the above-mentioned localities, except Bristol and Norwich, are either on, or, in the case of the islands, just off the coast, and it is obvious that any insects taken on the coast near Bristol would naturally be labelled with the name of this city. The only "Norwich" specimen that I have seen is one so labelled by the late Mr. C. G. Barrett, but since his letters prove that he regarded *crociacapitella* as a coast, and *ferruginella* as a woodland form, this capture may be considered as quite exceptional. Our present knowledge of the distribution of *crociacapitella* in the British Isles distinctly points to its being practically confined to the coast, where, however, it seems remarkably local, though, as Count G. Turati's experience shows, it is sometimes found inland in other countries. On the other hand, nearly the whole of my long British series of *ferruginella* has been captured inland, in lanes, &c., though a few of the specimens have occurred either on, or near, the coast.

I am not aware that the larva of either *crociacapitella* or *ferruginella* has ever been described, and our knowledge of their feeding-habits is probably incomplete. Sorhagen [Kleinschmett. M. Brand., 144 (1886)] gives the larvæ of the latter as feeding "in woollen fabrics, rotten wood, and, according to Bignell, in the seeds of *Artemisia absinthium*"; Meyrick [H.B. Br. Lep. 784 (1895)] says that it lives "in a case on seeds of *Artemisia* and doubtless other plants,"

* Mr. Bignell [Ent. Mo. Mag. xv, 110 (1878)] omits to mention whence the larvæ that produced his reputed "*Tinea ferruginella*," which were really *M. crociacapitella*, were obtained, but presumably they were collected near Plymouth, where he was then residing.—E. R. BANKES.

whilst Hering (*in litt.* 18.i.93) expresses the opinion that seeds form its favourite, if not its only, pabulum. These also afford sustenance to its ally at times, for Mr. Richardson ascertained, some years ago, that the insect reared by Mr. G. C. Bignell, in *Ent. Mo. Mag.*, xv, 110 (1878),* under the name "*Tinea ferruginella*," as bred by himself from seeds of *Artemisia absinthium*, was really "*lombardica*" (i.e. *croci-capitella*). Mr. C. G. Barrett's letters, that are before me, prove, moreover, that he reared the latter from seed-feeding larvæ received from Mr. Greig, but unfortunately neither the food-plant, nor the locality, is mentioned. This species, nevertheless, does not always feed thus, for, in his house at Brianza, Count G. Turati bred it in some numbers from débris of carpets, papers, &c., and the fact that it thrives upon such débris accounts for the partiality that the imago sometimes shows for buildings. As bearing on this point, Mr. E. A. Atmore's experience is interesting: he informed Mr. Richardson (*in litt.* 1.ii.93) that of his series of sixteen individuals — all taken at King's Lynn†, and identified by Mr. Richardson as "*lombardica*" (i.e. *croci-capitella*), some were captured in his house, and others in dock-warehouses in the town. My own experience, however, contrasts strongly with his, for, although I have taken many examples of *croci-capitella*, not one of these has been met with either in or near a building. A similar statement about *ferruginella* would be equally true, and Major Hering observed that he did not find it in houses, at any rate in the larger towns. Writing from Stettin, on June 4th, 1894, he informed me that *ferruginella*, which in Germany never showed any connecting links with "*lombardica*," was then emerging in plenty from some flower-pots on the balcony of a friend, and he was setting a long series of it, for the species, in spite of its very general distribution in that country, was, as a rule, by no means a common one there. He added "Till now *lombardica* has not been found in Germany," and I believe that his remark still holds good.

In Britain, as in Germany, *ferruginella* is singularly constant in facies, as regards the fore-wings, whilst its ally is noticeably less so. The females of *croci-capitella* have the fore-wings less flecked with ochreous, on the whole, than the males, and are therefore more uniformly dark in appearance, thus approaching *ferruginella* rather more closely. But these species can be easily separated by attention to the following points:

* This note is clearly the one referred to by Sørhagen (*l.c.*), and I have little doubt that Meyrick's statement (*l.c.*) that the larva of *ferruginella* feeds on "seeds of *Artemisia*" was based upon it. — E. R. B.

† Messrs. Atmore and Barrett both found *M. ferruginella* rare at King's Lynn. — E. R. B.

(1) The ground-colour of the fore-wing of *ferruginella* is black, tinged with violet, while that of *crociapitella* is blackish-fuscous, and is much more flecked with pale ochreous ;

(2) In *ferruginella* the dorsal streak is rather pale ochreous, whereas, in *crociapitella* it is whitish-ochreous ;

(3) The silky hind-wing of *ferruginella* is purplish fuscous in the male, dark purplish-, or violet-fuscous in the female, whereas the satiny hind-wing of *crociapitella* is whitish grey in the male, and pale grey in the female ;

(4) The cilia of all the wings are very much darker in *ferruginella* than in *crociapitella*.

In his unpublished notes, prepared in 1893-1894, which Mr. Richardson has most kindly lent me—together with some interesting letters received from Hering and others about these species—he remarks that “*lombardica*” (i.e. *crociapitella*) varies in size far more than *ferruginella*, and gives certain details bearing out his statement : this is further confirmed by the measurements of the largest and the smallest of the many British individuals of both species in my collection. Of *crociapitella*, my largest specimen (♀, Bristol) expands 17·5 mm., while the smallest (♂, King’s Lynn) expands 9 mm., whereas, of *ferruginella*, the *exp. al.* of my largest exponent (♀, Wareham) is 15 mm., and of the smallest (♂, Wareham) is 11 mm. In both insects the males are markedly smaller than the females. Mr. Richardson ascertained, by a series of careful measurements, that there is a good deal of variation in the shape of the wing in both species, but no appreciable difference between them in this respect.

In Ent. Mo. Mag. (*l.c.*) Mr. Richardson says that “*heringi*” (i.e. *crociapitella*) is found in Portland in June (end), July, and August (part), but that his only autumn capture was made on October 7th, 1887. My Portland examples were secured in July and early August, and my Cornish one towards the end of August, but in S. Devon I have taken it rarely in August and September, and on three occasions in October, viz., 10/x/04, 10/x/06, and 17/x/02, and it is particularly mentioned in my diaries that these three October individuals were in either “fine” or “good” condition. *Ferruginella* has been recorded as double-brooded by Stainton and other authors, and the autumn captures of *crociapitella* afford evidence that it has also a second brood, partial if not complete, in some of its haunts ; in this connection it is interesting to note that Major Hering (*in litt.* 18/i/93) informed Mr. Richardson that on the Continent “*lombardica*” (i.e. *crociapitella*)

had only been taken from August to October. The imago, in both sexes, flies freely and briskly on favourable evenings, especially towards dusk, and on October 10th, 1906, I netted one, on the wing of its own accord, as early as 4.40 p.m. It certainly has a "sweet tooth," as is shown by the fact that it has come to my "sugar" on several occasions in the months of August, September, and October; it is also attracted by artificial light, which yielded Lord Walsingham seven specimens on the Lido, near Venice, during May, 1910.

It has often been questioned whether *M. crocicapitella*, Clms., is truly distinct from *ferruginella* Hb., but there is no longer any room for doubt in the matter, for the male genitalia furnish proof that the former is not conspecific with the latter. The accompanying Plate shows these appendages in the two species under notice, and also in two of their congeners. The preparations, from which the photographs were taken, are due to the skill of Dr. T. A. Chapman, to whom I am also greatly indebted for the following interesting notes.

Comparison of male genitalia of *Monopis ferruginella*, Hb., *imella*, Hb., *crocicapitella*, Clms., and *monachella*, Hb. :—

"All these differ from the group of *M. rusticella*, Hb., *weaverella*, Scott, and *Tinea pallescentella*, Stt., with their oval clasps with rounded ends, in having comparatively straight ends with sharp angles, most marked in *crocicapitella* and *monachella*. In the two latter, in fact, the clasp might almost be described as quadrangular with straight parallel sides and a straight end at an angle to the sides of about 70°. *Imella* and *ferruginella* are a little more rounded. The ædeagus is very short and broad in *imella*, longer and narrower in *monachella*, still narrower in *ferruginella* and *crocicapitella*. (In the specimen the ædeagus and saccus have both been accidentally cut across, the gap is due to the portions being separated, not to any portion being wanting). The saccus is short in *imella*, very slender in *crocicapitella*, slender and thickened towards the end in *monachella*. The double scaphium has thick curved and clubbed ends in *crocicapitella* and *imella*, straighter, slighter, and more pointed ones in *ferruginella* and *monachella*. There are minor points of difference, but these are sufficient to illustrate how different specifically the four forms are."

I may mention in conclusion, that the genitalia of both sexes of *Monopis rusticella*, Hb., and *weaverella*, Scott, were shown on the plate (Pl. V) issued with the October (1910) no. of this magazine.

Meyrick [HB. Br. Lep., 784-785 (1895)] includes five British species in the genus *Monopis*. One of these, viz., *fenestratella*, Heyd.,

has not been obtainable, but we have now been able to give the result of Dr. Chapman's examination of the genitalia of the other four, as well as of *weaverella* and *crociacapitella* which are omitted from Meyrick's work.

EXPLANATION OF PLATE IV.

- Fig. 1. Genitalia of *Monopis ferruginella*, Hb. ♂ (× 35).
 " 2. " " " *imella*, (Hb. ♂ (× 35).
 " 3. " " " *crociacapitella*, Clms. ♂ (× 35).
 " 4. " " " *monachella*, Hb. ♂ (× 35).

Norden, Corfe Castle :
 November 5th, 1910.

Cryptohymnus sabulicola, Boh., in Cumberland.—It will be of interest to record the capture of a specimen of this uncommon and local insect last June, in the Eden valley, in flood refuse deposited on the extensive gravel bed, where my friend, Mr. Britten discovered *Thinobius pallidus*, Newb., two or three years ago. *C. sabulicola* hitherto has, I believe, only occurred in the British Isles in Scotland, where Dr. Sharp and Mr. Lennon met with it in Dumfries-shire. I am indebted to Mr. Newbery for naming the specimen, as not having the closely allied *C. pulchellus*, L., I was unable to satisfy myself as to which species to refer my capture.—F. H. DAY, 26, Curroch Terrace, Carlisle : January 8th, 1912.

Bledius arenarius, var. *fergussoni*, var. nov.—Mr. Fergusson has sent me for identification some specimens of *Bledius* which at first sight appeared to be the recently described *B. secernendus* (Ent. Mo. Mag., Vol. xlvii, p. 269, printed by mistake as *secerdendus*). They, however, prove to be a dark form of *B. arenarius*, easily distinguished from the former species by the characters given in the above note, the most obvious of which are the much finer central line of the thorax and the less strongly punctured head. Some of Mr. Fergusson's specimens are coloured just as in *B. secernendus*, others have the elytra almost entirely dark, with only the extreme apex yellowish. They were taken at Knoweside, Ayrshire, on the sandy banks of small streams on the shore, just above high water mark, in company with the type form of *B. arenarius* and *B. terebrans*. As it seems necessary to give this form a name, I propose to call it v. *fergussoni*.—NORMAN H. JOY, Bradfield, Berks January 1st, 1912.

Note on Omalium (Phyllodrepa) grandiloqua, Luze, a Scottish insect.—In the "Verhandlungen der k. k. zoologisch-botanische Gesellschaft in Wien," LX, pp. 394, 395 (October, 1910), Herr G. Luze has described a new species of *Phyllodrepa*, from Scottish examples sent him by Mr. N. H. Joy, under the name of *P. grandiloqua*. As no reference to this insect has hitherto appeared in our literature (except in the Zoological Record for 1910), it is necessary to call attention to Herr Luze's paper. The species is known to British Coleopterists under the name *Omalium brevicorne*, Er.—G. C. CHAMPION, Horsell, Woking : January, 1912.

Notes on Lepidoptera observed in Surrey, &c., in 1911.—Among the captures and observations made during the past year by my brother and myself, the undermentioned may be of interest to Lepidopterists. For the sake of convenience, two records made previous to 1911 are included, but unless stated otherwise, all dates refer to 1911.

RHOPALOCERA: *Colias hyale*, seen flying near the R. Wey, at Ripley, Aug. 7th.

BOMBYCES: *Stauropus fagi*, one on a beech trunk, Haslemere, June 10th. *Nola confusalis*, same locality and date as last, and taken in the same way. *Spilosoma urticae*,* taken at Ripley on June 5th, 1909. This species seems to be spreading in the south of England.

NOCTUÆ: *Demas coryli*, two larvæ found crawling up beech trunks on the Albury Downs, Guildford, evidently having been blown down by the wind; now in the pupal state. *Dasycampa rubiginea*, ♀, taken at sallow, April 21st; ova were laid by this specimen on May 2nd and later, from which a fair number of specimens were subsequently reared. *Xylina semibrunnea*, four at sugar, Horsell; in view of the comparative scarcity of ash, this is, perhaps, a little unexpected. *Hyphenodes albistrigalis*, flying in company with *H. costæstrigalis* and *Tholomiges turfosalis*, on damp heaths, Horsell, July 23rd.

GEOMETRÆ: *Selenia lunaria*, at light, Guildford. *Nemoria viridata*,* several 'walked up' out of heather at Chobham. Further specimens were reared from ova obtained from these as recorded elsewhere [Entom., December, 1911, p. 405]. *Hyria muricata**, one fine specimen taken on the wing, having been disturbed from amongst the bracken at the edge of a mixed wood near Brookwood, July 1st. *Acidalia straminata*, several examples flying over the heath, in the evening, June 21st, and later. *Lobophora viretata*, street lamps, Guildford, May 24th.

PYRALIDES: *Odonlia dentalis*, not rare from September 3rd onwards, at Shoreham, Sussex. *Ebulca stachydalis*,* not uncommon, early in July, in one very restricted locality near Woking. A number of imagines were netted along a ditch full of luxuriant vegetation, including much *Stachys palustris*. The larvæ were found by searching the food-plant in August and September. *Botys asinalis*, singly, near Cowes, I. W., at ragwort blossom, August 8th, 1910.

PTEROPHORI: *Oxyptilus teuerii*, locally abundant near Guildford. *O. parvidactylus*, in company with large numbers of *Ennychia nigrita* and *Ilithyia semirubella*, at Horsley, July 15th.

CRAMBI: *Crambus dumetellus*, on heaths, with swarms of *C. utiginosellus*, June 21st, Woking. *C. warringtonellus*,* with ten other species of the genus (the absence of *C. perlcellus* amongst which is to be noted), occurred in the same district early in August; *C. hamellus*, *C. pinellus*, and *C. latistrius* were usually obtainable by dislodging them from the pine boughs on which they rest. *Alispa angustella*,* larvæ frequent in fruits of *Euonymus*, at

Guildford and Oxford, in October. *Dioryctria splendidella*,* in numbers, at Woking, by jarring pine boughs; also a single example at rest on a telegraph pole, near Shoreham, Sussex, August 21st. *Phycis betulæ*, among birch, at the end of June, Horsell.

TORTRICES: This is the first year we have paid any attention to the group, and it may be of interest to note that 125 species, in all, have been taken. They include: *Tortrix piceana*, Woking, June 21st. *T. diversana*, Woking, June 27th, on oak. *Hedya servillana*, Woking, June 2nd. *Phoxopteryx siculana*, Woking, with *P. unguicella* and *P. uncana*, June 2nd and August 12th. *Pædisca rubiginosana*, on heaths, Woking, June 2nd. *Coccyx cosmophorana*,* a single example of this usually Scottish species taken amongst pines, Woking, June 2nd. *C. pygmæana*,* flying in the sunshine around, or beaten out of, spruce at Tilford, Surrey, April 24th. *Heusimene fimbriana*, on oak, Woking, April 14th. *Eupæcilia implicitana*, several at Shoreham, Sussex, August. *Argyrolepis zephyrana*, Guildford, May 23rd. *A. æneana*, imagines among ragwort on chalk, at Guildford; larvæ in the roots of the same plant in December. *Conchylis straminea*, Guildford, June 13th.

The species marked with an asterisk, have not, so far as I know, been previously recorded from Surrey.—H. G. CHAMPION, Horsell, Woking: Dec., 1911.

Limnophilus subcentralis, Brauer, near Nethy Bridge.—Five years ago I came across *Limnophilus subcentralis*, Brauer, in considerable numbers, but only females; towards the end of last summer I worked for the species in July and August with the hope of getting a supply of males. About the middle of August I saw a few females, and visited the locality several times for the sake of the males; they did not appear until the last day or two of the month, and, strange to say, the males were all more or less chipped at the tips of the wings, although the females were in perfect condition. My original specimens were taken in the middle of July, 1878, at Aviemore; in 1882 I took it at Kinardochie Loch, Perthshire, in the middle of August; and in 1886 it occurred at Loch Awe during July.—JAMES J. F. X. KING, 1, Athol Gardens Terrace, Kelvinside, Glasgow: January 15th, 1912.

The "Verrall" supper.—The evening before the Annual General Meeting of the Entomological Society of London has been, for more than 20 years, a date looked forward to by many Entomologists with pleasurable anticipation as one when a pleasant social evening would be spent in the company of other fellow students of nature, by invitation of the late Mr. Verrall in his capacity as a member of the Entomological Club. The founders of this very old Club no doubt did not fail to realize the advantages accruing to Entomological Science from social intercourse, but Mr. Verrall, by not limiting the number of his invitations, made his Annual Supper at the Holborn Restaurant an "Event," which many felt ought not to be allowed to cease at his death; the idea of continuing it, on as nearly as possible the same lines, in memory of its founder, was therefore decided upon. Consequently on January 16th, some 94

Entomologists met in the Caledonian Salon of the Holborn Restaurant, by invitation of "The President of the Entomological Society and other Entomologists," and subsequently sat down to the usual supper. The Rev. F. D. Morice, as Chairman, in explaining the 'raison d'être' of the gathering, expressed the hope that it might be put upon a permanent basis under the name of the "Verrall Supper," and asked those assembled to raise their glasses, standing, and in silence, to the memory of the late holder of that name. The Rev. E. N. Bloomfield, the oldest Entomologist present in so far at least as years go, proposed the toast of the Hosts of the Evening, which was seconded by Mr. W. E. Sharp, and responded to by Mr. J. E. Collin, who had acted as Hon. Sec. and Treasurer. The toast of the Chairman having been duly honoured, the rest of the evening was devoted to friendly discussions on, and mutual assistance in, the varied subjects in which those assembled happened to be interested.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The Annual Meeting was held in the Royal Institution, Colquhoun Street, Liverpool, on December 18th, 1911.—Mr. W. M. WEBSTER in the Chair.

As Mr. W. J. Lucas, the retiring Vice-President, was unable to be present to read his address "On the present state of our knowledge of the pre-imaginal stages of the British Dragon-flies," this was done by the Secretary. Mr. Lucas dealt lucidly and in detail with the various methods of oviposition obtaining in the *Odonata*, drawing particular attention to the habit *Ischnura elegans* possesses of descending beneath the surface of the water for this purpose, and to the two types of dragon-fly eggs: the elongate, cylindrical type such as is met with in *Æschna*, and the more or less oval or pear-shaped type found in *Sympetrum* and *Libellula*. The development of the nymphs, their form, habits, and food; the duration of the nymphal existence and other features of dragon-fly kinomics were then dealt with in an equally interesting and exhaustive manner, the fact being emphasized that although of recent years a considerable amount of work had been done, and our knowledge of the life history of these beautiful creatures had been greatly increased, there yet remained a vast amount to be done in the future. The latter part of the address consisted of a review of the progress of our knowledge of the earlier stages of dragon-fly existence, commencing with Thomas Mouffet's "Theatrum Insectorum," and bringing the subject down to the present day. The address and the excellent lantern slides with which it was illustrated were greatly appreciated by all who were present. Mr. C. B. Williams exhibited a box of *Lepidoptera* collected during the past season in various localities and including the following:—*Taniocampa munda*, *Xylina socia*, *X. ornithopus*, *Xylocampa areola* and *Oporina croceago*, from the Conway Valley; *Argynnis selene*, *Carterocephalus palæmon* and *Nemeobius lucina* from Northamptonshire; *Boarmia roboraria*, *Gnophria rubricollis*, *Nemeophila russula*, *Macroglossa fuciformis*, *Lycæna ægon* and *Argynnis euphrosyne* from the New Forest.—W. M. MANSBRIDGE, Hon. Secretary.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
 Thursday, December 14th, 1911.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Special Meeting.—It was agreed unanimously, at an unusually large Meeting, to increase the annual subscription to ten shillings and the life composition to six guineas.

Ordinary Meeting.—Mr. R. G. Todd, of Barnett; Mr. G. E. H. Peskett, of Ilford; Mr. A. Quarrington, of Norwood; and Mr. F. A. Stowell, B.A., of Kingston, were elected Members.

There was a special exhibition of *Rumicia phlæas* and its allies. Mr. Tonge, series from the S.E. counties and bred continental specimens; Mr. Newman, on behalf of Mr. Quarrington, ab. *schmidtii* and striated forms; the Rev. G. Wheeler, series from England, S. France, and S. Switzerland, including suffused examples, ab. *cæruleopunctata*, ab. *bipunctata*, ab. *unipunctata*, &c.; Mr. R. Adkin, representative series from Eastbourne taken this year, and analysed the variation occurring there; Mr. A. E. Gibbs, series from England, N. E. France, E. Pyrenees, Corsica, Algeria, Turkistan, and Japan, together with many closely allied species from the Palaearctic and Nearctic Regions; Mr. Turner, series, including his ab. *alba*, from Brasted; Mr. R. South, a selection illustrating the ordinary variation, including ab. *schmidtii*, and pointed out that the American representative of our species, *R. hypophlæas* had almost parallel variation; Mr. Cowham, ab. *schmidtii* from Oxshott; Mr. Frohawk, a long bred series of *C. dispar* v. *rutilus* from Continental ova; Mr. C. P. Pickett, long and varied series of four broods in 1911, and many aberrations taken during the past ten years; Mr. Edwards, closely allied Central and E. Asian forms; Mr. Kaye, bred specimens. In the subsequent remarks it was noted that the species had appeared in great abundance even in gardens and streets, that there were extremely few striking aberrations, that the later broods were generally darker, that the larva hibernated in any instar, and that the species was by no means common in Switzerland. Mr. West (Greenwich) exhibited a drawer of the Society's cabinet, in which he had arranged the British *Hymenoptera* recently presented to the Society. Mr. Ashdown, a collection of *Lepidoptera*, taken by him in Switzerland and near Chamonix in June and July last. Mr. Newman, a number of well-marked aberrations of *Lepidoptera* from the collection of Mr. Hills, of Folkestone. Mr. Quarrington, a fine blue ♀ of *Polyommatus icarus*. Mr. Buckstone, a series of variations of *Ematurga atomaria*. Mr. South, a long series of three generations of *Acidulia virgularia*, reared in 1911 from a ♀ taken at Bishop Auckland in 1910. Mr. Joy, two autumn bred specimens of *Apatura iris*, the rest of the brood going over as larvæ as usual. Mr. Blenkarn, light and dark examples of *Lithosia deplana*, and a specimen of the cockroach *Periplaneta australasiæ*, taken from a case of oranges from Jamaica. Mr. Edwards, the remarkably sexually dimorphic species *Euripus halitherses*, of which the ♀ mimics a *Euplœa*. Mr. Pickett, a very richly marked aberration of *Hipparchia semele*. Mr. Step, a further portion of the "Tugwell" Herbarium, which he had been renovating for the Society, and to contain which Mr. R. Adkin had most kindly given a handsome cabinet.

—HENRY J. TURNER, Hon. Secretary.

CHANGE OF ADDRESS.

Dr. E. BERGROTH, to Turtola, Finland.

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

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermoptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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The Second International Congress of Entomology will be held at Oxford from August 5th to 10th, 1912.

The President of the Congress is Professor E. B. Poulton, D.Sc., F.R.S.

The Executive Committee proposes to find for Members of the Congress lodgings in the town, or rooms in one or more of the Colleges at a moderate charge; rooms in College will be available only for men.

The Executive Committee invites an early provisional notice of intention to join the Congress, in order to be able to make the arrangements for the necessary accommodation.

The Proceedings of the First Congress are in the press, and will be published shortly.

All communications and enquiries should be addressed to the General Secretary of the Executive Committee,

MALCOLM BURE, c/o Entomological Society of London,

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DESCRIPTION OF A NEW SPECIES OF *VESPERUS* FROM PORTUGAL.

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

VESPERUS REITTERI, n. sp.

♂. Very similar to *V. bolivari*, Rtrr., from which it differs by its rather larger head, the coarser and more rugulose puncturation of the thorax and elytra, the latter less strongly narrowed at the apices, and by the darker legs and antennæ. Head black, rather shining, coarsely, rugosely punctured, its width including the eyes as broad as the thorax at base, its length greater than that of the thorax, narrowly impressed in the middle; temples large, the sides parallel, the posterior angles rounded; clothed with moderately long whitish pubescence. Antennæ pitchy brown, reaching the apex of elytra. Thorax black, rather shining, broader than long, strongly narrowed in front; anterior and posterior margins raised, the former rather broadly emarginate in middle; coarsely, rugosely punctured, with a short longitudinal impression before scutellum, clothed with rather long whitish pubescence. Scutellum black, punctured and pubescent. Elytra chestnut brown, rather shining, much broader than thorax at the base, gradually and distinctly narrowed from base to apex, $2\frac{1}{2}$ times as long as the breadth at base, and completely covering the abdomen; puncturation coarse and rugulose, with traces of two elevated lines on each elytron near base; pubescence scanty and short. Underside of the fore-parts covered with long whitish pubescence. Legs slender, pitchy black, tarsi ferruginous. Length 19-20 mm. ♀ unknown.

Taken near Lagos, Portugal, in September, 1901, flying at dusk. Types in my Collection. I am much indebted to Herr E. Reitter for the loan of a specimen of *V. bolivari*, and to him I dedicate the species.

February 1st, 1912.

 DESCRIPTION OF A NEW SPECIES OF *TROGOPHLEUS* (SUB-GEN. *TÆNOSOMA*) FROM MALTA.

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

TROGOPHLEUS CHAMPIONI, n. sp.

Near *T. halophilus*, Kies., but smaller, with notably smaller head and narrower thorax, which is more strongly rounded in front, more narrowed behind, and more finely shagreened; the elytra considerably longer; and the antennæ and legs lighter in colour. Distinct from *T. rufipennis*, Epp., by the structure of the eyes and temples. Head black, rather dull, more finely shagreened than in *T. halophilus*, almost as broad as thorax, with slight pubescence. Antennæ with first five joints testaceous, the rest infusate; first two joints rather long and stout, second a little shorter than first, third a little longer than broad, fourth quadrate, fifth to tenth transverse, gradually increasing in breadth; fifth larger than fourth and sixth. Thorax pitchy-brown, slightly broader than long, sides strongly rounded in front and contracted behind, narrower and more

finely shagreened than in *T. halophilus*, with traces of four faint impressions on the disc, sparingly pubescent and rather dull. Elytra pitchy-brown, rather shining, quite half as long again as thorax, puncturation shallow and moderately close, finer than in *T. halophilus*. Abdomen black, rather shining, finely alutaceous and pubescent. Legs reddish-testaceous. Length 1·2 mm.

One specimen taken in November, 1901, on the shores of a marsh at Melleha, Malta, with *T. troglodytes*, Er. Type in my Collection.

I add a Table which may serve to discriminate the small (length not exceeding 1·7 mm.) species of this genus which are not furnished with four distinct impressions on the disc of the thorax.

1. Sides of thorax only slightly rounded in front and only slightly contracted behind. Species narrow and elongate... .. 2
- Sides of thorax more strongly rounded in front and more strongly contracted behind..... 4
2. The whole upper surface densely clothed with thick grey pubescence; deep black, dull, legs (except knees and tarsi) black Length 1·2 mm. .
schneideri, Ganglb.
- The whole upper surface not densely pubescent: legs testaceous 3
3. Antennæ entirely testaceous; head and thorax more finely shagreened; abdominal pubescence more dense; insect more slender ... *subtilis*, Er.
- Antennæ infuscate towards apex; head and thorax more coarsely shagreened; abdominal pubescence less dense; insect more robust *gracilis*, Mann.
4. Head and thorax very finely shagreened, more shining, not punctured ... 5
- Head and thorax more coarsely shagreened, less shining, not punctured 7
5. Elytra coarsely and not very thickly punctured *punctipennis*, Kies.
- Elytra more finely and thickly punctured 6
6. Thorax about as long as broad, elytra considerably longer than thorax
exiguus, Er.
- Thorax broader than long, elytra but little longer than thorax .
despectus, Baudi
7. Eyes large, temples shorter than diameter of eyes viewed from above .. 8
- Eyes small, temples as long as the diameter of eyes viewed from above; elytra reddish *rufipennis*, Epp.
8. Abdomen densely alutaceous and pubescent *alutaceus*, Fvl.
- Abdomen much less densely alutaceous and pubescent 9
9. Head larger; size larger. Head and thorax more coarsely shagreened, sides of latter less strongly rounded in front and less strongly contracted behind; elytra shorter, puncturation coarser 10
- Head smaller; size smaller. Head and thorax more finely shagreened, the latter with sides more rounded in front and contracted behind; elytra longer, puncturation finer *championi*, n. sp.
10. Colour dark; thorax (usually) with small transverse impression at base; antennæ and legs (usually) dark *halophilus*, Kies.
- Colour of thorax and elytra reddish; thorax at base without impression; antennæ and legs reddish-testaceous *v. simplicicollis*, Woll.

OCCURRENCE IN ENGLAND OF *COLEOPHORA TRIGEMINELLA*,
FUCHS, A SPECIES NEW TO THE BRITISH LIST, WITH
NOTES ON *C. KRONEELLA*, FUCHS, AND *C. BADIIPENNELLA*, DUP.

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

In 1907, my friend, Mr. Alfred Sich, forwarded for identification two out of five examples of a *Coleophora* which he had bred, in June 1906, from larvæ found on hawthorn, during the preceding month, at Brentford, Middlesex,* and Putney, Surrey, and had failed to reconcile with any British or Continental species. He remarked that the imago was "smaller and greyer" than the elm-eating *Coleophora* known to him as *badiipennella*, and that the larval case, of which two specimens accompanied the moths, had "three keels at the posterior end and consequently three valves," whereas the short dark case of *badiipennella* only possessed two valves. The insect in question was clearly not identical with any in the British List, and was unknown to me, but, on my referring to Fuchs' notice in Stett. Ent. Zeit., 1881, pp. 462-463, it seemed evident that it was *trigeminella*, Fuchs. This determination was confirmed by a comparison with the solitary exponent, accompanied by the larval case, of *trigeminella* in the Frey Collection—this is labelled in Frey's handwriting, "*C. trigeminella*, Fuchs. Bornich." The locality specified leaves little doubt that the specimen was received from Fuchs himself, for his paper containing the notes on *trigeminella* is headed "Microlepidopteren des Rheingaus von Pfarrer A. Fuchs in Bornich." In the course of his lengthy notice (*l.c.*) of "*Coleophora trigeminella*, n. sp.," Fuchs stated that he was acquainted with the true *badiipennella* upon sloe, but had only met with *trigeminella* on two young cherry trees in the Rheingau, though it occurred in abundance on them—the moths emerged in June and July from larvæ collected off the stems and branches of these two young cherry trees in late May and early June, but the older trees were searched in vain. No cases were discovered on the young foliage, and the larvæ were never found feeding, though presumably they had fed upon cherry. Fuchs added that a description of the imago was needless, for it precisely resembled *badiipennella*, Dup., but that, whereas the case of the latter is two-valved, the more slim and cylindrical case of *trigeminella*, which is yellowish brown or reddish brown in colour, is three-valved, and is also longer, measuring $2\frac{1}{4}$ Paris lines [= 5.06 mm. E.R.B.]. *C. trigeminella*, which is apparently scarce with us, has long remained unrecognised in this country,

* A second Middlesex locality for the insect is Chiswick, where Mr. Sich found two cases last Spring.—E.R.B., IX, 1910.

** Mr. Durrant has kindly edited this and the previous paper (*ante* pp. 39-44).—

G. B., 15.11.1912.

where the imago, while closely resembling the darker specimens of our elm-eating species known as *badiipennella*, is still darker (*i.e.* greyer) in colour. This difference enabled me to detect two examples of it among the individuals which formerly made up the lengthy series of reputed *badiipennella* in the Stainton British Collection, now in the National British Collection. One of these, which has the *three-valved* larval case beside it, was bred by Stainton in 1851 from a larva found on ash at Lewisham, while the other was captured while sitting on hawthorn* at Lewisham, by Stainton, on June 29th, 1878. Kent, therefore, shares with Middlesex and Surrey the distinction of having produced this interesting *Coleophora*. The National British Collection also includes, in the series of *badiipennella*, four specimens from J. F. Stephens' Collection, labelled as having been so named by him**; these are, in my opinion, referable to *trigeminella*, Fuchs. The fact that Stainton, after breeding the latter from ash, identified it as *badiipennella*, suggests the thought that some, at least, of the reputed *badiipennella* that have been recorded as bred from, or captured amongst, ash, may have been *trigeminella*.

Fuchs himself confused these insects at first, and in Stett. Ent. Zeit., 1880, applied the name *badiipennella* to the *Coleophora* which, in the following year, he described (Stett. Ent. Zeit., 1881, pp. 462-463) as *trigeminella*, n. sp.

Until Fuchs, in Stett. Ent. Zeit., 1899, p. 183, brought forward *Coleophora kroneella*, as new to science, this species (= *trigeminella*, Rbl., Z.-B. V., 1889, p. 322—*nec* Fuchs) and *trigeminella*, Fuchs, had for some years been confused together under the latter name, and the specimens hitherto standing as "*trigeminella*" in both the Ottmar Hofmann and Stainton Collections are really *kroneella*, and are now so named. Hofmann's individuals have with them the larval cases, labelled as from wild pear, and as received from Professor Krone, who first discovered the insect at Vienna, while Stainton's two specimens, also accompanied by the cases, are labelled by Staudinger, from whom they were received in 1891, as "*Coleophora trigeminella*, Austria." Fuchs, in his original notice of *kroneella* (*l.c.*) says that it is separable, at the first glance, from *trigeminella* by its colouring, which is quite different and of a much cleaner grey, and that the fore-wing of the former measures 5 mm., whereas that of *trigeminella* is only 4-4.5

* It is upon hawthorn that Mr. Sich has found the larva of *C. trigeminella*.—E.R.B.

** These modern labels should not be too much relied upon, for I have been told, on good authority, that the Stephens Collection was rearranged by Stainton after Stephens' death. Stainton would naturally have corrected any of Stephens' determinations which he believed to be erroneous, but there is no record of alterations in nomenclature thus made.—E.R.B.

mm. in length. He also tells us that the case of *kroneella* is 5.5 mm. long, and has, at the end, three valves, which, however, are poorly developed. I may add that, in *kroneella*, the fore-wing is broader, and the costa is noticeably less straight, than in its ally. Fuchs recorded wild pear as a proven food of *kroneella*, and he believed that some cases found upon *Sorbus aria* were also referable to this species—these, however, yielded no imagines. When introducing *kroneella* as new to science, Fuchs stated that the only two certain localities for the true *trigeminella* were Bornich and Kissingen, but the Walsingham Collection contains four examples from Rachlau, in Saxony—these, which were bred in June, 1901, from *Sorbus aucuparia*, were forwarded by Prince Aristides de Caradja who had received them from Schütze.

My reasons for not having added *C. trigeminella* to the British List until now are as follows. In Stett. Ent. Zeit., 1881, p. 462, Fuchs stated that the imago was so precisely similar to that of *badiipennella* that a description of it was needless, and as I had for many years past, suspected that three species were confused together under the name "*badiipennella*, Dup.," it was obviously desirable that this supposed confusion should be cleared up when dealing with *trigeminella*. Owing to the recent arrival at the British Museum (Nat. Hist.) of the Walsingham, Zeller, and O. Hofmann Collections, and Duponchel's original drawings of Lepidoptera, it has now been possible to attempt to investigate the matter.

The three supposed species which seemed to require separation were:—

(1) *Badiipennella*, Dup.

Duponchel's original drawing shows an ochreous *Coleophora* with noticeable suggestions of some faint paler longitudinal lines on the fore-wings. The published figure (Sup. iv, Pl. 78, fig. 14), as is often the case, agrees very badly with the original drawing, and shows the fore-wings unicolourous deep ochreous, evenly speckled all over with minute black dots. I made an independent note nine years ago that the figure, except for the black dots, looks much like *lutipennella*. Duponchel (Sup. iv, p. 346) says that he received the insect from "M. Parreyss" (= Mann, *teste* Zeller), under the name *badiipennella*, which his correspondent attributed to Fischer von Röslerstamm. Its foodplant was maple, upon which Mann found it commonly at Vienna, and rarely at Leghorn, as we learn from Zeller in Lin. Ent., iv, p. 402.

(2) *Badiipennella*, Zell., Lin. Ent., iv, 401-403 (1849), H.-S., 680 (1853), v, p. 235 (1856); Frey, Tin. Pter. Schweiz, 225 (1856).

In this species the costa of the strongly ochreous fore-wing is white to about two-thirds, and the short basal joint of the antennæ is much thickened. Neither of these peculiarities is mentioned in Duponchel's description, nor shown in the original drawing or published figure. This form is illustrated by nearly all the Zeller series (part of which was received from Breslau, from Wocke), and by the Frey and O. Hofmann series; and sloe (*Prunus spinosa*) is mentioned as its foodplant on the label of one of the Zeller and more than one of the Hofmann specimens—in the case of the others the foodplant is not stated. Some of Frey's five specimens, which are all conspecific, were identified as *badiipennella* by Herrich-Schäffer. Zeller himself (*l.c.*) and Frey (*l.c.*) clearly indicate that they were doubtful whether their *badiipennella* was identical with *badiipennella*, Dup., and the former says that Duponchel's published figure reminds one of *lutipennella*. This form is much like *milvipennis*, Z., but not so strongly ochreous, and its case is altogether different.

(3) *Badiipennella*, Stn., I. B. Lep. Tin., 224 (1854), etc., Auct. Angl.

This form only differs from the last in being decidedly darker in its ground-colour, which, although somewhat variable, may be described as usually ochreous-brown. Stainton [Man. ii, 384 (1859)] gives ash and elm as its foodplants, and, although decidedly local, it has often been bred in Britain from the latter tree. It is noteworthy that the only continental specimens that I have seen, precisely identical with our British ones, are ten, standing in the Stainton Continental series of *badiipennella*, and labelled as bred in 1870 from "Elm, Paris, Ragonot."

From the other point of view, the following notes were made in favour of Nos. 1 and 2 being identical. Duponchel states on Mann's* authority, that Fischer von Röslerstamm first bestowed the MS. name *badiipennella* on the insect, and seeing that Mann communicated the species to Duponchel, Duponchel's *badiipennella* should be identical with Fischer's. Now, in the Zeller series, there is a specimen bearing a written label, "*Badiipennella*, Tosc. FR. 661," which shows that the moth came from Tuscany, through Fischer von Röslerstamm—it is very noticeable that it has a conspicuous white costal stripe from the base to beyond the middle, thus agreeing with *badiipennella*, Z. Again, Herrich-Schäffer, in Syst. Bear. Schmet. Eur., v, p. 235, no. 670 (1856), states that he possesses eight specimens of *badiipennella* from Fischer von Röslerstamm's collection, and since his figure (fig. 680)

* Zeller, in Lin. Ent., vii, 348 (1852), states that Duponchel always used the name "Parreyss" instead of "Mann."—E.R.B.

shows the costa distinctly white to beyond the middle, one cannot doubt that this characteristic was present in the eight individuals in question. We learn, therefore, that *badiipennella*, F.R. (MS.) is identical with *badiipennella*, Zell., H.-S., which makes it all the more difficult to understand why Duponchel's description and figure apparently represent a distinct species.

Again, it became evident that, if nos. 2 and 3 were to be satisfactorily separated, long series of the former, labelled with the foodplants from which they were bred, would be necessary for comparison, for although no. 3 appeared, on the whole, decidedly darker, it seemed impossible to say to which form some of the imagines (probably caught) belonged.

At my request, Mons. l'Abbé J. de Joannis has kindly searched in the Paris Museum, and has found a single specimen which may well be regarded as Duponchel's original type of *badiipennella*. Of its four labels, one shows that it stood in Duponchel's collection, whilst another reads "*badiipennella*, f.R.," and was almost certainly written by Duponchel himself, from the attribution of the name to Fischer von Röslerstamm who never rendered it valid. My correspondent informs me that the specimen is rubbed, and has the base of the fore-wing up to beyond the middle partially denuded of scales; the rest of this portion, together with the posterior half of the wing and the inner margin, are of a reddish ochreous colour, which corresponds very well with Duponchel's published figure. Mons. de Joannis adds that the costa is distinctly yellowish white as far as the middle, and suggests, as the probable explanation of the omission of this characteristic from Duponchel's description, original drawing, and published figure, that Duponchel, noticing that the insect was somewhat worn, erroneously assumed that the whitish costal stripe was due to discoloration, and that the imago, when fresh, was unicolorous reddish ochreous. He further suggests that, as regards the indications of paler lines on the fore-wings in the original drawing, the artist may have laid rather too much stress on the appearance of the rubbed portions. Mons. l'Abbé's valuable information leads us to the conclusion that Duponchel's description and drawing are faulty, and that in spite of all appearances to the contrary, both Duponchel and Zeller used the name *badiipennella* for the same species of *Coleophora*.

As regards the further question whether *badiipennella*, Auct. Angl., is identical with *badiipennella*, Dup., Zell.,—Mons. l'Abbé de

Joannis, after examining the collection formed jointly by his brother and himself, and that of Ragonot, finds nothing to support the idea that they are distinct. Ragonot's six specimens, like those which Stainton received from him, were bred from elm, some of them in 1875, and are rather light reddish brown. Those in the de Joannis Collection were bred by Mons. l'Abbé L. de Joannis from larvæ found in the département du Morbihan on *Prunus spinosa*, which is the only foodplant upon which he has found the insect. The general colour of the wings is brown, usually rather dark—one of the bred specimens was identified by Lord Walsingham as *Coleophora badiipennella*.

My object in treating of *badiipennella* so fully is, if possible, to prevent others, who may be confronted with the difficulties of the question, from being led to form erroneous conclusions, which may appear justified at first, but which will not stand the test of a fuller investigation.

Norden, Corfe Castle:
September, 1910.

ANOTHER HUNDRED NEW BRITISH SPECIES OF DIPTERA.

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

(Continued from Vol. xlviii, page 27).

39. *Hercostomus subsimplicipes*, n. sp. *H. nigriplanti* simillima, sed tarsorum intermediorum articulo ultimo valde simpliciore.

Col. Yerbury took a long series of this species at Porthcawl in July, 1906, and their examination has compelled me to consider them distinct from *H. nigriplantis*, though the only clear distinction I can find lies in the almost simple last joint of the middle tarsi in the male. *H. sahlbergi* is another very closely allied species, but has spines beneath the basal joint of the middle tarsi. Some slight distinctions from *H. nigriplantis* may exist in the less darkened anterior part of the wings, while the wings have a blackish rather than a brownish hue, though this is discounted by the fact that many Diptera such as *Beris geniculata*, *Sargus iridatus*, &c., taken at Porthcawl in 1906, have an unusually blackish hue on the wings; there may also be a more greenish (instead of slightly dusted bronze) hue on the thorax, and the genital lamellæ may have a slightly shorter fringe. The end joint of the middle tarsi in *H. subsimplicipes* is not absolutely simple, but the dilation is so slight as to be very inconspicuous; the thin spine at the end of the front tibiæ is longer in *H. subsimplicipes* and the hind tibiæ less blackened at the tip, while I think the face is narrower.

Col. Yerbury again found it in large numbers at Bridgend and at Port Talbot in Glamorganshire, on July 29th, 1908, on the black mud of the estuary up to August 11th, sitting on pebbles in the middle of the river.

40. *Gymnopternus brevicornis*, Staeg.: A male was taken by Col. Yerbury at Nethy Bridge on June 19th, 1905. It is very closely allied to *G. ater*, but has dark lamellæ to the male hypopygium.

41. *G. angustifrons*, Stæg.: I introduced this little species as British in 1875 upon the strength of a specimen so named by Loew; subsequent examination of the specimen convinced me (as I stated in 1881) that it was only a small female *G. cupreus*. I am now however convinced that a male taken by Dr. J. H. Wood at Moccas Pool on September 24th, 1910, belongs to true *G. angustifrons*, and I have compared it with Continental specimens named by Kowarz.

42. *Chrysotus suavis*, Lw.: Col. Yerbury again took *C. palustris* at Porthcawl in 1906, and at Port Talbot, Pyle, and Bridgend in August, 1908, but he also took two males of the closely allied *C. suavis* at Porthcawl on June 11th, 1906, one male at Bridgend on July 29th, 1908, and a pair on August 16th. *C. suavis* has the face narrower than in *C. palustris*, the anterior tibiæ paler, and the minute bristly hairs on the abdomen pale.

43. *C. melampodius*, Lw.: While dealing with this genus I may as well record this and the following species as being probably British. The distinctive characters are very difficult to follow, but I believe I have several specimens of *C. melampodius* from Brockenhurst, Dolgelly, Hever, Porthcawl, &c.

44. *C. varians*, Kow.: The distinctive characters between *C. gramineus*, *angulicornis*, *microcerus*, and *varians* as given by Kowarz are very difficult to follow, but I have so much faith in Kowarz's critical eye that I believe they must be distinct species. At one time I doubted his new species of *Medeterus* allied to *M. truncorum*, but I am now convinced that Kowarz was right. Under these circumstances I may say that I think I have taken *C. varians* at such widely divergent localities as Lyndhurst, Purley, Stokenchurch, and Rannoch.

45. *Argyra grata*, Lw.: Dr. J. H. Wood took a male of this well-marked species at Pentebro', in Herefordshire, on August 3rd, 1909, and he also took three females at Moccas on August 10th. *A. confinis* and *A. atriceps* appear to be fairly common in Herefordshire.

46. *Porphyrops fracta*, Lw.: I feel compelled to refer to this species a pair taken by Col. Yerbury at Nethy Bridge on June 18th, 1905, and a female from Brodie on June 9th. The male answers in every detail to Loew's description and also to two specimens in Kowarz's collection, except that the remarkable bend or fracture of the cubital vein (whence the name "*fracta*") is practically absent.

47. *Syntormon spicatus*, Lw.: This little species is very much like the common *S. pallipes*, but has shorter antennæ in the male and a ciliated (instead of bifid) thorn beneath the basal joint of the hind tarsi. It was taken by Dr. J. H. Wood at Middle Park Wood, and Stoke Wood, near Tarrington, in the summers of 1906 and 1907.

48. *S. filiger*, nov. nom. (*rufipes*, Zett.): This exceedingly rare little species was taken by Col. Yerbury at Walton-on-Naze on August 23rd, and near Woodbridge on August 24th, 1907, while I took a female at Aldeburgh on September 19th. In 1908 Col. Yerbury took several specimens at Christchurch on May 21st. Its greyish green colour and the peculiar hanging thread-like bristly hair beneath the *second* joint of the hind tarsi are very distinctive. There can be no doubt about this species being the *S. rufipes* of Staeger, Zetterstedt, and Mik, as I have seen the original Danish specimen and Mik's figures are unmistakable, but to identify it with Meigen's *Rhaphium rufipes* seems to me a wild stretch of imagination.

49. *Achalcus melanotrichus*, Mik.—A few specimens of this species were bred from the rotten debris obtained from a hollow in a living horse-chestnut tree at Snailwell in Cambridgeshire in June, 1906, and two more from similar debris in an elm at Lakenheath in June, 1907. Mik described it in 1878 from specimens found on ulcerous trunks of horse-chestnut trees in Vienna. It is easily distinguished from *A. cinereus* by its black bristles, but there are numerous distinctions in the male. The specimen which I previously recorded with doubt under *A. cinereus* from Thetford belonged to this species.

50. *Thrypticus divisus*, Strobl.: The genus *Thrypticus* is still very imperfectly known, and only two species are included in Kertész's "Katalog," and those two are known from apparently less than a dozen specimens. I have this year been examining considerably over a hundred British specimens and have come to the conclusion that we possess six or seven species. The first one, *T. divisus*, Strobl., is one of the most distinct, even though it was subsequently sunk by its own author as a synonym or variety of *T. bellus*. I take its identification

from some specimens which were in Kowarz's collection. It is larger than any other species known to me, and has the arista conspicuously thick and ending bluntly with its pubescence becoming more dense towards the tip. This is the species referred to by me in this Magazine in May, 1905, page 108, as having been taken by Col. Yerbury at Nairn. On July 5th, 1909, a large number of *Thryptici* occurred near Weybridge, and amongst them were three males of this species.

51. *T. lætus*, n. sp.: Bright green. Smaller than *T. divisus*, but larger than *T. bellus*, and distinguished from all other species by the greater curvature of the radial vein; the radial vein is so much curved that the radial and cubital veins slightly diverge at their ends; discal cross-vein about three times its own length from the wing-margin. Arista long, blunt at the tip, almost equally thick, and not pubescent, with its basal joint enlarged; third antennal joint fairly large. Face broad on the upper part, and bright green. Bristles on the vertex and postvertex blackish, and even those on the disc of the thorax darker than usual in this genus; acrostichal bristles numerous (9-12) and small. Legs black; all knees obviously orange, trochanters obscurely orange, middle tibiæ obscurely brownish orange, or even brownish yellow, and sometimes the hind tibiæ obscurely brownish orange, while occasionally the front tibiæ are brown. Genital lamellæ blackish brown. The female may be known by its size, its blunt arista, and by the curved discal vein.

This species was in abundance about the margin of a shallow pond at St. George's Hill, Weybridge, on July 5th, 1909, and I have also received specimens from the neighbourhood of Porthcawl which were taken by Col. Yerbury in August, 1908. Altogether I have examined 19 males and 8 females of this species. All the species of *Thrypticus* mentioned in this paper have distinct male hypopygia, but elaborate microscopical drawings would be necessary to show the details.

(To be continued).

ON THE *HYBOS GROSSIPES*, L., OF THE BRITISH LIST.

BY A. E. J. CARTER.

Referring to my note on "*Hybos culiciformis*, Fab., in Scotland" (E. M. M., 1911, p. 161), I ought, perhaps, to point out that *culiciformis*, as there recorded, is the species standing in our List as *grossipes*, L., and that the insect I recorded as *grossipes* is an addition to our List. I thought at the time that this might be so, as according

to my records, *culiciformis* appeared to be a common and widely distributed species, and *grossipes* a rare and local one; in fact, I had it from only three localities—all in Perthshire. My supposition has since been confirmed.

When my note appeared, the late Mr. Verrall expressed a wish, through Mr. Collin, to see the insect I called *grossipes*, as he did not appear to possess it, all his so-called *grossipes* being, according to Lundbeck, *culiciformis*, Fab. After examination of both sexes Mr. Verrall stated that my specimens represented a distinct species, and one that was quite new to him. As already stated, I follow Lundbeck (*Diptera Danica*, 1910) in regard to nomenclature, as his discussion of the synonymy seems convincing.

It may be useful to point out in tabular form the characteristic differences between the three species of this genus, so that collectors who come across *grossipes* may easily identify it. Records of its occurrence outside Perthshire would be of interest.*

- | | |
|----------|--|
| (1) (2). | Thorax <i>brightly</i> shining, with a distinct median stripe of short yellow pubescence; the margins also with such pubescence. Anterior tibiæ and tarsi reddish, in ♂ with long hairs ... <i>femoratus</i> , Müll. |
| (2) (1). | Thorax only slightly shining; no median stripe. Legs dark. |
| (3) (4). | Notopleural and postalar bristles yellow; also marginal bristles on scutellum. ♂ anterior tibiæ and tarsi without long hairs, and genitalia very large <i>culiciformis</i> , Fab. |
| (4) (3). | The above mentioned bristles black. Hind femora very thick. ♂ anterior tibiæ and tarsi with long hairs, and genitalia small...
<i>grossipes</i> , L. |

Blairgowrie, Perthshire :
January 12th, 1912.

PSALLUS VITELLINUS, SCHOLTZ:

AN ADDITION TO THE LIST OF BRITISH HEMIPTERA.

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

The discovery of this little Capsid in Britain is due to Mr. Jas. Edwards, who took six specimens in a plantation at Colesborne, Cheltenham, on the 26th July, last year.

PSALLUS VITELLINUS, Scholtz.

Uniformly flavo- or rufo-testaceous, and covered with a pale yellowish pubescence which is easily abraded. Membrane slightly dusky, with a minute pale spot just below the apex of the cuneus; cell-nerves concolorous with the hemelytra, the colour spreading from them as an irregular border. Legs and antennæ concolorous with the hemelytra, the antennæ with indications of

* Col. J. W. Yerbury caught *H. grossipes*, L., last year in Sutherland (Lochinver, in June) and Inverness-shire (Nothly Bridge and Spey Bridge, in July and August).—J. E. C.

two blackish rings on the basal joint, and sometimes with the base of the second joint black. Femora with a few blackish-brown spots. Tibiæ with black spines springing from black spots, and with the extreme base black. Length $2\frac{2}{3}$ mm.

In its uniform coloration, and the markings on the antennæ and tibiæ, this little insect resembles a *Plagiognathus*, but from that genus it differs in the absence of strong black hairs on the hemelytra, and in the greater length of the terminal joint of the posterior tarsi, which is much longer than the second; the eyes also are granulate instead of smooth. From our other British *Psalli* it may be easily distinguished by its uniform colour and its small size, and by being the only species which has the base of the tibiæ black. On the Continent it is associated with coniferous trees, and has been taken in France, Germany, Switzerland, the Tyrol, and Greece. Mr. Edwards took his examples by sweeping, and he thus writes of them:—"If the species really lives exclusively on conifers, it must have been introduced to the Colesborne station with young trees, and equally certainly, must have lived in this country for at least ten years. I could not decide whether my specimens came from young conifers, young hard-woods, or the rough herbage round."

I have to thank Mr. Edwards for very kindly presenting me with most of his specimens.

56, Cecile Park, Crouch End, N.:

February 13th, 1912.

TWO ECTOPARASITES (*MALLOPHAGA*) FROM THE SNIPE
(*GALLINAGO CÆLESTIS*, FRENZEL);
FROM NORTHMAVINE, SHETLAND.

BY JAMES WATERSTON, B.D., B.Sc.

During the first week of September, 1911, there were secured from snipe, shot in Northmavine by my friend, Mr. R. H. MacNair, I.C.S., a number of *Mallophaga*, amongst which two species of some interest occurred. One of these, *Nirmus truncatus*,¹ N., is represented by a good series; the other, *Docophorus nirmoides*,² P. var., by three examples only.

Nirmus truncatus, N. (= *scolopacis*, D.), is easily recognised. The breadth of the clypeus, the normally straight or slightly concave anterior edge, the dark signature, the length of the trabeculæ, the peculiar contraction of the metathorax laterally towards the prothorax,

the parallel-sided first abdominal segment, the narrow median 'furrow' reaching to the middle of the sixth segment, are together characteristic features.³

Denny's specimens were "communicated by Mr. Wallace from Douglas, Isle of Man, who found it upon the Common Snipe (*Scolopax gallinago*).⁴ Piaget obtained examples from the same host, and also from *Phalaropus hyperboreus*, 'en grande nombre.'" In the New World, the representative form is the var. *marginocephalus*,⁵ Carriker, which has been taken from *Gallinago delicata* and *Larus franklini* (straggler).

Constant generic criteria are often difficult to find amongst *Mallophaga*. Thus, while the specific identity of an example may not be in doubt, its systematic position may be uncertain. *Docophorus nirmoides*, P., falls in the debatable ground between *Docophorus* and *Nirmus*. Piaget found his types "sur un *Numenius*⁴ *arquata* (Jardin Zool. de Rotterdam)." There is, in my collection, a single *Nirmoid* *Docophorus* from this host (Shetland), but it does not appear to be Piaget's *nirmoides*, though the present three specimens are referable to that species. They differ hardly at all from the original description as regards markings and chætotaxy, but considerably in measurements. As Piaget has demonstrated the taxonomic value of such differences, it has seemed advisable to make a new variety. "Les Pédiculines" is a somewhat inaccessible work, and the following description may be given.

DOCOPHORUS NIRMOIDES var. MAJOR.

Head elongate, produced with almost parallel sides in front of the trabeculæ, which are moderate, movable, and somewhat acute. First antennal joint set rather deeply in head, clypeus broadly truncate; forehead, with seven hairs on each side, two anteriorly, one at edge, and another a short distance from edge, two close set at the suture, and two behind suture, and one, very tiny, just before the trabecula. In the ♂ there is a short fine hair rising with the anterior pair, but from the underside of the clypeus. This may be the eighth of which Piaget speaks. Signature broad, with straight edge, and much produced posteriorly, ending before the mandibles, not reaching them as in the type. One moderate hair at the eye, and two longer at the rounded temples; occiput slightly re-entrant. Occipital bands broad, dividing the posterior region of the head into three equal areas. Between their bases the marginal band of the occiput is broadly defined.

Prothorax, dorsal spot entire, margins thickened and darker, one posterolateral hair.

Metathorax pointed over the abdomen, dorsal mark divided, posterior row of long hairs on clear spots ("pustules incolores" of Piaget).

Abdomen. First segment with parallel sides; owing to the shape of this

segment, the metathorax seems to project far on either side—a breadth sufficient for the implanting of three hairs. Dorsal mark interrupted, segs. 1—7 (♀) or 1—5 (♂), by a clear furrow. Stigmatic spaces clear, but more sharply defined than in the type. Eighth seg. ♀ entirely coloured; ninth, with two spots and two small terminal spines. In the ♂ (seg. 6), the two spots into which the dorsal band is divided are broader at the sides than towards the middle. On 7, the markings are reduced to a continuous band, much narrower in the middle; on 8, the band is indistinct save at sides. The ninth shows two spots, confluent medianly. In both sexes, the eighth and ninth segs. are well developed. There is an incomplete transverse posterior row of long hairs on each of abdominal segs. 1—7, one hair near edge behind stigma, and one or two on each side of the median furrow. These arise from clear spots.

The above description from the Shetland specimens shows differences which may be summarised thus:—signature not to mandibles; a more prolonged uncoloured ‘furrow,’ which reaches the prothorax; clear space at stigma reduced, and spots on seg. 7 (♂) narrowed medianly. These would hardly justify any separation but for the greater size. We may compare the two thus (10 = 1 mm.):—

<i>Docophorus nirmoides</i>	♂, 13.	♀, 16.
,, ,, <i>major</i>	♂, 15.	♀, 19.

As the following details show, the difference is most marked in head and abdomen.

	♂		♀	
	Length.	Breadth.	Length.	Breadth.
Head	051	... 040	053	... 042
Prothorax	010	... 024	011	... 025
Metathorax	017	... 035	017	... 037
Abdomen	076	... 052 (on seg. 4)	109	... 060 (on seg. 4)

For comparative figures, see Piaget, p. 105.

The legs and genitalia seem to offer no distinguishing feature. The single ♂ of *major* has a short apparatus, with lateral appendix curved.

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2. *Les Pédiculines*, pp. 104—105, pl. 9. f. 2. (1880)
3. *Les Pédiculines*, pp. 178—179, pl. 15. f. 2. (1880).
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5. *Journ. New York Ent. Soc.*, Vol. 10, p. 218, pl. 20, f. 4. (1902).

The Manse,

Ollaberry, Shetland :

December, 1911.

Varieties of two British Coleoptera.—*Aphodius punctato-sulcatus*, Sturm, v. *obscurellus*, Schilsky.—On May 24th, 1908, I took at Deal a well-marked melanic form of our abundant dung-beetle, *Aphodius punctato-sulcatus*, in which the usual fuscous blotch on the elytra is much darkened, and so expanded as to leave only a narrow stripe near the suture, and a narrow space at base, sides, and apex yellowish; the sides of the thorax also are only very narrowly pale. This is the var. *obscurellus* of Schilsky (*Deutsche Ent. Zeitschrift*, 1888, p. 315). Mr. F. Bouskell some years ago recorded in the transactions of the Leicester Literary, &c. Society a specimen of *A. punctato-sulcatus* from the same locality; which appeared to him to be this variety.

Bryaxis longicornis, Leach (= *Rybaxis sanguinea*, auct.).—I took in April, 1910, near Roydon, W. Essex, a specimen of this common species in which the elytra are entirely black. Although such a form might be expected to occur, having regard to the variability in the shade of the red coloration of the elytra in the ordinary form, I cannot find that a British specimen of it has been recorded previously. It is, however, known on the Continent, as Ganglbauer, in the course of his description of the species in his well-known work on the *Coleoptera* of Central Europe, says that the elytra are "very rarely black."—F. B. JENNINGS, 152, Silver Street, Upper Edmonton, N.: *February 8th*, 1912.

Bledius arenarius, Payk., var. *fergussoni*, Joy.—Whatever opinion may ultimately prevail as to the specific value of *Bledius secernendus*, Joy, there can, I think, be no doubt that the insect described by Dr. Joy as *B. arenarius*, var. *fergussoni*, is the same as Rey's *B. arenarius*, var. *a.*, for which he proposes the name of *Bledius minor* (vide *Oxytoriens—Oxyteliens*, p. 192).—E. A. NEWBERY, 13, Oppidans Road, N.W.: *February 15th*, 1912.

Apatura iris and *Vanessa antiopa*, &c., near Hastings, in 1911.—It may be well to put on record that *Apatura iris*, a very rare species in this district, was seen by the Rev. A. G. Gregor at Brede on July 13th. It was sitting with wings expanded on the public road. *Vanessa antiopa* was taken by Mrs. Davison of Guestling in her own house on October 6th. It is a beautiful specimen with cream-coloured border, and had probably flown indoors for hibernation. *Sphinx convolvuli* has not been uncommon this autumn near Hastings. *Zeuzera æsculi* was brought to me by one of the school children, and *Cemistoma spartifoliella* swarmed about a bush of broom in my garden.—E. N. BLOOMFIELD, Guestling Rectory, near Hastings: *February*, 1912.

Hæmatopinus vituli, L. (= *tenuirostris*, Burm.), in *N. Mavine*, Shetland.—This peculiar louse occurred in extraordinary numbers during October last on a white calf belonging to a crofter in this neighbourhood. The animal suffered extreme discomfort for ten days and lost rapidly in condition, being latterly unable to sleep or rest. Small sores also formed, partly through the sucking of the parasite, and partly through the beast's rubbing against every hard object in his way. The crofter's treatment of the attack, a liberal application of "flowers of sulphur," was quite effective. By the second day, the lower parts of the

fore-limbs, which had received less attention, were black with dead or dying lice, and within a week, I believe, the animal was clean.—JAMES WATERSTON, Manse, Ollaberry, Shetland: *January, 1912.*

Stridulation in British Reduviidæ.—It has long been known that two of our British *Reduviidæ* have the power of stridulation, viz., *Reduvius personatus*, L., and *Coranus subapterus*, De G. The earliest notice of the former dates 200 years back, and is to be found in Ray's "Historia Insectorum" (1710), while the latter was mentioned by De Geer in 1771. But the apparatus by which the sound is produced does not seem to have been figured till comparatively recently. In the "Annalen" of the Vienna Natural History Museum for 1900, Prof. Handlirsch describes and figures the stridulating organs in each of these species. On the prosternum, between the anterior coxæ, there is a furrow containing a large number of fine transverse striæ, and the rugose tip of the short rostrum is moved along this furrow, crossing the striæ at right angles, and thus causing the chirping sound. The author further calls attention to the fact that a similar furrow is to be found in almost all sections of the *Reduviidæ* and allied families the world over, except the *Henicocephalidæ* and the *Nabidæ*, and he enumerates ninety genera in which he has observed it; but whether in all these cases the furrow is transversely striate and, therefore, presumably a stridulating apparatus, he does not state. Our British species included in the groups in question range themselves under four genera, three of which are represented by a single species, while the fourth contains only three. Of these, putting on one side *Pygolampis bidentata*, Goeze, of which there is only a unique British record, *Reduvius personatus* and *Coranus subapterus*, as already mentioned, are recognised stridulators, but I do not know that any one has observed a similar habit in either of our three species of *Ploiariola*; and yet the apparatus exists in this genus. In *P. vagabunda*, L., there is, as Handlirsch states, the usual furrow in the prosternum, along which the tip of the rostrum travels. I find that this furrow is very deep, and is crossed by four strong slightly curved ridges placed at nearly equal intervals, and the whole area, including the ridges, is covered with fine parallel transverse striæ. A very similar arrangement is found in *P. culiciformis*, De G., but it is more difficult to see. Our third species, *P. baerensprungi*, Dohrn, I have not been able to examine. It can scarcely be doubted that this structure, identical in principle with the first-named examples, has stridulation for its function, and I call attention to it in the hope that collectors who meet with these insects may be on the look-out for direct evidence of their sound-producing power.—E. A. BUTLER, 56, Cecile Park, Crouch End, N.: *February 2nd, 1912.*

Psylla albipes, Flor, in Surrey.—I am indebted to my friend Mr. Wu. West for the opportunity of recording this interesting addition to the British fauna. *Psylla albipes* may be distinguished from all our British species by the markings on the elytra; the latter are hyaline, with brownish-yellow veins, and have a blackish streak on the dorsum just before the apex of the clavus, as well as a subtriangular blackish spot on vein 2, of which it occupies about half the length, and by which it is unequally divided. The species was described by Flor from

a single male taken near Marseilles. Franz Löw found it, apparently freely, on Austrian pine, Scots pine, and common spruce in March, April, and July, in Lower Austria, but it does not appear that he bred it; Mr. West's single example was taken on ash at Box Hill, but he tells me that there are conifers in the neighbourhood.—JAMES EDWARDS, Colesborne, Cheltenham: Jan. 6th, 1912.

Agrion hastulatum, Charp., at Aviemore.—Since the time when Colonel Yerbury took a specimen of *Agrion hastulatum*, I have visited the locality at frequent intervals, but have only taken odd specimens of the species. During last July I visited the same locality several times, but without any success. I then moved further afield, with the result that I came upon a locality where I managed to capture a fairly good series of the ♂, having a few for friends. The ♀ was very scarce, or, at least, not easily captured. The few which I took were in company with ♂s. I did not see the species after the middle of August. It is a pleasure to know that another Dragon-fly is well established in Scotland, as I have little doubt that this fly will be easily obtained by anyone visiting the locality during future years.—JAMES J. F. X. KING, 1, Athol Gardens Terrace, Kelvinside, Glasgow: January 15th, 1912.

Bombus terrestris, L., and *B. ruderatus*, Fab. (= *subterraneus*, Smith), in New Zealand.—Mr. F. W. Hilgendorf has recently sent me specimens of the queens of these two species from Lincoln, New Zealand, the descendants of queens imported from England in 1885, twenty-seven years ago. In size, colouring and structure, they do not differ materially from ordinary English specimens. In colouring, for instance, the *ruderatus* show every grade of variation from entirely black to black with a yellow band on the front of the thorax, another on the scutellum, a transverse yellow spot on either side of the first segment of the abdomen, and the fourth segment dingy white, this tint extending on to the sides of the third and the fifth segments; but the white spreads rather further on to the third segment, and the hairs on the clypeus are more red, less black, than in average British specimens. Also, the coat on the upper surface of the thorax, especially on the scutellum, appears to be slightly shorter, and on the abdomen slightly longer, in the *ruderatus* queens than in the British queens of this species in my collection. One of the *ruderatus* from New Zealand has the hairs of the corbicula red, a colouring which is rare in England, where these hairs are usually entirely black. It will be interesting to see if these slight deviations from the ancestral type become accentuated as time goes on, and therefore it has seemed to me worth while to record them.—F. W. L. SLADEN, Ripple, Dover: February 5th, 1912.

Maequartia chalconota, Mg., a Dipterous parasite of *Chrysomela varians*, Schall.—In June, 1911, I collected a number of *Chrysomela varians* larvæ on a species of *Hypericum*, one lot being from Kiddington, near Woodstock, Oxon, and another from Wytham, Berks. I kept each lot separate, and besides breeding a series of the beetle, I also bred a nice series of a Tachinid fly from both sets of larvæ. Specimens of the flies were submitted to Mr. J. E. Collin, who very kindly named them for me as *Maequartia chalconota*, Mg. (= *M. nitida*, Zett). He also supplied the interesting information that it is recorded as bred from the same host by Rupertsberger (Verh. z.-b. Ges. Wien, 1870, p. 842).—J. COLLINS, University Museum, Oxford: January, 1912.

Syntemna (?) *alpicola*, Strobl, in Morayshire.—On September 23rd, 1910, sweeping bracken on a steep bank facing Logie House on the Findhorn above Forres, I took a fungus-gnat, which I entered at the time as “apparently a new genus near *Glaphyroptera*.” On coming home I found that Strobl had described what seems to be the same insect under the above name in “Die Dipteren von Steiermark,” Theil 3, pp. 25, 26 (= Mitth. des naturw. Vereines für Steiermark, 1894, p. 145). Mine is a female, and I failed last autumn to come across any more specimens. I have not been able so far to see *S. morosa*, Winn., on which the genus *Syntemna* is founded, but the wings of the two species as shown in *Genera Insectorum*, pl. 5, figs. 28, 29, are very different; and, in fact, Winnertz’s characterisation of the genus has to be altered in this respect. There are some points in which my insect does not agree with Strobl’s description, e.g., the spurs on the hind legs are not nearly as long as the metatarsi. This may be a sexual character. The body is very long and tapering, and the long lamellæ are conspicuously two-jointed. This species is an addition to the British “List.”—F. JENKINSON, Cambridge: January 19th, 1912.

Capture in the New Forest of a *Mycetophilid*, supposed to be *Syntemna morosa*, Winn.—As far back as November, 1910, I sent a few *Mycetophilidæ* to Mr. A. E. J. Carter for inspection, and he returned one of them, taken 27/9/09 in my garden at Lyndhurst, as a *Syntemna*, a genus not yet recorded as British, and he thought the species came near “*morosa*, Winn.” He did not like, however, to speak positively, but hoped I would get some one to confirm it with a view to recording. This I was unable to do, and having only one specimen I did not like risking it again by post. The matter therefore remained in abeyance until recently, when in correspondence with Mr. Jenkinson he wrote: “If your *Syntemna* agrees with Winnertz’s figure you may call it *morosa*, unless you find some reason against, as there is no other species like it.” Then in a later letter he asks (referring to another species of his own): “Can we record them both in the February number of the Ent. Mo. Mag.?” As regards venation of the wing, I consider my specimen does agree with Winnertz’s figure, and have therefore decided to send this note for what it is worth.—FREDK. C. ADAMS, 50, Ashley Gardens, S.W.: January 6th, 1912.

A new British Flea.—The Rev. James Waterston recently submitted to me three specimens of *Palaeopsylla kohauti*, Dampf, taken by a Mr. McIntosh from a mole on the 15th March, 1911, at Ballindalloch, a species not previously recorded from Great Britain. This flea has so far been regarded as an eastern insect, the most western point at which it had been previously secured being Wels in Lower Austria.—N. CHARLES ROTHSCHILD, Arundel House, London, W., March, 1912.

A note on *Ceratophyllus vagabundus*, Boheman.—Dr. Alfons Dampf* has recently given some extensive notes and illustrations of *Ceratophyllus vagabundus*, Boheman (= *C. digitalis*, Wahlgren). There seems no doubt that the species we described as *C. insularis*† is really identical with *C. vagabundus*: and the name *insularis* must therefore be rejected.—N. CHARLES ROTHSCHILD, Arundel House, London, W.: March, 1912.

* Avifauna Spitzbergensis, p. 276—279.

† Ent. Mo. Mag., Vol. XLII, p. 59, pl. II (1906).

Obituary.

Samuel James Capper—For the past forty or more years, probably no North of England Entomologist has been better known, or more highly esteemed, than Mr. Samuel James Capper, whose death, at the advanced age of 86, took place at Huyton, near Liverpool, on January 21st, last. Born at Highbury Place, London, on April 28th, 1825, he was, at the age of 12 years, sent to a Friends' School at Epping, where the boys were encouraged in the pursuit of Natural History, and where he made the acquaintance of the brothers Edward and Henry Doubleday, who helped him much in the study of Lepidoptera, which he had commenced. After leaving school he had little time for natural history work until he removed to Liverpool about the year 1846; but soon after this he made the acquaintance of the brothers Nicholas and Benjamin Cooke, C. S. Gregson, Noah Greening, and other well known Lepidopterists of the time; and with whom, in the intervals of a very busy life, he made frequent excursions in pursuit of Lepidoptera to various noted localities, the favourite one being Delamere Forest. Later he became very fond of the New Forest; and still later, of North Wales, usually making the pretty little village of Llanfairfechan his headquarters. It was on one of his visits to this last-mentioned locality that he re-discovered *Acidalia contiguaria*, for although the species had been first taken as British by Mr. Weaver, in 1855, and a casual specimen near Conway by Mr. G. H. Kenrick, of Birmingham, a little later, little was known of it until Mr. Capper found it to be fairly common on the mountains at Penmaenmawr. He had the species to himself for very many years, breeding it in large numbers, and it proved a veritable "gold mine" to him for exchange purposes, for through it he was enabled to add to his collection many of the then greatest rarities. It was, however, on one of his expeditions to these Welsh mountains that he unfortunately slipped, and so injured one of his knees that he was slightly lame for the rest of his life, and which probably stopped his outdoor collecting much earlier than would otherwise have been the case.

He was intensely interested in the Lancashire and Cheshire Entomological Society, and at the preliminary meeting held at the residence of Mr. Nicholas Cooke, when that Society was founded, he was elected President, an honour which he retained continuously from February 24th, 1877, until the time of his death, a period of nearly forty-five years—surely a record of its kind.

He was never so happy as when he had a number of Entomologists around him at his house, looking over his fine collection and "talking Entomology"; and those of us who joined in the delightful garden parties which he used to give to Entomologists at Huyton Park thirty or more years ago, well remember what an enthusiastic and charming host he made. One of the Entomologists he met at this time was Mr. F. N. Pierce, with whom so close a friendship sprang up, that for the past twenty-five years, Mr. Pierce has spent one evening almost every week with Mr. Capper, arranging and re-arranging the insects in his large collection, and in other mutually interesting work. The collection itself, as is well-known, was recently disposed of intact to some South of England Lepidopterists.

For some years Mr. Capper was a Fellow of the Linnean Society; and had been a Fellow of the Entomological Society of London since 1890. In business

he was a partner in the well known Liverpool firm of Homeopathic Chemists, Messrs. Thompson and Capper. He was indeed one of the first promoters of Homeopathy in Liverpool, and it was greatly owing to his efforts that the Hahnemann Hospital was built, and of which he was Honorary Secretary for fifty-seven years. He left several sons and daughters, one of the latter of whom, herself an enthusiastic naturalist, is the wife of Dr. H. H. Corbett, the well-known Doncaster Entomologist.—G.T.P.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The Fourth Meeting of the Session was held in the Royal Institution, Colquhoun Street, Liverpool, on January 15th, 1912.

A large number of interesting lantern slides were exhibited by Dr. Cotton, Dr. Linne, and Mr. O. Whittaker. Dr. Linne's slides included many beautiful coloured examples taken by the Lumière and other colour processes. Mr. Mansbridge exhibited a series of *Polia chi*, showing the usual range of melanic variation, from the Huddersfield district; and also, on behalf of Mr. A. W. Boyd, a case of *Micro-lepidoptera* from various localities in Cheshire, among them being *Mixodia schulziana*, *Sciaphila hybridana*, *Sophronia parenthesesella*, *Chelaria hubnerella*, *Argyresthia pygmaella*, *Peronea comariana*, etc.—OSCAR WHITTAKER AND WM. MANSBRIDGE, *Hon. Secs.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, January 11th, 1912.—Mr. A. SICH, F.E.S., Vice-President, in the Chair.

Messrs. C. G. Gahan, M.A., F.E.S., of the British Museum (N.H.), and Mr. N. S. Sennett, F.E.S., of S. Kensington, were elected Members.

Mr. A. W. Buckstone exhibited series of *Hybernia defoliaria* from several localities, and stated that variation had considerably increased in the last 30 years, and that around London the type form was much less frequent. Mr. H. Moore, a huge Tree-cricket, *Eumegalodon blanchardi*, from Borneo, whose tegmina resemble leaves. Mr. R. Adkin gave additional notes on the "Lepidoptera of a London Garden," exhibiting *Plusia moneta*, *Monopis rusticella*, *Gracilaria syringella*, *Argyresthia gadartella*, and *Gelechia malvella*. Mr. A. E. Gibbs, an aberration of *Pyrameis atalanta* bred from Vizzavona, Corsica, in which the diagonal red bands of the fore-wings and the marginal band of the hind-wings are more or less pink, and some areas very much paler than usual. Mr. Blenkarn, five specimens of *Anthrocerus trifolii*, v. *confluens*, from Withycombe and Horsley, and various species of *Coleoptera*, including *Bledius secernendus*, recently announced as new to Britain by Dr. Joy. Mr. H. Main, larvæ of the Glow-worm reared from eggs, and also a larva of *Ocyrops olens*. The Reports of the Society's Field Meetings during the past year were communicated by Messrs. Edwards, Gibbs, Kaye, Priske, Tonge, and Turner.—HY. J. TURNER, *Hon. Secretary.*

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, December 6th, 1911.*—The Rev. F. D. MORICE, M.A., President, in the Chair.

The following gentlemen were elected Fellows of the Society: Dr. Beckwith Whitehouse, 52, Newhall Street, Birmingham; Messrs. F. W. Edwards, Kingswear, Cornwall Road, Harrow; Douglas Pearson, Chilwell House, Chilwell, Notts; B. H. Smith, B.A., Edgehill, Warlingham, Surrey; C. F. M. Swynnerton, Mt. Chirinda, Melsetter, S. Rhodesia.

Mr. C. J. Gahan exhibited an insect recently brought to the British Museum, and recognized by him as belonging to *Prisopus*, a remarkable and specially interesting genus of *Phasmidae*; he proposed to name it *Prisopus fisheri* in honour of its discoverer. Mr. South, a drawer of Leucanid moths captured and reared by the Rev. W. P. Waller in the Woodbridge district of Suffolk. The female parent of the first series was apparently referable to *L. pallens*, but of her offspring twenty-three specimens were of the typical *favicolor* form, and the other seven were examples of the yellow form of *favicolor*—*ab. lutea*, Tutt. The next series of twenty-four specimens showed the progeny of a female *favicolor*, the majority of which were not separable from *pallens*, nine were typical *favicolor*, and the others intergrades, but favoured *pallens* more than *favicolor*. Mr. South said he understood that *favicolor* cannot be separated from *pallens* by any difference in the genitalia, and was informed that cross-pairings of *pallens* and *favicolor* are not uncommon in the habitat of the latter. He was, therefore, inclined to suppose that *favicolor* is a salt-marsh development of *pallens*. Mr. Donisthorpe, a specimen of *Eryx fairmairci*, Reiche, a species of *Coleoptera* new to Britain, one of several taken by him in Sherwood Forest on July 11, 1908. Mr. W. G. Sheldon showed a collection of *Rhopalocera* made by him in Jemtland and Swedish Lapland in June and July, 1911. The species included were: *Hesperia centaureæ*, *H. andromedæ*, *Chrysophanus (Loweia) amphidamas*, var. *obscura*, *C. (Runicia) phleas*, var. *hypophleas*, *Vacciniina optilete*, *Polyommatus icarus*, *Plebeius argyrognomon*, var. *ægidion*, *Pieris napi*, var. *bryoniæ*, *Colias nastes*, var. *werdandi*, *Aglais urticae*, and *ab. polaris*, *Brenthis freya*, *B. frigga*, *B. apherape*, var. *ossianus*, *B. thore*, var. *borealis*, *B. euphrosyne*, *Æneis norna*, *O. jutta*, *O. bore*, *Erebia lappona*, *E. embla*, *E. ligea* var. *adyte*. He also exhibited the following *Heterocera* taken during the same expedition: *Anthrocera exulans*, var. *vanadis*, *Anarta melaleuca*, *A. cordigera*, *A. melanopa*, *Plusia hochenvarthi*, and others. Mr. Henry J. Turner, a large number of specimens of *Luperina nickerlii*, of which the British form or race has been hitherto known as *Luperina guenéi*, together with series of other races from the Continent. He called attention to the interesting specimens of *L. testacea* from various continental localities and from Algeria, and of *L. dumerilii* from Rennes and Algeria, which he had received from M. Oberthür. Mr. Turner also, a long series of *Erebia æthiops* from many continental localities and also from Aviemore, Scotland. The Scotch (Galashiels) race of this species was lately named var. *caledonia* by Mr. Roger Verity. Mr. Turner at the same time called attention to the growing tendency to name aberrations, a course which often resulted in multiple names being bestowed on some one form. Dr. Chapman remarked that local races required special names if any forms did so, and that he had already remarked

upon the Scotch form of *E. æthiops*, though without naming it. A long and important discussion took place on the subject of varietal, and especially aberrational, names. Prof. Poulton, a series of specimens bearing upon the view that changes of colour and pattern in allied forms are due to climate, and especially to moisture, which tended to show that the operation of climatic influence is extremely improbable. Prof. Poulton also, a set of the mimetic *Pseudacraeas* and their models collected by Mr. C. A. Wiggins in the neighbourhood of Entebbe, which contrasted remarkably with a set of 17 *Pseudacraeas* collected by Dr. G. D. H. Carpenter on Damba Island, on the Equator, in the Victoria Nyanza, about 20 miles S.E. of Entebbe; also the cocoon of *Norasuma kolga*, Druce, together with the moth which had emerged from it. The compact cocoon itself was reddish, with an outer imperfect covering of yellow silk, which much resembled the cocoons of Braconid parasites. Prof. Poulton said that he had been shown by Mr. J. H. Durrant the spherical bodies scattered over the cocoon of the Tineid moth *Marmara salictella*, Clemens, and had no doubt that they were secreted by the larva and passed by the anus as in *Deilemera*. Also material to illustrate several letters on subjects of entomological interest from Mr. W. A. Lamborn from West Africa. Mr. W. J. Kaye, a drawer full of *Syntomidæ* that had been collected by himself in S. Brazil in the early part of 1910.

The following papers were read:—"On the *Nictitans* Group of the genus *Hydroecia*, Gn.," by the Rev. C. R. N. Burrows. "On the Dates of the Publications of the Entomological Society," by the Rev. G. Wheeler, M.A., F.Z.S.

Mr. Wheeler mentioned the great amount of gratuitous help which had been given to him in the matter of these dates by Messrs. Taylor & Francis, Mr. C. F. Roworth, Messrs. West, Newman & Co., and above all by Messrs. Longmans, Green & Co., who had given him the dates on which they had received every part of every volume from 1884 to 1911. He proposed a vote of thanks to each of these firms, which was seconded by Mr. J. H. Durrant, and carried unanimously.

The President said he had received a letter from Mr. T. H. L. Grosvenor, stating that Colley Hill, Reigate, a famous entomological and botanical locality, would come into the hands of the speculative builder in February next unless it were previously purchased by the "National Trust," in order to preserve it, and asking for subscriptions from one shilling upwards. He added that the Treasurer would willingly receive any subscriptions that the Fellows present liked to give, and would hand them over to the proper quarter.

The President further reminded the Society of the Second International Congress which is to take place at Oxford this year from August 5th to 10th. He hoped that the Society would be strongly represented.—G. WHEELER,
Hon. Secretary.

NOTES ON THE BRITISH SPECIES OF *LONGITARSUS*, LATR.(A GENUS OF *COLEOPTERA*)

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND W. E. SHARP, F.E.S.

(Continued from p. 7 *antea*)

SECT. IV.—Species testaceous, with sutural line black, broad, and distinct, and elytral punctuation distinct, but not coarse, more or less dense and confused.

- I. Thoracic punctuation fine, often scarcely visible.
 - A. Shape short ovate, very convex *L. suturellus*, Duft.
 - B. Shape oblong, rather depressed *L. senecionis*, Bris.
- II. Thoracic punctuation distinct, more or less strong.
 - A. Thorax with æneous reflection more or less pronounced.
 - a. Thorax testaceous red or pitchy, with plain metallic reflection, punctuation of thorax strong, and of elytra entirely confused *L. atricillus*, L.
 - b. Thorax black or nearly black, with faint brassy reflection, punctuation of thorax weak, of elytra distinctly stronger, and sub-seriate at base.
 - α. Elytral punctuation more remote and stronger. Size larger *L. suturalis*, Marsh.
 - β. Elytral punctuation closer and weaker. Size smaller *L. nasturtii*, F.
 - B. Thorax without any æneous reflection.
 - a. First joint of posterior tarsi clothed beneath with long thick pubescence; posterior tibial spurs shorter and thicker *L. melanocephalus*, de G.
 - b. First joint of posterior tarsi clothed beneath with short thin pubescence; posterior tibial spurs longer and thinner *L. nigrofasciatus*, Goeze.

L. SUTURELLUS, Duft. [Faun. Austr. III, p. 262]; Weise [Nat. Ins. Deutschl. VI, p. 969].

Syns. *melanocephalus*, Foudr. [Mon. p. 163].

freminvillei, Guilleb. [L'Abeille, 1895, p. 339], teste Bedel.

thoracicus, All. [Mon. p. 107].

(*Thoracicus*, Steph., is usually given as a synonym of this insect, but the specimens so named in the Stephensian coll. are of a different species, and the "*thoracica*" of the "Manual" does not quite correspond with *suturellus*; it is therefore perhaps better to drop the name *thoracicus*, Steph., as a synonym of this or any other species).

Short oval, very convex. Head always black. Antennæ: black with first three joints testaceous red or brown. Thorax: varying in colour from black to

CHANGE OF ADDRESS.

J. R. LE B. TOMLIN, on and after March 26th to "Lakefoot," Hamilton Road, Reading.

Dr. M. CAMERON, to H. M. S. "Dartmouth," Atlantic Fleet.

EXCHANGE.

Duplicates: Calathus cisteloides, Harpalus æneus, Bembidium littorale, Amara aulica, Bradycellus verbasci, Haliphus ruficollis, Noterus sparsus, Anohomenus dorsalis and albipes, Hyphydrus ovatus, Hydroporus gyllenhali, Agabus bipustulatus, Colymbetes fuscus, Aphodius rufipes, Quedius tristis, Niptus hololeucus.

Desiderata: many common British Coleoptera.—S. A. BLENKARN, "Norham," Cromwell Road, Beckenham, Kent.

THE THREE COLOURED PLATES illustrating the articles on "SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

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[VOL. XLVIII.]

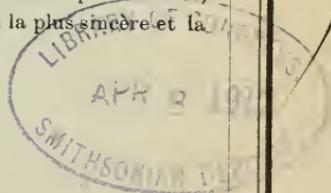
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It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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INTERNATIONAL CONGRESS OF ENTOMOLOGY.

The Second International Congress of Entomology will be held at Oxford from August 5th to 10th, 1912.

The President of the Congress is Professor E. B. Poulton, D.Sc., F.R.S.

The Executive Committee proposes to find for Members of the Congress lodgings in the town, or rooms in one or more of the Colleges at a moderate charge; rooms in College will be available only for men.

The Executive Committee invites an early provisional notice of intention to join the Congress, in order to be able to make the arrangements for the necessary accommodation.

The Proceedings of the First Congress are in the press, and will be published shortly.

All communications and enquiries should be addressed to the General Secretary of the Executive Committee,

MALCOLM BURR, c/o Entomological Society of London,
11, Chandos Street, Cavendish Square, London, W.

pitchy red, without any metallic reflection, transverse, bordered, distinctly but very finely alutaceous, with punctuation fine and remote, often scarcely visible. Elytra: livid testaceous, with suture variable in colour, black or pitchy, generally broad and suffused, punctuation only moderately strong, apices separately, bluntly angled, almost rounded. Legs: generally pitchy testaceous with posterior femora always black; first joint of anterior tarsi in ♂ rather more enlarged than in ♀. Posterior tibial spurs rather long. Underside black. Usually winged, but semi-apterous specimens occur. Length $1\frac{3}{4}$ —2 mm.

In the difficult group to which this species belongs, it may usually be recognised by its generally darker colour and shorter form, and more certainly by the very fine or obsolete punctuation of the thorax. The variation in colour of the elytra and the strength of the sutural band is considerable, specimens occurring in which the elytra are almost entirely testaceous, and we have seen an example taken by Mr. G. Brown at Coatbridge, near Glasgow, almost completely black.

Food plants.—Fowler and Bedel give *Senecio*, and it has on the Sussex Downs been definitely traced to *Senecio jacobæa* by Mr. H. C. Dollman.

Distribution general throughout the kingdom.

Var.—*fuscicollis*, Steph., the form with the thorax light pitchy, almost red, and in a more or less pronounced degree, is almost as common as the type.

Var.—*paludosus*, Weise [p. 970]. This is what Weise calls “the form of the plains”; he describes it as winged, with more slender antennæ, head and thorax black, elytra brownish yellow, without any reddish tinge, suture broadly black.

Var.—*macer*, Weise [*l.c.*]. According to this authority, the universal form in the South of Europe, smaller, narrower, with the suture narrowly black, and possessing wings.

We must confess our inability to separate any of these as distinct varietal or local forms among British examples of the species, although specimens occur promiscuously which might be comparable with either of them.

L. SENECIONIS, Bris. [Ann. Soc. Ent. Fr. 1873, p. ccxviii]; Bedel [Col. Bass. Seine, V, p. 192].

Syn. *piciceps*, Brit. Colls.

In his note on this species (*l.c.*, *supra*), Ch. Brisout says that he is re-naming the *L. atricillus* of Foudras, “comme il y a déjà un *L. atricillus*, Gyll.”; but *atricillus*, Foudr., in the opinion of most

Continental authorities = *melanocephalus*, de G. (see synonymic note on that species). *L. piciceps*, Steph., is also undoubtedly *L. melanocephalus*, de G., so that in any case *L. senecionis* holds good for the species we are now considering, although, Rye's note (Ent. Ann., 1872, p. 91) having been forgotten or ignored, it stands over the name of *L. piciceps*, Steph., in most British collections at the present moment.

In shape oblong-ovate, and depressed. Head black. Antennæ: fuscous, not black, with the first five or six joints testaceous. Thorax: transverse, bordered, faintly alutaceous and obsoletely punctured (the species in this respect resembles *L. suturellus*, from which, however, its general shape and colour abundantly distinguish it), in colour clear ferruginous, without any trace of metallic reflection. Elytra: oblong, straw coloured, somewhat translucent, confusedly and closely, but not very deeply punctured, the punctuation being very obviously closer than in *L. melanocephalus* or *L. suturalis*; the sutural marking varies considerably, it is always dark and distinct with suffused edges, usually thin and even, but often abbreviated at base and widened out posteriorly, and very occasionally almost obsolete. Legs: testaceous, with posterior femora usually brown testaceous or pitchy, sometimes quite black above and rufescent beneath; first anterior tarsal joints not dilated at all in ♀ and only very slightly in ♂, a feature in which *L. senecionis* differs from every other member of the section; posterior tibial spurs very short. Underside pitchy, coxæ rufescent. Bedel says that the last ventral segment of the ♂ bears a strong transverse impression at base, but we are not satisfied that this character is necessarily specific. Wings present in every specimen we have been able to examine. Length $1\frac{3}{4}$ —2 mm.

The oblong depressed form, the generally paler colour, and the undilated first anterior tarsal joint will, without much difficulty, distinguish the present species from others in this section. It is, however, much more easily confused with the form of *L. gracilis* with a dark sutural line (var. *poweri*), especially as both occur on the same plant. Superficially these two insects are very similar; under the microscope, however, its much denser and stronger elytral punctuation will readily distinguish *L. senecionis*, and the posterior femora are nearly always darker than in any form of *L. gracilis*.

Food plants.—Appears to be attached to various species of *Senecio*, and is generally to be beaten from *S. jacobæa*. It is generally, if not very commonly, distributed over the kingdom, and we have taken it as far north as Forres in Scotland.

L. ATRICILLUS, L. [Fn. Suec. p. 531]⁽¹⁾; Steph. [Man. p. 296]; All. [Mon. p. 108].

(1) Bedel doubts whether the "*Chrysoneta atricilla*" of Linnæus be really this insect, but all other authors accept the Linnean diagnosis.

Syn. *fuscicollis*, Bed. [Col. Bass. Seine, V, p. 310.]⁽¹⁾

Ovate, more elongate and less convex than *L. suturellus*. Head black. Antennæ: black or dark fuscous, with the first three or four joints ferruginous. Thorax: transverse, bordered, varying in colour from a light ferruginous to pitchy red, but never quite black, with a more or less pronounced æneous reflection always present, sometimes almost iridescent, alutaceous, very distinctly and evenly punctured. Elytra: dull testaceous, with the suture variably but always distinctly marked in black, generally narrow and abrupt, but sometimes suffused and indeterminate; there are often other dark linear markings on the elytra parallel with the suture; the surface is alutaceous, with distinct confused punctuation, generally rather stronger than that of thorax, but weaker at apex; apices slightly separately rounded. Legs: testaceous, posterior femora black above, pitchy or testaceous beneath; first joint of anterior tarsi in ♂ slightly enlarged; posterior tibial spurs short. Underside varying from pitchy to black. Wings sometimes present, but more often rudimentary. Length 2—2½ mm.

This species may be distinguished from *L. suturellus* by its rather longer oval form, the distinct punctuation of the thorax, and the generally more reddish or testaceous coloration; from *L. suturalis* by its form and the more confused elytral punctuation, and generally from all its congeners by the metallic reflection of its thorax.

Food plants.—*Medicago* (lucerne) (*Allard, Fowler*), *Onobrychis sativa* (*H. C. Dollman*). It thus appears to be attached to *Leguminosæ* and probably like other members of the genus feeds on more than one species. *L. atricillus* ranges throughout the United Kingdom and is generally common.

Vars.—*declivis*, Weise: appears to be merely the apterous form; *similis*, Weise: a dark form with head and thorax brassy black, and lateral border of elytra black, which can be found in any large series of the species.

L. SUTURALIS, Marsh. [Ent. Brit. p. 201]; Steph. [Man. p. 296]; All. [Mon. p. 114]; Weise [Nat. Ins. Deutschl. VI, p. 966]; Bedel [Col. Bass. Seine, V, p. 191].

Syns. *nigricollis*, Foudr. [Mon. p. 161.]
æneicollis, Fald.

Form oblong ovate, similar to *L. atricillus*, but rather more parallel-sided. Head black. Antennæ: black with first four or five joints testaceous. Thorax: transverse, bordered, black with a slight but distinct bronze reflection, alutaceous, rather weakly but quite distinctly punctured, the punctuation being much less strong than in *L. atricillus*. Elytra: dull testaceous, with black well-

(1) Bedel refers to this species in the first part of his work as *T. atricilla*, L., but in the catalogue says: "Substituez le nom de *fuscicollis*, Steph., à celui d'*atricilla*, L., qui reste énigmatique," but the Stephensian *fuscicollis* is undoubtedly the form of *L. suturellus* with red thorax.

defined suture as in *L. atricillus*, distinctly alutaceous, with bold and regular punctures, which are more remote than in the allied species and are to some extent, especially at base and near suture, seriate. Legs: testaceous, with last joint of all tarsi black; posterior femora black above, testaceous beneath; first joint of anterior tarsi in ♂ distinctly dilated; posterior tibial spurs short. Underside black. Winged. Length $1\frac{3}{4}$ —2 mm.

This is a species which appears to be rare in Britain, and about which much confusion prevails. It is often represented in British collections by either *L. atricillus* or *L. suturellus*. From the former, the quite black thorax, the marked difference in strength of punctuation of the thorax and elytra, and the more regular, remote, and subseriate character of the punctuation of the elytra, together with the presence of wings, will distinguish it. *L. suturalis* perhaps more closely resembles *L. suturellus*, but from this species its more parallel shape, the distinct, if weak, thoracic, and the much stronger elytral punctuation, will separate it.

(To be continued).

NEW CETONIIDÆ FROM BORNEO.

BY OLIVER E. JANSON, F.E.S.

PSEUDOCHALCOTHEA SHELFORDI, n. sp.

P. auripedi similis. *Capite pedibusque viridis, antennis viridi-piceis*.
 ♂. *Tibiis posticis pone medium dilatatis, intus ad basin lobo longo, tibiæ longiore, sat lato, curvato, apice abrupte recurvato, acuto*. ♀. *Tibiis anticis lateribus nigro piceis*.
 Long.. 35—37 mm.

Very similar to *P. auripes*, Westw., but a little larger, the legs entirely green, and the antennæ piceous, tinged with green. The male differs in having the appendage of the hind tibiæ free almost from the base, much longer, broader, and more abruptly bent near its apex, and the tibia itself dilated below the middle. In the female the outer side of the front tibiæ, including the teeth, is black. In *P. virens*, Rits., to which it is also closely allied, the appendage of the hind tibiæ, in the male, arises from the middle and is of a different form, and the female has the sixth abdominal segment broadly emarginate and more prominent at the sides.

Mt. Penrissan, Sarawak.

Both sexes received from Mr. R. Shelford, and also in the Sarawak Museum.

PSEUDOCHALCOTHEA COMPACTA, n. sp.

♀. *Saturate viridis, corpore subtus femoribusque ænescentibus, clypeo apice cupreo, antennis, tibiis tarsisque castaneis*. *Capite passim punctato*,

clypeo non dilato, apice emarginato; prothorace disco sparsim punctulato, lateribus grosse punctatis, marginatis; elytris juxta suturam et postice irregulariter punctato-striatis. lateribus apiceque strigulosis; pygidio convexo, profunde sinuato-aciculato, apice leviter sulcato et sparsim hirsuto; corpore subtus fere laevi, processu mesosternali triangulariter producto, apice sub-acuto.
 Long., 25 mm.

Size of *P. hasselti*, Rits., but of a broader, more robust and compact form, and more olive green colour above. The head is smaller and much more strongly punctured, the clypeus not widened in front and with a smaller apical notch, the prothorax altogether broader, more deeply sulcate behind, and more narrowly margined at the sides, the elytra more strongly punctured and less deeply emarginate at the apex, the pygidium very much broader, and with a deep and strongly sinuous aciculation, which gives a scale-like appearance, especially towards the apex; the mesosternal process is longer and almost acute at its apex, the aciculation on the apical abdominal segment is stronger and more sinuous, and the anterior tibiae are broader and with the teeth larger.

Mt. Kina-balu.

I have two female examples only, from the northern spurs of Mount Kina-balu.

PSEUDOCHALCOTHEA MACROPHYLLA, n. sp.

Pallide flavo-viridis, corpore subtus pedibusque luete prasino, antennis tarsisque piceis, clypeo margine antico cupreo, elytris callo humerali rufocastaneo. Capite obsolete et remote punctato, antice parum dilatato, clypeo marginibus elevatis, apice rotundato, vix sinuato; prothorace lateribus leviter sinuatis, marginatis; elytris lateribus postice aciculatis; processu mesosternali longe producto, apice incurvato, sub-acuto. ♂. Antennarum flabello longissimo ($4\frac{1}{2}$ mm.); pygidio transversim aciculato, apice sulcato; abdomine canaliculato, segmento ultimo transversim sulcato, leviter emarginato; tibiis anticis inermis, posticis apice flavo-fasciculato. ♀. Pygidio brevi, leviter asperato; abdomine segmento ultimo aciculato; tibiis anticis lateribus bidentatis.
 Long., 23—24 mm.

The upper surface is smooth, but under a lens an extremely fine and remote punctuation is discernible on the head and thorax, and there are scattered coarse punctures on the clypeus, sides of the thorax, and apical part of the elytra; the surface of the latter is also a little uneven behind the middle and at the sides. In the male there are widely scattered punctures on the sides of the metasternum, and in the female these are more numerous and somewhat strigiform. In form and size *P. macrophylla* is nearest to the preceding species, but in the form of its clypeus and its unarmed hind tibiae, with a simple apical spine, it does not come within the definition of this genus, and approaches *Glyptotheca*.

Mt. Kina-balu. Both sexes received from Mr. A. Everett.

GLYPTOTHEA MOULTONI, n. sp.

G. whiteheadi similis. ♂. *Olivaceo-viridis; capite, corpore subtus femoribusque viridi-auratus, tibiis castaneo-viridis, tarsis nigro-cyanis. Clypeo antice sensim dilatato, apice rotundato, anguste reflexo, medio paullo emarginato; elytris poste medium anguste bicostatis, lateribus uni-costatis, interstitiis apiceque sinuato-aciculatis; pygidio apice leviter bi-nodoso.*
 ♀. *Cyanco-viridis, clypeo apice leviter reflexo, pygidio apice obsolete sulcato, tibiis anticis latioribus, acute dentatis.* Long., 18—21 mm.

Besides the coloration, the male differs from this sex of *G. whiteheadi*, Bates, in having the clypeus more dilated, its apex much more narrowly reflexed and distinctly emarginate, the prothorax broader in front, the discal carinae of the elytra narrower, and the aciculate sculpture of the interstices, sides and apex of a more vermiculate form, and the pygidium more coarsely strigose, and with two small, closely approximate, nodules at its apex. In the female the sculpture of the elytra is very much coarser and consists of elongate impressions, uniting and forming chain-like rows.

Mt. Penrissen, Sarawak, 4200—4500 ft.

I am indebted to Mr. R. Shelford and Mr. J. C. Moulton for specimens of both sexes of this interesting species; it is also in the collection of the Sarawak Museum.

GLYPTOTHEA EXCAVATA, n. sp.

♂. *Olivaceo-viridis, prothorace elytrisque lateribus flavescentibus, capite, corpore subtus pygidioque aurco-viridis, antennis, tibiis et tarsis rufo-piceis, cyaneo-tinctis. Capite dense punctato, clypeo margine antico reflexo, paulo sinuato; elytris obsolete costatis, postice spatio juxta suturam grosse et profunde biseriatim punctatis.* Long., 18 mm.

Broader and of a more ovate form than *G. whiteheadi*, the head much more closely punctured, the clypeus narrower, rounded and more narrowly reflexed at its apex, the prothorax shorter, broader, more finely and closely punctured, less angulated at the sides, and feebly margined to the apical angles; the elytra more broadly sulcate at the suture and very feebly bi-costate behind, the sutural depression with three irregular rows of punctures, which become smaller and obsolete towards the base, but much larger, and assuming the form of a double series of very large transverse aciculated pits, as they approach the apex; the sides are punctured, rugose, and with a feeble submarginal carina; the pygidium convex, coarsely strigose, and with a very slight impression at the apex; the underside sparsely pubescent; the metasternum closely punctured at the sides; the mesosternal process short, broad, and rounded at its apex.

Mt. Kina-balú. A single female example from the van de Poll collection.

DESCRIPTION OF A VARIETY OF *TOMOGLOSSA LUTEICORNIS*, ER.

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

TOMOGLOSSA LUTEICORNIS, v. *EPPELSHEIMI*, n.

Entirely reddish-testaceous, except the anterior half or two-thirds of the elytra, which are more or less infusate, and a distinct dark patch on the middle of the sixth dorsal segment, not sharply circumscribed, but fading gradually into the ground colour. The fifth dorsal segment is sometimes also a little infusate.

This variety was referred to by Eppelsheim, *in litt.*, as var. *læta*, but no description having appeared, and the insect being very distinct from the type-form, I have thought it well to bring it forward and dedicate it to the late Dr. Eppelsheim.

Occurs not uncommonly in the Island of Kamaran in the Red Sea, also, according to Eppelsheim, in the Caucasus.

February 22nd, 1912.

ON SOME UNINTENTIONAL EVIDENCE IN SUPPORT OF THE
MIMICRY THEORIES, SUPPLIED BY A SMALL COLLECTION
OF BORNEAN BUTTERFLIES.

BY J. C. MOULTON, F.L.S., F.E.S., CURATOR OF THE SARAWAK MUSEUM.

A collection of butterflies was recently brought to me for examination by a friend who had caught them all in a fortnight's visit to a Sarawak out-station (Simunjon, December, 1911); and as it demonstrates so beautifully some of the chief characteristics of an Eastern butterfly fauna, I have thought that perhaps a few notes may be of some interest. Museum collections give a general idea of the resources of a country in any particular faunistic branch, and entomological literature can tell us something about the habits and rarity (or otherwise) of each species, but a far clearer side-light on the subject is gained by examining a small collection of this sort, formed, I should add, by a non-entomological visitor, who was content to take the easy course of collecting all those individuals which for the most part seemed almost to court capture by their gentle flight and brilliant colouring. An entomologist, recognizing the common species, would probably have passed them by, and devoted his attention to the rarities. This collection, however, was made by a *non-entomologist* to whom all Sarawak butterflies were new and desirable, and hence, although there are no rarities which call for remark, the relative numbers of each species are both instructive and interesting.

Lastly I should add that my friend, in making the collection and in offering them to me for examination, had no idea that they were to be utilised for these notes.

The collection comprises 274 examples, representing 68 different species, no less than 108 specimens being divided among 5 species of *Danainæ*. The number of different species of butterflies at present known from Borneo is approximately 791. The following table shows the number of species known of each family together with the number of species and individuals obtained in this collection.

	Nymphalidæ.	Lemoniidæ.	Lycænidæ.	Picridæ.	Papilionidæ.	Hesperiidæ.	Total.
Species known from Borneo ...	240	17	300	41	42	151	791
Species in collection ...	40	1	7	9*	9	2	68
Specimens in collection	197	1	9	25	40	2	274

The first point to notice is the relatively large number of *Nymphalidæ* obtained—no less than one-sixth of the total number known from Borneo—while over 71 per cent. of the specimens in the collection belong to this family.

If, furthermore, we analyse the *Nymphalidæ* so as to show the relative numbers of each group or sub-family, we obtain some significant figures.

	Danainæ					Nymphalidæ.	Total.
	Danaini.	Euploëini.	Satyrinæ.	Elymninæ.	Amathusiinæ.		
Species known from Borneo ...	16	16	33	10	26	139	240
Species in collection	5	8	8	2	1	16	40
Specimens in collection	49	77	15	7	2	47	197

The very large proportion of *Danainæ* (*Danaini* and *Euploëini*) provides excellent evidence in support of the Müllerian theory of mimicry, which postulates associations or combinations of distasteful

* Not including one specimen as yet unidentified.

butterflies characterised by a common conspicuous warning pattern, which is further displayed and emphasized by large numbers of individuals and by a fearless, slow method of flight, so that they fall an easy prey to the net. In the Neotropical region the dominant Müllerian associations are formed by the *Ithomiinæ* and *Heliconiinæ*—butterflies characterized by a black and yellow striped, tiger-like, pattern. In the Oriental region these are replaced by two distasteful associations, each with its own particular mimics, (i) the black-and-white-lined *Danaini* and (ii) the black or iridescent purple-black *Euplœini*. This has been demonstrated often enough by writers who have studied European collections, but the involuntary evidence supplied by the above figures is to my mind even more eloquent.

The *Danaini* collected are chiefly confined to two species, *D. eryx*, Fab. (29 specimens), and *D. vulgaris*, Butl. (14 specimens). The other three species represented are *D. septentrionis*, Butl., 3; *D. lotis*, Cram., 2; *D. aspasia*, Fab., 1. Total 49 specimens. Of these only two females were noticed, both of *D. eryx*.

The *Euplœini* chiefly belong to three species, *E. claudius mulciber*, Cram., 27; *E. crameri*, Luc., 18; and *E. diocletianus lowei*, Moore, 20. The remaining species are *E. scudderi*, Moore, 2; *E. bremeri*, Feld., 4; *E. uniformis*, Moore, 4; *E. zonata*, Druce, 1; *E. corus butleri*, Moore, 1. Total 77. Of all these only one female was noticed (*E. claudius mulciber*).

The remaining species of *Nymphalidæ* call for little comment. They are:—

ELYMNINÆ, *E. nigrescens*, Butl., 6; *E. panthera*, Fab., 1.

AMATHUSINÆ, *A. phidippus*, Linn., 2.

SATYRINÆ, *Mycalis medus*, W. M. et de Nic., 2; *M. anapita*, Moore, 3; *M. mineus*, Linn., 1; *Ypthima pandocus*, Moore, 1; *Y. fasciata*, Hew., 3; *Lethe europa*, Fab., 1; *Ragadia crisia*, Hübn., 3; *Erites elegans*, Butl., 1. Only one Lemoniid was captured, viz., *Abisara kausambi*, Feld., 1.

NYMPHALINÆ, *Neptis nata*, Moore, 1; *N. leucothoe matuta*, Hübn., 5; *N. peraka*, Butl., 1; *Junonia atlites*, Linn., 2; *Cethosia hypsea*, D. and H., 3; *Cynthia erota*, Fab., 15; *Cupha erymanthis lotis*, Sulz., 6; *Limenitis procris agnata*, Fruhst., 1; *Athyma kresna*, Moore, 3; *Adolias canescens*, Butl., 1; *Euthalia ambalika*, Moore, 1; *E. dunya*, D. and H., 1; *Eulepis delphis*, Doubl., 1; *Parthenos sylvia*, Cram., 5; *Cyrestis nivea nivalis*, Feld., 1; *C. theresæ*, de Nic., 1. Among the 15 *Cynthia erota* there was only a single female.

The *Lycænidæ* were conspicuously ill-represented—not a single example of the *Gerydinæ* or of the large sub-family of *Arhopalinæ* (of which some 60 species are known from Borneo). The 9 specimens captured are *Nacaduba* ? *atrata*, Horsf., 2; *N. ardates*, Moore, 1; *Lampides coruscans*, Moore, 1; *L.* ? *zebra*, Druce, 2; *Curetis thetys*, Drury, 1; *Biduanda thesmia*, Hew., 1; *Dacalana vidura*, Horsf., 1.

The *Pieridæ* captured are *Catophaga paulina*, Cram., 1; *Catopsilia crocale*, Cram., 5; *C. pyranthe*, Linn., 3; *Terias sari*, Horsf., 3; *T. hecabe*, Linn., 2; *T. tilaha*, Horsf., 2; *Leptosia xiphia*, Fab., 5; *Prioneris vollenhovei*, Wall., 1; *Huphina hespera*, Butl., 3.

The *Papilionidæ* are *P. helenus palawanicus*, Staud., 3; *P. nephelus saturnus*, Guér., 3; *P. memnon*, Linn., 6; *P. sarpedon*, Linn., 4; *P. evemon*, Boisd., 13; *P. eurypilus axion*, Feld., 4; *P. bathycles bathycloides*, Honr., 3; *P. agamemnon*, Linn., 3, and the Euplœine mimic, *P. caunus mendax*, Rothsch., 1.

There is a noticeable absence of the high-flying conspicuous *Ornithoptera* and *Troides*.

The swift-flying *Hesperiidæ* are represented by two specimens only, *Taractrocera ardonia*, Hew., 1, and one ? sp. very worn.

The collection brings out the following points:—

(i) *Euplœini* and *Danaini* are the most abundant, most easy to capture, and most conspicuous butterflies of the Oriental region, and therefore fulfil the requirements or answer to the definition of principal models in a Müllerian mimetic combination.

(ii) The Papilionine, *P. caunus mendax*, which so beautifully mimics the distasteful *Euplœa dioeletianus lowei*, being taken together with that species, affords yet further corroboration of the statement that models and mimics are undoubtedly found together in the same place and at the same time.

(iii) In accordance with the theory of mimicry the distasteful models are numerically superior to their mimics. The collection shows 20 individuals of the model, *Euplœa dioeletianus lowei*, to 1 of the mimic, *Papilio caunus mendax*, and none of the other two Bornean mimics, *Euripus halitherses* ♀ form *isa*, Moore (the Nymphaline), or *Mimeuplœa rhadamantha*, Butl. (Chalcosid moth),

(iv) The absence of *Lycænidæ* and *Hesperiidæ* in this collection demonstrates their capabilities for taking care of themselves, the former principally by protective colouring, and the latter by their swift flight, in addition to sombre colours.*

* It is also probable that more attention was devoted to the larger butterflies.—E. B. POULTON.

(v) The conspicuous absence of females supports another conclusion which follows from the mimicry theories, namely that females are more important than males for the continuation of the species, and that natural selection has evolved for them better means of protection, *viz.* (i) more sluggish habits, *e.g.*, females do not fly so much or appear in the open like the brightly coloured males which seem almost to court capture or the experimental tasting of young and inexperienced enemies; (ii) more perfect mimicry of some distasteful pattern or a closer resemblance to their surroundings.

Critics of the mimicry theories have often pointed out that it is easy enough to illustrate these theories with beautiful examples picked out from the collections of any large and important Museum, but they urge that it is quite a different thing to find such complete examples in real life. It is indeed true enough that one would have to sit in the jungle for many a long year before one managed to find in one spot and at one time a *complete* illustration of any one mimetic association, *i.e.*, like some of the remarkable series exhibited before the Entomological Society in recent years—series which show, *e.g.*, 100 examples of species A the dominant model, together with 50 each of the subsidiary distasteful models B and C, 10 each of the Müllerian mimics D and E, and one example each of the rare Batesian mimics F and G. I repeat that if one expects to see all the members of a combination like that alive in the tropics, the minute one finds a likely spot in the jungle, then disappointment awaits the visitor. But it is equally true that a supporter of the mimicry theory, if he diligently applied himself to it, *could* collect in one locality in a month or two, a very similar series to the picked exhibit which he had seen in London a few months before. And it is also true that a collector, with a bias *against* the mimicry theories, could make a numerous collection of common butterflies in this country, in which the Eupléine-Danaïe element was not obviously dominant, and from which their rarer mimics might well be absent altogether.

I desire therefore to call attention once more to the value of a collection such as the one now described, since it was formed by one blissfully free of all views in support of, or antagonistic to, these theories. It is more instructive than any formed by a professional collector, who would have been at great pains to search out rarities and at the same time would have passed by the common species; it is also more valuable than the average collection formed by the amateur-visitor, because such collections usually contain too few specimens, or, if of larger size, have probably been augmented from the duplicate boxes of friends.

Professor Poulton has recorded instances of model and mimic being taken in one sweep of the net, and has even found model and mimic sent to him in one set of papers by a collector who, having taken the two in the same place and day, had not noticed that they were different species. I suggest that these scraps of independent and unintentional evidence in direct support of these theories are worthy of the serious consideration of those who regard mimicry as a museum-manufactured phantom, but non-existent as a real phenomenon in tropical life.

The following experiment made by Mr. Moulton, January 2nd, 1912, forms an interesting supplement to his paper:—

“I caught a male *Danais* (the specific name is illegible, but is probably intended for *eryx*) in my dining-room and gave it alive to a ‘pig-tailed *Macacus*.’ The monkey first held the butterfly by the folded wings, then opened the wings and pulled off the abdomen, which he smelt, pulled to pieces, smelt again, tasted, and threw down in evident and unmistakable disgust. At the same time he liberated the butterfly which he had been holding with the other hand. The Danaine immediately flew away apparently uninjured, except for the *trifling* loss of its abdomen! I watched it for quite a minute as it mounted high up into the air, and, after hovering and gliding for some little time, flew easily away out of sight into a patch of jungle near by. The experiment showed not only the extreme distastefulness of the Danaine, but that the unpleasant quality resides in the body and has nothing to do with the pigment or the wings, as has been sometimes suggested. It also proved the extraordinary tenacity of life which is associated with the special means of protection.”

The Sarawak Museum, Kuching:
December, 1911.

TRIOGMA TRISULCATA, SCHUM., A FLY NEW TO BRITAIN.

BY A. E. J. CARTER.

While looking over recently some specimens of *Limnobiidæ* and *Tipulidæ*, given to me by the Rev. E. N. Bloomfield, I found a fly with a wing venation such as I had not seen before—no small cross vein being present. Examination showed that I had an example of

the *Cylindrotominæ* before me, and working with Schiner, I quickly ran it down to *Triogma trisulcata*, Schum. This species is characterised by the antennal joints being hardly longer than wide, by the thorax having three longitudinal grooves, the outer two, as well as the sides of the dorsum, being punctured; and by the peculiar venation: the 3rd long vein arising from the 2nd before the discal cell, and after forming for a short distance part of the upper boundary thereof, branching off and going to the apex of the wing. Zetterstedt (Dipt. Scand., X, p. 3879) says: "abdomine testaceo, vitta dorsali fusca." Schiner has no mention of a dorsal stripe, and it does not show in the present specimen.

It appears that the specimen under discussion was received by Mr. Bloomfield, many years ago, from Mr. R. C. Bradley, of Sutton Coldfield, as *Phalacroceræ replicata*, L., a species to which it bears a superficial resemblance. Mr. Bradley recorded *P. replicata* in Ent. Mo. Mag., 1894, p. 17. I do not suggest that this record was erroneous. It is more probable that the *Triogma*, being subsequently taken in the same locality, was overlooked.

The specimen is a ♂, and bears a label in Mr. Bradley's handwriting, "Sutton, 16, 6, 99," so that this interesting (generic as well as specific) addition to our List was captured nearly thirteen years ago!

According to Osten Sacken ("Studies in Tipulidæ") there is but one European species of *Triogma*. It appears to be rare, and is recorded by Zetterstedt from Sweden and Denmark, and by Schiner from Germany and Austria.

Blairgowrie:

March 9th, 1912.

A NEW FORM OF BED-BUG: *CACODMUS IGNOTUS*, SP. NOV.

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

Closely allied to *Cacodmus villosus*, Stål.

Head, thorax, elytra, abdomen, and legs densely covered with rather long hairs inserted in pits; colour madder brown. Head without labrum about half the length of the pronotum and very deeply placed, the pronotum reaching well to the eye. Relative lengths of antennæ as follows:—18, 54, 37, 39.

Pronotum at the apex truncate, far wider than it is long. The sides are rounded, but are less so than in *C. villosus*, Stål. Anterior angles of the pronotum slightly produced and reaching to the centre of the eye. Posterior edge of

pronotum sinuate, and longer than in *C. villosus*. Explanate margin narrow and of the same width all round, except at the apical angle where it is slightly widened. Marginal hairs of pronotum of equal length, except at posterior angles where they are slightly shorter. These hairs are long and stout and two and a half times the width of the eye in length.

Scutellum transverse and triangular in shape. The anterior edge is convex, the posterior edge concave towards the sides. The posterior edge forms a minute point fitting into the elytra in the centre where the scutellum is widest and generally narrows towards the pleura. The metasternum resembles that of *villosus* by being bottle-shaped, but whereas the posterior margin is sinuate in *villosus*, it is rounded in *ignotus*.

Elytra transverse, shortest towards the suture and widest towards the sides. The relative increase in breadth at the sides is more accentuated in the present species than in *villosus*, the lengths at the suture and at the sides being 20,29 in *ignotus* and 20,25 in *villosus*.

The two elytra are adjacent anteriorly but separated at the posterior end.

The anterior sutural angle of the elytra (*i.e.*, the angle near the scutellum) is less strongly rounded than the posterior angle in *ignotus*; while in *villosus* these two angles are identical, the posterior being less rounded in *villosus* than *ignotus*. There are some very long hairs situated on each elytra on the lateral explanate edges.

Abdominal tergites.—The hairs of the abdominal tergites one to six are very long and fine, and are evenly and very densely distributed over the whole surface of the tergite. In the posterior row of hairs of each of the tergites one to six are a number of spine-like bristles as well, which lie very flat. The bristles at the sides of the tergites are very long and stout and project well over the sides.

*The notch on the 4th sternite of the ♀ is present. Femora stout and clothed with long hairs. Apical tuft of hair very distinct in all the tibiæ. Relative lengths of tibiæ and tarsi (including claw) of hind leg as follows:—105, 39. In *C. villosus* they are:—92, 46.

Total length 12 mm., and of a uniform width of 6 mm.

The type and only known example of this fine species was discovered by Mr. Oldfield Thomas on a bat in the spirit collection of the Natural History Museum, but no other details were recorded.

Closely allied to *Cacodmus villosus*, Stål, of which we have been able to examine but three examples, two in the British Museum, and one in the Cambridge Museum, all in imperfect condition. The present species is certainly longer than *C. villosus*, it is also covered with finer hairs. The chief distinction however is found in the antennæ. In the present species, as mentioned above, the relative lengths of the joints are 18, 54, 37, 39; while in *C. villosus* they are 24, 48, 39, 35.

A NEW INDIAN BED-BUG: *CLINOCORIS PERISTERÆ*, SP. NOV.

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

Closely allied to *C. lectularius* and *C. columbarius*, but abundantly distinct from both.

The relative lengths of the joints of the antennæ are as follows:—♂ 12, 35, 37, 28; ♀ 13, 36, 39, 29. The present species thus resembles *C. lectularius* in the third joint being longer than the second, and *C. columbarius* in the third joint being a third longer than the fourth.

The eyes of *C. peristeræ* are longer and wider than those of *C. columbarius*, measuring .18 mm. in length and .12 mm. in width, those of *C. columbarius* being .165 mm. long and .09 mm. wide. Explanate margins of the prothorax distinctly wider at the apex than obtains in *C. columbarius*, being .24 mm. wide instead of .18 mm. The scutellum resembles that of *columbarius*, but the hairs on it are twice as long as those of that species, measuring .06 mm. in length.

The relative lengths of the femora, tibiæ and tarsi (including claw) of the hind leg are as follows:—90, 105, 40; while in *columbarius* they are 85, 90, 35. Length 2.65 mm.

The colour of this species is brownish orange, and if not due to incomplete chitinization is very characteristic of the species.

All the examples of this interesting insect, some eighty in number, were received from Mr. P. T. L. Dodsworth, taken from a pigeon-house on the 12th of September, 1911, at Simla, N. W. Himalayas, India.

Arundel House,
Kensington Palace Gardens,
London: *March*, 1912.

CORRECTION OF IMPOSSIBLE NAMES.

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

Mr. Meyrick (*ante* pp. 32-6) has taken a bold course in renaming a number of species of Microlepidoptera described by Mr. Kearfott under names which had no pretence to classical correctness and which could not in any way be interpreted. A zoological name should surely be invalid unless it means, or is at least intended to mean something, and can therefore be translated, understood, and possibly remembered in connection with the object described. Whatever may be the finally accepted opinion as to the validity of his substituted names according to international rules of nomenclature, no entomologist, however strong an adherent he may be to the hard

and fast law of priority, will blame the author for his righteous endeavour to call attention to the absurdity of any merely alphabetical system, and to provide a remedy for the confusion which would result from its adoption and repetition. At the same time I cannot agree with him in regarding the last three names, at the end of the list, as coming within the same category as those above them. Mr. Busck is certainly not guilty of having formed these three names on any similar principle, or, may we say, want of principle? They are not merely alphabetical constructions without meaning: "*banana*" certainly means something, a fruit, and there are precedents for the use of such well-known words as special names. The practice is none the less objectionable, and ought to be, if it has not already been, ruled out: "*rana*" also has a meaning, a frog, and may have been suggested by colour or appearance, such a name is distinctly allowable; "*kana*" may be a misprint for "*cana*," and the correction required, if any, to bring it within the rules of classical nomenclature, is very slight and involves no necessity for a new and different designation. It seems regrettable that Mr. Meyrick should have included the work of a careful and conscientious author in his otherwise well-applied criticisms.

Mr. Meyrick further expresses the opinion that "those who would write after such names as are proposed *n.n.* instead of *n. sp.* are basing an affected accuracy on a logical misapprehension; *n. sp.* whenever applied, signifies a new specific name only, and not a new species; Entomologists do not profess to have created the insect they describe; the description is new, but so is any re-description; the specific name is then the only really new thing that is intended by *n. sp.* and this applies therefore equally well, whether the insect has received another earlier name or not." Surely he is here proposing to entirely alter the accepted meaning of *n. sp.* If this means anything, it means that the author regards the species as previously undescribed, and therefore proposes a name for it. There is no question of creating the insect or object described, which as he admits no one professes to do, it is a question solely of a differentiation which has to be recorded. In this case Mr. Meyrick's names are not given to any record of fresh observation or differentiation; they are mere corrections, and should be designated in the same way that a name misspelt, or misprinted, and afterwards corrected should be indicated as such. "*n.n.*" has been used I think occasionally to signify "*nomen nudum*" which means a mere name, invalid because unaccompanied by description, or unconnected with an illustration, and cannot be here applied in this

sense—*n. nov.* (*nomen novum*) would be preferable, but in any case I contend that "*n. sp.*" is not applicable to such names. It might perhaps be convenient to quote them as "Kearfott *cor.* Meyrick" duly abbreviated. It is greatly to be hoped that at any future International Congress some fair and clearly defined rule may be laid down by which necessary corrections may be permitted without depriving the original author of whatever value or credit may attach to the record of his observations. If this is not done zoological nomenclature runs no small risk of losing all semblance of classical construction, and of being finally overwhelmed with ridicule.

Villa Sans Souci, Monte Carlo:

February 23rd, 1912.

Chaetocnema conducta, Motsch., as a British insect.—In the March number of the "Naturalist," pp. 82, 83, this quite unexpected addition to our list is recorded by Mr. E. C. Horrell, on the authority of two specimens captured by himself last May in Forge Valley, near Scarborough. The straw-yellow elytra, with dark suture, margin, and shoulder spot, distinguish it at once from our other British species. *C. depressa*, Boield. (*chrysicollis*, Foudr.), is an allied continental form, narrower in shape, with a uniformly punctured head (*C. conducta* having an impunctate space down the middle) and the dark shoulder spot wanting. *C. conducta* has an extraordinarily wide distribution, extending to Morocco, Algeria, &c. I met with it last June at Azazga, in Kabylia, by sweeping *Juncus* and other plants in a nearly dried-up marsh, and have specimens of it from Tangier, Salonica, Leghorn, and Perpignan. It is apparently not found in the basin of the Seine, where it is represented by the allied *C. depressa*. Mr. Horrell's drawing of the insect shows ten-jointed antennæ, which is of course incorrect.—G. C. CHAMPION, Horsell, Woking: March 7th, 1912.

Note on Carabus hookeri, Nodier, a Scottish insect.—In the "Bulletin de la Société Entomologique de France," 1912, No. 3, pp. 80, 81, M. P. Lesne calls attention to this species, described by Ch. Nodier, in a paper entitled "Promenade de Dieppe aux Montagnes d'Écosse," Paris, 1821. M. Nodier visited the neighbourhood of Ben Lomond in 1820, and collected insects there. The diagnosis is as follows: "*Carabus hookeri*. Affinis certe *C. auronitenti*, sed duplo minor. Apterus, elytris sulcatis viridibus, lineis elevatis externis apice tricrenatis. N." As M. Lesne says, the insect is undoubtedly *C. nitens*, Linn. (1758). *Carabus hookeri*, Nodier, seems to have completely escaped the notice of entomologists, who will now have the pleasure of adding yet another synonym to a species of this genus!—G. C. CHAMPION: March, 1912.

Note on Bledius terebrans, Schiodte.—This insect, recently introduced into the British List, and for a specimen of which I am indebted to Dr. Joy, is identical

with *B. campii*, Bondroit, Ann. Soc. Ent. Belg., LI, 1907, p. 24, from Belgium and Holland. Bondroit's name will therefore fall as a synonym of Schiodt's species.—M. CAMERON, H.M.S. "Dartmouth," Atlantic Fleet: *March*, 1912.

Coleoptera in a bag of Cherwell flood-refuse.—The following more or less noteworthy *Coleoptera* were found in a bag of flood-refuse brought home from the River Cherwell at Water Eaton, Oxon, in January, several of them being additions to the Oxford local list—*Agabus uliginosus*, one ♂ specimen of this very local northern insect, kindly confirmed for me (with other species in this note) by Mr. G. C. Champion; *Enochrus bicolor*, *Ochthebius rufimarginatus* and *marginellens*, *Calodera riparia*, *Ilyobates forticornis* (2), *Myrmedonia limbata*, *Homalota languida* (sparingly), *insecta*, *pavens*, *debilis* (common), and *intermedia* (1), *Philonthus lucens* (1),* *Gabrius bishopi*, Sharp (both sexes of this well-marked form), *Stenus canaliculatus* and *carbonarius*, *Platystethus capito* (rare), and *nitens* (common), *Hister neglectus* (1), *Heterocerus marginatus*, and several ♀ examples of *Phyllotreta exclamationis*, with the elytral spots confluent, forming a longitudinal indented yellow marking curiously like the pattern of *P. sinuata*.—J. COLLINS, 74, Islip Road, Summertown, Oxford: *March 16th*, 1912.

Silvanus bidentatus, Fab., in *New Zealand: synonymical note.*—In June, 1902, I took at Waitakerei, near Auckland, N.Z., two or three specimens of a small Cucujid under the bark of felled trunks of the introduced Californian *Pinus insignis*. These I noted at the time in my journal as "a *Silvanus*," but afterwards found them to agree in all respects with the description of *Cryptomorpha lateritia*, Broun (Man. N.Z. Coleoptera, p. 222, No. 390), and they have hitherto stood under that name in my series of *New Zealand Coleoptera*. On examining the beetle a few days ago with Mr. G. C. Champion, we found it to be identical with the well-known European (and British) *Silvanus bidentatus*, Fab. Bearing in mind the wide distribution by commerce of several species of *Silvanus*, it is not unlikely that *S. bidentatus* has been brought to New Zealand in that way; though my specimens were found with other certainly indigenous wood-feeding beetles (*Xenocnema spinipes*, Woll., *Mitrasethus bituberculatus*, Fab., &c.) many miles from the coast, in a wild and solitary spot at the edge of one of the few remaining patches of Kauri forest in the Auckland district.—JAMES J. WALKER, Oxford: *March 16th*, 1912.

Hylotrupes bajulus, L., and other beetles at Wellington College.—On July 29th last I found two specimens of *Hylotrupes bajulus* on some timber which was being used for repairs at Wellington College, Berks. I also captured *Leptura fulva* and *Tetropium fuscum* near the College in July, 1909; and have also to record a specimen of *Odontæus mobilicornis*, found dead in a garden at Twyford, near Winchester, in August, 1908.—BENJAMIN G. WHITE, Hardinge, Wellington College: *March 4th*, 1912.

Hybernia aurantiaria var. *fusca*.—By this name I propose to designate a very distinct form of *Hybernia aurantiaria* which seems to have become

*I found *P. lucens* in fair numbers in flood-refuse near Wolvercote, Oxon, Dec. 23rd, 1911.—J.J.W.

thoroughly established in south-west Yorkshire. It differs from the type in having all the wings uniformly fuscous-brown, though the hind wings are slightly paler than the fore-wings; and in that there is no trace of the usual markings, except that the marginal black spots on the hind wings can be traced in the dark ground colour. It is in fact exactly a parallel form to the variety *fusca* of *Hybernia marginaria*. The first recorded specimen was taken by Mr. W. Mansbridge at Horsforth, near Leeds, so long ago as 1890; in 1896 I bred it from a larva taken near Crosland Hall, Huddersfield; and last year (1911) Mr. B. Morley took a number of specimens at Skelmanthorpe, near Huddersfield.—GEO. T. PORRITT, Dalton, Huddersfield: *March 12th*, 1912.

Ichneumon lugens, Grav., *hibernating*.—In "British Ichneumons," Vol. i, p. 112, Mr. Morley states of this species: "The females are said to pass the winter in the perfect state." I have much pleasure in confirming this statement. My friend Mr. H. L. Orr, of Belfast, sent me a female which he took on February 24th, 1912, under the loose bark of a birch tree in Carr's Glen, which lies at the foot of Cave Hill, about three or four miles northward from Belfast, on the County Antrim side.—W. F. JOHNSON, Acton Glebe, Poyntzpass: *March 8th*, 1912.

Prosophis genalis in Surrey.—It will be of interest to record the re-occurrence, after more than 30 years, of this bee, which is, as far as I am aware, only known as British by three specimens taken on bramble flowers near Hastings in 1879. The first insect was taken on "deadly nightshade" about the middle of June last, and four ♂♂ and eight ♀♀ some three weeks later, all on bramble flowers, in this neighbourhood. As pointed out by the late Ed. Saunders, the ♂ is fairly easily identified. The characteristics which he gave of the ♀ are slight and comparative only; I have looked in vain for anything more definite. The peculiarities mentioned, however, such as they are, seem, judging from my own series, to be quite appreciable and equally constant. The Rev. F. D. Morice has been good enough to confirm my identification.—C. H. MORTIMER, Royton Chase, Byfleet, Surrey: *March 3rd*, 1912.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, January 25th*, 1912, ANNUAL GENERAL MEETING.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

The Reports of the Council and Officers for the past year were received and adopted. The following is the list of Council and Officers elected for the ensuing year:—*President*: A. E. Tonge, F.E.S.; *Vice-Presidents*: W. J. Kaye, F.E.S., and B. H. Smith, B.A., F.E.S.; *Treasurer*: T. W. Hall, F.E.S.; *Librarian*: A. W. Dods; *Curator*: W. West (Greenwich); *Hon. Secretaries*: Stanley Edwards, F.L.S., F.Z.S., F.E.S., and H. J. Turner, F.E.S.; *Council*:

C. W. Colthrup, T. W. Cowham, A. E. Gibbs, F.L.S., F.E.S., R. A. R. Priske, F.E.S., A. Russell, F.E.S., A. Sich, F.E.S., and E. Step, F.L.S. Mr. W. J. Kaye read the Annual Address. Votes of Thanks were passed to the Treasurer, Secretaries, and other officers.

ORDINARY MEETING.—MR. A. E. TONGE, F.E.S., President, took the Chair.

Messrs. A. C. Morris, of Upper Norwood, and Mr. F. W. Frohawk, of Wallington, were elected Members.

Mr. Edwards exhibited the so-called "silver fish" *Lepisma saccharina*. Mr. Main, a narcissus bulb, sent him by Mr. Winkworth, which had been attacked by the larva of the Dipteron, *Merodon equestris*, which was often extremely injurious in nurseries. Mr. Adkin, a *Tinea pallescentella* taken on Christmas Day, apparently just emerged. Mr. Moore, a number of butterflies from the interior of Borneo, including *Papilio evemon*, var. *P. itamputi*, *Terias gradiens*, *Hestia logani*, var. *virgo*, *Danisepa lowii*, and *Terias tilaha*. They were sent home to him packed in fragments of the flannel shirt of his friend who collected them, a successful method of combating the excessive superabundance of moisture in the atmosphere of the locality.

Thursday, February 8th, 1912.—MR. A. E. TONGE, F.E.S., President, in the Chair.

Mr. R. Adkin exhibited an aberration of *Pyrameis atalanta* with a flesh-coloured band on the forewing. Mr. Newman, a series of *Ephyra annulata*, var. *obsoleta*, in which the discoidal rings on the forewings of the type are absent. Messrs. Mitford, Edwards, Coxhead, and West (Ashtead) exhibited slides under the microscope.

February 22nd.—The President in the Chair.

Mr. Andrews exhibited a number of species of the *Trypetidæ* family of the *Diptera*, all from near Milford Haven. Mr. Turner, a dwarf example of *Colias edusa* from Villeneuve, measuring 32 mm. in expanse. Mr. Sheldon, the *Brenthids* he took last year in Lapland, *B. frigga*, *B. freija*, *B. polaris*, &c., and gave full notes on their characteristics and habits. Lantern slides were exhibited by Messrs. West (Ashtead), Dennis, Tonge, and Main.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, January 17th, 1912.—ANNUAL MEETING. The Rev. F. D. MORICE, M.A., President, in the Chair.

Mr. R. Wylie Lloyd, one of the Auditors, read the Treasurer's Balance Sheet, showing a balance in favour of the Society of £32 10s. 11d. On the proposal of Mr. O. E. Janson, seconded by Mr. W. J. Lucas, it was adopted unanimously.

The Report of the Council was then read by the Rev. George Wheeler, one of the Secretaries, and on the proposal of Mr. Claud Morley, seconded by Mr. Stanley Edwards, was adopted unanimously.

No other nominations having been received by the Secretaries, the President declared the following to be duly elected:—President, the Rev. F. D. Morice, M.A.; Treasurer, Albert Hugh Jones; Secretaries, Commander J. J. Walker, M.A., R.N., F.L.S., and the Rev. George Wheeler, M.A., F.Z.S.; Librarian, George Charles Champion, A.L.S., F.Z.S.; other members of the Council:

Robert Adkin, George T. Bethune-Baker, F.L.S., F.Z.S., Malcolm Burr, D.Sc., F.L.S., F.Z.S., Horace St. J. K. Donisthorpe, F.Z.S., John Hartley Durrant, Stanley' Edwards, F.L.S., F.Z.S., A. E. Gibbs, F.L.S., F.R.H.S., W. E. Sharp, Alfred Sich, J. R. le B. Tomlin, M.A., Henry Jerome Turner, Colbran J. Wainwright.

The Rev. F. D. Morice, the President, then delivered an Address on "The Saws (so-called) of the Saw-flies," at the close of which Dr. F. A. Dixey proposed, and Prof. W. Bateson seconded a vote, authorizing the publication of the Address, and thanking the President for the same, and for the series of seven plates which he had presented to illustrate it, and also for his services during the past session. This was carried unanimously, and the President replied with a few words of thanks.

A vote of thanks to the Officers for their services during the past year was then proposed by Mr. C. O. Waterhouse, in reply to which Mr. A. H. Jones and the Rev. G. Wheeler, the only two Officers then present, returned thanks.

Wednesday, February 7th, 1912.—The President in the Chair.

The President announced that he had nominated as Vice-Presidents for the present session Mr. A. H. Jones, Dr. Malcolm Burr, and Mr. J. H. Durrant.

Mr. W. E. Sharp exhibited specimens of *Carpophilus 6-pustulatus*, F., and *C. obsoletus*, Er., taken under bark of beech trees near Doncaster in October, 1911; the former having been recorded from the same locality only on a few occasions during recent years, and the latter never having been known to occur under natural conditions in England previously. Mr. Champion called attention to a paper by Mr. H. C. Bryant, recently published in an ornithological periodical, the "Condor," for November, 1911, entitled "The relation of birds to an insect outbreak in northern California during the spring and summer of 1911." The data collected showed of what value birds may be in the checking of an insect outbreak rather than their value in the prevention of such an outbreak. Prof. Poulton exhibited a large but not quite complete series of the members of the important combination of the Geometrid moths of the genus *Aletis*, and their mimics from the neighbourhood of Entebbe, collected, between May 23, 1909, and September 14, 1910, by Mr. C. A. Wiggins, D.P.M.O. of the Uganda Protectorate. Also part of an all-*anthesdon* family recently bred by Mr. Lamborn at Oni Camp, seventy miles east of Lagos, from an *anthesdon* female parent, and part of an all-*dubius* family also bred from an *anthesdon* female. The facts indicate that in the first family a recessive female had paired with a recessive male, in the second that a recessive female had paired with a dominant male. There can be little doubt that the pattern of *anthesdon* conforms more closely to that of the genus than the pattern of *dubius*, and that the dominant form is therefore the more recent development. Prof. Poulton read a note from Oni Camp, Lagos, showing that butterflies may be a natural food of monkeys. He also drew attention to the following observation recently made by Mr. Lamborn at Oni:—"On December 27 I saw a male *Glutophrissa saba* courting a female. She was resting on a leaf with wings expanded. Her abdomen was raised to an angle of rather more than 45° to the thorax, and two little tufts very similar to those possessed by male *Danainæ* protruded from the anal extremity."

Dr. Malcolm Cameron exhibited a new species of *Vesperus* from Lagos, Portugal, a description of which appears in the March number of the Ent. Mo. Mag. as *V. reitteri*, and for comparison a specimen of *V. bolivari*, Rtrr. Mr. E. A. Cockayne, the following specimens of the genus *Oporabia*: *O. christyi* from Ireland and Scotland, hybrid *O. christyi* ♂ × *O. dilutata* ♀, and *O. dilutata* ♂ × *O. christyi* ♀; *O. dilutata* from Scotland and Epping Forest, hybrid *O. dilutata* ♂ × *O. autumnaria* ♀, and larva; *O. autumnaria*, hybrid *O. autumnaria* ♂ × *O. filigrammaria* ♀, and *O. filigrammaria* ♂ × *O. autumnaria* ♀; *O. filigrammaria* from Yorkshire and Scotland.

The following papers were read:—"On some hitherto imperfectly known South African *Lepidoptera*," by Roland Trimen, M.A., F.R.S. "On the Comparative Anatomy of the Genital tube in ♂ *Coleoptera*," by D. Sharp, M.A., F.R.S., and F. Muir, F.E.S. "Descriptions of New Species of *Lepidoptera-Heterocera* from South-east Brazil," by F. Dukinfield Jones, F.Z.S., F.E.S. "The Effect of Oil of Citronella on two species of *Dacus*," by F. M. Howlett, B.A., F.E.S. "On the Genera *Liothrips* and *Hoodia*," by Dr. H. Karny, of Elbogen, Austria; translated by E. A. Elliott, F.E.S., and communicated by R. S. Bagnall, F.L.S. "On the Early Stages of *Albulina pheretes*, a myrmecophilous Plebeiid butterfly," by T. A. Chapman, F.Z.S. "The food-plant of *Callophrys avis*," by T. A. Chapman, F.Z.S. "An experiment on the development of the male appendages in *Lepidoptera*," by T. A. Chapman, F.Z.S. "The Study of Mimicry (Batesian and Müllerian) by Temperature Experiments on two Tropical Butterflies," by Lient.-Col. N. Manders, R.A.M.C., F.Z.S., F.E.S. A long and important discussion arose on many points in connection with the last paper, in which several Fellows took part.—G. WHEELER, *Hon. Secretary*.

NOTES ON BRITISH PHORA (CORRECTIONS AND ADDITIONS).

BY JOHN H. WOOD, M.B.

(Continued from Vol. xlvii, p. 249).

(PLATE V).

GROUP I OF BECKER.

Since Becker wrote, his Group I has been conveniently divided into two genera, based mainly on the condition of the second thick vein, the term *Phora* being restricted to the species in which the vein is forked, and that of *Hypocera*, Lioy, given to those in which it is unforked.

Phora gracilis. This was described from the female only. Since then I have on several occasions found the male on the trunks of beech trees, paired with the female. It is markedly smaller than its partner and barely exceeds 1 mm. in measurement, but needs no separate description. The hypopygium is very similar to that of *unispinosa*, and consists of a very long and narrow flap on each side and a small papilla-like anal organ.

P. bergenstammi, Mik, and *domestica*, Wood. In the January number of "The Annals of Scottish Natural History" for 1910, Mr. Malloch has shown that these two insects are the sexes of one and the same species, on the strength of a mated pair taken by Mr. Jenkinson at Cambridge. Of this pair the female has four dorso-central bristles and the male only two, which was the character that led me to treat them as distinct species. All the so-called *domestica* I have taken have been males, and have had but one pair of these bristles, whilst my only *bergenstammi* is a female and has two pairs. This female was swept at Stoke Wood; the males, some 20 in number, have invariably been boxed off the window of the house; and, strange to say, frequent sweeping outside in the garden has been an utter failure, neither male nor female having come to hand by this means.

Perhaps one ought not to be greatly surprised at this difference in the chætotaxy of the sexes. A very similar condition of things occurs in more than one of the species with four bristles to the scutellum in the genus *Aphiochæta*, Brues (the Group II of Becker). For whilst in the female all four bristles are strong and well developed, in the male the anterior pair are weak, and may even be little better than mere hairs; the stronger armature being here as in the other case in favour of the female.

Hypocera irregularis, sp. n. Closely allied to *femorata*, Mg., but differing in several important particulars. Described from a single specimen:—

♂. A deep black insect with nearly colourless wings: Thorax somewhat shining; frons black with a moderate gloss, nearly $\frac{1}{2}$ broader than long, the bristles strong (the middle row straight, the lower slightly curved forwards); palpi black and of ordinary form and armature; wings (fig. 1) faintly tinged

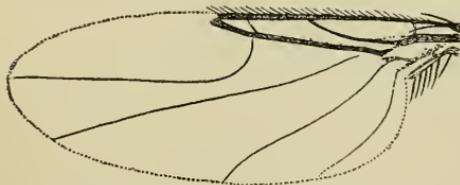


Fig. 1. *Hypocera irregularis*, ♂ $\times 18$.

with yellowish brown, costa to middle of wing, fringe short, 2nd thick vein forked, furnished as far as the fork with numerous small and delicate bristles or hairs as in *femorata* and beyond that gradually dilated, inner branch of fork extremely slender, threadlike and finer even than one of the thin veins, 1 equal to 2 + 3, 1st thin vein deeply curved at its original point from the fork; legs stout and black, tarsi and forelegs more yellowish, fore tarsi stout, tibial spines strong, one on the front tibiæ, two close together in upper third of middle pair, and two on the outer or anterior side of the hind pair, namely, one at about the basal third and the other close to the apex; abdomen quite dull, 2nd segment nearly twice as long as the 3rd, the 6th barely longer than the 5th, hypopygium much as in *femorata*, and the anal organ not prolonged externally as in that species. $2\frac{1}{2}$ mm.

The single example was swept from under a group of spruce firs in Stoke Wood, on the 3rd of October, 1910. The chief points differentiating it from *femorata* are the absence of the apical spine on the middle tibiæ and also of a tiny apical one on the front tibiæ, present in *femorata*; the dull abdomen (in *femorata* it is distinctly shining, especially behind); the broader frons; shorter 1st costal division and the forking of the 2nd thick vein. This inner branch, however, is so fine and threadlike that it may only be an individual variation, but whether it be so or not, it is at any rate hard on the way to extinction, and its presence in this emasculated condition need not, I think, preclude our placing the insect in *Hypocera* rather than *Phora*. Moreover, not only does its general appearance remind one of *femorata*, but what is also of even greater importance, the type of hypopygium is the same in both species. I have recently been looking more critically into the external characters of the male genitalia in *Phora* and *Hypocera* and have found so much that is interesting, that I have added at the end of these notes a few remarks on the subject, illustrated by some excellent figures, for which I am indebted to my good friend Mr. Collin, who has done so much in many ways to help me.

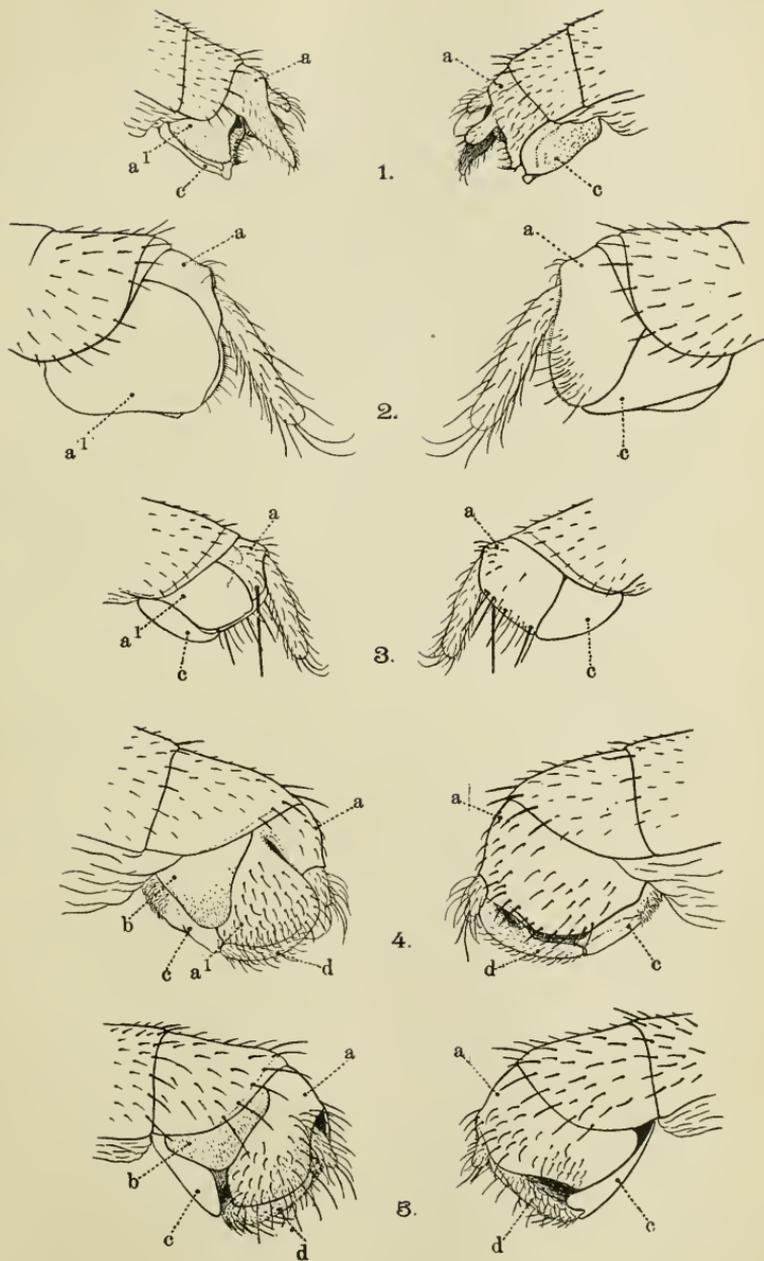
H. femorata. Among my five representatives of this species (all males) is one specimen that differs from the others in being distinctly larger, and in having a 2nd large preapical bristle on the hind tibiæ, placed at the end of the seam, besides several smaller bristles, in addition to the usual spurs, on the inner or posterior aspect of the joint. Mr. Collin tells me that he took a female of this variety, if variety it be, at Barton Mills (Suffolk), and that there are two males of it in Kowarz's collection.

GROUP II OF BECKER.

This is now known as *Aphiochaeta*, Brues. It still remains a huge and unwieldy mass, which, after putting on one side Verrall's *fornicatum*, does not seem to lend itself to any natural subdivision. The four species, *pieta*, *meigeni*, *giraudi*, and *fasciata*, with two rows of bristles on the tibiæ and other characters in common, such as the narrow or very narrow frons, and the position of the bristles in the lower frontal row, &c., might well be placed in a separate genus, but this does little to relieve the situation.

SECTION B (SCUTELLUM WITH FOUR BRISTLES).

By some oversight the general notes on the eight species from *rufa* to *rata* were never printed and the omission was not discovered at the time.



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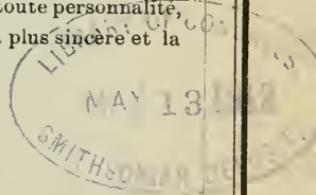
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The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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The Proceedings of the First Congress are in the press, and will be published shortly.

All communications and enquiries should be addressed to the General Secretary of the Executive Committee,

MALCOLM BURR, c/o Entomological Society of London,
11, Chandos Street, Cavendish Square, London, W.

Rufa. This is a scarce species. It was described from three females taken in my home district, in May and June of different years. Mr. Malloch has also sent it me from Scotland, but he too had only taken the female, and the male still remains to be discovered.

Projecta, Beck. A widely distributed and fairly common species. On one occasion recently Mr. Collin sent me a male *Aphiochæta*, which seemed in no way to differ from a pale *projecta*, except that it had the palpi of a female instead of the peculiar ones which give the insect its name. I was inclined to look upon it as an aberrant male, with the palpi of the female. The subsequent capture by myself of three or four others exactly similar made such an explanation most improbable, and led to the search for some other character that would confirm it as a good species. This was found in the position of the supra-antennal bristles, apparently a small and almost trivial character in itself, yet one, I feel sure, of great importance, on account of it being uninfluenced by sex and subject, in my experience, to little or no variation. In the new species, for which I propose the name *simulans*, the upper pair of bristles are in exact alignment with the inner bristles of the middle frontal row, and have the inner pair, of good size, directly underneath them, whilst in *projecta* these same bristles are closely approximated, that is, well inside that alignment, and the under ones are relatively smaller. Armed with this knowledge, I revised my series of *projecta*, picking out the females with widely separated bristles. This done, I found that all the selected females (three in number) agreed in having a yellow thorax and a brown or reddish-brown abdomen (*simulans*), whereas in those left behind (true *projecta*) the thorax was dark with only a tinge of red, and the abdomen black. It seems, therefore, very questionable whether the female *projecta* ever has a yellow variety as ascribed to it in the text.

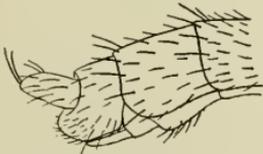


Fig. 2. *A. projecta*, ♂ × 40.

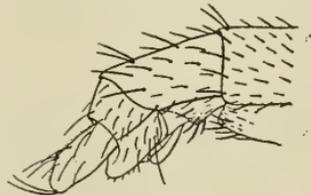


Fig. 3. *A. simulans*, ♂ × 40.

Simulans, n. sp., ♂ ♀. Closely allied to *projecta*, but differing in the following points:—

Thorax red (♂), yellow (♀); abdomen brown, more yellowish behind (♂), brown or reddish brown (♀); antennæ brown (♂), red (♀); the clear yellow

palpi alike in both sexes, rather large and armed with numerous but not very long bristles; upper supra-antennal bristles in alignment with inner bristles of middle frontal row, under ones of about half the size directly below them; anal organ and hypopygium very similar in both species, but the latter in *simulans* produced behind into a sort of prow (fig. 3) as is well shown in Mr. Collin's drawings.

Dubitalis. A very scarce species which was described from a single specimen, a male, taken in Stoke Wood on the 2nd of June, 1904. On the 8th of June, 1910, I again took another male, this time at Longtown, under the Black Mountains. I have also seen a female which was captured by Mr. Collin at Stokenchurch (Bucks) on the 6th of July, 1909, which agreed in all points with the males, except that the halteres were dusky yellow instead of yellow. On looking, however, carefully at the males, a dusky tint can be seen round these organs.

Cubitalis, Beck. As has already been shown, the earlier name, *humeralis*, Zett., must take the place of *cubitalis*, Beck., for Zetterstedt, as shown in his Dipt. Scand., XIV, p. 6474, was acquainted with both sexes and had correctly recognised their relationship. I described it from Scotch specimens, given me by Mr. Malloch, who met with it at Bonhill in some numbers, settled, if I remember right, on the leaves of aspen.

Ruficornis. A widely distributed, but probably not common species, the females of *errata*, sp. n. = *cilipes*, Wood, as will be shown later on, often passing for it in our collections.

Emarginata. Another scarce species, represented in my collection by three males and one female. The localities and dates for the males are: Stoke Wood, 18/8/06; Mainswood, 20/5/10, 25/5/10; for the female, Stoke Wood, 13/9/07. The measurement of $1\frac{1}{4}$ mm. in the text is full large, 1 mm. would be nearer the mark, and it shares with *paludosa* the distinction of being considerably the smallest species in Section B.

Albicans and *rata*. They are closely allied but undoubtedly distinct, and readily to be distinguished by the characters given. *Albicans* is a spring species and never, I think, to be taken later than May. It is moderately common here, but I have not seen it from elsewhere. *Rata*, on the other hand, begins to make its appearance as the other is going over, and thence onward to the end of the autumn, is one of the commonest and most widely distributed of the species with four scutellar bristles.

Breviseta, n. sp.

♂. Thorax and abdomen black; frons broad, nearly $\frac{3}{4}$ as wide again as long, dull and black; supra-antennal bristles small and approximated, the under pair half the size of the upper; antennæ large, as in *albicans*; arista short and only a little longer than the length of the frons measured up the middle; palpi yellow and with the ordinary ciliation; wings clear, costa not quite reaching wing middle, fringe only moderately long, 1 equal to 2 + 3, angle at fork rather large; legs brownish black, hind femora with moderately long hairs beneath, hind tibiæ stout, well arched and with strong bristles; hypopygium small and unarmed; anal organ small and yellowish. Length $1\frac{3}{4}$ mm.

By the table it runs down to the neighbourhood of *albicans* and *rata*, having bare pleura, yellow halteres, and bristly hind tibiæ. From both it may be known by the complete absence of any pale dusting on thorax or abdomen; by the large and equal scutellar bristles (in the other two the anterior bristle in the male is never more than half the size of the posterior one, and often considerably less); by the angle made by the forking of the 2nd thick vein being fairly large instead of acute; by the dark, almost black, legs; and lastly by the short arista (in *rata* the arista is full long, but in *albicans*, with its large antennæ, it is only moderately long, yet distinctly longer than in *breviseta*).

From *emarginata*, which also has a short arista, the form of the anal organ is alone sufficient to distinguish it. In *breviseta* the organ is of the usual cylindrical form, but in *emarginata* it is remarkably flattened, laterally, so that it is very narrow from side to side and very deep from above downwards. So unique is the shape that it might well be supposed due to some extraneous cause, were it not that there are three specimens before me, all with the part precisely similar. Further, the legs are much darker (black) in *breviseta*, and the tibial cilia stronger; the arista also is longer, being somewhat longer than the frons, whereas in *emarginata* it is only as long as the frons, besides some other small differences.

A single male taken at Mainswood, 29/6/11.

Paludosa. At the time of describing this species I had to confess that I did not know the female. This was the more remarkable, as I could at any time sweep up the male in suitable places, and I must have examined scores only to find them invariably males. Eventually my perseverance was rewarded, and on the 3rd of September, 1910, I did at length sweep up a female at Devereux Pool. It agrees so well with the male that no special remarks are needed.

(To be continued.)

CLAVIGER LONGICORNIS, MÜLL., A BRITISH INSECT.

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

It is with much pleasure that I am able to announce the addition to our list of indigenous *Coleoptera* of this highly interesting species, which has been the object of assiduous search by those Entomologists especially interested in our Myrmecophilous beetles, ever since the late Mr. E. W. Janson (*Ent. Ann.*, 1857, p. 94) suggested the probability of its occurrence in this country.

On May 31st, 1906, I accompanied the Entomological section of the Ashmolean Natural History Society on a field-meeting at Bletchington Station, Oxon, some seven or eight miles north of Oxford, and we spent the afternoon in rambling about and collecting in the old quarries on both sides of the river Cherwell. Among the insects met with were five examples of a *Claviger*, in nests of a small black ant, which is noted in the Society's report for 1906 (p. 45) as *Lasius niger*, L., but which I have every reason to believe was really *Formica fusca*, L. These nests were all under flat pieces of oolitic limestone of moderate size, none of them exceeding, as far as my memory serves me, a foot square and seven or eight pounds in weight.

The subsequent history of these specimens is somewhat curious. They were duly mounted and put away in a store-box "until wanted," and I most unaccountably overlooked their obvious distinctions from *C. testaceus*, Preysl., which is widely, though sparingly, distributed in the Oxford district. A few weeks ago, when I was "assembling" my Pselaphid material for re-arrangement, these specimens came to light, when I at once saw how different they were from our well-known form of the genus; and with the aid of Mr. G. C. Champion and Mr. E. A. Waterhouse at the Natural History Museum, had no difficulty in identifying them as the long-sought *C. longicornis*, Müll.

The original diagnosis of the species by P. W. J. Müller (*Germar, Magazin der Entomologie*, Band 3, p. 85, Tab. II, ff. 16, 16a) (1818) is as follows:—

"*Claviger longicornis* mihi: cinnamomeus, antennis clavatis: articulis intermediis elongatis, sub-cylindricis, abdomine ovato-subrotundo, basi brevissime bisulcato, segmentis dorsalibus obsolete (Fig. 16) long. 1-1 $\frac{1}{4}$ lin. In den Nestern der *Formica flava* Fl., um Odenbach selten."

Superficially *C. longicornis* differs from *C. testaceus* in its decidedly larger size and broader build, especially behind, and markedly in the

much narrower head and more elongate antennæ, these organs being relatively long and slender, with the terminal joint forming an abrupt club.

Mr. Donisthorpe kindly informs me that the usual host of *C. longicornis* on the Continent is *Lasius umbratus*, Nyl., and that *teste* Schmitz (Zeitschr. für wissenschaft-Insektenbiologie, 1908, Heft III, pp. 84-87) it is found most freely in April in nests of this ant under large and deeply embedded stones. I may add that a recent visit to the place of capture of the insect, under not very favourable conditions, failed to produce further specimens.

It is a singular coincidence that both our species of *Claviger* have been first found quite close to Oxford, as the original British specimen of *C. testaceus*, now in the Oxford University Museum, was taken by the late Professor J. O. Westwood in Wychwood Forest, Oxon, on August 30th, 1838 (*cf.* Shipp. Ent Mo. Mag., Vol. XXIX, p. 144).

Aorangi, Lonsdale Road,
Summertown, Oxford:
April 13th, 1912.

THE NAMES USED FOR OUR BRITISH CERAMBYCIDÆ IN THE
"COLEOPTERORUM CATALOGUS."

BY PROF. T. HUDSON BEARE, B.Sc., F.R.S.E., F.E.S.

The 39th part of this catalogue, just issued, is a bulky volume extending to 574 pages; it deals with the family *Cerambycidae*, sub-family *Cerambycinae*, and is the work of Dr. Chas. Aurivillius. As many important changes are made in synonymy, and as almost all of these changes had already been adopted in the last European Catalogue of Heyden, Reitter and Weise (1906), it seems desirable to call the attention of British Coleopterists to these alterations.

M. Aurivillius divides the sub-family into 94 tribes, of which 10 are represented in our fauna; the following is a summary of the changes made in generic or specific names:

(1). *Criocephalus polonicus*, Mots., is called *C. fesus*, Muls.: this is in disagreement from the European Catalogue.

(2). The two reputed British species of *Cerambyx* become now:
C. cerdo, L. = *heros*, Scop.
C. scopoli, Füssl. = *cerdo*, Scop.

(3). Two of our three species of *Rhagium* change names:
R. mordax, de G. = our *inquisitor*.
R. inquisitor, L. = our *indagator*.

(4). Our well known *Toxotus meridianus* becomes *Stenocorus* (F.) *meridianus*, L.

(5). The genus *Pachyta* disappears from our Catalogue; one species, *collaris*, becomes *Acmæops* (Lec.) *collaris*, L., the other two become:

Judolia (Muls.) *cerambyciformis*, Schrank.

,, ,, *sexmaculata*, L.

(6). In the genus *Grammoptera* the following changes are made: *præusta*, F., becomes *ustulata*, Schall., and *analis* becomes *variegata*, Germ.; while the species *tabacicolor*, de G., is placed in the genus *Alosterna*, Muls.

(7). The genus *Anoplodera* is merged in *Leptura*, L., as a sub-genus, and the species *livida*, F., of the genus *Leptura* is placed in a sub-genus *Vadonia*, Muls.

(8). In the genus *Strangalia*, *revestita*, L., is placed in a sub-genus *Sphenalia*, Daniel; the species *armata*, Preysl., becomes *maculata*, Poda; and lastly, *attennata*, L., is placed in a sub-genus *Strangalina*, Auriv.

(9). The genus *Callidium* retains now only one of our species, *violaceum*, L.; the other three species, *alni*, L., *lividum*, Rossi, and *testaceum*, L. = *variable* of our catalogues, are placed in the genus *Phymatodes*, L.

(10). The three species now known to us as *Clytus*, are placed under three distinct genera, namely:

Clytus (Laich.) *arietis*, L.

Plagionotus (Muls.) *arcuatus*, L.

Anaglyptus (Muls.) *mysticus*, L.

Most of these new genera were referred to by Canon Fowler in Vol. IV. of his "British Coleoptera," but at that time they were usually treated as sub-genera only. They are now considered by most authorities to be distinct genera, and it seems desirable that we should in this country come into line with our continental brethren.

Edinburgh:

April 6th, 1912.

DESCRIPTION OF A NEW SPECIES OF *SCOPEUS* FROM THE RED SEA.

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

SCOPEUS SHARPI, n. sp.

Size and build of *S. debilis*, Hochh., but distinct by the much coarser puncturation of the head and thorax, and by the ♂ characters. Entirely reddish-testaceous, rather shining, elytra sometimes a little infusate. Head shaped as in *S. debilis*, rather narrow, longer than broad, not widened behind, as broad as the elytra; posterior angles broadly rounded; colour reddish, puncturation fine and close, much as in *S. cognatus*, Rey; pubescence fine and close.

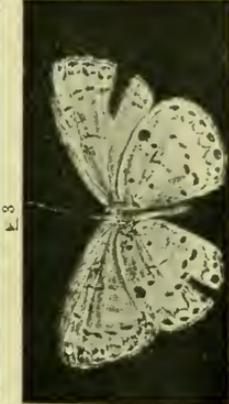
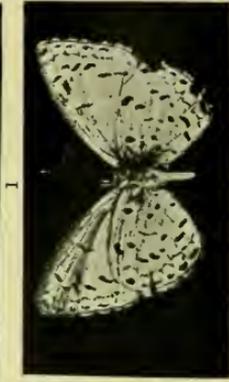


Photo A. E. Tonge.

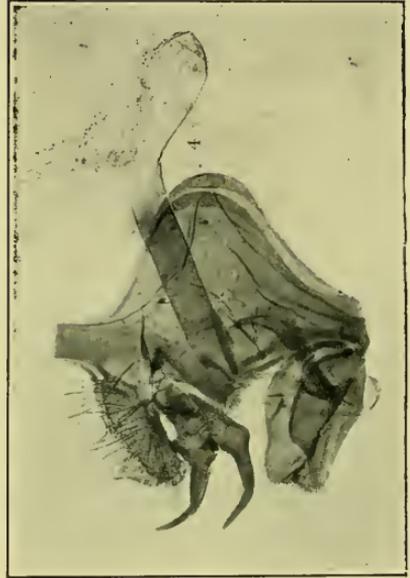
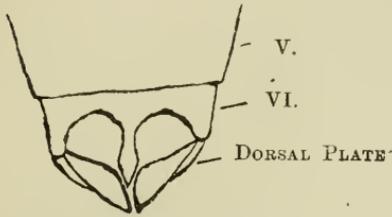


Photo F. N. Clark.



NOTARTHINUS BOULTI.

Antennæ testaceous; 1st joint about as long as 2nd and 3rd together, these latter longer than broad and of equal length; 4th slightly shorter than 3rd, a little longer than broad; 5th to 10th quadrate; 11th a little longer than 10th, abruptly acuminate. Thorax testaceous, much narrower than head and elytra, gradually narrowed behind; anterior angles effaced; posterior angles rounded; disc with two impressions at the base, separated by a smooth median space, which extends to anterior margin; puncturation coarser and much less close than that of the head; asperate, surface between the punctures smooth and shining; pubescence slight. Elytra slightly longer than the



Rough sketch of terminal ventral segment of
Scoparius sharpi, ♂.

thorax, testaceous, sometimes a little infusate; puncturation much as in *S. gracilis*, Sperr, evanescent towards apex and posterior angles; finely but not densely pubescent. Abdomen testaceous, very finely and closely punctured and pubescent, distinctly widened behind. Legs testaceous. Length $2\frac{1}{2}$ -3 mm. In the ♂ the posterior margin of the 6th ventral segment presents a large, deep, semi-circular incision on either side. This emargination commences on each side near the outer angle, and is of such size that it is only separated from its fellow by a narrow median lamina, which is produced beyond the level of the external angles, and dilated into a spear-shaped termination.

Taken near Massowah.

Types in my collection. I have pleasure in dedicating this species to Dr. David Sharp.

March 30th, 1912.

**NOTARTHINUS BOULTI: A NEW LYCÆNOPSIS BUTTERFLY
FROM BORNEO.**

BY T. A. CHAPMAN, M.D.

PLATE VI.

This butterfly is sent by Mr. J. C. Moulton from Sarawak. The specimens were taken on Mount Klingkang, and are to be placed in the British Museum collection at South Kensington.

NOTARTHINUS BOULTI, n. sp.

♂. Upperside black, with white cilia and a patch of iridescent blue occupying about a fourth of fore wing; the lower basal portion invades lower margin of cell, but hardly occupies lower half of it; it extends a little beyond cell, and below vein 4 a little further still; its outer margin below this parallel with hind margin at rather more than two-thirds of wing from base; the blue on hind wing is more suffused, rather as a light wash over the black than as a

patch of colour as on the fore wing; it reaches within two-thirds of length of wing from base, gradually fading out. The underside markings show through hind wings, not apparently due to wasting of specimen. Underside white, with the usual *Lycænopisid* markings; a fine black marginal line, inside white cilia (with dark points at end of veins); another line not so dark, and curved a little between veins, more so on hind wings, runs parallel with outer line about 1 mm. from it on fore wing; rather more on hind wing. Between these two lines a spot in each space, elongated on fore wing, more rounded and darker, almost black, on hind wings. A discal line on each wing. The spots in the usual post discal line are 6 on fore wing, elongated, 1st (from costa), 5th, and 6th in line; 2, 3, and 4 a little further out, and in echelon. The hind wing has 4 basal spots: 1, 3, 4 in line, 2 further out. Of the post discal line, 2 is under 1; 3, 4, and 5 nearer margin, and 4 oblique; 6 further in; 7 in line with 3, 4, 5, dark and elongated; 8 (or 8 and 9) smaller nearer base, in line with 6.

♀. Larger than ♂, hind margin a little more rounded; blue patch on fore wing has its hind margin sloping basally, so as to meet hind margin at middle instead of two-thirds as in ♂. Underside has post discal row of spots beneath fore wing nearly in line, and the antemarginal line is more regularly arched in each space. One ♂ specimen is in this respect much more like the ♀ than the other. The head and body are dark above and white below, like wings; antennæ black (?) narrowly ringed-white at joints.

Exp. ♂ 26 mm. (and 21 mm.); ♀ 27 mm.

2 ♂ Mount Klingkang, 2,500 ft., Oct., 1911. 1 ♀ Puduknear, Limbang, 5.6.1911, Sarawak—Moulton. Specimens now in B.M.

I have named them after Mr. F. F. Boulton, resident of the district where the insect is found.

The male appendages approach nearest to those of (*Lycænopisid*) *Notarthrinus vardhana*, and differ from those of *Lycænopisid* in possessing highly-developed hook (or spines) on the dorsal armature. I place these specimens, therefore, provisionally in the genus *Notarthrinus*, but believe they will probably, when more is known of them, be found to be entitled to a separate genus. They deviate from *Lycænopisid* also in the very triangular and pointed fore wings, a feature, however, in which they are approached by Bornean species of *Lycænopisid*, differing therein from more typical Indian forms.

They are accompanied by both sexes of *Lycænopisid planta* and *L. shelfordi* from the same localities and the close resemblance of the underside markings of the three species is notable, unrelated (comparatively) as they are, and the sexual dimorphism is also closely parallel.

The figures will make these descriptions more intelligible. The photographs of the imagines, after the manner of photographs, un-

mercifully expose all the defects of the specimens. The two sides of what must probably be called the uncus are separated by an unusually long narrow bridge.

EXPLANATION OF PLATE VI.

- Fig. 1. *Notarthrinus boulti* ♂ type, upper and undersides × $1\frac{1}{3}$
- 2. " " ♂ smaller specimen- - - × $1\frac{1}{3}$
- 3. " " ♀ - - - - - × $1\frac{1}{3}$
- 4. " " Appendages of Fig. 1 specimen × 45
- 5. " " " " 2 " 45

Figs. 1, 2, 3, photo by A. E. Tonge : 4 and 5, by F. N. Clark.

A NEW SPECIES OF *ARIXENIA* (*DERMAPTERA*).

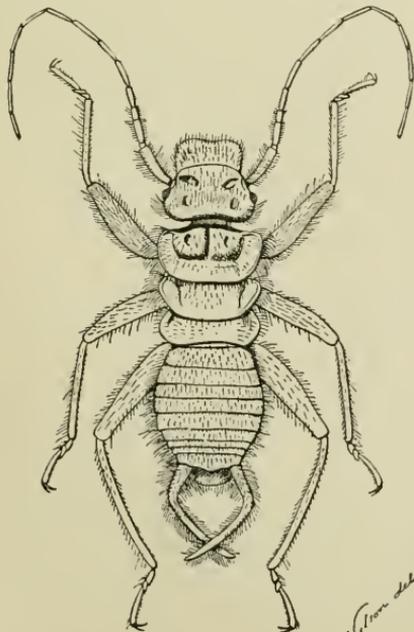
BY MALCOLM BURR, D.SC., F.L.S., &c.

Dr. Jordan, in the *Novitates Zoologicæ*, Vol. XVI, December, 1909, gave an account of an anomalous earwig apparently parasitic on a flying-fox, for which he erected a new genus *Arixenia*, with a special family, the *Arixeniidæ*, with a single species, *A. esau*.

I have recently received a considerable number of a similar creature from Mr. Edward Jacobson, of the Hague, who found them in a cavern in Java.

This species differs in important particulars from *A. esau*, Jordan, and it is necessary to describe it as new.

ARIXENIA JACOBSONI, sp. n.



Colour yellow brown: agrees in external structure generally with *A. esau*, but differs in the strongly transverse pronotum, the anterior and posterior margins of which are parallel: the mesonotum is truncate posteriorly, and not convex as in *A. esau*, and the metanotum more concave. Forceps slender, tapering, and remote, strongly bowed in the ♂, nearly straight in the ♀.

	♂	♀
Length of body -	18.5 mm.	23.5 mm.
„ of forceps	3.5 mm.	4 mm.

JAVA: Banjoumas Residency, Gouwa Lawa cave near the sea-shore at Babakan. (Numerous specimens: Edw. Jacobson.)

The Nomotype is in my collection.

A more detailed account of this curious creature is being prepared by Dr. Jordan and myself, which will eventually be published, with a more detailed description and account of its anatomy and morphology, and a discussion of its relations to the true earwigs.

I may add that Dr. Jordan informs me that the mandibles are provided with a tooth beyond the centre of the inner edge, differing from *A. esau*, and the upper lip is much longer.

It is especially noteworthy that in the abdomen of the female we find ten tergites fully developed, as in the male; this is a striking difference from the true earwigs, in the females of which, as is well known, the seventh and eighth segments are vestigial.

Castle Hill House, Dover:

March 25th, 1912.

THREE NEW SPECIES OF THE "ALBIMANA" GROUP OF THE
GENUS *HETERONEURA* (DIPTERA)

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

When Czerny revised the family *Heteroneuridæ* in 1903,* the only species possessing a strong pair of dorso-central bristles in front of the thoracic suture recognised by him was *albimana*, Meig.; there are, however, other undoubtedly distinct species belonging to this group, and having been fortunate enough to capture two of these species during the last few years in sufficient numbers to prove that the male genital characters upon which all the species are mainly founded are reliable specific distinctions, I venture now to publish the descriptions.

***Heteroneura caledonica*, n. sp. ♂ ♀.**

Resembling *H. albimana*, Mg., but with only two pairs of orbital bristles; vibrissæ much shorter; male hypopygium much larger, the lamellæ long and recurved at the tip (Fig. 1).

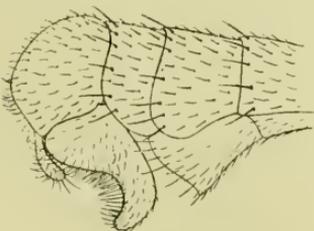


Fig. 1. *H. caledonica*, ♂ × 40.

The face, palpi, and antennæ are in no way darkened except the last named about the base of the arista, the arista somewhat shorter than in *albimana*, hind orbital bristle twice as long as the front one and about midway between it and the inner vertical bristle, decussate bristles midway between the upper and lower orbital bristles. The four posterior legs almost entirely pale, more extensively so

* Wien. Ent. Zeit., xxii, pp. 61-106, pls. 1-111.

than in *albimana*. Thorax of the female as extensively darkened as in the male or more so. The cloud at end of wing more extended than in *albimana*, reaching back half-way from tip of wing to end of subcostal vein.

I have seen specimens from Scotland only, and have examined nine males (two in the late Mr. Verrall's Collection, four in the British Museum, two in the Hope Museum, Oxford, and one in the Zoological Museum, Cambridge), and twenty-two females (four in the late Mr. Verrall's Collection, nine in the British Museum, two at Oxford, and seven at Cambridge). They were captured by Col. Yerbury and Mr. C. G. Lamb at Nethy Bridge (Inverness) in June, July, and August, and by Col. Yerbury at Golspie (Sutherland), in August.

Heteroneura gentilis, n. sp. ♂ ♀.

Resembling *caledonica* in possessing only two pairs of orbital bristles, and in colour of palpi and antennæ, in shortness of vibrissæ, and in thorax of female being as extensively darkened as in the male, but resembling *albimana* in the generally somewhat darkened face and more extensively darkened four posterior legs, differing from both in the male hypopygium (Fig. 2), which, though somewhat resembling that of *caledonica* in size has lamellæ of different shape, they are shorter, broader, and more flattened at the end, and not recurved at the tip. It requires considerable care to separate the females of this species and *caledonica*, but the wing cloud appears to be more restricted and the decussate bristles on frons placed nearer the hind orbital bristles than in *caledonica*.

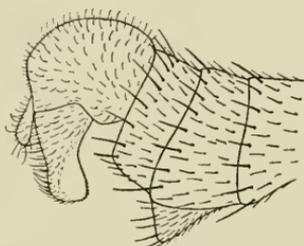


Fig. 2. *H. gentilis*, ♂ × 40.

I first recognised this species from specimens taken by the late Mr. Verrall in June, 1885, at Lyndhurst (Hampshire), but it was not until May, 1909, that I found it in numbers at Barton Mills (Suffolk), and in June, 1910, I could have taken any number in a wood near Chillesford (Suffolk). In addition to the above I have examined specimens from Devonshire, Hampshire, Herefordshire, and Glamorgan, taken by Col. Yerbury, and from Hertfordshire taken by the late Mr. A. Piffard.

Heteroneura verticalis, n. sp. ♂ ♀.

Remarkable for the absence of the postvertical bristles and the shape of the male genital lamellæ, otherwise much resembling the last two species, but the thorax of the female is not so extensively darkened, resembling in this respect the thorax of *albimana* ♀. The normal number of orbital bristles is two pairs, but I have seen specimens possessing a third pair. The male genital

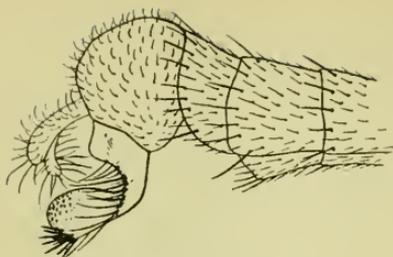


Fig. 3. *H. corticalis*, ♂ × 40.

lamellæ (Fig. 3) are long and much flattened, broad at the base then rapidly narrowing and again gradually broadening out to the rounded tip, where on the lower inner side they bear a cluster of black spines; the hind or lower margin is ciliate with long hairs.

I first doubtfully separated this species from its allies upon a female taken by the late Mr. Verrall at Dolgelly (Merioneth) in July, 1888, but further specimens taken by Col. Yerbury at Nairn in 1904, Mumbles and Bridgend (Glamorgan), in 1908, and Studland (Dorset), in 1909, removed my doubts. I have taken it myself at Stoke Wood (Herefordshire), and in some numbers in a wood near Chillesford (Suffolk), in 1910. There is a specimen in the British Museum taken by the late Mr. Piffard near Boxmoor (Herts) in 1893.

With regard to *albimana*, Meig. (which has a much smaller male hypopygium than any of the above, with very short rounded lamellæ), my own experience is that Loew's var. *obscurior* is rather more common than his var. *pallidior* or type form; these can hardly be seasonal forms for they occur together, and though there appears to be no external structural character in the genitalia by which they may be separated, there still remains the possibility that dissection may prove the so-called varietal characters to be of specific value.

Sussex Lodge, Newmarket :

March 21st, 1912.

HEMIPTERA IN CARMARTHENSHIRE.

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

Very little seems to be known about the Hemipterous fauna of Wales. There are a few scattered notices from some of the northern counties, such as Merioneth and Carnarvonshire, and also from Brecknockshire in the centre; but all these are most fragmentary. The south has fared rather better, through the efforts of the Rev. T. A. Marshall, in Pembrokeshire, and Mr. T. R. Billups and others, in Glamorganshire. During the last six years I have had several opportunities of collecting in Carmarthenshire, which lies between these two counties, and which, I believe, had previously been practically unworked by Hemipterists. The following list contains all the Carmarthenshire species I have in my collection, and if it is taken in

conjunction with the records from Pembrokeshire and Glamorganshire, we get for the south coast of Wales a total of 200 *Heteroptera* and 80 *Homoptera*, which is probably a fair proportion of the species that actually occur there.

The whole of the coast of Carmarthenshire consists of sandhills, which extend from Llanelly in the east to Ferryside, where they are interrupted by the estuary of the Towy; they are continued on the other side of the estuary, and run on uninterruptedly to Pendine, near the western boundary of the county, where cliffs form the coast line and so terminate them. This western division gives an unbroken stretch of sandhills for about six miles. Unfortunately, however, it is somewhat difficult of access, the nearest railway station being some eight or nine miles from Pendine. My collecting was done chiefly in the neighbourhood of the town of Carmarthen, and on the Burrows of Kidwelly, Ferryside, and Pendine. There is an interesting piece of bogland near Sarnan, on the Carmarthen side of the village, which yielded a few good species; but it is ground that needs wary working, as it is infested with adders, of which I saw, on one occasion, five sunning themselves together on one small hillock. Almost all the water-bugs were taken at Pondsideside, Carmarthen. This is really a tributary of the Towy, but in the neighbourhood of the town its course has been banked up, so that it now runs many feet above the level of the river. This was for the purpose of supplying water power to some tin-plate works which are now derelict. This part of the stream runs east and west, and therefore in its raised position it is exposed to the direct rays of the sun all day long. Possibly for this, or for some other reason, it is prolific in certain species of aquatic *Hemiptera*. My collecting was done almost entirely in the month of August and the first week in September.

The species marked (*) are recorded also from Glamorganshire, and those marked (+) from Pembrokeshire. Besides these, 52 other species of *Heteroptera* have been recorded from Glamorganshire, and 14 *Heteroptera* and 3 *Homoptera* from Pembrokeshire, which are not in my list.

HETEROPTERA.

PENTATOMIDÆ.

Thyreocoris scarabæoides, L.*: fairly common in 1906 amongst *Ononis*, which thickly covers a large part of the Pendine Burrows. *Dolycoris baccharum*, L.: Ferryside; larva in August amongst *Ononis*. This larva may be easily distinguished by its pilose surface. *Piezodorus lituratus*, F.: common on furze bushes in March and August. *Zicrona cærulea*, L.*: one specimen amongst long grass in the boggy ground near Sarnan.

COREIDÆ.

Pseudophlæus falleni, Schill.*†: common on the sandhills at Kidwelly and Pendine, chiefly under *Erodium*. The eggs of this species evidently hatch at intervals during the summer, for in August I have found recently disclosed imagines, together with larvæ in all stages of development. They are difficult to see amongst the sand, on which they often lie inactive, and the younger examples are very prettily and daintily coloured, often with various shades of pink upon an ochreous ground. *Stenocephalus agilis*, Scop.*†: I found a large number of larvæ under a tall species of *Euphorbia* (apparently *E. paralias*) that grows abundantly where the sandhills shade off into shingle at St. Ishmael's, near Ferryside. They ran about amongst the boulders, and were not on the plant; it is evidently the habit of the youngest to keep very close to the plant, but as they grow older they wander further afield. There was one adult with them, but whether this was her brood, and whether she was in any sense "looking after them," I could not determine. *Therapha hyoseyami*, L.†: abundant at Pendine, under *Erodium*, and on the flowers of *Senecio* at the beginning of September, 1907. I also found a few specimens on *Ononis* at Llanstephan and Ferryside, together with a nymph at the latter place. This may easily be recognised by its brownish colour and its hairy surface. The only representative of the brilliant red which makes the adult such a handsome insect, is a number of small scattered pinkish spots which are hardly noticeable except under a lens. *Corizus parumpunctatus*, Schill.: I have not found the typical form in the county, but on the sandhills at both Kidwelly and Pendine, a curious variety is abundant. It is less brightly coloured than the type and has a greyish tinge; the connexivum is generally more or less spotted, and there are certain small structural differences. It is found chiefly under *Erodium* and readily takes wing. *Chorosoma schillingi*, Schml.†: on *Psamma arenaria*, at Ferryside.

BERTYIDÆ.

Neides tipularius, L.†: this insect, usually of merely casual occurrence, I found commonly at Pendine amongst *Ononis*. The larvæ, which are green, were present as well as the imagines in August. The imago is very particular about the condition of the thickened terminal joint of the antennæ, frequently cleansing it by passing it between the front tarsi. This may perhaps be necessitated by the viscidness of the *Ononis* amongst which it lives. *Berytus signoreti*, Fieb.: Carmarthen. *Metacanthus elegans*, Curt.*†: abundant amongst *Ononis* at Kidwelly, Ferryside, and Pendine.

LYGÆIDÆ.

Nysius thymi, Wolff: Sandhills at Ferryside; also Careg Cenen Castle. *Cymus clavicolus*, Fall.*: Conwill. *Heterogaster urticæ*, F.*: on the sandhills, Kidwelly. I found one in a tuft of *Iris* in March, 1910. *Rhyparochromus prætextatus*, H.S.: Sandhills. *R. chiragra*, F.: in moss on the sandhills, Ferryside, in March. *Stygnocoris rusticus*, Fall.: Llanstephan. *S. pedestris*, Fall.: generally distributed. *S. fuliginosus*: Sandhills, Ferryside, March and August. *Trapezotus arenarius*, L.: on heathy ground near Sarnan. *Drymus sylvaticus*, F.: generally distributed. *D. brunneus*, Sahlb.: Ferryside, in March. *Notochilus contractus*, H.S.: Ferryside. *Scolopostethus affinis*, Schill.: Kidwelly. *S. thomsoni*, Reut.: generally distributed. *S. decoratus*, Hahn.: under *Calluna*, Conwill.

TINGITIDÆ.

Piesma capitata, Wolff†: Carmarthen. *Serenthia lata*, Fall.*: Pendine. *Acalypta parvula*, Fall.: in moss on Pendine sandhills. *Dictyonota tricornis*, Schr.: Carmarthen. *D. strichnocera*, Fieb.: on furze, Carmarthen. *Derephysia foliacea*, Fall.: Carmarthen; one specimen is much smaller than usual, and has the hairs of the antennæ and thoracic keels much shorter, and the second row of meshes of the raised sides of the elytra is almost unrepresented on one side, and reduced in size on the other. *Monanthia cardui*, L.: Carmarthen; not common.

GERRIDIDÆ.

Hydrometra stagnorum, L.: Carmarthen, March and August. *Velia currens*, F.: common on running water. During the two summers in which I was at Carmarthen, I found a large number of the winged forms in August at Pondsides. The peculiar conditions of this piece of water may perhaps have some influence in bringing about this abnormally large percentage of developed specimens. *Gerris najas*, De G.: exceedingly abundant at Pondsides, Carmarthen. *G. lacustris*, L.: common.

REDUVIIDÆ.

Coranus subapterus, De G.†: Ferryside and Pendine. *Nabis lativentris*, Boh., *N. major*, Curt., *N. flavomarginatus*, Scholtz,* *N. limbatus*, Dahlb.: all common. *N. lineatus*, Dahlb.: on a boggy heath, near Sarnan. *N. fesus*, L.: abundant under *Ononis* at Pendine sandhills. *N. rugosus*, L.: common. *N. ericetorum*, Scholtz: on heathy ground at Sarnan.

(To be continued).

CORRECTION OF IMPOSSIBLE NAMES.

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

I am glad to see that Lord Walsingham approves of my corrections in general, but should like to add a few words on the two points to which he takes exception.

(1) If my friend and esteemed correspondent, Mr. A. Busck, testifying on his own behalf, can affirm that he intended to call one of his species "frog" and another "banana" (never having used substantival names of this sort in any other instance), and a third "white," when it was really dark fuscous, I should of course accept his statements, but coming from any other source I can only regard these explanations as highly improbable conjectures, and of no value as evidence. When, therefore, on such scanty grounds Lord Walsingham pronounces Mr. Busck "certainly not guilty," the verdict would seem to be due to an amiable prejudice on his part; but Mr. Kearfott would have had just cause of complaint against me, if I had not measured his work and Mr. Busck's by the same rule. I am constrained to point out that Mr. Busck's names fit into Mr. Kearfott's series, and even seem to be the original source of contagion.

(2) I am certainly not proposing "to entirely alter the accepted meaning of *n. sp.*," but only to make the accepted meaning clear. An author proposes a new name in every case *not* (as Lord Walsingham assumes, thereby begging the question) because the species is previously undescribed, but because it is unnamed. If I announced in this magazine that I had captured a fine new species of *Adela*, blue with a red spot on each forewing, which would be named by my friend Lord Walsingham in the next issue, would he then write anything but *n. sp.* after it? Yet I should have already sufficiently differentiated the species from all known. I maintain then that my view is logical and correct, and it is only because as a matter of fact new specific names are in practice usually applied only to species supposed to be undescribed, that the misconception has arisen.

(3) Lastly, I should like to protest against another popular misconception which Lord Walsingham appears to favour, viz., the view that any intrinsic credit or honour attaches to the namer of a new species. If a name is grammatical, short, sensible, appropriate, and euphonious, and if a description is clear, concise, and accurate, these qualities deserve credit to the extent of their realization; but if a reasonable standard is not reached, discredit is the result. Let anyone who doubts this, look up the obituary notice of Francis Walker in this Magazine (Vol. XI, p. 140); it is a fearful warning. The author's name attached in books and catalogues to a species is not for his honour, but for use as the briefest bibliographical record. As such it must express a fact, and Lord Walsingham's suggestion that my substituted names might be attributed to "Kearfott corr. Meyrick," apart from its cumbrousness, is based on inaccuracy; the names were given by me, and not given by Kearfott and corrected by me. Kearfott's names would of course always be on record as synonyms.

Thornhanger, Marlborough:

April 6th, 1912.

Notes on the British species of the Coleopterous genus Philonthus.—On carefully examining the species of this genus I was struck by the great variation in the sculpture of the thorax, the cross-striation and punctuation, apart from the larger punctures by which they are divided into groups. It seemed, therefore, worth while examining them with a view to tabulating the characters of each species. Although these differences are constant they are not put forward as a direct means of identification, yet in many cases they are of great use to the student in verifying the species. In most cases the striation takes the form of waved lines, varying in fineness, distance apart, and in sinuation. In others these lines are broken, taking the form of short dashes, or the thorax is finely

punctured or entirely smooth. The microscope with a power of about $\frac{2}{3}$ in. is required for the purpose, and it is sometimes necessary to clean the thorax with a little benzine. I am indebted to Mr. E. A. Newbery and Mr. J. H. Keys for their kind assistance. The particulars are as follows:—

- P. splendens*, F., finely punctured, striate at sides.
- P. intermedius*, Boisd., finely punctured, striate at sides.
- P. laminatus*, Creutz, finely punctured, striate at sides.
- P. xeneus*, Rossi, striate, the lines normal.
- P. proximus*, Kr., striate, often obsoletely so on disc.
- P. addendus*, Sharp, striate, the lines normal.
- P. carbonarius*, Gyll., striate, the lines normal.
- P. atratus*, Grav., smooth and impunctate, faintly striate on margins.
- P. scutatus*, Er., finely punctured.
- P. decorus*, Grav., striate, the markings rather coarse, almost shagreened.
- P. politus*, F., striate, the lines normal.
- P. lucens*, Mann., striate, the lines normal.
- P. varius*, Gyll. (including var. *bimaculatus*), entirely smooth and impunctate.
- P. marginatus*, F., striate, the lines rather fine.
- P. lepidus*, Grav., quite smooth.
- P. albipes*, Grav., striate, the lines normal.
- P. umbratilis*, Grav., striate, the lines normal.
- P. cephalotes*, Grav., striate, the lines normal.
- P. nigriventris*, Thoms., striate, the lines normal.
- P. fimetarius*, Grav., striate, the lines being broken in the form of short dashes.
- P. sordidus*, Grav., smooth on disc, striate at sides.
- P. fuscus*, Grav., striate, the lines normal.
- P. concinnus*, Grav., smooth on disc, striate at sides.
- P. corruscus*, Grav., smooth on disc, striate at sides.
- P. ebeninus*, Grav. (I have not had the opportunity of examining this species).
- P. corvinus*, Er., striate, the lines very fine and close.
- P. fumigatus*, Er., striate, the lines normal.
- P. debilis*, Grav., striate, the lines faint, wide apart, and sinuate.
- P. sanguinolentus*, Grav., striate, the lines somewhat broken on disc.
- P. cruentatus*, Gmel., striate, the lines normal.
- P. longicornis*, Steph., striate, the lines fine and straight.
- P. varians*, Payk. (including the var. with black elytra), striate, the lines rather fine.
- P. agilis*, Grav., striate, the lines normal.
- P. vernalis*, Grav., striate, the lines fine and close.
- P. ventralis*, Grav., striate, the lines wide apart and sinuate.
- P. discoideus*, Grav., striate, the lines wide apart and sinuate.
- P. quisquiliarius*, Gyll. (and var. *dimidiatus*), striate, the lines finer than in any other species and slightly broken on disc.
- P. splendidulus*, Grav., striate, the lines faint and very sinuate.
- P. thermarum*, Aubé, striate, the lines faint and very sinuate.
- P. nigrita*, Nord., striate, the lines normal.
- P. fumarius*, Grav., striate, the lines normal.
- P. micans*, Grav., striate, the lines rather fine.
- P. astutus*, Er., striate, the lines rather faint and sinuate.

- P. nigrutilus*, Grav. (including most of the species recently added by Dr. Sharp), striate, the lines rather wide apart and sinuate.
- P. fulvipes*, F., striate, the lines normal.
- P. punctus*, Grav., striate, the lines rather straight.
- P. puella*, Nordm., striate, the lines broken in the form of short dashes.

WALTER BEVINS, Algarkirk, near Boston, Lines. : February 10th, 1912.

Carpophilus sexpustulatus, F., as a British species.—The history of this beetle in the neighbourhood of Doncaster and its status as a British species have lately been rendered more interesting than ever by the discovery by W. E. Sharp of a specimen of *C. obsoletus* among a short series of *Carpophili*, taken by him in Edlington Wood.

Up to the present year the captures of *C. 6-pustulatus* near here were, so far as I know, as follows :

1 Taken at Edlington Wood by E. G. Bayford, in 1894.]

1 Taken under bark of a felled elm in Sandal Beat by H. H. Corbett, in April, 1904.

8 Beaten out of dead crows on a "Keeper's Tree" by H. H. and H. V. Corbett and E. G. Bayford, in Wheatley Wood, on February 28th, 1907.

1 Taken under bark of a felled elm at Cusworth by H. H. Corbett, April, 1907.

A considerable number taken under bark of felled beeches in Edlington Wood by H. H. Corbett and W. E. Sharp, in October, 1911.

These localities are respectively—

Edlington Wood, 3½ miles S. of Doncaster, on Permian Limestone.

Cusworth, 2 miles W. of Doncaster, on Permian Limestone.

Sandal Beat and Wheatley Wood, 2 miles E. of Doncaster, on Bunter Sand.

The specimens found under bark were associated with common bark-frequenting spp., e.g., *Dromius 4-maculatus*, *Homalium vile*, *Rhizophagus dispar*, and *Rhinosimus planirostris*. The only species at all suggesting importation with foreign grain or fruit being *Læmophlæus ferrugineus*, which was found with *C. 6-pustulatus* at Edlington. The associated species on the crows in Wheatley Wood were *Homalium rivulare*, *Omosita colon*, *Nitidula bipustulata*, and *Dermestes lardarius*. With regard to the theories that *C. 6-pustulatus* is a foreign species, imported either with dried fruits or with pheasant food, the dried fruit idea may be dismissed at once. All the places where the insect has been found are far from warehouses or shops, and there is nothing in the way of rubbish heaps or "free tips" near them. And again, the insect has *not been found* as an imported produce frequenter, as is the case with many other beetles, e.g. *Silvanus surinamensis*. With regard to the pheasant food theory, Edlington Wood, where *C. 6-pustulatus* was first taken in 1894, by E.G.B., and where it was taken again this year by W.E.S. and H.H.C., has not been a pheasant preserve for certainly 60 years. In the other localities, Sandal Beat, Wheatley Wood, and Cusworth, there has from time to time been some pheasant rearing, but although at these places, and many others in the neighbourhood, I have often hunted for beetles at the pheasant feeding grounds, I

have never met with *C. 6-pustulatus*, except under bark or those found on dead crows, and never near the actual feeding places. Furthermore, the beetles that I have found among the pheasant food have been the ordinary species one expects among haystack rubbish; not a single foreigner has been found. *Lamophleus ferrugineus*, a species occurring with *C. 6-pustulatus* in the Edlington locality, also has been found at Askern, in fungus on birch, along with *Homalium punctipenne*, and several species of *Cis* and *Rhizophagus*. Near the place where it was taken was a pheasant feeding ground, where among the barley straw were *Philonthus fimetarius*, *Typhæa fumata*, &c., but not a sign of *C. 6-pustulatus* or any other doubtfully native species. I have also found *L. ferrugineus* swarming in a malt kiln in Doncaster, but here, although it was associated with insects of such doubtful claims to be called indigenous as *S. surinamensis*, *Niptus crenatus*, *Tribolium ferrugineum*, and *T. confusum*, no species of the genus *Carpophilus* was seen. In short, were it not for the discovery of *C. obsoletus* at Edlington, I should feel satisfied that *C. 6-pustulatus* was either a true native or a well established denizen. This belief has been weakened but not destroyed. There are numerous cases of closely allied species associating together, not only among the Coleoptera, but among quite different groups of animals. It is quite possible that the attractive "something," probably some particular quality of food, in the form of either subcortical larvæ or fungi, that brings *C. 6-pustulatus* together under the bark of felled trees, may be equally attractive to closely allied species; and if by remote chance an example of *C. obsoletus* did get into Edlington Wood it is not surprising that it foregathered with its relatives.

In reference to the specimens of *C. 6-pustulatus* that were beaten out of dead crows in Wheatley Wood, I think the probability is that they were hibernating in the birds and not feeding upon them. I have often beaten out of carrion, in winter, species that are not really carrion beetles, e.g., *Pterostichus versicolor*, &c.*—H. H. CORBETT, 9, Priory Place, Doncaster: May 12th, 1912.

A note on Anaspis ruficollis, Brit. Colls.—Capt. Deville pointed out to me long ago that the *Anaspis* with a red thorax, which stands under the name of *A. ruficollis*, F., in our collections, is wrongly named. It should be *A. regimbarti*, Schilsky. The latter species is distinguished by having the pubescence at the sides of the elytra yellow, long, and conspicuous, whereas around the suture and at the apex it is black, short, and hardly visible. This arrangement of the pubescence makes the elytra appear fulvous, with a triangular black patch in the centre, the apex of the triangle being at the scutellum. I have two specimens of this species, taken at Bradfield, Berks, which have the thorax very dark pitchy, and the legs pitchy-red with the tarsi black, for which I propose the name var. *fraudulenta*.—NORMAN H. JOY, Bradfield, Berks: April 13th, 1912.

Microglossa marginalis v. *obscura*, var. nov.—*Microglossa marginalis*, Gyll., generally has the elytra more brightly coloured than in other members of the

* Since writing the above I have taken several specimens of *C. 6-pustulatus* under beech bark at Sandal Beat. With them were *Litargus bipustulatus*, *Silvanus unidentatus*, and *Epurea obsolcta*.—H. H. C.

genus. In 1909, I took two specimens at Strathfieldsaye, Hants, with the elytra as dark as in *M. pulla*, and with the posterior angles of the thorax only obscurely reddish. They occurred in a starling's nest in company with the ordinary form. This variety is of course easily distinguished from *M. pulla* and *M. nidicola* by the much finer punctuation of the thorax, and from small specimens of *M. gentilis*, which it more closely resembles, by the thorax being alutaceous between the punctures.—NORMAN H. JOY: *April*, 1912.

Hæmatopinus (*Hæmodipsus*, Enderlein) *ventricosus*, Denny, in *N. Mavine*, *Shetland*, with note on an easy method of its detection.—In the seasons 1910 and 1911 this interesting parasite of the rabbit (*Lepus cuniculus*) has occurred frequently here both on the mainland and on the islands in Yell Sound. *H. ventricosus* is a very torpid creature—almost invariably to be found anchored to the skin of its host. Nevertheless, its small size renders it inconspicuous when sought for by turning back the fur. It may, however, be readily obtained by skinning the rabbit and examining the inner surface of the skin for the darker area surrounding the puncture made by the proboscis of the louse. If the finger is placed over the spot and the skin reversed the parasite will be seen at once.

As regards the parts of the body affected, the flanks, the neighbourhood of the mammæ, and generally, one might say, regions where the fur is thinner, seem most liable to attack.—J. WATERSTON, The Manse, Ollaberry, Shetland: *March 12th*, 1912.

Note on Prosopis genalis, Thoms.—I was greatly pleased to see noted by Mr. C. H. Mortimer in this Magazine (*ante*, p. 91), the occurrence of *Prosopis genalis*, Thoms., in Surrey, and have thought it advisable to add that I had recorded this species from Berkshire in the "Victoria History" of that county. It would, perhaps, have been better had I done so in this Magazine as well as in that rather inaccessible publication. The specimens in my collection bear the following data: "July 8, 1900, ♂ and ♀ near Wokingham; August 8, 1900, 1 ♀, Wellington College; August, 1901, 1 ♀, Padworth, near Aldermaston; August 18, 1904, 1 ♀, Wellington College. The late Mr. Edward Saunders kindly confirmed the identification and at the same time said they were the first specimens he had seen since those captured near Hastings, in 1879.—A. H. HAMM, 22, Southfield Road, Oxford: *April 15th*, 1912.

Review.

"BUTTERFLY HUNTING IN MANY LANDS," Notes of a Field Naturalist, by GEORGE B. LONGSTAFF, M.A., M.D., Oxon., F.R.C.P., F.S.A., F.G.S., F.E.S., &c. To which are added Translations of Papers by FRITZ MÜLLER on the Scent-Organs of Butterflies and Moths: with a note by E. B. POULTON, D.Sc., F.R.S. 8vo, with 16 Plates (7 coloured). London: Longmans, Green and Co., 39, Paternoster Row. 1912.

The valuable and interesting papers on the insects observed and collected by Dr. Longstaff in his travels during the past ten years, some of which have

appeared in our own pages, are well known to Entomologists; and the best thanks of all who are interested in our science are due to him for the handsome and finely illustrated volume in which these notes and observations are brought together. Many who read them in their present form will learn for the first time that their author in his younger days, before his eyesight was greatly impaired by a regrettable accident when an undergraduate at Oxford, was an ardent collector and student of British *Lepidoptera*, as his contributions to our early volumes bear witness, and that he is now only returning to his old love, though it may be in a wider field and with a more extended outlook. Chapter I is devoted to reminiscences of these early days, and the eight succeeding chapters to the observations made during flying trips to nearly every part of the world—India, China, Japan, Algeria, South Africa, the West Indies and the Spanish Main, the Nile Valley, and finally New Zealand and Australia, being among the regions that were visited and their insect productions “sampled.” With what success, in spite of many distractions, Dr. Longstaff’s efforts were rewarded, is evident from the fact that the Oxford University Museum has been enriched by him with fully 12,000 insects of all orders, their value being greatly enhanced by the full and accurate data attached to every single specimen. While some may consider that these chapters are treated in parts with an excess of detail (the capture of practically every species met with being noted!), the interest of the narrative never flags; and the genuine enthusiasm and *bonhomie* of the author shown on every page, as well as the number of valuable and interesting field-notes placed on record, make this part of the book exceedingly pleasant reading. This is especially the case as regards the regions lying more or less off the beaten track of Entomologists, such as the West Indies, New Zealand, and notably the Sudán and the White Nile, where the writer introduces us to some unusual and very beautiful forms of insect life. Mrs. Longstaff contributes some valuable notes on the *Mollusca* met with on the various journeys, and a vivid and graphic account of the great earthquake of January 14th, 1907, at Kingston, Jamaica, in which the author and his wife narrowly escaped losing their lives, is given in Chapter VI.

“Butterfly Bionomics” is the title of Chapter X, in which is embodied a large number of valuable and suggestive notes on the flight, resting habits, seasonal forms, mimicry, and scents of butterflies from all parts of the world. The author’s observations on the last mentioned subject, which Dr. F. A. Dixey and he have made peculiarly their own, are supplemented by an Appendix of nearly 70 pages, in which twelve papers by that great observer, Fritz Müller, now appear for the first time in an English dress as translated from the German and Portuguese languages by Mr. E. A. Elliott, who has thus earned the lasting gratitude of English naturalists by making these most interesting memoirs accessible to them.

The entire volume bears eloquent testimony to the care and research of Dr. Longstaff in the accurate identification of his captures, in many cases a matter of no small difficulty. Misprints and errors are few and far between, though there are one or two even in the “legends” of the coloured plates. Of these it is difficult to speak too highly, some of the figures reproduced from

Mr. Horace Knight's drawings (notably the lovely little *Calopieris eulimene* on Plate V, and the gorgeous *Papilio maackii* on Plate I) being among the very best we have ever seen. The "three colour" process adopted in the Frontispiece, however, fails to do full justice to the beautiful picture by that artist (which is well known to the writer of this notice) of the South African *Eronia cleodora* in its natural surroundings.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
Thursday, March 14th, 1912.—Mr. A. E. TONGE, President, in the Chair.

William Bateson, Esq., M.A., F.R.S., F.E.S., and Prof. E. B. Poulton, D.Sc., M.A., F.R.S., were elected Honorary Members.

Mr. Andrews exhibited three species of *Syrphidæ* parasitic in their larval stage upon Lepidoptera, viz., *Catabomba pyrastri*, *Xanthandrus comtus*, and *Melanostoma mellinum*. Mr. Adkin, an extreme melanic specimen of *Noctua xanthographa*, taken in his garden at Lewisham in 1911. Mr. Newman, living full grown larvæ of *Melitæa aurinia* fed up in a temperature of 60°–70°, and a pair of *Saturnia carpini* with all the usual reddish markings of a clear yellow. It was bred from a yellow ♂ and a red ♀. Mr. Blenkarn, the Coleopteron *Haliphus nomax*, from Coatbridge, recently described as new to science. Mr. B. H. Smith, a living larva of *Colias edusa*, from ova laid in October last; one larva had already pupated.—HY. J. TURNER, *Hon. Secretary*.

Thursday, March 28th, 1912.—The President in the Chair.

Mr. C. F. Lloyd, of Ashford Common, Middlesex, was elected a Member.

Mr. B. H. Smith exhibited ova of *Amphidasys strataria* laid by a ♀ with which he had assembled five ♂s. Mr. West, the specimen of *Psylla albipes*, found by him at Box Hill in October last, and new to the British list of *Hemiptera*. Mr. Newman, living examples of *Melitæa aurinia* bred at a temperature of 60°–70°, and full-fed larvæ of *Dryas paphia* fed under similar conditions. He called attention to the extreme scarcity of larvæ of *Arctia caja* and of *Abraxas grossulariata*. Mr. W. G. Sheldon, specimens of *Leptosia sinapis* and *L. duponcheli* with the summer broods of the same, v. *diniensis* and v. *æstiva* respectively, and pointed out that the British summer form of the former species was an intermediate form. Mr. E. Adkin, a specimen of *Hadena porphyrea* (*satura*), and read a series of historical and critical notes on the species. Mr. Andrews, the Dipteron, *Syrphus arcticus*, taken at Chattenden on March 12th. Mr. Ashdown, a specimen of *Mysia oblongo-guttata*, ab. *nigro-guttata*, from Oxshott in May, 1911, and recently described as new. Mr. Sich, for Mr. G. B. Routledge, a melanic example of *Depressaria applanata* from Carlisle. Mr. A. E. Tonge, a living specimen of *Callophrys avis* bred *ab ovo*. Mr. Edwards, examples of the closely allied species of *Ornithoptera*, *lydius* and *cræsus*. Mr. H. Main, the larva of the alder-fly, *Sialis lutaria*.—H. J. TURNER, *Hon. Sec.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held on February 18th, 1912, in the Royal Institution, Colquhoun Street, Liverpool.—Dr. P. F. TINNE in the Chair.

Mr. Wm. Mansbridge contributed notes on "Breeding experiments with the Black Race of *Boarmia repandata* (var. *nigra*)," and summarised the results as follows:—In 1909, (a) a wild ♀ of the local type form gave all var. *nigra*; (b) a wild ♀, var. *nigra*, gave all black moths; (c) a pairing of *nigra* ♂ and type ♀ gave all types. In 1910, (a) type × type gave 66.6% and 33.3% var. *nigra*; (b) *nigra* × *nigra* gave 92% *nigra* and 8% type; and (c) *nigra* × *nigra* gave 96% *nigra* and 4% type; while in 1911, (a) type × type gave all type; (b) *nigra* ♂ × type ♀ gave all *nigra*; (c) *nigra* × *nigra* gave 95.7% *nigra* and 4.3% type; and (d) a second experiment of the same gave 70.5% *nigra* and 29.5% type. In 1910, moths from the broods (a) and (c) were used for the cross pairings of type and variety, the others being inbred, and in 1911 all were inbred. Dr. Tinne exhibited *Lycæna icarus* from North Ireland, including very blue females.—WM. MANSBRIDGE AND OSCAR WHITTAKER, *Hon. Secretaries*.

NOTES ON THE BRITISH SPECIES OF *LONGITARSUS*, LATR.

(A GENUS OF *COLEOPTERA*)

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND W. E. SHARP, F.E.S.

(Continued from p. 76 *anted*)

Food plants.—The food plant of this species is practically unknown, although Bedel gives "*Lithospermum officinale* d'après H. Brisout." One of us has swept it from herbage in which *Convolvulus arvensis* was the most abundant plant, near Malvern.

Its range in this country is quite uncertain. It undoubtedly occurs, but apparently very rarely, in the London district, but other records, although fairly numerous, are entirely unreliable, and it is probably often cast away as one of the commoner species which it resembles.

Var.—*rubenticollis*, All. (Mon. p. 392), is simply a form with a reddish thorax, and bears precisely the same relation to the type as *v. fuscicollis*, Steph., does to *L. suturellus*, Duft.

L. NASTURTI, F. [Ent. Syst. I, 2, p. 31 (1792)]; Foudr. [Mon. p. 160]; Weise [Nat. Ins. Deutschl. VI, pp. 965, 1021], Steph. [Man. p. 296.]

Syn. *circumscriptus*, Bach [Käferf. III, p. 152].

In form and coloration very similar to *L. suturalis*, but much smaller. Head shining black. Antennæ: black with first four joints testaceous. Thorax slightly transverse, bordered, black, with a faint brassy reflection, distinctly

alutaceous; punctuation distinct, rather remote, not very strong, very similar to that of *L. suturalis*. Elytra: alutaceous, dull, testaceous, more feebly, and plainly, more closely and confusedly punctured than in *L. suturalis*, with suture sharply defined in black, the apex and side-margins also often darkened. Legs: testaceous, with tarsi slightly darker, and posterior femora quite black; first joint of anterior tarsi in ♂ not dilated; posterior tibial spurs moderately short. Underside black. Usually winged. Length, $1\frac{1}{2}$ – $1\frac{3}{4}$ mm.

Its much smaller size will easily distinguish this species from either *L. suturellus* or *L. suturalis*, which are the only two species otherwise superficially resembling it.

Food plants.—Various species of *Boraginæ*: *Symphytum*, *Cynoglossum* (Bedel), *Echium* (Bedel, Foudras, Fowler); *Nasturtium* and other water plants (Thomson). It appears to be rare in this country, and usually occurs in sandy places in the autumn. There are records from as far north as Yorkshire.

Var.—*autumnalis*, Weise. An apterous form, otherwise undifferentiated.

L. MELANOCEPHALUS, de G. [Mém. Ins. V. p. 348]; Gyll. [Ins. Suec. III. p. 545]; All. [Mon. p. 313]; Weise [Nat. Ins. Deutschl. VI. pp. 979, 1022]; Bedel [Col. Bass. Seine, V. p. 311].

Syns.—*atricillus*, Foudr. [Mon. p. 164]⁽¹⁾; *piciceps*, Steph. [Man. p. 296]⁽²⁾.

atricapillus, Duft. [Fn. Austr. III. p. 257].

In form a long oval, more acuminate than other members of the group. Very variable in size and general appearance, but with the thorax always more or less rufescent and without metallic reflection, and the sutural line narrow and even throughout. Head: black, finely punctured between eyes. Antennæ: black, with first four or five joints testaceous. Thorax: very transverse, bordered, shining, rufescent, with punctuation exceedingly variable, but never strong, often almost obsolete, occasionally slightly alutaceous between the punctures, but usually with interspaces smooth. Elytra: varying in colour, from pale straw colour to testaceous red, with punctuation stronger than that of thorax, distinct but confused; sutural line narrow and even, black with suffused reddish edges, but rarely with sutural marking obsolete; apices acuminate, more sharply angled than in most other members of the group. Legs: testaceous red; posterior femora usually black, but sometimes ferruginous, and always ferruginous beneath; the posterior tibiæ also varying from black to ferruginous; first joint of anterior tarsi in ♂ distinctly more enlarged

(1) From the text of Foudras it is impossible to be quite certain to what species his *atricillus* really referred. Most Continental authorities, however, regard it as equivalent to *melanocephalus*, de G., All., &c., and the synonymy is so given in the latest European list.

(2) That the "*piciceps*" of Stephens was really the *melanocephalus* of de Geer and others, was pointed out by E. C. Rye (Ent. Annual, 1872, p. 91), and assumed ("*picipes*, Steph.," in error) in the Waterhouse Catalogue of 1858.

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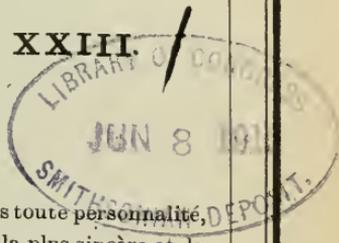
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The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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than in other members of the section; first joint of posterior tarsi in both sexes furnished with long white cilia beneath; posterior tibial spurs short and thick. Underside pithy testaceous, abdomen black. Winged. Length, 2½–3 mm.

This very common insect may be generally distinguished from other members of the group by its more transverse thorax and longer, more acuminate shape; it is also usually larger than any species in this section, except forms of *L. nigrofasciatus*. In the thoracic punctuation it often approaches *L. suturellus*, but the thorax is never black as in that species and in *L. suturalis*, and never possesses a metallic reflection as in *L. atricillus*. From *L. nigrofasciatus*, certain forms of which it closely resembles, it can be distinguished (in fresh specimens) by the more evident pilose clothing of the underside of the first posterior tarsal joint, and the distinctly shorter and thicker posterior tibial spurs.

The food-plant, according to Bedel, is Plantain, who adds, "Buddeberg a observé sa larve à la racine du *P. lanceolata*. Presque toute l'année; éclôt commencement de l'été." This, however, has not been confirmed, so far as we are aware, by any British coleopterist.

L. melanocephalus seems to occur all the year round, and is often found in haystack refuse in winter. It is one of our commonest species of *Lóngitarsus*, and its range extends over the whole of the kingdom.

Vars.—*kutscherae*, Rye⁽¹⁾ [Ent. Ann. 1872, p. 199] = *atriceps*, Kutsch. [Wien. Monat. 1864, p. 207].

This form was described in 1864 by Kutschera as a distinct species. By the courtesy of Mr. E. A. Waterhouse we have been enabled to examine specimens so named by that authority in the "G. R. Waterhouse" collection, and we cannot but think that Weise and other modern authorities are correct in considering it as merely a small form of *L. melanocephalus* with the thorax generally darker. We are unable to appreciate the structural differences referred to by Fowler (Brit. Col. iv. p. 345), and in any case they are not more than might be expected in so variable a species as *L. melanocephalus*.

Var.—*kutscherae*, Rye, is smaller than the average type-form, with the elytra shorter and distinctly less acuminate; the thorax usually, but by no means always, darker, and the posterior tibiæ blacker. We can discover no persistent difference in punctuation or other structural

(1) E. C. Rye, alluding to this insect, says (*l.c.*), "*T. atriceps*, Kutsch., requires re-naming on account of the long prior *atriceps* of Stephens, and may be called *kutscherae*."

characters. This form seems to be much less common than the type, and we are without reliable evidence as to its range; like the type it is winged in both sexes.

nigrinus, Weise [Nat. Ins. Deutschl. VI. p. 979]. This appears to be a melanic form. Weise describes it as "black, base of antennæ reddish, elytra pitchy, becoming reddish towards the sides." He adds that it is rare, and we have not seen anything taken in this country which quite corresponds with it.

L. NIGROFASCIATUS, Goeze [Ent. Beytr. I, p. 312 (1777)].

Syns.—*marginatus*, Geoffr., 1785.

lateralis, Illiger, 1807; Foudr. [Mon. p. 179]; All. [Mon. p. 110].

Weise [Nat. Ins. Deutschl. VI, pp. 983, 1020].

v. *patruelis*, All. [L'Abeille, III, p. 302, 398].⁽¹⁾

This very variable and perplexing species resembles in some of its forms both *L. suturellus* and *L. melanocephalus*. In form rather long oval, somewhat similar to *L. melanocephalus*. Head black, very faintly striated between eyes. Antennæ: long and stout, testaceous, with last four or five joints fuscous. Thorax: transverse, bordered, very variable both in colour and sculpture, the colour ranging from testaceous to pitchy black, the punctuation always fine but distinct, varying considerably in intensity; interspaces always more or less alutaceous, the strength of the alutacity appearing to vary proportionately with that of the punctuation. Elytra: either clear yellow testaceous or testaceous brown, nearly always with more or less indistinct darker linear markings, which often take the form of a cloudy elongate spot in the centre of the upper half of each elytron; the suture usually black and boldly marked, the marking irregular in width, sometimes narrowed at base and apex to a fine line or widened out on the apical declivity, sometimes (in the form *distinguendus*) narrowed to a thin rufescent line, or almost effaced; punctuation rather strong, distinct and remote, and often partially seriate; apices separately rounded and furnished with a few short exerted cilia. Legs: anterior and intermediate pairs entirely testaceous, the posterior pair with the femora black and the tibiæ testaceous or fuscous; the underside of the first posterior tarsal joint is set with short close pubescence, and the posterior tibial spur is long and slender and only very slightly curved at extremity; first joint of anterior tarsi slightly enlarged in ♂. Underside black or pitchy testaceous. According to Foudras both sexes are winged, but this is certainly not invariably the case in this country, as we have taken ♂ specimens in Surrey with wings rudimentary or absent. Length, $1\frac{3}{4}$ – $2\frac{1}{2}$ mm.

The wide range of variation of this species has occasioned much confusion in synonymy and much difficulty in identification, but

(1) Waterhouse's specimens originally named *lateralis*, Ill., by Allard, and subsequently described by him as *patruelis*, have been returned by Kutschera as *lateralis*, Ill. (Ent. Ann. 1867, p. 61).

through all its forms it may be distinguished from any other of the strongly sculptured species by the longer and straighter posterior tibial spur; the dark linear elytral markings, nearly always more or less obvious, are also characteristic; and it feeds on a different plant (*Verbascum*) from any of them.

Food plants.—“Diverses espèces de *Verbascum*” (Foudras), *Verbascum* (Allard). We have taken it in some numbers from *V. thapsus* on Box Hill, Surrey, but we are quite disposed to believe that it may occur on other plants and, as we have previously suggested, a different food-plant may to some extent imply a different form of the species.

Its range is uncertain, but it undoubtedly occurs not uncommonly in the South of England, and Mr. F. H. Day has taken it near Carlisle.

Var.—*distinguendus*, Rye [Ent. Mo. Mag. IX, p 157 (1872)].

In a species whose morphology is so unstable as this, it appears as impossible as it would be futile to single out each special form by a separate varietal name, but assuming the larger darker insect which we find on *Verbascum* to be the “type,” it is certainly convenient to retain the name *distinguendus* for the form so described as a species by E. C. Rye. It is certainly sufficiently dissimilar not only to have been described by so experienced a student but to have been accepted ever since as of specific value, and it is only by careful comparison between individuals of a long series that the gradation of form becomes so apparent as to lead to the conviction of their essential unity.

L. distinguendus ⁽¹⁾ as represented in our collections is generally rather smaller and paler than typical *L. nigrofasciatus*, with the thorax more or less testaceous, and the linear dark elytral markings, although nearly always more or less indicated, are weaker, but the long tibial spur is constant in every form. The long and stout antennæ, a character insisted on by Rye in his description, are common to all variations of the species which we have seen, but it is evident from the assertion of Rye that his insect much resembled *L. atricillus* that his exponents included some of the darker forms approaching typical *L. nigrofasciatus*. He also states it to be apterous. *Senecio jacobæa*, *Teucrium scorodonia*, and *Scrophularia nodosa* have been recorded as food plants of this variety, but we have taken specimens on *Verbascum* in company with the type-form which are indistinguishable from Rye’s lighter examples.

(1) Bedel, referring to *L. distinguendus*, Rye, says: “Il est surtout voisin de l’insecte décrit par Allard sous le nom de “*putruelis*” (variété de *nigrofasciatus*, No. 33) [Col. Bass. Seine, V, p. 313].

Foudras (Mon. p. 178) differentiates three varietal forms of *L. lateralis*, Ill., viz.:—

- Var. A. Macula marginali integra.
- B. Macula marginali deficiente.
- C. Tota pallida.

of which the last is probably equivalent to our var. *distinguendus*, Rye.

(To be continued.)

A NEW SPECIES OF *OLIGOTA*.

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

OLIGOTA YTENENSIS, sp. n.

Niger, antennis pedibusque rufis, illarum clara fusca; minima, angusta, sublinearis; elytris thorace vix longioribus, fere angustioribus. Long. corpore extenso, 1¼ mm., lat. ½ mm.

The smallest and most linear of our British forms, and readily distinguished by the aborted wings, they being smaller than the elytra. The antennæ are rather short, the club abrupt, the 8th joint being considerably larger than the very short 7th joint. The head and thorax are very shining. The elytra are intensely black, rather strongly punctured. The last segments of the abdomen are only slightly paler than the preceding.

This very distinct little species may be placed between *atomaria* and *pusillima*; it has much the appearance and the colour of *atomaria*, but will be distinguished from it by a glance at the small elytra. It is narrower and darker in colour than *pusillima*, and both *atomaria* and *pusillima* have elongate wings, whereas in *ytenensis* the wing is only about the length of the elytron. The measurements of length given by Gauglbauer for the species of this genus are too small; he says 0.7–0.8 mm. for *pusillima*, which insect, however, is larger than *ytenensis*, the length of which, before contraction has occurred, is a good deal more than 1 mm.

O. ytenensis has occurred at Lynton in decaying sea-weed, but is at present a great rarity. *O. atomaria*—a common insect here—occurs with it, as does *Actinopteryx fucicola*. I have also a specimen from Edinburgh, which I have no doubt is the same species, and which I think was not found in sea-weed.

Brockenhurst:

May 3rd, 1912.

LATHROBIUM RIPICOLA, CZWAL.: AN ADDITION TO THE BRITISH LIST OF COLEOPTERA, WITH REMARKS ON ALLIED SPECIES.

BY E. A. NEWBERY.

For some time past I have been of opinion that the insects standing in my collection as *L. boreale*, Hochh., should properly be referred to the above species. My friend Dr. Cameron was kind enough recently to bring some Continental *ripicola* for comparison, with the result that we both agreed as to their identity with my British examples. To make the matter more certain, he sent a ♂ of the latter to Dr. Bernhauer, who has confirmed the opinion we had formed. I do not propose here to give a detailed description of *L. ripicola*; a good one has been published by Ganglbauer (Käfer von Mitteleuropa, II, 511), and another, still more extensive, with figures of the male characters of this and the allied species by Mulsant and Rey (Pédériens, 39), under the name of *boreale*, Hochh.; a name which has been dropped altogether, as no insect with the ♂ characters given by Hochhuth appears to exist in nature. The separation of the males of the larger species of *Lathrobium* is comparatively easy, while that of the females is quite the reverse. The following is an attempt to tabulate the forms which are more or less allied to *L. geminum*, Kraatz. The males of this group can be distinguished by having the last ventral abdominal segment trifold, with the middle section longitudinally carinate on each side, the inner edges of the side-pieces (often with raised margins) being parallel to these carinæ. I have failed to discover any satisfactory characters to separate the females of *elongatum* from those of *geminum*, apart from the slight differences of punctuation and colour which are also found in the males.

- 1 (2). Middle joints of antennæ longer and more conical; elytra dark with more or less of the apex dirty yellow-brown, junction of colours badly defined. ♂ with penultimate ventral abdominal segment not, or scarcely, furrowed, nor furnished with longitudinal rows of black hairs, somewhat bluntly triangularly excised at apex. ♀ with penultimate dorsal segment broadly quadrangularly excised. Length, 7-8 mm.....*L. fulvipenne*, Grav.
- 2 (1). Middle joints of antennæ shorter and less conical.
- 3 (6). Penultimate ventral abdominal segment of ♂ without a row of converging black hairs on each side of the distinct longitudinal furrow; coxæ black or pitchy.
- 4 (5). Elytra black; size larger; penultimate ventral segment of ♂ deeply triangularly excised at apex. ♀ with apical dorsal segment longitudinally ridged. Length, 8-9 mm.....*L. brunripes*, Fabr.

- 5 (4). Elytra red, sometimes darker in a small and badly defined area near scutellum ; size smaller ; penultimate ventral segment of ♂ triangularly excised at apex, and furnished with a long tooth-like process, which is ciliated at apex, on each side of this excision. Length, 6.5-7.5 mm. *L. lævipenne*, Heer.
- 6 (3). Penultimate ventral abdominal segment of ♂ with a row of converging black hairs (crests of Rey) on each side of central longitudinal furrow. ♀ with dorsal apical segment not ridged. Elytra normally in part, or entirely, red.
- 7 (8). Upperside of head more diffusely and finely punctured than that of thorax ; coxæ usually red, except at base ; elytra either entirely red, or with only a small and badly defined black area near scutellum ; thorax longer in proportion to its breadth than in the following two species. ♂ with penultimate ventral segment much as in *geminum*. Length, 7.5-8.5 mm. *L. ripicola*, Czwal., *boreale*, Rey, *neq* Hochh.
- 8 (7). Upperside of head almost as closely and deeply punctured as that of thorax ; coxæ nearly always black or pitchy ; elytra with the black colour more extensive than in *ripicola* ; average size larger. Length, 8-9 mm.
- 9 (10). Underside of head more diffusely and finely punctured. ♂ with the apex of penultimate ventral segment slightly excised in a curve, often nearly truncate. The form with almost entirely black elytra is the var. *volgense*, Hochh. *L. geminum*, Kraatz.
- 10 (9). Underside of head more closely, and usually more coarsely, punctured. ♂ with the apex of penultimate ventral segment sharply triangularly excised. The limits of the black and red colour of the elytra are usually more strongly defined than in the last species. The form with nearly black elytra is the var. *fraudulentum*, Ganglb. *L. elongatum*, Linn.

L. fulvipenne, Grav., varies in the length of the elytra according to the development of the wings. It is easily separable from the other species in both sexes.

L. brunnipes, Fabr. The above remarks apply equally to this common species.

L. lævipenne, Heer. A ♀ specimen taken by Mr. W. E. Sharp was referred doubtfully to this species by me, and was subsequently corroborated by Herr Ganglbauer (*Ent. Mo. Mag.*, xlii, 55). The females of *lævipenne* and *ripicola* are exceedingly difficult to separate ; they differ in the colour of the coxæ and a little in size. The capture of a ♂ *lævipenne* is very desirable. Mr. Tomlin has a note of some specimens which he referred to the ♂ of this insect (*Ent. Mo. Mag.*, xliii, 136), two of which I have seen. They are certainly not *lævipenne*, but like that species they are without the "crests" on the penulti-

mate ventral segment, which is excised in a broad curve at apex unlike that of any of the species above tabulated. I am unable to say to what they should be referred.

L. ripicola, Czwal. This insect does not appear to be rare. I have seen specimens from Tottenham and Woking (Champion); near Carlisle (Day); and have myself taken it at Merton, Surrey, on the river bank near Putney, and at several places in Hampshire. Fowler's description (Brit. Col. II, 299) of *boreale*, Hochh., is as applicable to *ripicola* as to *geminum*. *L. ripicola* stands under various names in British collections.

L. geminum, Kraatz. Common round London, and probably all over the kingdom. The black forms of both this and *elongatum* are easily separable from *brunnipes* by the sexual characters.

L. elongatum, Linn. This insect is common at Slapton Ley, Devon, but appears local and apparently scarce elsewhere. Near Carlisle (Day); Lee (Champion). The var. *fraudulentum* has, I believe, only occurred at Slapton Ley.

Reitter (Fauna Germanica, II, 144) suggests that *geminum* is only a race of *elongatum*. He further states that *elongatum* is scarce, while *geminum* is common everywhere in Germany.

13, Oppidans Road, N.W.:

May 7th, 1912.

LYCÆNA (AGRIADES) ALEXIUS, FREYER: A GOOD SPECIES.

A PRELIMINARY NOTE BY T. A. CHAPMAN, M.D.

It seems desirable that Lepidopterists should not lose the coming season for the investigation of this interesting species. I therefore give this preliminary notice of its recognition, so that further *data* about it may be obtained in definite form. There is an aberration of *Lycæna* (*Polyommatus*) *icarus*, known as *icarinus*, Scriba. This occurs wherever *icarus* is found, but more or less sporadically. There is, however, a distinct species, for which I accept the name of *alexius*, as having been given by Freyer to one form of the species, that occurs with *icarus*, but not apparently in its more northern habitats, and in all probability ought to occur apart from *icarus*; but the curious part of its habit is that it appears to be a close mimic of *icarus*, and except in the loss of the basal spots of fore wing exactly

resembles the race of *icarus* with which it occurs. The only definite distinction between *alexius* and *ab. icarinus* of *icarus*, that appears on a superficial examination is, that *icarinus* is sporadic, whilst *alexius* being a distinct species, may be in greater or less numbers. Generalising from the few localities from which I have specimens I suppose it to range from France to Central Asia.

If any one meeting with it (and, if not as common as *icarus* it is certainly not rare) will be good enough to send me a few specimens of it and of the associated *icarus*, it would materially assist me in elucidating the species.

Betula, Reigate:

May 11th, 1912.

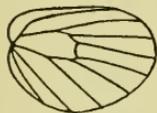
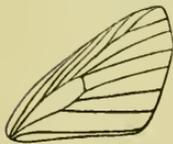
DESCRIPTIONS OF NEW EXOTIC LYCÆNIDÆ AND HESPERIIDÆ.*

BY HAMILTON H. DRUCE, F.L.S., &c.

LYCÆNIDÆ.

SHEFFIELDIA, gen. nov.

Closely allied to *Cooksonia*, from which it differs by veins 5 and 6 having a common origin from the end of the cell, consequently the upper discoidal nervule, which is present in *Cooksonia*, is wanting. The palpi and antennæ are as described in *Cooksonia*.



Venation of *Sheffieldia*.

Type: Sheffieldia neavei, sp. nov.

I think that both this genus and *Cooksonia* should be placed in the sub-family *Lipteninae*. In one of the specimens examined vein 6 is stalked from vein 5 in the fore-wing some distance beyond the end of the cell.

SHEFFIELDIA NEAVEI, sp. nov.

♂. Upper side orange-buff, with the basal area of the fore-wing and the whole of the hind-wing overlaid with brick-red. Fore-wing: apex rather broadly black, the black gradually narrowing towards the tornus; a large black costal blotch spread over the end of the cell and beyond and narrowing along the costa to the base. Hind-wing: termen broadly and evenly black, a clearly defined black spot at the upper end of the cell. Cilia of fore-wing, black; of hind-wing, chequered. Under side: fore-wing dull orange, reddish in the cell; pale yellow towards the apex, which is pale yellow inwardly, bordered with white, and again with black, and divided by the black nervules. The black

* The two coloured plates in preparation illustrating the insects now described will be issued in a future number as soon as ready.—H. H. D.

costal patch is less extensive than on the upper side, and split up into streaks and spots. Hind-wing pale buff, overlaid with creamy-white scales, with a number of black clearly defined spots scattered over the basal and discal areas. The black terminal border supports a marginal row of yellow lunules, and a submarginal row of white crescent-shaped lunules placed between the veins. Cilia of fore-wing, black; of hind-wing, chequered. Thorax, palpi, and antennæ black. Eyes inwardly bordered with a white line. Abdomen yellow, with the base of each segment black, and a white spot on each segment below. Legs black, with some yellow scales and hairs. Expanse, 47-50 mm.

Hab.: GERMAN EAST AFRICA, Uhehe District, 3000-3500 ft. (*S. A. Neave*).

Type: British Museum. Co-types: Mus. Hope, Oxford, and Mus. Druce.

Described from 6 ♂♂, all captured by Mr. Neave on Nov. 22nd, 1910. The specimen figured is in the Hope Museum. I can find no *Acraea* exactly like it, but it seems nearest to *A. anemosa*, Hew., on the upper side, but quite different below.

EPAMERA GAZEI, sp. nov.

♂ Upper side shining cærulean-blue; costa of fore-wing narrowly, apex broadly, black; dorsum of hind-wing white, becoming grey towards the lobe, which supports a deep black spot crowned with carmine and overlaid with a few metallic greenish scales. A black marginal spot in cell 1. The hind-wing bears a large shining grey costal patch centred with straw-coloured scales, which the convex dorsum of the fore-wing completely hides. Underside: fore-wing pure white without markings, but with a large shining central patch on the dorsum, to whose edge is attached a tuft of long straw-coloured hairs. Hind-wing pure white, with a subterminal black line angled towards the dorsum. Lobe black, crowned with carmine and metallic scales below. A faint black marginal spot in cell 1, and another more prominent in cell 2. Head yellow, white between the eyes, with a central yellow spot. Legs white, with black spots. Cilia black and white above, white below. Antennæ black, white-ringed. Palpi white, black topped. There is an indication of a faint red line near the apex of the hind-wing below.

♀. Upper side white, the basal areas of both wings pale cærulean-blue; fore-wing with costa and apical third, dull black. Hind-wing with an anteciliary brown line, a terminal row and a subterminal band composed of more or less crescent-shaped brown lunules. Lobe as in ♂, but the carmine more extensive. Under side as in ♂, but with a faint subterminal line to fore-wing. Expanse, ♂ ♀, 41 mm.

Hab.: S. NIGERIA, Lagos. *Types*: Mus. Hope, Oxford.

Captured by J. A. de Gaze, Esq., F.L.S., of King's College, Lagos.

This is an interesting insect, as although it is much like *Argiolaus menas*, H. H. D., especially as regards the ♀, both sexes have but four subcostal nervules.

THECLA MARACHES, sp. nov.

♂. Upper side rich dark purple blue, with a greyish tinge; apex and termen of fore-wing dull black. Hind-wing: costa broadly, termen narrowly, dull black; dorsum grey. Cilia of both wings black; a white ante-ciliary line between veins 1 and 2 on hind-wing. Tails black with white tips. Under side smoky brown; both wings crossed by prominent irregular dark-bordered pale blue lines, the innermost of which on the hind-wing is angled to the dorsum. Between veins 2 and 3 on the hind-wing is a prominent crescent-shaped red patch surrounding a black dot, and beyond this towards the dorsum is an elongated v-shaped red marking, which, together with the crescent-shaped patch, are inwardly edged with black and then white. A subterminal row of blue shades and a terminal white line. Cilia of both wings brown. Abdomen black above, pale beneath. Legs black, with white spots. Palpi black, interspersed with white hairs below. Expanse, 35 mm.

Hab.: E. ECUADOR, Baños, Río Pastaza, 5000-7000 ft. (*M. G. Palmer*). *Type*: Mus. Druce.

Somewhat like *T. sala*, Hew., but darker above, and the position of the pale lines below is quite different. There are no brands.

THECLA FASSLI, sp. nov.

♂. Allied to *T. loaurina*, Feld., from which it differs on the upper side by the fore-wing being darker in shade, and by the hind-wing, excepting over the basal area, being of a warm chestnut-brown. Cilia of both wings chestnut-brown. The hind-wing is decidedly more elongate and the lobe is less pronounced. Expanse, 39 mm.

Hab.: COLOMBIA, Monte Socorro, 3800 metres (*A. H. Fassl*).

Type: Mus. Druce.

THECLA OROCANA, sp. nov.

♂. Upper side shining lustrous blue with a greenish tinge. Allied to *T. orobia*, Hew., from which it differs by the much broader black apex and termen to the fore-wing, and by the veins traversing the blue areas being covered with blue scales, not black as in *T. orobia*. Under side: the fore-wing differs from that of *T. orobia* in having a pale purplish-brown costal patch extending from just beyond the end of the cell nearly to the apex and minute blue dots in cells 2 and 3 only. On the hind-wing the crescent-shaped band of black-encircled blue dots is much less prominent, and there are scarcely any metallic green scales towards the anal angle. There is no tail on vein 2 as in *T. orobia*. Abdomen blue above, pale brown below. Antennæ white-ringed. Palpi brown, inwardly bearing interspersed whitish hairs. Legs brown, with a few white spots. Expanse, 46 mm.

Hab.: E. PERU, El Porvenir, 900 metres. *Type*: Mus. Druce.

The black veins and tail of *T. orobia* at once distinguish it from the insect described above.

THECLA LOPHIS, sp. nov.

♂. Allied to *T. nisææ*, G. and S., from which it differs on the upper side by being of a more brilliant blue shade and by the broad black apex to the fore-wing, and on the under side by the orange-red base to the costa of the fore-wing. Expanse, 35 mm.

Hab.: COLOMBIA, El Tigre, Rio Tamana, Choco, 320 ft. (*G. M. Palmer*). *Type*: Mus. Druce.

THECLA OPISENA, sp. nov.

♂. Upper side lustrous shining ultramarine-blue; costa and apical third of fore-wing black. Costa of hind-wing greyish; termen very narrowly black; dorsum bluish-grey. Cilia of fore-wing, black; of hind-wing, black tipped with pure white; no tail. Under side emerald green; fore-wing with the dorsum rather broadly greenish-grey; hind-wing with an ultramedian serpentine narrow white line, inwardly bordered with black, commencing on the costa beyond the middle, and ending on the dorsum. A bright red spot in cell 1, and another in cell 2. A small black spot at the extreme angle. Abdomen blue above, pale buff below. Head black, emerald green between the eyes. Palpi green, with black tips. Antennæ black with white rings. No brands. Cilia of fore-wing golden brown, of hind-wing white towards angle. Expanse, 28 mm.

Hab.: COLOMBIA. *Type*: Mus. Druce.

Somewhat like *T. facuna*, Hew., but darker blue and without the brand on the upper side of the hind-wing in that species.

HESPERIIDÆ.

ENTHEUS NINYAS, sp. nov.

♂. Upper side: Fore-wing dark brown; basal third reddish-orange; a median, whitish, semi-hyaline band from the upper wall of the cell, extending into cell 1; a triangular hyaline spot in cell 3, and a subapical curved semi-hyaline band divided by the brown nervules. Hind-wing reddish orange, with the costa and termen evenly dark brown. Under side as above, but paler. Head, thorax, and abdomen reddish-orange above, creamy-white below. Palpi black above, white below. Antennæ black. Expanse, 40 mm.

Hab.: BOLIVIA, Farinas La Paz, 1500 metres.

Type: Mus. Druce.

Allied to *E. eumelus*, Cr. [Pap. Ex. II. t. 156, f. E. (1779)], which has less orange on the fore-wing, and the veins on the hind-wing broadly marked with brown.

POTAMANAX PISATES, sp. nov.

♂. Upper side: Fore-wing smoky brown, paler between the nervules; a pale yellowish white median fascia extending almost from the costa to vein 1. Hind-wing smoky brown, the veins darker; a central white patch extending from the costa to vein 4, its inner edge sharply defined, its outer edge obscure. Under side white, greyish brown towards apex of fore-wing and along termen

of hind-wing. Thorax and abdomen brown above, white below. Legs brown, clothed with white hairs. Palpi clothed with intermixed brown and white hairs. Antennæ brown, the base of the shaft with white spots. Expanse, 43 mm.

Hab.: E. ECUADOR, El Topo, Rio Pastaza, 4200 ft. (*M. G. Palmer*).

Type: Mus. Druce.

Described from three specimens which show no variation. There is also an example in the Godman and Salvin collection from Santa Inez, Ecuador (*Buckley*). It is nearest to *P. melicertes*, Godm., but is quite distinct.

FALGA SCYDRA, sp. nov.

♂. Upper side uniform dark brown, without markings; cilia of both wings concolorous. Under side: Fore-wing with an apical series of pale yellow radiating lines placed on veins 3 to 9; cilia brown. Hind-wing glistening white; cilia from vein 1 to above vein 8, dark brown; the basal portion overlaid with short white scales, thus producing a golden brown appearance. Thorax and abdomen dark brown above, white beneath. Antennæ black. Legs brown above, white below. Palpi pale yellow, with interspersed black hairs; terminal joint black. Expanse, 47 mm.

Hab.: E. ECUADOR, El Rosario, Rio Pastaza, 4900 ft. (*M. G. Palmer*); also El Topo, Rio Pastaza, 4200 ft.

Type: Mus. Druce.

Described from three specimens. Appears to agree in all generic characters with *Falga jeconia*, Butler.

DION TURMADA, sp. nov.

♀. Upper side dark brown, without markings; basal half to anal angle of hind-wing shot with dark peacock-blue, which is only visible when the insect is held at an angle. Under side: Fore-wing brown, with the costa and apex broadly olive green, and the veins dark brown; a rather large whitish patch in cell 1 placed beyond the middle. Hind-wing olive green, with the veins dark brown, and the dorsum broadly warm brown, slightly shining; a dark median shade placed beyond the cell. Thorax and abdomen bluish brown above, brown below. Head with white spots between and behind the eyes. The hairs clothing the palpi are deep black, excepting at the base, where they are white. Antennæ black. Legs brown; inner side of hind tibiæ clothed with pale grey hairs. Expanse, 63 mm.

Hab.: E. ECUADOR, El Topo, Rio Pastaza, 4200 ft. (*M. G. Palmer*).

Type: Mus. Druce.

Although I have not seen the male, I place this insect in the interesting genus *Dion* without hesitation.

DESCRIPTIONS OF TWO NEW SPECIES OF *MICRO-LEPIDOPTERA*.*

BY HERBERT DRUCE, F.L.S., F.R.G.S., &c.

FAM. *SPARGANOTHIDÆ*.*ATTERIA DOCIMA*, sp. nov.

♂. Head and antennæ black; thorax and abdomen reddish-brown, the latter black beneath; the anal segments also spotted with black; the anal tuft greyish white; legs reddish brown. Primaries, orange-red; the costal margin black, thickly streaked with white; the apex and outer margin black, to the end of the cell, streaked with fine white lines; the inner margin spotted with black, the fringe alternately black and white. Secondaries rather darker red than the primaries; the apex and outer margin broadly bordered with black, which is broken into spots near the anal angle; the fringe alternately black and white; the under side very similar to the upper side, but the black not crossed by white streaks as above. Expanse, 1½ inches.

Hab.: PERU, La Merced, 2000–3000 feet. Mus. Druce.

FAM. *TINEIDÆ*.*OMMATOTHELXIS*, Wlsm.*OMMATOTHELXIS GRANDIS*, sp. nov.

♀. Head, collar, tegulæ, and thorax, bright metallic blue; palpi, bluish-black, red at the base on the under side; antennæ black; abdomen white, banded with blue, the anus bright red; coxæ, femora, and tibiæ, bright red; tarsi, blue-black, banded with white. Primaries blue-black, crossed about the middle by a wide white band; the base of the wing very thickly irrorated with bright blue scales; the veins and marginal line thickly covered with bright metallic blue scales; the fringe white at the apex, black on the outer margin. Secondaries white, broadly bordered with black at the apex, and partly round the outer margin; the fringe bluish-black. Under side very similar to the upper side, but with the base of the primaries white. Expanse, 2½ inches.

Hab.: WEST AFRICA, Bitji Ja River, Cameroons, 2000 feet. Dry season. Mus. Druce.

A NEW BRITISH TIPULID.

BY DR. E. BERGROTH, C.M.Z.S.

In this Magazine, 1893, p. 285, and 1895, p. 52, a British species of the genus (or subgenus) *Ephelia* has been recorded by Bradley under the name *E. variinervis*, Zett., supposed to be identical with the *Limnobia variinervis* of Zetterstedt. As Wahlgren has shown that

* Coloured figures will be given in a future number of the two insects now described—H. D.

Zetterstedt's type is a *Tricyphona* (*Amalopsis*) with a supernumerary cross-vein in the basal median cell, it is clear that Bradley's identification was wrong. The late G. H. Verrall sent me some specimens of the British species in question, which proved to be undescribed. In describing it I have used the Comstock-Needham nomenclature of wing-venation, which, founded on a sound morphological basis, is now (except in Germany) beginning to replace the outgrown arbitrary vein-nomenclature used in the well-known works of Loew, Schiner, Osten Sacken, etc. For a detailed account of the Tipulid wings I refer to Prof. Needham's extremely interesting and instructive paper in the "New York State Museum Bulletin," 124, pp. 217—278, plates 11—30 (Albany 1908). There is, however, one term in the Comstock-Needham nomenclature which does not seem to be well chosen. The "great cross-vein" of the old nomenclature is called the "basal deflection" of Cu 1. It could never be called "deflexio" in a Latin description, and I propose for it the term "ascending portion" (*pars ascendens*) of Cu 1,

EPHELIA VERRALLI, n. sp.

Opaca, parce pilosa, capite et thorace cinereis, pronoto subochreo-cinereo, fusco-bivittato, pone suturam transversam fusco-trivittato, abdomine supra obscure testaceo subtus flavo-testaceo, limbo laterali toto et limbo apicali segmentorum ventralium fuscis, alis levissime umbratis, maculis septem transversis fuscis ad marginem costalem et macula minore dilutius fusca ad apicem venarum longitudinalium (excepto R 4 + 5) notatis, venulis transversis, deflexione basali venæ R 4 parteque ascendente venæ Cu 1 fusco-marginatis, venis Sc et R 1 flavidis partibus earum per maculas fuscas currentibus nigricantibus.

Long. corp. 6—7 mm., alæ 7—7.5 mm.

Hub. ANGLIA CENTRALIS (Warwickshire, Bradley; Derbyshire, Verrall).

Head considerably broader than the collar; antennæ short, not reaching base of wings, dark testaceous or fuscous, joints of flagellum in the male almost linear, except the three basal ones which are narrowly suboval, in the female shortly oval; palpi brownish testaceous. Thorax longitudinally strongly convex. Mesonotum with two fuscous vittæ, behind the transverse impression with three such but less distinct vittæ, at the apex with two small blackish dots placed close together; humeral pits very distinct, blackish, slightly shining. Wings with the first costal spot at h, the second between this and base of Rs, the third at base of Rs, the fourth at apex of Sc, the fifth, sixth, and seventh at apex of R 1, R 2, and R 3, the other wing-spots as indicated in the diagnosis. Apex of Sc 1 a little more basad than the base of R 4, Sc 2 vertical, a little before the apex of Sc 1. R 1 reaching C opposite the middle of R 2, or a little shorter, a little incurved near its tip, r often scarcely distinct. Rs beginning basad from the middle of the wing, gently curved at the base, a little shorter than R 3. Cell

R 2 about three times longer than its petiole, occasionally somewhat longer. Cell R 3 a little longer than R 4 + 5. Cell 1st M 2 about two times longer than broad. Petiole of cell M 1 as long as the cell or somewhat shorter. Ascending portion of Cu 1 joining cell 1st M 2 in its middle, rarely more basad. A 1 curved at the apex, which is opposite the apex of Sc 1. A 2 curved at the apex, usually with a spur directed obliquely forward some distance before the tip. Halteres rather long, pale testaceous, the club infuscated. Ovipositor slightly curved, upper valves straight, much shorter than the lower ones, narrowly truncate at apex. Legs testaceous with the apex of femora and tibiæ fuscous, or entirely fuscous except the coxæ, trochanters, and base of femora, which are always testaceous.

The specimens communicated by Verrall bear the labels Sutton and Dovedale. He wrote that he had found them on the damp surface of overhanging rocks. They are not in good condition, and the apex of the abdomen being destroyed in the only male, I am unable to give any information about the structure and colour of the propygium, but I suppose British Dipterists can supplement the description from better preserved material.

In most wings the second anal vein makes a sudden hitch toward the first anal vein some distance before its tip, and is at this point provided with a spur or stump of a vein directed obliquely toward the hind margin of the wing. When such is the case there is a fuscous spot at this point, a very unusual place for an incomplete vein in the *Tipulidæ*, and foreshadowing the structure of the second anal vein in the South African genus *Podoneura*, Bergr. This genus is placed in the *Limnophilinæ* by Needham, who finds its venation "aberrant" in several respects; and so it is if *Podoneura* is placed there, but it belongs to the *Eriopterinae*, as I clearly stated in my description. Its venation is very similar to that of the allied genera, *Symplecta*, Meig., and *Psiloconopa*, Zett. (*Trimicra*, O.S.), the only aberrant character being the furcated second anal vein.

I seize the opportunity to correct the synonymy of two genera of *Tipulidæ*. Meigen founded his genus *Ctenophora* on four species without indicating the type. In his paper, "The type-species of the North American genera of *Diptera*" (Proc. U. S. Nat. Mus., xxxvii, pp. 499—647), Coquillett cites as type of this genus, *Tipula atrata*, L., "by designation of Latreille, Considér. Général., 1810, p. 442." For the genus hitherto called *Ctenophora* he substitutes the new name *Phoroctenia*. The fact is, however, that Latreille, as early as 1805 (Hist. Nat. Crust. Ins., xiv, p. 286), singled out *atrata*, L. (*ichneumonea*, De G.), founding the genus *Tanyptera* upon it. *Atrata* was thus for the future precluded from the possibility of being considered the type

of *Ctenophora*, if *Ctenophora* and *Tanyptera* are kept apart as distinct genera. In 1832, Brullé, overlooking Latreille's work, also founded a new genus (*Xiphura*) on *atrata*, and in 1833 he separated *Ct. bimaculata*, L., as a distinct genus, *Dictenidia*, leaving Meigen's two remaining species in *Ctenophora*, where they have peacefully stood until Coquillett's unwarranted innovation. What Latreille, five years later (in 1910), did with the genus *Ctenophora* has no bearing on our nomenclature. Kertes's citation (Cat. Dipt. II, p. 269) of *Tanyptera* under the genus *Ctenophora* is wrong. The correct synonymy of these genera is:—

TANYPTERA, Latr. (1805).	CTENOPHORA, Meig. (1803).
<i>Xiphura</i> , Brullé (1832).	<i>Phoroctenia</i> , Coq. (1910).
Type: <i>atrata</i> , L.	Type: <i>pectinicornis</i> , L.

Turtola, Finland:

April, 1912.

TWO DIPTERA (CECIDOMYIIDÆ) NEW TO BRITAIN.

BY F. W. EDWARDS, B.A., F.E.S.

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1. *Oligotrophus ventricolus*, Rübs., Biol. Centr. XIX, p. 566 (1899).

In December last I received for identification from Mr. H. Horsfall, of Springhead, Oldham, Lancs., some Cecidomyiid galls on *Molinia cærulea*, together with one damaged fly bred from them. The galls and the larvæ contained in them were evidently those described and figured by Rübsaamen (Ent. Nachr., XXI, 1895, p. 13) and by Kieffer (Ann. Soc. Ent. France, 1900, pl. 31, fig. 9); the larvæ corresponded exactly with Rübsaamen's description, and as he says that they are "distinguished from all known Cecidomyiid larvæ by the presence of a chitinous structure on the fourth segment" (*i.e.* the one behind that bearing the "brustgräte") the identification seemed indisputable. Rübsaamen's subsequent description of the imago, however, did not seem to fit Mr. Horsfall's specimen. I was, therefore, very glad to receive from my correspondent, on April 2nd last, a number of living examples of the fly bred from the *Molinia*-galls. An examination of these proved that they were certainly *O. ventricolus*, and that the species is subject to a good deal of variation in size and colour. According to the original description there is a red stripe on the side of the thorax extending from the wing-base to the neck. One or two of the score of specimens I examined were coloured thus, but most had

the thorax almost entirely shining black. In some the scutellum and metanotum were red, in others black. The chitinised parts of the abdomen are usually black, sometimes (σ) brownish-black; in one or two specimens the tergites were black with a reddish-central longitudinal line. The non-chitinised parts of the abdomen are a bright red in life, and this makes the female at least a very conspicuous little fly. The black bands of the dorsal and ventral surfaces are connected by patches of small flat black scales on the lateral integument.

Kieffer (Suite à la Synopse, p. 12, 1902), places this species in *Mayetiola*; both *Mayetiola* and *Oligotrophus* are said by him to possess trifold empodia, but in *ventricolus*, as far as I can see, the empodia are simple and pulvilliform. Hence if the tarsal characters of Cecidomyiidae are to be accepted as of generic value, this species is apparently not correctly placed, though it is quite beyond my power to say in which of Kieffer's genera it should be included.

2. *Lestodiplosis tenuis*, Lw., Dipt. Beit. IV, p. 33 (1850)

A female specimen, possessing the characters of *Lestodiplosis* and answering fairly well to Loew's description of *L. tenuis* is in the British Museum collection, bearing the label "Felden, Herts., 11. iii. 93., A. Piffard." The species of *Lestodiplosis* are somewhat remarkable from having spotted wings, and some of them have also banded legs. *L. tenuis* differs from the other banded-legged species in having the hind tarsi entirely dark, while there are two whitish rings on the hind tibiae, and the femora are whitish except at the tip. In our specimen the pale rings on the hind tibiae are situated at the base and on the base of the apical half (Loew does not give their position); the fore and mid tibiae are whitish beneath (not mentioned by Loew); and the upper side of the basal half of the hind femora is dark, as well as the tip. In spite of these points I think the identification is correct; I can find no other description which fits the Felden specimen. *L. tenuis* does not seem to have been noticed since its description.

British Museum (Natural History):

May 6th, 1912.

Stylops melittæ, Kirby, at Woking, &c.—It is perhaps worth while to record the appearance of further examples of this species at Woking, after an interval of several years. On April 21st and 24th, five males were taken on the wing, and others seen, by my sons, on a sandy part of our heath frequented by various bees. It is such a restless insect that a butterfly net is required for its capture. Mr. Hamm has also taken several specimens on the wing on April 17th—May 1st,

between 1.40 and 2.0 p.m., in the grounds of the University Museum at Oxford. Those found at Woking were captured between 9.0 and 10.30 a.m.—G. C. CHAMPION, Horsell, Woking: *May 4th*, 1912.

A new locality for Lomechusa strumosa, F.—Last Saturday (May 11th), while walking across Blackheath, to the S.E. of Guildford, I noticed various specimens of *Formica sanguinea* running across a sandy path. This at once reminded me of *Lomechusa*, and on tracing the ants to their nest, two examples of the beetle were soon secured. The Woking locality is separated from Blackheath by the North Downs, and it is, perhaps, ten miles distant as the crow flies. It therefore seems probable that *Lomechusa* will be found in other places in the southern counties where the ant occurs. At present, at Woking, it seems to be restricted to a very limited piece of ground.—G. C. CHAMPION: *May 13th*, 1912.

Deilephila livornica, Esp., at Coventry.—I beg to record the capture of a specimen of *D. livornica* last evening between 10 and 11 p.m., at light. I was passing an electric arc standard near St. John's Church here, when I noticed a Hawk-moth encircling it. I had no kind of a net with me, but after two or three powerful soars round the lamp, the moth came within radius, and I managed to bring it down with my umbrella. Unfortunately in doing so, I knocked off one of its antennæ, but otherwise it is in fair condition. You can imagine my surprise when later, I found on reference, that I had secured *D. livornica*, here in Coventry.—E. W. SILLS, 34, Earl Street, Coventry: *May 13th*, 1912.

Early appearance of Pyrameis cardui and Caradrina quadripunctata in Cornwall.—*Pyrameis cardui* was observed on the wing almost every day during the three weeks I spent at the Lizard this spring, the earliest date being March 29th. All the specimens seen were in very good condition, and, as usual, very active; on one occasion three were seen together sunning themselves in a sheltered spot on the cliffs. I suppose these must have been immigrants from the Continent, and it would be of interest to know if they were observed by other Lepidopterists. I also took a rather rubbed, but apparently not very old, specimen of *Caradrina quadripunctata* on April 7th, flying in the sunshine—though it was probably disturbed by one of my companions.—H. G. CHAMPION, New College, Oxford: *May*, 1912.

Abundance of Heliozela stanneella, F.R.—I should be glad to know if any of your readers have noticed this little moth in unusual numbers this month. Here at Wanstead, and in this end of Epping Forest, they were, from the last week in April till a day or two ago, literally in hundreds, *thousands* would hardly be an exaggeration! At any sunny spot, where holly or hornbeam bushes were growing beneath oak, they were to be seen in little swarms buzzing round the twigs; it would have been an easy matter to have taken a dozen at one sweep of the net. I have frequently seen the allied, and usually more common *sericella* acting in the same way, but never in such large numbers.—A. THURNALL, Wanstead, Essex: *May 11th*, 1912.

A note on Xenolechia scutella, Se.—This beautiful little moth is just beginning to appear on the oak trunks; twenty years ago it was quite common on certain oaks here, but it seems to get less common every year.—A. THURNALL.

Triogma trisulcata, Schum., in Perthshire.—When I introduced this fly to the British List in the April number of this Magazine (*ante*, p. 84), I had no expectation of taking it here—almost at my own door, and so soon after writing my note. It is with pleasure, therefore, that I record five specimens taken to-day on a marshy piece of ground lying just outside this town. This particular spot has yielded me several “good things,” of which the present species is one of the most interesting. All the specimens are males, and were found flying low down over moss and short vegetation growing in water. I hope to get the ♀, and perhaps the larva. The latter is not known with certainty, but the supposed larva has been described by de Rossi (*Entom. Nachr.*, 1876, p. 31). His larva resembled in a general way the larva of *Phalocrocera*, which has been so well described by Prof. Miall. All my specimens show a faint dorsal abdominal stripe.—A. E. J. CARTER, Blairgowrie: *May 8th*, 1912.

Review.

GENERA INSECTORUM, Fasc. 122nd, DERMAPTERA By MALCOLM BURR, D.Sc. 112 pp., 8 coloured and 1 uncoloured Plates. Wytzman, Brussels, 1911. Price fr. 44.

The appearance of this memoir must be hailed with satisfaction by every entomologist, for at last we have in our hands a comprehensive and authoritative account of a most difficult and much neglected group of insects. Until the publication of Dr. Burr's volume on the earwigs of India, these insects had never been really satisfactorily figured except in a few isolated descriptive papers and faunistic works. The magnificent plates, the work of the accomplished Mr. Edwin Wilson of Cambridge, which accompany the text of Dr. Burr's latest monograph, give a good idea of the remarkable diversity of form and coloration existing in the *Dermaptera*, whilst the numerous outline drawings of anatomical details must be of enormous service in elucidating the text, clear though this is. Dr. Burr has devoted many years to the study of the *Dermaptera*, and during that time a steady stream of descriptive papers has poured from his prolific pen. Some measure of his industry can be gained from a consideration of the fact that out of the 143 genera enumerated in this memoir, 76 owe their origin to him. But the author has done more than publish descriptions of new genera and new species, for he has thoroughly revised the classification of the families into which the *Dermaptera* are divided, and has reduced to order the chaos in which the group had been left by De Bormans and Krauss. In his introduction, Dr. Burr adequately acknowledges the labours of Verhoeff and Zacher in the vineyard, which he might almost call his own, and has succeeded in dovetailing their conclusions with his own in a most ingenious manner. It speaks well for

the soundness of Dr. Burr's scheme of classification that, based as it is on the external features of both sexes, it corresponds in the main with Zacher's scheme, which is based entirely on the male genitalia. When two systematists working along independent lines arrive at much the same conclusions, there is every reason to believe that their system of classification is, to a considerable degree, permanent and natural. It may be remarked *en passant* that the author animadverts strongly on Zacher's practice of basing new genera on male sexual characters alone; it is consequently rather a shock to find that Dr. Burr's own definition of the genus *Apterygida* is:—"Resembles *Forficula* in every respect except the forceps of the ♂, which are remote and slender."

Our author divides the *Dermaptera* into three sub-orders, the *Arixeniina*, the *Hemimerina*, and the *Forficulina*. The first includes the remarkable insect which has recently been found in the axillary pouches of the hairless Malayan bat, *Cheiromeles torquatus*; the second, the well-known parasite of the African rat, *Cricetomys gambiensis*; the third, the earwigs proper. The *Arixeniina* should be placed next the *Forficulina*, for their affinities are quite undoubted. *Hemimerus* occupies a far more isolated position, and, in the reviewer's opinion, deserves to have equal rank with the *Arixeniina* and *Forficulina* combined. Its affinity to the *Blattidæ*, though remote, is perhaps as close as its affinity to the earwigs; the deflexed head and viviparous habit are all *Blattid* characters. The *Forficulina* are divided by Dr. Burr into three super-families, six families, and 28 sub-families; admirable synoptical keys to these and the genera guide the student through a maze of difficulties, and the descriptions of the genera themselves leave little to be desired. It only remains for Dr. Burr to put the crown on his protracted labours by issuing a monograph describing all the known species of *Dermaptera*, and it is good news to learn that this monograph is actually being written.

It is an ungrateful task to point out the faults in this memoir, but we cannot refrain from observing that misprints occur in irritating profusion and the index is not very reliable. However, these are minor blemishes in one of the most valuable contributions to our knowledge of insect taxonomy that has appeared in recent years.—R. S.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held in the Royal Institution, Colquh Street, Liverpool, *Monday, March 18th, 1912.*—Dr. P. F. TINNE, Vice-President, in the Chair.

Mr. H. S. Leigh read a paper dealing with a few points connected with the life-history and habits of the leaf-insect, *Pulchriphyllium crurifolium*, Serv., and the praying insect, *Sphodromantis guttata*, Thunb. After remarking that the metamorphosis of the leaf-insect and praying insect is slight—young individuals being very similar to the adults in general appearance—some of the results of breeding experiments with these insects were briefly described. The wonderful similarity, both in form and habits, of the leaf-insect to various plant struc-

tures, was remarked upon, and it was pointed out that development is slow and requires considerable heat and moisture for its continuance, restricting the geographical distribution of these creatures to some of the islands of the Tropical zone. Sexual dimorphism is very pronounced, the females being large and foliaceous, whilst the males are much more elongate, and are not, therefore, so leaf-like in appearance. The feeding habits of *S. guttata* were described in some detail, as were also the methods of oviposition obtaining in the two families under consideration. The *Mantidæ* possess some strange modifications in structure resulting from their carnivorous habits. Thus, the front legs which are modified for the seizure of prey, are developed to an extent out of all proportion to the same limbs in other insects. The *Mantidæ* enjoy a wider distribution than the *Phasmidæ*, being abundantly represented in all the warmer regions of the world, including South Europe. Dr. P. F. Tinne exhibited *Lycæna ægon* from the New Forest and other localities.—WILLIAM MANSBRIDGE, *Hon. Secretary.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, April 11th, 1912.—MR A. E. TONGE, F.E.S., President, in the Chair.

Mr. Step exhibited the Crustacean *Squilla desmarestii*, and described its Mantis-like appearance and habits. Mr. Gibbs, long series and specimens of *Pieris napi* from various British localities, and pointed out their racial characters with reference to various continental races and forms. Mr. Cowham, hybrid *Nyssia zonaria* and *Biston hirtaria*, varied series of *Hybernia leucophæaria* and *H. marginaria*, small forms of *Leucania pallens*, probably of the 2nd brood, and bred specimens of *Zonosoma pendularia* from Oxshott, referable to the rosy form var. *subroseata*. Mrs. Hemming, bred series of *Melitæa aurinia*; the Carlisle series included a melanic form and var. *virgata*, the Welsh series included forms with very red ground colour, and the Oxford series contained very pale specimens, as well as a specimen closely resembling *M. cinxia*. Mr. Quarrington, living larvæ of *Rumicia phlæas*, taken wild on April 7th and 10th. Mr. Newman, full-fed larvæ of *Abraza grossulariata*, kept in sleeves outdoors, and living pupæ of *Dryas paphia* and *M. athalia*. Dr. Chapman, living larvæ of *Leioptilus tephradactylus*. Mr. Tonge, a branch of *Viburnum* from Tilgate, with four larvæ of *Ægeria andrenæformis*. Mr. Colthrup noted the abundance of *Biston hirtaria* this season, especially around London. Mr. R. Adkin, many examples of named varieties of British *Lepidoptera* to illustrate his paper, entitled "Varietal names as applied to British *Lepidoptera*."—HY. J. TURNER, *Hon. Sec.*

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, March 6th, 1912.—The Rev. F. D. MORICE, M.A., President, in the Chair.

The following gentlemen were elected Fellows of the Society:—Harold Hodge, Chapel Place Mansion, 322, Oxford Street, W.; Samarendra Maulik (Calcutta), c/o Messrs. T. Cook & Son, Ludgate Circus, E.C.; Roland T. Smith, 54, Osbaldeston Road, Stoke Newington, N.

Mr. Donisthorpe exhibited a specimen of *Catops montivagus*, Heer, new to the British list, taken at Nethy Bridge, on June 27th last, under a dead squirrel. Also *C. tristis*, Panz., for comparison, the nearest species previously known as British. Professor Poulton, the first, and a part of the second, of three families of *P. dardanus*, Brown, bred from *hippocoon*, F., females in the Lagos district by Mr. W. A. Lamborn. He stated that these three families were the first successful attempt, outside Natal, to breed *P. dardanus* from a known female parent. Professor Poulton drew attention to the following letter, received by Mr. W. A. Lamborn from Captain H. V. Neal:—"You have asked me about monkeys eating butterflies. This is very common as every native will tell you. I have seen it myself. The monkey runs along a path, sees some butterflies fluttering round some filth, goes very quietly, and seizes one by the wings, puts the solid part (body) into his mouth, and then pulls the wings off. The poor butterfly goes down like an oyster." Professor Poulton said that he had now submitted to Professor R. Newstead some of the Coccids which formed the food of *S. lemolea*, H. H. Druce. They had been sent in spirits by Mr. W. A. Lamborn and, although unfortunately badly attacked by fungus, had been placed without hesitation in the genus *Dactylopius* by Professor Newstead. Professor Poulton, examples of *Eurytela dryope*, Cramer, and *E. hiarbas*, Drury, bred by Mr. W. A. Lamborn in the Lagos district. Mr. Lamborn had bred considerable families of *dryope* three times, and *hiarbas* once from known female parents. The *dryope* parents produced nothing but *dryope*, the *hiarbas* nothing but *hiarbas*. It was, therefore, almost certain that the two forms were distinct species, at any rate in the Lagos district. Professor Poulton, specimens of *Pseudacraas*, captured on December 3rd, 10th, and 17th, 1911, by Dr. Carpenter, in the primitive forest which still exists in the centre of Damba Island. Mr. A. Gibbs, two specimens of the scarce butterfly, *Baronia brevicornis*. Mr. Douglas Pearson, a drawer of aberrations of the genera *Melitæa* and *Erebia*, amongst which were some striking forms of *E. stygne*, *E. ceto*, and *M. varia*, as well as a remarkably variegated ♀ of *M. aurelia*, generally speaking the most constant of the group. Dr. Jordan, on behalf of Dr. Malcolm Burr, two specimens of a new Dermapteron, discovered in vast numbers in a cave in Java, for which a new sub-order is required.

Wednesday, March 20th, 1912.—The President in the Chair.

The following gentlemen were elected Fellows of the Society:—Messrs. T. W. Allen, M.A., 30, Blenheim Gardens, Cricklewood, N.W.; Edward Stuart Augustine Baynes, 120, Warwick Street, Eccleston Square, S.W.; Gerald Bedford, Entomologist to the Union of South Africa Dept. of Veterinary Science, Churchfelles, Horley, and Oudestepoort, Transvaal; Capt. Kenneth Alan Crawford Doig, R.A.M.C., M.R.C.S., F.R.C.P., Villa Sorrento, York Road, Woking; Messrs. Herbert L. Earl, 35, Leicester Street, Southport, Lancs.; C. Jemmett, Ashford, Kent, and South-Eastern Agricultural College, Wye, Kent; R. D'A. Morrell, Authors' Club, 1, Whitehall Court, S.W.; Charles A. Schunck, Ewelme, Wallingford. The death was announced of Mr. H. J. Adams, of Roseneath, Enfield.

Commander J. J. Walker exhibited specimens of *Claviger longicornis*, Müll. (with *C. testaceus*, Preysl., for comparison), a species of *Coleoptera* new to the British list. They were taken under stones near Kirtlington, Oxfordshire, in May, 1906, and April, 1907, in nests of small black ants of a species not determined, but suggested by Mr. Donisthorpe to be *Lasius umbratus*. Mr. Donisthorpe, specimens of *Microdon mutabilis* bred in his observation nest of *Formica fusca* from Porlock, also the nest itself, with the ants and a live larva of *Microdon* taken at Porlock, April 27th, 1911, and pupa cases and larvæ of the fly in spirit. Mr. W. C. Crawley said that he had found one larva in a nest of *Myrmica ruginodis* instead of the usual host *Formica fusca*. Prof. Poulton, the following *Lepidoptera* with the "Neptis" pattern, collected by C. A. Wiggins near Entebbe; all the specimens had been captured in forests within a few miles of Entebbe, between May 23rd and July 25th, 1909:—*Neptidopsis ophione*, Cram., *Neptis melicerta*, Drury; *N. agatha*, Stoll.; *N. metella*, Dbl.-Hew.; *N. nicomedes*, Hew., var. *quintilla*, Mab.; *N. nemetes*, Hew.; *N. saclava*, Boisd.; *N. nysiades*, Hew., ab. *continuata*, Holl.; *N. puella*, Auriv.; *Deilemera leuconoe*, Hopff.; *D. transitella*, Strand. *Neptis nicomedes*, *nysiades* ab. *continuata*, and *puella*, were closely similar, and would be indistinguishable upon the wing. The two Hypsid moths presented a rough approximation to the pattern. Professor Poulton, the male and female types of *Neptis swynnertoni*, a new species from S.E. Rhodesia, described by Mr. Roland Trimen, F.R.S., together with a specimen captured in the garden at Chirinda (3800 ft.) on March 28th, 1911, by Mr. C. F. M. Swynnerton. Prof. Poulton, *Tirumala formosa*, Godn., and its mimic *Papilio rex*, Obth., from the Kikuyu Escarpment, near Nairobi, British East Africa; the same Danaine, and the transitional *Papilio commiata*, Auriv., from Nyangori, at the N.E. corner of the Victoria Nyanza; *T. mercedonia*, Karsch, and *Papilio mimeticus*, Rothsch., from Buddu on the W. shore of the lake; and *T. morgenii*, Honrath, with three of its *Amauris* models—*psyttalea*, Plötz, *hecate*, Butler, and an undetermined species, probably new, from the Cameroons. Professor Poulton, the three largest *Lycænidæ* captured by Mr. W. A. Lamborn, and suggested that an undetermined pupa in the nest of *Æcophylla* might possibly belong to one of them. The three large species were *Epitola honorius*, F., male and female, *E. posthumus*, F., male, and *Hewitsonia boisduvali*, Hew., male and female. Mr. Lamborn's notes on the two females showed a remarkable degree of sluggishness. Professor Poulton, a male *Amauris egialea*, Cram., recently received from Mr. W. A. Lamborn. The "paper" enclosing the specimen bore the following note:—"8 a.m. Half mile [from Oni clearing]; January 30, 1912. Observed flying up and down. It then settled on upper surface of leaf and started to pass its brushes to and fro over its scent-patches, exactly as *Amauris niavius* did. Wings were rather overflexed." Dr. F. A. Dixey and Professor Kellogg commented on this exhibit.—

G. WHEELER, Hon. Secretary.

ANOTHER HUNDRED NEW BRITISH SPECIES OF DIPTERA.

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

(Continued from Vol. xlviii, page 59)

52. *T. pollinosus*, n. sp.: Rather dull green. This species may be known at once by its duller green appearance; the face has the upper part distinctly duller than in *T. lætus*. Discal vein not so curved, and the discal cross-vein hardly more than twice its own length from the wing margin. Arista pointed, and with its basal joint small; third antennal joint small. Bristles on the head and thorax all yellow; acrostichal bristles rather strong (especially the hinder ones) and about eight in number. Legs paler than in *T. lætus* (especially on the tarsi); coxæ, trochanters, extreme base and about apical third of femora, and anterior tibiæ orange to pale brown, hind tibiæ slightly darker, tarsi all brownish orange; front coxæ bearing longer and coarser orange pubescence. Genital lamellæ yellow, with long thin side-processes which have two very long hairs proceeding from each of them. The female may be known by its dullish colour, pointed arista, and straight discal vein.

Col. Yerbury caught three males and five females at Aviemore on July 18th to 21st, 1905, and one male at Nairn, while a pair occurred at Devereux Pool in Herefordshire on July 5th, 1909.

These additions will bring the British species of *Thrypticus* up to four, but I suspect the existence of three others of which I do not possess sufficient material. I have three males and two females of a very small species allied to *T. pollinosus* from the New Forest, two very distinct looking males taken by Col. Yerbury at Porthcawl in June, 1906, and an apparently very distinct male from the Norfolk Broads (Ormesby), taken by me on June 22nd, 1881.

T. bellus I possess from numerous localities extending from Dorset to Nethy Bridge, and I have examined nearly fifty specimens.

53. *Medeterus infumatus*, Lw.: A few specimens of this species were taken by Col. Yerbury at Nethy Bridge in June and July, 1905. It may be distinguished from the "*truncorum*" group of species by its entirely black legs.

54. *M. nitidus*, Macq.: Mr. Donisthorpe bred three females of this little known species in 1910, but I do not at present know where the larvæ were found. I have not the slightest doubt but that they are British.

55. *M. excellens*, Frey.: This very distinct species was taken very

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[VOL. XLVIII.]

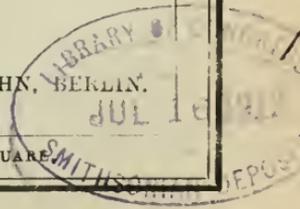
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It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermoptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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INTERNATIONAL CONGRESS OF ENTOMOLOGY.

The Second International Congress of Entomology will be held at Oxford from August 5th to 10th, 1912.

The President of the Congress is Professor E. B. Poulton, D.Sc., F.R.S.

The Executive Committee proposes to find for Members of the Congress lodgings in the town, or rooms in one or more of the Colleges at a moderate charge; rooms in College will be available only for men.

The Executive Committee invites an early provisional notice of intention to join the Congress, in order to be able to make the arrangements for the necessary accommodation.

The Proceedings of the First Congress are in the press, and will be published shortly.

All communications and enquiries should be addressed to the General Secretary of the Executive Committee,

MALCOLM BURN, c/o Entomological Society of London,

11 Chandos Street, Cavendish Square, London, W.

sparingly by Mr. C. G. Lamb at Nethy Bridge in June, 1905, but was only described by Frey in 1909 from Finland. The remarkable swelling of the postical vein in the male and the pale halteres distinguish it.

When Mr. Verrall wrote the above the female of *M. excellens* was unknown, but on September 3rd, 1911, at Nethy Bridge, Col. Yerbury caught both sexes, and an examination of the female proves that it does not resemble *pallipes* (as suggested by Frey) so much as it does *apicalis*, differing from the former in its larger size, postical cross-vein nearer the wing-margin, and abdomen not so metallic coloured; from *apicalis* it appears to differ chiefly in having a white post-ocular ciliation, and knees more narrowly pale. The colouration of the legs, however, varies, the majority having the four posterior tibiæ and 3—4 basal joints of tarsi yellowish, with indications of a brownish ring at base and tip of tibiæ, but the hind legs are always slightly darker than the middle legs and occasionally the hind legs, except the knees, are entirely darkened, and the middle legs very extensively darkened. The postical vein is simple.—

J. E. C.

56. *Telmaturgus tumidulus*, Radd.: Col. Yerbury found this species about the margins of a pond on Rempstone Heath in Dorsetshire in August, 1909, and upon a visit there Mr. Collin took a fair number of specimens. The genus *Telmaturgus* is closely allied to *Sympyenus* and *Sytormon*, but the male is distinguished by the eyes being touching almost all down the face and by the knobbed arista, while the females have the face produced as in *Synarthrus*, but have the arista placed nearer the base of the third antennal joint; and in neither sex is the second joint of the antennæ pushed thumblike into the third.

57. *Campsicnemus compeditus*, Lw: A male of this remarkable species—almost as remarkable as *C. magius*—was taken by Col. Yerbury at Studland, Dorset, on June 9th, 1907. *C. magius* is not uncommon on black mud on the east coast.

58. *C. marginatus*, Lw: Dr. J. H. Wood has sent me three males of this well-marked species, which were taken at "Churchyard Dingle," June 22nd, 1908; Monnow, July 30th, 1908; and Moseley Mere, September 19th, 1910. It is recorded from Germany and Austria, but apparently not since nearly fifty years ago.

59. *Teuchophorus calcaratus*, Macq.: I anticipated as far back as 1876 that this species would occur in England, and Dr. J. H. Wood found it in the Monnow Valley, Herefordshire, while I have taken it, not at all uncommonly, in company with all the other species of the genus, except *T. simplex* (which occurs within a mile), at Snailwell near here.

60. *Aphrosylus mitis*, n. sp. : A small species allied to *A. ferox*. Antennæ all black. Legs yellowish with the tibiæ brown, and the femora of the female brown.

♂. Palpi silvery with a slight yellowish tinge, smaller than in *A. ferox*. Antennæ small, blackish, third joint pointed but only as narrow at the tip as the basal joint of the arista, the rest of the arista tapering and rather longer than (or equal to) the rest of the antennæ (including the basal joint of the arista). Face whitish grey, extremely narrow at the middle or the eyes touching. Lower postocular bristles all short and pale greyish yellow; ocellar, fronto-orbital, and posterior vertical bristles shorter than in *A. ferox*, and a short postocular row extending half-way down the head.

Thorax darker (brownier) grey than in *A. ferox*.

Abdomen with the genitalia hardly at all knobbed and with no large lobe, small, greyish black but ferruginous and minutely pubescent at the end.

Legs luteous (compared with orange ferruginous in *A. ferox*), but the tibiæ all darkened; coxæ with a slaty grey hue except at the tip, but reddish at the base of the front pair, which are glossed with white anteriorly, and on which the tiny black anterior bristles may be stronger but less numerous than in *A. ferox*; front femora with one black spine beneath at the base, but with the other tiny black bristles not specialised and without any row of longer ones beneath (which are present in *A. ferox*); front tibiæ with one small dorsal bristle at about one third from the base, and a small, inconspicuous apical spur, while any dorsal or ventral ciliation is so slight as to be not noteworthy; front tarsi quite simple, slightly longer than the tibiæ, basal joint slightly longer than the next two together, and these two almost equal in length, fourth joint the shortest; middle legs simple, femora without any of the bristles beneath which occur in *A. ferox*, though a slight præapical bristle occurs on the femora and two small bristles on the tibiæ at about one third from the base; middle tarsi longer than the tibiæ, last joint hardly dilated; hind legs thin and simple, femora with a slight row of (about three) rather long antero-dorsal bristles on the apical half, and the tibiæ with a pair of bristles at about a third from the base; hind tarsi long and thin, basal joint only equal in length to the next two together.

Wings smoky; costa with only short regular equal spines (as distinguished from the *Helomyza*-like double row of spines in *A. ferox*). Squamæ greyish brown; halteres yellow.

♀. Palpi comparatively small, blackish with a tinge of yellow and with slight yellow pubescence.

Eyes distinctly though rather narrowly separated by the pale grey or brownish yellow face. Legs with even the front coxæ grey, except at the tip, but more yellowish posteriorly; all femora darkened except about the tip, front femora simple and almost straight, with only one (instead of three as in *A. ferox*) strong bristle beneath near the base, or with one smaller one in addition, but with three rather thin long postero-dorsal (one just before the middle, and the others between that and the tip); front tibiæ straight and simple, with one moderately short spur, and one small slight dorsal bristle just before the middle, and with slight postero-dorsal and ventral ciliations on the whole length; posterior tibiæ with slighter bristles, but the front trochanters more bristly than in *A. ferox*. Squamæ greyish yellow. Length about 1.5 mm.

This species is easily distinguished from *A. ferox* in the male by its simple hypopygium, normal front tarsi, unarmed middle femora, and simple front tibiæ; the female is also distinguished by the comparatively unarmed front femora, and by the front tibiæ having only a short apical spur.

A. mitis is very abundant on the sides of the River Deben, in Suffolk, about halfway between Woodbridge and the mouth of the river. It was taken on June 30th, 1907, and June 28th, 1908, and it also occurred at Walton-on-Naze, on June 5th, 1908.

60a. *Callimyia elegans*, Meig. This may now, in my opinion, be definitely accepted as a British species. The male has orange halteres, but may be distinguished from *C. amœna* by the abdomen having a silvery-grey patch at each side of the hind margin of the third and fourth segments, the patch on the fourth segment being the more obvious one, while the thorax bears no præsutural grey spot above the wing-base, *C. amœna* (♂) has a large grey patch on the sides of the fore margin of the second abdominal segment and similar (but smaller) spots on the fore margins of the fourth and fifth segments, and also has an obvious præsutural grey spot above the wing-base. I place infinitely more faith in the slight silvery-grey markings of the male than I did in 1900. Col. Yerbury took four males at Porthcawl.

(To be continued).

A TABLE OF THE BRITISH SPECIES OF THE COLEOPTEROUS
GENUS *GYROPHÆNA*, MANN.

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

In the following table of the British species of *Gyrophæna*, Mann., it will be noticed that there are two additions to the list, one of which is new to science. *G. bihamata*, Th., is probably mixed with *G. lævipennis*, Kr., in most collections, as the females are very much alike, but the males are easily distinguished by the shape of the 6th (free) segment of the hind body; I have seen specimens from Berks, Hants, near Cardiff (Tomlin), and Westmorland (Day, who noticed the peculiar ♂ characters some time ago). *G. convexicollis*, sp. n., is probably rare, as it occurs, like its nearest ally, *G. lucidula*, Er., in marshy places.* I have taken three males from flood-rubbish at Theale and Thatcham, Berks., and it has occurred to Commander Walker at Yarnton, near Oxford, in April, 1907, among wet dead sticks in a swamp.

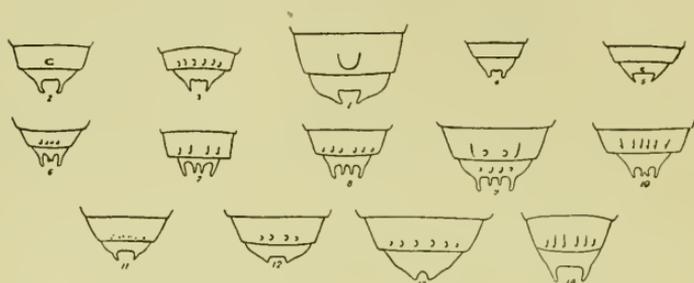
In the accompanying illustrations of the last two dorsal segments of the hind body of the males, the under-plate of the last segment is not shown. In the table the "6th segment" refers to the 6th free segment, which is the last.

TABLE.

- I.—Penultimate joints of antennæ not transverse, 5th joint longer than broad.
- i. Elytra extremely finely punctured. Length, 2·4—2·8 mm....
pulchella, Heer.
 - ii. Elytra alutaceous and with diffuse rather large shallow punctures.
Length, 1·5—2 mm. *affinis*, Mann.
- II.—Penultimate joints of antennæ distinctly transverse, 5th joint transverse.
- i. Head slightly transverse; temples more than half the diameter of the eyes, which are smaller and less prominent.
 - 1.—Thorax and elytra very scantily pubescent; thorax pitchy black.
...*strictula*, Er.
 - 2.—Thorax and elytra rather closely, finely but distinctly, pubescent; thorax reddish yellow.....*lævicollis*. Kr.
 - ii. Head strongly transverse, temples very short, hardly one quarter the diameter of the eyes, which are larger and more prominent.
 - 1.—Thorax entirely and diffusely punctured with large punctures, which are not arranged in two rows on disc.
 - A.—Colour pitchy black, elytra slightly lighter...*manca*, Er.
 - B.—Colour yellow, head, postero-external angles of elytra, and 4th segment of hind body, pitchy.

* I have recently taken fifty specimens of *G. lucidula* from two small white fungi growing on a water-soaked log at the side of a lake at Englefield, Berks.

external angles, impunctate in scutellary region; hind body alutaceous, finely and rather closely punctured; ♂ with the 5th (free) dorsal segment of hind body with four small round tubercles near posterior margin; 6th terminating in two sharp teeth separated by a considerable interval. Length, 1.5–1.8 mm.



- | | |
|--------------------------|------------------------------|
| 1. <i>G. pulchella.</i> | 8. <i>G. fasciata.</i> |
| 2. <i>G. affinis.</i> | 9. <i>G. gentilis.</i> |
| 3. <i>G. strictula.</i> | 10. <i>G. nana.</i> |
| 4. <i>G. lævicollis.</i> | 11. <i>G. lucidula.</i> |
| 5. <i>G. manca.</i> | 12. <i>G. convexicollis.</i> |
| 6. <i>G. minima.</i> | 13. <i>G. lævipennis.</i> |
| 7. <i>G. poweri.</i> | 14. <i>G. bihamata.</i> |

Bradfield, Berks. :

May, 1912.

STROPHOSOMUS CURVIPES: A COLEOPTERON NEW TO BRITAIN.

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

When collecting with Mr. Ford near Bournemouth two or three weeks ago, I picked up a pair of a small *Strophosomus* which struck me at once as being different from anything I had met with before, and on comparing it with various descriptions I find it to agree perfectly with Bedel's *S. curvipes* (Faune Col. Seine, vi, p. 46). The species is remarkable by the comparatively narrow prothorax with much rounded sides, and by the strongly curved anterior tibiæ of the male. The female has a small bare carinule at the base of the thorax, but this is scarcely indicated in the male. The nearest ally seems to be the common *S. coryli*, but in appearance *S. curvipes* more resembles *S. fulvicornis*, from which it is distinguished by the form of the thorax and elytra, by the different setæ on the elytra, and by the male tibiæ. *S. curvipes* was first described by C. J. Thomson, and Bedel applies Thomson's name to the insect I am writing about. But I admit that I have grave doubts as to whether Thomson's insect is really the same as Bedel's. According to Bedel *S. baudueri* Desb., briefly diagnosed by

Desbrochers (Bull. Soc. Ent. France, 1874, p. cxviii), is this species, but the diagnosis has nothing characteristic. The species seems to be very rare and little known. Bedel mentions a pair found in connection with *Erica cinerea* on a very sandy place at Fontainebleau. Although the name is a little doubtful, the species is certainly a valid one, and we may register it at present as *curvipes* with a reserve of doubt as to Thomson. The synonymy of the species of this genus is very uncertain. In the European Catalogue (2nd Ed., 622), *fulvicornis*, Walton is placed as a synonym of *capitatus*; and *rufipes* Steph. is given as a distinct species. Yet *rufipes* Steph., and *fulvicornis* Walton, appear to be really one and the same. As there appears to be much misunderstanding as to *S. fulvicornis*, I may here mention that it is a perfectly good species, distinguished by possessing only very minute short setæ, which mostly arise from the punctures, not from the interstices between the striæ. I have recently taken here, on stunted oaks and birches, a very fine series in perfect condition. No other species occurred with it except the ubiquitous *S. coryli*. Two species from Spain in Mr. Champion's collection, both named *curvipes* for him by a continental authority, are quite different from the Bournemouth insect. As *S. curvipes* is from Scandinavia, it is not very probable that the Spanish examples are either of them correctly determined.

Brockenhurst:

May 29th, 1912.

COLEOPTERA IN DEVONSHIRE.

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

Despite the great scarcity of beetle life last year, in this County at any rate, there are a good many fresh locality records which may be worth noting as well as the few additions (marked with an asterisk) to the County List which I can report.

At BRAUNTON during the first three months of the year:—**Oxyptoda lentula* (one), *Calodera riparia*, **Bledius longulus* (one), *Oxytelus sculptus* (one), and *Silpha tristis* (one), on the Burrows; one *Haliphus heydeni* in a marsh drain; several *Atemeles emarginatus* under stones on top of nests of *Myrmica ruginodis*; two *Rhizophagus perforatus* in elm sawdust; *Homalota silvicola*, *H. occulta*, *H. villosula*, *Encephalus complicans*, *Agathidium lævigatum*, *Olibrus particeps*, **Longitarsus patruelis*, and *Ceuthorrhynchus euphorbiæ* (one) in moss, &c.

During April and May at AVONWICK, near SOUTH BRENT :—one *Megarathrus denticollis* in window; *Bembidium punctulatum*, *Hydræna nigrita*, *Homalota cambrica*, *H. exilis*, *Lesteva pubescens*, *L. fontinalis* (one), *Choleva angustata* (one), and *Elmris volkmari*, on the banks of and in the River Avon; *Homalota elegantula* (one), *Meligethes umbrosus* (one), *Phyllotreta tetrastigma*, and *Ceuthorrhynchus setosus* (one) by sweeping; *Stomis puniceatus* and *Pselaphus heisei* (one) under stones; *Anaspis geoffroyi* on apple blossom; *Oxyopoda vittata* (five), *Homalota oblongiuscula*, *H. silvicola*, **H. hepatica* (one ♂), *H. xanthopus*, **H. intermedia* (recorded on p. 66 of last year's Ent. Mo. Mag., but not marked as new to County), **Eusphalerum primulae* (one), *Agathidium nigrinum* v. *rubicundum*, Reitt. (one), and *Choleva coracina*, in sugar traps in a wood; *Rhizophagus depressus* and *R. ferrugineus* under fir bark; remains of a *Clinocara undulata* under oak bark; and an *Acupalpus meridianus* in the garden—this species appears to be exceedingly scarce throughout Devon. One **Phlæopora angustiformis*, Baudi, was taken from a branch amongst flood rubbish in Sept., 1908.

At BUCKFASTLEIGH from June to September :—*Laccobius ytenensis* (common), *Helophorus arvernicus* (several), *Hydrochus nitidicollis* (in quantity in one very restricted spot), *Hydræna testacea*, *H. nigrita*, *H. britteni* (one), *H. atricapilla*, **Callicerus rigidicornis*, *Homalota luteipes*, *Myllæna kraatzi*, *Philonthus micans*, *Oxytelus rugosus* v. *terrestris*, *Ancyrophorus onalinus*, and *Cilea silphoides* (from moss as at Christow in 1907) on the banks of and in the River Dart; *Mycetoporus longulus*, *Lathrobium angustatum*, *L. quadratum*, *Sitones cambricus*, *Gymnetron beccabungæ* v. *veronicae*, *G. labilis* (one), *Poophagus nasturtii*, and *Ceuthorrhynchus melanostictus*, from marshy ground; *Olibrus particeps*, *Meligathes gagatinus* (two), *M. viduatus* (two), *M. umbrosus* (one), *Aphodius sticticus*, *Phyllotreta ochripes*, *Apion subulatum*, *A. vicinæ*, *A. filirostre*, *Tychius tomentosus*, *T. pygmaeus*, by general sweeping, and one *Cryptophagus setulosus* by sweeping at dusk; *Ocyopus compressus* under stone; *Orthochætes setiger* in moss; *Necrophorus interruptus* (one) flying at dusk; one *Cassida hemisphærica* from mint in the garden; one *Leptidea brevipennis* in the house (probably from a hamper which had travelled widely); two *Phlæopora angustiformis* and several **Scolytus pruni* and **S. rugulosus* from decaying apple boughs; two *Pityogenes bidentatus* (dead) from a fir branch at Gallantry Bower.

One *Laccobius purpurascens* was obtained at EXMOUTH in October; one *Arena octavii* on DAWLISH WARREN in November; and one *Homalota oblongiuscula* in fungus in Stoke Wood, near EXETER, in December.

Oxyopoda vittata and *Lesteva fontinalis* were omitted to be noted from flood rubbish at CHRISTOW; and *Cassida hemisphærica* from SHALDON.

My thanks are again due to Mr. E. A. Newbery for his great kindness in verifying difficult species.

8. Queen's Terrace, St. David's, Exeter :

June 3rd, 1912.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (29.)

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

ALLANTUS, JURINE, AND *TENTHREDO*, L.

Most species—or at any rate most British species—of *Allantus* may be easily known from those of *Tenthredo* by their wasp-like coloration, and short sub-clavate (or sub-fusiform) antennæ, with a long slender 3rd joint, and the penultimate joints (6, 7, 8) quite remarkably short and thick. In *Tenthredo* the antennæ are generally longish; and their penultimate joints, though shorter, are scarcely if at all thicker than the third. The colour, too, is very seldom wasp-like, the abdomen being generally quite black, or red and black, or green and black. Yet there are cases in which it is difficult to employ the above characters; and, in fact, the most experienced systematists have disagreed as to the exact dividing line between the two genera, though fortunately, these differences of opinion affect the position of two only among our native species. These two, until the year 1888, were placed by all authors in the group now called *Tenthredo*; but were then transferred by Konow (followed by Dalla Torre, Costa, etc.) to *Allantus*, and there remained until Dr. Enslin, the latest monographist of the latter genus, re-transferred them in 1910 to *Tenthredo*. My Table of Generic Characters (*Ent. Mo. Mag.*, August, 1903) was drawn up after correspondence with Konow and under the influence of his views; but even then I felt and expressed some difficulty about bringing *T. maculata* under Konow's definition of *Allantus*, and I am now convinced by Dr. Enslin's Memoir, and by correspondence which I have since had with him, that it is best to refer both *maculata* and the other species which Konow made into an *Allantus*, viz., *temula*, Rossi (= *bicineta*, Cam., etc.), not to *Allantus*, but to *Tenthredo*.

Allantus, Jur., is a group which is rather poorly represented in this country, but flourishes exceedingly all round the Mediterranean, and throughout the warmer parts of the Palearctic region generally. In such districts its species are not only more numerous, but also far more diversified, both in colour and structure, than with us. Our species (except the ♂ of *flavipes*) are invariably black and yellow simply, but in the South there are many more or less red-bodied forms, and a few entirely black or violaceous, &c.

On the other hand, *Tenthredo* spp. seem to become rare south of

the Alps. In Central Europe, many of them are very common; and of these a considerable number are well established with us, while others occur from time to time, but on the whole must be regarded as rarities.

I will now attempt to diagnose, in a single Synoptic Table for both Genera, such species as I think have any claim to rank as British. Especially in the case of *Allantus*, I have found, by examination of the actual specimens, that many old records, hitherto accepted as correct, simply rest on mis-identifications; and others have pretty certainly arisen from the accidental admission of foreign specimens, without tickets indicating their origin, into the cabinets of British collectors (especially Leach and Stephens). Afterwards, as in my previous papers, I shall add a few notes on particular species.

SYNOPTIC TABLE OF BRITISH *ALLANTUS* AND *TENTHREDO*, spp

1. Antennæ short and more or less incrassate before the apex (joints 6, 7, 8 very much shorter but evidently broader than joint 3!) Stigma *always* yellow, at least at its base. Abdomen *always* more or less banded with yellow (*Allantus*) 2.
- Antennæ nearly always long and scarcely (or not at all) incrassate before the apex (joints 6, 7, 8 almost, or quite, as slender as joint 3!). Stigma often fuscous. Abdomen seldom banded with yellow....
(*Tenthredo*) 13.
2. Head, in both sexes, much dilated behind the eyes (viewed from above, its sides *converge* from back to front!). Head, antennæ, thorax (except the cenchri), base apex and whole *ventral* surface of abdomen, and bases of all legs, black. The yellow markings are confined to one or two dorsal abdominal segments, and the middle parts of the legs (tibiæ, tarsi, and extreme apices of the front femora)—Very rare, if really British; I know of no recent captures in these islands *A. rossii*, Pz.
- Head not, or scarcely, dilated behind the eyes. Yellow markings much more copious than in *rossii*3.
3. Flagellum of antennæ fulvous (orange or red brown)4.
- At least joints 3 to 9 of antennæ black5.
4. Large and handsome (wasp-like) species (11–15 mm. long). Tegulæ, and most of the abdominal segments (at their apices, broadly) bright yellow.
—Not uncommon in S. England*A. scrophulariæ*, L.
- Rather smaller and darker (10–12 mm. long), Tegulæ black; yellow bands not so regular, and that on segment 5 often wanting. (Hind tarsi rufescent in both sexes)*A. omissus*, Först.
5. Abdomen black at the base, red in the middle, and yellow at the apex....
A. flavipes, Fourcr. ♂

- Abdomen with no red markings, only black and yellow 6.
- 6 Hind femora always black or streaked with black.....7.
- Hind femora (and practically the whole of all the legs) yellow. Abdomen with broad yellow fasciæ much dilated laterally, on all the segments except the basal. (Tempora not sharply margined behind!) Pronotum widely, tegulæ, and two basal joints of antennæ yellow....
A. flavipes ♀.
7. Some segments of abdomen entirely black; others yellow, or banded more or less broadly with yellow, these bands being nearly equally broad throughout (not more so laterally than in the middle!). Tegulæ, or mesopleuræ, or *ventral* plates of abdomen, or all these, often black entirely8.
- Variable in colour, but the abdominal fasciæ are (N.B.) *always much dilated laterally*, so that the *sides* of the insect are yellower than its back. (Generally each segment is very narrowly edged with yellow above, while the sides and belly show more yellow than black). The tegulæ* and mesopleuræ are *always* marked with yellow. The scutellum and the two basal joints of the antennæ may be either black or yellow. (If both scutellum and antennæ are entirely black it is the var. *nitidior* of Knw.)—An extremely common species everywhere*arcuatus*, Först.
8. Upper wings distinctly (though it may be slightly) infuscated in certain areas, and clear in others. Head and thorax pretty strongly punctured, and either dull or only slightly shining.....9.
- Wings without definite infuscations. Head and thorax very shining, almost impunctate.....12.
9. Tegulæ black. Scutellum generally marked with yellow.....10.
- Tegulæ never black. Scutellum generally immaculate11.
10. Hind tarsi of ♂ always black (in the female they are reddish). Head and mesonotum in both sexes slightly shining between the punctures. A brightly coloured insect, generally with a broad, yellow apical band on the propodeum and each of the segments following it, except the 1st, 2nd, and 5th (that on the 4th, especially in the ♂♂, is frequently interrupted in the middle!). Occasionally the mesopleuræ are slightly spotted behind with yellow: in more typical specimens they are immaculate. Labrum sometimes very dusky, but this character also varies. 10–11 mm. long.....*A. marginellus*, Kl.
- Hind tarsi reddish *in both sexes*! Exceedingly like *marginellus* but the puncturation of head and mesonotum coarser and more rugose, so that the surface looks duller. (The antennæ are variable in colour, the flagellum being either black or fulvous. In *marginellus* it seems to be always black!)*A. omissus*, Först.
11. Abdomen coloured much as in *marginellus* and *omissus*, but the

**A. schaefferi*, Kl., which has been recorded as British (but, I believe, erroneously) is practically a large and highly coloured *arcuatus* but with black tegulæ. See Notes following this Table.

yellow bands are usually narrower (linear) and that on segment 4 entire in both sexes. Its surface is much duller (opaque!) and its general appearance darker, though the tegulæ (as well as the hind tarsi) are not black, but yellowish or reddish. In the upper wings a long and conspicuous dusky streak runs first along (under) the subcosta, then crosses the base of the cubital area, and then follows the radius up to the apex of the wing. (The *metapleuræ* are marked with yellow, but the *mesopleuræ* are immaculate.) 10–13 mm. long...

A. vespa, Retz.

(= *tricinctus*, F.)

- A much smaller species than *vespa*, about 9 mm. long. Abdomen, with the three segments following the propodeum, black, the fourth *entirely* yellow, and the fifth black. The tegulæ and the two basal joints of the antennæ are bright yellow. (The *metapleuræ* immaculate!) Head and thorax as in *vespa*, opaque, coarsely and rugosely punctured. Hind tarsi and apex of tibia reddish in the ♀. (I do not know the ♂ and can find no description of it) *A. zona*, Klug.
12. Superficially very like *zona*, but at once separable from it by the *smooth and shining* head and mesonotum. Tegulæ entirely yellow. Antennæ with *the scape only* yellow, and even that is generally marked behind with black. Stigma parti-coloured, the base yellow, the apex fuscous. In both sexes, as in *zona*, the three segments following the propodeum are black, and the fourth entirely yellow. The apical segments are entirely black in the ♂, marked with yellow in the ♀. In both sexes, rather more than the apical half of the hind femur is black, as are also the apices of the tibiæ and tarsi..... *A. distinguendus*, v. Stein.
- Tegulæ only edged with yellow. Closely related to *distinguendus*, but larger (10–12 mm. long). In the ♂ the apex of the abdomen is marked with yellow (in *distinguendus* it is immaculate). The ♀ differs from *distinguendus* in having, like the ♀♀ of most species, *rufescent* (not black) apices to the hind tibiæ and tarsi, and is unlike that or any other species in the colour of the fourth abdominal segment after the propodeum, which is (N.B.) yellow at the *base* and black at the *apex*! (In the ♂, as in *distinguendus*, *zona*, etc., this segment is entirely yellow.) The above characters appear to be constant, but in other points of coloration the species is rather variable. *A. amœnus*, Gravenh.
(= *cingulum*, Kl.)
13. Abdomen black, with a broad central yellow band, covering at least the whole of one dorsal plate and the sides of that which follows it.....14.
- Abdomen never broadly banded with yellow. (Generally that colour is absent altogether, except in faded specimens of originally green species, and in these it never takes the form of a broad transverse band ...15.
14. Large species (12–15 mm. long). The abdominal yellow band occupies at least *two* segments in the ♀ and *four* in the ♂, and is continued across

the *ventral* plates as well as the dorsal. The tegulæ are white or yellow, and the scutellum bears a round pale yellow spot...

T. maculata, Geoffr.

- Much smaller (9–11 mm. long). The central yellow abdominal band occupies only one dorsal-plate (the next but one after the propodeum) and the sides of that following it. The venter is unbanded (black in the ♀, sordid yellow in the ♂). The tegulæ and scutellum are generally black, the apical abdominal segments yellow above. (The antennæ in this species are distinctly incrassate before the apex, as in *Allantus*: but it differs from any of our British *Allantus* spp. in having the stigma *completely fuscous!*).....*T. tenuula*, Scop.
(= *bicincta*, F.
15. Body green and black, the green fading in old specimens to a sordid straw-yellow. (Scutellum green).....16.
- No part green. (Scutellum nearly always black, but in one species bright yellow.) The usual coloration is red or black, or a combination of these colours, with occasionally a little white on the antennæ, pronotum, pleuræ, coxæ, &c.17.
16. Stigma, antennæ, and most of the body *above* black (the sides and belly mostly green). Rather like a dark specimen of *Rhogogaster viridis*, but easily distinguished by its converging eyes and fuscous—not green—stigma. An exceedingly common species.....*T. mesomela*, L.
- Stigma, antennæ in part, and most of the body (above as well as beneath) olive-green: dorsum of abdomen usually with a *rather narrow* black central vitta*T. olivacea*, Htg.
17. Antennæ entirely black.....18.
 with some joints white or yellow, at least beneath.....21.
18. Clypeus and labrum black, contrasting strangely with the mandibles, which are yellow.....*T. mandibularis*, P2.
- Clypeus and labrum white or yellow.....19.
19. Abdomen entirely black, legs red. (If there be a white mark on the metapleura, the insect is the variety *dispar*, Kl.) *T. atra*, L. ♀
- Abdomen black and red.....20.
20. Edge of pronotum and tegulæ black*T. atra*, L. ♂
- Edge of pronotum yellow or white, tegulæ red (or, in var. *lachlaniana* Cam., white)*T. moniliata*, Kl.
21. Antennæ with joints 8, 7, and *the apex only* of 6, white. Abdomen of ♂ black at the base, the intermediate and apical segments red (often somewhat *pallid* in the centre of the intermediate segments): that of the ♀ may be black entirely, or the apical half may be red. Sides of propodeum and metapleura marked with white. Stigma pale at the base*T. livida*, L.

- Antennæ, with the *whole* of joints 8, 7, and 6 white or yellow, but joint 5 entirely black22.
- Antennæ with the 5th joint white or yellow, at least at the apex or beneath23.
22. Scutellum yellow (N.B.!). Tegulæ and abdomen of ♀ black...
T. fagi, Pz.
 (= *solitaria*, Cam. nec Scop.)
- Scutellum black. Tegulæ rufescent. Apical segments of ♀ abdomen red*T. colon*, Kl.
23. Metapleuræ white. The antennæ are *altogether* white or yellow at the apex, and all the joints from the 4th (or even part of the 3rd) to the apex are pale *beneath*. The ♂ abdomen is mostly red, that of the ♀ usually mostly black.....*T. velox*, F.
- Metapleuræ quite black (No white spot!).....24.
24. Larger (11–12 mm. long). Mesopleuræ conspicuously and sharply—even *angularly*—protuberant. Antennæ black at the apex; but joints 7, 6, and 5, yellow. Tegulæ yellow or white.....*T. ferruginea*, Schr.
 (= *rufiventris*, F.)
- Smaller (8–10 mm. long). Mesopleuræ not very protuberant. Antennæ mostly pale, from joint 5 to the apex. Tegulæ dusky. (Thomson says they are whitish in the ♂, but this is not the case with my British specimens!)*T. ballcata*, Kl.

NOTES.

A. rossii, Pz. The Dale Collection at Oxford contains a ♂ of this species called “*tenulus*” (sic!) and a female called “*viduus*.” (*Viduus*, Rossi, is a synonym of *bifasciatus*, Müll. It is a South European species, with much darker wings than those of *rossii* and the tibiæ of the *hind legs only* yellow.)

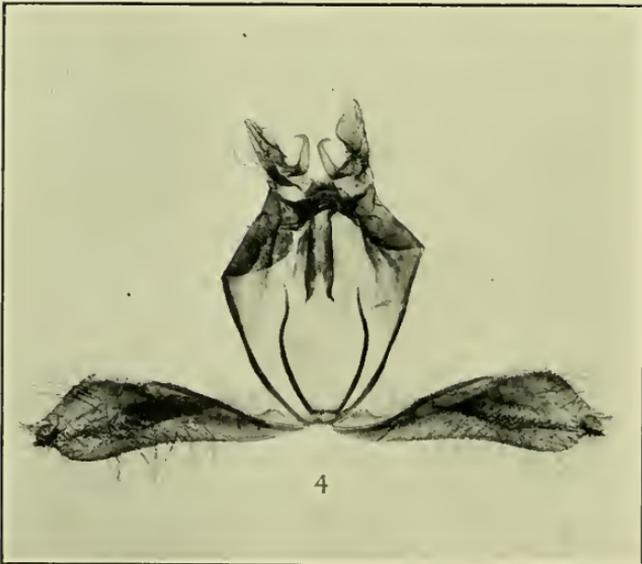
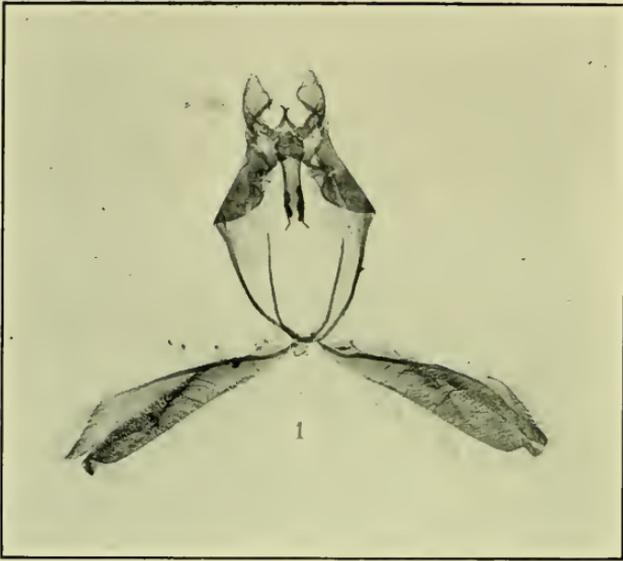
A. flavipes, Fourer. I have a ♂ from the Oxford district, and a ♀ from Colchester (Harwood).

A. schaefferi, Kl. I have seen the specimens referred by Mr. Cameron to this species, but they are certainly examples of *marginellus*. Their ventral segments are black in both sexes, whereas in *schaefferi* ♂ the venter is entirely yellow, and in the ♀ it is banded with that colour.

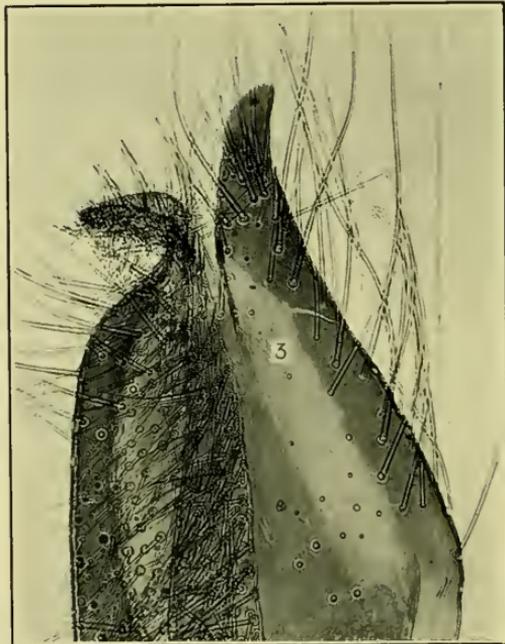
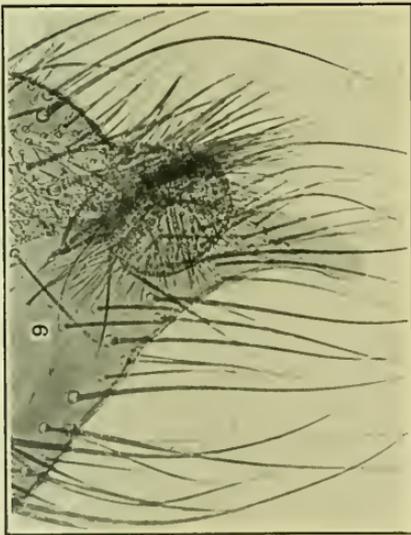
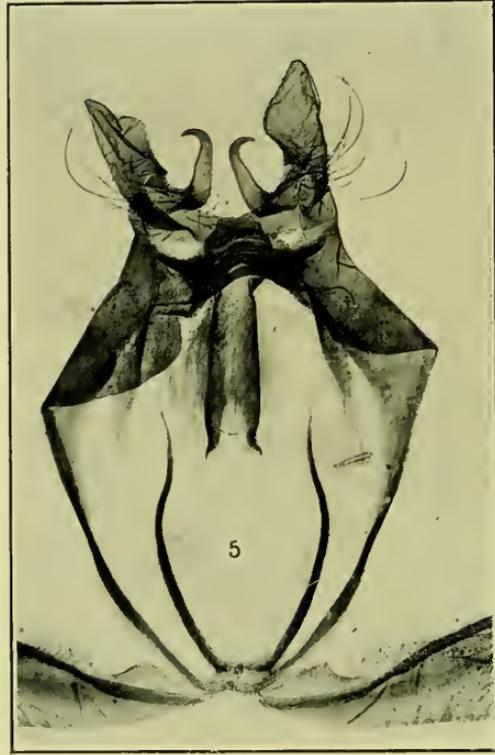
A. marginellus, Kl. According to Mr. Cameron’s Vol. IV, the *marginellus* of his Vol. II is really *omissus*. I possess British specimens (♂ ♂ and ♀ ♀) of both these species. *Marginellus* has been taken by Mr. G. Arnold in the New Forest, and also by the late Mr. Rollason near Truro; *omissus* by the late Mr. McLachlan (Blackheath) and by Dr. Capron (? Shiere, Surrey).

A. zonu, Kl. This is the *quadricinctus* of Cam., Vol. II. I have only foreign (Swiss) specimens myself, which are all ♀ ♀. The ♂ was unknown to Klug, and apparently also to Thomson, Cameron, and André. No author whom I have consulted describes it!

A. distinguendus, v. Stein. I have a ♀ taken by myself at Virginia Water,



AGRIADES GRAVESI AND A. ESCHERI.



AGRIADES GRAVESI AND A. ESCHERI.

and a ♂ from coll. Capron. Probably it is the *zonula* of Cam. (*nec* Kl.). The true *zonula*, Klug, is common in Switzerland and South Europe, but I cannot certify it as British. It is very like *distinguendus*, but (*inter alia*) differs by having the hind femora almost entirely yellow, only their actual apices being black in either sex.

A. amœnus, Gravenh. (= *cingulum*, Kl., Cam., André, &c.). Seems to be commoner than *distinguendus*, but still decidedly rare. It occurs in Surrey and Sussex (Capron, Bloomfield, &c.). A ♂ in coll. Capron has the 5th abdominal segment as well as the 4th entirely yellow.

T. maculata, Geoffr. The yellow in this species is very apt to become discoloured (brown) soon after death. The same is the case with the somewhat similar continental form, *T. flava*, L. (with yellow antennæ!). The latter beautiful species is, I fear, not British; though it is recorded as such by Stephens, and there is a specimen of it in his collection—probably one of Dr. Leach's Italian captures!

T. mandibularis, Pz. Taken by Lt.-Col. Nurse last year in Essex.

T. fagi, Pz. The antennæ in this species, though long, are distinctly incrassate before the apex. It is described by Cameron under the name *solitaria*, Scop. But according to Konow and Enslin the true *solitaria* = *coryli*, Pz.—a quite different species. I have many continental specimens of the latter, but do not believe it is British, though Cameron gives it as such (under the name *coryli*), on the authority of Stephens. A ♂ of *fagi* from Pelham Wood, Lincolnshire, June, 1909, was sent to me for determination by Mr. Claude Morley. (I have taken a ♀ of it in Germany while visiting the late Pastor Konow.)

T. colon, Kl. I have seen two ♀ ♀ from Yorkshire sent me for identification in September, 1909, and I think Mr. Bloomfield has also taken it.

T. velox, F. My British specimens are all from Scotland (Rannoch, Donisthorpe). It is a common Alpine insect.

(To be continued).

AGRIADES GRAVESI, N. SP.: A NEW LYCÆNID.

BY T. A. CHAPMAN, M.D.

~ (PLATES VII, VIII).

At first glance this species resembles closely on the upperside *Polyommatus icarus*; on the underside the suggestion is *Aricia medon*. It is, however, not a *Polyommatus* or an *Aricia* but an *Agriades*, and is, indeed, nearest to *A. escheri*. It has, in some respects, much resemblance to *A. actinides*, of which, however, I have been unable to obtain a male specimen for dissection. From *actis* it seems very distinct.

The specimens available are three males and one female. One male expands 27 mm., the other three specimens, 30 mm.

Male. Upperside, a clear bright violet blue, rather more violet than in the violet forms of *icarus*. About No. 506 of Klinksieck's "Code of Colours," but with a difficulty of comparison due to the metallic brilliancy of the butterfly. The fringe is divided into an inner and outer line: the outer light grey (whitish scales tipped with blackish), the inner nearly black; without a lens this appears to be a black margin of the wing itself. In one specimen there are no other markings; in another, there are small black marks on the hind wings in the spaces close to the hind margin; they are six in number; this is a variation well known in *icarus*, *thetys*, and other blues. The veins do not stand out as paler, really more shining lines, as they commonly do in *icarus*.

♂. Underside: the underside very closely resembles that of *medon*, and it is curious that the upperside, especially as regards the fringes, is not unlike *sarta*, another *Aricia*. It also resembles *hunza* and *icarus*, both of which are *Polyommatus*.

In comparing it with *medon*, the upper wing presents no points of difference. The hind wing, however, has the spot in space 6-7 in normal sequence, not advanced basally (as in *medon*, close to that in space 7-8). The basal margins of the orange spots, which are as bright as and otherwise very similar to those of *medon*, with their white and black marginal lines, are more rounded, not with a basally pointing angle as in *medon*. The white dash in space 3-4 is close to 4, and though it is continuous with the white circles round the spots in 3-4, 4-5, it is smaller and shorter than in *medon*, and can barely be said to enter space 4-5, and is quite separate from the orange marginal spot in 4-5.

In general appearance and markings the species is nearest to *actinides*, which I have little doubt is a closely allied species, although I have been unable to obtain a ♂ of that species for dissection. It differs in the orange marginal markings in the male, being very weak in *actinides*, in the white dash on the hind wing being much more extensive, and especially in the row of discal spots beneath the fore wing, being quite free of the marginal spots, and in curving very strongly basally towards the costal extremity. This latter is a specific character that cannot be disregarded.

The female upperside is of a brown-black, with a faint trace of discal spots that one rather imagines than sees, and a marginal row of orange spots not unlike those of ♂ *medon* when fully expressed; there are five on the upper wing, the most costal very small. On the hind wing are also five, their marginal ends are hollowed, and a whitish-bluish curved line facing the hollow encloses a black spot (of the general wing colour). The underside differs from that of the male in being darker (the two corresponding very nearly to the lightest and darkest undersides of *medon* varieties), and in the orange spots being more pronounced.

In comparison with *actinides* (I have only one specimen of each before me) the female has the orange marks above smaller, very

much, however, for size and distinctness, like Groum-Grshimailo's figure in the fourth volume of the Romanoff Memoirs. Neither in my specimen or in the figure of *actinides* is any trace of the completion of the ocelli on the hind wing as in *gravesi*. Beneath they are much alike, with the same differences as in the male, viz., in *gravesi*, row of spots (upper wing) less incurved at costa, white dash (hind wing) shorter, red marginal spots well developed up to costa fore wing, and all the markings brighter and crisper and more like, in that respect, *medon*. The ♀ *actinides* may not be so fresh, but it seems in fine condition.

In *gravesi* ♀ the outer fringe which is white, in ♂ is dark on fore wing, except at extreme apex, and has a good deal of dark shading in hind wing, but may be called white. In *actinides* ♀ specimen and figure it is white, faintly tinted in specimen. There is on both surfaces of *A. actinides* ♀ a faint trace of blue, that is wholly wanting in *A. gravesi*.

Icarus, *amor*, and *venus*, in various respects resemble *gravesi*. The most obvious point of difference is in the presence in them of the basal spots beneath fore wing, but this is too variable a character to have much value; the real distinction is that they belong to the genus *Polyommatus*, and *gravesi* is an *Agriades*. These two genera are at once recognisable by the genitalia, the form of the ædœagus being characteristic (Ent. Rec., Vol. xxii, p. 100). The genitalia of *gravesi* are remarkably close to those of *escheri*, and though the general aspect of the two species is very different, in essentials (pattern of markings, &c.), they are certainly very close. *Escheri* has also many local varieties, some of which make a certain approach to *gravesi*, and as it is not known so far east as the habitat of *gravesi*, we may, without calling them conspecific, regard *gravesi* as representing *escheri*.

The principal difference between the appendages of *gravesi* and *escheri* is in the terminal serrations of the clasps. I have found no specimen of *escheri* identical in this feature with *gravesi*, but there is a good deal of variation in this structure in *escheri*, and no very great further variation in one direction would make them alike. We may take it, however, that this further variation on the part of *escheri* would carry it beyond its present specific boundaries. A point, whose importance it is difficult to weigh, is, that the whole appendages in *gravesi* are smaller than those of *escheri*, about as 5 to 6. Such a difference does not always imply specific distinction.

The coloured figures show upper and undersides of ♂ and ♀, and

a variety of the underside in our specimen, showing that in this as in so many "Blues," the alignment of the spots beneath the disc of fore wing is liable to vary from its normal disposition.

In the Plates of the appendages Figs. 1, 2, and 3 are *gravesi*, and 4, 5, and 6 are *escheri*; 1 and 4 are the whole appendages $\times 15$; 2 and 5 without the clasps $\times 30$; and 3 and 6 the extremities of the clasps, figs. 2 and 5. If allowance be made for *escheri* being the larger as 6 to 5, there is very little difference between the two species, even that between the serrated ends of the clasps is slight. In fig. 2 the very definitely Agriadid structure of the ædæagus is obvious (the two black marks in the ædæagus are air bubbles accidentally admitted in preparing the specimen). In figs. 3 and 6 no valve attaches to the differences in the soft extremity of the clasp terminating the soft middle of the clasp, as these take all sorts of forms according to accidents of preparation of the specimen.

The specimens were captured by Mr. P. P. Graves (of Constantinople) at 6,400 ft. at the Cedars of Lebanon, at the end of August, 1910. Mr. Graves writes:—

"The specimens were taken on August 27th and 28th, 1910, on the borders of the Cedar Grove, known as the Cedars of Lebanon (Arabicé "El Arz") which is situated in an amphitheatre surrounded by the highest mountains of the North Lebanon, which reach a height of over 10,000 ft. The Cedar Grove is 6,400 ft. above the level of the sea. The formation is limestone covered with a thin layer of glacial debris. The female specimens were at first confused by me with *A. astrarche*, till I had examined the undersides more closely. The males were recognized when in their roosting posture on grass stems by the rich colour of the reddish submarginal spots on the underside. They occurred with *H. poseidon*, *H. admetus*, *P. ? candalus*, *P. icarus*, *P. amanda*, and other Lycænids, in grassy and bushy places."

He presents the types to the British Museum.

Betula, Reigate :

May 14th, 1912.

Discovery of Planeustomus flavicollis, Fauv., in England (Coleoptera Staphylinidæ).—P. flavicollis is a small beetle very similar in facies to its congener, *P. palpalis*, Er., but more slender, with small eyes, and comparatively short elytra, these being but little longer than the elongate thorax. It is a very distinct little creature, not likely to be confounded with anything else. *P. flavicollis* is one of the rarest of insects, there being, so far as I can find, only one previous

capture of it, viz., two specimens found by Chapins at Verviers in Belgium. A specimen of the species was found by my daughter, M. A. Sharp, in a small quantity of flood-refuse here last week. I was very much surprised by this discovery, especially as the insect was accompanied by several other rare forms that I had not expected to occur close at home. The flood was not a high one and the insect had not come from a distance, the refuse being on the bank of a small ditch, over which a footpath passes, and the refuse was on this footpath, at a considerable distance from the river or any large stream. The spot is only a few minutes walk from my residence, and we frequently pass it several times in the day. And yet this small quantity of rubbish produced, as I have said, several species, some of them in numbers, that are usually considered rare. The amount of work that is requisite in order to obtain a good knowledge of the more obscure *Coleoptera* of a fruitful district is almost distressing to contemplate.—D. SHARP, Brockenhurst: *June 17th, 1912.*

Agrion armatum, Charp., in the Norfolk Broads.—During Whit-week, I was on the Norfolk Broads every day from May 27th to 31st inclusive, searching chiefly for *Agrion armatum*. I took very few of the species however, and never saw it in the plenty I did at the same time two years previously. There was but little dragon-fly weather, but I am inclined to think that the species was probably largely over. It is perhaps the earliest British *Agrion* to appear on the wing, and would this early season most likely be well out during the very warm weather we had at the end of April. Even *Agrion pulchellum*, usually the commonest dragon-fly of the Broads, was in much reduced numbers and apparently also going over. I took *A. armatum* on both Sutton and Stalham Broads, and over a fairly wide area. *Libellula fulva* was common, but mostly immature so far as I noticed; indeed, I did not see a single ♂ in the mature blue garb. The most abundant and restless dragon-fly was *Erythromma najas*; it never seemed to tire, and was on the wing constantly from early morning to seven o'clock in the evening if there was any sunshine at all.* *Papilio machaon* was out in plenty in perfect condition, and very pleasing it was to find this fine butterfly still so common, notwithstanding the persecution it has been subject to for so many years.—GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield *June 6th, 1912.*

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held in the Royal Institution, Colquh Street, Liverpool, *Monday, April 15th, 1912.*—Dr. P. F. TINNE, Vice-President, in the Chair.

The Rev. S. Proudfoot, of Altrincham, communicated a paper: "Collecting in Wicken and District," in which he gave a most interesting resumé of his experiences in the district among the *Lepidoptera*, describing the various methods of collecting practised, and enumerating the special insects peculiar to Fenland. The localities were described in an entertaining manner, and the habits and best places to find some of the rarer species were clearly outlined,

* A friend tells me he saw *P. machaon* flying freely on Wicken Fen during the same month.—G. T. P.

and altogether the paper proved a very stimulating account of many pleasant holidays spent in this prolific area. A vote of thanks, proposed by Mr. W. Mansbridge, seconded by Mr. F. N. Pierce, was cordially endorsed by the members present. Dr. Tinne exhibited a drawer of Madeiran *Rhopalocera*, comprising *Vanessa atalanta* and *V. callirhoë*, *Pyrameis cardui*, *Argynnis lathonia* *Colias edusa* and *Satyrus semele*. Mr. Leonard West brought live specimens of *Taeniopteryx nebulosa* and *Nemoura inconspicua* from Heapy, near Chorley. Mr. Wm. Mansbridge showed a fine intermediate variety of *Amphidasys betularia*, bred from a wild larva taken at Simonswood, Lancs., and an unicolorous fuscous grey aberration of *Scoparia ambigualis* from Burnley. Mr. Oscar Whittaker exhibited a pair of *Attacus orizaba*, bred on willow.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, April 11th, 1912.—Mr. B. H. SMITH, B.Sc., Vice-President, in the Chair.

Mr. H. Moore exhibited *Lepidoptera* from Karang, N. Borneo, including *Papilio paradoxus* v. *telesicles*, *Hestia hypermnestra* and v. *belina*, *Hestia lynceus*, a large species of *Nyctalemon*, &c. Mr. Edwards, several species of the genus *Charaxes* from Central and South America, and a *Cucullia verbasci* which had been two years in pupa. Mr. Lucas reported that from April 4th to April 23rd, in the New Forest, he has noted 57 species of plants in flower, and that *Boarmia cinctaria* was out on April 5th. The rest of the evening was given up to the exhibition of lantern slides by Messrs. Dennis, Lucas, and Edwards, the last-named showing slides illustrative of that anomalous creature, *Peripatus*.

May 9th.—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. J. E. Gardner, of Upper Clapton, was elected a Member.

Mr. Jäger exhibited for Miss Edwards, a series of *Hybernia leucophearia* from East Grinstead, with which a large percentage of v. *marmorinaria* had occurred this year. Mr. R. Adkin, specimens of *Dianthæcia luteago*, and read notes on the two varietal forms *barrettii* and *ficklini*. Mr. R. Adkin then read a paper entitled "Labelling Entomological Specimens," after which a considerable discussion took place.

May 23rd, 1912.—Mr. W. J. KAYE, F.E.S., Vice-President, in the Chair.

Mr. H. W. Andrews exhibited specimens of the Dipteron *Brachyopa bicolor*, a Syrphid from Bexley, with the Anthomyiid *Hyetodesia scutellaris*, which it closely resembled. Mr. Alfred Sich, specimens of *Ptycholoma lecheana*, bred on May 23rd from larvæ taken at Richmond on May 11th. Mr. Cowham, a cocoon of *Dicranura bifida*, from which he had observed the imago emerge after softening a portion with a fluid which it had secreted. Dr. Chapman, a larva of *Scolitantides orion* in its first instar mining between the cuticles of a leaf of *Sedum telephium*. Mr. A. E. Gibbs, a large number of species of the genus *Cæonympha*, and read notes on variation, characteristics, and distribution of the various species in the Palæarctic and Nearctic areas. Mr. Kaye, the genus *Cæonympha*, referring particularly to the large size and minute ocelli of the

undersides in Irish specimens of *C. tiphon*. Mr. R. Adkin, *C. tiphon* from English, Scotch, and Irish localities, and remarked on their general local characteristics, and *E. pamphilus*, referring to the varied development of the eye-spots. Mr. Sheldon, fine series of the rarer species, *C. hero*, *C. ædipus*, and *C. iphioides*, and remarked on the unaccountable absence from Britain of the extremely common European species, *C. arcania*. Mr. Curwen, long and varied series of *C. pamphilus* and *C. dorus*, and called attention to the occasional development of a row of submarginal spots on the fore-wing. Mr. Edwards, series of several species, including dark *C. arcania* and species of the allied genus *Hypocista* from Australia. Mr. Turner, series of various Palæartic and Nearctic species, including *C. elko* from Vancouver.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, April 3rd, 1912.*—The Rev. F. D. MORICE, M.A., President, in the Chair.

The following gentlemen were elected Fellows of the Society:—Mr. Henry Hacker, Queensland Museum, Bowen Bridge Road, Brisbane, Queensland; Mr. Cyril Engelhart Latour, Port of Spain, Trinidad, British West Indies; Signor Orazio Querci, Macerata, Marche, Italy.

The Council having been invited to elect Delegates to represent the Society at various functions, the following have been elected:—for the Centenary Celebration of the Philadelphia Academy of Natural Sciences, Professor Comstock and Dr. Holland; Professor Fernald, who had also been elected, was unable to attend; for the First Eugenic Congress, in July, Professor Bateson; for the 250th Anniversary of the Royal Society, in July, the President; for the International Congress of Entomology, in August, the President, the Rev. G. Wheeler, Secretary, and Messrs G. T. Bethune-Baker, H. Rowland-Brown, and the Hon. W. Rothschild.

Mr. G. T. Bethune-Baker exhibited a specimen of *Cyclopodia hopei*, Westw., a parasite on the Indian Flying-fox; this was itself parasitized by an *Acarus* of the genus *Gamasus*, there being no less than seventeen of this small species on one specimen of *C. hopei*.

There being no other exhibits and no papers to be read, the President said that he thought it would be a good opportunity to discuss the important subject of Nomenclature, and a long discussion arose in which many of the Fellows present took part. Eventually, Mr. Turner proposed that a small Committee be appointed to consider the subject of Nomenclature and report to the June meeting, with a view to the coming International Congress. This was seconded by Mr. A. E. Gibbs, and carried *nem. con.* The following Fellows were proposed as forming the Committee, and the names being put from the Chair were unanimously accepted:—Mr. G. T. Bethune-Baker, Dr. T. A. Chapman, Messrs. J. H. Durrant, H. J. Turner, C. O. Waterhouse, and Rev. G. Wheeler, with power to add to their number.—

NOTES ON BRITISH PHORA (CORRECTIONS AND ADDITIONS).

BY JOHN H. WOOD, M.B.

(Concluded from p. 99.)

atrimana, sp. n.

♂ ♀. A deep black insect with almost colourless wings: Thorax, abdomen, and halteres black, pleural bristles strong and equal; frons and supra-antennal bristles much as in *campestris*; antennæ of ordinary size, palpi pure black; wings scarcely tinted, costa less than half the wing length, but more than $\frac{2}{3}$ in both sexes, fringe moderately long, 1 double 2 (♂), rather more (♀), angle at fork moderate, 1st thin vein scarcely curved at its origin; legs black, fore-legs browner, cilia under hind femora small (in *campestris* moderately long on inner half), hind tibiæ less robust, and cilia weaker than in *campestris*; hypopygium and anal organ large and black, and similar in form to those of *campestris*, the former as in that species with a few long hairs rather than bristles below. 1¼—1½ mm.

Of all the species in this section it comes nearest to *campestris*, but the shorter costa, longer fringe, and deep black legs are characters obvious enough to distinguish it at once from that species.

A pair only. Dates and localities: ♂. Middle Park Pool, 10/6/09; ♀. Westhide, 28/10/07. The female happens to be a somewhat abnormal specimen, the 2nd thick vein on the left side being unforked, and the anterior or least stable scutellar bristle on the same side being reduced to the condition of a hair.

Aphiochæta major, sp. n. Very near *ciliata*, with which it agrees absolutely in general colour, form and armature of legs, and in the possession of a very long pleural bristle, but distinguished by two important characters, namely, the absence of the abbreviated 4th abdominal segment of the female, and by the thickness of the costal vein, which is unusually slender in *ciliata* but of ordinary thickness in *major*. Less important distinctions are a somewhat wider frons with stronger bristles, paler wings with the first costal division rather shorter than the other two, instead of being as long or even rather longer, and in the forelegs being darker, the coxæ especially wanting the bright yellow colour which is so conspicuous a feature of *ciliata's*. The hypopygium and anal organ are also somewhat larger, and the underside of the former is more produced posteriorly. It is, besides, a larger and more robust insect, and measures 2 mm.

For the present it remains very scarce. The first specimen I saw was a female submitted to me by Mr. Collin, who captured it at Weybridge (Surrey), 5/7/09. A pair have since fallen to my share, the

male having been taken on the Monnow, 5/7/10, and the female in the house, 9/10/10.

Mallochi. When introducing it I could only give Scotland as a locality. I can now record it from my own neighbourhood. Four females were swept out of rough herbage in Mainswood, from March to May, 1910; and on the very last day of this same year a male was turned out from amongst the remains of an old deserted hive-bees' nest in a hollow overturned tree near Devereux Pool. In the Herefordshire insect the costa seems shorter than in the Scotch one, and even in the female does not reach the wing middle. The discrepancy may, however, be due to the position of the wing in Mr. Malloch's specimens not lending itself so well to a correct estimation.

Minor, Zett. I had very little material before me when describing it, one of each sex only, and the difference, especially in the colour of the legs was so marked between them that there was some little doubt whether they could belong to the same species. Since then I have been able to examine a second male taken by myself in September, 1909; a female taken by Mr. Collin, at Barton Mills, 19/5/09; and a pair *in cop.* also taken by my friend at Aldeburgh, 18/9/07. With this enlarged material, one has learnt that the colour characters are very variable and not governed by sex. In my second male the coxæ are not black but dusky yellow, (all these parts in the male described in the text being black) and the palpi dark. In the mated female the coxæ and femora are uniformly black, whilst these parts in the other female are pale as in my described female, though of a less pure tint, being dusky yellow rather than yellow. The palpi in Mr. Collin's females are dusky yellow and in my single example clear yellow. One or two points need correction in the text. The legs of the male are quite black and not brownish black as there given; neither are the male palpi large; they are only fairly long and slender, and the halteres are white rather than yellow.

Angustifrons, sp. n. This belongs to the short fringed division in Section C, and runs down to the neighbourhood of *uliginosa*, having like it bare pleuræ and yellow halteres, but is otherwise abundantly distinct.

♀. Thorax and abdomen black; frons narrow, longer than broad, and dull; the inner bristle of lower frontal row much below the level of the outer one, but fairly away from the eye margin; one pair only of small supra-antennal bristles, moderately approximated; palpi clear yellow; antennæ brown; wings tinged with yellowish brown, costa well beyond wing middle and densely fringed; 1 rather longer than 2+3, 2 barely half as long again as 3, angle at

fork moderate, 1st thin vein gently curved at its origin from the fork; hind legs brown, middle and front ones more yellow; hairs underneath hind femora well developed on basal half; tibial cilia strong. $1\frac{3}{4}$ mm.

Two females of this very distinct species have been taken, the first on the 22nd of June, 1911, at Mainswood, and the other a week later at the same locality. It resembles in some respects both *uliginosa* and *infraposita*, but is quite distinct from both. From *uliginosa* it may be known at once by the much narrower frons and the differences in its chætotaxy; by the differently proportioned costal divisions, the second division in *uliginosa* being three times as long as the third, instead of barely half as long again, and by other small distinctions. From *infraposita* it is distinguished by the absence of any reddish tinge on the thorax; by the still narrower frons; and the position of the inner bristle of the lower frontal row, away from the eye margin and not close to it, as in *infraposita*, by having only one pair of supra-antennal bristles, which are not widely separated; by the much darker hind legs, shorter costal fringe, and larger size.

Hyalipennis, sp. n. This belongs to the small group of half a dozen species, characterised by having bristly pleuræ, blackened halteres, and thickened front tarsi, and it should occupy a position between *humilis* and *alticolella*, having some of the characteristics of each. From both it is best distinguished by its quite clear wings (hence its name) with their very fine and delicate thin veins; by its darker, almost black, legs; and also by the front tarsi being black and in marked contrast with the pale tibiæ. With *humilis* it agrees in the length of its costa, and in having three or four strong bristles underneath the hypopygium on each side, but is without the three or four diagonal ones present on the sides in that species. With *alticolella* it agrees in the absence of a bend in the middle of the underside of the hind femora; in the ciliation underneath these femora, though more distinct than in *alticolella*, being of the usual character and not short and stubby as in *humilis*; and in the marginal bristles of the last abdominal segment being well developed, as well as in the absence of any special hairiness on the sides of the last two or three segments. It is rather smaller than either. $1\frac{1}{2}$ mm.

Upwards of a dozen, inclusive of both sexes, were swept amongst bracken on high ground in Stoke Park, between the 4th and 21st of October, 1909, and a specimen or two were met with again the following autumn in Stoke Wood.

Unguicularis. Mr. Collin has been fortunate enough to take more than one female of this scarce species. It has blacker legs than

the male; the costa about reaches the middle of the wing, and the 1st costal division is not more than half as long again as the 2nd, whereas in the male it is twice as long.

Fungivora. Mr. Collin has bred it from a tree fungus, so that its name is now amply justified.

Infraposita. A female (this sex was unknown at the time of introducing the species) was taken at the Middle Park Pool, 4/8/09. It has the same characteristic frontal chætotaxy as the male.

Cilipes. Brues, I find, described an *Aphiochæta cilipes* in 1907. Another name must therefore be given the present species, and that of *decipiens* would seem not inappropriate, since not only has a mistake of nomenclature been made, but a still more serious error has been committed in giving it an utterly wrong female. In spite of the commonness of the male much difficulty was experienced in discovering an appropriate partner for it, and even after I thought that this was done the selection was felt to be far from satisfactory. Nor can this be wondered at, for the search was made among the species with two scutellar bristles, whilst all the while the creature so badly wanted was amongst the four-bristled kind. The discovery of the mistake we owe to the capture by Mr. Jenkinson at Cambridge of a pair of insects *in cop.*, the male of which was typical *decipiens*, and the female apparently a small and weak *ruficornis*. So close is the resemblance to *ruficornis* that there can be little doubt that it is mixed up with that species in most of our collections. It may, however, be distinguished with a little care. Besides being a smaller and less robust insect, the costal fringe is somewhat longer, the 1st costal division also a little longer and the tibial cilia weaker, but a far more satisfactory character is the group of large bristles on the 2nd abdominal segment. In *ruficornis* they are numerous (quite a bunch of them) and placed upon a lateral prominence of the segment, but in *decipiens* they are not more than four at the outside, and there is no prominence, the outline of the segment being flush with that of the segment on either side of it. Mr. Collin points out that in the sexes of both species there is an extra bristle on the thorax, situated out on the disc about midway between the postalar bristle and the dorso-central one. *Decipiens* will have, then, to be moved from its present position in the table to Section B, where it will come next to *ruficornis*. What, it will be asked, are the females which have been doing duty for it? *Scutellaris* I am now convinced. They had been picked out because of their proportionately long 2nd and 3rd costal divisions, and in the female of this species, as in a few others, these divisions seem to be variable.

Denotata. In establishing this species on the characters of the female, some doubt was expressed whether the right male had been assigned it. That note of caution has now been fully justified. In overhauling lately some unsorted material I came upon three males which are unquestionably the true *denotata* and quite distinct from the form described in the text. They were taken as far back as the 7th of May, 1905, at Devereux Pool. As might have been expected, they bear the same close relationship to male *tumida* as does the female *denotata* to female *tumida*; that is, the peculiar blunt-ended abdomen with its characteristic hypopygium, which distinguishes male *tumida*, equally distinguishes male *denotata*, just as the swollen costa, characteristic of the female, is common to both species. The points of distinction from *tumida* are the brown instead of black halteres, the relatively shorter costa and costal fringe, the 1st costal division equal only to the 2nd instead of to the 2nd and 3rd, and in the smaller size, all which amply differentiate from *tumida* and at the same time show its close agreement with *denotata*. *Denotata* is apparently an early summer species and *tumida* essentially an autumnal one.

The discovery among some old material of one or two little males, extremely like the insect erroneously given as the male of the above species, has quite removed any doubt of that insect having been *discreta*, as was indeed half suspected at the time.

Rubescens, sp. n. This belongs to the large group with bare pleuræ and bare hind tibiæ in Section C, and to that portion of it characterised by having dark (in this case yellowish brown) halteres

♂. Thorax dull dusky red, abdomen black, halteres yellowish brown; frons black, about half as broad again as long, supra-antennal bristles rather small, the upper approximate and twice the size of the under ones, antennæ red, scarcely full-sized, palpi rather large and clear yellow, the bristles large; wings tinged with yellowish brown, costa more than half the wing length, fringe only



Fig 4. *Rubescens*.

moderately long, 1 rather longer than 2 + 3, angle at fork largish, 1st thin vein scarcely curved at its origin; legs yellow, hind femora with moderately long hairs on basal portion of underside, hind tibiæ bare; hypopygium (fig. 4) fairly large, underneath it a large and conspicuous group of bristles or strong coarse hairs, anal organ large and yellow. 1¾ mm.

Of this well marked species I took a specimen on a window of this house as far back as June, 1905, but refrained from describing it as it was a single specimen. The capture of another, exactly similar and under precisely similar circumstances, on the 8th of August, 1910, has removed all scruples, and I propose the name of *rubescens* for it on

account of its reddish thorax. From its nearest allies it may readily be known by this same reddish thorax, red antennæ, and yellow legs, but still more certainly by the collection of bristles under the hypopygium.

Longicostalis, sp. n. This also belongs to the same group as the preceding species, but to that part of it which has the halteres yellow.

♀. Thorax and abdomen black; frons scarcely shining, about $\frac{1}{2}$ broader than long, supra-antennal bristles rather weak, the upper pair very closely approximated and the under very much smaller and nearly directly underneath them, palpi narrow, dusky yellow and bristled as usual; wings rather deep yellowish brown, costa remarkably long—about $\frac{2}{3}$ the wing length, fringe also very long, 1 rather longer than 2 and distinctly shorter than 2 + 3, angle at fork moderate, 1st thin vein leaves well beyond the fork with a moderate curve; legs yellowish brown, margins of hind femora blackish, hind tibiæ practically bare, though under a Zeiss' lens numerous small cilia become visible.

Its singularly long costa, longer than in any other species I am acquainted with in this large genus, strikes the eye at once, and leaves its identification in no doubt. It is the species discovered by Mr. Donisthorpe in a nest of the ant, *Lasius fuliginosus*, at Darenth Wood (The Entomologists' Record, Vol. LI, Nos. 10, 11, and 12). Another female has also been obtained by the same observer, which I have seen, and which bore the label Whitsand Bay, April, 1907. And still another female I have taken myself, March 23rd, 1910, from under a dead mole in Stoke Wood.

SECTION D.

In the four species commencing with *tarsalis* and coming under the numbers 46—51, no reference was made to the halteres. In all of them the colour of these organs is yellow.

The male hypopygium. We shall, I think, gain a better understanding of the organ if we look upon it as consisting of two parts, an internal and an external one, the former carrying the outlet of the digestive system and the latter that of the generative, and each as representing a separate segment. The external portion or shell—the part that chiefly concerns us here—is made up of two pieces, a large (as a rule) dorsal plate, which may roughly be compared to a saddle in which the dorsum is the seat, and the sides, the panels, and a small (as a rule) under or ventral plate. Between them they commonly form a chamber within which in ordinary circumstances lie concealed the generative organ and its complex appendages or, as I have called them in these notes, the subanal body.

In its simplest form the shell is symmetrical, the panels being alike in form and size on the two sides, and its general shape more or less cylindrical. This is its condition almost universally in *Aphiochæta*, and several excellent illustrations of it have already been given in Mr. Collin's figures. But when we turn to *Phora* we find that this symmetry is for the most part lost, and while the right panel remains the simple structure it is in *Aphiochæta*, the left one is fissured transversely and sometimes much crumpled at the same time. The fissure may extend only a comparatively short way across the panel as in *urbana* (*vide* fig. 4), but usually is so extensive as to leave a mere strip, so narrow, that unless the hypopygium be fully exposed or be dissected out, the panel appears to be cut completely in two. In the *perennis* and *lugubris* group the hind corner of each panel is prolonged into a flap, which is usually of equal length on the two sides, or one may be longer than the other as in *vitrea* (*vide* fig. 1). In *unispinosa* and its allies the saddle is very short and the panels are long, narrow and depending flaps, and the ventral plate correspondingly large. In the *concinna* and *abdominalis* group (figs. 2 and 3) the distinguishing feature is the very long anal organ; the subanal body is concealed, the panels are very large and of equal size, though the left one is deeply fissured. Still further modifications arise in the *urbana*—*bergenstammi* (*domestica*) group (figs. 4 and 5). In the first place the hypopygium loses its more or less cylindrical shape and becomes globular and is usually very large; moreover it no longer forms a closed chamber, but leaves the subanal body exposed. The right panel is large and simple as usual, but the left one is always somewhat reduced in size, and in *urbana* and its allies fissured also, but in *bergenstammi* and *erythronota* merely reduced, whilst between it and the ventral plate is a large triangular piece (*b* in the figures) which I believe to be part of the subanal body. On the right side, projecting beyond the large simple panel, is a long slender process (*d*) which generally looks as if it belonged to the panel, but under favourable conditions is seen to come from underneath it, and must also be part of the subanal body.

Hypocera. Here we are met with a very remarkable departure from the common type. In *Aphiochæta* and *Phora* the anal organ invariably finds an exit by issuing from underneath the saddle. In *Hypocera* it does so by piercing the saddle itself. In some cases (*carnifrons* and *femorata*) the exit is flush with the general surface, so that an anal organ in the sense of a projecting body cannot be said to exist, but in others an organ is present of the short papilla-like form so commonly found in *Phora*. Among the British species *citreiformis*

offers the one exception to this condition of things, its anal organ issuing in the usual way from underneath the saddle. Another feature characteristic of the hypopygium in this genus is the very large size of the ventral plate, as marked in *citreiformis* (where it is cleft almost to the base) as in the other species. The saddle varies from quite tiny in *carinifrons* and *incrassata* to large in *femorata* and *mordellaria*. Its panels are always symmetrical, the left one never being fissured as happens so often in *Phora*, and they are simple in outline, except in *citreiformis* where they are produced behind into a long narrow process on each side as in the *perennis* group in *Phora*.

Mr. Collin, who has drawn the figures in the plate, is of the opinion that the part marked "a¹" in figures 1, 2, and 3, is the homologue of the part marked "b" in figures 4 and 5, but the dissection of several specimens has only served to confirm me in my views.

EXPLANATION OF PLATE V.

- Fig. 1. Hypopygium of *Phora vitrea*, Wood.
 „ 2. „ „ „ *abdominalis*, Fall.
 „ 3. „ „ „ *concinna*, Meig.
 „ 4. „ „ „ *urbana*, Meig.
 „ 5. „ „ „ *maculata*, Meig.

CORRECTION.

Vol. xlviii, page 98, line 24, for "errata" read "decipiens."

SUPPLEMENTARY NOTES.

In view of the great size of *Aphiochæta*, and of the not altogether satisfactory character on which have been grounded its two last sections in the Table, it will, I think, be of material help to the student if I give a second scheme choosing the costal fringe as the governing character, and so enable him in doubtful cases to check the one by the other. Moreover, the new scheme has an advantage over the old one, inasmuch as the fringe seems to be quite uninfluenced by sex and rarely, if ever, liable to variation, whereas the costa is subject at times to both these disturbing influences.

SECTION C.

Costal fringe short or very short.

In a few species—*pygmæa*, *latifrons*, *lata*, *tarsalis*, *lutescens*, and *collini*, the fringe might perhaps be considered only moderately short.

- 1 (2). Cilia on middle and hind tibiae in two rows, one on either side the seam.
 ...1½–2 mm. *fasciata* Fall.
 2 (1). Cilia on one side of the seam only

- 3 (26). *Mesopleuræ* bristly.
- 4 (21). Halteres black or brown (*verralli* and *ciliata*).
- 5 (16). Hind tibiæ bare (*affinis* and *serrata*), or cilia small and numerous.
- 6 (7). Costa plainly to middle of wing $1\frac{1}{2}$ mm. *armata*.
- 7 (6). Costa plainly short of middle.
- 8 (9). Abdomen in both sexes narrowly but conspicuously banded with white on hind margins of segments.....about 1 mm. *Verralli*.
- 9 (8). Abdomen not so banded; the hind margins in *serrata* are pale but not white.
- 10 (11). *Mesopleuræ* with one bristle much longer than the others. Anal organ very large, as long as the last abdominal segment...about $\frac{3}{4}$ mm. *spinata*.
- 11 (10). Bristles of nearly uniform size.
- 12 (13). Fore metatarsi distinctly thickened in both sexes, being as wide as the tibiæ or nearly so $\frac{1}{2}$ mm. *crassipes*.
- 13 (12). Metatarsi simple, or whole tarsus slightly thickened (*latifrons*)
- 14 (15). A group of five or six short hairs underneath the hypopygium on each side. Upper supra-antennal bristles outside an alignment with inner bristles of middle frontal row $\frac{3}{4}$ mm. *latifrons*.
- 15 (14). No such group of bristles. Supra-antennal bristles only in such alignment and not outside it $\frac{1}{2}$ - $\frac{3}{4}$ mm. *affinis*.
- 16 (5). Tibiæ plainly (*rudis*) or very strongly (*ciliata* and *major*) ciliated. All three species have one pleural bristle much longer than the others.
- 17 (18). Frons quite dull. Upper supra-antennal bristles outside an alignment with inner bristles of middle frontal row. Hypopygium large, with a conspicuous bristle on each side beneath $1-1\frac{1}{4}$ mm. *rudis*.
- 18 (17). Frons more or less shining. Supra-antennal bristles inside such alignment. Hypopygium small or moderate, and bare.
- 19 (20). Costa fine and delicate. Fourth abdominal segment of female abbreviated. Fore coxæ clear yellow $1-1\frac{3}{4}$ mm. *ciliata*, Zett.
- 20 (19). Costa of the usual stoutness. Abdominal segment not abbreviated. Fore coxæ dusky yellow.....about 2 mm. *major*.
- 21 (4). Halteres yellow.
- 22 (23). Frons black and shining. A deep black insect, closely allied to *ciliata*, but wanting the abbreviated abdominal segment..... $1-1\frac{1}{4}$ mm. *æqualis*.
- 23 (22). Frons grey and dull. Pale or yellowish species.
- 24 (25). Costa well beyond middle of wing. One of the pleural bristles much longer than the others. A large species $1\frac{1}{2}$ -2 mm. *flavescens*.
- 25 (24). Costa well short of the middle. The bristles all small. A small species. 1 mm. *pallens*.
- 26 (3). *Mesopleuræ* bare.
- 27 (46). Halteres black.
- 28 (39). Frons highly glossy (*parva*, *mallochi*, *glabrifrons* and *propingua*) or at least somewhat shining (*longiseta* and *longipalpis*).
- 29 (34) Costa distinctly less than half the wing length.
- 30 (31). Male palpi very large and almost bare $\frac{3}{4}$ mm. *longipalpis*.
- 31 (30). Male palpi normal.

- 32 (33). First costal division nearly three times as long as the 2nd, and the 2nd scarcely longer than the 3rd. Stem of halteres black. A large species.
...nearly 2 mm. *mallochi*.
- 33 (32). First costal division about half as long again as the 2nd, and this nearly three times as long as the 3rd. Stem of halteres yellow. A very small species $\frac{1}{2}$ - $\frac{3}{4}$ mm. *propinqua*.
- 34 (29). Costa fully to wing middle or beyond.
- 35 (36). Wings colourless. Costa in both sexes incrassated at humeral x-vein. A tiny species $\frac{1}{2}$ mm. *parva*.
- 36 (35). Wings distinctly darkened. Costa not incrassated. Moderate sized species.
- 37 (38). Arista of unusual length. Upper supra-antennal bristles in alignment with inner bristles of middle frontal row. First thin vein leaves at fork. Hypopygium large, anal organ long and depressed.
...1-1 $\frac{1}{2}$ mm. *longiseta*.
- 38 (37). Arista of usual length. Supra-antennal bristles inside such alignment. First long vein (σ) leaves well on proximal side of fork. Hypopygium very small, anal organ minute 1 $\frac{1}{2}$ mm. *glabrifrons*.
- 39 (28). Frons dull.
- 40 (43). Costa moderately long, but not fully reaching the wing middle. First costal division equal or nearly equal to the 2nd and 3rd together.
- 41 (42). Legs deep black. Hypopygium small $\frac{3}{4}$ -1 mm. *rivalis*.
- 42 (41). Legs yellow. Hypopygium large $\frac{1}{2}$ - $\frac{3}{4}$ mm. *surdifrons*.
- 43 (40). Costa very short ($\frac{1}{3}$ wing length *gregaria*), or at most not quite $\frac{2}{3}$ wing length. First costal division at least double the 2nd and 3rd together.
- 44 (45). A tiny black species with black antennæ. Costa only $\frac{1}{3}$ the wing length.
...barely $\frac{1}{2}$ mm. *gregaria*.
- 45 (44). A small reddish species with red antennæ. Costa nearly $\frac{2}{3}$ the wing length.
... $\frac{3}{4}$ mm. or rather more. *rufifrons*.
- 46 (27). Halteres yellow.
- 47 (56). Frons more or less shining. Costa nearly to wing middle in minor, and less than $\frac{2}{3}$ wing length in the others.
- 48 (49). Frons very narrow, $\frac{1}{3}$ longer than broad and highly glossy. Inner bristle of lower frontal row considerably below the outer one and placed close to the eye margin 1-1 $\frac{1}{4}$ mm. *minor*, *Zett*.
- 49 (48). Frons broader than long. Inner bristles of frontal row in usual position.
- 50 (51). Foretarsi thickened in both sexes. Costal fringe only moderately short.
...1 mm. or barely, *tarsalis*.
- 51 (50). Foretarsi not thickened.
- 52 (53). Cilia on hind tibiæ fine and indistinct. Frons distinctly shining. Halteres black-stalked. A minute species..... $\frac{1}{2}$ mm. *angelicæ*.
- 53 (52). Cilia distinct. Frons only moderately shining. Halteres yellow-stalked. Not minute species.
- 54 (55) First costal division more than twice as long as 2nd and 3rd together. Costal fringe only moderately short. Upper supra-antennal bristles approximated, under ones small 1 $\frac{1}{2}$ -1 $\frac{3}{4}$ mm. *pygmæa*, *Zett*.

- 55 (54). *First division scarcely longer than the other two. Costal fringe very short. Four nearly equal supra-antennal bristles, the upper ones wide apart*..... 1 mm. *brevicostalis*.
- 56 (47). *Frons dull.*
- 57 (64). *Costa quite to wing middle.*
- 58 (59). *Frons narrow, longer than broad*..... $1\frac{3}{4}$ mm. *angustifrons*.
- 59 (58). *Frons broader than long.*
- 60 (61). *Tibial cilia large and sparse (10 or 11 in number), though not quite as large and sparse as in ciliata and its two near allies.*
..... $1\frac{1}{2}$ -2 mm. *uliginosa*.
- 61 (60). *Cilia moderately large and numerous (15 or 16).*
- 62 (63). *First costal division distinctly shorter than 2nd. Costal fringe very short.*
..... $1\frac{1}{2}$ -2 mm. *flava*, Fall.
- 63 (62). *First costal division distinctly longer than 2nd. Fringe only moderately short*..... $1\frac{1}{4}$ - $1\frac{1}{2}$ mm. *collini*.
- 64 (57). *Costa much short of wing middle.*
- 65 (66). *Cilia on hind tibiae distinct and fairly large. (Thorax black).*
..... $1\frac{1}{4}$ mm. *nigrescens*.
- 66 (65). *Cilia fine and very indistinct.*
- 67 (68). *Thorax red or yellow. A moderate sized species*..... $1-1\frac{1}{2}$ mm. *lutescens*.
- 68 (67). *Thorax black. A very small species* $\frac{3}{4}$ mm. *lata*.

SECTION D.

Costal fringe long or very long.

- 1 (50). *Mesopleuræ bristly. (In conformis bristles very tender and not infrequently quite absent).*
- 2 (33). *Halteres black, sometimes yellow in involuta.*
- 3 (18). *First joint of front tarsi dilated, or the whole tarsus distinctly thickened.*
- 4 (7). *Costa conspicuously short of half the wing length, $\frac{2}{3}$ or less.*
- 5 (6). *First costal division not half as long again as the other two together. Fore metatarsus conspicuously dilated in male, the other joints and the whole tarsus of female slender* $1-1\frac{1}{4}$ mm. *manicata*.
- 6 (5). *First costal division at least double the other two. The whole tarsus short and thickened in both sexes*about 1 mm. *involuta*.
- 7 (4). *Costa to wing middle, or nearly.*
- 8 (11). *The metatarsus only dilated, the other joints of both sexes slender.*
- 9 (10). *Wings dusky; fringe only moderately long; 1 from two to three times 2 + 3. Hypopygium without bristles. A large species.*
.....2 mm. *obscuripennis*.
- 10 (9). *Wings clear, or nearly so; fringe full long; 1 from half as long again to twice as long as 2 + 3. Hypopygium with two or three bristles underneath. A small or tiny species. Pleuræ sometimes bare.*
.....about $\frac{3}{4}$ mm. *conformis*.
- 11 (8). *The whole tarsus distinctly thickened in the male, but in the female the thickening limited to the metatarsus.*
- 12 (13). *Legs more or less yellow. Hypopygium quite bare.*
..... $1\frac{1}{2}$ - $1\frac{3}{4}$ mm. *hortensis*.

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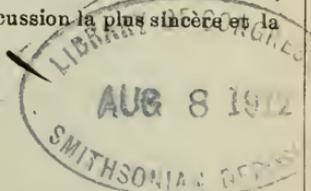
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The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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The Executive Committee invites an early provisional notice of intention to join the Congress, in order to be able to make the arrangements for the necessary accommodation.

The Proceedings of the First Congress are in the press, and will be published shortly.

All communications and enquiries should be addressed to the General Secretary of the Executive Committee,

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- 13 (12). *Legs dark brown to almost black. Hypopygium bristly, or at least with a long hair or two at each corner (alticolella).*
- 14 (15). *All the joints of the fore-tarsi yellow in both sexes. Hypopygium without bristles, only with a long hair or two on each side.*
... $1\frac{1}{2}$ - $1\frac{3}{4}$ mm. *alticolella*.
- 15 (14). *The whole tarsus, or at least the metatarsus dusky. Hypopygium strongly bristled.*
- 16 (17). *Wings tinted. Legs brown or dark brown; hind femora of male thickly fringed beneath with short and stubby hairs. Hypopygium with three or four bristles at the corner and as many more diagonally on the side.*
... $1\frac{1}{2}$ - $1\frac{3}{4}$ mm. *humilis*.
- 17 (16). *Wings clear. Legs black or nearly so; the hairs underneath the hind femora of ordinary character. Hypopygium with only the corner bristles* $1\frac{1}{4}$ - $1\frac{1}{2}$ mm. *hyalipennis*.
- 18 (3). *Fore-tarsi slender, or at least not strikingly thickened.*
- 19 (22). *Mesopleuræ with one very large and conspicuous bristle, beside the ordinary ones.*
- 20 (21). *Costa to middle of wing. Legs yellow tinged with grey. A largish species.*
... $1\frac{1}{2}$ -2 mm. *fungivora*.
- 21 (20). *Costa considerably short of wing middle. Legs black. A small species.*
...about 1 mm. *pectoralis*.
- 22 (19). *Pleuræ without such bristle.*
- 23 (24). *Large species—2 mm. and over. Tibial cilia strong and sparse.*
... $2\frac{1}{2}$ -2 mm. *Beckeri*.
- 24 (23). *Small species—1 mm. or rather more. Tibial cilia at most of moderate size.*
- 25 (26). *First costal division greatly longer than the other two—two to three times as long. Metatarsi and lower end of tibiae of hind pair of legs thickened*1 mm. *clavipes*.
- 26 (25). *First costal division not greatly longer—at most half as long again. Metatarsi and tibiae of hind legs simple.*
- 27 (30). *Upper supra-antennal bristles not outside an alignment with inner bristles of middle frontal row; bristles of lower frontal row not approximated.*
- 28 (29). *Wings clear; thin veins fine and delicate. Hypopygium with a long conspicuous bristle on each side*..... barely 1 mm. *nigripes*.
- 29 (28). *Wings yellowish brown; veins strong and distinct. Hypopygium without bristles, but attached to sub-anal body a curious claw-like yellow process with its point directed forward.*
...1 mm. or a trifle more. *unguicularis*.
- 30 (27). *Upper supra-antennal bristles outside such alignment; bristles of lower frontal row approximated.*
- 31 (32). *Supra-antennal bristles small, under ones minute. Costa fully to wing middle. Hypopygium bare, very large and globular, and with a long yellow process underneath, much as in unguicularis.*
...barely 1 mm. *barbulata*.
- 32 (31). *Supra-antennal bristles large and nearly equal. Costa considerably short of wing middle. Hypopygium of ordinary shape and bristly.*
...1- $1\frac{1}{4}$ mm. *hirsuta*.

33 (2). *Halteres yellow.*

Involuta, already included in the group with black halteres, sometimes has these organs yellow, but its thickened fore-tarsi should prevent its being mistaken for any of the species under this heading.

- 34 (39). *Costa conspicuously short, except in female albipennis, where it nearly reaches the wing middle.*
- 35 (36). *One of the pleural bristles very large and conspicuous. Tibial cilia fairly strong and sparse 1½-1¾ mm. albipennis.*
- 36 (35). *Bristles equal or nearly so. Tibial cilia weak and numerous, or quite absent.*
- 37 (38). *Wings nearly clear; fringe very, but not extremely, long; first costal division double the other two. Tibial cilia fine and numerous. Moderately large species..... 1¼-1¾ mm. simplex.*
- 38 (37). *Wings yellowish brown; fringe extremely long; first costal division barely half as long again as the other two. A very small species. ...¾ mm. superciliata.*
- 39 (34). *Costa long, sometimes just short of the wing middle (altifrons and subpleuralis), but usually beyond it.*
- 40 (41). *First thin vein well curved at its origin, especially in the female. Hind femora of male densely fringed on the basal half with long hairs. Hypopygium curiously clothed behind with long and overhanging hairs 2½ mm. sordida, Ztt.*
- 41 (40). *The vein only gently curved. Hind femora and hypopygium without such hairs.*
- 42 (43). *Frons high, scarcely broader than long 1½ mm. altifrons.*
- 43 (42). *Frons low, about ⅓ broader than long.*
- Four closely allied species come under this heading. Common to all of them is a moderately broad frons with full-sized antennæ, closely approximated supra-antennal bristles, large and nearly equal, and large and prominent yellow palpi; the costal fringe is very long, the curve at the origin of the first thin vein gentle in the male, but more pronounced, though still moderate, in the female; and the tibial cilia always distinct and generally large, fore-tarsi somewhat thick in both sexes of *variabilis* and in the female of *pleuralis*.
- 44 (49). *First costal division not longer or barely longer than the second, and distinctly shorter than the second and third together.*
- 45 (46). *Male hypopygium armed at the corners and on the sides with large and conspicuous bristles, almost identical in number and distribution with those in humilis 1½-2 mm. pleuralis.*
- 46 (45). *Hypopygium without bristles.*
- 47 (48). *Wings clear; angle at fork rather variable but never acute. ... 1½-2 mm. diversa.*
- 48 (47). *Wings deeply tinged with yellowish brown; angle at fork acute but rather variable 2-2½ mm. variabilis.*
- 49 (44). *First costal division about twice as long as the 2nd, and distinctly longer than the 2nd and 3rd together. Hypopygium armed with some small and inconspicuous bristles, somewhat similar to those of pleuralis. ... 1¼ mm. subpleuralis.*

- 50 (1). *Mesopleuræ* bare.
- 51 (52). *Cilia on middle and hind tibiæ irregular in distribution and placed on both sides the seam* 3 mm. *melanocephala*, v. Ros.
- 52 (51). *Cilia of regular distribution and placed only on the inner side of the seam.*
- 53 (62). *Costa of female swollen.*
- 54 (57). *Costa greatly swollen, encroaching on costal cells, and partially obliterating the first thin vein. Thorax pale.*
- 55 (56). *Costal swelling stops well short of the inner branch of the second thick vein*..... 1 $\frac{3}{4}$ mm. *costalis*, v. Ros.
- 56 (55). *Costal swelling extends to end of the costa*... 2 mm. *brunneipennis*, Costa.
- 57 (54). *Costal swelling comparatively slight and not encroaching on costal cells. Thorax dark.*
- 58 (59). *Halteres and legs yellow. Anal organ of ordinary size.*
..... 1-1 $\frac{1}{2}$ mm. *suttumida*.
- 59 (58). *Halteres and legs dark. Anal organ minute.*
- 60 (61). *Costa conspicuously swollen, almost humped; fringe only moderately long. A moderate-sized species* 1 $\frac{1}{4}$ -1 $\frac{1}{2}$ mm. *denotata*.
- 61 (60). *Costa not conspicuously swollen (may be overlooked in unfavourable positions of the wing); fringe very long. A full-sized species*
..... 1 $\frac{1}{2}$ -2 mm. *tumida*.
- 62 (53). *Costa not swollen.*
- 63 (92). *Costa long—at least to wing middle or nearly, very commonly beyond In derasa the costa of the male is occasionally somewhat short.*
- 64 (73). *Halteres black or brown, sometimes dusky yellow (angusta, var.).*
- 65 (66). *Tibial cilia large and sparse.*
A large species with dark legs, four large and equal supra-antennal bristles, the upper ones outside an alignment with inner bristles of middle frontal row, and with the first costal division shorter than the other two 2 mm. *frontalis*.
- 66 (65). *Cilia very weak and numerous, or tibiæ quite bare (rubescens).*
- 67 (68). *Anal organ minute. A very small species.*
Hypopygium very large with small erect hairs on the sides and a couple of bristles, one above the other, on each side... $\frac{3}{4}$ mm. *discreta*.
- 68 (67). *Anal organ not minute, nor the species very small.*
- 69 (70). *Halteres yellowish brown. Thorax dusky red. Hypopygium with a bunch of bristles on each side. Costal fringe only moderately long.*
..... 1 $\frac{3}{4}$ mm. *rubescens*.
- 70 (69). *Halteres and thorax black. Hypopygium without such bristles. Fringe long.*
- 71 (72). *First costal division much longer than the second, generally twice as long. A large species*..... 1 $\frac{1}{2}$ -2 $\frac{1}{4}$ mm. *fusca*.
- 72 (71). *First costal division not longer or only slightly longer than the second the venation being the same as in subtumida. Not a large species.*
..... 1 $\frac{1}{2}$ mm. more or less, *angusta*.
- 73 (64). *Halteres yellow.*

- 74 (75). *Inner bristle of lower frontal row close to the eye margin and in vertical line with the outer one; upper supra-antennal bristles very wide apart. The black thorax is tinged with red in all the specimens I have seen* $1\frac{1}{2}$ mm. *infraposita*.
- 75 (74). *Frontal bristles in usual position and supra-antennal ones approximated.*
- 76 (77). *Costa and fringe both very long, the former extremely so—about $\frac{2}{3}$ wing length. Tibial cilia minute and numerous*.... 1 mm. *longicostalis*.
- 77 (76). *Costa well short of $\frac{2}{3}$ the wing length.*
- 78 (81). *Male abdomen clothed on the sides with numerous blunt-ended and very long hairs.*
- 79 (80). *Supra-antennal bristles small, the under ones minute. Male hind tibiæ of curious shape, the upper ridge-like edge being flattened out on its lower third or rather more* $\frac{3}{4}$ mm. *hirtiventris*.
- 80 (79). *Four large and nearly equal supra-antennal bristles. Hind tibiæ simple and bare* $2\frac{1}{2}$ – 3 mm. *rufipes*, Mg.
- 81 (78). *Male abdomen not so clothed.*
- 82 (83). *Male hind tibiæ shaped as in hirtiventris.*
 Supra-antennal bristles small, under ones minute. First costal division from two to three times as long as the second, the proportion greatest in male. Male costa sometimes not fully to wing middle.
 ... $1\frac{1}{4}$ – $1\frac{3}{4}$ mm. *derasa*.
- 83 (82). *Hind tibiæ simple.*
- 84 (87). *Supra-antennal bristles large and nearly equal, at least in the male.*
- 85 (86). *Legs dark brown, almost black; tibial cilia distinct and of bristly character. Costa of male barely to wing middle.*
 ... $1\frac{3}{4}$ – $2\frac{1}{4}$ mm. *vernalis*.
- 86 (85). *Legs yellowish; hind tibiæ bare or minutely ciliated. Costa well to middle of wing in both sexes*..... $1\frac{3}{4}$ – 2 mm. *pulicaria*, Fal.
- 87 (84). *Supra-antennal bristles small, under ones minute.*
- 88 (89). *Upper edge (seam) of hind tibiæ blunt and straight, without cilia on its inner side, but in the male with numerous small erect or semi-erect hairs on the outer side. Hypopygium long and cylindrical, as large in all its dimensions as the 6th segment or even larger; anal organ minute* $1\frac{1}{4}$ – $1\frac{1}{2}$ mm. *nudiventris*.
- 89 (88). *Edge of hind tibiæ sharp and its lower third deflected outwards; cilia distinct but not strong. Hypopygium and anal organ ordinary, both in form and size (see Mr. Collin's drawings, Vol. xx, p. 148).*
- 90 (91). *Thorax and antennæ yellow* $1\frac{1}{2}$ mm. *lutea*, Mg.
- 91 (90). *Thorax black or dusky red. Antennæ red or brown.*
 ... $1\frac{1}{2}$ – $1\frac{3}{4}$ mm. *scutellaris*.
- 92 (63). *Costa conspicuously short of wing middle.*
- 93 (100) *Halteres black or (halterata) brown.*
- 94 (95). *Tibial cilia sparse and strong.*
 First costal division more than double the other two. Hypopygium small and without bristles..... 2 mm. *maura*.
- 95 (94). *Cilia weak and numerous, or (erecta) tibiæ quite bare.*

- 96 (99). *Legs blackish brown. First costal division at the most half as long again as the other two together. Anal organ minute and hypopygium large.*
- 97 (98). *Upper supra-antennal bristles approximated. Last segment or two of male abdomen fringed on the ventral side with numerous stiff hairs, or rather bristles, increasing in size from before backwards, and continued on to the hypopygium under 1 mm. hirticaudata.*
- 98 (97). *Upper supra-antennal bristles in alignment with inner bristles of middle frontal row. Male abdomen not so fringed, but numerous small hairs along the lower edge of the hypopygium $\frac{3}{4}$ mm. erecta.*
- 99 (96) *Legs yellow. First costal division more than double the other two. Hypopygium and anal organ of ordinary form and size, the former with a pair of closely approximated bristles on each side.*
 ... $1\frac{1}{4}$ - $1\frac{1}{2}$ mm. halterata.
- 100 (93) *Halteres yellow.*
- 101 (106) *First costal division greatly longer than the other two—at least $\frac{3}{4}$ as long again (minutissima).*
- 102 (105). *Hypopygium bristly. Legs yellow.*
- 103 (104). *Thorax black. Hypopygium with a pair of bristles on each side. Not a minute species $1-1\frac{1}{4}$ mm. halterata.*
- 104 (103). *Thorax pale. Hypopygium with only one bristle on each side. A minute species barely $\frac{1}{2}$ mm. minutissima.*
- 105 (102). *Hypopygium without bristles. Legs brown $1-1\frac{3}{4}$ mm. exigua.*
- 106 (101). *First costal division not greatly longer than the other two—at the most $\frac{1}{3}$ longer.*
- 107 (108). *Four large and equal or nearly equal supra-antennal bristles. Male hypopygium conspicuously white. Tibial cilia very fine and delicate.*
 ... $1-1\frac{1}{4}$ mm. albicaudata.
- 108 (107). *Under pair of supra-antennal bristles minute. Hypopygium black. Tibial cilia distinct but not large.*
- 109 (110). *The marginal hairs on 6th abdominal segment very large and conspicuous.*
 ... $1\frac{1}{4}$ mm. spinicincta.
- 110 (109). *Without such hairs $1\frac{1}{4}$ mm. sylvatica.*

Tarrington, Ledbury :

July, 1912.

NOTES ON THE BRITISH SPECIES OF *OPHONUS*.

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

No. 1.—*O. brevicollis*, *O. rufibarbis*, and *O. cordatus*.

When I commenced the study of British *Coleoptera* (now I am sorry to say more than 50 years ago), one of the earliest puzzles that attracted my attention was the species of *Ophonus*. Not being able to name them I distinguished them by means of numerals, and my collec-

tion was communicated in that state to Canon Fowler. He also was much troubled by the small species of the genus, and his book on "British Coleoptera" expressed a very uncertain opinion about them. Some fifteen or twenty years ago I commenced an examination of the ædeagus in this genus, but pressure of other work did not allow me to continue the study. I have now, however, found time to complete it, and the results will be stated in the notes, of which this is the first.

The larger and metallic species of the genus are easily dealt with, and are comparatively few in number. The smaller, brown or blackish species are really difficult to discriminate, and the Continental, as well as the British literature, is unsatisfactory. The ædeagus does not present remarkably different characters; the lateral lobes are similar in all the species, but the median lobe, or body of the organ, presents characters which, though slight, are extremely valuable, so that by their aid I have been able to discriminate the species in a satisfactory manner. And I find that this group includes nine British species, or if we include the brown variety of *O. azureus*, ten species. This is an addition of four species to our catalogue. As I shall have occasion to use their names in my comparisons, I had better here mention them all. They are: 1, *brevicollis*, Dej.; 2, *rufibarbis*, Fabr.; 3, *cordatus*, Duftschm.; 4, *rupicola*, Sturm; 5, *rupicoloides*, sp. n.; 6, *championi*, sp. n.; 7, *parallelus*, Dej. (?); 8, *rectangulus*, Thoms.; 9, *puncticollis*, Payk.; 10, *azureus*, Fabr. var. *similis*, Dej.

The group does not lend itself satisfactorily to tabulation, the species being very closely allied, and some of them variable. So far as our British forms are concerned, the ædeagus divides them fairly well into two groups: (1) the ædeagus terminates as a blunt point; this includes only *brevicollis*, *cordatus*, and *rufibarbis*, and the latter is to some extent transitory to the second division; (2) in which the ædeagus terminates by a raised margin, which when very strongly expressed, projects a little on each side in the form of a sharp angle. This division is not a sharp one, as in point of fact each species differs a little from the others in the shape of the tip. But in addition to this the organ presents important differences in length, calibre, curvature, torsion, the thickness of the apical portion, and the extension of the median orifice towards the tip. These characters are nearly, but not quite, constant in each species; and when a determination is made by their aid it is found that the result is also satisfactory as regards the body characters. The species can in fact be discriminated without the aid of the ædeagus, though the student will, I hope, not be satisfied

till he has tested his superficial discriminations by the examination of the more recondite parts. I may mention that besides my own collection, I have had the advantage of examining those of Cambridge University, of Mr. Champion, and of Commander Walker.

1.—*Ophonus brevicollis*, Dej. This species may be distinguished by its short, broad thorax, with sharply marked rectangular hind angles, by the punctuation of the thorax being very scanty on the disc, and by the fact that the punctuation on the elytra tends to become diminished, and though somewhat coarse is frequently sub-obsolete. The ædeagus has a blunt short tip, the apex being minutely curved, but without actual raised margin.

This is, apparently, in this country, the most abundant species, and it is the most unattractive in appearance. It varies considerably. Length, 6–8 mm. Colour of body above generally fusco-piceous, head and thorax occasionally dilute piceous so as to be almost rufescent. The thorax does not exceed $1\frac{3}{4}$ mm. in length in the largest examples. The most striking variation is to be found in the punctuation of the elytra, which in many specimens becomes so scanty, as to distinguish this species from all our others. Serial punctures on the 3rd and 5th interstices are usually absent, but one, two, or three may be present on each; more frequently on the 5th than on the 3rd. The ædeagus shows slight variation in length and a little in thickness and curvature.

O. brevicollis is probably widely and generally distributed in England, as I have specimens before me from Cornwall, the Isle of Wight, and Dumfries-shire, &c.

As regards synonymy, the less said the better. I believe it to be the *brevicollis* of Dejean, and the *cribellum* (Stephens) of Dawson. Mr. Champion has examined the Stephens collection, and as a result I feel that we ought not to take that name into consideration. Dejean thought this species might be *foraminulosus*, Marsham, and I should apply that name to it, were it not that Dawson states that he has examined the type of *Carabus foraminulosus*, and that it is not this species.

2.—*Ophonus rufibarbis*, Fabr. This is the largest form of the group, the length varying from 8 to 10 mm. The thorax is always longer than it is in *brevicollis*, and its punctuation is greater; the hind angles are perfectly rectangular and well marked, and there is no trace of a basal margin. The ædeagus is altogether larger than it is in *brevicollis*, and is more contorted, with a considerably broader apical portion.

This species is not abundant, and the series I have examined does not exhibit much variation. In immature individuals the head and thorax may be rufescent, but not very brightly so. There is no tendency to the diminution of elytral punctuation, the character that is so striking in *O. brevicollis*. In July and August, 1890 and 1891, I met with a fine series of *O. rufibarbis* at Swaffhamprior in Cambridgeshire on the Devil's Dyke, and Commander Walker finds it not very rarely about Oxford. It also occurs not rarely near Chatham, and Mr. Champion possesses a specimen from Mickleham.

The application of the name *rufibarbis* is conventional. Fabricius's few words containing nothing characteristic; but I make use of it in this manner as involving the least change and inconvenience.

3.—*O. cordatus*, Duftschm. In this species the thorax is very much rounded at the sides in front, and greatly narrowed behind, the sides there becoming parallel for a short distance so that the angles are quite rectangular; there is a raised margin along the base, fine but quite distinct. The punctuation of the upper surface is coarse, and the colour is usually a pale brown or tawny inclining to piceous, and sometimes red on the head and thorax.

Although these characters render this species easy to distinguish, nevertheless there is sometimes confusion between it and *rupicola*: the latter does not have the sides of the thorax behind truly parallel and the base is not margined. The two species differ in various other ways and the ædeagus is very different.

O. cordatus is really nearer to *O. rufibarbis*, but the last-named species has the thorax much broader at the base and without a raised margin there.

The ædeagus of *cordatus* is very like that of *rufibarbis*, except for being considerably shorter: and in the British list *cordatus* should come next to *rufibarbis*, the distinction of the two as regards the basal margin of the thorax being of less importance than the similarity of the male organ.

O. cordatus is decidedly a scarce insect in this country, and most of the specimens in our collections come from the neighbourhood of Deal, where it appears to vary but little. It is not however strictly a coast species, and Mr. Champion's collection includes a specimen from Mickleham, and two from Croydon, and all these three individuals differ so much from the Deal form that they might give rise to the idea of a distinct species. These specimens are all female, and are far

from agreeing together, so that there is no probability of their representing a distinct species, although the remark on inland specimens of *O. cordatus* in Fowler's "British Coleoptera" (i, p. 45), might give rise to the idea that inland specimens supposed to be *cordatus* are really not so. And it may be here stated that *cordatus* is not a maritime species on the Continent. One of Champion's Croydon examples is very large and dark in colour with an ample prothorax, so that it reminds one strongly of *O. rufibarbis*. The Mickleham individual, on the contrary, is small, has diminished punctuation and is somewhat reminiscent of *O. rupicoloides*. Variation of this kind has given rise to the idea that most of our British species are really only one, but my study has convinced me that this is entirely erroneous.

The name in the case of *O. cordatus* is satisfactory. The species was figured by Sturm (Deutsch. Ins. iv, tab. 94, fig. C) from a specimen from the Duftschmidt collection, and Sturm's figure no doubt represents the insect under consideration, though it has a ridiculous blunder as regards the front margin of the thorax.

Lawnside, Brockenhurst :

July 12th, 1912.

(To be continued.)

NOTE ON A PECULIAR FORM OF *NOTIOPHILUS*.

BY JAMES E. BLACK, F.E.S.

Some years ago I took a *Notiophilus* at Peebles, Scotland, which appeared to differ from any of our British species, especially by a patch of testaceous-brown on the outer posterior side of each elytron. This colour-mark is entirely different, both in colour and position, from the ordinary testaceous apex characteristic of some of our *Notiophili*.

Unfortunately this example was lost, but in 1906 I took another, also at Peebles, though in a different locality, which I believe to be the same species.

Mr. Donisthorpe then kindly compared the specimen with the British and European *Notiophili* in the South Kensington collections, but could not find any to agree with it.

Herr Reitter, to whom I sent the specimen, has returned it as *bigeminus*, Th. = *pusillus*, Wat., var.

On going to Brockenhurst last June I showed the insect to Dr. Sharp, who has kindly gone very fully into the matter for me, and who has just had a *Notiophilus* sent him by Col. Yerbury, taken in Sutherlandshire this summer, which corresponds with mine. According to him it is apparently a rare mountain form, and it is of interest to note that Thomson in his "Skandinavien Coleoptera," Vol. I, p. 182, mentions as var. c. of *aquaticus*, a form which apparently corresponds to these Scotch examples.

Peebles: July, 1912

NOTE ON THE *ACRITUS MINUTUS*, HBST., AND *A. NIGRICORNIS*,
HOFFM., OF BRITISH COLLECTIONS.

BY JAMES EDWARDS, F.E.S.

These two species are given as British in the Beare-Donisthorpe Catalogue of 1904. According to the current definitions, as given in the few Continental beetle books at my command, the following, *inter alia*, are their index characters *inter se*.

Pronotum without a transverse row of punctures near the base. Habitat under bark and in rotten wood (according to one writer, generally with ants)

...*minutus*, Hbst.

Pronotum with a slightly impressed transverse sinuous row of punctures near the base. Habitat in decaying vegetable matter*nigricornis*, Hoffm.

In a manure heap here, I get an *Acritus* which is evidently *nigricornis* as defined above; but this is also the same as a specimen of *minutus* which I bought of E. W. Janson many years ago under that name. Wishing to see *minutus* proper, which according to Fowler is common and generally distributed, I applied to several correspondents for an *Acritus* of that name having no row of punctures near the base of the pronotum and subcortical in habitat: no one has it. Mr. Champion's *minutus* are all like the one I had from Janson, and so are forty-seven specimens of so-called *minutus* kindly lent to me by Mr. Donisthorpe. As long ago as 1862 these two species were clearly diagnosed by Thomson, but they remain inadequately distinguished in our English text-books; the characters given in Cox's Handbook are inaccurate, and in Col. Brit. Isl., the correct diagnoses are so modified that they become worthless. I am unable to find any evidence that the real *A. minutus*, Hbst., has ever occurred in this country; indeed, the evidence on the subject, such as it is, indicates rather that the *A. minutus* of British authors and collections has always been *A. nigricornis*.

Colesborne, Cheltenham:

June 22nd, 1912.

HEMIPTERA IN CARMARTHENSHIRE.

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

(Concluded from page 111).

SALDIDÆ.

Salda scotica, Curt.*: on the Towy, at Twm Shon Catti's Cave, near Llandoverly. *Salda orthochila*, Fieb.: Sandhills, Kidwelly. *S. saltatoria*, L.: common. *S. c-album*, Fieb.*: on rocks in R. Gwili, March and August, and in R. Cothi, August; *S. pallipes*, F.: common.

CIMICIDÆ.

Cryptostemma alienum, H.S.*: on shingle on banks of R. Gwili in March. The testaceous larva was also present. *Lycotoris campestris*, F.: common. *Piezostethus flavipes*, Reut.: in a corn store at Carmarthen I found a specimen of this insect, which has not yet been found in Britain outside of buildings in human occupation (see Ent. Mo. Mag., XLIII, p. 14). *Anthocoris confusus*, Reut., *A. nemoralis*, F., *A. nemorum*, L.: common. *Microphysa elegantula*, Baer.: a few ♀♀ found on dead trees at Carmarthen had the fore parts much darker than usual, and the pubescence much longer, but otherwise they agreed with the type. *Myrmedobia tenella*, Zett.: the ♀♀ common in moss on Merlin's Hill.

CAPSIDÆ.

Pithanus maerkeli, H.S., *Miris calcaratus*, Fall., *M. lævigatus*, L., *M. holsatus*, F., *Megaloceræa erratica*, L., *M. ruficornis*, Fourc.: all common. *M. psammæcolor*, Reut.: on *Psamma*, sandhills, Kidwelly. *Leptopterna ferrugata*, Fall., and *L. dolabrata*, L.: Carmarthen. *Monalocoris filicis*, L.: on ferns. *Bryocoris pteridis*, Fall.: very abundant on *Iastræa* and *Athyrium*, with a fair proportion of macropterous examples. *Phytocoris longipennis*, Flor, *P. ulmi*, L., and *P. varipes*, Boh.: common. *Calocoris seaguttatus*, F.*: sweeping amongst long grass in damp places, Carmarthen. *C. bipunctatus*, F.†: common. *C. lineolatus*, Goeze: on *Ononis* at Pendine. *Stenotus binotatus*, F.*: common. *Plesiocoris rugicollis*, Fall.: abundant on dwarf sallows at Kidwelly and Pendine. *Lygus pabulinus*, L.: common. *L. viridis*, Fall.: on alder, most of the specimens with very little dark coloration of the elavus. *L. lucorum*, Mey.,* *L. spinolæ*, Mey., *L. pratensis*, L., *L. cervinus*, H.S., *L. pastinacæ*, Fall., *L. kalmii*, L.: all more or less common. *Camptozygum pinastri*, Fall.*: on firs, Carmarthen. *Pæciloscyllus palustris*, Reut.: this insect occurs chiefly at roots of rushes and grasses in damp places on the Pendine sandhills. I have also found it in a damp spot amongst rushes just outside Carmarthen. On the continent it is said to occur on *Galium palustre* (see Ent. Mo. Mag., XLVI, p. 141). *Liocoris tripustulatus*, F.: common. *Capsus ruber*, L., and *Rhopalotomus ater*, L.: Carmarthen. *Allodapus rufescens*, Burm.: one specimen on heathy ground near Sarnau. *Systellonotus triguttatus*, L.: one specimen on Kidwelly sandhills. *Pilophorus clavatus*, L.: abundant on dwarf sallows at Kidwelly. *Orthocephalus saltator*, Hahn*: Carmarthen. Also sandhills at Ferryside, where the specimens are more thickly covered with white scales than usual. *Macrolophus nubilus*, H.S.*: on *Rubus* at Conwil. *Dicyphus epilobii*, Reut., and *D. errans*, Wolff: Carmarthen. *D. stachydis*, Reut.*: one

specimen, Carmarthen. *D. pallidicornis*, Fieb.*: rare, although the foxglove is abundant. *D. annulatus*, Wolff*: common on *Ononis* at Kidwelly, Ferryside, and Pendine. *Campyloncura virgula*, H.S.: Carmarthen. *Ætorhinus angulatus*, Fall.: common on alder. *Globiceps cruciatus*, Reut.: on dwarf sallows at Kidwelly. *Mecomma ambulans*, Fall.: common on ferns. *Cyrtorrhinus caricis*, Fall.*: amongst rushes, Carmarthen. *Orthotylus flavinervis*, Kb.: on alders, Carmarthen. *O. marginalis*, Reut.: common on dwarf sallows, Kidwelly. *O. tenellus*, Fall.: one specimen, Carmarthen. *O. ochrotrichus*, D. and S., and *O. diaphanus*, Kb.: Carmarthen. *Hypsitylus bicolor*, D. and S.: on furze, Carmarthen. *Heterotoma mecrioptera*, Scop.: common. *Malacocoris chlorizans*, Fall.: on hazel, Carmarthen. *Macrotylus paykulli*, Mey.: common on *Ononis* on the sandhills at Kidwelly and Ferryside. *Byrsoptera rufifrons*, Fall.: Carmarthen, not very common. *Phylus coryli*, v. *avellanæ*, Mey.: Carmarthen. *Psallus variabilis*, Fall.: Carmarthen. *P. lepidus*, Fieb., and var. *minor*: Carmarthen. *P. alnicola*, D. and S.*: on alders, Carmarthen. *P. varians*, H.S., and *P. diminutus*, Kb.: Merlin's Hill. *P. roseus*, F.: very abundant on dwarf sallows, Kidwelly. *P. salicellus*, Mey.: on hazel, Carmarthen and Conwil. *Atractotomus magnicornis*, Fall.: on Scotch firs, Carmarthen. *Plagiognathus albipennis*, Fall.: on *Artemisia*, Kidwelly. *P. chrysanthemi*, Wolff, and *P. arbustorum*, F.: common. *P. pulicarius*, Fall., and *P. saltitans*, Fall.: Kidwelly sandhills. *Asciodema obsoletum*, D. and S.: on furze, Carmarthen.

NEPIDÆ.

Nepa cinerea, L.: Carmarthen.

NOTONECTIDÆ.

Notonecta glauca, L.: Aberguili.

CORIXIDÆ.

Corixa geoffroyi, Leach, *C. venusta*, D. and S., *C. striata*, L., *C. fallenii*, Fieb.: Pondsides, Carmarthen.

HOMOPTERA.

CERCOPIDÆ.

Aphrophora alni, Fall.: common. *A. salicis*, De G.: on dwarf sallows, Kidwelly. *Philænus spumarius*, L., and *P. lineatus*, L.: common. A large form of the latter occurs on the sandhills at Ferryside.

JASSIDÆ.

Megophthalmus scanicus, Fall.: Pendine. *Euacanthus interruptus*, L.: Pendine. *E. acuminatus*, F.: Carmarthen and Pendine. *Oncopsis (Bythoscopus) alni*, Schr.: on alders, Carmarthen. *O. flavicollis*, L.: on hazel, Merlin's Hill. *Macropsis (Pediopsis) tibialis*, Scott: Pendine. *M. impura*, Boh.: on dwarf sallows, Kidwelly and Pendine. *M. cerea*, Germ.: on sallows, Pendine. *M. virescens*, F.: one specimen, Carmarthen. *Idiocerus elegans*, Flor.: on sallows, Pendine. *I. lituratus*, Fall.: on sallows, Pendine and Kidwelly. *Agallia puncticeps*, Germ.: Carmarthen. *A. venosa*, Fall.†: at roots of plants, Carmarthen, Kidwelly, and Pendine. *Acocephalus nervosus*, Sch.: common. A curious dwarf form of this variable insect occurs

abundantly under *Erodium* on the sandhills at Kidwelly and Pendine; it is as variable in colour as the type. *A. albifrons*, L.: common. *A. histrionicus*, F.†: under *Erodium*, Kidwelly and Ferryside. *Strongylocephalus agrestis*, Fall.: by searching at roots of rushes and other plants in damp places, Pendine. This insect keeps so close to the ground that it is not to be taken by sweeping. *Eupelix cuspidata*, F.†: Carmarthen. *E. producta*, Germ.: Ferryside, Pendine, and Careg Cenen. *Athysanus sordidus*, Zett.: Carmarthen and Pendine. *A. sahlbergi*, Reut.: Pendine. *A. lineolatus*, Brullé: Carmarthen. *A. obsoletus*, Kb.: Carmarthen, Kidwelly, and Pendine. *Deltocephalus ocellaris*, Fall.: Merlin's Hill. *D. repletus*, Fieb.: Moelfre. *D. socialis*, Flor: Kidwelly. *D. sabulicola*, Curt.: on *Erodium*, Kidwelly. *D. striatus*, L.: Carmarthen. *D. maculiceps*, Boh.: boggy land near Sarnau. *Thamnotettix striatula*, Fall.: boggy land near Sarnau. *T. attenuatus*, Germ.†: Ferryside and Pendine. *Limotettix 4-notata*, F.: common. *L. nigricornis*, J. Sahlb.: amongst rushes, Carmarthen. *L. sulphurella*, Zett.: Careg Cenen. *Cicadula variata*, Fall.: Carmarthen. *C. sexnotata*, Fall.: common. *Dikraneura flavipennis*, Zett.: amongst *Carices*, Pendine. *D. citrinella*, Zett.: amongst grasses and ferns by the side of the River Cothi, Nantgaredig. *Empoasca butleri*, Edw.: this beautiful insect I first found on dwarf sallows at Kidwelly and Pendine, where it is common, and it was from there that Mr. Edwards described the species (see Ent. Mo. Mag., XLIV, p. 81). I have since found it in several places in Hampshire, including the New Forest, and at Waltham Abbey in Herts. *Eupteryx vittatus*, L., and *E. notatus*, Curt.; Pendine. *E. urticæ*, F., and *E. stachydearum*, Hdy.: Merlin's Hill. *E. signatipennis*, Boh.: on *Spiræa*, Pendine. *E. concinna*, Germ.: Merlin's Hill. *Typhlocyba jucunda*, H.S.: on alder, Carmarthen. *T. tenerima*, H.S.: Pendine. *T. cratægi*, Dougl.: Merlin's Hill. *T. avellanæ*, Edw., and *T. quercus*, F.: Carmarthen. *T. nitidula*, F.: on wych elm, Careg Cenen. *T. geometrica*, Sch.: on alders, Carmarthen. *Zygina alneti*, Dall.: on alders, Carmarthen. *Z. parvula*, Boh.: Pendine.

FULGORIDÆ.

Cixius nervosus, L.: Carmarthen and Kidwelly. *C. brachycranus*, Scott: Carmarthen and Nantgaredig. *Megamelus notula*, Germ., and *M. fieberi*, Scott: at roots of rushes in very damp places, Pendine. *Kelisia vittipennis*, J. Sahlb.†: Carmarthen. *Conomelus limbatus*, F., and *Delphax pellucida*, F.: common. *D. discreta*, Edw.: Carmarthen. *D. forcipata*, Boh.: Moelfre. *D. aubei*, Perris: Ferryside. *D. fairmairei*, Perris: common. *Dicranotropis hamata*, Boh.: Merlin's Hill.

PSYLLIDÆ.

Livia juncorum, Latr.: on rushes, Kidwelly. *Rhinocola ericæ*, Curt.: Moelfre. *Aphalara picta*, Zett.: Llanstephan and Merlin's Hill. *Psylla mali*, v. *viridissima*, Scott: Carmarthen. *P. buxi*, L.; Nantgaredig. *P. nigrita*, Zett.: Ferryside. *P. salicicola*, Först.: Pendine.

[In preceding paper, pp. 109-111, for Sarnan read Sarnau.]

56, Cecile Park, Crouch End, N.

April 9th, 1912.

CEPHALOTHRIPS MONILICORNIS, REUT.: AN ADDITION TO THE
THYSANOPTERA OF GREAT BRITAIN.

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

On the occasion of the British Association Meeting at Portsmouth last August, I had the opportunity of spending a few hours in the New Forest, taking many interesting thrips, chiefly belonging to the *Terebrantia*. But at Matley Bog a species of Tubuliferon, which I at once recognized as a *Cephalothrips*, occurred on long soft grass. Until 1910 only the apterous form was known; in that year, however, Fryderyk Schille [*Nowe Formy Przylźniców* (Thysanopterorum gen. et. spp. novæ)] in the "Academia Litterarum Cracoviensis" recorded a single female example of the winged form. This specimen, which Herr Schille later discovered (*in litt.*) was a male, has been generously submitted to me with other material described by him in the above mentioned paper.

Numerous specimens of *C. monilicornis*, Reut., were collected by Mr. C. B. Williams and myself in the New Forest, and although Williams obtained the fewer examples I was very pleased to learn that he had been fortunate enough to obtain two examples of the macropterous form, one of which he has kindly placed in my collection.

Cephalothrips monilicornis was first taken by Reuter in Finland, and has been more recently met with in Bohemia (Uzel), Poland (Schille), Italy (Buffa), and Norway (R. S. B.).

University Museum, Oxford:

July 6th, 1912.

ANOTHER HUNDRED NEW BRITISH SPECIES OF DIPTERA.

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

(Concluded from page 114).

60b. *Agathomyia zetterstedti*, Wahlberg. Dr. J. H. Wood still keeps adding to the Herefordshire species of *Platypezidæ* and has sent me a male and three females of this little known species taken by him at Ashperton Park from September 21st to October 1st, 1907. The reddish abdomen of the female renders that sex very distinct, but the black male is as usual very much like the other males of the genus.

61. *Pipunculus incognitus*, Verr. I quite expected to find that this species was an inhabitant of Britain, and consequently I was not surprised to receive a number of specimens taken by Col. Yerbury at Nairn, in May, 1905.

61a. *Chilosia velutina*, Lw. Mr. R. C. Bradley took several specimens of this species at West Runton, in Norfolk, in July, 1900. I failed to name it from Becker's monograph, but upon sending a pair to him he identified them. It very much resembles *C. proxima*, but has paler antennæ, and the tuft of black hairs on the sides of the abdomen is at the hind corners of the *third* segment. Dr. G. B. Longstaff also took a male on August 17th, 1909, at Mortehoe, in Devonshire. I seem to have taken a female within two miles of my own house on August 11th, 1882, but quite failed to recognise it. I do not count it as one of the hundred species because it has been recorded under exhibitions.

62. *Sphærophoria loewii*, Zett. Col. Yerbury took a beautiful female of this species at Gravesend on June 27th, 1908. It is very distinct from the other species of the genus and is easily known by its brilliantly shining thorax and entirely black antennæ.

62a. *Hammerschmidtia ferruginea*, Fall. This fine addition to the British List was captured by Col. Yerbury at Spey Bridge in June, 1905, and a few specimens were also taken there by Mr. C. G. Lamb. It is a remarkably distinct species, which may be known by the long strong black bristles which occur on various parts of the thorax, by the curved end of the discal vein (which indicates relationship to *Ascia* and *Volucella*), by the tubercle which exists on the middle of the face in the male but is absent in the female, by the strongly incrassated hind femora which bear bristles on the underside, by the curved and incrassated hind tibiæ, and by the long curved abdomen; many of these characters are suggestive of *Xylota* but the genus is really allied to *Brachyopa*. I cannot call this a new record for Britain because specimens have been exhibited at a meeting of the Entomological Society of London.

63. *Eudoromyia magnicornis*, Zett. I do not think that I can be wrong in introducing this fine species as British upon a female taken by Col. Yerbury at Bridgend, on July 23rd, 1908. It is similar to the common *Echinomyia fera*, but is considerably larger and has the femora mainly black. It is, however, very desirable that both sexes should be authenticated.

64. *Sturmia ligniperdæ*, Br. & Berg. I am convinced that a pair of Tachinids, taken at Lyndhurst Road on a "*Cossus*" tree on July 1st, 1897, belong to this little known (and I am afraid not well distinguished) species.

65. *Vibrissina turrita*, Meig. I caught a specimen of this little species at Tangham Wood, in Suffolk, on August 17th, 1907.

66. *Ptychomyia selecta*, Meig. This Tachinid is comparatively common, and I possess it from Lyndhurst, Swansea, Orford and Herefordshire, but most of my specimens were taken by Col. Yerbury.

66a. *Bothria subalpina*, Villen. When describing this new species (Wien. Ent. Zeit., 1910, 88) Villeneuve stated that he had seen a female taken by Mr. C. J. Wainwright, near Birmingham. I know nothing about the insect, but it must be included in our British List.

67. *Germaria angustata*, Zett. I took a female of this species at Martham (Norfolk), on June 26th, 1888, and Mr. C. J. Wainwright, who has seen the specimen, confirms the identification. According to Villeneuve (1909) this is the *Germaria sabulosa* of van der Wulp and the *Atractochaeta graeca* of Brauer and Bergenstamm.

68. *Onesia gentilis*, Desv. This may be easily distinguished from all other known British species of the genus by the absence of the inner præsutural bristle. I have records from Chippenham Fen (common), Barton Mills, Lewes, Folkestone, Dartford, etc., from March to October, so I expect it only requires identification to be found a common insect. I have two other species of the genus which I have failed to identify.

69. *Syntomogaster exigua*, Meig. I cannot find any record of this as British, though the existence of a British species of the genus has long been known to Dr. J. H. Wood, Col. Yerbury and myself. Dr. Wood has taken several specimens at Hough Wood and Stoke Wood near Tarrington, in Herefordshire.

70. *Syntomogaster* (?) *fasciata*, Meig. I caught a specimen of this very distinct species at Lyndhurst on May 29th, 1897, and Mr. Atmore took one near King's Lynn (Norfolk), in June, 1910, and there is a specimen in the British Museum taken at Tarrington, Herefordshire. The species is unmistakable, but its generic position seems to be most uncertain; I should not place it in the same genus as *S. exigua*, but rather in the restricted genus *Litophasia*.

71. *Cinochira atra*, Zett. A fair number of this very little known genus and species were taken by Mr. J. E. Collin and Col. Yerbury at Butley Thicks, near Woodbridge, in Suffolk, on July 10th, 1908.

Weberia thoracica is not very uncommon, but I have seen only one specimen of *W. curvicauda* which was taken by Col. Yerbury at Gravesend on June 27th, 1908.

72. *Sarcophaga sinuata*, Meig. A male of this very distinct

species was taken by Col. Yerbury at Mildenhall, in Suffolk, on May 22nd, 1909. The peculiar patch of golden scales on the anterior surface of the middle femora is very characteristic.

73. *S. pumila*, Meig. This small species may be easily distinguished by the absence (or almost so) of the apical scutellar bristles. It was not uncommon at Barton Mills, in Suffolk, on May 19th, 1909, and three males occurred at Eynsham in Oxfordshire, on July 2nd, 1910.

73a. *Pyrellia xenea*, Zett. The comparatively common species which we have known as *P. cadaverina* is not that species, but apparently is the one known on the continent as *P. xenea*; it is very common in Wicken Fen. Probably some older name will be found for it. I have never met with the true *P. cadaverina*, which is apparently very common over nearly all Europe, but I possess an old specimen from the late Mr. Dossitor's collection which is probably British. *P. cyanicolor* is now considered a synonym of *P. serena*.

73b. *Spilogaster platyptera*, Zett. This uncommon species would come among those placed by me under *Mydina*, and in Kertész's Katalog is given as a synonym of the doubtful *Anthomyia querceti*, Bouché. It was identified by Stein in my collection from males taken at Lyndhurst on June 25th, 1872, Lee, on August 17th, 1875, and a female at Penzance on June 7th, 1871. It has been recorded as British by Mr. Grimshaw in the "Ann. Scott. Nat. Hist." for 1909.

74. *Spilogaster halterata*, Stein. A number of specimens of this species in my collection were identified by Stein himself. Four males occurred near Eridge in Kent in June, 1886, and one at Ormesby in June, 1888, while I believe I took it at Lyndhurst in June, 1876.

75. *Limnophora maritima*, v. Röd. This species was described in 1887 by v. Röder from the East Frisian island of Norderney, as a new *Melanocheilia*. In 1902 Schnabl thought that he recognised it from the same island and the neighbouring island of Borkum, and founded upon it the possibly justifiable new genus *Neolimnophora*, but in the *errata* of the same volume he re-named his species as *N. schnusei*—a fact which seems to have been overlooked in all catalogues. Next, in 1902 Villeneuve described from the North French and Belgian coasts a *Limnophora xestuum*, which he said in 1906 should be ranged with *L. maritima* in Schnabl's sub-genus *Neolimnophora*, but at the same time he described two more species, *L. candicans* and *L. virgo*, from Montpellier on the French Mediterranean. Stein in 1906 thought he knew *L. maritima* from Borkum,

France, North Africa, and Venice, but he distinguished *L. æstum*; lastly, in 1909 Strobl placed *L. virgo* from Spain and Dalmatia as a synonym of *L. maritima*. I consider I am justified in naming two females taken by Col. Yerbury at Walton-on-Nazé on August 19th, 1907, and one female at Studland on July 29th, 1909, as *L. maritima*.

76. *Homalomyia fucivorax*, Kieff. This recently distinguished species (Ann. Soc. Ent. Fr. 1898) has been taken by Dr. J. H. Wood in the Monnow Valley in Herefordshire. It is very much like the common *H. canicularis*, but may be known by the wide silvery optics, almost unstriped thorax, more extensively yellow knees, &c. Dr. Wood tells me that it appears to be associated with *Odynerus spinipes*; if so, the association of the genus *Homalomyia* with Aculeates is not new, but the peculiar resemblance which the shape of the head and frons of *H. fucivorax* bears to the species of *Ammomyia* must have some significance. I suspect that Meade's *H. vesparia* is the same as Stein's *H. ciliata*.

77. *H. lineata*, Stein. A number of specimens were bred in June, 1906, from rotten débris in a hollow tree at Snailwell, near here.

78. *Pegomyia rufina*, Fall. This species, of which *P. squamifera* is probably a variety, has occurred at Dawlish. *P. univittata*, v. Roser, is probably a variety of *P. geniculata*, Bouché, but I do not feel quite certain upon this point.

79. *P. squamifera*, Stein. This species occurred in considerable numbers in my garden in June, 1904.

80. *P. interruptella*, Zett. I caught a number of males of this species hovering under a tree between Soham and Wicken on May 15th, 1892. I had previously taken one male at Lyndhurst on June 10th, 1884. My specimens were named by Stein, and therefore probably represent this little known species.

80a. *Pegomyia femorata*, Stein. This may not be an addition to the British List, because Stein says that it is Meade's *P. hæmorrhoum*. I must admit that I am not satisfied with Stein's distinctive characters for this somewhat common species.

81. *Anthomyia procellaris*, Rond. I think *A. pluvialis* was rightly separated by Rondani into three species, as I find genital characters supporting his superficial characters. It is however probable in that case that there are several more South European species, and therefore the nomenclature must for a while remain uncertain. *A. procellaris* is widely distributed in Britain.

82. *A. imbrida*, Rond. Probably as widely distributed as *A. pluvialis* and *A. procellaris*. It is as a rule the largest of the three species.

83. *Chortophila latipennis*, Zett. A male taken by me at Lyndhurst on June 27th, 1874, was identified by Stein, and agrees very well with Zetterstedt's description.

84. *Chirosia crassiseta*, Stein. A male taken by me at Porthcawl on June 7th, 1906, agrees perfectly with Stein's description. Stein took it at Genthin in Prussia in numbers on fern leaves, and stated that it had been bred from stems of *Athyrium filix-femina*.

85. *C. parvicornis*, Zett. This species is apparently very widely distributed, as I have taken it at Lynton, Eridge, Abbots Wood, Loch Maree, and Tongue. It has only recently been well recognised, which accounts for its not having been recorded sooner, as I took it at Abbots Wood on April 24th, 1870.

86. *Lispe pygmæa*, Fall. (*tenuipalpis*, Zett.). This species has long been known to us as British, but I do not think has been recorded. I took a specimen at Bournemouth on August 30th, 1874, but it was not recognised until Col. Yerbury took it in some numbers at Porthcawl in June, 1903. It occurred rather freely at Walton-on-Naze on June 6th, 1908.

87. *L. hydromyzina*, Fall. Many years ago I introduced *L. uliginosa* as British on rather weak authority, but in 1908 I caught a specimen at Aldeburgh. I now introduce *L. hydromyzina* on the authority of a gummied male, labelled 13:9:65, but without any locality; I suspect it to have been one of the late Rev. T. A. Marshall's collecting, and if so I feel sure he would have been particular in indicating the locality if foreign. It ought to occur in Britain.

88. *Caricea erythroceræ*, Desv. Dr. J. H. Wood took this species in considerable numbers at the Leech Pool, near Hay, in Herefordshire, in July and August, 1901—2; I had taken it at Three Bridges, in Sussex, on August 27th, 1874, and I took a male at Weybridge on July 5th, 1909.

89. *C. brachialis*, Rond. I refer without doubt some specimens which were taken by Dr. J. H. Wood in April, 1903, to this species. The stout figure and reddish abdomen distinguish it from most *Cænosinæ*, except the species of *Dexiopsis*.

90. *Limnospila albifrons*, Zett. This little species was common on the Suffolk coasts near Aldeburgh and Woodbridge in August and

September, 1907, and I also took several specimens at Aberlady on July 27th, 1873. I will not attempt to locate its generic position at present, but in my opinion it is much nearer *Limnophora* than *Cœnosia*. I think I have also taken it at Fawley in Hampshire, as well as in Arran, while Col. Yerbury has taken it at Gravesend, Nairn, Forres, and The Mound in Sutherlandshire.

91. *Cœnosia dorsalis*, v. *Roser*. This rather common species can hardly be considered new to Britain, because Stein, when describing his *Cœnosia longitarsis* (a synonym) in 1900 mentioned that he had seen it in my collection. I caught it first at Blackboys, in Sussex, in 1876, but have subsequent records from numerous Eastern and Herefordshire localities.

92. *C. albatella*, Zett. This very distinct little species was taken by me at Porthcawl on June 10th, 1906 (3 ♂, 2 ♀); Col. Yerbury had previously captured a male there on June 6th, 1903, and also took a considerable number of both sexes in 1906, on July 3rd, and one female at Pyle on August 14th.

93. *C. atra*, Meig. This very distinct, brilliantly shining, little black species occurred near here in two localities in 1909. Wicken Fen produced a male on June 6th, and Mr. Collin took one of each sex at Barton Mills on August 4th. Further search has produced a female from Wicken Fen, taken on August 21st, 1903, and four specimens taken by Col. Yerbury at Port Talbot on July 26th, 1908, and two others at Holmsley, in Hants, on September 17th, 1909.

94. *C. bilineella*, Zett. Col. Yerbury took three males of this species at Nairn on May 24th, 1905. It may be known by the small squamæ.

95. *C. lineatipes*, Zett. Stein has mentioned in the Wien. Ent. Zeitung that he has seen two specimens of this species from England. Dr. J. H. Wood took it in 1897 near Tarrington, in Herefordshire, and I also took it in his company at Devereux Pool on July 8th, 1909.

96. *C. pumila*, Fall. Under this name I record the species described by Stein in 1897 as *C. perpusilla*, Meig. It has occurred at Wicken Fen, Aldeburgh, and Golspie.

96a. *C. steini*, n. sp. This species which was considered by Stein (Wien. Ent. Zeit. xvi, 58) to be a variety of *C. pygmæa*, Zett., is obviously distinct. Stein has fully recorded its distinctions. Colonel Yerbury took two males of *C. steini* at Porthcawl on May 28th, 1908, and a number at Barmouth on September 4th, 1902.

97. *C. pygmaea*, Zett. I have taken this pretty little species, which is closely allied to *C. pedella*, Fall. (*decepiens*, Meig.), at Aldeburgh and Woodbridge. It is distinguished from *C. steini* by the absolutely immaculate middle femora of the male.

98. *C. salinarum*, Stein. This species was rather common at Butley in Suffolk in June, 1907, and I expect occurs anywhere on salt marshes, as I took it at Fawley in 1876, and Col. Yerbury took it at Llanbedr on July 2nd, 1902.

99. *C. trilineella*, Zett. It is only recently that this species has been distinguished from *C. sexnotata*, Meig., and I suspect that Meade's references to the latter apply to this new introduction; I believe, however, that I possess the true *C. sexnotata* from Butley in Suffolk. *C. trilineella* was common at Rannoch in June, 1870, and also occurred in Arran in 1882. Col. Yerbury also correctly identified it from Rannoch in 1898.

100. *C. longicauda*, Zett. Two males and one female taken by me in the Lake District in July, 1876, were identified by Herr Stein when he looked over my collection. I have closely examined them and believe his determination to be correct.

Strophosomus curvipes, Bedel, captured near Bournemouth in 1905.—On May 14th, 1905, I captured two specimens of a small *Strophosomus* in a sandy place at Poole Heath near Bournemouth. I was convinced they were a species new to us, but was told they were only small specimens of *S. fulvicornis*, Walton. As I did not then possess that species, I put them reluctantly into my cabinet as *fulvicornis*. Some years ago, when I took a nice series of *fulvicornis* in the New Forest, I was again struck by the distinct appearance of my Poole specimens. Experiments with ants and other work put the matter out of my head. On June 22nd last I sent the two specimens to Dr. Sharp, and he returned them to me as *curvipes*, Bedel. In Dr. Sharp's article in the Ent. Mo. Mag. for July on the species (*antea* p. 150), he notes the capture of two specimens by himself near Bournemouth this year, and that Bedel found two specimens in a sandy place at Fontainebleau.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: July 14th, 1912.

Immigrant Lepidoptera in 1912.—*Pyrameis cardui* was first observed by me at Oxford on May 11th; *Plusia gamma* and *Nomophila noctuella*, which appear to be its constant travelling companions, were also seen on the same day, and my nephew, Mr. H. G. Champion, reported the occurrence of *P. atalanta*, which I saw in apparently quite good condition in one of the main Oxford roads two days later. *Scopula ferrugalis*, a species that I suspect of strong migratory tendencies, as I have more than once met with it on board ship far out in the

Atlantic, was quite common for a few days in the middle of May on gas-lamps, fences, &c., at Oxford. On going to Sheerness early in June, I found *P. cardui* to be the butterfly most in evidence; half-a-dozen at a time were to be seen at the flowers of the early-blooming thistle *Carduus tenuiflorus*, which this season was unusually abundant and luxuriant in growth, and also attracted several worn-looking specimens of *Macroglossa stellatarum*, a moth I had not seen on the wing for several years. A large but worn ♂ of *Colias edusa* was taken near Sheerness on June 1st, and this promise of an "Edusa" year was to a large extent fulfilled on July 17th. On this day at Milford-on-Sea, Hants, I saw at least a dozen freshly emerged *Colias edusa* under the cliffs, all apparently ♂s, but so restless and active in the intense heat that I could not secure a single specimen; at the same time a few individuals of the new brood of *Pyrameis cardui* were seen frequenting the thistles in company with the last worn-out stragglers of the "immigrants." Fresh specimens of *P. atalanta*, *Plusia gamma*, and *Nomophila noctuella* have been observed here during the last few days.—
JAMES J. WALKER, Brockenhurst: July 19th, 1912.

Sycamore as a natural food of Xanthia aurago.—Although sycamore has sometimes been used as a substitute food for beech or maple on which to feed larvæ of *Xanthia aurago*, I am not aware that it was known to be one of the natural foods of the species. The moth has occurred very sparingly for many years in South-West Yorkshire, in woods where it seemed impossible that beech or maple could be its food, but where sycamore is abundant. This spring Mr. B. Morley, having reared a few larvæ from a moth taken in Deffer Wood, Skelmanthorpe, last autumn, made a search for more on sycamores in the same wood, and soon had the satisfaction of finding that in this part of the county it was quite at home amongst it, at first feeding inside the unexpanded buds, and afterwards on the foliage, but quite as often, he tells me, on the stalks as on the leaves, the larva biting off the leaf and then eating down the stalk from the top to the base. When not feeding it hides between two leaves of the sycamore. The larvæ were not at all uncommon, and now that the habits of the species in this district are known, no doubt the moth will be obtained much more frequently.—
GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield: July 11th, 1912.

Macroglossa stellatarum at Putney.—This morning I saw a humming-bird moth in the garden. Although *Chærocampa porcellus* visits my rhododendrons pretty regularly, it is many years since I have seen *M. stellatarum* here.—
G. B. LONGSTAFF, Highlands, Putney Heath, S.W.: June 22nd, 1912.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, June 23rd, 1912.—MR. A. E. TONGE, F.E.S., President, in the Chair.

Mr. West (Greenwich) exhibited the very scarce Orthopteron, *Platyplecis roeselii* from Gravesend, with *P. grisea*, *P. brachyptera*, and *Thamnotrizon*

cinereus, closely allied species, for comparison, and also the destructive Dipteron, *Merodon equestris*, bred from daffodil bulbs. Mr. Lucas, *P. roeselii* from N. Essex. Mr. Blenkarn, *Anthroceva trifolii* ab. *minoides* from Bembridge, a form new to the Isle of Wight, and *Spilosoma urticæ* from Sandown marshes, with an example of *Colias edusa*. Of Odonata he showed *Calopteryx splendens* from Brading; of Coleoptera, *Dichrotrichus pubescens* from Bembridge with 4 perfect legs on the left side; *Opilo mollis*, a local species from West Wickham on oak; and *Bembidium ephippium* from Culver Cliffs, a rare record for the Isle of Wight. Mr. L. W. Newman, a gynandromorph of *Amorpha populi* bred, the left side ♀, a vivid pink and large, the right side ♂ normal and small, the antennæ both ♀. Also living pupæ of *Pachnobia hyperborea*, and a stump of birch from which 16 pupa-cases of *Ægeria culiciformis* were projecting. Mr. A. E. Tonge, the commencement of the nests of the Common Wasp, *Vespa vulgaris*, and wild laid ova of *Ægeria tipuliformis* on the twig of a currant midway between the nodes. Mrs. Hemming communicated a note on the occurrence of *Colias edusa* on the S. Downs, and the obtaining of ova from a ♀ captured, and the habits of the young larvæ. Many *Pyrameis cardui* were seen at the same time. Mr. Sich exhibited larval cases of *Coleophora discordella* from Folkestone Leas. Mr. Hall, the Orthopteron known as *Dixippus morosus* (*Lonchodes* sp.). Mr. Adkin, the series of *Tortrix teucrana* from the Tutt collection, and read notes on the species.

June 27th, 1912.—The President in the Chair.

Mr. Sothorn Dekter, of Lee, was elected a Member.

Mr. Gahan exhibited some sycamore leaves showing the mines of the larvæ of the saw-fly *Phyllotoma aceris*, and the remarkable cases, in the form of little circular discs constructed by the larvæ. These cases become detached and move on the ground by little hops somewhat like the Mexican jumping bean. Mr. A. Sich, specimens of the rare Micro-lepidopteron, *Coleophora agramella*, from Hailsham. Mr. R. Adkin, a short series of *Biston hirtaria* bred from Aviemore larvæ which fed up in 1908. The imagines exhibited emerged in March and April of this year. Mr. Edwards, a pair of the beautiful Lycænid, *Eumæus debora*, from Mexico, and a fine specimen of the rare *Epiphile eriopsis* from Bogota. Mr. Cowham, a fine regular variety of *Abrazas grossulariata* taken in his garden; the usual yellow markings were almost absent, and the black markings were of smaller area and very symmetrical. Mr. Dods, a cocoon of *Platysamia cecropia* from which the imago had emerged by the wrong end. Mr. Goff, somewhat heavily marked specimens of *Brenthis euphrosyne* from Kent and Surrey. Mr. H. Moore, a huge Tick taken from a tortoise from N. Africa. Mr. Step read the Report of the Delegates to the Congress of the S. Eastern Union of Scientific Societies held at Folkestone in June.—
H. J. TURNER, *Hon. Secretary.*

NOTES ON THE BRITISH SPECIES OF *LONGITARSUS*, LATR.(A GENUS OF *COLEOPTERA*).

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND W. E. SHARP, F.E.S.

(Continued from p. 124 anteâ).

SECT. V.—Species large (exceeding 2 mm. in length), convex, unicolorous. (except in vars. of *L. tabidus*), testaceous or brown, or with sutural line faintly rufescent; punctuation fine.

I. Posterior tibial spurs short.

1. Form more rounded and convex, punctuation stronger. Species living on *Verbascum* and *Scrophularia**L. agilis*, Rye.

2. Form more elongate and less convex, punctuation weaker.

A. Size larger, unicolorous, posterior femora hardly darker. Species living on *Senecio**L. jacobææ*, Wat.

B. Size smaller, suture faintly rufescent, posterior femora always more or less pitchy. Species living on *Boraginææ**L. exoletus*, L.

II. Posterior tibial spurs long*L. tabidus*, F.

L. AGILIS, Rye [Ent. Mo. Mag., 1868, p. 133]; Weise [Nat. Ins. Deutschl. VI, pp. 987, 1020].

Of a full rounded oval shape, very convex, entirely light yellow brown. Head smooth between the eyes. Antennæ long, ferruginous with last four or five joints fuscous. Thorax: transverse, finely bordered, sometimes very finely alutaceous, sometimes quite smooth, with punctuation variable but always feeble and remote. Elytra: finely and distinctly alutaceous, punctuation distinct and close, but not very strong, somewhat seriate at base and near suture; apices very slightly separately rounded; suture sometimes darker, especially throughout apical half, often with obscure darker somewhat linear markings, particularly at base and sides. Legs concolorous with body, posterior femora darker, often quite black, apices of posterior tibiæ and tarsi usually fuscous; posterior tibial spurs short; first anterior tarsal joint very slightly enlarged in ♂. Underside pitchy. Winged, apterous, or semi-apterous. Mr. Champion (see note already referred to, Vol. XLVII, p. 244, anteâ) found, on examining a very large number of specimens taken by himself near Seaton, Devon, that the fully-winged individuals were females, the apterous and semi-apterous being males, but it remains uncertain whether this is invariably the case. Length, 2½—3 mm.

This species, attached as it is to special food plants, can hardly be confused with any other. It is sometimes found on *Verbascum* associated with *L. tabidus*, but the darker colour and very much longer tibial spurs easily distinguish that species. Very small examples somewhat resemble pale forms of *L. lateralis* (*distinguendus*), but the shape of *agilis* is always more rounded and convex, the tibial spurs shorter, and the punctuation weaker and less seriate.

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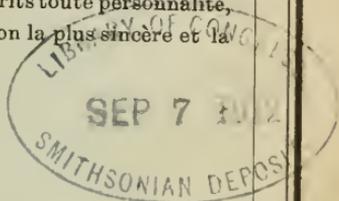
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It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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Catalogues may be had on application about seven days prior to the sale.

Food plants.—*Verbascum* and *Scrophularia*. Local throughout the south of England, from Kent to Devonshire, but common where it occurs.

There are some specimens of *L. agilis* in the collection of the late W. Laundry Brown said to have been taken in Norfolk, and Mr. Morley has recorded it from Suffolk. A variety with dark suture has been taken by Mr. Champion at Mickleham, Tilgate, Snodland, and Oxford.

L. JACOBÆÆ, Wat. [Cat. Brit. Col., 1858].

Syn. — *tabidus*, Panz. et Auct., nec Fab.

One of the larger of our British species of *Longitarsus*. Oval, somewhat acuminate, convex. Entirely and uniformly testaceous, paler or darker. Head very finely alutaceous between the eyes. Antennæ: long, testaceous, with last four or five joints infusate. Thorax: transverse, distinctly bordered, quite smooth or exceedingly finely alutaceous, with punctuation very feeble or quite obsolete. Elytra: very finely alutaceous, punctuation weak but rather close and regular, variable, much weaker in some specimens than in others, but never strong; apical angles very slightly separately rounded. Legs concolorous, posterior femora occasionally slightly darker on upper side; posterior tibial spurs very short; first joint of anterior tarsi distinctly enlarged in ♂. Underside usually concolorous with upper, sometimes slightly darker. Winged. Length, $2\frac{1}{2}$ — $3\frac{1}{2}$ mm.

This, one of the most abundant and conspicuous of our *Longitarsi*, can hardly be confused with any other species of the genus. From *L. agilis*, which perhaps it most closely resembles, its entirely different food plant separates it. It also differs from that species in its longer form and more uniform and lighter colour. Exceptionally small individuals of *L. jacobææ* are possibly difficult to distinguish from large *L. gracilis*, as in this case the food plant is the same; but the elytral punctuation of *L. gracilis* is generally weaker, the colour lighter—more straw-coloured than testaceous, the antennæ shorter, and the shape rather more parallel-sided.

L. jacobææ occurs generally throughout the kingdom. Its food plant is *Senecio jacobæa*.

Var.—*rufescens*, Fowler. This is merely a darker coloured form, varying from ferruginous to (in extreme and exceptional cases) a clear red. It occurs with the normal form, usually in spring and autumn, and is sometimes locally abundant.

L. EXOLETUS, L. [Syst. Nat. Ed. X, p. 373]; Weise [Nat. Ins. Deutschl. VI, p. 999].

Syns.—*femorialis*, Marsh. [Ent. Brit. I, p. 201] ; All. [Mon., p.123].
pratensis, Foudr. [Mon., p. 186].

Very variable in size. Of a rather long regular oval, somewhat acuminate. Head dark ferruginous, hardly visibly punctured. Antennæ: first four or five joints testaceous, remainder fuscous to black. Thorax: ferruginous, usually rather darker than elytra, transverse, very finely bordered, distinctly alutaceous, punctuation distinct, variable in strength, but always shallow and remote. Elytra: testaceous, often somewhat translucent, and in apterous specimens with indications of obscure darker markings; punctuation distinct and regular, moderate in strength and closer than that of thorax; sutural line rufescent and narrow; apices only slightly rounded. Pygidium clothed with short white cilia. Legs: entirely testaceous, with a dark, usually black, elongate patch at the upper apical half of the posterior femora; posterior tibial spurs moderately long, usually thin and curved, but rather variable; first anterior tarsal joint not enlarged in ♂. Underside entirely black. Winged or apterous. Length, 2—3 mm.

The most distinctive character of this species is the peculiar partial darkening of the hind femora, which is very persistent. Its much larger size and quite different food plants separate *L. exoletus* from any other species with a thin rufescent suture. Superficially, it might possibly be confused with *L. ochroleucus*, but in that species the hind femora are entirely black, the general body-colour much lighter, and the punctuation of elytra weaker.

Food plants.—The most usual is *Echium vulgare*, and we have found it on that plant almost wherever it grows throughout the kingdom. We have also taken it on *Cynoglossum officinale* in Sussex and Suffolk, and on *Lithospermum officinale* near Malvern. Fowler, possibly following Allard, adds *Convolvulus sepium*, but we have never known an instance of its occurrence on that plant in this country. It is exceedingly common wherever the Viper's Bugloss grows in the south of England. and as no other *Longitarsus* at all similar is found on *Echium*, its association with that plant, together with the salient characters above alluded to, render its recognition in the field comparatively easy.

Vars.—*rufulus*, Foudr. (Mon., p. 205). The only difference between this and the usual form is that the black upper surface of the posterior femora is wanting, the femora being concolorous with the rest of the legs—specimens occasionally occur with the type form—and out of a large collection of the species individuals could certainly be selected exhibiting a perfect gradation between almost entirely black hind femora and this form.

L. TABIDUS, F. [Syst. Ent. (1775), p. 115].

Syns.—*verbasci*, Panz. [1794]; Steph. [Brit. Col., p. 295]; All. [Mon., p. 120]; Weise [Nat. Ins. Deutschl. VI, pp. 985, 1040].

Quite the largest of the British *Longitarsi*. Of a rotund oval, very convex shape, unicolorous olive brown without any trace of rufous. Head smooth between eyes. Antennæ long, with last three or four joints infusate. Thorax: transverse, very finely bordered, not alutaceous, either quite smooth or very obsoletely punctured, usually concolorous with elytra, but occasionally of a darker brown. Elytra: not or hardly alutaceous, very finely punctured, rather more strongly at base near suture; apices separately rounded. Legs concolorous, posterior femora sometimes slightly darker; posterior tibial spurs very long and curved at apex; first joint of anterior tarsi very slightly enlarged in ♂. Underside concolorous with upper, but darker. Winged. Length, 3—4 mm.

The large size, exceptional colour, and long tibial spurs, easily distinguish this species from all our other British *Longitarsi*.

The food plant is *Verbascum thapsus* and *V. nigrum*. It appears to occur generally, but not commonly, over the greater part of England as far north as Yorkshire, but we have no records from either Scotland or Ireland.

Vars.—*thapsi*, Marsh. (Ent. Brit. I, p. 202). Similar to the type, but with the sutural line darker; the antennæ, legs, and underside are also rather darker than in the more usual form.

Bedel and the European catalogue consider *L. sisymbrii*, F. (Ent. Syst. I, 2, p. 31), to be a varietal form of this species. Of this we are doubtful; it appears to be a form spotted or banded with black, and in any case does not seem to have been recorded in this country.

L. rutilus, Ill. [Mag. VI, pp. 67, 165]. This species, having had a previously provisional place in our lists, was confirmed by Rye as British on the strength of specimens taken by the late Mr. Moncreaff near Portsmouth (see Ent. Mo. Mag. VII, p. 206, and Ent. Ann. 1872, p. 89), and since that time other collectors have on various occasions taken examples of what they believed to have been this species. Most of these specimens we have seen, and Mr. A. A. Moncreaff has been good enough to allow us to examine the whole of the examples standing over the name *L. rutilus* in his late father's cabinet. Without exception we refer these specimens either to *L. agilis* or to the form *rufescens* of *L. jacobææ*. No doubt the very considerable variation in the strength

of elytral punctuation exhibited by *L. agilis* has occasioned, and might excuse, the separation of exceptional individuals as supposed *L. rutilus*; but as any fairly large series of *L. agilis* taken at the same time on the same plant, either of *Verbascum* or *Scrophularia*, will show such variation, and that in every degree, it becomes impossible to regard the character as a valid specific criterion. There appears, indeed, to be considerable doubt among Continental authorities as to what the *L. rutilus* of Illiger really may have been, and we have seen Continental exponents of the species which to us seem to be nothing more than very dark red forms of *L. jacobææ*. As to the validity, however, of *L. rutilus*, Ill., as a Continental species, we cannot of course express an opinion, but we are quite satisfied that no supposed example of it yet taken in this country cannot be satisfactorily referred to one of the two species we have mentioned.

(To be continued.)

THE SECOND INTERNATIONAL CONGRESS OF ENTOMOLOGY.

Under the presidency of Professor E. B. Poulton, D.Sc., F.R.S., the Second International Congress of Entomology was held at the University Museum, Oxford, from August 5th to 9th. It was preceded on the evening of the 4th by an informal reception given by the Entomologists resident in Oxford in the hall of New College, which jointly with Wadham, Merton, and Magdalen Colleges, extended its hospitality to members of the Congress. Although the numerical strength of the present gathering was not quite equal to that of its predecessor at Brussels in 1910, the attendance was very satisfactory, 175 out of rather more than 200 Members being present at the meetings. These included the President and Officers of the Entomological Society of London, and a large number of the Fellows; delegates from the Universities and the chief learned Societies, and a goodly number of the leading Entomologists of the Continent and the United States, as well as representatives of such distant countries as Borneo, Canada, Chile, Cuba, Egypt, Hawaii, and Turkey.

At the opening meeting of the Congress on the morning of August 5th, the President extended a hearty welcome to the Members on the occasion of their visit to Oxford. This city presented a special advantage as a meeting-ground for the Entomologists of all nations in the existence of the "Hope Department" of the University

Museum, containing the great collections which the University owes in the first instance to the generosity of its founder more than sixty years ago, and which, under the first "Hope Professor," the renowned Entomologist J. O. Westwood, and his pupil and successor now presiding at the Congress, has developed into one of the finest and most extensive series of insects of all Orders of the world. The traditions of the University, in one of whose Colleges, Wadham, the Royal Society may be said to have had its cradle 250 years ago, also added to the appropriateness of Oxford as a rendezvous for men of science. Professor Poulton concluded an exceedingly interesting address, which was heartily applauded, with a detailed account of the distribution, polymorphism, geographical modifications, and results of breeding experiments of *Papilio dardanus*, illustrated by the specimens in the Hope Department, which form by far the finest series of this wonderful African butterfly at present in existence.

In the sectional meetings, a large number of papers of first-class importance and interest were read. Of these we may specially mention "Nature Reserves," by the Hon. N. Charles Rothschild; "Some Entomological Problems in the West Indies," by Sir D. Morris, on behalf of W. G. Ballou; "Die Differenzierung der zoogeographischen Elemente der Kontinente," by H. J. Kolbe; "The Silk of Spiders and its Uses," by Prof. J. H. Comstock; "Messrs. C. A. Wiggins' and Dr. Carpenter's researches in Mimicry in the forest Butterflies of Uganda," by Prof. E. B. Poulton; "The Colour-groups of Hawaiian Wasps," by Dr. R. C. L. Perkins; "Scent-Organs in the Lepidoptera," by Dr. F. A. Dixey; "The Phylogenetic Significance of the Development of the Butterfly Wing," by J. Van Bemmelen; "The necessary investigation with regard to Insect and Fungus Enemies of Plants, preliminary to Legislation," by A. G. L. Rogers; "Die Geographische Verbreitung der Insekten in ihrer Beziehung zu Phylogenie und Palaeontologie," by Prof. A. Handlirsch; "Travels of an Entomologist in Eastern Africa," by S. A. Neave; "On the founding of Colonies by Ants," by H. St. J. Donisthorpe and W. C. Crawley (illustrated by living specimens); "Observations on the Central American Acacia Ants," by W. M. Wheeler; "How to kill that Fly," by F. A. Lowe; "Ueber fossilen Termiten," by Baron K. von Rosen; "Progress in knowledge of the *Odonata* from 1895 to 1912," by Philip P. Calvert; "The Order *Thysanoptera*, &c.," by R. S. Bagnall; "How does the Insect see the World," by Prof. Adalbert Seitz, &c., &c.

A notable feature of the Congress was the treatment of the vexed question of Nomenclature, introduced on August 6th by the Rev. G. Wheeler and Mr. G. T. Bethune-Baker, in a joint paper embodying the proposal of the Entomological Society of London for the formation of International and National Committees, with unofficial suggestions as to desirable restrictions. Papers dealing with this subject were read or communicated by M. Charles Oberthür ("Pas de bonne figure à l'appui d'une description, pas de nom valable"), Mr. L. B. Prout, Capt. Ch. Kerremans, and M. Ernest Olivier, and eventually, after a most interesting discussion, the proposals contained in the first paper were adopted in substance by the Congress.

Among the exhibits on view in the Hope Department and adjoining rooms were the exceedingly fine series of the African species of *Acræa*, arranged by Mr. H. Eltringham in accordance with his splendid Monograph of these butterflies forming Part I of this year's Transactions of the Entomological Society; the *Pierinæ*, arranged by Dr. Dixey; Mimetic Groups of Butterflies, by Prof. Poulton; and "Insects and their Prey, with special reference to the Courtship of the Empidæ," by Mr. A. H. Hamm, who also showed on August 9th a very beautiful set of lantern slides from his own photographs of insects in resting attitudes in their natural surroundings.

The sole drawback to the complete enjoyment of the Congress was the persistently wet and stormy weather which prevailed without a break throughout the week, and was especially bad on the afternoon of the 7th, which had been set apart for excursions in the neighbourhood of Oxford. These excursions, to Nuneham, by the kind invitation of the Rt. Hon. L. V. Harcourt, M.P., and to Bagley Wood, by that of the President and Fellows of St. John's College, were well attended, and at the latter place a few interesting *Micro-Lepidoptera* and other insects were observed in spite of very unfavourable conditions.

At the final business Meeting on the afternoon of August 9th it was decided that the next Congress should be held at Vienna in 1915, under the presidency of Professor Anton Handlirsch of the Kaiserlich-königlich Naturhistorische Hofmuseum. A highly successful banquet in the hall of Wadham College, on the same evening, attended by about 150 Members, and a most enjoyable visit on the following day to the Zoological Museum at Tring, where over 100 Members partook of the generous hospitality of the Hon. Walter Rothschild and his brother, brought a memorable reunion of Entomologists to a close. In large

measure the success of the Oxford Congress is due to the energy and organizing powers of the General Secretaries, Dr. Karl Jordan, and especially Mr. H. Eltringham, who was at short notice called upon to act on behalf of Dr. Malcolm Burr, unfortunately prevented by the illness of himself and his wife from fully carrying out the onerous duties of that post.

NOTES ON THE BRITISH SPECIES OF *OPHONUS*.

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

No. 2.—*O. RUPICOLA* and ALLIES.

(Continued from p. 185).

4.—*O. rupicola*, Sturm. This is one of the easiest of the species to recognise, on account of the comparatively elongate and flat form, and the shining elytra with unusually coarse punctuation; this sculpture is, however, rather denser and finer in the female than it is in the male. The thorax is ample, but a good deal narrowed behind, and that in a slightly variable manner, for the sides are sometimes only very slightly, sometimes distinctly, sinuate posteriorly; when the sides are most sinuate the hind angles approach nearly to being rectangular, but they are always slightly obtuse, and there is no basal margin. The species therefore ought never to be confused with *O. cordatus*, though it sometimes is mistaken for that species. The colour varies a little, the head and thorax being sometimes rather bright red, while in other specimens they are picescent, but are never so black as the elytra. Serial punctures on the 3rd and 5th interstices are not easy to detect, but sometimes 2 or 3 really exist, on the 5th interstice at any rate, though they are difficult to distinguish among the coarse diffuse punctuation. Large specimens attain a length of $9\frac{1}{2}$ mm. A very small variety only $6\frac{1}{2}$ mm. long occurs, and in the smallest specimens the hind angles of the thorax are quite obtuse. The *ædeagus* in this species is quite remarkable on account of the broad strongly margined apical portion. This character is not diminished in the depauperated variety just mentioned.

O. rupicola is apparently a local species occasionally met with in numbers in the South of England. I once captured numerous specimens at Malvern in the month of August. Commander Walker finds it at Oxford and in the Isle of Sheppey. The Champion collection has

specimens from Sevenoaks, Dorking, Guildford, Weymouth, Wicken Fen, and Mickleham, besides a very remarkable specimen from the New Forest, which makes considerable approach to *rupicoloides*; it is rather immature, so that I have not attempted to extract the ædeagus, and I do not myself feel any doubt as to its species.

The nomenclature of this species is unsatisfactory. Sturm, the first describer, figured it as having green elytra, and in his description says "Die Farbe ist dunkel braunroth, auf der Oberseite fast in das Schwarze übergehend, die Flügeldecken sind ußerdem mit einem grünen bronzeschimmer überlaufen." Dejean could not recognise Sturm's species (probably on account of the discrepancy as to colour I have just quoted) and he described the insect as *O. subcordatus*, adding "*rupicola*, Sturm?" in the synonymy. Dawson in "*Geodephaga Britannica*" appears to have been the first to assign Sturm's name "*rupicola*" to this species, and he says "Elytra . . . pitchy with occasionally an obscure greenish tinge." I have never seen a specimen with any such coloration, but as the name *rupicola* is now in general use for this insect it is well to adhere to it. It is curious that Schaum in "*Insecten Deutschlands*" makes no remark as to this point.

5.—*O. RUPICOLOIDES*, sp. n. *Rufescens, antennis pedibusque testaceis, elytris nigricantibus; prothorace evidenter transverso, lateribus leniter sinuatis, angulis posterioribus subrectis, basi immarginata; elytris sat profunde striatis, crebre sat fortiter punctatis. Long. 6½—7½ mm.*

This insect is, I believe, largely responsible for the confusion as to our forms. I have found it mixed in collections with several of the other species. The ædeagus shows it to be allied to *O. rupicola*. It has the coloration of the rufescent varieties of that species, but it may always be distinguished by its shorter form, and by the less coarse punctuation of the elytra, and the thorax always has the sides less convergent behind. It is also confounded with *O. rectangulus* (= *puncticollis* of collections), but it has less elongate elytra, a less densely punctured thorax, and the base of this part with less distinct traces of a margin.

I have also seen it placed among *O. brevicollis*, but the broader prothorax of that species, with less punctuation, and sharply marked almost acute hind angles, make the two distinct enough.

In Mr. Champion's Continental collection there is an *Ophonus* from Corfu labelled *O. brevicollis*, Dej. This specimen is extremely like *O. rupicoloides*, but has a shorter thorax, and an ædeagus approximating to that of *rectangulus*, so that it pertains, I believe, to another undescribed species.

Small specimens of *O. rupicoloides* are very similar to *O. parallelus*, but I have never seen that species with the coloration of this. *O. parallelus*, moreover, also has the thorax more evenly punctured throughout. The ædeagus of *O. rupicoloides* is most like that of *O. rupicola*, but the apical portion is much more slender, and the raised margin at the tip less definite.

O. rupicoloides is probably not a great rarity in Southern England. Commander Walker possesses a nice series from the Medway district (Chatham and the Isle of Sheppey), and he has also met with it at Portland. Mr. Pool has found it at Bembridge in the Isle of Wight. Mr. Champion has an example from Guildford, and I have one from Mickleham. Most of my own specimens were procured from Brewer many years ago and probably came from Chatham. The Crotch collection at Cambridge possessed a small series without locality, and spoiled by Mr. Crotch having taken them off their cards and pinned them with black pins. The same collection also has a specimen from T. V. Wollaston marked "*puncticollis*" and "Withington," and which may be from either Herefordshire or Wiltshire.

The Bembridge specimens seem to be a slender race resembling *rectangulus* a good deal, though not really difficult to distinguish.

6.—*O. CHAMPIONI*, sp. n. *Ferrugineus, capite thoraceque piceo-ferrugineis, elytris nigricantibus; thorace transverso, basin versus angustato, lateribus vix sinuatis, angulis posterioribus obtusis, basi tantum prope angulos marginata, parce punctato; elytris profunde striatis, crebre sat fortiter punctatis. Long. 6 mm.*

This species is known to me only by four specimens, all males. On account of the small size etc. *O. championi* resembles *O. parallelus*, but it is closely allied to *rupicoloides* from which it differs by having the thorax slightly different in shape, more scantily punctured, rather less sinuate at the sides, and the hind-angles slightly more sharply marked, though really more obtuse. The elytra are a little more deeply striated. The ædeagus is shorter and thicker, with a shorter and stouter apical portion. In addition to these characters I find that the wing is shorter, more blunt at the tip, with the nervures on the apical portion more obsolete than in any other species (except *O. azureus*, in which the wings are rudimentary). Though very closely allied to *rupicoloides* I believe this will prove to be a distinct species.

I found three specimens near Guildford on May 3rd, 1895, when collecting with Mr. Champion; and there is an example in his collection, also from Guildford, and perhaps found at the same time. He

seems to have been puzzled by his insect, as it was reversed among some large specimens of *O. parallelus* at the end of his series of that species. It differs, however from large examples of *parallelus* by the less distinct basal margin of the thorax, as well as by a slightly different shape and punctuation of that part.

Lawnside, Brockenhurst:

July, 1912.

(To be continued).

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

BY JAMES EDWARDS, F.E.S.

The following table suggested itself in the course of the writer's arrangement of his material in this genus, and its publication is prompted by the consideration that no table of our species has hitherto appeared in which the character of the ♂ specula, discovered by Dr. Sharp, has been utilized in the grouping of them; moreover, two species have been added to our list since the publication of Mr. Newbery's table (Ent. Mo. Mag. xlv, p. 30).

- 1 (12). ♂ with a pair of flat smooth shining spaces (specula) on the under side of the front edge of the labrum. Rows of elytral punctures irregular.
- 2 (7). Specula sub-circular. Surface of the pronotum smooth on the disk.
- 3 (6). ♂ with a patch of yellow pubescence on the hinder basal angle of the middle femora beneath.
- 4 (5). Elytra without metallic reflection. The dark patch on the pronotum touching the hind margin in its two inner fourths and having a more or less v-shaped projection on each side in front. Clypeus often narrowly pale at the sides*nigriceps*, Thoms.
(*sinuatus*, Fowler, nec Motsch).
- 5 (4). Elytra with purple metallic reflection. The dark patch on the pronotum occupying the whole surface except a narrow side border, which sometimes has a dentiform projection near the apical third of its inner edge directed obliquely backward. Head entirely dark above*purpurascens*, Newbery.
- 6 (3). ♂ without a patch of yellow pubescence on the underside of the middle femora. Pronotum black with irregular yellow side margins, which have a dentiform projection near the apical third of the inner side, and sometimes an oblique linear one running from the inner apical angle towards the middle of the disk. Head entirely dark above*ytensis*, Sharp.
- 7 (2). Specula wider than long.
- 8 (11). Specula about twice as wide as long. Head entirely dark. Surface

- of pronotum smooth and shining on the disk. ♂ without a patch of yellow pubescence on the underside of middle femora.
- 9 (10). Elytra pale with black punctures and spots. Colour-pattern of pronotum as in *yteneusis**sinuatus*, Motsch.
(*oblongus*, Gorh.)
- 10 (9). Upperside black, sides of pronotum and elytra pale. The pale sides of the pronotum narrow and having a dentiform projection near the apical third of the inner side*regularis*, Rey.
(*scutellaris*, Sharp, *nec* Motsch.)
- 11 (8). Specula about four times as wide as long. ♂ without a patch of yellow pubescence on the underside of middle femora. Pronotum dull by reason of a very close shallow punctulation, its colour-pattern as in *yteneusis*. Clypeus with a pale spot on each side*alutaceus*, Thoms.
- 12 (1). ♂ without specula. No patch of yellow pubescence on the underside of middle femora in that sex. Rows of elytral punctures regular. Clypeus with a pale spot on each side.
- 13 (14). Surface of pronotum very closely punctulate on the disk...*minutus*, L.
- 14 (13). Surface of pronotum smooth and shining on the disk...
biguttatus, Gerh.
(*bipunctatus*, Fowler, *nec* Fab.)

Colesborne, Cheltenham :

August 7th, 1912.

ORTHOCHÆTES INSIGNIS, AUBÉ: A BEETLE NEW TO BRITAIN.

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

When looking over my collection of Coleoptera a short time ago, Capt. Deville suggested that *Orthochætes insignis*, Aubé, ought to occur in Britain, as it is not uncommon on the coast of Brittany, and on examining my series of *O. setiger*, Beck, he pointed out that four specimens from Cornwall were to be referred to the former species. He has since kindly sent me a Continental example and the original description of the species.

O. insignis resembles *O. setiger* in colour, except that the antennæ are somewhat darker. The general shape differs considerably; the thorax is rather longer and more parallel-sided; and the sides of the elytra are sub-parallel, being only contracted for the apical third. In *O. setiger* they are evenly rounded, the elytra being broadest about the middle. Perhaps the most obvious distinction in fresh specimens is in the structure of the scale-like bristles on the elytra.

In *O. setiger* these are erect, and only very slightly curved; in *O. insignis* they are so strongly curved that the tip quite, or almost, touches the bristle behind it. The thorax in the latter species has a shallow longitudinal groove in the centre, and a deeper one on each side. These grooves are absent in *O. setiger*.

Besides the specimens from Cornwall I have seen others from S. Wales (Tomlin), where *O. setiger* also occurs, and Southsea (Fowler, ex Moncreaff).* Capt. Deville gives its known distribution as follows: "Côtes françaises de la Bretagne à partir de Roscoff (Finistère), Ile de Ré, Asturias, côte occidentale du Maroc (Larache), Provence (Bouche-du-Rhone, Var, Alpes-maritimes), Corse, Sardaigne.—Dans les derniers pays l'insecte n'est pas spécialement maritime."

Bradfield, Berks.:

August 9th, 1912.

Recapture of *Bembidium virens*, Gyll., at Loch Maree, Ross-shire.—On August 1st I paid a long contemplated, but unfortunately very brief, visit to Loch Maree, where Mr. G. C. Champion and Mr. R. Wylie Lloyd took *B. virens* just 20 years ago (Ent. Mo. Mag., Vol. XXXI, p. 263); since that date, with the exception of the doubtful record by Mr. Chitty of its occurrence at Beaulieu, Inverness-shire, the insect does not seem to have been recaptured in this country. The weather was anything but propitious on the 1st, being wet and cold; fortunately the morning of the 2nd was bright and warm, though later in the day rain again set in. Thanks to the good fortune and the quick eye of Capt. C. H. Fox, R.N., who was staying with us and joined me in the trip, four specimens of *virens* were taken under stones by the Loch side on the evening of our arrival, and six more (one was afterwards lost) on the morning of the 2nd. The insect appeared to be by no means common, and much stone-turning and searching in the gravel was necessary to secure it. We had, however, only about four hours available for collecting, and could therefore only work a very short strip of the Loch side.

The following other insects were seen or taken on the Loch side:—*Carabus granulatus*, Scop., *Cychrus rostratus*, L., *Notiophilus biguttatus*, Fab., *N. aquaticus*, L., *Nebria gyllenhali*, Sch., *Loricera pilicornis*, F., *Pterostichus niger*, Schall., *P. nigrita*, F., *Anchomenus albipes*, F., *A. parumpunctatus*, F., *Bembidium tibiale*, Duft., *B. atrocæruleum*, Steph., *B. monticola*, Sturm, *B. littorale*, Ol., *Trechus obtusus*, Er., *Anacæna globulus*, Payk., *Quedius fuliginosus*, Grav., *Geodromicus nigrita*, Müll. A single specimen of *Euryporus picipes*, Payk., was found on the road in the

* I find that I have *O. insignis* from Southsea (mixed with *O. setiger*, ex Moncreaff), and Portland; and *O. setiger* from Milford-on-Sea (Hants), the Isle of Sheppey, and Oxford. Mr. Champion has *O. insignis* from Scilly (Tresco and St. Agnes), Southsea, and Woking, and *O. setiger* from Sandown, Sheppey, Chatham, and Woking, as well as from Malta and the Pireus.—J. J. W.

wood by the Loch side on our way back to the hotel to catch the motor car which left Kinlochewe Hotel about mid-day on the 2nd for Achnasheen Station, but as there was no room on the car we had to procure a trap and drive the 10 miles from the hotel to the station. We dismounted *en route* and made a hasty search under stones by the shores of Loch Rosque, a large loch near Achnasheen, but saw no sign of *B. virens*.* Loch Maree is not an accessible place; the journey from Nethy Bridge, a distance of about 80 miles, took nearly nine hours in trap, train, and motor car, so unless the insect is discovered in other localities, it is not likely that *B. virens* will ever be very common in our collections.—Prof. T HUDSON BEARE: August 12th, 1912.

Velleius dilatatus, &c., in the New Forest.—On July 11th, I had the good fortune to take a pair of this fine and rare Staphylinid under a piece of loose bark on a *Cossus*-infested oak near Brockenhurst. In former years there had been a hornet's nest in this tree, but these insects had long deserted it, though numbers of *Vespa vulgaris* were attracted to the small quantity of sap exuding at the present time. "Sugaring" at night on the tree, and laying a baited bottle at its root, failed to produce any further specimens of *Velleius*, but Dr. Sharp obtained a third example from an old *Cossus*-burrow on the 18th. *Quedius ventralis* was also present in the tree.

The usual New Forest *Coleoptera* were exceedingly scarce in July, and sweeping was particularly unproductive, the only good beetle obtained by this method being *Trachys troglodytes*, of which I took a single example in a marshy place on the South-Western railway-bank, where I had found the insect in previous years on two occasions. *Batrissus venustus*, *Trichonyx sulcicollis*, *Scydmaenus exilis*, *Euthia schaumii*, *Choleva colonoides*, *Leptinus testaceus*, and *Plegaderus dissectus*, among other species, were obtained, all rarely or sparingly, by sifting decayed beech-wood. I found a fine coal-black variety of *Pterostichus lepidus* in a sand-pit near Matley Bog, and turned a fine ♂ example of *Anisotoma lunicollis* on July 23rd out of a burrow in a sandy spot on the cliffs at Milford-on-Sea.—JAMES J. WALKER, Aorangi, Lonsdale Rd., Summertown, Oxford: Aug. 16th, 1912.

Nanophyes gracilis, Redt., on *Peplis portula* in the New Forest.—By following up Mr. G. C. Champion's discovery of the food-plant of *Nanophyes gracilis* (Ent. Mo. Mag., 1911, p. 214), I succeeded in taking a fine series of this pretty little weevil on and under *Peplis portula*, growing on open places where water had stood earlier in the year; the species had previously occurred to me only as a great rarity in the Forest.—JAMES J. WALKER: August 16th, 1912.

Request for larvæ of Phytonomus.—Herr M. Rühl, Zürich, Editor of the "Societas Entomologica," having read in a paper I sent him that lucerne is here and there cultivated along the English coast, and on the shore of Alderney is growing wild, is desirous of obtaining stems that are, or ought to be, attacked by the grubs of a beetle of the genus *Phytonomus*. The stems containing the

* The shores of this Loch were also examined by me in 1892.—G. C. C.

grubs should be sent in wet sphagnum, and, as the leaves of the lucerne when picked quickly wither, it is necessary to place them in a glass of water. I conclude he wishes to work out the biology of this beetle.—A. H. SWINTON, Braishfield, Romsey, Hampshire: *July*, 1912.

“*A rare butterfly's journey.*”—We copy the following from the “Daily Mail” of August 10th.—“What apparently is a very rare butterfly has been captured by the Rev. Hugh S. Walford at Bracknell. It is a black swallow-tail butterfly, which, with wings extended, measures 13¾ in. (*sic!*) Mr. Walford knows it to be neither English nor European, but thinks it may be either Indian or Japanese. The butterfly is a splendid specimen, and has probably come to England in some packing-case in the chrysalis stage. It was caught in the woods a mile from the village.”—Ebs.

* *Melanism in Abraxas grossulariata.*—During the spring of this year I had collected for me, from a market garden close to this town, over six thousand larvæ and pupæ of *Abraxas grossulariata*. The last lot brought to me consisted of six hundred pupæ only, and they were put into a separate cage. From them I bred two large ‘all-black’ ♂ moths, and a third similar ♂, except that in it the yellow band can be faintly traced through the black, and of which in the other two there is no trace. The form has nothing to do with var. *varleyata* (which form I do not regard as a case of true melanism), but is evidently the extreme form of var. *nigrosarsata*, in which the usual black dots and spots of that form have become so dense as to overlap each other and form an uniform black surface. The three specimens were probably all from one brood, and no doubt the pupæ were collected from the same part of the garden, as the three moths emerged on two following days, the first on June 18th, the two others on the next day, the 19th. Nothing like them appeared from the larvæ, large as the number was, although from them I bred some three dozen examples of var. *nigrosarsata*, varying from pale moths sparingly freckled with the black dots, through intermediate forms to the finest dark form of the variety, and then to the specimen so near the ‘all-black’ form that only the indistinct yellow median band separates it. The ‘all-black’ form has never been noticed in this district before, and is seemingly another instance of progressive melanism.

The larvæ, too, were far more variable this year than I have ever seen them, though that may be because I have never previously had so many wild larvæ at one time. The almost black form which the late Mr. Robson used to send out from near Newcastle-on-Tyne (described and figured in Buckler’s “Larvæ”) was in fair numbers, and specimens occurred of almost every intermediate form between it and the ordinary form; whilst one very striking form, fairly numerous, was so striped and coloured as to have a superficial resemblance to a huge larva of *Hyssipetes elutata*! The late Wm. Buckler would have revelled in them.—GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield: *August 12th*, 1912.

Abrazas grossulariata, var. *nigra*.—The 'all-black' form alluded to in the foregoing, which has quite lost the characteristic of var. *nigrosarsata*, I propose to name *Abrazas grossulariata*, var. *nigra*, and it may briefly but effectively, be described as follows:—

All the wings both above and underneath of a very dark blue-black, with the usual black markings of the species showing through of a still more intense black, except that on the hind-wings there are no spots except the marginal series, and these smaller than usual. Head, thorax, and abdomen of the more intense shade of black. The only trace of bright colour consists of a very few dark orange scales just at the junction of the hind-wings with the thorax. ♂.

Described from the slightly finer specimen of the two, and which stands in my cabinet as the type of the form.

I have adopted the name *nigra* for this variety, in preference to another name I had half decided on for it, to prevent confusion. In the "Entomologist's Record," Vol. XXI, p. 272, the Rev. G. H. Raynor suggests the name *nigra* as applicable to "a pure black form which Mr. Beattie bred from Mickleham, and Mr. L. W. Newman from larvæ of *ab. varleyata*." Possibly the Mickleham specimen may have been of the form above described, as I do not know that var. *varleyata* has ever been recorded from the south of England; but Mr. Newman's specimen, which I examined, certainly was not: it was merely a somewhat small second brood specimen of *varleyata* in which the white of the forewings was obliterated. I bred a similar one myself, also a second brood specimen, last year, and have bred a number of others nearly approaching it. The form is in no way entitled to a separate appellation. Mr. Raynor had apparently neither of the specimens before him; it is well, therefore, that it should be definitely known to what form the name belongs.—GEO. T. PORRITT, : August 12th, 1912.

Syrphus torvus, O.-S., and *S. luniger*, Meig., bred.—Early in May last I noticed that various young pines on one of our commons here were much infested with two species of *Aphis*, and on examining these trees a little more closely, numerous Syrphid larvæ, and many Coccinellids, were found to be preying upon the Aphids. Most of the larvæ were green, with two sinuous vermilion-red lines, separated by a black streak, running down the middle of the dorsal surface. On May 13th, I handed over a number of these larvæ, which appeared to be full-fed, to Mr. F. W. Edwards of the British Museum, to see if he could breed them. Two or three days later, he tells me, they pupated, and altogether about 30 examples of *S. torvus* emerged in the Museum, on May 25th—30th. With these handsome *S. torvus* larvæ there were a few others of a more uniform green colour, from which three specimens of *S. luniger*, Meig., were bred on the same dates. Mr. Metcalf has recently given an account of the life-history of *S. torvus* [Ohio Nat. ii, pp. 341—344, pl. 17 (1911)], but his description of the larva does not accord very well with those taken by me. He says it is brownish in colour, and that "laterad to the black mid-dorsal blood vessel are two long

yellowish bundles of fat irregularly outlined, extending practically the full length and varying in width." Also that the larva lives on cabbage and related plants affected by *Aphis brassicæ*; and on sycamore affected by *Longistigma caryæ*. The *S. torvus*, therefore, of our British lists may prove to be different from Osten Sacken's species.—G. C. CHAMPION, Horsell, Woking: *July*, 1912.

How to use Schröder's Prism-eye-piece camera lucida.—Several entomological specialists, including the late Baron E. de Selys-Longchamps and Mr. Verrall, have regretted their inability to use a *camera lucida* in drawing. The difficulty experienced by them arose partly from improper adjustment of light (the light reaching the eye through the microscope, and that reflected to it from the drawing paper or card), and partly from the object to be drawn shifting, through parallax, its apparent position on the paper. Expedients are well known for the regulation of light, such as increasing that thrown upon the object, using diaphragms, or laying paper over the mirror to reduce excess of light coming through the microscope, or shading with ground glass or the hand the surface of the drawing board: but parallax remains. This difficulty, however, can be easily surmounted also. First look inside the Schröder eye-piece to make sure that the prisms completely cover the circular aperture of the eye-cap of the apparatus to be fitted on to the microscope: then, having put it on to the eye-piece, set the lower edge of Schröder's frame parallel with the horizontal edge of some part of the microscope stand; incline the tube of the microscope until the field of vision in view through the oval external aperture of Schröder's instrument becomes circular and centred upon the drawing-board laid horizontally 10 inches below the eye-piece. The centring can be assured by drawing on the board two diameters intersecting one another in the centre at right angles, and marking off upon them points where they are cut by circles drawn from that centre at distances equal to radii of different fields of view previously ascertained, and then making the circumference of the field of view under observation pass through 3 points out of 4 equi-distant from the centre (the fourth mark being commonly out of view). Also have ready a piece of sheet brass, shaped and beaten to fit saddle-wise upon the prism-case of the camera, and capable of being moved forwards or backwards a little upon it, having at a distance of 5 millimetres from the microscope end a circular perforation 1, or 1.5 millimetre in diameter, pierced through in the middle of the breadth of its upper side. This fitted over the Ramsden spot (visible with a lens within the oval aperture of Schröder's eye-piece) precludes parallax. By shifting the saddle the circular hole in it can be centred upon the spot mentioned, the area and position of which vary with the object-glass and eye-piece of the microscope employed.—A. E. ELTON, Northam, Devon: *July*, 1912.



Photo L. GRILLICH.

L. Ganglbauer

Obituaries.

Ludwig Ganglbauer.—We regret to have to record the death of this well known writer on Palaearctic *Coleoptera*, on June 5th. He was born at Vienna on October 1st, 1856, and thus had not completed his 56th year. His father was an official in the Ministry of Finance, and his mother came from a Viennese family of merchants; and he was a nephew of Cardinal Coelestin Josef Ganglbauer. Ganglbauer passed his youth at Vienna, spending some time nearly every summer in the country with his grandparents, who had a farm at Schüttelberg in Upper Austria. He was a pupil at the Schotten Gymnasium, and then went to the University. His father wanted him to study law, and was much annoyed by the love of his son for natural sciences, which became evident even in his early youth. He collected beetles when he was only six or seven years of age. As his father died the same year in which Ganglbauer passed the University examination, the son decided at once to study natural science instead of law. At the University he studied Zoology and especially Botany. In 1878 he passed the examination as Master for Secondary Schools, and entered the Akademische Gymnasium as a probationer, but soon after, on October 1st, 1880, he was appointed Assistant in the k.k. Hofcabinet, becoming custodian of the collection of *Coleoptera* in succession to Dr. H. Krauss. In 1883 Ganglbauer married Eugenie Starke, his family life being a very happy one until his death. On January 1st, 1893, he was appointed Custos, and on May 1st, 1906, in succession to Brauer, he became Director of the Zoological Department of the k.k. Hofmuseum. Besides his extensive literary activity in the field of systematics of *Coleoptera*, Ganglbauer has achieved exceptionally great results in the enlargement and arrangement of the collections of *Coleoptera* of the Hofmuseum. Owing to his zeal and knowledge, the collection of beetles in this Museum is now one of the largest in the world, containing an unrivalled material for study, especially of the Palaearctic fauna. A large proportion of this material has been collected by Ganglbauer himself during his yearly tours, particularly in the Alps, Carpathians, and the Austrian Karst districts, Ganglbauer being in large tracts of country the first to explore their fauna as regards *Coleoptera*. He did not spare himself in any way, either in the field or when engaged on literary work. Some years ago, but especially after the forced completion of Vol. III of his "Käfer von Mitteleuropa," symptoms of disease appeared from time to time in consequence of too strenuous work. The appointment as Director of the Zoological Department burdened him with new and extensive duties, in addition to which he strained every nerve to continue his literary work in *Coleoptera*. This double strain broke his health. He became dangerously ill in the spring of 1911, and died, as above stated, on June 5th of the present year, after undergoing, with the greatest patience, two serious operations. During the last weeks of his life he received the news of his election as Corresponding Member of the Academy of Sciences at Christiania, which gave him great pleasure. He was elected an Honorary Fellow of the Entomological Society of London in 1906. British Coleopterists are much indebted to him for his valuable work on the *Carabidæ*,

Staphylinidæ, *Clavicornia*, *Hydrophilidæ*, &c., forming Bandes I-IV of the "Käfer von Mitteleuropa," 1892-1904. We have to thank Herr Anton Handlirsch for his assistance in the preparation of this notice.

Robert Walter Campbell Shelford, whose death took place under distressing circumstances at Margate on June 22nd, was born at Singapore on August 3rd, 1872. From a very early age, as the result of a fall downstairs, he suffered from tubercular disease of the hip, which left him with a permanently stiff joint. Despite this serious handicap, after a short term at King's College, London, he proceeded to Emmanuel College, Cambridge, where he took an excellent degree in the Natural Sciences Tripos. In 1895 he became Demonstrator in Biology at the Yorkshire College, Leeds, under Professor L. C. Miall; and two years later he gave up this appointment to go out to Borneo as Curator of the Sarawak Museum at Kuching. In this capacity he remained until 1904, adding greatly to the efficiency and value of the Museum under his charge, and acquiring an extensive and varied knowledge of nature in one of the richest and most interesting regions in the Tropics. His studies at Sarawak resulted in several important papers, chiefly on Mimicry in Insects, in the Proceedings of the Zoological Society, and elsewhere; and latterly he was engaged on a work on the Natural History of Borneo—this was left unfinished at his death, but it is hoped that in the near future it may be completed from his notes. On his return to England in 1905, after a tour in the Malay Archipelago, he accepted an appointment in the Hope Department of the Oxford University Museum. Here his energies were concentrated on the important collections of *Orthoptera*, which are now, thanks to his exertions, second to none in the world as regards completeness and arrangement. The *Blattidæ* were his favourite group, and he published a large series of exceedingly valuable papers on these insects in the Transactions of the Entomological Society and other scientific serials, besides undertaking a monograph of the family for Wytzman's "Genera Insectorum." After some four years of steady and fruitful work in the Museum, an accidental fall in 1909 led to the appearance of his old complaint in an aggravated form, to which more than one severe operation failed to give more than temporary relief, and henceforward he was only able to pursue his studies at irregular intervals; finally he retired, on medical advice, to Margate, where his last days were passed under severe and increasing suffering, though his bright and energetic nature was manifested in the last letter received from him by the writer of this Memoir, only a few days before his death.

Shelford's untimely decease leaves a gap in the ranks of systematic and bionomic Entomologists which will not be readily filled, and his place in our science as an authority on his favourite order of Insects is a permanent one. He married in June, 1908, the daughter of the Rev. Alfred Richardson, who survives him, and to whom we tender our sincere condolence and sympathy.

The Rev. Thomas Blackburn, B.A.—The last survivor of the original Editors of this Magazine passed away in the person of the Rev. Thomas Blackburn, at Woodville Vicarage, Adelaide, South Australia, on May 19th last, at the age of more than 70 years. In company with his elder brother, the late Mr. J. B. Blackburn, he early turned his attention to the study of insects, and we first find him contributing notes to the later numbers of the "Entomologist's Weekly Intelligencer." A few months after this periodical ceased to appear in 1862, he started with commendable enterprise a magazine on similar lines, the "Weekly Entomologist," published at first at Altrincham, Cheshire, and afterwards in London; this came to an end in November, 1863, after 65 numbers had been issued. Our own Magazine commenced in the following year, with Mr. Blackburn as one of the five original editors, but his name disappeared from the list after the close of the first volume. About that time he decided to leave the Civil Service and to take Holy Orders; his interest in entomology, however, continued, and he contributed several articles to our earlier volumes, mainly on British *Coleoptera*. Towards the end of 1876 he went to the Hawaiian Islands as chaplain to the Bishop of Honolulu, and the insect fauna, then all but unknown, of these islands naturally claimed his attention. The results of collecting and observation during a residence of more than six years are embodied in an important joint paper with Dr. D. Sharp, "Memoirs on the *Coleoptera* of the Hawaiian Islands," in the Scientific Transactions of the Royal Dublin Society for 1885. In these Memoirs a large number of new and most remarkable endemic forms are described by the two authors, and in them we realize for the first time the surpassing interest of the insect fauna of this small island group, isolated in the midst of the Pacific Ocean. We next find Mr. Blackburn at his South Australian vicarage, engaged in the study of the far more varied and extensive Coleopterous fauna of the Island-Continent. Many hundreds of new species were described by him from 1887 onwards in the Australian scientific periodicals, mainly in the "Transactions of the Royal Society of South Australia"; and the type-specimens of all these have, we believe, been recently acquired by our own Natural History Museum. It need hardly be said that he was regarded as the leader of the energetic little band of Australian Coleopterists, to whom his name was a household word; and the writer of this notice recalls with much pleasure the genial kindness and hospitality extended to him by Mr. Blackburn during his two very brief visits to Adelaide in 1891 and 1901.

George Masters.—We have to deplore the loss of another well-known Australian Entomologist, Mr. George Masters, who died at Sydney, N.S.W., on June 26th, at the ripe age of 75 years. He was a native of Mid-Kent, and went to Australia about the year 1860, shortly afterwards proceeding on an extended collecting tour to Port Denison and Gayndah, Queensland. On this trip he accumulated an enormous series of rare and unknown forms, chiefly of *Coleoptera*, of which a large number were described by Sir W. Macleay; this was followed by equally successful journeys to Western Australia and Tasmania, and in 1875 he was a member of Macleay's important scientific expedition to

New Guinea in the "Chevert." At first on the staff of the Australian Museum, Mr. Masters became in 1874 the curator of the extensive collections which developed into the fine "Macleay Museum," attached to the University of Sydney, and of which he retained the charge until his death. In intimate and first-hand knowledge of the Australian insect fauna, Mr. Masters was altogether without a rival, and it is greatly to be regretted that his many friends were unable to persuade him to give his experiences as a field naturalist to the world. We owe to him, however, an exceedingly useful "Catalogue of the Described *Coleoptera* of Australia," with a supplement of the species then known from New Guinea, embodied in the Proceedings of the Linnean Society of New South Wales for 1886. He became one of the Original Fellows of this Society more than 50 years ago, and was also a member of the short-lived but active Entomological Society of New South Wales throughout its duration.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, July 11th, 1912.—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. Dennis exhibited galls from the poplar-tree made by two species of Aphides, *Pemphigus bursarius* and *P. spirothecæ*, the former of a pyriform shape on the petiole, and the latter of a spiral shape in the same situation. Miss Fountaine, a fine series of examples, mostly bred by herself, of species of *Callidryas* from the W. Indies and S. Africa, with the large species of *Gonepteryx* from America. Mr. H. Main, living larvæ of *Pyramcis cardui* from Eastbourne, and a fine series of *Pieris napi* and *v. bryoniæ*, the results of recent experiments. Mr. Platt Barrett, a bred specimen of *Charaxes jasius* from Sicily, and made remarks on the spring and early summer of the present year in that island. Mr. Step, photographs of the leaves of the maple and sycamore with the cases of the sawfly larva, *Phyllotoma aceris*, and remarked on the occurrence of the insect at Ashted and Oxshott. Several other members had also met with the species. Mr. Adkin, the cocoon of *Platysamia cecropia* previously shown by Mr. Dods, and pointed out that the inner envelope of the cocoon was reversed, hence the imago had to emerge from the wrong end of the outer envelope. He also showed several bred series of *Coremia ferrugata*, and read notes on the variation of this species. Mr. H. Moore, a variety of *Papilio phorcas* from Africa, in which the veins were margined with white in the green areas of both wings. Mr. Sich, the pupa cases of *Libythea celtis* showing that the pupa lies in a horizontal position under a leaf without a girdle for support, and he also showed white eggshells of *Cerura vinula* found in Sussex. Mr. Edwards, two large Eastern *Satyridæ*, *Neorina hilda* and *N. crishna*.—H. J. TURNER, *Hon. Secretary.*

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, May 1st, 1912.*—Mr. A. H. JONES, Vice-President, in the Chair.

The Rev. E. Adrian Woodruffe-Peacock, F.L.S., F.G.S., Cadney Vicarage, Brigg, Lincolnshire, was elected a Fellow of the Society.

Mr. A. H. Jones exhibited three examples of *Aglais urticae*, var. *ichnusa*, showing the absence of scales in the centre of the wings, where the central spots are present in the type. These spots appeared also in one only of the Corsican examples. Also examples of *Euchloë damone* from Sicily and Asia Minor, showing the difference in the depth of colour of the transverse black streak on forewings and in the tone of colour of undersides. Dr. G. B. Longstaff, a series of twelve specimens (five males and seven females) of the rare white butterfly, *Pinacopteryx doxo*, Godart (*venatus*, Butler), from the White Nile. Mr. Alfred Sich, two specimens, with their cases, of *Coleophora trigeminella*, Fuchs, and one specimen of *C. badiipennella*, Dup., with its case for comparison. Mr. W. J. Kaye, three small groups of Ithomiine butterflies that had been taken by himself in S. Brazil. One group consisted of *Heterosais nephele edessa*, *Ithomia drymo*, and *Leucothyris aquata*, all of which had been taken at Guarujá, near Santos, at the end of February and beginning of March, 1910. Another similar group, all belonging to different genera, was one made up of *Pseudoscada adasa*, *Pteronymia sylvo*, and *Hymenitis andronica andania*, all of which had been secured at Castro in Parana at close on 3000 feet elevation. He remarked that these groups of black and transparent Ithomiine species were always found in rather dark forest country, and it was possible that they were simply cases of syncryptic resemblance, rather than mimetic examples of a Müllerian Association, for these species were invisible at a very short distance, and they were all equally adapted to that end. A third small group that was exhibited consisted of a Danaine, *Ituna ilione*, and two Ithomiines, *Thyridia (Methona) themisto* and *Dircenna dero*. All these were also from Castro. Professor E. B. Poulton was of opinion that the forest species as well as the others were connected as members of a mimetic group. Dr. Longstaff, speaking from personal experience, emphasised the invisibility of these Ithomiines on the wing, at a very short distance, in their native haunts. Mr. Hamilton H. Druce, ♂ and ♀ of the new *Mimacraea eltringhami*, captured by Mr. S. A. Neave in the Bugoma Forest, Unyoro, Uganda; also another new *Mimacraea* which he proposed to name *costleyi*, after its discoverer Mr. Costley-White, from Mlanje, Nyasaland. Mr. S. A. Neave described the capture of these specimens. This species in common with several others flies very high, and he said that it was often necessary to employ small native boys perched at the top of the trees and armed with nets. Mr. A. E. Gibbs exhibited a drawer of butterflies recently received from Dr. Davis, of Belize, and collected in British Honduras and the neighbouring Republic of Guatemala. Mr. G. T. Porritt, specimens of *Nemoura dubitans*, Morton, taken by Colonel Nurse at West Stow, Suffolk, in June last, and for comparison specimens of *Nemoura inconspicua*, Pict., from Aviemore. Mr. H. M. Edelsten, stems of *Carex riparia* (received from the Hon. N. C. Rothschild from Berlin) to illustrate the life history of *Nonagria*

neva, Hb. Mr. C. B. Williams, a specimen of the male *Megalothrips nobilis*, Bagnall, from Wicken Fen, taken April 11th, 1912. This is the largest European species and, since first taken by Dr. Sharp in 1894, has not been recorded. Mr. S. A. Neave, some of the *Tabanidæ* collected during his recent tour in East Africa. He called attention to the male individuals exhibited, and expressed the opinion that their rarity in collections was perhaps due to the fact that they were short-lived. Mr. G. A. K. Marshall observed that probably many of the Fellows present would hardly realise the importance of Mr. Neave's exhibit. Even amongst the English *Tabanidæ* by no means all the males were known, and this sex was hitherto unknown in the large majority of the species then exhibited. Mr. R. M. Prideaux brought for exhibition seventeen ova of *G. rhamnii* found in a cluster at Brasted Chart, on April 28th, on a shoot of *Rhamnus frangula*. Professor Poulton said that he had long been struck, especially in the collections of butterflies received from Uganda and British East Africa, with the immense development of mimicry in *Lepidoptera* from the forest as compared with the open country. He read notes bearing on the subject from Messrs. C. A. Wiggins, F. J. Jackson, and C. F. M. Swynnerton. He also read notes on a few observations which supported the conclusion that birds possessed the extraordinarily acute and far-reaching vision required by the Batesian and Müllerian theories of Mimicry. He further called attention to a statement received in a letter from Mr. W. A. Lamborn, dated March 22nd, 1912:—" *Neptidopsis* would I am sure outnumber all the species of *Neptis* put together at any season." Mr. S. A. Neave said with reference to the prevalence of insectivorous birds in Uganda, that he had recently had an interesting experience near Entebbe. On January 12th, 1912, at Gabunga's, near Entebbe, he had watched a wagtail, most probably *Motucilla capensis*, catching butterflies on a small patch of damp sand in the bed of a forest stream. In less than half-an-hour this bird captured and ate 19 butterflies and failed to catch many others. The butterflies eaten were nearly all small *Lycænidæ*.

The following paper was read:—"On the colour groups of the Hawaiian Wasps," by Dr. R. C. L. Perkins, M.A., D.Sc., F.Z.S., F.E.S. In illustration of the paper, Prof. Poulton exhibited the specimens referred to by Dr. Perkins. The Colour-groups were arranged in the order of the islands, from Kauai in the N.W. to Hawaii in the S.E.

Wednesday, June 5th, 1912.—The Rev. F. D. MORICE, M.A., President, in the Chair.

Mr. Henry Francis Carter, Liverpool School of Tropical Medicine, University of Liverpool, was elected a Fellow of the Society.

The President announced that it was requested that for the future the names of intending exhibitors should be handed in at the beginning of the meeting, in order that they might be called upon from the Chair.

The Rev. G. Wheeler read the Report of the Committee on Nomenclature:—

"The present independent and irresponsible methods of giving and adopting names having resulted in much unnecessary synonymy, and even graver abuses,

the Entomological Society of London feels that the time has arrived when some check should be placed upon the practice, of more weight than that which can be exercised by any single individual, society, or publication, and would urge upon the International Congress the establishment of a permanent International Committee to deal with questions of nomenclature as affecting Entomology; to consider what elucidations, extensions or emendations, if any, are required in the International Code; and to confer with the International Commission of Zoological Nomenclature. The Entomological Society of London recommends that the International Entomological Committee, when formed, shall take such action as to ensure the adequate representation of Entomology on the International Zoological Commission. The Society also recommends that, considering the difficulty of frequent International meetings, the leading Entomological Society of each country be invited to appoint a Committee whose duty it shall be to deal with all questions arising in their own country, subject to reference to the International Committee; and suggests that the International Committee be composed of two, or three, members of each of the National Committees, elected either by the Committees, or directly by the electing Societies.

(Signed) Chas. O. Waterhouse, *Chairman*, G. T. Bethune-Baker, T. A. Chapman, Jno. Hartley Durrant, Louis B. Prout, Hy. J. Turner, George Wheeler."

The Report was adopted.

Mr. J. E. Collin exhibited a series of thirteen specimens of *Physocephala nigra*, De G., the largest British species of the *Conopidae*, caught on Studland Heath (Dorsetshire), during the last week in May, when Colonel Yerbury Mr. C. J. Wainwright and himself took some 24 specimens. He remarked that though widely distributed, the species was always considered a great rarity, and its occurrence in such numbers had never before been recorded. Dr. T. A. Chapman, a specimen of *Hydræcia burrowsi*, Chpmn., a new species that has turned up (from Vladivostok) since Mr. Burrows's paper on the group was written; also a specimen of *Lycæna (Albulina) pheretes*, ♀, bred at Reigate from the egg, supposed to be the first (and only) bred example of the species. Dr. G. B. Longstaff exhibited two uncommon Sudanese butterflies, *Calopieris eulimene* and *Teracolus pleione*, and read notes on them. Colonel Yerbury observed that the yellow ♀ ♀ of *Teracolus pleione* were much brighter at Aden than those now exhibited. Mr. S. A. Neave exhibited some specimens of the Asilid genus *Hyperechia*, representing three, perhaps four, species, all taken during his recent tour in East Africa. He also showed for comparison four common species of *Xylocopa*, bees to which the flies bore a marked superficial resemblance; also a remarkable new Nymphaline butterfly, probably belonging to the genus *Pseudacræa*, taken on Mt. Mlanje, Nyasaland. He pointed out that it bore a marvellous superficial resemblance to *Amauris lobengula whytei*, Butler, the Danaine which occurred in the same place; also a number of unnamed *Lycænidæ*, principally from Uganda. Mr. Main, series of *P. napi* and var. *bryoniæ*, and observed that pupæ from ova of var. *bryoniæ*, both from Lapland and Glarus, had produced a partial second brood. Mr. K. G. Blair, larvæ of *Cebrio* sp. (? *gigas*) from Sicily, which were dug up in a patch

of potatoes in a garden at Messina. This patch alone, out of many others, was unhealthy and appeared diseased, as was the case also with some tomato plants which occupied the same ground last year; and it is probable that these larvæ were the cause of the "disease." In continuation of the breeding experiments on *Hypolimnas misippus*, Professor Poulton exhibited the females of two families, reared in 1911, from female parents of the type form, by Rev. K. St. Aubyn Rogers, M.A., F.E.S. These experiments confirmed the conclusions drawn from Rev. K. St. Aubyn Rogers' earlier work, and stated in the Proceedings of 1911, p. xlv, that *misippus* was dominant and *inaria* recessive; also the fragments of a *Glossina* identified by Mr. E. E. Ansten as a female of *G. caliginea*, Aust.; this specimen had been bitten and rejected by a monkey; also several families of butterflies, bred by Dr. W. A. Lamborn in the Lagos District. He referred to the strong light which was thrown by them upon different biological problems; also a specimen of the Eupterotid, or, as Aurivillius considers, the Notodontid moth, *Anaphe infracta*, concerning which Mr. W. A. Lamborn had written from Oni Camp, April 22nd, 1912: "The moths undoubtedly possess urticating hairs. The female Mona was allowed to steal one. She smelt it, rubbed off the hairs and scales, then dropped it, and in a few minutes was rubbing all four feet on the ground. I made some sympathising remarks, with the result that she suddenly sprung on to my bare neck, and I have been troubled with skin irritation all the evening. I found, too, that an urticating line on my arm followed exactly where I allowed a moth to crawl up a few days ago. It came and settled there when I was reading." Professor Poulton said that Mr. A. H. Hamlin had found hairs from the anal tuft of the exhibited specimen produced irritation on his hand and face. Mr. Eltringham had found that the hairs of the female, but not of the male tuft, were covered with minute, excessively fine spicula-like teeth. Professor Poulton also exhibited the imagines and cocoons of *C. varia* sent to him by Dr. G. D. H. Carpenter from Damba Island, 20 miles south-east of Entebbe. The larval skin was still projecting from some of the cocoons and showing its blue spots. Dr. T. A. Chapman remarked that the hairs covering the eggs of *Porthetria dispar* are also urticating. He also observed that there are other species of moths which extrude the larval skin, but in these cases it was from flimsy cocoons. Mr. J. H. Durrant also gave instances of this fact. Prof. Poulton also exhibited the larvæ, pupæ, and imagines of "*Callioratis*" *pactolicus*, sent by Dr. G. D. H. Carpenter, to illustrate the warning colours of the moth in all its stages. He said that Dr. G. D. H. Carpenter had left Damba in December, 1911, and had gone in January to Bugalla Island in the Sesse Archipelago. On January 28th he had found there representatives of all the *Planema-Pseudacræa* associations; the disproportion between *Planema* and *Pseudacræa* is even greater there. Sesse thus confirms the Damba records, the results being still more striking. The following papers were read: "Studies in the *Blattidæ*," by R. Shelford, M.A., F.E.S.; "*Polyommatus alexius*, Freyer, a good Species," by T. A. Chapman, M.D., F.Z.S., F.E.S.—GEORGE WHEELER, Hon. Sec.

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

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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ON SOME ARBITRARILY FORMED SCIENTIFIC NAMES.

BY AUGUST BUSCK.

Due to my absence on a five months' collecting trip in Panama, I have but recently had opportunity to read Mr. Meyrick's interesting article "On Some Impossible Specific Names in *Micro-Lepidoptera*" [Ent. Mo. Mag., XLVIII (XXIII), pp. 32-36, Feb., 1912], and the subsequent discussion (in this Magazine and "The Entomologist's Record" for March, April, and May) by Lord Walsingham, the Rev. G. Wheeler, and Dr. Chapman on "impossible" or "nonsense" names.

Otherwise, as one of the accused, I should have asked space before this to plead guilty, without apologies for my acts, though with sincere regret for their effect, if they, as Mr. Meyrick suggests, have been the original source of contagion in the deplorable Kearfott eruption. However, I cannot hold myself in any way responsible for this epidemic and certainly can find no excuse for it, but I am ready to defend such occasional arbitrary names as I, myself, along with many others, have been guilty of.

For let it be understood at once, that while I am sincerely appreciative of Lord Walsingham's and Mr. Wheeler's kind efforts to save me from the stigma of introducing "impossible" names, and while two of the three examples of my names, which Mr. Meyrick has chosen to correct, are rather unfortunate for his argument, not falling under his arraignment at all, I have no intention to seek refuge behind artificially constructed derivations, but confess openly and unblushingly, that on several occasions I have made use of an arbitrarily formed name for a new species of *Microlepidoptera*.

It is not the object of this note to advocate or to defend arbitrary names, but to point out the futility of endeavouring to correct one evil by adding another, as, in my judgment, Mr. Meyrick has attempted; but after the several sweeping condemnations of such names a word from another view-point may be apropos.

First, it would be well to recall, that these so-called "nonsense" or "impossible" names did not originate recently in America, but long ago in England, and that hundreds of such names are now in common use, which logically should all have to be changed if Mr. Meyrick's view were adopted. It is gratifying to see Dr. Chapman's sound arguments in opposition to this radical proposition, which would entail endless labor and result in perpetual unrest in nomenclature, just as certainly as different opinions about the corrections should ever exist.

What is the purpose of a scientific name? It is to be a convenient, distinctive handle to facilitate our studies of species. We have agreed that these names shall be Latin *in form*, and even in this we must be charitable and give them the benefit of any doubt. Beyond this, no other requirements *can be insisted upon*. It is desirable that they should be short and euphonic; we may advocate that they should in some way describe the species they apply to; it is to be recommended that they be actual and correct Latin or Greek derivations, but we *cannot insist* upon any or all of these things to the extent of barring all names not conforming, or we should have to change about one half of the existing names for one reason or another.

Let us realize, that natural science would exist even were there no Latin.

The main thing is, that a generic or specific name be pronounceable and a handy tool to work with, and in these respects some of the so-called "nonsense" names meet the requirements quite as fully as some of the scholarly composed names, the derivation and meaning of which is rarely recalled during actual use; even if it were, it would seldom be of any help whatever to the memory, because very many of these linguistically correct names are quite as truly "nonsense" names, having no real relation to the species.

A striking example of this is the very list which Mr. Meyrick proposes to substitute for Mr. Kearfott's names. How can he with any "sense" give descriptive names to species he has never seen? What sense is there, for instance, in naming such a species "*amanda*," when it may, for all he knows, prove to be an unattractive pest more apt to be hated? Kearfott's "*mandana*," which it is proposed that "*amanda*" should substitute, is unmeaning, but no more so than the substitute as descriptive of the species.

But neither is "impossible," as the facts have proven; and *both attain a real meaning in Entomology by being applied* to a species, and henceforth signify a certain species of *Lepidoptera*, no more, no less.

Mr. Meyrick's only expressed objection to arbitrary names is: "that if a name is without meaning and only consists of a chance arrangement of letters, memory, deprived of the clue afforded by sense, is unable to recall the name with accuracy"—but I am not sure he is correct in this, and that a short, euphonic word, though avowedly without meaning, is not as easily remembered as a long, difficult, semipronounceable name, properly constructed, but of no apparent meaning in relation to the object it signifies, or even, as is often the case, actually giving a false clue.

For example, is not Walker's generic name *Datana* as easily recalled to memory as *Phthorimaea* Meyrick, *Aproaerema* Durrant, *Mnesichara* Wlsm., or *Gnorimoschema* Busck, all very finely constructed names, each with its more or less far-fetched significance, the derivation of which, however, is not normally recalled, while we struggle with their spelling and pronunciation? Even worse than these are the various actual misnomers. Will Mr. Meyrick maintain that it is a help to his memory to have a species called *crataegana* Hübner, when it feeds on sycamore and willow but not on *Crataegus*? Or another, *crataegella* Hübner, when it feeds on mosses? Or still another, *americana* Linn., the home of which is the Mediterranean region, and which is not found in America? Or does he propose to substitute "possible" names for these also?

No, the real objection to Mr. Kearfott's names is not their "unmeaning gibberish," to use Mr. Meyrick's expression, but their inane sameness, their stupid lack of distinctiveness; any one of them would have been acceptable, even if not commendable, but the deluge of them is beyond excuse, and if Mr. Meyrick had contented himself with his severe arraignment of the nuisance produced by Mr. Kearfott, the writer would heartily join his English friends and peers.

But it would appear, that with all the excuse which unusual provocation affords and with the best of intentions, Mr. Meyrick has gone one deplorable step too far and made a bad mess worse, in proposing new names for Mr. Kearfott's species.

Even supposing that we could adopt his new names, it would merely mean additional work; we should have to look up this new reference and find out which of Mr. Meyrick's names applied to a certain one of Kearfott's, and then after all have to go back and refer to Kearfott's name in order to find the description of the species.

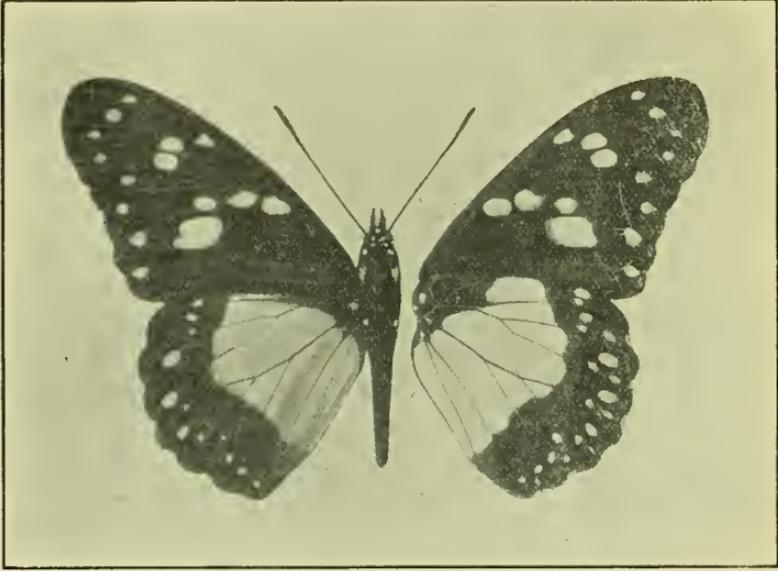
However, I doubt that any systematist seriously intends to break the one saving rule of priority in order to adopt Mr. Meyrick's classical, but under the circumstances, equally "impossible" names; these will thus merely augment the synonymy, and while a good synonym, referring to a separate description, is rather a help than otherwise, a mere synonym, without any description, which adds nothing whatever to our knowledge, such as those in Mr. Meyrick's list of names, is a burden adding to the labor of future workers. This is all the more true, because some of Mr. Kearfott's species already are synonyms of earlier described species, while others have been redescribed and thus already possess synonyms.

Washington, D. C.:
July 25th, 1912.

A NEW SPECIES OF *PSEUDACRÆA* FROM NYASALAND.

BY S. A. NEAVE, M.A., B.Sc., F.E.S.

The following striking new Nymphaline butterfly occurs among my collection of *Lepidoptera* made during a recent tour in Nyasaland:—



Pseudacræa deludens, sp. nov.

Primaries.—*Upperside* dusky with the following white spots: one beneath the costa near the distal end of the cell; one immediately beyond the cell end in area 4; a row of 3 spots forming part of a broken subapical bar midway between end of cell and apex; of these the second from the costa is more distally placed than the others, the third being the largest. A small discal spot occurs in area 3, and immediately below it in area 2 is a large spot, the largest in the wing. A submarginal row of 8 small spots from apex to hind margin, that in area 4 being somewhat further from the margin than the remainder.

Secondaries.—*Upperside*: a small dusky triangular area at the base; a broad marginal band of the same dusky colour; the intervening discal area pale ochreous, extending from the inner margin to the costa, but not to the actual costal margin which is dusky. A marginal row of white spots, one at least in each area (two above costa) becoming smaller toward the anal angle.

Underside as above, with a few additional spots. In the *Primaries*, a small spot in area 1b immediately below the large spot in area 2. In the *Secondaries* some small additional internervular, submarginal, somewhat evanescent spots. Also in each wing a small white spot at the base above the costa (in the *Secondaries* before the precostal). *Pulpi* black, with an external lateral white

stripe. *Thorax* black with, especially laterally, a few tufts of whitish hairs. *Abdomen* dusky. *Fringe* black in both wings, with small internervular white spots.

The Type and only specimen, a ♂, was taken at Mlanje Boma, Nyasaland, alt. 2,400 ft., on May 4th, 1910. It is a somewhat worn example, and it is likely that the ochreous area of the secondaries would be of a brighter colour in a freshly emerged individual. The above remarkable species will be seen to bear an astonishing general resemblance to various members of the Danaine genus *Amauris*, more particularly that which occurs in the same locality, viz.:—*Amauris lobengula whytei*,* Butler, a not uncommon insect on Mount Mlanje. *Pseudacræa deludens* has at first sight more the appearance of a species of *Euralia*, but it is readily separable from insects of that genus by its neuration. *P. deludens* differs, however, from any described species of *Pseudacræa* in the absence of dark spots at the base of the hind-wing beneath.

London: September 4th, 1912.

NOTES ON THE BRITISH SPECIES OF *OPHONUS*.

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

(Concluded from p. 210.)

No. 3.—*O. PUNCTICOLLIS* and ALLIES.

In our British list there are two species recognised of this group, viz., *O. puncticollis*, Payk., and *O. parallelus*, Dej. Thomson in 1870 considered that *puncticollis* really consisted of two species, and he described one of them as new under the name of *O. rectangulus*. We have in this country, I believe, the two species distinguished by Thomson. I will take into consideration first the one which I believe to be his new species.

7.—*O. rectangulus*, Thoms. Next to *O. brevicollis* this appears to be the least rare of the species of *Ophonus*, while at the same time it is the most variable. The thorax is a good deal narrower than the elytra, and slightly but quite definitely sinuate at the sides, the hind angles being nearly rectangular, slightly obtuse, however. The punctuation of the thorax is rather close, but a good deal more sparing on the disc, and the punctures are not very large, so that in contrast with most of the other species of the genus it might be described as finely punctured. The punctuation of the elytral interstices is always

* *Amauris whytei*, Butler, P.Z.S., 1893, p. 644.

close and moderately fine, and the serial, or accessory, punctures on the 3rd and 5th interstices are usually conspicuous and numerous. The length varies between 7 and 9 mm. The ædeagus is remarkable by the slenderness of its apical portion, which ends as a very definite raised ridge.

The colour varies from piceous-black to a dark rusty-brown, but there is never the strong contrast, seen in some other species, of bright red head and thorax and black elytra. The thorax varies a good deal in length, in the sinuation of the sides and the definiteness of the hind angles, and still more in the margination of the base; sometimes there is a distinct fine margin along all the base, and sometimes a margin can be detected only near the hind angles.

This insect seems to be widely distributed in the southern half of England; I have seen it from many localities, from the Isle of Wight to Mildenhall.

The species is not usually recognised in books and catalogues, and it must be admitted that Thomson was a little uncertain, even contradictory, in his statements, but I think there can be little doubt that I am rightly interpreting him. He calls the species "*rectangulus*," but he says in his description "*angulis posticis fere obtusis*."

8.—*O. puncticollis*, Payk. This appears to be a very rare species, as nearly all the specimens named *puncticollis* in our collections are really *rectangulus*, Th.

O. puncticollis is undoubtedly very similar to *rectangulus*, but it is easy to recognise by the prothorax, which is broader in front so that it is very nearly as broad as the elytra, strongly sinuated at the sides, and with the definite hind angles almost absolutely rectangular; the punctures on it are coarser and less numerous, and the surface is more highly polished, so that Thomson's expression "*disco fere subcyaneo-micante*" is really apposite. The ædeagus is very like that of *O. rectangulus* but it is a little thicker, the apical portion being definitely less slender; I attach some importance to this slight difference as I have examined this organ in several of the variations of *O. rectangulus*.

Altogether I have seen less than a dozen specimens of *O. puncticollis*, so that I can say but little as to its variation; but the basal margin of the thorax is sometimes very definite, and in other cases is more indistinct.

The localities are Caterham, Guildford, Down (no doubt the Kentish Down), and Cholsey, Berks (Commander Walker). There

are four specimens in the Champion collection and four in my own. The specimen from Down in the Cambridge University Collection was one of Wollaston's and is a very fine example; Mr. W. E. Sharp has a very nice example taken at Coulsdon, near Caterham, and Commander Walker's specimen is also a very fine one.

9.—*O. parallelus*, Dej. The species known by this name in our British collections is closely allied to *O. rectangulus*, but is a little smaller—5–7 mm. long—and has a shorter thorax; the ædeagus has the apical portion considerably broader and shorter. Although it is very difficult to distinguish a large female *parallelus* from certain small females of *rectangulus*, yet I believe the two will prove to be distinct. The basal margin of the thorax is generally fairly distinct, sufficiently so to prevent large *parallelus* from being mistaken for species of other groups, such as *brevicollis*, *championi*, or *rupicoloides*.

This is apparently a rare insect, though there are good series of it in the collections of Mr. Champion and Commander Walker. Localities for it are Deal, Chatham, Sheppey, Eastbourne, Southsea, Sandown and Caterham. The name of the species is very doubtful. Dejean described *O. parallelus* from Spain, and the applicability of his description to the species under consideration is far from complete. Schaum, however, *Ins. Deutschl.* i p. 580, identified Dejean's description with specimens from Austria and Switzerland, and in recent times the species has been treated as a variety of our *rectangulus*. When it was first discovered in Britain (*cf.* Proc. Ent. Soc., London, Feb. 1862) no remark was made as to the grounds on which the specimens were identified with Dejean's species.

I have reviewed the more critical of the British representatives of this difficult genus, and a few lines is all that need be devoted to the other five species.

10.—*O. azureus*, Fabr. This is very variable. It is usually brilliantly metallic on the upper surface, but sometimes is nearly or quite black; and those non-metallic varieties are often confounded with some of the forms I have already discussed. *O. azureus*, however, is quite flightless, having the wings very much reduced, while in all the other species they are ample. The sides of the thorax are rounded, without sinuation, and the hind angles are quite obtuse. The ædeagus is but little dissimilar from that of *O. rupicoloides*. The vestigial wings vary considerably in size. The obscurely coloured varieties are generally designated as var. *similis*, and may pass as such until a more adequate study of the variation shall be made.

11.—*O. punctatulus*, Sturm. As this insect is slightly larger than the largest *O. rufibarbis*, and is metallic in colour on the upper surface, it cannot readily be confounded with any of the species I have discussed, while from the following forms it is readily distinguished by the rectangular hind angles of the thorax. The ædeagus is most like that of *O. puncticollis*, which species is, on the whole, the one to which *punctatulus* comes nearest.

The three larger species, *O. sabulicola*, Panz., *O. obscurus*, Fabr., and *O. rotundicollis*, Fairm., are well enough known, so that I need only remark that the ædeagus is very similar in all of them, and differs but little from what we find in *O. rufibarbis* and *O. brevicollis*.

Brockenhurst:

18th August, 1912.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (30.)

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

TENTHREDOPSIS, COSTA. (IN PART).

Any difficulties with which I have had to contend in previous papers of this series appear mere trifles in comparison with those which now confront me. It may seem strange that a genus like *Tenthredopsis* consisting of fairly large insects, many of them by no means rare, and almost always strikingly and to all appearance very "characteristically" coloured, should not long ago have been broken up by systematists into well-defined groups and 'species,' having each at least some one positive and constant 'differentia' of its own by which it might be identified with certainty. But as a matter of fact, the more the genus is studied, the more doubtful does it appear whether any (except a very few) of the characters on which species have been founded in it are more than individual peculiarities of particular specimens, or at most of local races. And I fear that this is true not only of those old descriptions of so-called 'species,' which make no pretence to be based on any differences except those of colour, but of others whose authors have thoroughly realized the extreme variability of coloration which may exist within the limits of a single species in this genus, and have taken extraordinary pains to supplement or supplant such colour-characters by others derived from structure — slight differences in the length and thickness of the antennæ, or the calcaria, the greater or less development of the

tempora, the exact shape and sculpture of the vertical area and scutellum, the exact position of the "second recurrent nervure," and so forth. I have pondered long and carefully over many elaborate diagnoses published by Konow of his own species and those of other authors, and cannot help seeing that they are often quite irreconcilable with determinations kindly made by him for me of specimens in my own collection. Had he lived longer, a meeting which we had planned (and to which I have alluded in an earlier paper) might have removed some of the hesitation which I now feel as to quoting and relying upon these determinations. Moreover, several of the *Tenthredopsis*-forms described as British by Mr. Cameron are, I believe, unknown to me altogether; others of them again I seem to recognise in specimens which I possess or have examined, but am unable to form any opinion of my own whether or no they deserve to be recognised as 'species,' and in some cases he appears himself (in his Vol. iv) to modify or abandon his earlier opinions about them.

On the whole, I believe that I should create more confusion than I should remove if I attempted at present to construct such Tables for the determination of British *Tenthredopsis* spp., as I have drawn up for our other genera. Instead, I will only point out the characters by which, *in certain cases*, I am able myself to arrive at a confident opinion as to the identity of a particular specimen, and in others to form some sort of conjecture—often a very dubious one—on the same subject. This may, perhaps, be most conveniently done in the form of

NOTES ON PARTICULAR SPECIES.

1. *T. litterata*, Geoff. sec. Konow. (= *nassata*, Thoms. = *thomsoni*, Konow *olim.*). This species comprises a number of our largest forms, differing very widely in colour as far as the ♀♀ are concerned, but hardly, if at all so, in the ♂♂. One form of the ♀—not a very common one—has more or less the coloration of the ♂, but the others are utterly unlike it, and are only known for certain to belong to it by having been found repeatedly in the act of pairing with it. Formerly they were treated without hesitation as distinct species; and various ♂♂ more or less agreeing with one or other of them in colour were, on that ground only and (as we now know) quite incorrectly, assigned to it by various authors. The character by which, whatever their colour, all these ♀♀ may be recognized is the form of the "hypopygium," *i.e.*, the curiously modified ventral plate which immediately precedes the base of the saw-sheath. This is larger than in other species, and excised very deeply at its apex, so that the latter becomes sharply 'bidentate.' In all our other species, the apex of the hypopygium is 'entire' and subtriangular.

The ♂ of *litterata* has a pale whitish-yellow head and thorax, more or less largely marked above with black, its abdomen is of a reddish orange, with a

hardly noticeable very narrow and interrupted black streak at the base of each segment; the antennæ and legs are also mostly orange. The insect is common in collections, and I have often taken it myself, sometimes *i.e.* with one or other of the ♀ forms; it is therefore surprising to me that in his Vol. iv Mr. Cameron says that he has never been able to recognise it among his own specimens. The colour alone will generally distinguish it from anything else, but it has also a good structural character (which is easily found if looked for properly) in the form of the saucer-like apical ventral segment. If the insect is held belly upwards, and the apex of its abdomen turned to face the lens, a distinct (almost semi-circular) incision or emargination in its outline can, after a little practice, be recognised without difficulty, though it requires some management to get the object exactly into the right position. I have before me British ♀ specimens representing 6 colour-varieties of the species, which may be tabulated as follows. (The varietal names are those adopted in Konow's *Tableau Analytique*).

- | | | |
|---|--|----------------------------------|
| { | 1. Abdomen black at base and apex, red in the middle. Legs red... | var. <i>typ. thomsoni</i> , Knw. |
| | 2. Abdomen black at base only, red at apex. Legs red... | var. <i>cordata</i> , Fourcr. |
| | 3. Like <i>cordata</i> , but legs in great part black | var. <i>femorialis</i> , Cam. |
| | 4. Abdomen entirely black. Legs red | var. <i>microcephala</i> , Lep. |
| | 5. Like <i>microcephala</i> , but hind legs black | var. <i>caliginosa</i> , Cam. |
| | 6. Abdomen orange (much as in the ♂, but with larger and less definite and regular black markings) | var. <i>concolor</i> , Knw. |

Of the ♂, as has been said, there seem to be no corresponding colour-varieties. But should such occur, the emargination of the last ventral plate would no doubt be found to distinguish them.

2. *T. coquebertii*,* Klug. Of this species the ♂ may be known at once by the circumstance, pointed out (N.B.) in the author's original description, that it alone of all our *Tenthredopsis* ♂♂ has its lower wings *neurated as in the ♀, i.e.* without what I have called elsewhere (Ent. Mo Mag., 1903, p. 53. Fig. 6), "Continuous external neuration." Unfortunately the ♀ has no corresponding character, as indeed of course it could not!

Coquebertii ♂ varies a good deal in the colour of the abdomen, which may be practically black throughout, or more or less distinctly red-banded. The head and thorax are black, always marked to some extent, but often rather scantily, with white or whitish-yellow (clypeus, scutellum, cenchri, &c.). The tegulæ, I believe, are black always. But whatever its colour, the alar neuration will distinguish it from any British ♂ of the genus known to me.

The ♀ seems pretty constant in colour. The head and thorax are black with more or less of whitish markings like those in the ♀. The abdomen is black at base and apex with a broad red band, occupying usually about four of the intermediate segments. (This band is occasionally, but not often, interrupted by a black line or series of spots, running longitudinally down the

* Konow wrote the name *coqueberti*, but I spell it as Klug did.

middle of the dorsum. More usually the red is quite unbroken on at least three segments). Unfortunately quite a number of other species, or supposed species, have almost exactly the same arrangement of colour. Some of these one learns by practice to separate from *coquebertii* ♀ (at least to one's own satisfaction!) by smaller size, more extensive pale markings on head and thorax, a certain difference of tint in the red on the abdomen, paler coloration of the legs (especially the hind tibiæ), &c. But the best advice I can give to collectors who wish to learn the "points" of *coquebertii* ♀ is to secure, if possible, a series of specimens that have been taken in company with the unmistakable ♂ ♂, and to study these carefully side by side with others that they have reason to suspect of belonging to other species. Yet I do not believe that much real progress in determining the true specific relations of such closely similar and admittedly most variable forms is likely to be made, till much more material has been collected than is at present available to show *what males and what females really belong together*, and how far the characters on which our supposed species rest are really *constant throughout long series of specimens* bred together or taken abundantly at the same time or under the same particular circumstances. Till this has been done, I believe that it is a mere beating of the air to argue whether this or that name applied by this or that old author to such and such a combination of colours in a single sex (for really this is all that these descriptions amount to) be the older, and therefore the one to be adopted. First let us know what species really exist with us, and then we may consider how we are to call them. I do not make these remarks with the desire of awakening discussion of a thorny subject; but to explain why, since Klug positively tells us that the insect which he called "*coquebertii*" was a ♂ with the exceptional alar neuriation above referred to, and since the ♀ ♀ found with such ♂ ♂ cannot, as yet at least, be shown to have any character of even approximately equal value, I should continue to call the species *coquebertii*, Klug, even if I thought it probable that some older description of a *Tenthredopsis* ♀ in the works of—say—Fabricius or Lepelletier really referred to it.

3. *T. excisa*, Thoms. This is one of the few cases where both sexes of a *Tenthredopsis* can be identified even by a beginner with reasonable certainty by a few simple and obvious characters. 1. The white clypeus is very distinctly emarginate at the apex, in such a way that it may be said to be divided into a pair of rounded lobes. (In our other species, so far as I know them, if the clypeus be sinuated inwards at all, the emargination is very shallow and extends throughout the whole length of its apical margin—there is no appearance of a pair of lateral lobe-like projections). 2. The tegulæ are clear-white, and for that reason very conspicuous; much more so than in most species, where, if not black, they are usually at least a little grey or brown or yellowish. It is rather a small species. The ♀ abdomen is coloured in all my specimens like that form of *coquebertii* ♀ in which there is a black line bisecting the red dorsum. (In *excisa*, however, the red is somewhat paler, I think, than in *coquebertii*). The head and thorax are black, but adorned copiously with white. The ♂ is very similar, but the black streak on the red part of the abdomen is sometimes obsolete, and when present seems less sharply defined (— a vague clouding, not a distinct line or row of spots!).

Mr. Cameron identifies this sp. with *ornata*, Lep., with whose description it certainly seems to agree pretty closely, and if he be right, this is the older name. But Konow, though aware of this identification, never adopted it, why I do not know; so provisionally I retain the name he gave me. It certainly is what Thomson called *excisa*, whatever else it may have been called.

4. *T. gynandromorpha*, Rud. This is a rare and remarkable species which any one fortunate enough to find it should recognize without difficulty. I never took it myself in this country, nor indeed anywhere except in Greece and Corfu, but it is vouched for by Mr. Cameron as occurring in Clydesdale. This, alone among British *Tenthredopsis* spp., has the antennæ ringed with white in both sexes; and (N.B.) the mesopleuræ distinctly and even strongly punctured. The ♀ (but not the ♂) has a white scutellum. The rest of the thorax and the head (including the clypeus and labrum) are usually—perhaps always?—quite black in both sexes; at any rate they are so in all my specimens. The red colour on the ♀ abdomen generally extends over 5 segments. Otherwise it is not unlike *coquebertii* and has the same peculiarly deep shade of red. The legs are black throughout, while in *coquebertii* the tibiæ are normally somewhat paler than the femora or the tarsi. The character of the distinctly punctured mesopleuræ occurs in several foreign *Tenthredopsis* spp. but in no other, I believe, that has been recorded, unless obviously in error, from this country. It is probably one of more real importance, than the white on the antennæ, though the latter will be noticed first and at once even by a novice.

Our remaining species of this genus I must postpone to another paper. I fear I shall not be able to indicate in any of them characters as distinct and positive, as those exhibited by the species diagnosed above. In fact I may almost say of my own ideas about them, here certainty ends, and doubts begin!

(To be continued).

Parnus anglicanus, Edw., at Wicken.—*Parnus anglicanus* was described for the first time in this Magazine by Mr. Edwards about three years ago, from specimens found at Horning in Norfolk. Last year Mr. Pool and I, together with Mr. F. Muir, visited Horning, my principal object being to make acquaintance with this species. After a good deal of search we located the *Parnus* in the water at the edges of one of the large ditches, and secured a fair series. The spot reminded me so strongly of Wicken that I felt sure the species must also exist there, and I now have the pleasure of reporting that a fair series of it has been procured at Wicken by that most successful of collectors, Mr. C. J. C. Pool. The Wicken specimens indicate a race with the individuals fully as large in size as those from Horning.

I find that certain of the species of this genus possess a very remarkable character in the dimorphism of the wings, these organs being more or less reduced in size in the female and of peculiar shape. Mr. Pool has kindly

furnished me with both sexes from Wicken, and I find that they agree in this respect with the Horning examples of *P. anglicanus*.—D. SHARP, Brockenhurst: *September 2nd, 1912.*

Note on the variation in size of Criocephalus fesus, Muls.—It is perhaps worth while to record the variation in size of the examples of this species captured during recent years in Surrey, viz., smallest ♂ 10, largest ♀ 27 mm. This is a much greater variation than is to be found, I believe, amongst the very long series of *C. rusticus*, L., bred or captured by Dr. Sharp and others at Nethy Bridge. The small variety of the former, described by Dr. Sharp under the name *hispanicus*, measures ♂ 14, ♀ 16 mm. *C. fesus* has again been met with this summer on the burnt pines at Woking, on July 20th, 21st, and 27th, five specimens in all, one of which was being carried off by ants, though scarcely dead; but the *Melanophila* has not put in an appearance. The range of variation in *C. fesus* is, of course, nothing to compare with that recorded for some other wood-feeding *Coleoptera*, such as *Brenthus anchorago*, L., smallest ♂ 10, largest ♀ 52 mm.; *Rhina barbirostris*, Oliv., 17—60 mm., both sexes in this case varying greatly in size, &c.—G. C. CHAMPION, Horsell, Woking: *Sept. 7th, 1912.*

Apion annulipes, Wenck., near Oxford.—During the past week I have taken this rare and distinct *Apion* in some small numbers, including a fair proportion of ♂s, by persistently sweeping on a wayside bank near Bletchington Station, Oxon. The plants growing on the very limited area where the beetle occurs are chiefly red clover (*Trifolium pratense*), black knapweed (*Centaurea nigra*) and two or three kinds of grass, with a sprinkling of *Ononis arvensis*, milfoil, wild parsnip, &c., but I strongly suspect that here, at any rate, it is attached to the first-named plant, on which *Tychius lineatulus*, Steph., also occurs rarely. In the sweeping-net *A. annulipes* is readily distinguished from the small dark-legged species of the genus occurring with it (*filirostre*, *ononis*, *seniculum*, &c.) by its decidedly sluggish habits and the large development of the femora, which, in the ♂ especially, would almost seem to suggest the possession of saltatorial powers. It has occurred singly in the Oxford district on two previous occasions, to Prof. T. Hudson Beare at Shotover, Oxon, and to Mr. J. Collins near Tubney. The allied *A. flavimanum*, Gyll., has not as yet been met with at Oxford, its food-plant, *Origanum vulgare*, on which *A. annulipes* has also been taken (*cf.* Ent. Mo. Mag., vol. xli, p. 20), being decidedly scarce and local in the district.—JAMES J. WALKER, Oxford: *September 17th, 1912.*

Limnitis (sibylla) camilla in the London district.—On July 15th, when walking with a non-entomological friend in the neighbourhood of Barnes Common, I caught sight of what I took to be a *Neptis* gliding about the bushes. Doubting the evidence of my eyesight, I approached the spot, and presently saw a "White Admiral" settle in front of me. It did not linger long, but was quite unmistakable. The specimen was in fair condition though somewhat faded. How did it get there? I suspect some human agent.

The second brood of *Cyaniris argiolus* was unusually common in the Putney district at the end of July and beginning of August.

My friend Prof. Selwyn Image sends me the following extracts from the works of early English entomologists referring to (*sibylla*) *camilla* near London :

“1. John Ray, Hist. Insect, 1710.—‘*Papilio mediae magnitudinis elegantissima, alis supinis nigris cum arca transversa alba, pronis variis coloribus depictis.*

In Essexia non procul a Tolesbury oppido a D. Morton capta, et ad nos delata est Julii 11, 1695.’

2. W. Lewin, Pap., pl. 8, 1795.—‘This insect appears on the wing about the 24th of June, and is not uncommon. . . It is very extraordinary, that, though this fly is an inhabitant of almost every patch of wood in England, neither the greatest pains taken, nor accident, have yet discovered the caterpillar . . .’

3. J. Curtis, Brit. Ent., 1826.—‘Formerly tolerably abundant in the neighbourhood of London during the months of June and July. Mr. Samonelle has seen it in Bedstile Wood, near Finchley, and at Birch Wood, in Kent, and we have heard of its being taken not unfrequently at Coombe Wood.’

4. J. F. Stephens, Illustr., 1827.—‘. . . frequently taken the insect at Coombe Wood, in July, previously to the year 1813, since which period I have not seen it alive. . . It was formerly very abundant in Betstile Wood, near Finchley, and at Birch Wood, Kent; but has not been captured at either place for many years.’ ‘Lordship Lane, Camberwell, formerly in plenty. Mr. Witherington.’

5. Edward Doubleday.—‘Parkall Woods, near Epping, sparingly.’—

G. B. LONGSTAFF, Twitchen, Mortehoe, R.S.O., Devon: *August 23rd*, 1912.

A note on Abraxas grossulariata ab. nigra.—Adverting to Mr. Porritt’s interesting note on this in your last number (*Ent. Mo. Mag.* xxiii, 215), I should like to say that I twice saw Mr. Beattie’s Mickleham specimen, and made my description direct from it. This specimen is not an intensified form of *ab. nigrosparsata*. It is, as I described it, a “*pure black form*,” not *blue black*. It is unlike Mr. Porritt’s in that it has not the usual black markings of the species showing through; nor has it even the few dark orange scales appearing in Mr. Porritt’s example at the junction of the hindwings with the thorax; and, lastly, it has no marginal series of spots on the hindwings. Mr. Newman’s specimen I never saw, but the fact of its being a *varleyata*, with the white markings suppressed, does not seem to me to preclude its being classified under *ab. nigra*. Surely *varleyata* without white markings is no longer *varleyata*, whatever else it may be!—G. H. RAYNOR, Hazeleigh Rectory, Maldon: *September 9th*, 1912.

[Assuming that Mr. Beattie’s black *grossulariata*, as described in the foregoing note, had also the head, thorax, and abdomen pure black (these are always normal in var. *varleyata*), but about which Mr. Raynor nowhere says anything—it was evidently a still more extreme form of the variety I bred, the black being so intense as to quite obliterate the usual markings. But Mr. Raynor erred in including under his suggested name of *nigra* (for no

scientist would ever accept the few words as published in the "Ent. Record" as a description) the specimen which Mr. Newman bred; it had only the upper wings all black, the lower wings still retaining the white basal mark, though reduced in extent, as was also the case in my own similar specimen. The amount and shape of the white in the forewings of *varleyata* varies infinitely in both wild and bred specimens. Very often it is merely a narrow irregular band, and frequently reaches only half way or less through the wing from the inner margin; in some specimens it consists of only a white spot on the edge of the inner margin, whilst in two specimens I possess it is merely a short thread-like streak from the inner margin and extending only a third of the distance across the wings. It only needs the obliteration of this short thread-like mark, the remnant of the colour of the ordinary type of the species still left, to produce Mr. Newman's form; and I contend that all of these forms still come under the designation var. *varleyata*, and no one who knows the forms would mistake them for anything else. From my experience in breeding *varleyata*, and it is not small, I am quite certain that the form I have named *nigra* could never be bred from any of them, and it is equally sure that *nigra* would never produce *varleyata*. The two forms are quite distinct races of the species, and the black forms of the two races are quite different in appearance. Mr. Raynor's note amply justifies my adoption of the name to one definite form, including in it a range of variation in the tint of the black, which we all admit in similar named varietal forms.—GEO. T. PORRITT.]

The food-plant of the larva f Erebia blandina, F. (æthiops, Staud.).—Mr. L. G. Esson has recently been collecting in a locality in Scotland where this insect is extremely common. At my request he watched a female deposit, dug up the plant with the ova attached to it and sent the same to me. The grass proves to be *Molinia cærulea*. I believe that the food-plant of the larva of this insect in a wild state has not yet been recorded.—N. CHARLES ROTHSCHILD, Arundel House, Kensington Palace Gardens, W.: September, 1912.

The food-plant of the larva of Erebia epiphron.—Mr. H. A. Beadle of Keswick, very kindly supplied some living larvæ of this butterfly after hibernation, which he found in the early spring of this year. To establish with certainty the food-plant, Mr. Beadle very carefully marked the plants on which he found these larvæ feeding, and when the grasses in question were in flower, dug them up. They are all *Nardus stricta*, which can now be definitely stated to be the food-plant of this insect in a wild state.—N. CHARLES ROTHSCHILD: September, 1912.

Pentatoma (Tropicoris) rufipes, L., and caterpillars.—As an imago, this Hemipteron has, for the last 130 years, been credited with carnivorous habits. De Geer says it wanders over the foliage of trees, seeking caterpillars to suck, and several observers since his time have confirmed this statement. Wishing to determine whether the larva is characterized by a similar habit, I enclosed a specimen in its last instar, which I found on hawthorn in Epping Forest on June 15th, in a box with a twig of the host-plant, and a well grown Orthosid

larva from the same bush. For some time the bug seemed to leave the caterpillar severely alone; but after a few days, when the caterpillar had eaten the greater part of the hawthorn provided, I was glad to see it and the bug in close contact, and I hoped that the latter had at last risen to the occasion and attacked its companion. But on looking more closely, I was surprised to find that, although the caterpillar was undermost, the tables had been turned, and it was the caterpillar that was devouring the bug! Almost the whole of the under-side was eaten away, and little more than the dorsal integument remained. I was familiar with the fact that some Orthosid larvæ will, when their natural food fails, show carnivorous tastes and attack other larvæ; but I was scarcely prepared to find an insect which is usually regarded as most distasteful made the object of attack. It is only fair to add, that the disagreeable scent of the bug, which was at first very pronounced, had almost entirely passed off when the tragedy took place, and possibly this may have made the insect palatable.—E. A. BUTLER, 56, Cecile Park, Crouch End, N.: *September 12th, 1912.*

An additional locality for Psallus vitellinus, Scholtz.—When this species was introduced as British on p. 60 of the current volume of this magazine, only one locality was known for it—Colesborne, where Mr. Edwards discovered it, and there was some doubt as to whether it occurred there on a coniferous or a deciduous tree. But on June 22nd I found the species in some numbers on spruce firs in the neighbourhood of Burnham Beeches, and the food-plant in this case agrees with continental records. The occurrence of the insect so far from the original locality suggests the probability that it is widely distributed, though, if so, one certainly wonders how it escaped notice so long.—E. A. BUTLER: *September 12th, 1912.*

Prosopis genalis, Thoms., at Woking.—Only last April Mr. C. H. Mortimer recorded in this magazine several captures of *Prosopis genalis*, Thoms. (♂ ♂ and ♀ ♀), at Weybridge; and next month followed a Note from Mr. A. H. Hamm, of Oxford, stating that he had specimens of the same species from Berkshire, which he had already recorded in the "Victoria" History of that county. Mr. Mortimer kindly gave me one of his ♀ ♀; and, as Weybridge is so near to Woking, I was more pleased than surprised (though I *was* rather surprised also) when on July 10th last I took with my fingers a fine ♂ *P. genalis* from a bramble flower in a large sand-pit hardly a mile from Woking Station.

It is rather curious that the existence of *P. genalis* so near our own doors should never have been discovered nor suspected, either by myself or by my next-door neighbour, the late Mr. Saunders, who himself first introduced the species to the British List so long ago as 1879 (from Hollington near Hastings). His captures and those above mentioned are the only ones that I have ever heard of in this country.

In North Germany, or at least round Bremen (according to Alfken), *genalis* is quite a common species, while its nearest ally, *confusa*, Nyl., is "very rare." With us the latter is certainly the less rare of the two. In Switzerland both are common; but Frey Gessner has found *genalis* chiefly on his higher hunting

grounds (Forelaz, Luc. and Alp Pouchette in July). Hence it seems that collectors in our more northern and mountainous districts might do well to be on the look out for it.—F. D. MORIÈE, Brunswick, Woking: *Sept. 9th*, 1912.

Erotesis baltica, McLachl., from Hampshire.—In a small lot of *Trichoptera* recently received from Mr. Martin E. Mosely for verification, there was included a ♂ of a small species of *Leptoceridæ*, correctly determined as *Erotesis baltica*, McLachl. Mr. Mosely tells me that he took it on the River Test, near Romsey, Hants, and that the species occurred there during the latter half of July, its flight extending over a period of at least three weeks. The males were very plentiful, the females apparently rather scarce. It is interesting to know of this species from a locality quite away from the Fen country of Eastern England.—KENNETH J. MORTON, 13, Blackford Road, Edinburgh: *Sept. 6th*, 1912.

Bothria subalpina, Villen., and *Eudoromyia magnicornis*, Zett., not British.—The late Mr. G. H. Verrall in his last published article entitled "Another hundred new British species of Diptera," published in this Magazine and completed in the August number, introduced the above two species to the British list. *Bothria subalpina* was included on the authority of Dr. Villeneuve, the original describer, who said that he had seen a specimen taken by me near Birmingham. Unfortunately this was an error, which should be corrected at once before the mistake has become difficult to "catch up." The examples I sent to Dr. Villeneuve, and which formed co-types of the species, were taken just below Caux, on the hillside above Territet in Switzerland, and thus accord with the probable distribution of the species. Dr. Villeneuve unfortunately failed to note the labels on the pins and, as I had sent them, believed that I had taken them at home, and recorded them accordingly.

Eudoromyia magnicornis, Zett., was included, as Mr. Verrall said, on the strength of a single female taken by Col. Yerbury at Bridgend. As Mr. Collin and I both felt doubt about this specimen, I asked Mr. Collin to let me examine it, and having done so I can state positively that the insect is not *magnicornis*, Zett., and I have little doubt that it is only a fine large and dark specimen of *Echinomyia fera*, L. The genus *Eudoromyia* depends for safe recognition upon the male characters, and this is a female, but the width of the frons and the yellow tarsi both decide definitely against *magnicornis*, which has a decidedly wider frons and black tarsi. The femora in *E. fera*, L., are well known to vary in colour and I do not think this specimen could be regarded as a distinct species on that account.—COLBRAN J. WAINWRIGHT, 45, Handsworth Wood Road, Handsworth, Birmingham: *September 1st*, 1912.

A proposed Monograph of the British Chrysididæ.—Mr. G. Arnold, M.Sc., F.E.S., of the Rhodesian Museum, Bulawayo, will be grateful to collectors and students of *Chrysididæ* for lists of localities, dates and particulars of capture of the more noteworthy species, or other information to be used in preparing his projected Monograph of the British Species of these *Hymenoptera*. Such particulars may be sent direct to Mr. Arnold or to—A. H. HAMM, 22, Southfield Road, Oxford: *September*, 1912.

Review.

"POLYMORPHISM IN A GROUP OF MIMETIC BUTTERFLIES OF THE ETHIOPIAN NYMPHALINE GENUS *PSEUDACRÆA*," by E. B. POULTON, D.Sc., M.A., F.R.S., Hope Professor in the University of Oxford. "Nature," Vol. XC, pp. 36, 37: September 12th, 1912.

Under the above title Professor Poulton has communicated to our contemporary a paper bearing on our science of such importance and interest as to fully justify a brief *resumé* in our own pages.

About two years ago Dr. Karl Jordan, in studying the ♂ genital armatures of the well-known genus of butterflies, *Pseudacræa*, found that those of the group made up by the West African *P. eurytus*, L., and its allies, with *rogersi*, Trimen, from Mombasa, *imitator*, Trimen, from Natal, and three forms from Uganda, were in all respects practically identical. All these forms are mimics of species of the Acraeine genus *Planema*, and in the case of those observed at Entebbe, Uganda, by Mr. C. A. Wiggins, where *Pseudacræa hobleyi*, Neave, is in both sexes a beautiful mimic of the brightly coloured and sexually dimorphic *Planema macarista*, E. M. Sharpe, and both sexes of the less conspicuous *Ps. terra*, Neave, and *Ps. obscura*, Neave, bear an equally close resemblance to the sexually monomorphic *Pl. tellus*, Auriv., and *Pl. paragea*, Gr. Sm., a very remarkable and complicated example of polymorphism in the former genus is indicated. Two specimens sent by Mr. Wiggins from Entebbe—a ♂ of *Ps. terra* with a pattern approaching that of *hobleyi* ♂, and a ♀ *hobleyi* bearing the mimetic colours of the ♂ of the same form, lend strong support to the identity of these so-called "species," and a few further specimens corroborating this view were received after the researches of Dr. Jordan and Mr. Wiggins were communicated to the Entomological Congress at Brussels in 1910.

On the whole at Entebbe, *Ps. hobleyi* (the commonest form) and *terra* were found to be wonderfully constant, the third, *obscura*, being rare. In the islands of the north-west of the Victoria Nyanza, Dr. G. H. Carpenter found the *Planema* models rare (perhaps owing to the comparative paucity of forest), and the mimics relatively abundant, *terra* being common and *obscura* plentiful, but transitional forms are of very frequent occurrence. Moreover, Dr. Carpenter on several occasions observed the ♂ pursuing a ♀ of one of these mimetic forms of entirely different pattern. In the collections made in 1911-12 by Mr. S. A. Neave over a wide area in the Uganda Protectorate, male-coloured ♀'s of *Ps. hobleyi* were found to be relatively much commoner than within the Entebbe district, where the sexually dimorphic *Pl. macarista* is much more plentiful than the more widely spread *Pl. poggei*, Dewitz, both sexes of which resemble the ♂ of *macarista*.

This evidence strongly supports Dr. Jordan's views as to the specific identity of these forms, and would appear to involve the necessity of sinking at least a dozen "species" of *Pseudacræa* as geographical and polymorphic "races" of the old Linnean *P. eurytus*. But such far-reaching conclusions required before acceptance the final test furnished by breeding. This test has now been supplied by Dr. Carpenter, who observed at Bugalla Island, Victoria Nyanza, a

♀ *Ps. obscura* "with a touch of *hobleyi*" in the act of oviposition; and though the butterfly was not secured, the larva resulting from the single egg found was successfully reared, and proved to be, as anticipated by Dr. Carpenter, *Ps. terra*, the commonest form on Bugalla. Unfortunately this important discovery was not made in time to be announced at the Oxford Congress, the single word "*terra*" being cabled to Prof. Poulton on August 19th. As more eggs from known forms of ♀ *Pseudacraea* have recently been obtained by Dr. Carpenter, it is to be hoped that direct proof of Dr. Jordan's conclusions as to the specific identity of all the Uganda forms of the genus will shortly be forthcoming, and all concerned in this research may be heartily congratulated in their efforts at the solution of a "bionomic problem of extraordinary interest and complexity."

Obituaries.

Herbert Jordan Adams.—The arrival of Mr. Adams' valuable collection of Exotic and Palearctic *Lepidoptera* at the National Museum in Cromwell Road has reminded us that no obituary notice of this entomologist has as yet appeared in our pages. He was born in London in 1838, and died on March 1st last at Roseneath, Enfield, in his 74th year, having resided in that district for upwards of 50 years. Taking an interest in insect life, he commenced in a rough way the usual schoolboy's collection of butterflies and moths, thus laying the foundation in later years of a really fine collection of British *Lepidoptera*, eventually bequeathed by him to the Enfield Entomological Society, of which he was one of the founders. On the death of his mother, and the subsequent sale of Chase Park, Enfield, he went to reside at "Roseneath," a house not far off, and it was here during the last 30 years of his life that, with the aid of Mr. P. I. Lathy, his curator, he got together the large and valuable collection of *Lepidoptera* which has now become the property of the nation, subject, we believe, to the proviso of its being kept intact as the "Adams Collection" for 25 years. The collection is a very extensive one, and said to be particularly rich in *Ornithoptera* and other fine *Rhopalocera*. It is contained in 68 cabinets and about 600 carton boxes. Mr. Adams—like his surviving brother, Mr. F. C. Adams, a well-known collector of British *Diptera*—was elected a Fellow of the Entomological Society of London in 1877. He was a J.P. for Middlesex, a Governor of Enfield Grammar School, one of the founders of the Enfield Town Constitutional Club, a great supporter of Freemasonry, a Fellow of the Royal Horticultural Society, &c. Various papers by Mr. Lathy on the insects contained in Mr. H. J. Adams' collection have appeared from time to time in the Transactions of the Entomological Society of London, the last (written in collaboration with Mr. W. F. H. Rosenberg), entitled "Notes on the Genus *Cutasticta*," having been published during February of the present year.

George Herbert Grosvenor, M.A.—We deeply regret to record the death, at the early age of 32 years, of Mr. George Herbert Grosvenor, Demonstrator in Zoology in the University of Oxford. On September 4th, while bathing at

Polzeath, near Wadebridge, N. Cornwall, he was, though an expert swimmer, drowned in a gallant attempt to rescue a fellow-victim. Mr. Grosvenor, who was the eldest son of Mr. G. W. Grosvenor of Kidderminster, was greatly esteemed and respected in his University, where, in addition to the usual zoological subjects, he was responsible for the tuition in economic and forest Entomology of the students in the new School of Forestry. At the recent Congress of Entomology at Oxford he acted as one of the joint Secretaries, in which post his energy and powers of organization were largely in evidence, and contributed in no small measure to the success of the meeting. He was elected a Fellow of the Entomological Society in 1909.

Edward Arthur Fitch was born at Chelsea on February 23rd, 1854, and died on June 28th at his residence, the "Brick House," Maldon, Essex, after an operation for acute gastritis. Although he had of late years almost or quite ceased to take an active interest in Entomology, he will be long remembered for his able articles in the early volumes of our contemporary, the "Entomologist," on certain of the so-called "neglected Orders" of Insects; those on the Parasitic *Hymenoptera* written in collaboration with Mr. J. B. Bridgman of Norwich being of especial value. A man of wide and varied interests, he threw himself with characteristic energy into whatever work he undertook, whether local or general politics, archæology, or the study of nature. In the latter connection he was one of the founders of the well-known Essex Field Club, and was for ten consecutive years its President. For many years, too, he was a Fellow of the Linnean Society, and was elected into the Entomological Society as long ago as 1874, serving more than once on the Council, and acting as Secretary from 1881 to 1885. A family of five sons and four daughters survives him.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, July 25th, 1912.—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. West (Ashted) exhibited ova of a *Chrysopa* on the leaves of the Garden Ox-eye Daisy. Mr. Edwards, the butterflies *Eunica eurota* from Brazil, *Smyrna blomfieldia* from Mexico, and *S. karwinskii* from Brazil. Mr. J. Platt Barrett, a full fed larva of *Saturnia pyri* from Sicily, young larvæ of *Colias edusa* from ova of an English caught ♀, and a large number of butterflies from South Africa. Mr. R. Adkin, *Ptycholoma lecheana* from Brentwood, one almost unicolorous buff colour and unusually pale, the other a rich deep brown with very distinct silvery markings. Remarks were made on the abundance of *Celastrina argiolus* and the occurrence of *Sesia stellatarum* and *Colias edusa* this season.

August 8th.—The President in the Chair.

Mr. Ashby, larvæ and imago of the local Coleopteron *Cassida fastuosa* from Otford. Capt. Cardew, larvæ of *Papilio machaon* from Stalham Dyke spun up

for pupation. Mr. Hugh Main, larvæ of *Papilio alexanor* from the south of France. Mr. H. Moore, a short series of *Colias edusa* taken in the Forest of Arques, Dieppe, in August. Mr. Priske, a ♀ cockroach, *Periplaneta orientalis*, with the ootheca still attached to her. Mr. F. D. Cooke, the pupæ of *Pyramis cardui* to show the difference between those spun up on white muslin and those on darker material. Mr. Newman, long series of *Dianthœcia carpophaga*, specimens of *D. capsicola*, and *D. capsophila*, and Kentish *Dianthœcia*, identical with Isle of Man *D. capsophila*. Mr. Blenkarn, *Haliplus wehnckeï* with aberrant ædeagus, a specimen of *Clytus arietis* with the first yellow belt reduced to a minute spot, an unusually small example of *Philonthus puella*, and specimens of the rare Coleopteron *Pentarthrum huttoni* from the cellars of Messrs. Møet and Chandon.

August 22nd.—Mr. B. H. SMITH, Vice-President, in the Chair.

Mr. Edwards exhibited the exotic butterflies *Thaumantis diores* from Assam, *Discophora lepida* from Ceylon, *Tenaris selene* from the Malay Islands, and *T. honrathiï* from Madagascar, all belonging to the Asiatic section of the *Morphinæ*; and specimens of *Opsiphanes boisduvalii* from Mexico, referring to the conspicuous tuft of scent-hairs. Mr. Newman, a very long series of *Pachnobia hyperborea* from Rannoch, showing much variation, a short very uniform series from Shetland, where the species was fast disappearing from the attacks of Ichneumons; a few *Crymodes exulis* from Shetland, including a very pale specimen, and a long series of his inbred yellow form of *Callimorpha dominula*, with the only intermediate he had obtained. Mr. Sheldon gave a very interesting account of his holiday near the N. Cape in search of butterflies and bird's eggs. Mr. Sich, specimens of *Coleophora apicella* taken at Byfleet in June, where its food-plant *Stellaria graminea* grows abundantly. Mr. Adkin, the ova of a *Chrysopa*, which were on unusually short stalks. Reports were made that larvæ were very scarce this season, especially in the New Forest. *Bryophila perla* was noted as very scarce. *Agriades coridon* was still common in Hertfordshire, and several var. *semisyngnatha* had been taken, while the ♀s, varied from very deep black to khaki-coloured ground. Capt. Cardew noted the curious fact that *B. muralis* was common at Folkestone, but completely absent from Dover, where apparently conditions were most favourable.—H. J. TURNER, Hon. Secretary.

NOTES ON THE BRITISH SPECIES OF *LONGITARSUS*, LATR.

(A GENUS OF COLEOPTERA).

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND W. E. SHARP, F.E.S.

(Continued from p. 204).

SECT. VIA.—Species small (not exceeding two mm. in average length), testaceous, with sutural line rufescent, narrow, sometimes almost obsolete, punctuation comparatively strong and somewhat seriate.

- I. Posterior tibial spurs long and thin.
 1. Punctuation weaker, size larger, posterior femora lighter...
L. waterhousei, Kutsch.
 2. Punctuation stronger, size smaller, posterior femora darker
...*L. ballotæ*, Marsh.
- II. Posterior tibial spurs short and thick.
 1. Elytral punctuation weaker, hardly seriate...
L. membranaceus, Foudr.
 2. Elytral punctuation stronger, more or less distinctly seriate.
 - A. Size larger, form broader and more rotund, elytral punctuation less distinctly seriate ...*L. curtus*, All.
 - B. Size smaller, form more elongate, elytral punctuation more distinctly seriate*L. lycopi*, Foudr.

L. WATERHOUSEI, Kutsch [Wien. Monat. 1864, p. 274]; C. O. Waterhouse [Ent. Mo. Mag., II, p. 229]; Rye [Ent. Ann., 1867, p. 97].

Syn. *menthæ*, Bedel. [Col. Bass. Seine, V, p. 189].

Apart from similarity of description, food plant, &c., we base our belief in the equivalency of these two names on the fact that the types of *waterhousei* returned by Kutschera to G. R. Waterhouse, now in the "Waterhouse" collection, agree precisely with specimens returned by M. Bedel to Mr. E. G. Elliman as his *menthæ*. In the European Catalogue [Heyd., Reitt., and Weise, 1906] *waterhousei*, Kutsch., is given as a var. of *juncicola*, Foudr., but if, as we have reason to suppose, *juncicola*, Foudr. = *lycopi*, All., this is clearly incorrect, for *waterhousei* differs entirely from that species. Bedel doubtfully suggests that *L. cerinus*, Foudr., may be synonymous with his *menthæ*, and this may possibly be the case, although we are more inclined to associate *L. cerinus*, Brit. Colls., with *membranaceus*, Foudr.

Of a rather short and rounded oval. Head: dark ferruginous, very finely and delicately punctured between the eyes. Antennæ: long, testaceous, with the last four or five joints infusate. Thorax: transverse, bordered, very variable in character of punctuation, from confluent and rather rugose to weak and diffuse, but never very strong or deep; very weakly alutaceous. Elytra: straw-coloured or pale ferruginous with the peculiar translucent granular appearance common to most of the apterous species, punctuation weak and scattered, but usually rather stronger than that of the thorax, plainly seriate near suture, finely alutaceous, suture narrowly and faintly rufescent; there are occasionally obscure traces of darker linear markings, caused possibly by the partial semi-transparency of the elytra. Legs: entirely testaceous, with the posterior femora only slightly darker or ferruginous, posterior tibial spurs long, first joint of anterior tarsi not enlarged. Underside dark brown. Bedel describes the species as apterous, and this is so in all the specimens we have seen. Length, $1\frac{3}{4}$ —2 mm.

The species which *L. waterhousei* most closely resembles is *L. membranaceus*, from which, however, its larger size and longer tibial spurs will distinguish it. Bedel separates the two by the differing form of the "plaques surantennaires"; this distinction, however, although we believe it to exist, is very difficult to appreciate and in practice of little value.

From *L. ballotæ*, the weaker punctuation, the more translucent elytra, and the much lighter posterior femora, as well as the larger size, readily distinguish it, and these are the only two British species with which *L. waterhousei* could easily be confused.

The food plant is undoubtedly *Mentha aquatica*, from which plant we have swept it rather commonly in the Cambridgeshire fens in August.

So far as we have any evidence its range appears to be Southern. We have seen specimens from Wicken, Escher, and Chesham, but none from the Midlands or North of England, Scotland, or Ireland.

L. BALLOTÆ, Marsh. [Ent. Brit. I, p. 205]; Foudr. [Mon., p. 191]; All. [Mon., p. 133]; Weise [Nat. Ins. Deutschl. VI, p. 1003].

This is one of the few *Longitarsi* about which no substantial difference of opinion appears to exist among authorities, and in the last European catalogue the name appears without any synonym.

Of a rather short and full oval form, apterous specimens being more parallel-sided than winged. Head: ferruginous, sometimes pitchy, very finely punctured between the eyes. Antennæ: rather short, testaceous with last five or six joints fuscous. Thorax: transverse, very finely bordered, usually concolorous with elytra but often rather darker, distinctly alutaceous, punctuation distinct, rather variable, but not strong. Elytra: very plainly alutaceous, dull testaceous, with a more opaque appearance than in the allied species, and quite free from the darker linear markings which are often seen in *L. membranaceus*, punctuation moderate, distinct, and regular, usually somewhat linear, suture very narrowly rufescent; apices only slightly rounded, with a few short cilia just above the angle. Legs: pale testaceous, with the posterior femora varying in colour from dark fuscous to black, and the bilobed joints of all the tarsi fuscous, first anterior tarsal joints not enlarged in either sex; posterior tibial spurs long and slightly curved ("en forme de sabre" as Bedel expresses it). Underside pitchy testaceous. Winged or apterous. Length, $1\frac{1}{2}$ — $1\frac{3}{4}$ mm.

Superficially this species may be recognised by its peculiar dull opaque look. Its uniform light colour, darker posterior femora, and longer tibial spurs sufficiently separate it from *L. membranaceus*, and its stronger, more regular punctuation from *L. waterhousei*.

Food plants.—The most usual appears to be *Ballota nigra*, but it has also been taken on species of *Stachys* in England. Foudras and Bedel add *Marrubium vulgare*.

The species is not very uncommon in the south of England, but we have no records from further north than Norfolk. It is very probable, however, that its real range is much more extensive than our present meagre list of records would indicate.

L. MEMBRANACEUS, Foudr. [Mon., p. 222]; Weise [Nat. Ins. Deutschl. VII, p. 991].

Syn. *teucii*. All. [Mon., p. 139].

(Allard himself makes his *T. teucii* synonymous with *minuscula*, Foudr. The text of the latter author, however, would rather lead to the inference that *T. minuscula* was more probably a pale form of *L. luridus*, Scop).

Of a short and rounded oval form, of the same size and shape as, and superficially very similar to, *L. ballotæ*. Head: usually ferruginous, but sometimes pitchy or almost black, exceedingly finely and closely punctured between the eyes. Antennæ: testaceous, with the last four or five joints fuscous. Thorax: usually of a rather redder testaceous than the elytra, transverse, very finely bordered, faintly alutaceous, punctuation not close, moderately strong, sometimes weakly and confluent rugose. Elytra paler or darker testaceous, somewhat translucent or gelatinous, nearly always with indistinct traces of a darker lineation, very finely alutaceous, punctuation shallow and remote, sometimes somewhat seriate but very variable in this respect [Under a high magnification the elytral surface of this, as of many of the apterous species, appears to be thickly covered with lighter points or dots. This appearance has nothing to do with the proper elytral punctuation, but is probably due to a refraction of light caused by the irregular under surface of the wing sheaths and the vacant space which exists between them and the abdomen]; suture very narrowly and faintly rufescent; apices plainly separately rounded, and more or less debiscent, making visible the short white cilia with which the pygidium is clothed. Legs testaceous, except the last tarsal joint, which is fuscous, posterior femora hardly darker than the rest of the legs; posterior tibial spurs shorter and thicker than those of either *L. waterhousei* or *L. ballotæ* ("en forme d'ergot" as Bedel describes them); first anterior tarsal joint not enlarged. Underside testaceous brown. Completely or semi-apterous in all the specimens we have examined. Length, $1\frac{1}{2}$ — $1\frac{3}{4}$ mm.

The British species to which *L. membranaceus* comes nearest are *L. waterhousei* and *L. ballotæ*. The distinctions already given under *L. waterhousei* will separate it from that species, while from *L. ballotæ* it may be known by the weaker and more remote elytral punctuation, the much lighter coloured posterior femora, the more rounded elytral apices, the distinctly shorter and thicker posterior tibial spurs, and the different food plant.

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The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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ENTOMOLOGICAL NEWS.

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ENTOMOLOGICAL NEWS,

The Academy of Natural Sciences,

1900 RACE STREET, PHILADELPHIA, PA.

Food plant.—*Teucrium Scorodonia*, on which it is often excessively abundant throughout the chalk downs of the south of England. It probably occurs with that plant generally throughout the country; there is a record of Power's from Fifeshire quoted by Fowler, and one of us has taken it as far north as Forres.

Vars.—This species, for a member of this genus, is singularly constant. The Scots specimens appear to be rather darker and more strongly punctured, noticeably those from Forres; but as Fowler says, "this can hardly be considered as a constant variety," and the only varietal form given in the European catalogue is *v. helvolus*, Kutsch. [Wien. Monat., p. 269], of which we know no British examples.

L. CURTUS, All. [Ann. Soc. Ent. Fr., 1860, p. 832].

Syn. *pratensis*, All. [*loc. cit.*, p. 137 (*nec* Panz.)].

This species bears a considerable resemblance to both *L. membranaceus* and *L. lycopi*. Of a short rather parallel-sided oval, very convex. Head: dark brown or black, finely alutaceous between the eyes. Antennæ: moderate in length, black or dark fuscous, with the first four or five joints ferruginous. Thorax: transverse, bordered, very finely alutaceous, with punctuation variable but usually weak and scattered, in colour ferruginous, often with darker cloudy markings at sides and in front. Elytra: testaceous, lighter than thorax, occasionally with darker cloudy linear markings, finely alutaceous; punctuation bold, distinct, and more or less seriate, the punctures often having the appearance of being marked in a rather darker colour than the rest of the elytral surface; suture very narrowly rufescent. Legs: testaceous, posterior femora brown, darker on the upper edge; posterior tibial spurs very short; first anterior tarsal joints slightly enlarged. Underside dark ferruginous. Such specimens as we have seen are winged, but it probably also occurs in the apterous form. Length, $1\frac{1}{2}$ — $1\frac{3}{4}$ mm.

This species may be superficially distinguished among its allies by its distinctly "stumpy" shape. From both *L. waterhousei* and *L. ballotæ* it may be separated by its much shorter posterior tibial spurs, and from *L. membranaceus* and *L. lycopi* by its stronger and coarser elytral punctuation.

L. curtus was added to the British list (after submission for confirmation to M. Bedel) by Mr. E. G. Elliman [Ent. Mo. Mag., XVII (1906), p. 137], who took it in some numbers near Chesham in October, and we have also seen specimens taken by Mr. E. A. Newbery in the Isle of Wight. The only evidence we have relative to its possible food plant in this country is that *Myosotis* was growing abundantly on the ground where Mr. Elliman made his capture, but according to Allard it occurs in France on *Echium vulgare*.

L. LYCOPI, Foudr. [Mon., p. 193]; Weise [Nat. Ins. Deutschl. VI, p. 988].

Syn. *abdominalis*, All. [Mon., p. 411]*; Dufts. [Faun. Austr. III, p. 262] (*nec* Weise).

juncicola, Foudr. [Mon., p. 189].

One of the smallest of our British species. In shape, a long oval; in colour, elytra testaceous and thorax ferruginous, or sometimes entirely testaceous. Head varying from dark ferruginous to black, very finely alutaceous between the eyes. Antennæ: comparatively short, testaceous, with last four or five joints fuscous. Thorax: transverse, bordered, usually of a redder colour than the elytra, punctuation fine and regular but remote, interspaces either smooth or alutaceous. Elytra: testaceous, with the sutural line dark red and very narrow, usually somewhat suffused; punctuation strong, much stronger than that of thorax, regular and distinctly seriate (of the character of *L. suturalis*), intervals feebly alutaceous; apices completely separately rounded. Legs ferruginous, posterior femora partly or wholly black or pitchy red; posterior tibial spurs moderately long; anterior tarsal joints hardly dilated in ♂. Underside ferruginous. Usually winged. Length, 1—1½ mm.

A variable species both as regards size, colour, and punctuation; and were it not that an intermediate gradation occurs, varietal forms, if not valid species, might be differentiated under the names of *abdominalis* or *juncicola*. In its largest form, however, *L. lycopi* is smaller than any other of our species except *L. pratensis*, and perhaps very small examples of *L. luridus*. From *L. pratensis* its strong seriate punctuation at once distinguishes it, while the smallest forms of *L. luridus* are more oval, always more consistently concolorous, and much more strongly alutaceous than *L. lycopi*.

Food plants.—*Lycopus europæus* (Allard); *Lycopus* and *Mentha* (Foudras); *Mentha rotundifolia* (Deville). Commander J. J. Walker has taken it on *Nepeta Glechoma* near Oxford.

The species appears to be very rare in this country, and the few records available are all from the south of England.

L. CERINUS, Foudr. [Mon., p. 219]; All. [Mon., p. 328].

This species was recorded and introduced to the British list by E. C. Rye in the "Annual" for 1870, p. 90, on specimens believed to have been taken at Mickleham.

Even if Foudras' *L. cerinus* should be a good species, about which

*Allard, in the list of synonyms given in his Monograph, makes his own *abdominalis* equivalent to the *lycopi* of Foudras, but in the appendix to that work (p. 320) appears to separate them. The exponents, however, sent to Wollaston by Allard (see Vol. XXI, p. 242, *supra*) under these two names are clearly the same species and differ merely in size. In the Waterhouse catalogue of 1858 they are treated as synonymous.

there appears to be considerable doubt felt by Continental authorities, more evidence is certainly required to establish it as British than we possess at present.

The characters on which Rye relied to separate it from *L. ballotæ*—a slight difference in punctuation and colour of underside—appear hardly satisfactorily specific, and we have been unable to discover any authentic specimen of it in any British collection, the very few representatives of the species being usually resolvable into forms of either *L. membranaceus* or *L. ballotæ*. We consider, therefore, that it is desirable for the present to delete *L. cerinus* from our British list.

SECT. VI B.—Species small (not exceeding 2 mm. in average length), testaceous with sutural line rufescent, narrow, sometimes almost obsolete; punctuation fine or very fine.

I.—Antennæ and posterior tibiæ moderate in length.

1. Body concolorous, very pale, posterior femora distinctly black, at least on apical half*L. ochroleucus*, Marsh.
2. Body-colour variable, or testaceous, posterior femora only slightly darker.

A.—Length about 2 mm.; body generally concolorous.

- a. Punctuation of elytra almost obsolete; form more oval; posterior tibial spurs very short...

L. gracilis, Kntsch.

- b. Punctuation of elytra fine, but very distinct; form more oblong; posterior tibial spurs moderately long

L. pellucidus, Foudr.

B.—Length 1-1½ mm.; thorax and elytra often differing in colour.....*L. pratensis*, Panz.

II.—Antennæ and posterior tibiæ very long*L. succineus*, Foudr.

L. OCHROLEUCUS, Marsh. [Ent. Brit. I, p. 202]; Foudr. [Mon. p. 208]; Weise, [Nat. Ins. Deutschl. vi, pp. 1012, 1024]; All. [Mon. p. 405].
Syn.—*albellus*, Duméril (Dict. Nat. I, p. 524).

Oblong-ovate, somewhat depressed, concolorous pale testaceous, except eyes, apices of antennæ, and posterior femora.

Head almost smooth between eyes. Antennæ: long, pale testaceous, with last five or six joints fuscous. Thorax: transverse, bordered, obsoletely punctured, hardly alutaceous, occasionally with slightly darker lateral markings. Elytra: exceedingly finely alutaceous, punctuation rather close, but very weak, sometimes almost obsolete, suture unmarked, apices separately obtusely rounded, somewhat dehiscent. Legs: concolorous with body, except posterior femora, which are entirely, or with apical half, quite black; posterior tibial spurs rather short, but longer than in *L. gracilis*; first anterior tarsal joint very slightly enlarged in ♂. Underside slightly darker testaceous. Usually winged. Length, 2-2½ mm.

This species may be at once distinguished from all our other *Longitarsi* by the peculiar whitish-testaceous unicolorous upper surface which contrasts strongly with the very black colour of the posterior femora. Otherwise *L. ochroleucus* much resembles *L. gracilis*, but apart from colour its distinctly longer posterior tibial spurs distinguish it from that insect. Until one of us recently discovered this insect in abundance on *Senecio vulgaris*, and more sparingly on *S. jacobæa* on Tresco, one of the Scilly Islands, the food plant appears to have been entirely unknown to both Continental and British authorities.*

There are records of its occurrence from various widely separated localities throughout the kingdom, some of which should perhaps be received with caution. Although sometimes locally abundant, it can hardly be considered a generally common species.

L. GRACILIS, Kutsch. [Wien. Monat. VIII, p. 275]; Weise [Nat. Ins. Deutschl. VI, pp. 973, 1024].

Oblong-ovate, somewhat depressed, concolorous testaceous, very similar to *L. ochroleucus*, but rather more brightly testaceous and without the black femora of that species.

Head varying in colour from ferruginous to pitchy, almost smooth between eyes. Antennæ: moderately long, testaceous, with last five or six joints fuscous. Thorax: transverse, bordered, exceedingly finely alutaceous, punctuation very weak, often quite obsolete. Elytra: usually very slightly paler in colour than thorax, hardly visibly alutaceous, with punctuation irregular and very weak, but close; suture sometimes slightly reddish; apices separately rounded, and bearing a few white cilia on external apical margins. Legs: concolorous with body; posterior femora hardly darker; posterior tibial spurs very short and blunt; first anterior tarsal joint slightly enlarged in ♂. Usually winged, but occasionally semi-apterous. Length, 1½-2 mm.

As we have previously pointed out, large specimens of this species may be mistaken for small *L. jacobææ*, as both occur on the same plant, but *L. gracilis* may generally be distinguished by its more parallel-sided form and weaker punctuation. Its almost concolorous posterior femora and shorter tibial spurs separate it from *L. ochroleucus*, and its oblong instead of ovoid shape, and relatively shorter antennæ, from *L. succineus*. More closely perhaps it resembles *L. pellucidus* but that species has the elytra much more distinctly and remotely punctured and is not usually taken on *Senecio*.

* Thus Bedel: "On ignore absolument quelle peut être la plante nourricière de cet insecte" (Col. Bass. Seine, V, p. 313).

Food plant.—Bedel states that this species feeds on *Tussilago farfara*, but in this country it certainly lives upon *Senecio jacobæa*, and its distribution is general throughout the kingdom.

Vars.—*poweri*, All. [L'Abeille, III, pp. 302, 408, 1866]. This form differs from the type in having the thorax rather more rufescent and the suture strongly marked in black, so that superficially it might appear to belong to Sect. IV, and its occurrence on the same plant as that on which *L. senecionis* is found has been the cause of much confusion. The var. *poweri* indeed very much resembles that species, and can only be distinguished from it by its distinctly weaker punctuation both of thorax and elytra, lighter posterior femora, and shorter tibial spurs.

It is found rarely with the normal form, and intermediate examples with the suture more or less distinctly darkened also occur.

nigrithorax, Heikertinger. This is a form with thorax as well as suture pitchy. It appears to be an extreme variety of *poweri*, and although we have not seen British specimens, may well occur in this country.

(To be concluded.)

ON IMPOSSIBLE SPECIFIC NAMES.

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

A short reply to Mr. Busck seems called for; but there are so many misconceptions and so much logical inaccuracy in his article that I fear I cannot pretend to treat it thoroughly.

(1) Mr. Busck's main position is the singular one that nonsense-names in small quantity (his own) are quite nice, but in large quantity (Mr. Kearfott's) are deplorable. How can any logical distinction be made here? Mr. Busck calls an insect *kana*, and it is "acceptable"; Mr. Kearfott wishes to call one *bana*; would Mr. Busck object because *kana* holds the field, or would he permit him? If he adopts the latter course, and Mr. Kearfott then proposes to call another *dana*, why draw any line there? Can he say "We allow you one absurdity, but two would be monstrous"? My position on the other hand is clear; any nonsensical specific name is non-existent.

(2) He immediately proceeds to stultify his own position by the further contention that all these deplorable names should notwithstanding be allowed to stand, in ridiculous homage to the priority-

fetish. Then how can any one in future be prevented from perpetrating similar or worse atrocities? On the contrary, a precedent would have been established, and every illiterate species-monger might quote it in his own justification. My position is again logical; as these names are null and void, others are needed.

(3) Mr. Busck "is not sure I am correct" in regarding arbitrary words as more difficult to remember; but as in the middle of the following page he roundly abuses these very words for their sameness and lack of distinctiveness (which is exactly my contention, expressed in other terms), he must have become convinced meanwhile.

(4) He argues that my names must be equally nonsensical with Mr. Kearfott's, since I have not seen the insects. This is a good example of the confusion of thought which characterises his whole communication; in this instance he is passing from one signification of the word "sense," viz. "meaning," to another, viz. "reasonableness," without knowing it. If ten Latin adjectives are selected at random as names for insects, they will still have sense, as opposed to ten arbitrary names for which no meaning can be suggested, and which are therefore nonsense. As for my names being necessarily inappropriate, it is extraordinary that it should not have occurred to him that I read the descriptions; the fact is so, however, and my names were in all instances chosen to be appropriate; indeed I also possess some of the species, and in at least one case (*Eucosma argyraulæ*, which I took myself in a prairie near Akron, Colorado, on September 11th, 1883), more specimens than Mr. Kearfott himself examined. The name *amanda*, which he quotes, refers of course to appearance, and has also another bearing which hardly seems to have struck him; to object to it on the ground that it might possibly be inappropriate in an agricultural sense is merely captious. He also quotes such names as *cratægana*, Hübner, and asks whether I would change this, erroneously assuming that the name implies that the insect feeds on *Cratægus*, whereas it merely implies association without specifying its nature; but granting that it is inappropriate (probably it is not), it would certainly be just as easy to remember as one taken from an appropriate food-plant. All names taken from plants are undesirable, and so are all taken from places, as they are likely to give false impressions; so also are all taken from personal names, as introducing uncouth forms (this applies also to place-names); the use of such names argues great poverty of imagination, but they present no difficulty on the score of memory.

(5) Mr. Busek states that "nonsense-names originated in England, and hundreds of such names are now in common use." Reference to my original article will show that I am discussing "specific names in *Micro-Lepidoptera*," the groups intended by that term being the *Tortricina*, *Tineina*, *Micropterygina*, and the plume-moths. I have catalogued the whole of the species in these groups, and am aware of no instance; the statement is undoubtedly erroneous. I cannot answer for other groups of insects or animals, but with those I am not concerned. Neither am I dealing with generic names, some of which have undoubtedly been arbitrarily compounded by Walker; the useful convention which forbids the duplication of a generic name in Zoology creates an entirely different position with regard to these, and I am not discussing them. I stated my subject clearly, and prefer to keep to the point.

(6) Finally, Mr. Busek expresses doubt that any systematist will adopt my views. I decline to be terrified by this prediction. I am no believer in the application of democratical methods to science; whatever this generation may decide, the next may reverse; I shall continue therefore to advocate what seems to me consonant with reason and logic, whether I am supported or alone. But I may say that communications of approval have reached me from every quarter of the globe, not excepting the United States of America; and I should particularly like to mention that I have received a most kind and friendly letter from Mr. Kearfott himself, who has endured my criticisms with the greatest good-temper and courtesy, which I highly appreciate.

Thornhanger, Marlborough, Wilts.:

October 3rd, 1912.

THANASIMUS RUFIPES, BRAHM: A BEETLE NEW TO BRITAIN.

BY PROF. T. HUDSON BEARE, B.Sc., F.R.S.E., F.E.S.

Our summer holidays were again spent this year at Nethy Bridge, and I found on arrival that a considerable amount of felling work had been going on, with the consequence that there was an abundance of fir tops lying about in the woods. Fortunately at that period we were having the only spell of real summer weather we were to be blessed with this season, so I spent several days in the woods, beating these fir tops, chiefly with the object of securing a series of *Magdalis duplicata*, Germ., in which I was quite successful—of course many

other species tumbled into the net, usually common things, and were at once ejected. On July 15th, I saw two specimens of *Thanasimus* in the net, and was just on the point of turning them out when, fortunately, certain differences in their appearance attracted my attention, and the insects were bottled. Upon killing and mounting these two specimens, I saw at once that while one of them was the well-known *T. formicarius*, L., the other was an insect which differed in certain important characters from that species; but, having no books with me except Canon Fowler's "Coleoptera of the British Islands," the matter had to be left over for final determination until our return home. I, however, carefully bottled after this every *Thanasimus* I beat out of the fir tops, and eventually secured five—the last was taken on August 6th, by which date these cut tops had become too dry for any further collecting.

On reaching home I soon found these insects agreed in all respects with the description of *T. rufipes*, Brahm, given by Thomson in his "Skandinaviens Coleoptera," Vol. VI, p. 224, and by the other authorities I consulted. Herr Reitter in the "Fauna Germanica," Vol. III, gives on plate III an excellent illustration of this species.

T. rufipes differs from *T. formicarius* by its smaller size and the much finer and less dense punctuation of the head and thorax; in addition there are certain important colour differences—the whole of the breast of *formicarius* is black, while in *rufipes* only the metasternum is black (by an unfortunate slip Reitter says the breast of *formicarius* is "entirely red," he evidently meant to write "entirely black"); in *rufipes* the antennæ and legs are yellowish or reddish, in *formicarius* they are normally black; in *formicarius* the elytra, with the exception of a narrow red band at their base, are black, and the black portion is crossed by two transverse bands of white pubescence; in *rufipes* the basal red band is much wider, and in the type form the basal white transverse band crosses this red portion and not the black portion of the elytra—there is, however, a var., *femorialis*, Zett., in which the white bands are arranged as they are in *formicarius*.

I was stimulated to overhaul my boxes of duplicates of captures at Nethy Bridge in 1910 and 1911. In the latter year we did not go to our summer quarters till August, apparently too late for *Thanasimus*; in 1910, I found from my diary I took one specimen of a *Thanasimus*, on July 9th, and, on examining the box of duplicates, I found it was *rufipes*. I paid no attention to it at the time, thinking naturally it

was only *formicarius*, and have never looked at it since then till now. The species is apparently rare on the Continent, in central and northern regions, though it is also recorded from Spain.

10, Regent Terrace, Edinburgh:

September 24th, 1912.

BRADYCELLUS SHARPI, SP. NOV.

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

Knowing that I was working at the British *Carabidæ*, Dr. Sharp suggested to me some time ago that the *Bradycellus distinctus* of British collections was not the true *distinctus*, Dej., and that it was an undescribed species. He at the same time pointed out to me some marked differences between it and its allies, *B. verbasci*, Duft., and *B. harpalinus*, Dej. Capt. Deville has since kindly lent me a specimen of *B. distinctus*, Dej., which is a very different insect from the beetle we have so long known under that name. It therefore becomes necessary to describe the latter form, and I have much pleasure in naming it after its discoverer.

Apterous; pitchy red or pitchy, suture often somewhat lighter, antennæ and legs red; thorax strongly contracted behind, slightly sinuate before hind angles, which are sharp, but rather obtuse; elytra considerably rounded at sides, scutellary stria very short, 3rd interstice with a pore at the hinder third. L. 4—5 mm.

B. harpalinus and *B. verbasci* are winged; they have the hind angles of the thorax much more obtuse, and the scutellary stria longer. *B. distinctus* has no pore at the hinder third of the 3rd interstice. Capt. Deville has specimens of *B. sharpi* from France.

Bradfield, Berks:

October 7th, 1912.

FURTHER ADDITIONS TO THE LIST OF SCILLY COLEOPTERA.

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

The following list of 94 additions to the records of Scillonian beetles is almost entirely the result of a week's collecting on the island of Tresco last June. By far the rarest species now recorded is *Oxytelus piceus*, L., of which a specimen was taken by one of us in April, 1908,

but not immediately recognised. Other interesting species are *Myrmecopora brevipes*, Butler, from under stones deeply buried in the sand; *Orthoperus atomarius*, Heer, several in garden refuse; *Enicmus histrio*, J. and T., with the last; *Longitarsus ochroleucus*, Marsh., abundant on the sandhills on *Senecio vulgaris*; and *Apion sedi*, Germ., common on *Sedum acre*.

Of the 15 additions mentioned by Mr. K. G. Blair in the last January number of this Magazine (p. 11), we may point out that *Homalota melanaria* has been already recorded by Mr. Champion (Ent. Mo. Mag., 1897, p. 218, as *H. sordida*), and *Quedius impressus* by Dr. Joy (*ibid.*, 1908, p. 177, as *Q. cinctus*).

The total number of species now recorded from Scilly is 438.

Badister bipustulatus, F., *Acupalpus dorsalis*, F., *A. luridus*, Dej., *Bradycellus verbasci*, Duft., *Harpalus honestus*, Duft., *Amphigynus piccus*, Marsh., *Hydroporus erythrocephalus*, L., *Copelatus agilis*, F., *Enochrus bicolor*, Pk., *Helochares lividus*, Forst., *Helophorus rugosus*, Ol., *H. griseus*, Hbst., *Cyclonotum orbiculare*, F., *Cercyon hæmorrhoidalis*, F., *C. pygmæus*, Ill., *C. analis*, Pk., *Cryptopleurum atomarium*, Ol., *Alcochara brevipennis*, Gr., *Drusilla canaliculata*, F., *Homalota longicornis*, Gr., *Myrmecopora brevipes*, Butler, *Autalia rivularis*, Gr., *Hypocyclus læviusculus*, Mann., *Tachyporus formosus*, Matth., *T. tersus*, Er., *Habrocerus capillaricornis*, Gr., *Quedius rufipes*, Gr., *Q. semivæneus*, Steph., *Ocytus brunneipes*, F., *Philonthus unbratilis*, Gr., *P. sordidus*, Gr., *P. concinnus*, Gr., *P. longicornis*, Steph., *P. discoideus*, Gr., *P. ventralis*, Gr., *Gabrieus nigrifolius*, Gr., *G. pennatus*, Sharp, *Leplacinus batychnus*, Gyll., *Stilicis orbiculatus*, Pk., *Lithocharis ochracea*, Gr., *Stenus similis*, Hbst., *Oxytelus piceus*, L., *O. inustus*, Gr., *O. nitidulus*, Gr., *O. tetracaratus*, Bl., *Trogophlæus corticinus*, Gr., *T. pusillus*, Gr., *Megarthus sinuaticollis*, Lac., *Psclaphus heisei*, Hbst., *Trichopteryx scricans*, Heer, *T. bovina*, Mots., *Nephanes titan*, Newm., *Orthoperus atomarius*, Heer, *Coccinella 10-punctata*, L., *Micropeplus margaritæ*, Duv., *Brachypterus urticæ*, F., *Cercus rufilabris*, Latr., *Epuræ æstiva*, L., *Pria dulcamaræ*, Scop., *Meligethes æneus*, F., *M. erythropus*, Gyll., *Monotoma picipes*, Hbst., *M. longicollis*, Gyll., *Anommatus 12-striatus*, Müll., *Enicmus minutus*, L., *E. histrio*, Joy and Tomlin, *Corticaria pubescens*, Gyll., *C. crenulata*, Gyll., *Cryptophagus pilosus*, Gyll., *C. pallidus*, Sturm, *Atomaria linearis*, Steph., *Aphodius hæmorrhoidalis*, L., *Lacon murinus*, L., *Athous hæmorrhoidalis*, F., *Cyphon pallidulus*, Boh., *Longitarsus pusillus*, Gyll., *L. ochroleucus*, Marsh., *L. lævis*, Duft., *Phyllotreta nodicornis*, Marsh., *P. nigripes*, F., *Crepidodera smaragdina*, Foudr., *Rhinosimus planirostris*, F., *Anthicus floralis*, L., *Apion confluens*, Kirby, *A. striatum*, Kirby, *A. sedi*, Germ., *Sitones tibialis*, Hbst., *Hypera trilincata*, Marsh., *H. plantaginis*, De G., *Bagous limosus*, Gyll., *Cionus blattariæ*, F., *Ceuthorrhynchus rugulosus*, Hbst., *Calandra granaria*, L., *Hylastinus obscurus*, Marsh.

October 14th, 1912.

DESCRIPTION OF THE LARVA OF *LUPERINA GUENÉEII*, DBL.

BY GEO. T. PORRITT, F.L.S.

On July 9th last I received from Mr. Arthur Murray, of St. Anne's-on-Sea, a larva and a pupa of *Luperina guenéeii*, the former of which was so far full fed that I do not know that it ate anything at all after I received it. Next day I described both as follows:—

The larva is about an inch long, plump, tapering a little at the extremities, cylindrical, but with deep wrinkles at the segmental divisions, and shallower wrinkles on the segments themselves, which give it a very uneven appearance. The head has the lobes full and rounded and is narrower than the second segment. The anal plate is evenly rounded, and has a peculiar semicircular depression; skin glossy. Its maggoty appearance and small legs clearly indicate it as an underground feeder. Ground colour above and below a dirty whitish-yellow; head pale yellowish-brown, with the mandibles brownish-black, and the lobes at the sides of the mandibles brownish; immediately above the brown on the lobes, on each side, are three black spots, and there are two more of these black spots on each side the division of the lobes, the back of the lobes being faintly freckled with wainscot-brown. The alimentary canal shows through the skin as the dorsal line, but there are no subdorsal or spiracular lines; spiracles black and conspicuous. Frontal plate of the same colour as the rest of the larva, but the ridges on the anal plate formed by the depressions are darker, as are also the tips of the legs and prolegs. Altogether it is a very unattractive looking creature.

It feeds on the roots of the sea-wheat, *Triticum junceum*.

The pupa is smooth and of the usual noctua shape, a trifle slender, bright brown, the bases of the abdominal divisions rather widely dull black, the eye-pieces and the two points at the tip of the abdomen also blackish; the front part of each abdominal segment is roughly shagreened.

From the pupa a nice moth emerged on August 7th, and from the larva a still finer specimen on August 29th.

Elm Lea, Dalton, Huddersfield:

October 11th, 1912.

THE CAUSE OF "HUMMING IN THE AIR."

BY CLAUDE MORLEY, F.Z.S.

Some years ago my interest was considerably aroused by a discussion respecting the origin of a sibilant humming, well known to every observer of Nature with ears to hear, more or less throughout the summer season. I was so familiar with the sound from my youth up that it was somewhat startling to discover that I had no notion

whence it proceeded; and this augmented the interest with which I followed the suggestions respecting its cause put forth by others. That general natural history weekly, the defunct "Country Side," was just the organ for thrashing out the subject, for it appealed alike to all lovers of Nature, and to no class deeply. There (1909, p. 87) Lady M. S. Jenkyns states that while walking across a field on May 31st, the noise was very distinct, and thought by her companion to be caused by a swarm of bees; by the trees it was weaker, and at one end of the field quite faint. "We looked about for flies, but could not see half a dozen. We agreed it was like the noise of bees in a lime tree, only there was no lime tree and we could not see any bees." W. M. Bunce of Ascot quotes (*l.c.* p. 135) Gilbert White's very accurate account of the humming: "There is a natural occurrence to be met with upon the highest part of our down in hot summer days, which always amuses me much, without giving me any satisfaction with respect to the cause of it; and that is, a loud audible humming of bees in the air, though not one insect is to be seen. The sound is to be heard the whole common through. Any person would suppose that a large swarm of bees was in motion and playing about (he should have added, 'at some distance') over his head. This noise was heard last week on June 28th." And the same correspondent testifies (*l.c.* p. 231) that he himself subsequently several times heard, while crossing Ascot Heath during hot weather in August, "a loud humming high in the air, but although I repeatedly looked up quickly, I could see nothing to account for the sound." Other causes were suggested, such as bluebottles, by Lady Jenkyns at Farley Hill in a beech, at 4.30 p.m. in early September (*l.c.* p. 294); great numbers of humble bees and wasps, while gathering honeydew from beech aphids [doubtless *Phyllaphis fagi*, Linn.] near Inveraray (*l.c.* p. 343); R. B. Sedgwick "found it was caused by numerous small humble bees, many of which I found dead beneath the tree,"—but these, being dead, could not attest to their humming properties—(*l.c.* p. 311). Doubtless this phenomenon is vulgarly ascribed to bees, presumably *Apis mellifica*; for this is taken as a granted and well known fact by a hay-maker at *l.c.* p. 151, who, in the open field, remarks, "Listen to them bees, Sir; they're overhead, Sir." But it is not among the habits of any bees to congregate and buzz invisibly overhead in an open field. Nor will the ingenuous suggestion (*l.c.* p. 134) that it emanates from the drumming of a snipe, account for this continuous hum!

To finish with popular hypotheses, the Editor (*l.c.*) somewhat tentatively "thinks" that if those who hear the noise would look up quickly they would catch sight of a little cloud of "minute flies"; but this seems only a reiteration of Fred Barraclough of Barnsley, who (at p. 120) had already tracked the humming to "a swarm of small black insects or gnats with greyish wings a few inches above my head, like may-flies hovering. On standing up they rose up in the air and were very soon invisible." Here the matter ended at "small black insects or gnats" hovering in the air, doubtless somewhat in the manner of *Culex detritus* described by Haliday (Ent. Mag. 1833, p. 151), and Douglas (Ent. Mo. Mag. 1895, p. 239); that the latter was describing the gyrations of *Culex* and not *Chironomus* is obvious, for he distinctly states that at rest the hind legs were elevated, whereas in *Chironomus* it is the front legs which do not cling.

Insects are the only creatures known to me that hum in the air, consequently it was incumbent upon entomologists to discover an explanation; and this I have been seeking an opportunity of doing for four years. The problem for long seemed insoluble. Often the peculiar humming was heard, usually during the comparatively windless hush before dusk, though this may be because other sounds are then less apparent; but never was there the least indication of swarming insects. About 9 p.m. on 12th of last July (one of the hottest days this year), with a maximum temperature of 85 and minimum of 61), the sound was very prominent about the front lawn, but a diligent search failed of result. The place is surrounded by trees, and the air at that time was practically still. Then I strolled round the house and found the tennis court swept by a slightly gusty S.W. air of wind; here the humming was even more audible and, glancing up, I was rejoiced to see companies of insects dancing in the air. As the gusts struck them they descended and always rose to the height of invisibility during the frequent lulls, the humming rising and falling in exact ratio to the insects proximity. Here at last were the elusive hummers in visible form; I netted a couple of dozen of them and packed them off to Mr. F. W. Edwards, who kindly tells me they are Chironomids of two species in equal numbers, *Tanyptus varius*, Fab., and *Chironomus dorsalis*, Mg.; adding that the only reference to Chironomidæ producing sound, known to him, is in Williston's Manual of North American Diptera: "Over meadows, in the Rocky Mountains, the writer has seen them rise at nightfall in the most incredible numbers, producing noise like that of a distant waterfall, and audible for a considerable distance." With

these Chironomids I took, doubtless accidentally, single *Borborus longipennis*, Hal., and *Scaptomyza graminum*, Flh. Shipley and Wilson dealt with the stridulatory organs of *Anopheles* in Trans. Royal Soc. Edinb. 1902, p. 367; but those of *Chironomus* seem much less understood, and they are probably possessed only by the male, though, unlike the ærial dancers of *Culices*, both sexes occurred in the present instance.

Monk Soham House, Suffolk:

July 24th, 1912.

The sound seems to be confined to unusually hot weather, as is testified by several of the above records. At 7.45, a little before dusk on 7th August, a damp and cool evening (temp. 55°), several companies of gnats were seen flying over the moat here; we listened attentively, but they made no sound whatever. A sweep through one (only) of these well separated companies produced males of both *Tanyptus varius* and *Chironomus dorsalis*.

August 9th, 1912.

Psylliodes luteola, Müll., in the Oxford district.—Of this rare and distinct Halticid, which has apparently not been met with in Britain for many years, I have taken a good series at Kirtlington, Oxon, between September 16th and October 10th; my friend Mr. J. Collins having a short time previously found it rarely near Enslow Bridge in the same county. The majority of my specimens were obtained by sweeping very dusty and unsuggestive roadside grass, and a few taken in a wood-path in Kirtlington Park, where the herbage was of a much more varied character, also appeared to come off dry grass only; so that I am at present unable to refer the insect to any more definite food-plant in this locality. On the Continent, Mr. G. C. Champion has taken *P. luteola* in plenty on willows at Larche, Basses-Alpes, but this tree does not grow within a long distance of the places where my specimens were found.—JAMES J. WALKER, Oxford: October 18th, 1912.

Species of Longitarsus on Senecio vulgaris, L.—Having recently been devoting a good deal of attention to the food-plants of *Longitarsi*, it may be interesting to record that I have taken the following species more or less abundantly on groundsel (*Senecio vulgaris*, L.) in Herefordshire:—*L. suturellus*, Dufts., *L. atricillus*, L., *L. melanocephalus* var. *kutscherae*, Rye, *L. ochroleucus*, Marsh., *L. jacobææ*, Wat., *L. gracilis*, Kuts., and *L. succineus*, Foudr.

Last June I found *L. ochroleucus* swarming on *S. vulgaris* on the island of Tresco, Scilly Isles, and counted as many as 50 specimens on one small plant.—J. R. LE B. TOMLIN, "Lakefoot," Reading: October 14th, 1912.

A distinction between Anoplus plantaris, Næz., and A. roboris, Suffr.—Though the relative size and food-plants of these two weevils as a rule make discrimination fairly easy, it may be useful to point out a positive character which I have not seen mentioned in the text books. This is to be found in the thorax, which is alutaceous between the punctures in the case of *A. roboris*, but smooth in *A. plantaris*.—J. R. LE B. TOMLIN: October 14th, 1912.

Note on the prosternal structure, &c., of Dorcatoma flavicornis, F., and D. chrysomelina, Sturm.—I have recently had occasion to examine the prosternum of these two species, and as the differential characters to be found in this portion of the under surface do not appear to have been mentioned in our British literature, it is worth while calling attention to the subject. In both insects the broad, depressed, intercoxal process of the prosternum is produced behind into two long, flattened, erect, horn-like processes, which are probably used to guide the large 3-jointed, folded-up, antennal club into the very deeply excavate mesosternum. In *D. flavicornis* the processes are contiguous at the base, while in *D. chrysomelina* they are widely separated and the depressed intercoxal portion of the prosternum is broadly arcuate-emarginate between them. These processes are altogether wanting in the allied genus *Cænocara*, Thoms., and of course are completely invisible when the insect is in its normal retracted condition. It may be noted also that the antennæ are 9-jointed in *D. flavicornis* and 10-jointed in *D. chrysomelina*. In both genera the number of minute, transverse, closely-articulated joints between the two stout basal ones and the large 3-jointed club varies according to the species, and examples of *D. flavicornis* may be found in which two of these small joints are fused in one antenna and free in the other.—G. C. CHAMPION, Horsell, Woking: October 10th, 1912.

Henoticus serratus, Gyll., and Pentarthrum huttoni, Woll., in London.—I am glad to record the occurrence of two specimens of *Henoticus serratus*, Gyll., which were taken in the offices of Messrs. Mœt and Chandon, Craven House, W.C., on July 25th last. Mr. Ashby, the manager, informs me they were found in the office and not in the vaults. I am indebted to Mr. Newbery for the identification. During the year Mr. Ashby has also sent me four examples of *Pentarthrum huttoni*, Woll., taken under the same conditions, on July 12th and 25th, August 14th, and September 25th.—STANLEY A. BLENKAEN, Norham, Cromwell Road, Beckenham: October 3rd, 1912.

Lathrobium dilutum, Er., at Nethy Bridge.—I took a nice series of this rare species during the latter part of July and the beginning of August, under stones resting on damp sand in dry portions of the bed of the river Nethy, and also found larvæ of the species. It will be remembered that the insect was introduced by Dr. Joy on three specimens taken in the autumn of 1909, at Dalwhinnie (Ent. Mo. Mag., Vol. xlv, p. 268), which lies about thirty miles south of Nethy Bridge.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: September 24th, 1912.

A swarm of Trichoptera.—On September 16th I availed myself of the return of the fine weather to take a stroll in the direction of the Valley of the Test, and perceiving an oak with overhanging branches in the hedge at the side of the road I bethought me to beat them over a butterfly net, when to my surprise I found myself surrounded by a shower of caddis flies, a dozen flying out in response to every blow. These I recognised to be *Limnophilus marmoratus*.—A. H. SWINTON, Braishfield, Romsey, Hants: *September 17th, 1912.*

Notes on a few rare Diptera.—For several years past my friends, Mr. Claude Morley of Monk Soham, and Mr. E. A. Atmore of King's Lynn, have allowed me to see many of the *Diptera* taken by them. Among these are several species which are so rare that I think they should be recorded. Mr. Claude Morley's captures include the following: *Ceroplastus lineatus*, F., Monk Soham (June, 1911). Only one specimen was taken, but several more were observed flying round a decaying willow; *Sciomyza (Heteropteryx) brevipennis*, Zett., Mildenhall (June 8th, 1910); *Tetanops myopina*, Fln., male and female, taken sitting on the bare sand at Skegness (June 7th, 1912); this is a very bleached and strange looking fly which I believe is very rare. Of Mr. Atmore's captures at King's Lynn I would mention *Syntomogaster (Litophasia) fasciata*, Mg., King's Lynn (July, 1910). This specimen is referred to by Mr. Verrall in his notes on "A Hundred new British *Diptera*" (*Ent. Mo. Mag.*, 1912, p. 192). *Scoliocentra villosa*, Mg., King's Lynn (March 23rd, 1910, and July, 1911; *Rhacochlæna toxoneura*, Lw., King's Lynn (June, 1908); *Psila bicolor*, Mg., King's Lynn (July, 1908). These are, I think, all very scarce species.

In Mr. Verrall's list, *Thryptocera minutissima*, Zett., is given in italics as a doubtful British species. On sending to Mr. Wainwright one of the two Guestling specimens on which Dr. Meade introduced *Thryptocera minutissima*, Zett., into our British List, he returned it as *Craspedothrix vivipara*, B. and B. In the summer of 1911 I took on my dressing room window a very similar fly which Mr. Wainwright tells me is *Phytomyptera nitidiventris*, Rond. Both of these have been supposed to be Dr. Meade's *Thryptocera minutissima*, Zett. This name must therefore now be expunged from our lists. Both *Craspedothrix vivipara*, B. and B., and *Phytomyptera nitidiventris*, Rond., were introduced as British by Mr. Wainwright in 1905 (*Ent. Mo. Mag.*, 1905, p. 207), and hence they are not included in Mr. Verrall's list which was published in 1901.—E. N. BLOOMFIELD, Guestling Rectory, Hastings: *September 30th, 1912.*

Odonata in Perthshire.—Between July 16th and 23rd I had the opportunity of collecting in two of my old localities in Perthshire—Rannoch and Glen Lochay. To the former, I had the pleasure of accompanying Prof. Philip P. Calvert, of Philadelphia, who, with Mrs. Calvert, was staying at Kinloch-Rannoch for a few days. We had a fair amount of sunshine but with a cool wind, conditions unfavourable for the flight of dragon-flies, which were far from abundant. As Dr. E. M. Walker points out with regard to the species of *Æschna* found in Ontario (North American Dragon-flies of the genus *Æschna*, p. 33), in cool bright weather these insects take very frequent and prolonged

rests. So it happened that in their most favoured haunts comparatively few dragon-flies were seen. Occasionally a single *Æschna* or *Somatochlora* would appear in the open, flying about in a rapid, nervous fashion, and more rarely it would be joined by another of its kind; but after the usual aerial scuffle, both would vanish over the tree tops, leaving the spot deserted for another long interval. In any case, we were rather too late to find *Æschna cærulea* at its best, and of the few examples seen we secured two or three females. With *Somatochlora arctica* we were even more unfortunate, only one or two being observed. A single teneral ♂ was found, evidently at the place of its emergence, but my efforts to find the exuviae were of no avail. I marked the spot, however, and later Dr. Calvert was successful in finding the cast-off skin which he very generously gave to me. *Æ. juncea* was the most numerous of the larger species. The only other species seen or taken were *Cordulegaster annulatus*, *Libellula quadrimaculata*, *Pyrrhosoma nymphula* and *Enallagma cyathigerum*.

In Glen Lochay it was interesting to find *Æ. cærulea* in the glade where I first took it in 1895. Only one ♀, however, was secured on the present visit. It was resting on a well-known large boulder which has often before yielded me specimens. Here *Æ. juncea* was present in some numbers, with one or two *C. annulatus*.

Dr. Walker in his valuable Monograph alluded to above, refers to the dimorphism existing in the females of *Æschna juncea*, which may be either blue or yellow. In the former (homœochromatic) the colour differs little from that of the ♂, except in the paler shade of blue. In the hetero-chromatic type all the pale markings are green or yellow. He remarks that in a series of British specimens which I sent to him, the postero-dorsal spot varies from blue to greenish yellow, and the lateral spots from pea-green to pale yellowish green. The hetero-chromatic type was well represented in a long series which I took in Carnarvonshire in 1908. It is noteworthy that the nine females taken last July in Rannoch and Glen Lochay are one and all of the blue type.—KENNETH J. MORTON, 13, Blackford Road, Edinburgh: September 28th, 1912.

Review.

“BUTTERFLIES AND MOTHS AT HOME AND ABROAD,” by H. ROWLAND-BROWN, M.A., F.E.S. 4-to. 271 pp. With 21 full-page Plates. T. Fisher Unwin. London: Aldelphi Terrace; Leipsic: Inselstrasse, 20. 1912.

The name of Mr. H. Rowland-Brown, who has long been recognised as one of our foremost collectors and students of Palearctic Butterflies, is a guarantee for the value of the letterpress of this large and handsome volume. Though avowedly of a slight and elementary character, it is written throughout with all the author's well-known lucidity and charm of style, and forms a very pleasant and reliable introduction to the study of the *Lepidoptera*. The general arrangement of the first part of the book includes the subjects of classification, nomenclature, distribution, migration, mimicry, protective resemblance, collecting and preserving—all briefly but clearly treated; while in the second

and larger part, all our British and a few of the more striking European butterflies, with a selection of the representative forms of "Moths," are succinctly dealt with, a large amount of valuable information being condensed into a relatively small space. We notice a few obvious slips, notably on p. 39, where the larvæ of our two well-known "Bee-Hawks," *Hæmorhagia tityus* and *fuciformis*, are bracketed with the "clearwings" and stated to "pass their lives in galleries bored in the living wood until they emerge as perfect insects" (!). Misprints are few and far between, and there is an excellent Index. It is a much less pleasant task to refer to the plates, which, though artistically mounted on brown paper, fall very far short of what illustrations of insects ought to be. A few of the figures, as the two *Papilios* on Plate I, and the highly-coloured design of *Apaturids* on the cover, may be regarded as tolerable, but many are crude in the extreme, and some remind one of nothing else than a child's first attempt to draw a butterfly. For ourselves, we should like to see the letterpress issued separately at a low price, as a very useful introductory work on the subject of which it treats.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, Sept. 12th, 1912.—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. Tonge exhibited an *Ephestia* sp. bred from an Egyptian date. Mr. Moore, galls found on the wild rose. Mr. Gibbs, a *Rumicia phleas* from Woburn, a combination of ab. *radiata* and ab. *cæruleopunctata*. Captain Cardew, an *Apatura iris* with much fulvous shading on the fore-wings and apex of hind-wings, a series of *Eupithecia subfulvata* bred from Northumberland, and living larvæ of *Acidalia immutata*. Mr. Curwen, a large summer form of *Pieris napi* with rays evanescent, *Polyommatus icarus* ab. *semi-arcuata*, *Agriades coridon* with aberrant markings on the undersides, and an *Argynnis niobe* var. *eris* with an extremely deep green ground on the undersides of the hind-wings. Dr. T. A. Chapman, specimens of *Agriades alexius* and of *Polyommatus icarus* ab. *icarinus*, and gave a detailed account of the former species which Freyer put forward in 1858. Mr. Tonge reported *Leucania albipuncta* at sugar at Deal, and specimens of *Polia chi* at Winslow in Bucks. Mr. Sich read his Report as delegate to the International Congress of Entomology at Oxford in early August.

Thursday, September 26th, 1912.—The President in the Chair.

Dr. Chapman exhibited varieties of "blues" taken in the French Alps this year where several species were of unusually large size, they included *Polyommatus icarus* resembling *P. escheri*, *Agriades thetis* ab. *punctifera*, a possible hybrid between *P. damon* and *A. coridon*, &c. Mr. Colthrup, long series of *Pachygastris trifolii* from Romney and Eastbourne, the former showing much variation, especially in the males; specimens of *Satyrus semele* with the eye-spot in the anal angle of the hind wings absent, an unusually large example of *Colias edusa* ab. *helice*, &c. Mr. Newman, a long bred series of *Papilio machaon*,

of fine size mostly, but only showing trivial variation in size and position of the discoidal spots, in amount of blue in the hind wings, in the breadth and depth of colour of the transverse bands, &c. Mr. Hugh Main, a beetle, *Caryoborus nucleorum*, bred by him from the Coquilla nut previously exhibited with the larva inside by Mr. Joy. Mr. J. P. Barrett, the larvæ of *Cebrio gigas* (?), a Coleopteron occurring somewhat freely in his son's garden in Messina, doing injury to his potatoes; a short series of *Lycena arion* from Cornwall, *Egeria muscæformis* and *Dianthæcia luteago* var. *ficklini* from the same county, and a huge earthen cocoon of *Manduca atropos*. Mr. Tonge, a fragment of slate from Cornwall containing a fossil, in appearance very much resembling an Orthopteron. Mr. Curwen, a very varied series of *Brenthis pales* from Switzerland. Mr. Blenkarn, the rare Coleopteron, *Henoticus serratus*, taken in the offices of Messrs. Moët & Chandon, Northumberland Avenue, and a series of bred *Porthesia chrysothæa* from Sandown, including two with bright golden, instead of the usual rich brown, tufts. Mr. Lucas, a living female of the rare Orthopteron, *Metrioptera roeselii*. Mr. Turner, for Rev. C. R. N. Burrows, a beautiful series of *Celastrina argiolus* bred from larvæ taken on Portugal laurel, notable for their large size and brilliant coloration, approaching the American form *pseudargiolus*.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 2nd, 1912.*—
Rev. F. D. MORICE, President, in the Chair.

Miss Lily Huie, Hollywood, Colinton Road, Edinburgh, was elected a Fellow of the Society.

The death was announced of the Hon. Fellow, Prof. L. Ganglbauer, of Vienna, and also of Messrs. R. Shelford, M.A., F.Z.S., E. A. Fitch, F.L.S., and G. H. Grosvenor, M.A.

Dr. Nicholson showed three specimens of *Adalia obliterata*, L., ab. *sublineata*, Weise, an aberration not as yet recorded from Britain; these were taken on Box Hill. Mr. G. T. Porritt, various forms of the variety *nigrosparsata*, together with the type specimen of var. *nigra* of *Abraxas grossulariata*.* Commander J. J. Walker, series of the following rare species of British Coleoptera, recently taken in the Oxford district: *Lathrobium pallidum*, Nordm., *Apion annulipes*, Wenek., ♂ and ♀, and *Psylliodes luteola*, Müll.; also a specimen of the so-called "Insect-catching grass" (*Cenchrus australis*) from Cairns, N. Queensland, with several Coleoptera, belonging to various genera, adhering to the spinous awns. Mr. R. M. Prideaux a beautiful aberration of *Pyramcis cardui*, closely resembling one figured by Newman. Mr. C. J. Gahan a small series of *Phronimia superba*, Melichar, a dimorphic species of Homoptera of the subfamily *Flatinae*, taken by Dr. A. C. Parsons, in Northern Nigeria; he said that Dr. Parsons' observations on this species were a strong confirmation of the account given by Prof. J. W. Gregory of a nearly related East African species in his book "The Great Rift Valley." He passed round a copy of the plate on which that species had been represented, showing the green insects at the top

* All bred from Huddersfield wild larvæ this year.

of the stem and the pink ones below. Mr. W. A. Lamborn a series of twelve *Homoptera* of the genus *Flata*, all taken feeding on one plant, 70 miles E. of Lagos, on December 1st, 1911. The insects were dimorphic, and he stated that the pink and green forms were mixed as they rested on the plant. Prof. Poulton an apparently uninjured example of *Euchelia jacobææ* given him by Mr. Roland Trimen, F.R.S. The moth was flying slowly at midday in his garden at Woking, when a robin captured it on the wing and flew with it behind a bush. After about three minutes the bird flew away, and Mr. Trimen found the moth lying upon the ground. Dr. T. A. Chapman several unusual forms of some common "Blues" taken this year in the Valley of the Isère and at Courmayeur. He said that the "Blues" of this region are generally large and more than usually variable; and that it is also the headquarters in W. Europe of *Agriades alexius*, Fr. Mr. Donisthorpe exhibited a number of ♂♂ of *Ponera coarctata* which he had swept at Box Hill, and remarked that no one living appeared to have taken ♂♂ in Britain. Also ♂♂, ♀♀, and ♀♀ of *Formicoxenus nitidulus*, taken in a nest of *Formica rufa* at Weybridge. Also ♂♂, ♀♀, and ♀♀ of *Leptothorax tubero-affinis*, a form new to Britain, taken in some numbers in the New Forest by Mr. Crawley and himself in July. Also a ♂, and winged and dealated ♀♀ of *Anergates atratulus*, which had been found in the New Forest in July by Mr. Crawley and himself in the nests of *Tetramorium cæspitum*. Mr. Hy. J. Turner, on behalf of the Rev. C. R. N. Burrows, a long series of bred *Celastrina argiolus*. The larvae had occurred each year for some time past in the garden at Mucking, feeding on Portugal laurel, attacking the flower buds in the early summer. The whole of the specimens were unusually large, and the females had the black border on the fore-wings very considerably developed and of a deep black; many had a strong development of whitey-blue on the basal half of the costal area, and there was a tendency to develop a whitish suffusion in the discal area of the fore-wing. Also a curious colour-print of an "Entomologist" published in 1830 in London, in which the whole of the figure was ingeniously made up of various species of the Insecta, only the face being human. Mr. L. W. Newman, specimens of *Dianthæcia*, bred from North Kent wild larvae, resembling exactly, both in size and coloration, *Dianthæcia capsophila* from the Isle of Man; also for comparison varied series of *D. carpophaga*, a pair of *D. capsophila* and *D. capsincola*. Mr. W. G. Sheldon, a series of *C. hecla*, from the Porsanger Fjord, Arctic Norway, with specimens of the other orange species occurring in Europe for comparison. Mr. W. J. Lucas, a living ♂ of *Labidura riparia* (the Giant Earwig), taken on the shore near Christchurch, Hants. Also a drawing giving the colour of the living insects, and demonstrating how well they are protected by resemblance to the pale sand of the Hampshire coast. Mr. G. T. Bethune-Baker, specimens of *Hepialus pyrenaicus*, a species found not uncommonly on the higher parts of Mount Canigon, with the apterous female; also a fine form of *Lycæna arion*, and a specimen of *Heodes hippothoe* that was at once radiated, obsolescent and asymmetrical. Mr. Douglas Pearson, a drawer of *Rhopalocera* from the Black Forest and the Swiss Alps, including an albinistic specimen of *Erebia lappona*, the large Black Forest form of *Colias palæno*, *Brenthis pales* from Pontresina, with underside hind-wings of a deep purple-red, &c. Mr. J. A. Simes read a note on the egg-laying of *Erebia glacialis*, which

takes place on the underside of a detached slab of rock. The President, a species of *Osmia*, probably *indigotea*, Mor., and its cell, from which it had emerged three and a half years after it had been found beside a little stream at Jericho, in a hollow stem of *Zizyphus spinu-christi*. It is known that *Osmia* spp. will sometimes wait through a year or more before emergence. Mr. C. O. Waterhouse observed that in cases of delayed emergence in bees, it was in the larval, not in the pupal state that they passed the interval, and that the larva was capable of existing thus for years without food. Mr. H. Baker Sly, a very dark example of *Brenthis selene*, having the under-wings clouded with dark brown all over, except for a slightly lighter shaded spot in the middle, and the upper-wings very heavily clouded with dark brown; also a specimen of *Epinephela janira*, one upper-wing having a white blotch at the tip, the under-wing on the same side also having a white streak.

The following papers were read:—“Life History of *Lonchæa chorea*,” by A. E. Cameron, M.A., B.Sc.; communicated by H. S. Leigh, F.E.S. “A few Observations on Miniery,” by W. J. Kaye, F.E.S.

NOTES ON SEMI-APTEROUS FEMALES IN CERTAIN SPECIES OF
LEPIDOPTERA, WITH AN ATTEMPTED EXPLANATION.

BY G. V. HUDSON, F.E.S.

The existence of semi-apterous females in certain species of moths has long been known to Entomologists and has been fully described in many entomological works, but as far as I have been able to ascertain, no attempt has yet been made to explain why the semi-apterous condition has been assumed by the female sex, or in what respects such a condition can benefit the species. Owing to the limited number of foreign works on entomology and the restricted nature of the exotic collections at present available for study in the Dominion, I have been obliged to confine my attention to species inhabiting New Zealand and the British Islands. The circumstances in connection with the occurrence of flightless females in both these regions prove, however, to be strikingly similar, and this fact merits careful consideration when seeking to obtain an explanation of this interesting phenomenon. It is perhaps needless to point out that the loss of the power of flight in one sex, whilst fully retained in the other, is a very remarkable and interesting circumstance, and the present requirements of Natural History demand, not only that a detailed account of the surrounding facts be given, but that a provisional theory at least be set up to account for it. I should perhaps here point out that these semi-apterous females are quite on a different footing to those insects where the power of flight has been lost in both sexes. The general

question of apterous insects has very often been dealt with, and many adequate explanations have been given to account for the loss of flight under the most varied conditions. The present paper, however, is solely concerned with those insects in which the wings of the female are so abbreviated as to render that sex incapable of flight, the male retaining his flying powers quite unimpaired. Before proceeding further it will be desirable to consider the following list of *Lepidoptera* in which the females are semi-apterous.* In addition to general remarks this list gives, as far as is known, the food-plant of the larva of each species as well as its distribution, and the time of the year when the perfect insect appears. In the *Psychidæ*, which are represented in New Zealand by two species, i.e., *Æceticus omnivorus* and *Orophora unicolor*, the females are not only apterous, but have rudimentary legs and are incapable of walking, being in fact mere egg-bags. I have not included these insects in the present paper, as the species here dealt with have the females normally developed.

A. NEW ZEALAND SPECIES.

Metacrias strategica.—Appears middle of November to end of January; food-plant: various generally distributed grasses. Frequents the flat country near Invercargill and has also been taken on the Richardson Range, South Canterbury. The males fly in warm sunny weather only. (Philpott.)

Metacrias erichrysa.—Appears in January; food-plant: *Senecio bellidioides* (Meyrick), a common species. A strictly mountain insect, at present only recorded from the Tableland of Mt. Arthur at elevations of over 4,000 ft. The males fly with great rapidity in the hottest sunshine.

Metacrias huttonii.—Appears in December and January; food-plant: various common grasses. Another strictly alpine species frequenting the mountains around Lake Wakatipu at elevations of about 4,000 ft. The males fly very rapidly in hot sunshine.

Hybernia indocilis.—Appears July to January; food-plant: a common *Leptospermum* (?). According to the late Mr. R. W. Fereday the male is found plentifully at rest on bare ground amongst *Leptospermum* and the female on the stems.

Atomotricha ommatias.—Appears in August and September; food-plant: unknown. Found on fences during cold nights in August and September. The female if touched hops two or three inches. (Philpott and Sunley.)

Brachysara sordida.—Appears in June and July; food-plant: unknown. Found on fences during cold nights in the depth of winter. (Sunley.)

* Twelve British *Timina* with semi-apterous females are not included in my list. The larvæ of all these feed on plants of universal distribution. One species appears in March, four in April, one in May, one in October and November, one in November and December, and four at Midsummer. Detailed habits of these insects are not available to me, but the species stated to appear in midsummer belong to the genera *Fanua* and *Talporia*. They are obscure forms, and their precise habits may not be fully known at present.

Mallobathra scoriota.—Appears early in September (Invercargill); food-plant: unknown. The males of this species were found by Mr. Philpott flying in numbers over ferns in an open space in the forest. A semi-apterous female, evidently referable to this insect, was found at rest on a fern leaf.

Taleporia aphrosticha.—Appears in December; food-plant: unknown. Two males and one semi-apterous female were taken by Mr. Philpott on The Hump, Southland, at an elevation of 3,500 feet above the sea level. It is evidently a mountain insect and therefore subject to winter conditions.

B. BRITISH SPECIES.

Orgyia antiqua.—Appears in August and September; food-plant: most trees and bushes. Flies rapidly in hot sunshine. Is very common in the streets of London. (Stainton.)

Orgyia gonostigma.—Appears in June, second brood in July or August, larva hibernates; food-plant: willow, oak, also beech, elm, hawthorn, sloe and nut. The moths emerge in June, and from their eggs caterpillars result in July. These, feeding up quickly, attain the perfect state in late July or early August. Caterpillars from this second generation usually go into hibernation when quite small, and feed up in the following April and May; in confinement they may, however, get through their metamorphosis and reach the moth state in September or October. Sometimes it happens that a part of the summer brood of caterpillars will feed up straight away and produce moths in August; others, feeding and growing more slowly, assume the winged state in November; whilst a third portion will remain small and go into hibernation. (South.)

Cheimatobia brumata.—Appears November to February; food-plant: apple and other fruit trees. The parent moth deposits her eggs in the months of November or December, frequently on hawthorn or apple; in the early spring as soon as the hedges begin to have a greenish tinge, but before the leaf-buds are fully expanded, these eggs hatch, and the small looping larvæ begin feeding on the young unexpanded leaves, eating a number of holes in them. They are sometimes extremely injurious from their numbers to apple orchards and even to hawthorn hedges. A few years ago I had about fifty yards of a hawthorn hedge eaten perfectly bare by the larvæ of this insect, and the larvæ feeding on the young unexpanded shoots cannot be expelled by shaking or beating. When they attack apple orchards in numbers the entire crop may be lost. About the end of May these small green looping larvæ are full fed, and then descend below the surface of the earth, where they undergo their change to the pupa state. About the middle of November the pupa comes to the surface, and the skin cracking, the moth escapes, and crawling up the hedge or tree stem, proceeds to expand and dry its wings. It is, however, only the male which has developed wings; the female has the wings no larger than when it first emerges from the pupa, and is therefore incapable of flight. On a mild November evening the males may be seen flying along the leafless hedges by hundreds, and if we examine the hedges with a lantern we shall see the subapterous females sitting on the twigs. (Stainton.)

Cheimatobia boreata.—Appears October to December; food-plant: birch. A local species.

Hybernia rupicaprariva.—Appears in January and February; food-plant: hawthorn, sloe, plum, and bilberry. Although generally common, and often abundant, over England, Wales, the south of Scotland, and Ireland, this species hardly ever comes under notice unless hedgerows and hawthorn bushes are examined in January and February by the aid of a lantern after darkness has set in. Then the males and almost wingless females will be found in numbers, sitting at the ends of the twigs. (South.)

Hybernia leucophæaria.—Appears in February; food-plant: oak. The moth rests on tree trunks, fences, etc., and the males may be thus found during the day in February, earlier or later in some seasons; the female is less often obtained on trees and fences, but may be beaten, together with the male, from the dead leaves which remain upon oak and other bushes. (South.)

Hybernia aurantiaria.—Appears October to December; food-plant: oak, birch, blackthorn. The moth is out in the latter part of the year from October, and is best obtained at night when sitting on the twigs of trees or bushes, but a specimen or two may be found on tree trunks, palings, etc., in the daytime. (South.)

Hybernia marginaria.—Appears in March and April; food-plant: oak, birch, hawthorn, sloe, alder, willow. The moth is out in March and April, and after their short evening flight the males may be seen in numbers on hedgerows and the twigs of trees. It is not infrequent at willow catkins, and sometimes is not scarce on palings and tree trunks. The female may occasionally be detected in the crevices of bark on tree trunks, but is more easily obtained on the twigs at night. (South.)

Hybernia defoliaria.—Appears October to December, January, February, March; food-plant: birch, oak and other forest trees, fruit trees, and rose, honeysuckle, etc. Generally abundant during winter months.

Anisopteryx æscularia.—Appears in March; food-plant: hawthorn, sloe, privet, lilac, currant, plum, cherry, rose, oak, hornbeam, etc. The moth is out in spring, and may be found on palings, tree trunks, etc., in the daytime, and more freely flying about or sitting on hedges at night, when the spiderlike wingless female is more frequently obtained. The male is attracted by light and sometimes is not uncommon on gas lamps.

Phigalia pedaria.—Appears usually January—March, sometimes in November and December, also mid-June; food-plant: birch, oak, elm, lime, poplar, willow, hawthorn, sloe, plum, and other fruit trees. The moth may be seen in the daytime on tree trunks, palings, etc., but the female secretes herself in any convenient cranny, and is not easily detected. The male flies at night and comes freely to light. (South.)

Apocheima hispidaria.—Appears in February and March; food-plant: oak, hawthorn, birch, and elm. This moth is found resting on oak trunks or on the grass stems, etc., under or around the trees. The male is attracted by light. (South.)

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The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermoptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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Nyssia lapponaria.—Appears in April and May in Perthshire, Scotland; food-plant: heather, bog myrtle, will also eat birch, sawow, and hawthorn. The moth is very local, frequenting damp places near streams. (South.)

Nyssia zonaria.—Appears in March and April; food-plant: sawow, dandelion, dock, plantain, clover, yarrow, grass, etc. The moth rests by day on or among herbage. The male has been known to fly in the sunshine, but its more usual time of flight is the early evening. (South.)

With the few exceptions shortly to be specified, it will be seen that a striking agreement exists between the New Zealand and the British species in the following respects:—

(1) GENERAL DISTRIBUTION OF THE FOOD-PLANT OF THE LARVA
IN THE REGION WHERE THE INSECT IS FOUND.

There is no exception to this rule, which holds good in every case where the female is semi-apterous and the food-plant is known. It is, in fact, obvious that the semi-apterous state would be absolutely fatal to an insect feeding on a scarce or local plant, as the females would require to travel over extensive areas in order to deposit their eggs. Any advantage which a species might obtain by possessing a semi-apterous female would therefore be wholly neutralized unless its food-plant were very common and generally distributed.

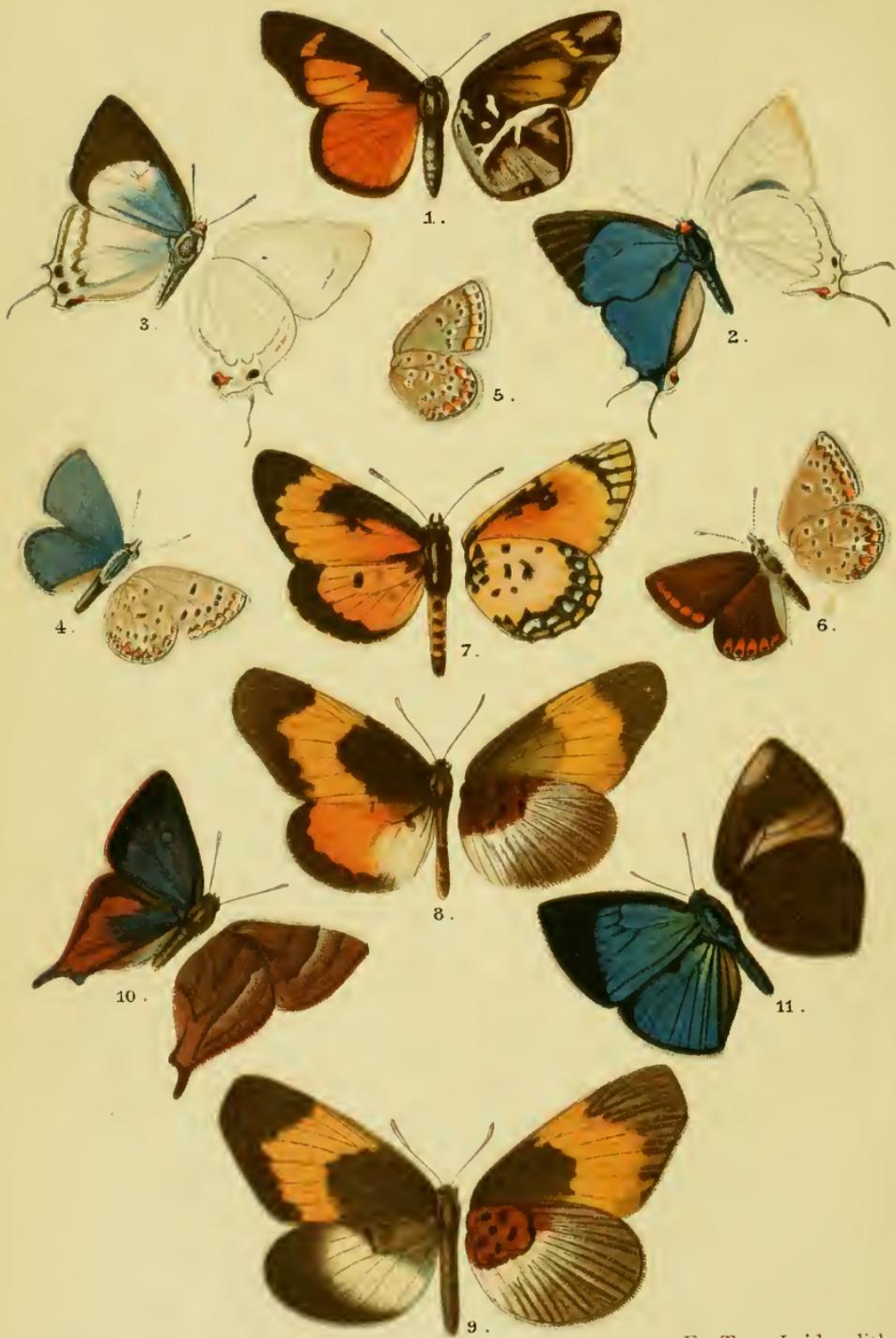
(2) APPEARANCE OF THE IMAGO IN WINTER OR IN
VERY EARLY SPRING.

It is in this circumstance, which is common to all the species having semi-apterous females, with the exception of the three species of *Metacrias* in New Zealand, and the two species of *Orgyia* in the British Isles, that in my opinion an explanation of the semi-apterous condition of the female is to be sought. As a matter of fact, *M. erichrysa* and *M. huttonii* can hardly be regarded as exceptions seeing that they are both strictly alpine insects, and therefore practically exist under winter conditions. One of the species of *Orgyia* also occasionally appears in winter and may therefore have recently changed its habits. The only important exceptions are therefore *M. strategica* (New Zealand) and *O. antiqua* (Britain), and of the latter insect there appears to be a succession of broods throughout the entire summer. As corroborative evidence from insects belonging to an order other than the *Lepidoptera*, two of our common Crane-flies, *Tipula obscuripennis* and *T. heterogama*, occur to me. They have semi-apterous females and appear often in considerable numbers late in April and during May, a period which must, of course, be regarded as winter in New Zealand, I think,

therefore, there can be no doubt that the semi-apterous condition of the female is in some way connected with the appearance of the species during cold periods.

THE EFFECTS OF COLD ON INSECTS.

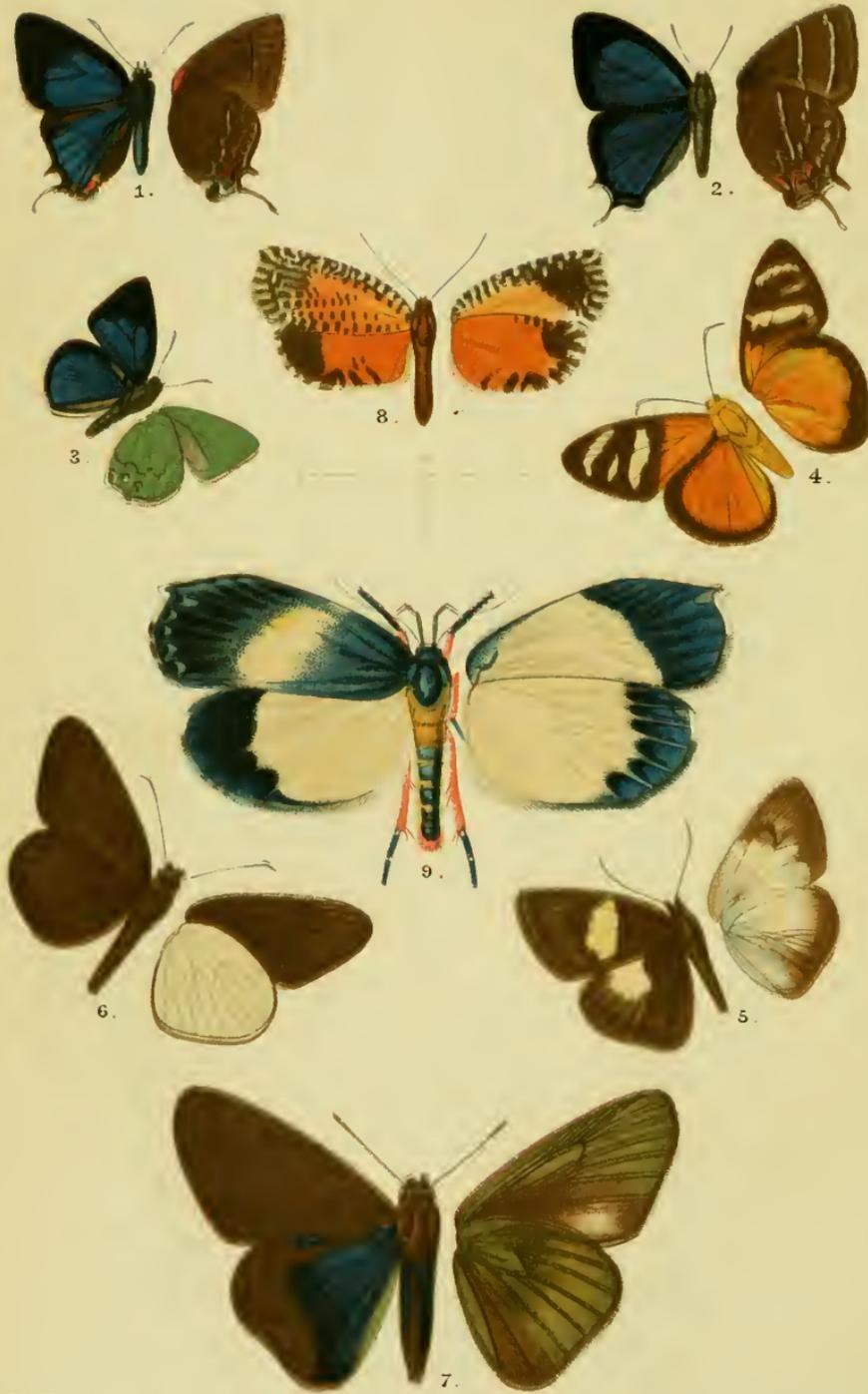
In considering the cause of semi-apterous females amongst moths appearing in winter the effect of cold on insects generally must be briefly considered. A slight lowering of the temperature below the normal produces torpidity, which is first manifested by inability to fly. Further cold results in inability to walk, then in suspended animation, and if prolonged, in death. It is a matter of common observation that species appearing late in the autumn, or in the winter, are frequently so overpowered by the cold as to render them incapable of flight, and it is equally obvious that a female so incapacitated when away from the food-plant of the larva would fail to leave offspring owing to her eggs being deposited in a position where the young larvæ would be unable to obtain food. In this way the loss of the power of flight would be a distinct advantage to the female as she would be prevented from straying from the food-plant, and although semi-torpid through cold, would in most cases have sufficient vitality to deposit her eggs in a fitting spot before death. On the other hand the power of flight would still be necessary for the male in order to enable him to seek out the female and to prevent the evil effects of prolonged interbreeding. The fact that a certain number of males would no doubt perish from the cold without pairing would be of little importance so far as the perpetuation of the species is concerned, especially if the males outnumbered the females, which is known to be the case in many insects. It may, of course, be urged that a far simpler explanation of the semi-apterous condition is to be found in a lowered vitality, induced by cold, preventing the full development of the organs of flight, but the winged condition of the male in my opinion negatives this explanation, and the existence of many winter insects with fully developed wings in both sexes is also against it. Briefly stated then, I believe that the semi-apterous females have been evolved in many insects appearing in the winter or very early spring because such a condition prevents them from leaving the food-plant, and being afterwards unable to return to it to deposit their eggs when overcome by the effects of cold. Such insects would naturally feed on widely distributed plants, as otherwise the semi-apterous condition of the female would be a fatal disadvantage, and this fact is in complete agreement with actual observation. In view of the restricted data on which this theory is based, it is put for-



H. & T. C. Knight, del.

Fa. Trap. Leiden, lith.





H. Knight, del.

Fa. Trap, Leiden, lith.

EXOTIC LEPIDOPTERA.

ward as a provisional hypothesis only, and may, of course, be subject to modification or rejection in the light of more extended investigations.

As a subsidiary advantage the ability possessed by semi-apterous females to secrete themselves in crevices in the bark or in the ground may be mentioned, but I do not consider such an advantage would be commensurate with the loss of flight, and it cannot therefore in my opinion be regarded as the primary cause of the modification.

In conclusion, I should perhaps point out that the extreme abundance of many of the species possessing semi-apterous females indicates that the innovation has proved a most successful one in the struggle for existence, and this is further demonstrated by the fact that almost all the species appear in winter, when the insectivorous birds are often sorely pressed by hunger and in consequence keenly on the alert for insect food.

Hill View, Karori,
Wellington, N. Z.:
August 9th, 1912.

DESCRIPTIONS OF NEW LEPIDOPTERA.

BY HAMILTON H. DRUCE, F.L.S.; HERBERT DRUCE, F.L.S.; AND
T. A. CHAPMAN, M.D., F.Z.S.

(PLATES IX, X.)

LYCÆNIDÆ AND HESPERIIDÆ:

Supplementary Note and Figures (Plate ix, figs. 1-3 and 7-11 ;
Plate x, figs. 1-7).

BY HAMILTON H. DRUCE, F.L.S.

Fam. LYCÆNIDÆ.

Teratoneura isabellæ, Dudgeon, Proc. Ent. Soc. Lond. 1909, p. li.

By the kindness of Mr. G. C. Dudgeon I am able to give a coloured figure of the remarkable insect taken by him in Sierra Leone.

Mr. Dudgeon's type is now in the British Museum.

Mimacræa eltringhami, H. H. Druce, Ann. and Mag. Nat. Hist., series 8, ix, p. 635 (1912).

Mr. Eltringham has drawn my attention to a paper in the "Annalen k.k. Naturhistorischen Hofmuseums, Wien, 1910," by Dr. H. Rebel, wherein is described—p. 413, pl. 14, figs. 9, 10—*Mimacræa paragona*. Dr. Rebel had only the ♀ before him, and a comparison of

the descriptions and figures seems to show considerable differences between the two forms. *M. paragora* has "rather dark reddish-yellow hind wings," whilst *M. eltringhami* has a broad white central band only to these wings. Since the description of *M. eltringhami* was written, we have received another ♂ from Uganda [precise locality not stated] which differs slightly from the type, ♂, by the orange band of the forewing being broader, and the dark terminal border of the hindwing being narrower. It is also much larger, expanding 69 mm.

Fam. HESPERIIDÆ.

Falga theoclea, Hew. [Plate x, fig. 6].

Hesperia theoclea, Hew. Equat. Lep., p. 71, No. 128 (1870),

Falga scydra, H. H. Druce, Ent. Mo. Mag., 2nd series, xxiii, p. 132, (1912).

Since my description was written I have found that the species named by me *F. scydra* is synonymous with *Hesperia theoclea*, Hew., the types being identical. In the "Genera Insectorum," Mons. Mabille has omitted *F. theoclea*, Hew., and *F. sciras*, Godm. [Biol. Centr.-Am., Rhop. ii, p. 610, pl. civ, figs. 5, 6 (1901), from Honduras]. Hewitson's type of *F. theoclea* is in the British Museum, but has not yet been incorporated with the general collection.

Gen. DION.

Dion, Godman, Biol. Centr.-Am., Rhop. ii, p. 592 (1901).

Dion (Hesperia) carmentis, Hew., Equat. Lep., p. 72, No. 131 (1870). *Hab.*: ECUADOR.

The two examples in the Hewitson cabinet, including the type, undoubtedly belong to this genus. They are both ♀ ♀. Mons. Mabille has also omitted this insect from his lists.

MICRO-LEPIDOPTERA.

BY HERBERT DRUCE, F.L.S.

[Plate X, figs. 8, 9.]

LYCÆNIDÆ.

AGRIADES THERSITES, var. GRAVESI: Supplementary Note.

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

[Plate IX, figs. 4-6.]

Mr. Graves' new butterfly, figured in this plate, was described by me on p. 159 of this volume. The description had been written some time before, and these figures belong to that paper. My notice of *A. alexius*, Frr., on p. 127, though appearing before the description of *A. gravesi*, was written considerably later. It was my examination of

A. gravesi that initiated, by exploration in various directions, the recognition of *A. alexius*, Frr., as a "good" species. I have communicated a fairly full account of the latter to the Entomological Society of London, but the paper will probably not appear for some time after this does. I now recognise *A. gravesi* as a local form of *A. alexius*. I wish pointedly to call attention to an error in Fig. 4, for which, of course, I am to blame. I ought to have noticed it before the plate was completed. A fairly constant character of *A. alexius* is to have the costal orange spot of the hind wing advanced basally as is shown in figs. 5 and 6. In *P. icarus* there is only occasionally some approach to this, nor is a similar disposition of this spot present in any other of our European "blues."

In fig. 4 this spot is shown as it usually is found in *P. icarus*. At the time I passed the drawings I had not identified *A. gravesi* with *A. alexius*; had not in fact recognised the latter species, so this error escaped me. The insects are now at South Kensington, and on going there to find out whether this specimen was in truth as figured, I found that this angle of the wing was broken and bent under, so that though the first spot was really as figured in figs. 5 and 6 in this specimen, the second spot, and of course on the left side only, appeared to be the first, and neither Mr. E. C. Knight, whose drawings leave nothing to be desired in other respects, nor myself were deceived on this point. It is not perhaps generous on my part to remark that this ought to have made the orange spots fewer by one, but by careful count Mr. Knight saw to it that the normal number was shown. That the error was not corrected in time is clearly my fault, and my only (poor) excuse is that it was not till long after the drawing was made that I knew this was a point of importance.

On this particular point Freyer's original figures are not unsatisfactory. I now, however, recognise that *thersites* (Bdv. Ms.), Cantener (1834), is identical with *alexius*, Frr.; the name *thersites* therefore displaces, by priority, *alexius* which I have so far used. Cantener's figure and note are decisive. The only other figure I have seen that is almost certainly] that of *A. thersites* is Herrich-Schaeffer's fig. 246, which he notes as a variety of *icarus* and for which he gives no locality.

I feel some regret that *A. gravesi*, which led to the discovery that *A. thersites* was truly of specific rank, should have to sink as a variety of that species. As a var. of *A. thersites*, *gravesi* would be characterised as the form occurring in Syria, fairly uniform in size and tone of colour, and not very different from the type (as far as can be judged from the figures).

EXPLANATION OF PLATE IX.

- Fig. 1.—*Teratoneura isabellæ*, Dudgeon, Proc. Ent. Soc. Lond. 1909, p. li.
Sierra Leone.
- „ 2.—*Epamera gazei*, H. H. Druce, ♂, Nigeria. *Anteà*, p. 129.
- „ 3.— „ „ „ ♀, „ „ „
- „ 4.—*Agriades thersites*, v. *gravesi*, Chapman, ♂, Lebanon. *Anteà*, p. 159.
- „ 5.— „ „ „ ♂ „ „ „
- „ 6.— „ „ „ ♀ „ „ „
- „ 7.—*Sheffieldia neavei*, H. H. Druce, ♂, German E. Africa. *Anteà*, p. 128.
- „ 8.—*Mimacræa eltringhami*, H. H. Druce, ♂, Ann. and Mag. Nat. Hist.,
ser. 8, vol. ix, p. 635, 1912.
- „ 9.—*Mimacræa eltringhami*, H. H. Druce, ♀, *Id.*
- „ 10.—*Thecla fassli*, H. H. Druce, ♂, Colombia. *Anteà*, p. 130.
- „ 11.— „ *orocana*, „ ♂, S. Peru. *Anteà*, p. 130.

EXPLANATION OF PLATE X.

- Fig. 1.—*Thecla lophis*, H. H. Druce, ♂, Colombia. *Anteà*, p. 131.
- „ 2.— „ *maraches*, „ ♂, E. Ecuador. *Anteà*, p. 130.
- „ 3.— „ *opisena*, „ ♂, Colombia. „ p. 131.
- „ 4.—*Entheus ninyas*, „ ♂, Bolivia. „ „
- „ 5.—*Potamanax pisates*, „ ♂, E. Ecuador. „ „
- „ 6.—*Falga scydra* [= *theoclea*, Hew.], H. H. Druce, ♂, E. Ecuador.
Anteà, p. 132.
- „ 7.—*Dion turnada*, H. H. Druce, ♀, E. Ecuador. *Anteà*, p. 132.
- „ 8.—*Atteria docima*, H. Druce, ♂, Peru. *Anteà*, p. 133.
- „ 9.—*Ommatothelxis grandis*, H. Druce, ♀, W. Africa. *Anteà*, p. 133.

The figure of *Atteria docima* is slightly enlarged; the others are natural size.

NOTES ON THE BRITISH SPECIES OF *LONGITARSUS*, LATR.

(A GENUS OF *COLEOPTERA*).

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND W. E. SHARP, F.E.S.

(Concluded from page 253).

L. PELLUCIDUS, Foudr. [Mon. p. 210]; Weise [Nat. Ins. Deutschl. VI,
pp. 1007, 1024].

Syn. *testaceus*, All. [Mon. p. 127].

Oblong-ovate, somewhat depressed, more parallel-sided than other members of this section; in colour and size very similar to the preceding. Head ferruginous, exceedingly delicately alutaceous between eyes. Antennæ: rather long, testaceous, with last four or five joints infusate. Thorax: transverse, bordered, testaceous, punctuation fine and remote, but much more distinct than in *L. gracilis*, almost smooth between punctures. Elytra: concolorous with thorax, hardly alutaceous, with punctuation fine and remote, but very distinct and regular, stronger than that of thorax, the punctures sometimes having the

appearance of being very delicately dotted in a darker rufescent colour something after the manner of *L. lycopi*; suture scarcely marked; apices slightly separately rounded and bearing, like *L. gracilis*, a few white cilia on external margins. Legs: concolorous with body, posterior femora very slightly darker; posterior tibial spurs short; first anterior tarsal joint very slightly enlarged in ♂. Underside ferruginous. Winged in such specimens as we have been able to examine. Length, $1\frac{1}{2}$ -2 mm.

L. pellucidus bears considerable resemblance both to *L. gracilis* and *L. succineus*. From the latter its more oblong form and relatively shorter antennæ will separate it, and from both, in fact from all the other species in this section, it may be distinguished by its very distinct and regular but fine punctuation.

Food plant. - The food plant of this insect appears somewhat doubtful. Fowler states it to be *Trifolium* and *Mentha*, but we have no confirmation of either of these. Bedel, quoting Weise, says: "sur le *Convolvulus arvensis*," and one of us has certainly swept it off ground covered with this plant near Malvern. It is by no means a common species, and appears in but few collections. Its range in this country is unknown, but what records we have are all from the southern half of England.

L. PRATENSIS,* Panz. [Faun. Germ. p. 21, No. 16, 1794]; Weise [Nat. Ins. Deutschl. VI, p. 995] (*nec* Allard).

Syn. *pusillus*, Gyll. [Ins. Suec. III, p. 549, 1813]; Foudr. [Mon. p. 184]; Brit. Colls.

reichei, All. [Mon. p. 366].

medicaginis, All. [Mon. p. 366].

With the exception of *L. lycopi*, the smallest of our testaceous species. Of a rather short oval, acuminate and convex. Head pitchy black, very finely alutaceous between eyes. Antennæ: moderate in length, ferruginous, with last five or six joints fuscous. Thorax: transverse, finely bordered, ferruginous, distinctly alutaceous, with punctuation scattered and feeble, sometimes almost obsolete. Elytra: testaceous, usually with the granular appearance to which allusion has been made in the case of previous species, often clouded or lined with fuscous, sutural line sometimes faintly and narrowly rufescent, plainly alutaceous, punctuation weak and irregular, but distinct and considerably stronger than that of thorax; apices separately obtusely rounded. Legs: testaceous, posterior femora darker, often fuscous, but never pitchy or black; posterior tibial spurs very short; first anterior tarsal joint very plainly enlarged in ♂. Underside brown. Winged, or, more often, semi-apterous. Length, $1-1\frac{1}{2}$ mm.

* Apart from the priority which Panzer's name has over that of Gyllenhal, we have thought it desirable in this as in other cases of nomenclature, to conform to the latest European list, even although our doing so may involve the displacement of names more familiar to British collectors.

Its small size easily separates this species from all our other *Longitarsi* of a similar colour, except *L. lycopi*, and from this its much weaker punctuation distinguishes it. Large specimens might possibly be confused with *L. succineus*, but in the latter the antennæ are distinctly longer, and whereas the elytral punctuation of *L. pratensis* if weak is distinct, in *L. succineus* it is almost obsolete.

Food plants. Fowler, probably following Allard, gives the food of this species as *Thymus*. We have, however, never found it associated with that plant. On the contrary, Mr. H. Britten has traced it with some certainty to Plantain, and in this he is in accordance with Bedel, who states "sur les *Plantago*." Mr. H. C. Dollman has found it associated with *Helianthemum*, and Mr. P. de la Garde has taken it abundantly on *Ulex*, so that like many other members of the genus it is probably polyphagous. It can generally be swept off low mixed herbage, appears to be common throughout the kingdom, and occurs more abundantly in August and September than earlier in the summer.

Vars.—*collaris*, Steph. This form only differs from the normal in having the thorax wholly or partly infusate, and the posterior femora darker. It occurs not uncommonly with the more usual form, and it may be of interest to record that one of us has taken several specimens of it from moss on the extreme summit of Snowdon where no other *Longitarsus* occurred.

reichei, All. [Mon. p. 366], is given by Bedel and the last European catalogue (1906) as a synonym of *L. pratensis*. The suggestion that this form was equivalent to *collaris*, Steph., was first made by Bedel (Col. Bass. Seine, V, p. 191), but later in the same work (*ibid.* p. 311), withdrawn.* Allard himself likens it to a small *L. ochroleucus*, nor is there any suggestion in his description that it has any affinity with *L. pusillus*, Gyll. (*pratensis*, Panz.). Bedel, however, may have seen the types, but as the exponents of the 'species' in British collections are merely large examples of *L. pratensis*, and as it has been on the continent universally sunk as a synonym of that insect, we consider it best to delete the name entirely from the British list.

medicaginis, All. This form also was described as a distinct species by Allard [Mon. p. 366], and in this as well as in the case of the preceding, he has been followed by Fowler [Brit. Col. IV, p. 351]. Allard's own description, however, leaves us in no doubt

* "C'est la var. *collaris*, Steph., qui a la pronotum noir (et non le *reichei* comme je l'ai dit)."

but that this is merely another large form of *L. pratensis*, and his inconsistency in the statement of its size has been noted by Fowler. We have not seen the specimens named by Allard for the late Mr. Wollaston on which its claim to a place in the British lists apparently rests, but one of us has recently examined an example sent by Crotch to Mr. Gorham as *medicaginis*, and Mr. Gorham concurs with us in considering it to be *pratensis*. Nor is there anything else that we have seen in British collections, supposed to be this form, which can be said to possess even varietal value in a genus like *Longitarsus*, and we consider therefore that we are justified in adopting the same course with it as with *L. reichei*.

L. succineus, Foudr.⁽¹⁾ [Mon. p. 218, 1859.]

Syns.—*lævis*, All. [Mon. p. 351; Brit. Colls. (*nec.* Duft., teste Bedel) *æruiginosus*, Brit. Colls.]

In shape a rounded oval, convex, acuminate in ♂, with legs and antennæ longer in proportion to its size than in other members of the section, unicolorous pale testaceous. Head ferruginous, almost smooth between eyes. Antennæ: very long, testaceous, with the last four or five joints slightly dusky at apices. Thorax; transverse, bordered, very variable in sculpture, punctuation sometimes fairly distinct or very weakly rugose, sometimes quite obsolete, never strong. Elytra: concolorous with thorax, sometimes with faint indications of darker lineation, punctuation always very feeble and confused, suture sometimes very faintly reddish, apices slightly separately rounded—in fresh specimens the outer edges of the elytra at apex bear a few long white cilia. Legs: testaceous, posterior femora sometimes brownish on the upper surface; posterior tibial spurs short; first joint of anterior tarsi in ♂ not enlarged. Underside ferruginous. Apterous⁽²⁾. Length $1\frac{1}{4}$ – $1\frac{3}{4}$ mm.

This species can be distinguished from *L. pratensis* by its larger average size and more uniform coloration; from *L. gracilis* by its more oval shape; from *L. pellucidus* by its much weaker elytral punctuation; and from them all by its much longer antennæ, which bear only faint traces of the apical infuscation common to all our other species of *Longitarsus* except *L. rubiginosus*.

Food plants.—*L. succineus* appears to be attached to various species of the order *Compositæ*. Allard says it is common on *Chrysanthemums* in gardens, and this statement we are able to confirm from our own experience in Cheshire.

Mr. P. de la Garde has taken the species in abundance on *C. leucanthemum* in Devonshire, and Mr. H. C. Dollman on *Achillea*

(1) See note *anté* in *L. pratensis*.

(2) Weisc mentions a variety, *luctator*, which appears to be a winged form, but we have no record of it from this country, although it probably occurs here.

millefolium in Surrey. Weise gives *Artemisia campestris* as a food plant, and it is sometimes locally common on *Eupatorium cannabinum*. It is one of the most abundant of our species throughout the late summer and autumn, and its range extends throughout the Kingdom.

L. æruginosus was described as a species by Foudras [Mon. p. 203], and although Allard makes his *L. lævis* synonymic with Foudras' *L. æruginosus*, Bedel treats them as distinct species. This author's discrimination, however, does not appear to us to be very convincing, resting as it does on the difference in character of the apical cilia, which are certainly quite easily abraded; and in the comparative length of the antennæ, which differ sexually. Moreover we have had British specimens, discriminated as *L. æruginosus*, returned to us by M. Bedel himself as *L. succineus*. We therefore cannot escape the conclusion that whether the insect described as *L. æruginosus* by Foudras was specifically valid or not, the specimens we take in this country on *Eupatorium* (the food plant of "*L. æruginosus*") or any other composite are all of one species—*L. succineus*, Foudr.

In bringing to a conclusion these imperfect notes on the British species of the genus *Longitarsus*, it may not be irrelevant briefly to dwell on some of the more obvious considerations which a survey of the group as a whole occasions.

Without venturing on any speculation as to the position in the phylogeny of the Halticidæ which *Longitarsus* occupies, from which, if by nothing else, we are precluded by our profound ignorance of the ontogeny of any of its species—our attention is at once arrested by their extreme morphological instability, we might indeed almost say that we appear to have before us a group in nature whose species are still in process of complete differentiation; and we might further surmise that the specific rigidity which we find in other groups might only be attained in this by much closer restrictions as regards food plants and consequent conditions, than we find actually to be the case. That many of the species of the genus are dominant in the zoological sense may be inferred by their general abundance and ubiquity; and that they possess that organic plasticity which enables them to adjust themselves to varying conditions of environment is also evident, and probably the essential factor in such dominance.

A further and very striking proof of this organic plasticity is afforded by the state of their wings.

A position in which not only some members of a genus but also some individuals of a species are winged and some not, cannot of course be regarded as static, and since we may assume with some confidence that all primitive forms of *Coleoptera* were fully winged, and that such species or groups as are now apterous have become so through some process of atrophy, we may reasonably conclude that certain members of *Longitarsus*, if not the genus as a whole, are now in process of passing from a fully winged to a completely apterous condition.

Such being the case, we must necessarily assume that with these insects wings are becoming useless, or at any rate of very subordinate utility to some other organic development with which *within the organism* wing-development competes, for the atrophy of organs not actively injurious, but only useless, difficult if not impossible to explain solely on the accepted principles of natural selection and inheritance, becomes clearer if we assume the necessity for economy in the expenditure of vital energy which the katabolism of the organism demands, and that such necessity would result in an internal competition in the development of separate organs.⁽¹⁾ In this case, then, we would suggest that the very great saltatorial power evinced in *Longitarsus* has been gained, and is perhaps being increased at the expense of the alar power; in other words, that as leaping hypothetically serves the needs of the insect better than flying, wing and wing-muscle cellular determinants have been reduced, so that femora and femoral muscle determinants might be increased.

We must admit that, in the present state of our knowledge of the economy of these insects, we are quite unable to explain why it should be better to jump well than to fly, nor is it any refutation to point to quite other groups such as *Orchestes*, *Scirtes*, or other *Halticidæ*, which both possess saltatorial power and are fully winged. As a matter of fact, as most field Coleopterists know, *Longitarsi* do leap further and with more alacrity than any other beetles, except perhaps *Phyllotretæ*, so much so that their capture is usually considerably more difficult than is that of species possessed of the most ample wing-development. The suggestion might indeed be made that to facilitate escape from enemies,

(1) Apropos of this we venture to quote from a recent text book on biology:—"A strengthened representative item or determinant in the germ-plasm will nourish itself more abundantly than its neighbours. It may get into a permanent upward movement and attain a degree from which there is no falling back. On the other hand a weakened determinant will have less power of attracting nutriment and will tend to go downhill. If it be the determinant of something useful, then the ordinary process of natural selection will eliminate the individual that develops from the impoverished germ-cell; if it be the determinant of something useless, natural selection will not interfere and the determinant will continue getting weaker every generation."—"Evolution," Geddes and Thompson, p. 174.

or removal from a dry or less suitable to a succulent or more suitable food plant, without incurring the risk of involuntary deportation by the wind, the power of extended leaps might be more advantageous than that of flight.

Whether this be so or not, it is at least certain that if the possession of effective wings were in any way essential to the well-being of these insects, we should not now find a large proportion of them deprived of those organs, as, on the other hand, we may be confident that their enormously powerful femoral muscles have not been developed merely to provide their owners with the means of an agreeable and exhilarating form of exercise.

But as we have already remarked, although *Longitarsi* are so abundant, we know little of their economy or life histories. It seems certain that the majority of them hibernate in the perfect form, but whether there are more than two generations in the course of the year, or whether, if so, the summer generation may differ in any respect from that which hibernates, are some of the many points on which we require further information—information which it is for the future to supply, for we can only conclude by the expression of the hope that the superior importance of bionomics to mere systematization in this, as in other groups of *Coleoptera*, will be more adequately recognized by students who are to come than it has been by those who have gone before.

Finally, we must thank the following friends and correspondents who have in the most generous manner communicated specimens or even whole collections, and placed at our disposal information without which the preparation of the foregoing notes would have been impossible:—Capt. St. Claire Deville, Messrs. Bedel, du Buysson, Heikertinger and Weise, Prof. T. Hudson Beare, Com. J. J. Walker, Drs. Sharp and Wallace, and Messrs. E. C. Bedwell, H. Britten, G. A. Brown, G. C. Champion, F. H. Day, H. C. Dollman, H. St. J. Donisthorpe, E. G. Elliman, A. Fergusson, P. de la Garde, P. Harwood, A. Moncreaff, E. A. Newbery, T. L. Thompson, G. B. Walsh, E. A. Waterhouse, and W. West.

SUPPLEMENTARY NOTE ON *LONGITARSUS NIGERRIMUS*, GYLL.

It will be remembered that during the publication of our notes on the British species of *Longitarsus*, Dr. Sharp recorded the occurrence in sphagnum in the New Forest of *L. nigerrimus*, Gyll. [Ent. Mo. Mag., XLVII, p. 257]. That species had been introduced to the British

List by Messrs. Joy and Tomlin [Ent. Mo. Mag., XLIV, p. 104] on specimens taken by Dr. Wallace of Great Grimsby, by sweeping on the coast near that town.

The insect dealt with in our note [Ent. Mo. Mag., XLVII, p. 248], which was in type previous to Dr. Sharp's discovery, was the latter. These two *Longitarsi* are not, however, of the same species, and although the original description of Gyllenhal might be held as applicable to either, the insect taken by Dr. Sharp is undoubtedly that known to Weise and other continental authorities as *L. nigerrimus*, Gyll.

The species, although thus erroneously introduced, will still retain its place in our lists, and the differences between the two are not so great as to necessitate a change from the position assigned, or an alteration in the characters given in our table.

For our detailed description should, however, be substituted the following:—

Ovate, convex, entirely black except anterior and intermediate femora and tarsi which are somewhat fuscous. Antennæ: moderate in length. Thorax: transverse, very finely bordered, very distinctly alutaceous with weak scattered punctuation. Elytra: hardly alutaceous with punctuation strong, close, and confused, apical angles well defined. Spurs of posterior tibiæ long. Length 2 mm.

The true *L. nigerrimus* thus differs from the Lincolnshire insect in being smaller, in having the anterior and intermediate femora fuscous instead of quite black, and, what is much more important as a specific differentiation, in having the posterior tibial spurs very conspicuously longer. There is, however, another and a physiological difference which sunders the two, the habitat of *L. nigerrimus* being very wet sphagnum, while the other species was swept from some plant on the dry sandhills of the coast.

The question thus arises, to what is this coast insect, which is *not L. nigerrimus*, referable? At present we can only say that we are inclined to believe it may prove identical with a *Longitarsus* recently described by Mr. H. C. Dollman under the name of *L. plantagomaritimus* [Ent. Record, 1912, p. 187]. Mr. Dollman took his specimens from *Plantago maritima* near Gravesend, and although we have no evidence as to the exact plant on which Dr. Wallace took his, we know that the locality was littoral. Morphologically such specimens as we have seen of either have much in common.

We feel, however, that more specimens of, at any rate, the Lincolnshire insect should be available before we can express any con-

fidant opinion on this point, and that further investigation and comparison with allied European forms is necessary before we can fully endorse the validity of *L. plantagomaritimus* as a species hitherto undescribed in the European fauna.

November 11th, 1912.

Henoticus germanicus, Reitt., in a London warehouse.—In a note on *H. serratus* by Mr. Blenkarn (*ante*, p. 263), he states that the specimens he mentions were named by me. I am now convinced that I was in error in referring them to *H. serratus*, as they accord quite well with the description of *H. germanicus*, Reitt., given in Reitter's "Fauna Germanica," Vol. III, p. 59, which I append:

Eyes round; thorax broadest behind middle, somewhat more strongly roundly contracted towards the apex than towards base; rust-brown to brown-black, antennæ and legs paler rust-red. Upper side somewhat roughly pubescent with longer and shorter hairs; head and thorax strongly and thickly punctured, elytra strongly but more scantily so, the punctures becoming gradually finer towards apex. Widely spread but scarce everywhere. Length 2—2.3 mm.*H. serratus*, Gyll.

Eyes projecting, short conical; thorax broadest just before base, the sides strongly contracted in a straight line to apex, with also the last fifth strongly contracted up to the base: head and thorax moderately strongly and thickly, elytra more finely, punctured. Unicolorous pale brown-yellow, roughly haired. Length 2 mm.*H. germanicus*, Reitt.

Described from a single specimen from C. blentz.

In the examples taken by Mr. Blenkarn the teeth at the sides of the thorax are much more conspicuous than those of *H. serratus*, and the pubescence is longer and more closely placed. The insect probably feeds on cork. In the same warehouse *Lathridius bergrothi*, *Corticaria fulva*, *Cryptophagus acutangulus*, and other cellar-loving beetles occurred.—E. A. NEWBERY, 13, Oppidans Road, N.W.: November 14th, 1912.

Phyllotreta sinuata, Steph., &c., in Eskdale, Cumberland.—I have found this usually very scarce Halticid in Eskdale during the past two seasons in the latter part of August and the beginning of September. It occurred on turnips in company with *P. undulata*, the latter species being, of course, by far the most abundant. At the same time *P. sinuata* was far from uncommon, and I could have taken as many as I liked on one or two mornings. The species varies considerably, the yellow markings being sometimes reduced, and sometimes divided completely and forming four separate spots. *Plectroscelis concinna* occurred, but very sparingly indeed (only about half-a-dozen specimens), and also a few *Psylliodes cupro-nitens*. Mr. Day informs me that the species has not hitherto been recorded from Cumberland, and it is evidently very local. Eskdale is shut in all round by high fells and mountains, and this may afford some explanation of this fact. I find beetles as a rule scarce in the valley, but last year I took a good series of *Ceuthorrhynchus viduatus* and two *C. euphorbiæ*. *Cryptohypnus dermestoides* was common by the side of the Esk, but owing to

the perpetual rise and fall of this river the banks are very unproductive. The only *Bembidium* I have found is *B. tibiale*. Mr. Day tells me that this is his experience also in these smaller Cumberland rivers. *Nanophyes lythri* was abundant last year on *Lythrum*; this year it is very scarce. I have also found *Cionus pulchellus* and *Hyperaspis reppensis*, and a single specimen of *Quedius nigroæneus* occurred at the entrance of a rabbit burrow.—W. W. FOWLER, Earley Vicarage, Reading: November 12th, 1912.

Liodes (Anisotoma) curta, Fairm., in Ireland.—While stopping at Coolmore, Co. Donegal, in September, I drove across to Mullaghmore in Co. Sligo on the southern side of Donegal Bay, with the object of examining its capacities as a hunting ground for insects. I had the good fortune to pick up a *Liodes* on bent-grass, which proves to be *L. curta*, Fairm., a species not hitherto recorded from Ireland. I unfortunately only got one specimen, the fact being that there were scarcely any insects about, though the day was tolerably fine. I have to thank Dr. Joy for kind help in the determination of this beetle.—W. F. JOHNSON, Poyntzpass, Armagh: November 13th, 1912.

Note on Abraxas grossulariata ab. *nigra*.—With regard to Mr. Porritt's editorial comments appended to my note on this subject in your October issue (Vol. XLVIII, p. 238), I may say that Mr. Beattie's specimen is so absolutely black that when excogitating a varietal name I originally fixed on the word "*pammelæna*" (signifying in Greek "entirely black"), but on second thoughts I concluded that it would not convey much to the ordinary run of entomologists who are not thoroughly well versed in that ancient but somewhat difficult language. I therefore contented myself with the name "*nigra*," which I hope bears its meaning on its surface. I am strongly of opinion that this name of mine, "*nigra*," holds good on the ground of priority, especially as its colour is nearer to total blackness than Mr. Porritt's form, for the only part of it that is not black is its thorax, which is normal. The mere fact of Mr. Newman's specimen having some white on the lower wing bears but little on the question, although, of course, if I had been informed of the fact, I should not have included it, with Mr. Beattie's specimen, under the designation of "*nigra*."—G. H. RAYNOR, Hazeleigh Rectory, Maldon: November 6th, 1912.

[From the foregoing, Mr. Raynor and I are evidently agreed on practically the only point at issue, that the so-called black *varleyata* should not have been included under var. *nigra*. As to the authorship of the name *nigra*, Mr. Raynor is most welcome to it. Now that we know exactly to what form the name applies, it is quite immaterial to whose credit the name stands. I am not ambitious to be a name maker; if I were, I could easily make many out of forms in my own collection!—G. T. PORRITT.]

Notes on British Diptera.—*Mycetophila ornata*, Steph.: In the number of this Magazine for April, 1911, page 93, I called attention to having two specimens of Mycetophilidæ that I felt sure must be the *Mycetophila ornata* figured and described by Stephens; but as this name was not to be found in my list, I asked if any of your readers could enlighten me, without, however, eliciting a reply. This identification is now confirmed by Mr. F. W. Edwards, to whom I

recently showed an example. He says *M. ornata*, Steph. = *M. rufescens*, Zett., but at present there is some doubt as to which author has priority.

Syntemna morosa, Winn. ?—In the March, 1912, number, page 67, I also mentioned the capture of an example supposed to be this species, but on submitting it also to Mr. F. W. Edwards, he has named it *Syntemna alpicola*, Strobl, similar to Mr. Jenkinson's specimen recorded in the same number.—
FREDK. C. ADAMS, 50, Ashley Gardens, S.W.: November 15th, 1912.

Obituaries.

William Rickman Jeffrey.—Another of the old time lepidopterists has passed away in William R. Jeffrey, of Ashford, Kent. Born at Ashford in April, 1836, he died at his native place on October 14th last, having attained the ripe age of over 76 years. His early school days were spent at Croydon, but the year 1848 found him at Folkestone, where he appears to have imbibed the strong liking for natural history which clung to him through life. In 1851 he was apprenticed to Mr. Thomas Nickalls, watchmaker, at Reigate, and which business he adopted as his own after he settled down in his native town of Ashford some years afterwards. Whilst at Reigate, he made the acquaintance of the late Mr. H. T. Stainton; and afterwards, when he removed to Scarborough, where he spent some years, of the late Mr. T. Wilkinson. But it was probably his connection with the late Mr. William Buckler which brought him most prominently into entomological notice, for, with the larvæ of the *Pyræles* especially, he helped Buckler very largely, as the earlier volumes of this journal and "Buckler's Larvæ" testify. And the writer of this notice knows how very proud he always was of his connection with that work. For many years Mr. Jeffrey had been a correspondent of the writer's, but it was not until June, 1899, that he made his personal acquaintance; the occasion being a visit to Wye, in company with Mr. F. J. Hanbury, to collect *Pachetra leucophæa*, &c. Mr. Jeffrey frequently joined us in our sugaring expeditions and walks, and a most genial and instructive companion he proved. We believe he shared with Mr. Sydney Webb the discovery of *Nonagria sparganii* as a British insect; and was also the discoverer of the head-quarters of *Pachetra leucophæa* in Britain. In recent years, on the discovery of the habits of *Ægeria andrenæformis*, he did not rest until he had turned it up in numbers in his own district. His delight was in the study of the early stages of *Lepidoptera*, for he made no collection, generously distributing his specimens when bred among his friends.

Besides entomology he took great interest in astronomy, on which science, with a sympathetic listener, he seemed never to weary of talking. He also took much interest in the lower forms of plant life.

As a member of the Society of Friends, he was laid to rest at the Friends' burial ground at Kennington, near Ashford, on October 16th.—G. T. P.

William Forsell Kirby.—We regret to announce the death of this distinguished Entomologist, in his 69th year, on November 20th. A full notice of his career and work will be given in our next number.

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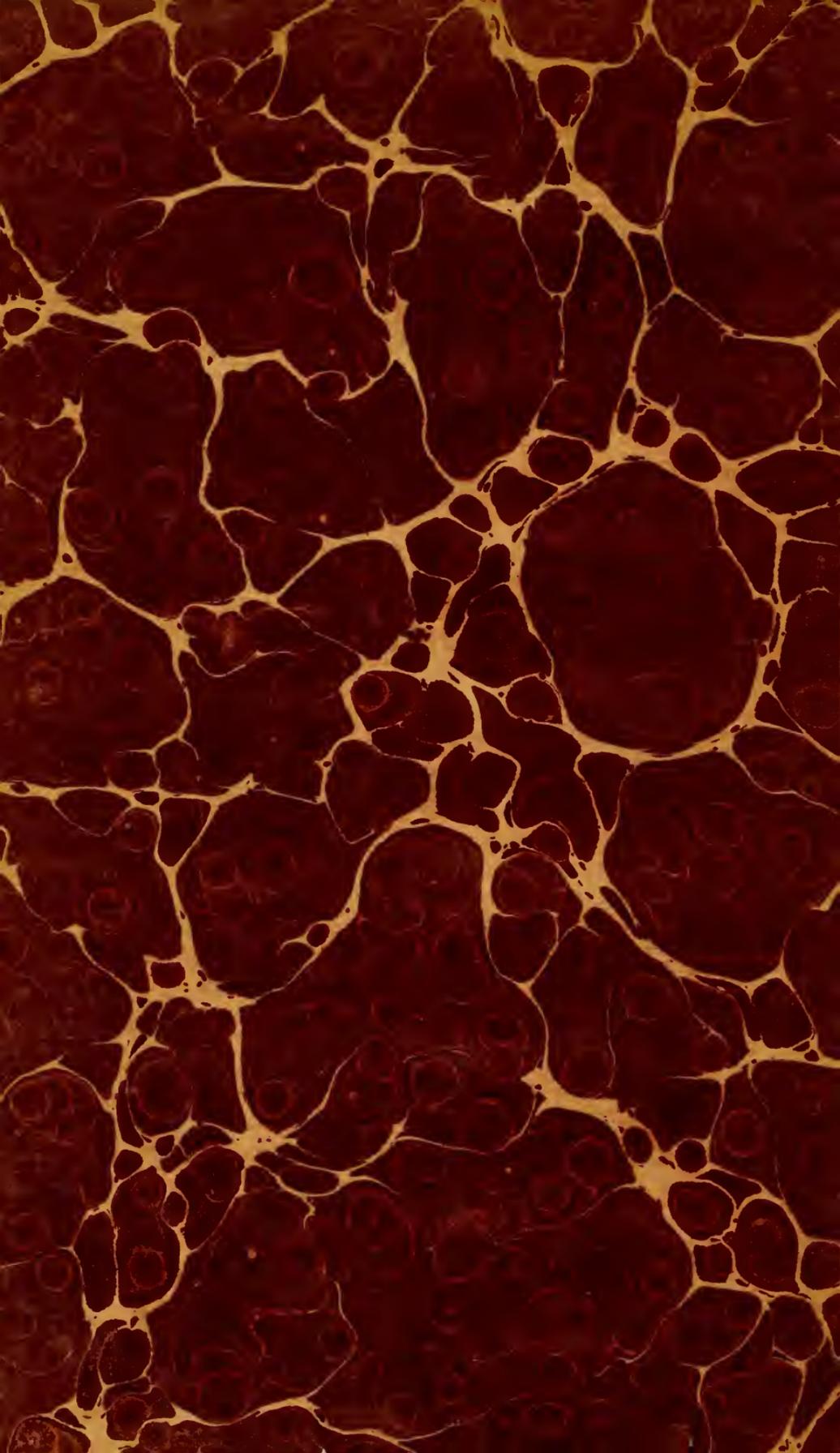
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