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SECOND SERIES—VOL. XV.

[VOL. XL.]

“ Friend after friend departs,
Who has not lost a friend ? ”

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SECOND SERIES—VOL. XV.

[VOLUME XL.]

NOTES ON *EREBIA CHRISTI* AND OTHER *LEPIDOPTERA*,
PRINCIPALLY FROM THE LAQUINTHAL.

BY A. HUGH JONES, F.E.S.

Having decided with my friend Mr. F. C. Lemann, of Plymouth, to visit Switzerland once more, the Laquinthal, the locality for *Erebia christi*, was suggested.

Arriving at Brigue on July 13th, the following day we started for the village of Simplon; nothing of particular interest was noticed *en route*, except the abundance of the usual butterfly life between Brigue and Berisal. We arrived at the village of Simplon at about eight o'clock, and were glad to meet the Rev. George Wheeler, and to hear that he had taken *Erebia christi*. Full of great expectations, we started the following morning for the Laquinthal. On the high road at the entrance of the valley, a known locality for *E. eriphyle*, I secured a beautiful specimen of this butterfly, but we considered it unwise to linger. The path diverges to the right, and about a mile and a half up the valley commences the collecting ground for *E. christi*. The day was fine, and butterflies very numerous, principally *E. ceto*, *mnestra*, *goante*, *A. amathusia* and *euphrosyne*, but *E. christi* was certainly not common. I captured five specimens, and my companions did little, if any, better. The next day we again visited the valley, but I only added three specimens to my number. Although the day was far more perfect than the preceding one, yet there was a marked falling off in the number of butterflies. They had no doubt sought a safe retreat from the bad weather which was about to follow, the atmospheric conditions of change having possibly been conveyed to them.

For the next four days we were practically imprisoned in the Hotel Fletschorn, as it rained continuously.

On July 20th the weather mended, and we started for Berisal. On the road, about two miles from the village of Simplon, a locality already known for *E. christi*, Mr. Lemann took two specimens, but I only noticed *E. epiphron*, var. *cassiope*. On the summit of the Pass there were a few butterflies, notably *Colias phicomone* and *Melitæa aurinia*, var. *merope*. Whilst at Berisal the weather was not fine, and the nights intensely cold for the time of year. In the meadows at the back of the 2nd Refuge, the well known locality for *Lycæna zephyrus*, var. *lycidas*, I took a fair number of ♀s, also one or two ♂s, but these latter were very worn. The walk down to Brigne will be remembered chiefly by the countless numbers of *L. corydon*, they were simply in thousands resting on the muddy roadsides, rising in clouds as they were disturbed by passing objects.

At Sierre we spent several days. At the entrance of the Val d'Anniviers we found a good piece of collecting ground, although somewhat limited in extent; a fine form of *L. arion* occurred here, and close by, in the village of Chippis, *Papilio podalirius* was quite common. Here Mr. Lemann took *Apatura ilia*. *Pieris daplidice* was not uncommon, and a very large and interesting form of *L. argus* we found in the open spaces on the banks of the Rhone. On July 25th we paid a visit to the Pfyw-wald, a locality for *L. meleager*, var. *stevanii*, but were too late for the species; two days later, however, I captured two worn males in the grounds of the Hotel at Sierre.

On our way to Glion we had a day's collecting on the Sepey road, but butterflies were not so abundant as we have usually found them in this well known locality; of *Limenitis sibylla*, which is generally so plentiful, we saw but one specimen.

At Glion the weather was very bad, and during the five days we remained there collecting was almost out of the question.

The following is a list of the species noticed:—

Papilio podalirius.—Chippis, near Sierre, common; *P. machaon*, Laquinthal, Sierre, &c., scarce.

Parnassius apollo.—Simplon, Sepey valley; a few *P. delius* near the summit of Simplon Pass.

Aporia crataegi.—A few, Simplon, Sepey, &c.

Pieris brassicæ and *rapæ*.—Sierre, a few; *P. napi*, var. *bryoniæ*, Laquinthal; *P. daplidice*, 2, Sierre.

Anthocharis belia, var. *simplonia*, and *A. cardamines*, ♀.—Laquinthal.

Leucophasia sinapis.—Simplon, and *ab. erysimi*, Pfyw-wald.

Colias phicomone.—A few, top of the Simplon Pass. *C. hyale*.—At Brigue and elsewhere, but not abundant. (Note.—*C. edusa* was conspicuous by its absence).

Rhodocera rhamni.—Chippis, somewhat common.

Thecla spinis and *ilicis*.—Common locally, Le Sepey Road. *T. quercus*.—Val d'Anniviers.

Polyommatus hippothoë, var. *eurybia*, *P. dorilis*, var. *brunnea*, ♀.—Laquinthal, a very fine form. *P. phlaeas*.—Berisal, scarce.

Lycæna argus.—A fine form, Sierre, common. *L. zephyrus*, var. *lycidas*.—8 ♀, 2 ♂, mends back of 2nd Refuge, Simplon Pass. *L. baton*.—One specimen, Sierre. *L. astrarche*.—Simplon. *L. icarus*, everywhere scarce. *L. escheri*, *L. bellargus*, *L. damon*, *L. corydon*.—All common on the Simplon route near Brigue. *L. hylas*.—Sierre, sparingly. *L. meleager*.—Two ♂, worn, Sierre. *L. donzelii*.—Simplon. *L. argiolus*.—Le Sepey Road. *L. semiargus*.—Common, Laquinthal. *L. minimus*.—Laquinthal, a large form. *L. arion*.—Laquinthal and elsewhere, sparingly.

Apatura iris.—Le Sepey Road. *A. ilia*.—Chippis and Pfyn-wald.

Limnitis camilla.—Sierre, and *L. sibylla*, Le Sepey Road.

Vanessa c-album.—Brigue. *V. polychloros*.—Glion, Sierre, occasionally. *V. urticae*, *V. antiopa*.—four. *V. io*, *V. atalanta*.—Pfyn-wald. *V. cardui*.—larvæ, Sierre.

Melitæa aurinia, var. *merope*.—Top of the Simplon Pass. *M. dilyna* and *M. phæbe*.—Both generally distributed and common. *M. parthenie*, *M. dictynna* and *athalia*.—Laquinthal, not uncommon.

Argynnis paphia, *A. aglaia*, *A. adippe* and *niobe*, var. *eris*.—Generally distributed. *A. latonia*.—Sparingly, Simplon. *A. euphrosyne*, *A. amathusia*.—Laquinthal, not uncommon. *A. dia*.—Glion.

Melanargia galotea.—Brigue, &c.

Erebia epiphron, var. *cassiope*.—Quite scarce. *E. melampus*.—A few, Simplon. *E. eriphyle*.—One specimen near village of Simplon. *E. mnestra*, *E. ceto*, var. *obscura*, *E. tyndarus*, *E. euryale*, *E. goante*.—All common, Laquinthal. *E. lappona*.—Laquinthal, occasionally. *E. aethiops*.—Le Sepey, and *E. ligea*, Glion. *E. gorge*.—Top of Simplon Pass. *E. christi*.—Of this species I took in the Laquinthal eight specimens, one of which was a ♀ (not fine). This appears to be a distinct species. It has a strong resemblance on the upper surface to forms of *E. eriphyle*, and corresponds in size to that species, but the under-side is totally unlike; the species to which it may be considered somewhat allied is *E. epiphron*, var. *cassiope*, which is, however, considerably smaller. The wings are more rounded in *E. christi*, the marginal band on the under-side of the fore-wing is well defined, and the under-side of the hind-wing much darker.

Satyrus alcyone.—Simplon, near Brigue, Sierre, and Le Sepey, common. *S. semcle*.—Simplon. *S. actæa*, var. *cordula*.—Several specimens at Sierre, with four equal sized pupilled eyes on the fore-wing. *S. dryas*.—Males only, Le Sepey.

Pararge mæra, *P. megæra*, and *ægeria*.—Sierre, &c.

Aphantopus hyperanthus.—Sierre.

Epinephle jurтина, *E. lycaon*, *E. pamphilus*, *E. satyrion*.—Pfyn-wald.

Spilothyrus lavateræ.—Simplon and Le Sepey, occasionally.

Syrichthus earthami, *S. alveus*.—Pfyn-wald, Laquinthal. *S. suo*.—Sierre.

Thanaos tages.—Sierre, sparingly.

Hesperia thaumas, *lineola*, and *sylvanus*.—Sierre.

Sphinx convolvuli.—One specimen at flowers of tobacco plant, Sierre. *Porthea auriflua*.—At light, Aigle. *Agrotis candelarum*.—Top of Simplon Pass. *A. decora*.—Berisal. *Heliothis dipsacea*.—Sierre, several. *Odezia tibiale*.—Laquinthal. *O. atrata*.—Simplon. *Ortholitha limitata*, *O. bipunctaria*.—Simplon. *Phasiane clathrata*.—Laquinthal. *Cleogene lutearia*.—Laquinthal. *Acidalia flavenlaria*.—Laquinthal. *Larentia salicata*.—Laquinthal. *Zygæna ephialtes*.—Sierre. *Psodos alpinata*.—Flying over road near Berisal. *Crambus pinetellus*.—Laquinthal. *Pyrausta octomaculalis*.—Laquinthal.

Shrublands, Eltham, Kent :

October 5th, 1903.

ASTEIA ELEGANTULA, ZETT., A SPECIES OF DIPTERA NEW TO BRITAIN.

BY F. JENKINSON, M.A., HON. D. LITT. (OXON).

I spent the latter half of August on the banks of the Findhorn, and worked as assiduously as the weather permitted. The wind and rain made all methods of collecting difficult. What insects I got by sweeping were often damaged; I accordingly thought myself very fortunate when I saw at the bottom of my net, uninjured, what looked like a delicate orange *Pipunculus* with outspread wings; it proved to be a species of *Asteia*. Schiner's note (p. 281) sent me to Zetterstedt, Dipt. Scand., vi, 2575, 3, and I found I had taken *Asteia elegantula*. The specimen has since been seen by Mr. Collin, who confirms my identification. It is a fine large species, the alar expanse being 7 mm.; and the thorax, instead of being unicolorous black, is (to quote Zetterstedt) "ferrugineo-flavus, dorso vittis subquattuor abbreviatis fuscis obsoletis;" though what subquattuor means I do not know. The date of my capture was September 1st.

10, Brookside, Cambridge :

November 17th, 1903.

PTINUS TECTUS, BOIELDIEU, RECENTLY INTRODUCED INTO BRITAIN.

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

I am informed by Mr. C. O. Waterhouse that the specimens of the unknown *Ptinus* exhibited at the meeting of the Entomological Society of London on October 7th are to be referred to the above species.

P. tectus was described by Boieldieu in Ann. Soc. Ent. Fr.,

1856, p. 652. Mr. Waterhouse was of opinion that the insects could not be this species, because in the description the scutellum was said to be covered with white pubescence, which was not the case in the insects taken lately in London, and again he could not satisfy himself in regard to the agreement of our insect with another part of the description, viz, "quatre dents obtuses, peu saillantes, les extérieures un peu plus élevées." However, I have just heard from Mr. Waterhouse that Mr. Newbery has found one example with a whitish scutellum, and M. Bedel has seen this and other specimens, and is convinced that they are all *P. tectus*, and since he possesses the type this settles the matter. It may be stated that M. Reitter and M. Pic both concur in this decision.

My six specimens, which were exhibited for me by Mr. Champion at the October meeting, were taken in a granary at Strood, belonging to Messrs. Horsnail and Reynold, on May 11th, 1901. The insects were common, running about on empty sacks in a long shed, in which there were stored a great amount of beans in sacks, which I understood came from the Levant. At the time I mistook them for *Niptus crenatus*, which they superficially resemble, and they were, owing to my move to Edinburgh (preparations for which were then going on), laid aside and forgotten.

Quite recently Mr. C. J. C. Pool, of Edmonton, took the species in numbers in a baker's shop in North London, and as he recognised that it was not any insect in our list, he is entitled to the credit of having drawn attention to the occurrence of this introduced beetle.

Of course the *Ptinus* is introduced, but as it occurred as far back as 1901, and again lately in numbers in two widely separated localities, it is probably establishing itself, and is therefore entitled to entry into our list under the heading of introduced species.* Many of its congeners, such as *Niptus hololeucus* and *N. crenatus*, and others have undoubtedly been introduced by commerce; they have, however, so thoroughly established themselves, that they are now included in our list as a matter of course, and it appears to me that *Ptinus tectus* will probably sooner or later share the same position. Mr. Waterhouse thinks its original home is Tasmania.

10, Regent Terrace, Edinburgh :
December 11th, 1903.

[*As a new List of British *Coleoptera* is in course of preparation, I cannot avoid expressing the hope that no heading of "introduced species" will appear therein unless under a time limit. The advisability of this is indicated by our correspondent's concluding remarks.—R. MCLACHLAN.]

EUCONNUS MÄKLINI, MANNERH.: A NEW BRITISH BEETLE.

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

While looking over a few beetles lately which I had not been able to identify, and had put aside to examine more carefully on some future occasion, I came across a small *Euconnus* very distinct from our other British species. As I could find nothing like it in the British Museum collection, I sent it to Herr Reitter, who has kindly returned it to me as *Euconnus mäklini*, Mannerh. I see by the label that I took it here in July, 1901, but, unfortunately, I have no recollection of the exact circumstances of its capture. On the continent it is taken among fallen leaves, and I think I probably obtained my specimen by sifting decaying leaves, a method which I often employ, and by which I have on several occasions come across *Seydmænidae*. The only book in which I have had an opportunity of looking up the species is C. G. Thomson's "Skandinaviens Coleoptera." My specimen answers perfectly to his description of *Napochus claviger*, which is synonymous with *Seydmænus mäklini*, Mannerh., Bull. Mosc., 1844. *Napochus* is now only regarded as a sub-genus.

The following is a detailed description of the species:—

Of much the same shape as *E. hirticollis*, Ill., obscure piceous, shining, very sparingly and finely pubescent, except base of head and thorax, which have rather sparing but coarse bristly pubescence; antennæ, palpi, and legs testaceous; head slightly narrower than thorax, orbicular; antennæ scarcely longer than head and thorax, robust, and with a very abrupt four-jointed club, first joint ovate, second joint as long as broad, 4—7 small, equal, and transverse, 8—10 much larger, very transverse, and of about equal breadth, the last joint about as broad as tenth, sub-orbicular; thorax as long as broad, narrowed in front, with a deep impression at the base, slightly interrupted in the middle and bounded on each side by an elevated fold; elytra about three times as long as thorax, widened in middle, with shoulders not prominent, base deeply foveolate, with a strong humeral fold. Long., 1 mm.

E. mäklini may easily be distinguished from the other British representatives of the genus with a four-jointed antennal club by its much shorter and stouter antennæ, and abrupt club; the latter is rather gradual in the other species, and the joints are not transverse; it is also a somewhat smaller insect.

Bradfield, Berkshire:

November 11th, 1903.

SPANISH AND MOORISH *MICRO-LEPIDOPTERA*.

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

(Continued from Vol. xiv, p. 293).

443.—BRACHODES, Gn.

n. syn. = § ATYCHIA, Ltr. (1809), Stgr. & Rbl. (*nec* Ochs., 1808).Type, *Brachodes vernetella*, Gn. (Gn. 1845).

BRACHODES, Gn., Ann. Soc. Ent. Fr., XIV (2 s. III) 311 (1845): Ind. Meth. 73 (1845).

4464. *Brachodes vernetella*, Gn.4464+a. *vernetella*, Gn., + *vernetella*, Gn.*Brachodes vernetella*, Gn., Ann. Soc. Ent. Fr., XIV (2 s. III) 311 (1845): Ind. Meth. 73 (1845). [Omitted by Stgr. & Rbl.]4464+b. *vernetella*, Gn., + *cassandrella*, Stgr.*Myelois cassandrella*, Stgr., Stett. Ent. Ztg., XX, 224, No. 30 (1859). *Atychia cassandrella*, Stgr. & Rbl., Cat. Lp. Pal., II, 231, No. 4464 (1901).

A series of the typical *vernetella*, Gn. (a species omitted by Staudinger and Rebel), taken at Thuès-les-Bains, near Vernet, are very uniform in their colouring, and individually are very difficult to separate from some specimens taken at Granada which agree with *cassandrella*, as named by Staudinger from Murcia, and two specimens in the Zeller Collection, one labelled "*Atychia 'cassandrella'* Kraatz lit. 1.72," the other "*Atychia mediterranea* Sievers 1857." This latter specimen has been compared with the type of *vernetella*, and agrees with it.

A long series from Granada shows a distinct tendency to paler colouring, and conforms generally to the type of *cassandrella*, but this can only be regarded as a local variation from *vernetella*, not entitled to more distinction than that of a geographical subspecies. The synonymy would therefore stand as above.

I am of strong opinion that *læta*, Stgr., is quite distinct. The females of both *vernetella* and *cassandrella* are as yet undescribed, and unfortunately I met with neither.

4737: 1.—ADELA COLLICOLELLA, *sp. n.*

Antenna ♂ more than twice the length of the forewings; purplish fuscous, fading to pale cinereous on the outer half, the basal joint bronzy golden; ♀ not thickened, extending one-third the wing-length beyond it. *Palpi* short, projecting, moderately hairy; black. *Head* black, mixed with some yellow scales, especially in front. *Thorax* shining bronzy. *Forewings* shining bronzy metallic, with a golden sheen, the costa tinged with purple throughout, except on the narrow, straight whitish fascia a little beyond the middle of the wing, this is bordered with deep purple on both sides, the outer edge of the purple diffused, not defined, it also tends to fail on the outer side of the white fascia immediately above the dorsum; cilia golden bronzy. *Exp. al.*, ♂, 11—12.5, ♀, 13—14.5 mm. *Hindwings* rich purple; cilia bronzy grey. *Abdomen* black; ♀ with the ovipositor long and much

extruded, the anal segment dirty whitish. *Legs* black, tarsi slightly bronzy, with three white spots, spurs whitish.

Type, ♂ (87179); ♀ (87180). Mus. Wlsm.

Hab.: MOROCCO—Tangier, 28.II.—7.III.1902. Twenty-six specimens.

The average size of the ♀ is slightly larger than that of the ♂, but there is no difference in colouring. This specimen appears to be nearest to *paludicolella*, Z., from which it differs in the constant and entire absence of a costal spot beyond the transverse fascia, in the more brilliantly purple hindwings, and in the uniformity of colouring which prevails before and behind the central fascia, as also in the absence of any white spotting at the base of the antennæ. From other apparently allied species (*e. g.*, *australis*, Z.) the absence of any thickening at the base of the antennæ in the ♀ would at once separate it.

4401 : 1.—NEPTICULA TINGITELLA, *sp. n.*

Antennæ black; eye-caps in the ♀ silver. *Head* and *Thorax* black. *Forewings* black, with an interrupted silvery white fascia beyond the middle; in the ♀ this fascia is more distinct than in the ♂, and is preceded by a similar, but oblique, silvery white fascia, arising on the costa near the base, but not attaining the dorsum before the middle; cilia black at their base, greyish on their outer half, sometimes with a few whitish scales along the margin preceding these in the ♀. *Exp. al.*, 5 mm. *Hindwings* grey. *Abdomen* black. *Legs* blackish, hind tarsal joints whitish.

Type, ♂ (87764); ♀ (87765). Mus. Wlsm.

Hab.: MOROCCO—Tangier. Larva *Helianthemum tuberosum*, 14.I. excl. 17.II.—10.III.1902. Five specimens.

The larva makes a tortuous mine ending in a small blotch in the leaves of *Helianthemum tuberosum*. The frass is deposited in a broad brownish line throughout the mine, and the cocoon is pale brownish or brownish yellow. The first larva, found on January 14th, emerged on February 17th, and six others were bred in the beginning of March; unfortunately some *Psoci* attacked my setting boards, utterly destroying two specimens and damaging others, so that only a good pair remained available for description.

The species seems to be not uncommon where it occurs on the high ground above Tangier, rather more than half way to Cape Spartel.

It appears to come into the same group as *quinquella*, Bedell, but is not nearly allied to any described species so far as I am aware. It is of course widely remote from *helianthemella*, HS., which I have strong reason to think has been redescribed by Peyerimhoff under the name of *cistivora*.

(To be continued).

ON INSECTS OBSERVED AT THE EDDYSTONE LIGHTHOUSE IN
THE AUTUMN OF 1901

BY WM. EAGLE CLARKE, F.R.S.E., F.L.S.

The following notes form another slight contribution to a subject which has received but little attention from Entomologists, namely, the migrations and wanderings of insects. They relate to a few species, chiefly moths, observed during a month's residence in the Eddystone Lighthouse during the autumn of 1901; they must, however, be regarded as a mere indication of the frequency and extent of the visits of insects to a pelagic station (if I may so term this outlying tower) rather than a record of species, for on nearly every occasion on which the insects appeared migratory birds were also present in considerable, sometimes vast, numbers, and demanded all my attention.

This well-known lighthouse lies well out in the waters of the English Channel off the Cornish coast, and fourteen miles S. W. of Plymouth; the nearest point of the land, Rame Head, being about ten miles distant.

The following are extracts from my journal, the identity of the species being in some cases determined on my return to the Museum:

September 23rd.—A specimen of *Agrotis segetum* captured in the lighthouse.

October 1st.—At 4.15 a.m. a number of moths appeared, and were observed until daylight (wind S., light; rain). At 11.45 a.m. a humming-bird hawk-moth (*Macroglossa stellatarum*) was flying round the tower for some time. At 10 p.m. and until 1.30 a.m. (2nd), and, perhaps, beyond, many hundreds of moths of all sizes were flying around, and great numbers alighted on the windows of the lantern and elsewhere; they presented a very remarkable and pretty spectacle, resembling innumerable brilliant sparks as they careered in the dazzling rays from the lantern, indeed, the lighthouse presented the appearance of a chimney on fire, and emitting quantities of sparks. There were many species present, but I only captured *Agrotis ypsilon* (*suffusa*), *A. segetum*, and *Hadena meticolosa*. (Wind W., light to calm; some haze).

October 10th.—Between 2 and 4 a.m. a few moths appeared (wind W.S.W., gentle breeze; overcast, dark).

October 12th.—From 1 a.m. to 3.30 a.m. moths and flies were present in great numbers (wind S.S.E., light breeze; showery). The moths captured were *H. meticolosa*, *A. ypsilon*, *A. segetum*, *Plusia gamma*. The flies, which were very abundant, have been determined by Mr. P. H. Grimshaw as *Catabomba pyrastris*.

October 12th.—Hundreds of moths from 7 p.m. until 5.30 a.m. (13th), also vast numbers of migrating birds passing south (wind N.E., gentle breeze; overcast).

October 15th.—Many moths from 9.50 p.m. to 2.30 a.m. (16th) (wind E.N.E., moderate breeze; overcast).

That such a sun-loving species as *Catabomba pyrastris* should have made its

appearance in numbers during the earliest hours of the morning is most significant, and may throw some light on the occurrence of the other species for there can be no doubt that this Syrphid was overtaken by darkness while journeying over the sea, in the same manner as *Tanessa cardui*, when it occurred at the lantern of the Kentish Knock Lightship.* It was not blown out to sea, for the weather previous to its appearance was not characterized by strong winds. Indeed, as at the lightship, our insect visitors generally arrived during the prevalence of light airs, the single exception being on October 15th, when the wind at the Eddystone was logged as a moderate breeze with a velocity of about 20 miles an hour.

H. meticulousa appears to be the greatest traveller. It was not only the most abundant species observed, but was also the most frequent visitor; and since I returned from the Kentish Knock I have received specimens captured at the lantern of that lightship between 8 p.m. and midnight on November 6th.

Museum of Science and Art,
Edinburgh: December, 1903.

TWO NEW SPECIES OF BRITISH ACULEATE HYMENOPTERA.

BY EDWARD SAUNDERS, F.R.S.

The first of the two species described below (*Crabro styrius*, Kohl) has been known to me for several years, but having only seen isolated females, I did not like to describe it as new. In Dr. Capron's collection, however, I found a small series of it under the name of *cestratus*, which are doubtless the specimens he recorded from Shiere in this Magazine, vol. xxii, p. 264, and amongst these is a ♂, so I am able now to describe both sexes; I recently found that the ♀ agreed with the characters of *styrius* described by Prof. Kohl, of Vienna, from a specimen taken at Admont, in Steiermark. I forwarded one of my females to him for his opinion, and he kindly writes that it is certainly identical with his species.

The other (*Halictus semipunctulatus*, Schenk) has been taken this year by Mr. E. B. Nevinson at Lyme Regis; it is very closely allied to *Halictus pauxillus*, but it appeared to me to differ in certain particulars, so I sent a pair to Mr. Alfken, of Bremen, who has been good enough to compare it for me with the species in Schenk's collection, and returns it as *semipunctulatus*. I expect this species may be mixed in collections under *pauxillus* or *subfasciatus*, but the characters given below will, I hope, enable it to be recognised.

* In connection with the appearance of this species in abundance at the Eddystone, Mr. Grimshaw has drawn my attention to the note by the late F. Walker in vol. 1 of this Magazine (p. 139), regarding the occurrence of this and other Syrphids in vast numbers at the Isle of Wight in August, 1861; and to Mr. Verrall's note on p. 339 of his recent work on British Flies (*Syrphidae*), which may also be consulted with advantage.

CRABRO (CÆLOCRABRO) STYRIUS, Kohl, Ann. Nat. Hofm. Wien, vii, p. 198, T. xiii, figs. 7 and 16.

Similar in general shape to the other species of the subgenus *Cælocrabro*, but with the petiole of the abdomen rather more slender, and more convex posteriorly, so as slightly to suggest the form of that segment in the subgenus *Rhopalum*.

Black, very shining, head with somewhat scattered but clear punctures, face with a deep impression running from the front ocellus to the clypeus, eyes very convergent in both sexes, distant from each other in the region of the insertion of the antennæ less than the combined lengths of the 1st and 2nd joints of the flagellum. Scape of the antennæ and mandibles piceous, the former unusually long and slender and paler at the base and apex, palpi pale, head not nearly so much produced behind the eyes as in *capitosus*, and less *quadrate*, its posterior sides more rounded, occipital carina ending abruptly so as to give the effect of a slight tooth under the cheek; clypeus, viewed from above, subtruncate in the centre, viewed from in front trituberculate, mesonotum very shining, punctured, deeply impressed in the centre anteriorly; wings slightly clouded, tegulæ testaceous; legs pitehy-brown, the apices of the femora, and the bases and apices of the tibiæ, and the anterior and intermediate tarsi in both sexes paler, those of the ♂ nearly colourless, and the anterior femora in that sex with a pale central vitta; propodeum shining, without a defined area, but with a row of crenatures along the extreme base, and with a very short, longitudinal, central impression, the sides clothed with silvery hairs, this latter character less evident in the ♂; abdomen very shining, and without perceptible sculpture, even under a Coddington lens, although with a compound microscope under an inch objective very fine transverse aciculations can be seen; petiole much slenderer than in the allied species, apical dorsal valve in the ♀ narrowly channelled and reddish-testaceous towards the apex, largely punctured at the base. Long., 6—6½ mm.

♂ and ♀, Shiere (Capron); ♀, New Forest, June, July, 1894, (Champion); ♀, Ley Hill, Chesham, Bucks, June 29th, 1899 (Piffard); ♀, Dollar, near Edinburgh, July 9th, 1901 (Evans); ♀, near Faversham, Kent (Chitty); ♀, Porthcawl, June 29th, 1903 (Yerbury).

There are only two species with which the above can be confounded, viz., *capitosus* and *cetratus*, from both of them it can be distinguished by the form of the clypeus, the longer and more slender antennal scape, the slender petiole, and the absence of visible sculpture on the abdomen; both sexes are further distinguished from *capitosus* by the less massive head, and from *cetratus* by the less closely punctured mesonotum, and the ♂ by the simple anterior tibiæ and metatarsi.

HALICTUS SEMIPUNCTULATUS, Schenck, Jahr. ver. Naturk. Nassau, xxi—xxii, 1867/8 (1870), p. 308.

Closely allied to *pauillus*, Schenck, and similar in general form to the other small species.

♀. Black, head and thorax clothed sparingly with pale hairs; face wide, very closely punctured with a bright shining line running from the anterior ocellus to the clypeus generally traceable all along its path; vertex somewhat shining, not closely but rather irregularly punctured; mesonotum rather closely punctured, much as in *pauillus*, the intervals between the punctures very finely rugulose; wings with the nervures pale testaceous, subcosta darker; legs pitchy-brown; propodeum with its sides converging in nearly straight lines to the brow, which terminates in a straight, very slightly pronounced, raised line, lateral angles not prominent; abdomen with the apices of all the segments pale testaceous, basal segment very finely and very remotely punctured, 2nd somewhat singularly punctured, the other segments with a still finer puncturation, the puncturation is scarcely perceptible with a power less than a Coddington; at the base of the 2nd and 3rd segments there is a small patch of white pubescence which easily rubs off, and all the segments have a sort of frosted appearance in certain lights in fresh specimens, due to a very short, white, sparse pubescence, this is more evident and denser on the 4th and 5th, apical rima golden, segments beneath densely fringed with white hairs

♂. Head and thorax clothed with erect brownish hairs; antennæ reaching to about the apex of the propodeum, pale beneath; head, across the eyes about as wide as long; clypeus pale at the apex; mesonotum slightly shining, very finely punctured; wings as in ♀; legs, with the extreme apex of the femora, the base and apex of the tibiæ and the tarsi, yellowish-white; the anterior tibiæ largely pale in front; propodeum finely and more or less radiately rugose, its apex truncate, but without prominent angles, the rugosities extending to the brow, whereas in *pauillus* the actual brow is smooth; abdomen very similarly punctured to the ♀, but the punctures larger, all the segments with pale testaceous apices, and only very slightly impressed at their bases, the basal segment is distinctly longer than its apical width, the segments beneath bear a few short hairs. Long., ♂, 7 mm.; ♀, 6 mm.

Lyme Regis, July, 1903 (E. B. Nevinson).

Allied to *subfasciatus* and *pauillus*, but differing from both by the broader face and the paler margins of the abdominal segments; from *subfasciatus* the ♂ may be known by the hairs on the ventral segment of the abdomen, and the less rugose propodeum with less sharp brow; the ♀ by the form of the propodeum, which lacks the prominent lateral angles, the less convex abdomen, and the more punctured basal segment. From *pauillus* the ♂ may be known by the form of the abdominal segments, which are not impressed at the base, as in *pauillus*, and by the sharp brow of the propodeum; the ♀ by the entire raised apical margin of the propodeum and the less strongly marked apical depressions of the abdominal segments.

St. Ann's, Woking:

December, 1903.

Hymenoptera Aculeata at Porthcawl, S. Wales.—Amongst some *Hymenoptera* which Colonel Yerbury was kind enough to collect for me at the above locality last summer the following are of special interest:—*Crabro styrius*, Kohl, ♀, one

example, 29.6.03 (see *antea*); *Odynerus gracilis*, Brullé, ♂, 2.6.03; *Cælioxys mandibularis*, Nyl., 1 ♀, 8.7.03—this is quite a new locality for this species, the only other British one being from Wallasey, in Cheshire, it is so far a great rarity in this country, only four or five specimens having been found; *Osmia aurulenta* several of both sexes evidently quite recently emerged, and also some pupa cases in a shell of *Helix aspersa*, which Col. Yerbury had observed to be a source of interest to a ♂ *Osmia*, which he saw investigating it; I put the pill box containing the shell in a drawer, and the next time I looked at it I found that a ♀ *O. aurulenta* had emerged, I then opened the shell and found that it contained only two cells, the one from which the ♀ had emerged, and another which had an irregularly shaped small hole at the side, looking as if it had been eaten out by some other insect; in the shell were also a lot of fragments of moss of a species of *Hypnum*.—EDWARD SAUNDERS, St. Ann's, Woking: December 7th, 1903.

Hymenoptera Aculeata in the New Forest in 1903.—The following species among others were taken by Mr. A. Gibbs, F.L.S., of St. Albans, during his visit to the New Forest: *Pompilus rufipes*, L., one ♀; *Ammophila campestris*, Latr., several; *Crabro lituratus*, Panz., ♂ and ♀, a rare species. *Halictus zonulus*, Smith, one ♂; *Andrena fuscipes*, Kirb., one ♂; *A. argentata*, Smith, ♀, and its parasite, *Nomada alboguttata*, H.-S., one ♀. None of these are included in Mr. Arnold's list (*Ent. Mo. Mag.*, November, 1903, p. 284). Three specimens of the common *Nomada solidaginis* had abnormal neuration: one had two submarginal cells in each wing, one had two submarginals in one wing and three in the other, another had the 2nd submarginals very narrow, scarcely looking like cells.—E. N. BLOOMFIELD, Guestling Rectory: December, 1903.

Aculeate Hymenoptera at Lyme Regis.—During July last I visited Lyme in the hope of finding some of the rarities recorded from that district forty or fifty years ago. I may say at once that, with the exception of *Aporus unicolor*, Spin., I was disappointed in this. My disappointment, however, was dispelled by my wife's capture of a specimen of *Gorytes laticinctus*, Lep., ♀. This insect, I believe, has not been taken since the pair recorded by Shuckard in his *Fossorial Hymenoptera*, 1837, from the New Forest. We were also fortunate in finding a colony of *Halictus semipunctulatus*, Schk., an Aculeate new to Britain, which Mr. E. Saunders has kindly identified and described (*antea*, p. 11); the ♂♂ of this were in fair numbers near their burrows in the joints of a stone wall, but the ♀♀ were very scarce and difficult to get. The district is certainly a good one, as, in spite of the inclement season, the following were seen or captured:—*Myrmosa melanocephala*, Fab., *Agenia variegata*, Linn., *Pompilus unicolor*, Spin., *einctellus*, Spin., *viaticus*, Linn., *Salius pusillus*, Schiödte, *parvulus*, Dhlb., *Trypoxylon clavicerum*, Lep., *attenuatum*, Smith, *Tachytes pectinipes*, Linn., *Ammophila sabulosa*, Linn., *hirsuta*, Scop., *Diodontus luperus*, Shuck., *Passalærus insignis*, V. d. Lind., *Pemphredon lethifer*, Shuck., *Mimesa unicolor*, V. d. Lind., *Psen pallipes*, Panz., *Gorytes tumidus*, Panz., *laticinctus*, Lep., *Mellinus arvensis*, Linn., *Cerceris arenaria*, Linn., *Crabro cetratus*, Shuck., *podagricus*, V. d. Lind., *palmaris*, Schreb., *wesmaeli*, V. d. Lind., *elongatulus*, V. d. Lind., 4-maculatus, Fab., and var. *geniculatus*, *cribrarius*, Linn., *peltarius*, Schreb., *cephalotes*, Panz., *saundersi*, Perk., *chrysostoma*, Lep., *albilabris*, Fab., *En-*

tomognathus brevis, V. d. Lind., *Oxybelus uniglumis*, Linn., *Vespa vulgaris*, Linn., *rufa*, Linn., *sylvestris*, Scop., *Odynerus parietum*, Linn., *trimarginatus*, Zett., *parietinus*, Linn., *grocilis*, Brullé, *Colletes fodiens*, Kirb., *picistigma*, Thoms., *Prosopis communis*, Nyl., *hyalinata*, Sm., *brevicornis*, Nyl., *Sphcodes puncticeps*, Thoms., *reticulatus*, Thoms., *pilifrons*, Thoms., *dimidiatus*, V. d. Lind., *Halictus albipes*, Kirb., *subfasciatus*, Nyl., *semipunctulatus*, Schk., *villosulus*, Kirb., *nitidiusculus*, Kirb., *minutissimus*, Kirb., *tumulorum*, Linn., *smeathmanellus*, Kirb., *morio*, Fab., *leucopus*, Kirb., *Andrena thoracica*, Fab., *gwynana*, Kirb., *fulvicrus*, Kirb., *afzeliiella*, Kirb., *wilkella*, Kirb., *Panurgus ursinus*, Gmel., *Nomada solidaginis*, Panz., *succincta*, Panz., *Epeolus productus*, Thoms., *Cœlioxys rufescens*, Lep., *Megachile willughbiella*, Kirb., *ligniseca*, Kirb., *centuncularis*, Linn., *versicolor*, Sm., *Anthidium manicatum*, Linn., *Osmia rufa*, Linn., *fulviventris*, Panz., *aurulenta*, Panz., *spinulosa*, Kirb., *Suropoda bimaculata*, Panz., *Psithyrus vestalis*, Fourc., *campestris*, Panz., *Bombus muscorum*, Linn., *latreillellus*, Kirb., *hortorum*, Linn., var. *harrisellus*, Kirb., *derhamellus*, Kirb., *lapidarius*, Linn., *terrestris*, Linn.—EDW. B. NEVINSON, 5, Bentinck Terrace, Regent's Park : December, 1903.

Bembidium obliquum, Sturm, &c., in Berkshire.—While looking over a few un-named beetles belonging to the collection of the late Mr. C. E. Collins, of Calcot, near Reading, I came across two species which I think ought to be recorded, namely, *Bembidium obliquum*, Sturm, which was taken at Wokingham, Berks, on April 25th, 1902, and *Medon dilutus*, Er.,* taken in Tubney Wood, near Oxford, on November 20th, 1899.—NORMAN H. JOY, Bradfield, near Reading : Nov. 6th, 1903.

Leptidia brevipennis in company with *Formica sanguinea*.—On August 4th of this year I was at Wellington College searching ants' nests for *Coleoptera*; amongst the various insects found in and near a nest of *F. sanguinea* I captured a beetle running about with the ants, which I sent up to Mr. Saunders, of Woking, with some *Hymenoptera* for determination. He tells me that it is a Longicorn beetle, *Leptidia brevipennis*, and says that it is very interesting to have found it in such a situation, as it is not considered to be an indigenous species, but to be an introduction in the wood of baskets. Thinking perhaps it would interest your readers I venture to send an account of the capture. I may mention that in the same nest I also took *Diodontus minutus*, ♀, with its wings bitten off, and a species of *Proctotrypida*.—W. BARNES, Brightwell Villas, New Road, Southern Hill, Reading : Nov. 28th, 1903.

Coleoptera in the Plymouth district.—The following interesting *Coleoptera* have occurred to me in the Plymouth district at the times mentioned, but their record in this Magazine has hitherto been neglected. 1901 : August 13th—*Perileptus areolatus*, Creutz., two examples in flood refuse, Tavy Valley, near Horrabridge. September 14th—*Ochthebius lejolisi*, Muls. & Rey, 55 specimens in rock pools, near Rame Head; the only occasion that I ever found a suitable habitat in the district for the species; the beetles were quickly discovered by stirring up the pools. *Scymnus minimus*, Rossi, a single example found floating on one of the pools. 1902 : April 6th—*Atemeles paradoxus*, Gr. (6) in nests of *Formica fusca*, Whitsand Bay; *Trechus lapidosus*, Daws. (3) under stones on the shore; *Lymnæum nigropiceum*, Marsh. (2) with the preceding. May 25th—same locality, *Trogophlæus*

* Hitherto unique as British.—G. C. C.

tenellus, Er. (1) in the sand; and on June 29th, *Harpalus azureus*, F. August 3rd—*Telephorus thoracicus*, Gyll. (1) Yelverton; *Gymnusa brevicollis*, Payk. (2) in Sphagnum, Wigford Down. 1903: March 13th—*Homalota eremita*, Rye (2) and *Acidota erenata*, F. (3) in moss near Cadover Bridge, Plym Valley (two examples of the last named also occurred to me in the Tavy Valley in April); and *Hyperaspis reppensis*, Herbst, one specimen in flood refuse.—JAMES H. KEYS, Morwell, Lipson Road, Plymouth: December, 1903.

Variety of Pyralis costalis at South Croydon.—On August 24th last I found at rest on a fence in South Croydon a striking variety of the above pretty species, which I think is well worthy of record. The space between (and including) the two conspicuous costal spots is filled up with bright yellow, forming a large oblong blotch extending considerably more than half way across the wings towards the dorsal margin; the outer and inner edges are continued to the margin in the shape of two narrow lines. The central space of the hind-wings is much paler than usual. Altogether the insect presents a striking contrast to the type.—A. THURNALL, Whitehall Road, Thornton Heath: December 9th, 1903.

Acidalia ornata in Cumberland.—It may be interesting to record the capture of a specimen of *Acidalia ornata* near Keswick, in Cumberland, in the beginning of August last, as it is no doubt known that this is a southern insect, and I have no knowledge of a previous capture in a district so far North.—W. J. WOOTTON, Board School, Johanna Street, Westminster: November, 1903.

[This specimen of *Acidalia ornata*, Scop., is interesting, not only from its northern habitat, but also because it differs from southern specimens in its markings, the prettily laced spots near the margins of its fore- and hind-wings being distinctly narrower than usual, so that it forms a probably local variety.—C. G. B.]

Colias hyale at Dover in 1903.—Having heard that *Colias hyale* has been rare in England this year, it may be of interest to record that I took a specimen on the cliffs near Dover on August 6th last. The condition of the insect indicated that it had just emerged from the pupa case. Although in various parts of Kent the whole of August, this was the only specimen of the genus *Colias* that came under my notice.—H. A. PARSONS, 6, Clayton Road, Peckham, S.E.: November, 1903.

Aeschna grandis in Gloucestershire.—I desire to record the capture, on August 11th of this year, in the Lower Lypiatt Woods, near Stroud, by my friend, Mr. W. B. Davis, of a ♀ specimen of *Aeschna grandis*, which I have carefully examined and compared with the specimen in my collection taken near London. I knew no other record of this fine species for Gloucestershire.—CHAS. J. WATKINS, Painswick: December 4th, 1903.

May-flies (Ephemeridæ) re-entering the water.—On September 17th, 1903, my brother and I were on the river about two miles above Bures, Suffolk. We were returning to Bures about four o'clock in the afternoon, allowing the boat to drift down the stream whilst we lay with our heads over the side watching the fish; the boat was broadside on the stream, and I was looking over the opposite side to which we were travelling. There was scarcely any wind, and the water was only slightly

rippled. A fair number of small May-flies were about, the bodies of the flies being about half an inch long, and marked alternately with black and yellow bands, the wings were the ordinary green of the "green drakes," a few of the flies were with pale greenish bodies and colourless wings. I imagine these were the final flies of the previous mentioned "green drakes."

As I lay with my head over the boat side one of the "green drakes" settled on the side of the boat just below me; it carefully turned head downwards and crawled down towards the water; when it reached the water it with difficulty forced one front "foot" and then the other through the surface film, its head followed and the next pair of legs, but when the bases of the wings were reached, and the fly progressed, the wings became bent downwards and outwards until they closely enveloped the abdomen; the fly now moved more quickly until finally the two tail filaments became joined as the insect drew them under. Beneath the water the fly looked much like its own larva. After this I saw eight or nine other of these May-flies behave in the same way, all of which were the green drakes excepting one, but the latter were not so abundant as the former. The flies all crawled out of sight as they travelled round towards the keel of the boat. I would suggest that the enveloping wings retained air for respiration under water.—FRANK SLADE, The Horniman Museum, Forest Hill, S.E.: *December 7th, 1903.*

[Mr. Slade's note "On May-flies re-entering the water" probably concerns a species of the *Ecdyurus* assemblage of genera, regard being had to the date, the size of the fly, the colour of its wings (subimago and imago), and the number (two) of its setæ. The habit noted has hitherto been observed only in May-flies of small stature, such as species of *Baëtis* and its allies.—A. E. EATON, Woodlands, Seaton Devon: *December 9th, 1903*].

Corizus hyalinus at Norwich.—On October 3rd last I captured a *Corizus* which was sunning itself on the Cemetery wall at Norwich. The insect, which was quite unknown to me, has subsequently been identified by Mr. Edward Saunders as *Corizus hyalinus*, a species recently described by him as British on the strength of a specimen captured during the past season in Essex (Ent. Mo. Mag., xiv, 294). It is interesting that both captures should be from the Eastern Counties.—H. J. THOULESS, Corfe College Road, Norwich: *December 9th, 1903.*

Oxycera dives, Lw., at Aberfoyle, Perthshire.—I have to record the capture at Aberfoyle last July of three specimens of this rare Stratiomyid, a species which is placed "in italics" in Mr. Verrall's List of British *Diptera*. In the Ent. Mo. Mag., vol. xxxiv, p. 88, Mr. C. W. Dale states that a single example was taken at Rannoeh in June, 1896, and that there is another in the collection of the Entomological Club. I do not know of any other record. My specimens were taken on the hills at Aberfoyle, near the waterfall known as Rob Roy's Leap, one on the 6th, one on the 8th, and one on the 9th July, 1903, at rest on bracken in sheltered spots. They are in good condition, and I should think had only recently emerged. Thinking I had found something good, I looked carefully for more, but without success, and the wet weather soon put a stop to collecting during the remaining days of my visit. Mr. Percy H. Grimshaw has seen two of them, and says that they belong to this species.—A. E. J. CARTER, 4, West Holmes Gardens, Musselburgh, N. B.: *December 7th, 1903.*

Loxocera fulviventris, Mg., near Forres. — On August 31st I swept a ♀ of this species among heather and grass. Dr. Sharp took it over to Newmarket, and on being compared with Mr. Verrall's specimen of *L. fulviventris*, it was found to agree, except that there is hardly a trace of fulvous on the front part of the belly. I may add that the hind femora are tipped with blackish above.—F. JENKINSON, 10, Brookside, Cambridge: November 17th, 1903.

Review.

MONOGRAPH OF THE COCCIDÆ OF THE BRITISH ISLES: by ROBERT NEWSTEAD, A.L.S., F.E.S., &c. Vol. ii, pp. viii and 270, plates F. and xxxv—lxxv. London: Ray Society, 1903.

In our issue for January, 1902, we gave a short notice of vol. i of this invaluable work, and of its talented author. We now congratulate the latter, the Ray Society, and the entomological and horticultural public, on the appearance of vol. ii, completing the Monograph to date. This second vol. is largely made up from the genera and species of *Coccidæ* that cover themselves with a white wax-like or cottony secretion, from which they have obtained the name—dreaded by horticulturists—of “mealy bug,” though only a few are rightly entitled to that name. With these are, of course, incorporated those beautiful ambulatory species placed in the *Ortheziinæ*. The author says that 88 species (and four varieties) of *Coccidæ* have now been found in the British Isles; of these, 51 species (and two varieties) occur only under “glass,” and have certainly been introduced, but have mostly come to stay. The descriptive matter is very full and clear, and the plates beyond praise; less colour has been required than in vol. i, and this brings out the author's artistic ability more clearly; the lithographer has succeeded even better than in the previous vol. Except in the dry details of nomenclature there will not be very much to add for some time. A reviewer must have his grumble: here is ours. As the plates in vols. i and ii are numbered consecutively, it might have been better had the text been paged consecutively.

Obituary.

Philip Brookes Mason, M.R.C.S., F.L.S., F.E.S., who died at Burton-on-Trent on November 6th, 1903, was well known in the Midlands, and especially in Burton-on-Trent, as a physician of no ordinary repute and ability. He commenced his medical education in 1858 by spending a winter and a summer session in Glasgow, where he gained prizes in the classes of anatomy, chemistry, and botany. After a year spent in his father's surgery at Burton-on-Trent he entered at University College, London, where he gained seven gold and silver medals, as well as the “Filliter” exhibition in pathological anatomy, the “Longridge” exhibition for general proficiency in medicine and surgery, and the “Atkinson-Morley” exhibition for three years in surgery. He was house surgeon in the hospital to Mr. Erichsen and Sir Henry Thompson. In 1866 he was appointed Demonstrator of Anatomy in University College, and held that appointment for three years. Mr. Mason was born at Burton-on-Trent on January 2nd, 1842, and he once said he began collecting

objects of natural history at the age of four years. He was especially attached to the *Coleoptera*, but he was an ardent collector of everything belonging to the British Fauna and Flora. In 1889 he made an expedition to Iceland, and collected a good many insects, but apparently never published a list of his captures. The *Trichoptera* were recorded by Mr. McLachlan in this Magazine in November, 1889. For many years he did comparatively little collecting, but devoted a considerable proportion of his income to acquiring well known British collections; among them were the *Coleoptera* of Mr. E. C. Rye and the Rev. A. Matthews (including the latter's unique collection of *Trichopterygidæ*), the *Lepidoptera* of Mr. T. Wilkinson, Mr. Douglas, and Mr. J. Sang, the Aculeate *Hymenoptera* of Mr. F. Smith, and the *Hemiptera* of Mr. Douglas and Mr. Scott. The cabinets in time increased upon him so much that he erected a museum adjoining his house, which certainly contains the finest collection of British Zoology that has ever been got together by a private individual. In fact, it is doubtful if his British *Lepidoptera* are surpassed by any other collection, whether public or private. He also possessed an almost perfect British Herbarium. His Natural History library, too, was as complete as he could make it. Mr. Mason was elected a Fellow of the Linnean Society in 1872, and of the Entomological Society in 1874: for some time he served on the Council of the latter; in 1884 he became a Member of the Société Entomologique de France, and for the last ten years he was a Member of the Entomological Club. At his own expense he published the works on the *Corylophidæ* and *Sphæriidæ*, and the supplementary *Trichopterygidæ*, of which the Rev. A. Matthews had left the unfinished MSS. at the time of his death; and for some years he employed Mr. John Sang, of Darlington, to make coloured drawings of all the British *Staphylinidæ*; these were executed with great skill and care, but were never published. For the particulars in this notice relating to Mr. Mason's medical career we are indebted to the appreciative notice in the *Lancet* of November 13th, 1903; the writer of which says that: "The profession is the poorer by the death of Philip Brookes Mason, a man of sterling qualities and excellent intellectual gifts;" it remains, however, for those who knew him intimately to bear testimony to the simple geniality of his character, and to the affection with which he was regarded by his many friends; his collections were always open to any one who was interested in any of the branches of study which they represented, and many are the pleasant hours which the writer of this notice (who was first led to take up the study of *Coleoptera* by Mr. Garneys and Mr. Mason) has spent in the well known upper room of his house, where the bulk of his collections were stored before they grew so unwieldy that they had to be transferred to a special museum. Mr. Mason was greatly respected in Burton-on-Trent, and will be much missed by the town and neighbourhood. He was emphatically a man who made friends wherever he went, and had no enemies. He leaves behind a widow, who nursed him devotedly through his long illness, and for whom all his friends feel deep sympathy in her great loss.—
W. W. F.

Thomas Kelsall, who died at Blackpool on November 23rd, 1903, aged 78, was one of the few remaining members of the older group of Manchester entomologists, being contemporary and associated with Messrs. Presteott, Broadhurst, Hall, John Bleakly, Joseph Chappell, and John Hardy. Some months previous to his death he

retired from the post he held in the Geological Department of the Manchester Museum, Owens College. From 1857 to 1873 he collected *Coleoptera* in the Manchester district, and in a short MSS. diary kept by him he recorded the following captures amongst others:—*Cicindela hybrida*, L., flying plentifully at New Brighton, April 22nd, 1859; *Carabus nitens*, L., in profusion, Chat Moss, May 7th, 1859; *Saperda scalaris*, L., Drinkwater Park, Prestwich, 10 specimens, June 20th, 1857; *Donacia sparganii*, Ahl., Clifton Canal, July 12th, 1858. The new *Tomicus* in the utmost profusion in Drinkwater Park, coming out of the holes in the bark and basking in the sun, April 4th, 1869; from the ravages it had made in the alder it must have been in existence for years (this evidently refers to *Dryocates alni*, Georg., recorded in Fowler's "British *Coleoptera*" as "first taken by Mr. Morley in a wood near Prestwich, Manchester, in February, 1861" [J. H. B.]). *Chrysomela hobsoni*, Steph., one specimen near Stretford, along the Mersey, September 1st, 1860, plentiful at Jackson's Boat, River Mersey, October 4th, 1873 (this note is specially interesting as giving a more recent record for this species for the Manchester district than the one in Stephens' "Illustrations" and Stephens' "Manual," and again in Fowler's "British *Coleoptera*," viz., "Manchester, in abundance (Stephens).") The name of the var. *hobsoni* was evidently given in honour of Edward Hobson, the celebrated Manchester museologist, President and Founder of the Manchester Banksian Society, who died in September, 1830, ætat. 48. Hobson paid some attention to entomology during the years 1825 to 1827, and it is exceedingly likely that he took the specimens mentioned by Stephens [J. H. B.].—J. H. BAILEY.

Rev. John Hocking Hocking, M.A., J.P., F.E.S., Rector of Copdock-with-Washbrook, Suffolk, died on December 10th, 1903, aged 69. After being ordained he officiated in various parishes in England, but in 1862 was called to a chaplaincy in India, where he remained until 1880. On his return to this country he became, in 1881, rector of Copdock, on the presentation of Lord Walsingham, until 1883, and again from 1895 down to his decease. He was an enthusiastic collector of *Lepidoptera*, but reserved in his habits, so that his brother entomologists seldom knew much of his doings. The fortunate capture by him of that very rare (as British) moth *Xylina lambda (zinckenii)* brought him before a meeting of the Entomological Society of London on November 6th, 1895, where he exhibited it. He became F.E.S. in 1896.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—The Fifth Ordinary Meeting was held in the Royal Institution, Liverpool, on Monday, November 16th, Mr. WM. WEBSTER, M.R.S.A.L. (St. Helen's), presiding over a large attendance of members.

Messrs. A. H. Garstang, F.R.S.L., of Southport, H. A. Sweeting, M.A., of Liverpool, and Carrington B. Williams, of New Brighton, were elected Members of the Society.

Details in connection with the next (St. Helen's) Meeting having been discussed, Mr. E. J. B. Sopp, F.R.Met.S., F.E.S., communicated an interesting

paper on "The Birth and Infancy of *Dytiscus punctulatus*, F." After explaining the manner of ovipositing and describing the varying effect of temperature on the length of time required for the development of the ova in spring and winter, he gave particulars of diseases to which the eggs were liable both in their earlier and later stages. The birth of the larva, process of change of skin at the various ecdyses, &c., were described from notes in his diary written at the time of observation. The paper was illustrated by eggs, cast skins, larvæ in various stages of growth, and perfect insects. On the motion of Mr. Richard Wilding, seconded by Dr. J. W. Ellis, a cordial vote of thanks was accorded the lecturer. Amongst the large number of exhibits on view were the following: a drawer of *Xanthias*, including *Dasycompa rubiginea*, and *Xanthia aurago* var. *fuscato*, by Mr. F. N. Pierce, F.E.S. (Liverpool). A fine collection of *Lepidoptera* from Cumberland and Westmoreland (1903), including the Alpine species *Erebia epiphron*, *E. cassiope*, *E. medon*, &c., an exotic *Orthopteron*—*Acridium* (sp.?), captured on a vessel in the Liverpool Docks, and a fine specimen of the Oleander Hawk Moth (*C. nerii*), captured on the S.S. "Achilles," Liverpool, by Mr. H. B. Prince (Birkenhead). Long series of *Melanargia galatea* and *Cidaria picata*, a curiously bleached form of *Epinephile janira*, and specimens of *Anticlea sinuata* and *Cidaria unangulata* from Devonshire by Mr. W. A. Tyerman (Broad Green). Mr. J. Roxburgh distributed a series of *Erebia medon*. Mr. J. W. Dutton (Helsby), exhibited *Coleoptera* collected in Stromness by Mr. George Ellison, of Liverpool, including *Amara spinipes*, *Donacia discolor*, *Chrysomela sanguinolenta*, and *Otiorrhynchus blandus*; Mr. Guy A. Dunlop's (Liverpool) local *Coleoptera* contained *Bembidium saxatile*, *Melanotus rufipes*, *Leiopus nebulosus* and *Metæcus paradoxus*, whilst Dr. J. W. Ellis, F.E.S. (Liverpool), Easter captures on Slieve Donard and in the neighbourhood of Newcastle, Co. Down, included *Leistus montanus*, *Nebria gyllenhali*. *Pterostichus vitreus*, *Silpha atrata*, var. *subrotundata*, and *Otiorrhynchus maurus*. Mr. J. R. le B. Tomlin, F.E.S. (Chester), showed recent additions to the list of British *Coleoptera*, including *Gynandrophthalma affinis*, *Aphanisticus emarginatus*, *Lathridius bergrothi*, and *Hydroporus bilineatus*. Mr. Richard Wilding (Bootle), exhibited the British *Donaciæ*; Mr. C. B. Williams (New Brighton), collections of Japanese *Lepidoptera* and *Coleoptera*; a small collection of local *Coleoptera*, and a living Lepidopterous larva from a barrel of Canadian apples. Mr. E. J. B. Sopp, F.E.S. (Birkdale), *Anisotoma furva*, from Leasowe, and the large locust *Acridium cristatum* from British Guiana, and Mr. W. H. Jennings (Hoylake), a fine specimen of *Sphodrus leucophthalmus*, found under a kitchen floor at Hoylake. Amongst miscellaneous exhibits also made were a number of specimens of the crab spider (*Mygale cancerides*), from Peru, by Mr. H. B. Prince, a fine centipede (*Scolopendra* sp.?), captured at Preston amongst West African rubber by Mr. J. R. Charnley, F.Z.S., and two excellent photographs of the larvæ of the Cinnabar Moth feeding on ragwort taken from nature, by Mr. Henry Ball, M.P.S. (Southport).—E. J. B. SOPP, F.R.Met.S., and FREDK. BIRCH, *Hon. Secs.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—October 22nd 1903.—Mr. E. STEP, F.L.S., President, in the Chair.

Mr. C. W. Simmonds, of Tufnell Park, N., and Mr. J. Ovenden, of Frindsbury, Rochester, were elected Members.

Mr. South exhibited very interesting series of *Anthrocera* (*Zygæna*) *trifolii* and *A. filipendulæ* from various localities, together with varieties, local races and hybrids, and read a short paper on the exhibit. He remarked on *A. trifolii* with an additional spot, on the occurrence of *A. filipendulæ*, v. *hippocrepidis*, and on pairs of *A. trifolii* ♂s and *A. filipendulæ* ♀s taken in nature. Mr. McArthur, a short series of *Heptalus humuli* v. *hethlandica* taken in Unst in 1882. Mr. Dodds, specimens of the Coleopteron *Corynetes rufipes* found alive in a box of cigars. Mr. Edwards, a wedding cake which had been over twenty years under a glass shade in a city confectioner's; the interior was thoroughly demolished by beetles, and the sugar was burrowed in an extraordinary way by them. The species was recognised as *Anobium paniceum*. Mr. Carr, series of bred and captured ♂s of *Orygia antiqua*, of which the former were very considerably the larger. Mr. Tonge, very fine photographs of the larvæ of *Sesia* (*Macroglossa*) *stellatarum*, *Eumorpha elpenor*, *Theretra porcellus*, *Asphalia flavicornis*. Mr. West, short series of two species of *Hemiptera*, *Microphysa elegantula* from Darenth and *Cardiastethus fasciventris* from Box Hill. Dr. Chapman, an album of photographs, showing the embryonic development of *Botys hyalinialis*, taken by Mr. Hammond and Mr. Jeffreys of Canterbury. It consisted of a unique series taken at short intervals from the time of the laying of the egg until the exclusion of the young larva. Mr. Kaye, bred specimens of *Theope endocia*, *T. foliorum* and *Nymphidium lysimon*, with figures of the larvæ and pupæ from Trinidad. The larvæ were found to live on friendly terms with species of ants, who milked them from papillæ above the anal segment.

Mr. R. Adkin read the Reports of the Field Meetings at Limpsfield and St. Paul's Cray.

November 12th.—The President in the Chair.

Mr. Jäger exhibited a specimen of *Ophiusa stolidæ*, a Noctuid new to Britain, taken at sugar, near Dartmouth, on September 23rd, 1903. Mr. Kaye, two remarkable aberrations of *Tæniocampa stabilis* (1), a ♀ with shiny pale hind-wings, the fore-wings brick red, and the transverse line and lunule distinct; (2), a ♀ with grey fore-wings, the lines strongly black, and a broad blackish fascia passing through the reniform stigma. Mr. McArthur, a specimen of *Hippotion* (*Chærocampa*) *celerio*, captured at Brighton on October 24th, by Mr. Clayton. Mr. Colthrup, a large number of the various species and forms of British *Anthrocerids* (*Zygænidæ*), including *A. hippocrepidis*. Mr. Fremlin, an example of *Hemaris bombylifformis* from the New Forest. Mr. Tonge, very finely executed photographs of the ova of *Numeria pulveraria*, *Oporabia autumnaria*, and *Hemerophila abruptaria*. Mr. West (Greenwich), a short series of *Sitones griseus* from Oxshott, where it was common on broom. At Yarmouth he had usually met with it at the roots of grass. Messrs. Dennis, Goulton, Main, Tonge and West (Streatham), then showed a large number of lantern slides comprising studies of flowers, ova, larvæ and pupæ of *Lepidoptera*, resting habits of imagines, diatoms, and geological formations in North Wales.—HY. J. TURNER, Hon. Sec.

ENTOMOLOGICAL SOCIETY OF LONDON: November 4th, 1903. Professor E. B. POULTON, M.A., D.Sc., F.R.S., President, in the Chair.

Mr. W. A. Bogue, Wilts and Dorset Bank, Shepton Mallet, Mr. G. R. Baldoek, 71, Hertford Road, Lower Edmonton, Mr. Robert Etheridge, jun., Curator of the Australian Museum, Sydney, New South Wales, Mr. Charles French, F.L.S., Government Entomologist, Victoria, Australia, Mr. J. T. Houghton, Worksop, Notts., Mr. G. Lyell, jun., Gisborne, Victoria, Australia, and Mr. William Herrod, the Horticultural College, Swanley, Kent, were elected Fellows of the Society.

Mr. H. J. Elwes, F.R.S., exhibited a small collection of Norwegian butterflies made in July last, on one day at Saltdalen, including a fine series of *Erebia disa*, *Pararge mæra* and *Carterocephalus sylvius*, the latter not being found in any other part of this region, though it occurs commonly in Southern Norway. Mr. A. J. Chitty, living specimens of *Anthribus albinus*, showing the way in which this beetle mimics its surroundings. Mr. J. W. Tutt, a number of series of the genus *Melitæa* to illustrate his remarks made at the last meeting, and the discussion on the affinities of the several named species was continued. Mr. H. J. Elwes mentioned that he was at present engaged in the classification and arrangement of the Melitæan Argynnids in the British Museum, and appealed to collectors to bring their series there to be looked over, and to present such specimens as might be useful for the completion of the group. The President exhibited a set of 323 butterflies from British Guiana, all captured on one day, August 28th, 1903, between the ninth and tenth mile from the Potaro River to the Gold Mines. The dominance of the black-hind-winged group was seen in the fact that it included no less than 295, of which *Melinæa mneme* alone accounted for 253 specimens. Mr. J. C. Kershaw communicated a note on the larva and pupa of *Clerome eumeus*, Drury. Mr. W. J. Kaye contributed "A Catalogue of the *Lepidoptera-Rhopalocera* of Trinidad, with an appendix by G. L. Guppy." Mr. P. I. Lathy, F.Z.S., communicated a paper "On some Aberrations of *Lepidoptera*."

November 18th.—The President in the Chair.

Mr. John Rowland Cattle, of Nettleton Manor, Caistor, and 59, Chancery Lane, E.C., and Mr. E. J. Hare, of 8, Hillsboro' Road, East Dulwich, S.E., were elected Fellows of the Society.

Mr. G. C. Champion exhibited numerous specimens of both sexes of *Xyleborus dispar*, from Moncayo, Spain, taken out of beech-stumps. Mr. F. B. Jennings (1), on behalf of Mr. H. Britten, of Great Salkeld, Cumberland, a specimen of *Tropiphorus tomentosus*, Marsh., from Great Salkeld, showing the deciduous false mandibles intact; (2), a ♀ specimen of *Anchomenus parumpunctatus*, F., from the same locality, showing a malformation of the middle right tibia which was abnormally thin, and bent in the centre, but thickened at the base; the right antenna also had the last seven joints flattened and dilated. Mr. Jennings also exhibited on his own behalf, *Apion sanguineum*, De G., taken at Brandon, Suffolk, in August last, on *Rumex*. Mr. H. St. J. K. Donisthorpe, *Apium sorbi*, ♂, taken this year at Freshwater, Isle of Wight, and said that the ♂ of this species was extremely rare. Mr. M. Burr, two ♀s and two ♂s of the largest known earwig, *Anisolabis colossea*, Dohrn, from New South Wales. Mr. A. J. Chitty, a specimen of the rare *Homalium testaceum* taken in Blean Wood in 1900, and a pair of bees *Nomada guttulata*, of which the ♂ has never been recorded hitherto in Britain, taken by him at Huntingfield, Kent, in May last. Dr. Norman Joy (1), *Euconnus*

mäklini, Mannerh., taken at Bradfield in July, 1901, new to the British list of *Coleoptera*, and (2), a series of beetles taken at Bradfield at the exuding sap of trees attacked by *Cossus ligniperda*. Colonel J. W. Yerbury, specimens of rare British *Diptera* from Porthcawl, including *Leptopa filiformis*, Zett., *Pelidnoptera nigripennis*, *Lucina fasciata*, and *Thyreophora fuscata*. Dr. T. A. Chapman, specimens of *Chrysophanus phlæas* from Reigate, Locarno and Spain, showing the apparent effects of temperature on the wing markings and coloration. Mr. G. J. Arrow showed specimens and diagrams illustrating a remarkable kind of variability noticed in beetles of the Trogid genus *Acanthocerus*. The President showed an exhibit sent by Mr. A. H. Thayer, of Mondarock, N.H., U.S.A. The greyish silhouettes of two butterflies were represented in a tint nearly the same as the basal-ground, but sufficiently distinct to be easily recognisable. Mr. Thayer considered the dark ground-colour of many Rhopalocerous insects represented shadow under vegetation, the white submarginal lines and dots a generalization of flowers and flower-masses. But these markings also had a second meaning in that they tended to obliterate the tell-tale margin of the wings. The President also exhibited specimens of *Drurya antinachus*, together with the butterflies which he suggested as forming a group synaposematic with it. The central species appeared to be *Acræa egina*, round which clustered a number of other species of the same genus so much alike as to be probably indistinguishable upon the wing. Examples of these were exhibited, viz., *A. zelis*, *perenna*, *rogersi*, and *pharsalus*. Another beautiful Papilionian member of the group, *P. ridleyanus*, was also shown, in pattern it was nearest to that of the male *A. egina*. In fact, so close was the resemblance that Godart had been entirely misled by it, and had described the *Papilio* under the name of *zidora* as the female of *Acræa egina*. Mr. E. Saunders, F.R.S., communicated "A Supplementary Note to a Paper entitled '*Hymenoptera Aculeata*, collected by the Rev. A. E. Eaton, M.A., in Madeira and Tenerife, in the Spring of 1902.'"—H. ROWLAND-BROWN, *Hon. Sec.*

December 2nd, 1903.—The President in the Chair.

Mr. F. H. Day, of Carlisle; the Rev. Thomas Prinsep Levett, of Frenchgate, Richmond, Yorkshire, and Parkington Hall, Lichfield; and Mr. Robert C. L. Perkins, B.A., of Honolulu; were elected Fellows of the Society.

Mr. H. Goss, one of the Secretaries, again read the names of the Officers and Members of the Council proposed for election at the General Meeting.

Mr. G. T. Porritt exhibited, on behalf of Mr. T. Ashton Lofthouse, a specimen of *Xylophasia zollikoferi*, taken at sugar near Middlesbrough, Yorkshire, on September 26th last. He said he believed that this was only the second specimen which had been recorded as having been taken in Britain. Mr. McLachlan, F.R.S., said the strongest evidence existed that a very large immigration of insects from the nearest continental coast took place during the exceptional (for this year) spell of warm and calm weather prevailing towards the end of September, and he was of opinion that the specimen of *Xylophasia zollikoferi*, taken by Mr. Lofthouse in Yorkshire, formed an item in this migratory swarm. Mr. Malcolm Burr exhibited, and remarked on, a specimen of *Dinarchus dasypus*, Illig., belonging to a family of five or six species confined to the Balkans. The President, a series of photographs sent by Mr. A. H. Thayer to illustrate his views on the significance of the colours

and patterns of butterflies' wings. The insects had been photographed on masses of foliage and flowers, and it was obvious that the dark ground-colour harmonized with the dark shadow behind and under the vegetation, while the light markings stood out as conventionalized representations of single flowers and flower-masses. Also the eyeless imagines and pupa cases of *Ennomos autumnaria*, in illustration of his remarks at the meeting on November 18th. Imagines produced by unblinded larvæ were also shown for comparison. Dr. Chapman made some remarks on the specimens exhibited by the President. The Rev. Francis D. Morice, M.A., read a paper, entitled, "Illustrations of the male terminal segments and armatures in thirty-five species of the Hymenopterous genus *Colletes*."—H. Goss, *Hon. Sec.*

ANTIPODEAN FIELD NOTES.

II.—A YEAR'S INSECT HUNTING IN NEW ZEALAND.

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

The large and important group of islands collectively known as New Zealand, whether they are viewed from the standpoint of the physical geographer, the biologist pure and simple, or the student of the geographical distribution of the varied forms of animal and vegetable life, may be regarded as one of the most interesting regions of the whole world. The insects especially, though it may be that on the whole they are somewhat lacking in superficial attractiveness, bear a more pronounced stamp of individuality than those of any other well-defined region of equal extent; and they, with the fast-vanishing indigenous birds, form a large and important relic of the most ancient and long-isolated fauna yet existing on the earth's surface.

Thanks to the exertions of such energetic entomologists as Captain T. Broun, Captain F. W. Hutton, Mr. G. V. Hudson, and Mr. J. H. Lewis—to name only those whose acquaintance I made during my visit to New Zealand, and whose invaluable assistance I gratefully acknowledge here—we have now a very fair general knowledge of most of the Orders of insects occurring in the Islands. Although extensive areas in the two great land-masses are as yet entomologically unexplored, and Stewart Island, the third and smallest, is entirely unworked, the number of species already known to inhabit New Zealand is so great as entirely to negative the idea, which still, I believe, prevails in some quarters, that its insect-fauna is a poor and limited one. My own visit, in H.M.S. "Ringarooma," to New Zealand, extended from October, 1901, to November, 1902; and this was supplemented by a flying trip with the Australian Squadron in February and March, 1903. Of necessity, the major

portion of my collecting work was done in the immediate neighbourhood of the principal seaports and oldest settlements, where the best results could hardly have been expected; but after many years of wandering and insect-hunting in various parts of the world, I am disposed to regard my New Zealand experiences as the most pleasant and interesting of all.

As New Zealand extends over fourteen degrees of latitude in the South Temperate Zone (from $34^{\circ}, 25'$ to $47^{\circ}, 20'$ S.), and possesses a more diversified surface than that of almost any other land of equal extent, its climate, although mild on the whole and eminently healthy, varies very greatly within its limits. In the north, we find the mean annual temperature of the south of France, though with less variation at different seasons, and such fruits as lemons, oranges, figs, and olives thrive to perfection at Auckland in the open. The climate of the Dunedin district may fairly be compared to that of the south of England, with fewer hot days in summer, and less severe cold in winter. At this season, frosts in the low country, though frequent enough, are usually of short duration, though I have seen ice half-an-inch thick in July at Lyttelton for several days in succession. On all the coasts the winds are often very boisterous, and Cook's Strait has quite an unenviable notoriety for stormy weather; and rapid changes of temperature are frequent, though not so great and sudden as in Australia. Insects, though of course less numerous in winter than at other times, are active in that season; and as, with very few exceptions, all the native trees and shrubs are evergreens, the general aspect of the country varies but little throughout the year.

In the course of settlement a great part of the once general forest clothing of the Islands has been destroyed, but many thousands of square miles in the more remote parts are still covered with the primeval "bush." This is especially the case on the western side of the South Island, where a naturally fertile soil, a genial climate, and a rainfall of from 80 to 150 inches per annum, combine to produce a vigorous and luxuriant forest growth such as is rarely to be met with outside the Tropics. The ferns of New Zealand are justly celebrated for their beauty and variety, more than 130 species being known, and the noble arborescent forms, which extend to the southern extremity of the Islands, give an air of great distinction to the deep and tangled gullies in which they are seen to the best advantage. The only indigenous palm is the Nikau (*Rhopalostylis sapida*) which is abundant in the North Island, and is found as far south as latitude 44° in Banks Peninsula, this being the southern limit of its

family. Much of the forest, especially in the south and on the higher mountains-slopes, consists chiefly of several species of *Fagus*, but elsewhere there is a considerable variety of trees, notably the fine Conifers known throughout the Colony by their expressive and sonorous Maori names, the Rimu (*Dacrydium cupressinum*), the Totara (*Podocarpus totara*), the Matai (*P. spicata*) and the Kahikatea (*P. dacrydioides*), all noble trees yielding valuable timber. The Kauri (*Agathis australis*), one of the grandest trees in the world, exists only in any quantity to the north of Auckland, where the once extensive forests composed almost entirely of this tree have been of late years sadly reduced, and its practical extinction is imminent. For the most part, the mixed "bush" is of a very dense and impenetrable character, from the luxuriance of the undergrowth and ferns, and the prevalence of climbers, two at least of which deserve special mention, as forming the principal obstacle in traversing the woods. The "Supple-jack," *Rhipogonum scandens*, is a member of the family *Liliaceæ*, which straggles over the highest trees, and its bare brown stems near the ground resemble nothing so much as an intricate tangle of two-inch rope, through which it is often impossible to force one's way. But a much worse obstruction is the "Bush Lawyer," *Rubus australis*, which climbs in dense masses over shrubs and stumps, especially at the edge of the bush. Every leaf of this detestable plant, which produces a small dry berry not worth eating, is armed along the back of the midrib with a series of recurved spines like cats' claws in miniature, and the damage to net and garments, to say nothing of tempèr, incurred in getting through the undergrowth where "Lawyers" abound, may be better imagined than described. It has, however, one point in its favour, as it is one of the most remunerative plants to beat for *Coleoptera* whenever the umbrella can be got fairly under a sufficiently old and dense mass. In the more open spaces, especially in the North Island, are wide stretches of high bracken (*Pteris aquilina*, var. *esculenta*), and, in poor soils, of the "manuka" or "tea-tree" (*Leptospermum scoparium* and *L. ericoides*), shrubs or small trees bearing a profusion of sweet-scented white blossoms, that are very attractive to many insects; and in swampy places especially, the New Zealand flax, *Phormium tenax*, is the prevalent and most characteristic plant, with its sword-shaped leaves five or six feet long, and loose spikes of dark red flowers on a stem sometimes ten feet high. Flowers are on the whole somewhat scarce in the "bush," though some of the trees, especially the golden-yellow Kowhai (*Sophora tetraphylla*), and the glorious crimson and

pink Ratas (*Metrosideros*), are most striking and conspicuous objects when in full blossom; and the Alpine flora, of which I had but a glimpse, is exceedingly rich in showy and peculiar forms.

In no part of the world has the indigenous Flora been displaced by introduced and cultivated plants, and by the weeds which everywhere follow the footsteps of civilized man, to so great an extent as in New Zealand. Mr. T. F. Cheeseman (Trans. N. Z. Institute, vol. xv, pp. 268 *et seq.*) enumerates no fewer than 350 species of plants, mostly common British and European forms, which have become naturalized in the immediate vicinity of Auckland. In the outskirts of some of the older settlements, notably at Christchurch and Nelson, the present vegetation is entirely English in character, and scarcely a single indigenous herbaceous plant or shrub has been left surviving by its more vigorous Old World competitors. Gorse, broom, sweetbriar, and brambles now cover large areas in the South Island, and are regarded as the most noxious of weeds. The Australian *Eucalypti*, especially *E. globulus* and *E. amygdalina*, make very fine and handsome trees, and this is also the case with the Californian *Pinus insignis*, a great favourite in the North Island; and oaks, elms, poplars, willows and all the ordinary home fruit-trees, attain to perfection in this genial climate.

The native land-birds, like the indigenous plants, have been to a great extent superseded by our familiar British species, and one must now go far afield to see any but a very few of them. Starlings, sparrows, larks, greenfinches, linnets, and especially goldfinches, have quite taken their place in all the settled districts, and in many places have become so numerous as to be a serious nuisance to the fruit-grower and farmer. Even the insects of such comparatively recent introduction as the hive-bee, the humble-bee (*Bombus terrestris*, L.), the blue-bottle fly (*Calliphora vomitoria*, L.) and the drone-fly (*Eristalis tenax*, L.) are much more in evidence to the casual observer than any of the indigenous forms.

On first landing in New Zealand, the entomologist can hardly fail to be impressed with the great apparent scarcity of insects. Excepting the *Diptera*, of which some species are individually numerous, a long day's walk without special search would probably reveal very little more than hosts of a common *Cicindela* (*C. tuberculata*, White, in the North, and *C. latecincta*, White, in the South Island) along the roadsides, the sandy banks of which are everywhere riddled with the burrows of their larvæ; a large and fine dragon-fly, *Uropetala carovei*, White, and on the "tea-tree" blossoms, in early

summer, great numbers of a little brilliant green "chafer," *Pyronota festiva*, Fab., and perhaps a Longicorn or two. At dusk the fine green Rutelid, *Stethaspis suturalis*, Hope, and the smaller brown species of *Odontria*, are sometimes seen on the wing in numbers, with a good many moths; a few of the latter insects are diurnal in their flight, and two or three butterflies, of which *Pyrameis gonerilla*, Fab., is usually the commonest and most beautiful, may be met with in most places. But a little closer investigation, in almost any locality where some part of the original "bush" remains, will reveal numbers of curious and most interesting forms in nearly all the Orders, and the Coleopterist, at any rate, may rely on filling his bottle by the exercise of a little persevering scrutiny. The great majority of these insects are most efficiently protected by their sluggish and retired habits, and by the close adaptation of their forms and markings to their immediate surroundings. In fact, I venture to affirm that among the New Zealand insects of all Orders, "cryptic coloration," and "protective resemblance," are carried to a greater degree, and in more frequent instances, than in any other equally well-known fauna; and this is especially the case with the *Coleoptera*, in which Order apterous or flightless forms appear to be very numerous, and many species are in consequence exceedingly local.

In the very useful "Manual of New Zealand *Coleoptera*," by Captain T. Broun (Wellington, N.Z., 1880—1893) 2,592 species are enumerated from the Islands, and the species since described, mostly by the above-named author, bring the total to more than 2,800 known forms of New Zealand beetles, a number which compares favourably with that of the British beetle-fauna on an approximately equal area. But this number is certain to be largely increased as new parts of the Islands are worked, and collecting is more closely carried out. The different sections of the *Coleoptera* are most unequally represented, many groups of otherwise world-wide distribution, and some of them especially prevalent in the neighbouring Australian continent, being either entirely absent from New Zealand, or having exceedingly few species indigenous to the Islands. Thus, of the three great families, the *Buprestidæ*, *Scarabæidæ*, and *Cetoniadæ*, all so abundant and fine in Australia, the first-named presents only two small and insignificant species; the second has a few small forms (*Saphobius*, *Aphodius*) found in decaying vegetable matter, there being no true dung-beetle; and the third has not a single representative. The *Cassididæ* are also entirely absent, and the other *Phytophaga* are very poor in species

(To be continued).

FURTHER NOTES ON LEPIDOPTERA OBSERVED AT MORTEHOE,
NORTH DEVON.

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

[See *Ent. Mo. Mag.*, 2nd Series, Vol. xiv, p. 194.]

During 1903 my stay at Morteheo was longer than usual, covering the whole of May, June, July, and August, and I did a good deal of day collecting; moreover, the Rev. C. Chichester, Mr. D. A. Onslow, Mr. A. L. Onslow, Mr. James Douglas, Mr. Selwyn Image, and Dr. F. A. Dixey from time to time accompanied me in my rambles, so that the additions to the list are very numerous. I only sugared once, but often visited the red valerian, which grows with great luxuriance in the garden. The weather in August was much against collecting, and worked sad havoc with butterflies.

Mr. C. G. Barrett and Mr. E. F. Studd gave me invaluable assistance in naming specimens. The list of *Tineina* is mostly due to the kindness of the latter.

Species observed for the first time are marked with an asterisk.

Cucullia verbasci, larvæ on mullein.

Leucania comma, two at flowers of red valerian.

Harmodia cucubali, Mr. Chichester found one at rest among roots under an overhanging bank [See *Ent. Mo. Mag.*, 2nd series, vol. xiv, p. 201].

Melanchra serena, rather common on rocks.—*M. brassicae*, towards the end of July Dr. Dixey and I took a very remarkable variety, in which the usual markings are darkly outlined on a pale grey ground. The abdomen is ochre-yellow, with a central chain of dark spots; a most striking and distinct looking insect.

Agrotis lunigera*, one at red valerian. Mr. Chichester took another at light.—A. triangulum*, one in the sugar trap, another taken by Mr. Chichester mothing.

**Triphæna prasina (herbida)*, one at red valerian.

Rusina tenebrosa, one in an outbuilding.

Hadena bicoloria, occasionally mothing, not so common as might have been expected.—**H. strigilis*, two specimens of the red variety in the sugar trap.

**Æthia nemoralis (grisealis)*, three specimens.

**Plusia iota*, taken by Mr. Douglas at red valerian.

**Eustrobia viridaria (ænea)*, Mr. A. L. Onslow took one.

**Rivula sericealis*, one.

**Chloroclystis rectangulata*, one.

**Tephroclystis vulgata*, one.

**Eucymatoge tersata*, one flying in the garden at dusk. (This and *T. isogrammaria* almost certainly introduced with the food plant).

**Plemyria bicolorata (ruginata)*, a very large specimen among alders.

Hydriomena picata*, one.—H. suffumata*, Mr. A. L. Onslow took one on a tree trunk in the garden; Mr. B. Young another on the sand hills.—**H. albicillata*, Mr. D. A. Onslow took one.—**H. albulata*, a single specimen in a

meadow which produces almost as much of the food plant (yellow rattle) as grass. Seen also twenty years ago, but accidentally omitted from my previous list.

**Operophtera brumata*, the larvæ are not very common.

**Euchæca oblitterata* (*heparata*), one.—*E. sylvata*, one; both species beaten out of alder.

Asthena candidata*, not common.—A. dilutata* (*filigrammaria*, *autummaria*), a larva.

**Xanthorhoe bipunctaria*, Dr. Dixey took one far from any chalk or limestone.

**Leptomeris marginepunctata* (*incanata*, *promutata*), Mr. Chichester took one on a rock at Woolacombe, Mr. A. L. Onslow another on a wall at Lundy Island.

**Euchloris lactearia*, two.

**Opisthographis liturata*, several in young fir plantations.

**Ectropis consonaria*, two on tree trunks.

Selidosema repandata, three of the banded variety, *conversaria*.

Pseudopanthera punctata (*temerata*), several.—**P. binaculata* (*taminata*), Mr. D. A. Onslow took one.

**Hybernia defoliaria*, a larva.

Biston hirtarius*, two larvæ.—B. betularius*, one at light.

Metrocampa prosapiaria* (*fasciaria*, *prasinaria*), two in young fir plantations.—M. pulveraria*, one taken by Mr. A. L. Onslow.

**Colotois pennaria*, larvæ.

**Gonodontis bidentata*, two; also a larva on lichen of the light green and black variety. Such larvæ were erroneously recorded in my first list as those of *Cleora lichenaria*.

Lasiocampa quercus (*callunæ*), Mr. Image took a fine female on August 13th, and a full grown larva the next day.

Argynnis adippe*, a few. I think this must have been previously overlooked among the far more numerous *A. aglaia*.—A. euphrosyne*, rather common.

**Melitæa aurinia* (*artemis*), quite abundant in a very restricted area, by no means co-extensive with the distribution of *Scabiosa succisa*, a plant very common in the district.

Vanessa io, the only one of the genus that has been at all common this year.

[*Apatura iris*, a very definite report reached me that a specimen was seen between my house and the sea; the locality, in spite of the shallows, seems most unlikely. The insect has, so I am told, been noted at Barnstaple.]

**Hesperia malvæ* (*alveolus*), rather common. This makes 34 species of butterflies that I have taken within this small area.

**Pempelia dilutella* (*adornatella*, *subornatella*), common amongst wild thyme near the sea. Of the *adornatella* form, but very grey in colouring, the crimson being almost absent.

Crambus pinellus (*pinetellus*), the habits of this species are very different from those of its congeners; I have never kicked it up from herbage, but have always beaten it out of hedges, most frequently perhaps from elder.—*C. perlellus*, this year in some numbers, it is an early species.—*C. geniculeus*, here on rocks, or among short grass, &c., but in my father's garden at Wandsworth, many years ago, I always beat it out of *Cedrus deodara* and other conifers. This species, and the more abundant *culmellus* appear to me to be distinctly gregarious.

Stenia punctalis, not uncommon among herbage close to the shore.

Eurhyphara urticata, quite a scarce insect here.

Phlyctœnia crocealis, common in one place, but very local, being by no means co-extensive with the range of fleabane. As it appears to be difficult to dislodge it may really be commoner than one thinks.

**Pyrausta asinalis*, one on the sand hills, nothing.

Scoparia ambigua*l.——S. basistrigalis*.

[*Endotricha flammealis*, Mr. Image took one at Instow.]

**Stenoptilia pterodactyla* (*fuscus*, *fuscodactylus*), common, occasionally at red valerian.

Chrosis littoralis, very common amongst thrift close to Morte Point. Appears to be very local.

**Eucosma striana*, a solitary specimen near the golf house.

**Eudemis novæna*, several. Mr. Image observes that the tips of the fore-wings are turned up in repose so as to appear more hook-tipped than when set.

**Notocelia roscolana*, one.——*N. roborana*, one on the sand hills (*N. incarnatana* (*amanana*), Mr. Image took one on the sand hills at Instow, about seven miles distant).

Epiblema tripunctana*, only two seen.——E. towella* (*hyrciniana*) among spruce firs.——**E. pflugiana* (*cirsiana*, *scutulana*), rather common in places.——**E. brunnichiana*, one or two.——**E. cana* (*hohenwarthiana*, *scopoliana*) ?.

Lipoptycha plumbana (*ulicana*), several.

**Laspeyresia leguminana* (*interruptana*) ?, one worn specimen beaten out of a fir.

**Acalla permutana*, a single specimen amongst *Rosa spinosissima*, quite distinct from *A. variegana*, var. *boreana*, taken inland the same day.

**Cacoecia musculana*, rather common.

**Pandemis ribeana*, one.

Tortrix forsterana* (*adjunctana*), a few.——T. virgaureana*, common.——**T. conspersana* (*perterana*, *communana*), among grass or low herbage, or on rocks, mostly near the shore. Twice taken in the sugar trap, which very rarely produces *Tortrices*. Very variable in colouring, some an almost unicolorous deep grey, specimens approaching *T. octomaculana* scarce.——**T. osseana* (*pratana*). Locally abundant in a pasture nearly 600 feet above the sea.

Phalonia smeathmanniana* ?, seen, but not secured.——P. badiana*, but two specimens, though often looked for, possibly very retiring in its habits.——**P. tesserana*, frequently kicked up from grass; somewhat grey in colour.

**Euzanthis angustana*, several of the large June form among mixed herbage (also on Lundy Island). Only two of the small August form, these were found amongst heather a mile away from the others.

[*Trochilium musciforme* (*philanthiforme*), Mr. A. L. Onslow took one on the cliff on Lundy Island, bringing it home in a match box. During the past two summers I have often sought for it in vain amongst the thrift on the mainland.]

**Paltodora cytisella* ?, common among bracken.

**Aristotelia tenebrella* (*tenebrosella*).

**Anacamptis vorticella* (*ligulella*, *cincticulella*), one.

Gelechia desertella*, on the sand hills.——G. terrella*, **G. atriplicella*, **G. maculea*, **G. ericetella*, common amongst heather.

**Depressaria liturella* (*flavella*, *bipunctosa*), at flowers of red valerian.

**Cecophora sulphurella*, rather common in hedges.

**Coleophora pyrrehulipennella*, a solitary specimen.

**Elachista megerlella* (*cinctella*, *adscitella*, *obliquella*), **E. rufocinerea*, **E. cygnipennella*, common.

**Schreckensteinia festaliella*, rather common in hedges. To my eye this is much more like a Plume than a *Tinea*. Stainton says (Natural History of the *Tineina*, vol. xii, p. 40) that the peculiar carriage of the posterior legs is met with not only in *Stathmopeda*, but in the Indian *Atkinsonia clerodendronella*.

**Prays curtisellus*, both the type form and the dark variety *rustica*.

**Hyponomeuta cognatella* (*evonymella*), a single specimen taken by Mr. Image near the house. Is the larva known to feed on the *Euonymus*, so much grown in sea-side gardens? [Very common on *Euonymus japonicus* in and near London, which is probably the plant intended.—EDS.]

Glyphipteryx fusco-viridella*, common.—G. thrasonella* (*cladiella*), swarming among rushes.—**G. fischeriella* (*schænicolella*), in swarms.

Lithocolletis faginella* (*triguttella*), common.—L. messaniella*, very common amongst Holm oaks in the garden.

**Ornix avellanella* (*devoniella*).

Gracilaria alchemiella* (*swederella*), two.—G. syringella*, very common amongst privet.

**Cedestis farinatella*, among firs.

Argyresthia mendica*, **A. nitidella* (*purpurascensella*), abundant.—A. albistria*, common.

**Swammerdamia combinella* (*comptella*, *apicella*), several.

**Acrolepia granitella*, two.

**Incurvaria musculella* (*masculella*), two or three.

Lampronia luzella*, one.—L. prwatella*, one.

**Nemophora swammerdammella*, rather common.

**Adela fibulella*, a single specimen on *Veronica chamædryis*.

**Hepialus lupulinus*, Mr. Douglas took one in a cobweb.

**Micropteryx subpurpurella* (*fastuosella*).

Twitchen, Morteohoe :

August 31st, 1903.

Occurrence of Cryptocephalus coryli in Sherwood Forest.—In June of last year I, in company with my friends Messrs. J. Ray Hardy and E. J. B. Sopp, took eight specimens of this insect in Sherwood Forest (two males and six females) by beating birches and oaks. There is very little hazel at all in the Forest, none whatever where the beetle occurred. This is, I believe, the first record of its capture in the locality.—J. KIDSON-TAYLOR, 2, South Terrace, South Avenue, Buxton: January 12th, 1904.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (7).

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

XYELA AND THE SIRICIDÆ.

The family of the *Lydidæ*, as defined by Konow, embraces, besides the *Lydini* and *Cephini*, a third subfamily, the *Xyelini*, which is represented in England by one species of one genus, viz., *Xyela julii*, Bréb. Any one fortunate enough to find this rare and curious little insect should be able to determine it at once by its extraordinary antennæ. There are figured in Cameron, vol. ii, pl. vi, and I have already mentioned their unique structure in the Table of Genera. The insect has several times occurred in this country, but I never took it myself, and, having only foreign specimens, will merely refer any one wishing for more information about it to Mr. Cameron's Monograph.

We may now pass to the *Siricidæ*. The genera of these which have been found in Britain are (1) *Xiphydria*, (2) *Sirex*, and—*teste* Stephens—(3) *Oryssus*.

(1) Of *Xiphydria* we have two species, commonly known as *camelus*, L., and *dromedarius*, F. These names express rather felicitously the similarity between the two, and their common peculiarity of a very elongate "neck." Konow has shown, however, that Geofroy's name *prolongata* has "priority" over *dromedarius*; and I suppose we must, however regretfully, adopt it, since the laws of nomenclature recognise no such principle as the "Survivals of the Fittest."

Prolongata is known at once from *camelus* by the conspicuous red on its abdomen. In the ♀ especially this part is red nearly to the apex. *Camelus* has no red on the body. Its abdomen is simply black with creamy-whitish lateral spots.

Camelus is attached to the alder. Most British specimens are from Scotland and the North of England.

Prolongata, on the contrary, is generally found in southern counties. I once met with a good many specimens (but all males) in the hollow interior of a large half-decayed willow near Ripley (Surrey).

As far as I know, neither species can be called common in collections. *Prolongata* has come to me occasionally for determination from correspondents, but *camelus* never. I have seen, however, at South Kensington a fine ♀ of the latter, taken (I believe somewhere in the Midland Counties) by Colonel Yerbury.

(2) As to *Sirex*, it seems useless to enumerate particular localities, and impossible to say for certain which of the recorded species are

really indigenous. Boring as they do in solid timber, their larvæ get conveyed about with it from place to place, and may reach us from other countries, or even from other continents. I have myself met with *S. gigas* in Upper Egypt, where it is certainly not indigenous. No doubt it simply arrived by boat and rail in European timber.

Two species are pretty often found in this country, *gigas*, L., and *noctilio*, F. (= *melanocerus*, Thoms.). These are not likely to be confused, at least in the ♀♀, *gigas* having a hornet-like coloration, its dull finely rugulose abdomen being fuscous at the base and tawny-yellow at the apex, while *noctilio* ♀ has the basal and apical abdominal segments shining blue-black, and the intermediate ones obscurely violaceous. Also in *gigas* ♀ the dorsal apex is rounded at the sides and produced centrally into a long "mucro" or spike which is dilated in its middle, while in *noctilio* the apex is nearly an equilateral triangle, with jagged edges and a comparatively short and simple pointed extremity. The males are not so strikingly dissimilar, but *gigas* is usually larger, has yellow antennæ, and a dull abdomen. In *noctilio* the antennæ are black, the abdomen (which in this sex is not coloured as in the female, but yellow with a black apex), has a shiny look, which at once distinguishes it from *gigas*, and (a character which also separates the females) the 3rd joint of the antennæ is distinctly longer than the 4th. In *gigas* it is, if anything, shorter.

Specimens of *noctilio*, F., are, I believe, constantly recorded in this country under the name *juvencus*, F., and I have probably named them so for correspondents myself. But if the true *juvencus* occurs at all in Britain, it must be very rare. I have it from Switzerland, but have never seen a British specimen which I can confidently refer to it. True *juvencus* ought to have the antennæ widely yellow at the base, the vertex finely punctured and not deeply sulcate; its ♀ should have all the legs red up to the coxæ, the saw-sheath (viewed laterally) slender and scarcely rugose; in the ♂ the 8th dorsal segment should be blue only at the sides. Thomson adds that in both sexes the tarsal joints 2—4 have in *juvencus* "patellas completas," and in the other species "patellas minimas apicales." This he regards as the most important character for separating the two insects, but I am bound to say that I have found it a very difficult one to realize, though I have tried hard to see it in my own specimens. With the two species actually side by side one *does* see a certain difference, but I should be sorry to have to determine an isolated specimen by means of it.

(3) *Oryssus abietinus*, Scop., is a rather small insect with bright red abdomen. Stephens says that Dr. Leach took one in 1817 at

Dareuth Wood, "while in company with me on a collecting excursion," and another "subsequently in Devonshire." These specimens are, I presume, the two now at South Kensington in the British collection. Not having turned up since, as far as I know, it might perhaps as well be omitted from the list of existing British species.

NOTE ON TWO SPECIES OF *COLEOPTERA* INTRODUCED INTO EUROPE.

BY GILBERT J. ARROW, F.E.S.

Two small species of beetles, which may become of importance as affecting articles of commerce imported into Europe from the East, were originally described by Walker (it is unnecessary to say without any exact study of them) from specimens in the British Museum, and examples of both introduced into Europe have since been characterized by Herr E. Reitter as generically and specifically new, other authors having also described them under different names from various quarters of the world. The object of this note is to bring together the various synonyms, and to point out the correct name in each case.

The first of the species referred to was called *Ditoma rugicollis* by Walker in 1858, and five years after was given the name of *Minthea similata* by Pascoe, who, although ignorant of Walker's connection with it, placed it in the same family, *Colydiidæ*. Mr. Waterhouse first pointed out [Ann. and Mag. Nat. Hist. (6), xiv, p. 68 (1894)] its close affinity with the genus *Lyctus*, and expressed the opinion that Walker's and Pascoe's insects belonged to the same species, although brought from Ceylon and the Malay Archipelago respectively. Since that time specimens have been received from various parts of the world, and, although they show considerable variation, I have been unable to find any sufficient reason for regarding them as representing more than a single species. In Europe the same insect has been again honoured with generic rank by Reitter, who has called it *Lyctopholis foveicollis*. Finally, a specimen found by Mr. Blackburn in the Sandwich Islands was referred by him in 1885 to the *Colydiid* genus *Eulachus*, to which it has little resemblance, as *E. hispidus*. The type of the genus *Minthea* is a Brazilian insect, *M. squamigera*, Pascoe, closely related to the Oriental species, which should be known as *Minthea rugicollis*, Walker.

The other insect was first described in 1859 under the name of

Trogossita rhizophagoides, the type being also from Ceylon. In 1871 Gerstaecker described what there can be no doubt was the same species from East Africa as *Læmotmetus ferrugineus*, referring it to its proper position in the *Cucujidæ*. In 1885 a new generic name was proposed for it by Olliff, who, after an examination of Walker's type in the British Museum, called the species *Asana rhizophagoides*. This insect also has been added to the European list, under yet another name (*Oryzæus cathartoides*) by Reitter, who, however, subsequently treated it as synonymous with Gerstaecker's species. The oldest name being Walker's, the insect must be called *Læmotmetus rhizophagoides*, Walker. In the British Museum collection there are specimens of it from Ceylon, Formosa, Celebes, Timor, New Guinea, and East Africa. The rather larger, but very closely related form, *L. insignis*, Grouvelle, seems to represent the commoner species in India and Burmah.

The synonymy of these two much-described little beetles is accordingly as follows:—

MINTHEA RUGICOLLIS.

Ditoma rugicollis, Walker, Ann. and Mag. Nat. Hist. (3), ii, p. 206.

Minthea similata, Pascoe, Journ. of Entom., ii, p. 141.

Minthea rugicollis, Waterh., Ann. and Mag. Nat. Hist. (6), xiv, p. 68.

Eulachus hispidus, Blackburn, Trans. Roy. Dublin Soc. (2), iii, p. 141.

Lycotopholis foveicollis, Reitter, Verh. zool.-bot. Gesells. Wien, 1878, p. 199.

LÆMOTMETUS RHIZOPHAGOIDES.

Trogossita rhizophagoides, Walker, Ann. and Mag. Nat. Hist. (3), iii, p. 53.

Læmotmetus ferrugineus, Gerstaecker, Arch. Naturg., xxxvii, 1, p. 45.

Oryzæus cathartoides, Reitter, Coleopt. Hefte, xv, p. 37.

Asana rhizophagoides, Olliff, Proc. Linn. Soc. N. S. Wales, x, p. 71.

British Museum (Natural History):

January 12th, 1904.

[It is perhaps worth while calling attention to another introduced species included in the European list which has been described at least twice. This is *Pharaxonotha kirschi*, Reitt. The synonymy is as follows:—

PHARAXONOTHA KIRSCHI, Reitt.

Pharaxonotha kirschi, Reitt., Deutsche ent. Zeitschr., 1875, Heft iii, p. 86.

Thallisella conradti, Gorh., Biol. Centr.-Am., Col. vii, p. 249 (1898).

Reitter's specimens were found in Silesia amongst imported Mexican drugs; those described by Gorham were obtained in Guatemala. Mr. Chittenden, of the U. S. Dept. of Agriculture, has sent me several examples of it from Mexico. This insect belongs to the *Erotylidæ*.—G. C. C.]

ON *BARICHNEUMON HERACLEANÆ*, BRIDG., WITH A DESCRIPTION
OF THE MALE.

BY CLAUDE MORLEY, F.E.S., &c.

In a box of *Ichnemoninæ* recently sent to me for determination by Mr. W. H. Harwood, were both sexes of the above insect, of which the ♂ is hitherto undescribed:—

Head black; occiput obsoletely and confluentely punctate; frons distinctly and confluentely punctate, laterally narrowly flavous; face with short, griseous pilosity, somewhat shining and centrally prominent, epistoma quadrately and the fascial orbits broadly flavous; elypeus entirely flavous, discreted, shining, distinctly and somewhat sparsely punctate; its apical margin rotund with a subimpressed central fovea; mandibles bidentate, not very stout, basally flavous; palpi elongate, pilose, testaceous; external and vertical orbits immaculate. *Antennæ* shorter than body, somewhat slender, filiform and apically attenuate; piceous, with scape and flagellum entirely flavous beneath; seventh flagellar joint quadrate. *Thorax* black, with margin of pronotum and elongate callosities before and beneath the radix white; mesonotum shining, not very finely punctate, notauli distinct; mesosternum finely punctate, with deeply impressed sternauli; metathorax pilose with complete areæ, areola semilunar, only slightly transverse, emitting costulæ from its centre, petiolar area discreted and trans-strigose; apophyses obsolete, spiracles oblong. *Scutellum* black, with two white dots on either side of its centre; sparsely punctate with erect pilosity. *Abdomen* subcylindrical, finely and closely punctate with pale pubescence; red, with the basal, except its extreme apex, and the two subapical segments, black; postpetiole somewhat short and explanate, bicarinate and centrally punctate-strigose; gastrocæli and thyriddii obsolete, punctiform, the intervening space evenly punctate; ventral valvulæ pilose and exerted. *Legs* black; front trochanters and apices of their femora flavous; anterior tibiæ and tarsi ochraceous; posterior femora piceous, the hind ones broadly red basally; hind coxæ finely and closely punctate, front tibiæ not spinulose; posterior calcaria with their apices infusate. *Wings* normal, hyaline; tegulæ and stigma piceous, radix whitish; areolet narrowed above, externally subpellucid; radius apically reflexed; first recurrent nervure of lower wing postfureal, emitting nervellus below its centre. ♂.

Length, 9 mm.

Than the ♀ (*cf.* my "Ichn. Brit.," 93), the abdomen of the ♂, and especially its basal segment, is narrower, with its central area hardly broader than its lateral area, the metathoracic sculpture is identical excepting the shorter and basally broader areola, which is subtruncate apically.

The ♀ sometimes has all the femora and the anterior tibiæ mainly red, the base of the petiolar above black, and the length, though not the shape, of the areola is variable; the ♀ length varies from $7\frac{1}{2}$ – $8\frac{1}{2}$ mm.

The ♂ differs from that of *B. vacillatorius* in its larger size, much longer areola, bimaculate scutellum, irregularly punctate postpetiole, the apex of which is not glabrous, and in the hind tibiæ not being internally canaliculate. Both sexes have the metapleuræ evenly punctate, at least basally, and not transversely costulate as in *B. vacillatorius*, to which it is so closely allied that much care is necessary to distinguish it therefrom.

Mr. Harwood sent me a pair, and subsequently adds (January 16th) "I bred about a dozen specimens from pupæ of *Depressaria heracleana* in 1902; the locality is within a mile of my house" (in Colchester). "I think there were three males and nine females, at any rate, I had this number together labelled '*I. hericliana*,' being determined to my satisfaction some years ago; but seeing they did not all agree with your description, I thought I should like you to look at a pair."

Ipswich: *January, 1904.*

Elasmotethus ferrugatus, F., in Derbyshire.—I am very pleased to be able to record the capture of a second British specimen of this handsome Hemipteron; it was captured by Mr. G. Pullen about the middle of last June on raspberry in a garden on the outskirts of the town of Derby, and was forwarded to me for examination by the Rev. F. C. R. Jourdain, who is assisting with the Victoria County History of Derbyshire. The other record for this species was from Bangor, North Wales, July, 1900 (*cf. Ent. Mo. Mag., xxxvi, p. 131.*)—EDWARD SAUNDERS, St. Ann's, Woking: *January 8th, 1904.*

Orthostira nigrina, Fall. (macropterous) in Somersetshire.—Two fully developed specimens of this rare species have been sent to me for identification by Mr. Dale, of Glanvilles Wootton. They are the first British examples of the macropterous form that I have seen, and were taken by Mr. Dale at Shapwick in Somersetshire. The only other British records that I know of are from Scotland. This macropterous form is so unlike the brachypterous that it might well be mistaken for a distinct species; it is somewhat similar in shape to a *Dictyonota*, but smaller, and with thin antennæ, the third joint of which is testaceous and very slightly widened at the base as in brachypterous specimens.—ID.

Is Leptidia brevipennis a British insect?—As an old Reading Collector I have been much interested in Mr. Barnes' note in the last number of this Magazine (p. 14) on the capture of *Leptidia brevipennis* near an ants' nest. This discovery is likely to be far more important than might be inferred from the very modest way in which it is recorded. There is no doubt, I think, that the beetle could have had nothing whatever to do with the ants near which it was found; it had probably but just alighted or dropped on what, for so defenceless a species, would be a most dangerous spot. It would be difficult in August to sift or hunt among any fallen leaves which were not near ants. The locality where the insect was taken is an old hunting ground of mine, a grand wild place resembling parts of the New Forest. There are certainly no old baskets there, but plenty of the material from which baskets are made, and I think if Mr. Barnes searches carefully in the same district next season it is extremely likely he will find that the beetle lives there as an indigenous species.—W. HOLLAND, University Museum, Oxford: *January 15th, 1904.*

Occurrence of the genus Strobliella, Klap., in Northern Africa.—This genus

of *Perlidæ*, allied to *Leuctra*, was established by Klapálek in the Bulletin Internat. de l'Académie des Sciences de Bohême, 1901, where he describes *S. minuta* from the Sierra Morena in Spain.

Some time ago I received through Mr. McLachlan a few specimens of a *Leuctra*-like insect taken by the Rev. A. E. Eaton about Bône, in Algeria, in March and April, 1903. In forwarding these to me, Mr. McLachlan remarked that they did not appear to be quite of the regulation *Leuctra* type—the genus *Leuctra* being wonderfully homogeneous—and in this, on examining the insects closely, I found that he was quite right.

There seemed to be little doubt that if they were not identical with Klapálek's species above mentioned, they were certainly very close to it. To put the matter beyond question, I submitted one of the ♂ to Prof. Klapálek, and he at once confirmed the determination of the species as *Strobliella minuta*. Thus, *S. minuta* has been found in two rather widely separated localities of the Mediterranean area, in which it probably takes the place in part, or it may be in some districts wholly, of the genus *Leuctra*. But there is still very little definite information regarding the distribution of the latter genus, except in North-Western and Central Europe. According to our present information, it would seem to reach its maximum development in Austria, but this conclusion is the result of the exhaustive work of Dr. Kempny, and may require slight modifications when other regions have been more fully explored for these insects.—K. J. MORTON, 13, Blackford Road, Edinburgh: January, 1904.

Coleoptera from Berkshire.—Pressure of work, and the very wet weather in October, gave me very little time for collecting *Coleoptera* in the autumn, but one or two captures are, I think, worth recording. In October I visited a favourite old sand pit in the neighbourhood of Bradfield, which in the summer is swarming with bees of many species, and took one specimen of *Cryptophagus populi*, Payk. A few days after, while searching for more, I dug up some of the bees' burrows; and although I was unsuccessful in finding the *Cryptophagus*, some twenty specimens of *Megatoma undata*, Er., were unearthed. These were nearly all found still in their pupæ cases, and were beautifully fresh. I think the larva must have been feeding on the larva or pupa of an *Andrena*, of which there were a great number of cocoons in the sand. I have once before taken *M. undata* crawling on an old stump well bored by wood-haunting bees.

On the only other occasion I was able to get away for a day's collecting I went in search of *Elater elongatulus*, Ol. After nearly two hours' work with no results I came across an old fir stump, out of which I took ten specimens; I found them, evidently not long hatched, in the hard wood close to the outside of the stump; about sixteen specimens were eventually brought to light. The only other species of any interest that have turned up are: *Bembidium quinquestriatum*, Gyll., six specimens behind a loose brick on an old bridge, and *Ischnomera cærulea*, L., a long series from a log of wood on December 24th.

A search through a large number of specimens which I have not had time to identify before has revealed several species of interest. In the following list Bradfield is the place of capture, except where some other locality is mentioned: *Agabus femoralis*, Payk., and *Hydroporus neglectus*, Schann, Wellington College; *Ischno-*

glossa corticina, Er., evidently not uncommon under bark in the neighbourhood; *Oxytelus clypeonitens*, Pand.; *Omalium septentrionis*, Thoms., two, the first in April, 1901; *Phlæocharis subtilissima*, Mann., under bark at Wellington College; *Scydmaenus poweri*, Fowler, under bark at Streatley; *S. pusillus*, Müll., *Trichopteryx seminitens*, Matth., by sifting the bottom of an old hay stack at Thatcham; *Carcinops 14-striata*, Steph., from old bones; *Gnathoncus punctulatus*, Thoms.; *Phalacrus brunnipes*, Brit. Cat.; *Meligethes serripes*, Gyll.; *M. ochropus*, Sturm; *Smicronyx reichei*, Gyll.; *Ceuthorrhynchus urticæ*, Bol.; *C. euphorbiæ*, Bris. I have only three specimens of the latter taken at Aldermaston in August; I took it quite commonly by sweeping, but unfortunately mistook it for *C. asperifoliarum*, Gyll., at the time.—NORMAN H. JOY, Bradfield, near Reading: January 5th, 1904.

The late Mr. P. B. Mason's Collections.—Mr. Sydney Webb has called our attention to an inaccuracy, and also to an omission, in the notice that appeared in our last No. Mr. J. Sang's collection of British *Lepidoptera* was sold by auction and dispersed before its owner was appointed to the position he subsequently held in Mr. Mason's museum. On the other hand, Mr. Mason purchased privately the once famous old collection formed by Edwin Shepherd of Fleet Street, some time Secretary of the Entomological Society of London. This is important, inasmuch as it concerns a collection of at least historical interest.—EDS.

Sirex juvencus and S. gigas in Hertfordshire.—During the past season instances of the mischief caused by these two species of *Sirex* have been brought under my notice. In September the Instructor at our Technical School, Mr. J. T. Baily, drew my attention to some silver fir wood which had been purchased from a local timber merchant for use in the School. A section of the trunk showed that it was full of galleries made by some wood-boring larvæ. I gave instructions for it to be kept for observation, and in a few days a *Sirex juvencus* ♀ emerged. A part of the tree had been cut up into planks, and these had been placed one over the other against one of the interior walls of the school building, so that after leaving the cocoon the imago had in several cases to bore through a succession of planks in order to obtain its liberty, making a clean cut tunnel a quarter inch in diameter. A considerable number of these insects, both ♂ and ♀, emerged during September and October, and were captured on the windows when they flew to the light. The wood still contains a number of larvæ not fully fed, which will probably develop next year. The tunnels ran in all directions, making the timber quite useless for school work. I have, however, been able to turn the infestation to account, for it has furnished an interesting series of specimens, both of the insects and their borings, which I am utilizing in the preparation of a case for the County Museum, to show the damage done by *Sirex juvencus* to growing timber. The tree in question grew on the Russell Estate near here. During the time I had these insects under observation my Co-Secretary at the County Museum brought me a *Sirex gigas* ♀ which had been killed in his wood cellar, and a few days afterwards he informed me that quite a number of them, of both sexes, had appeared in the same place. Investigation showed that they were emerging from a heap of fir wood which had been purchased

for fuel. A piece of the wood which had been badly tunnelled by the grubs and the escaping saw-flies was kindly sent me by Mr. Kitton for exhibition at the Museum.—A. E. GIBBS, Herts County Museum, St. Albans: *January 4th*, 1904.

Some Aculeate Hymenoptera in North Durham in 1903.—Speaking generally, this year has been a poor one for *Hymenoptera*. The spring, however, opened with great promise, and queen wasps and humble bees were very abundant. Of the *Vespæ* I took in April and May *V. rufa*, *V. vulgaris*, *V. germanica*, and *V. sylvestris*. The other tree wasp, *V. norvegica*, although usually common, its nests being found in numbers in our fir woods, did not show itself. As if to compensate for this toward the end of June I took two (recorded elsewhere), and saw about half-a-dozen other, *V. austriaca*. These occurred in a small clearing in the middle of an extensive larch wood amongst the North Durham Hills, decidedly an upland region. A point I consider worthy of notice is, that although I got about two dozen queen wasps in this same limited area, yet all (save these two) were *V. vulgaris*; not one *V. rufa* did I get within six miles of the spot. These *V. austriaca* were flying in and out of hedge bottoms and out of the roots of honeysuckle climbing up dwarf birches. They were much later than the *V. vulgaris* I got at the same spot. On the wing they are very conspicuous from their flight and lightness of colour, as they are of a very much brighter yellow than the rest of the *Vespæ*; further, when flying they seem to be much more slimly built than the others. The last wasp I saw in Durham in 1903 was on July 6th, a worker of *V. vulgaris*; from that date onward I never saw another.

Of the *Bombi* I saw in spring *Bombus agrorum*, *B. venustus*, *B. hortorum*, *B. terrestris* var. *lucorum*, *B. terrestris* var. *virginalis*, *B. pratorum* and *B. latreillei* var. *distinguendus*; these were very common. *B. distinguendus* was taken in the small clearing mentioned above. *B. derhamellus* and *B. lapidarius* were not so common here, but three miles south of this I got about a dozen *B. lapidarius*. In autumn all I saw were myriads of *B. agrorum*, a few each of all sexes of *B. hortorum*, *B. venustus*, *B. derhamellus*, a few male *B. pratorum*, and one queen *B. terrestris*. The others were absent.

Of *Psithyrus* I saw no spring females, but in July, when *B. hortorum* came off, males of *P. vestalis* were not uncommon in the Derwent Valley, and I saw one or two females later; the other species of the genus were absent from these districts this year.

I have to record for the first time from Durham, I think, a single specimen of *Andrena fulva*, which I took in May at the flowers of Lousewort (*Pedicularis sylvatica*); I never saw or took it before here, and no Hymenopterist I know has either.—J. W. H. HARRISON, 2, Craig Street, Birtley, R. S. O.: *Dec. 10th*, 1903.

Hymenoptera (Tenthredinidæ and Aculeata) in Dumbartonshire: with some additions to the Clyde list.—Seldom has it been the misfortune of entomologists to experience such a poor year for collecting as that just closed. Until the middle of the month of June the weather was fairly good, but after that time, with the exception of a period in July, rain was very frequent. The spring *Hymenoptera* were

late in appearing with us, and those that did turn up were rather scarce. Of the solitary bees *Andrena clarkella* was more common than usual, a fine series being taken on a sandy bank in the Murroch Glen. An unusual feature of last spring was the exceptional abundance of the small larvæ of *Meloe proscarabæus* on insects taken particularly at furze bushes; I counted as many as six on a single ♀ of *Andrena albicans*. Even the *Diptera* were not unmolested, such species as *Eristalis tenax* occasionally showing an odd passenger. Sallow was late in blooming, and in many cases the bushes were useless for collecting purposes. The best capture I made during the season was a pair of *Andrena ruficrus*, the ♀ being taken a week or so after the ♂ from a sallow bush in Murroch Glen, about a mile away from the place of capture of the first one. The *Tenthredinidæ* were not by any means common, but one or two good species were taken, notably *Tenthredopsis fenestrata*, Knw. In the following lists there are one or two species included that are not in the West of Scotland List (1901), and which I took previous to last season (1903). The saw-flies may have been recorded by Cameron, but the changes of nomenclature and want of sufficient material for reference prevents me forming an accurate opinion on this point.

TENTHREDINIDÆ.

Lyda stellata, scarce, Bonhill.

Pamphilus silvaticus, common, Bonhill. *P. balteatus*, Bonhill.

Abia sericea, not uncommon on the hill sides.

Lophyrus pini, larvæ often met with in pine woods.

Pontania proxima, Bonhill. *P. salicis*, Bonhill.

Holocneme lucida, not uncommon in Murroch Glen.

Hoplocampa pectoralis, Bonhill.

Tomostethus fuscipennis, common, Murroch Glen.

**Blennocampa (Ardis) bipunctata*, Bonhill.

**Phyllotoma microcephala*, Bonhill.

Selandria morio and *Strombocerus delicatulus*, both common in Murroch Glen.

Pæcilosoma immersa, Bonhill.

**Dolerus gessneri*, Bonhill. *D. fumosus*, Bonhill.

**Tenthredopsis dorsivittata* and *T. fenestrata*, both scarce, Bonhill.

ACULEATA.

Formica fusca—In examining a nest of this species in April I discovered a winged ♀ among the general body in the nest; it was a very conspicuous object, and I believe very rarely met with thus early.

Pompilus niger—Whilst digging among some broken rocks and sand in the Murroch Glen I picked up a couple of small cocoon-like objects, and supposing them to belong to some species of *Ichneumon* I took them home, and in the course of time they produced specimens of *niger*; they were quite near the surface, but underneath a stone, when found. *P. spissus*—I obtained several specimens of this species, the first I have taken here.

Agonia variegata—I took half-a-dozen specimens of this species in July, 1902, on an old dry stone wall here; the species is not included in the Clyde list.

Pemphredon lethifer, one specimen, Bonhill; also new to Clyde list.

Gorytes mystaceus, common in Murroch Glen; seems to have a fondness for settling on bracken.

Nysson spinosus, Murroch Glen; not in Clyde list.

Crabro tibialis—A specimen taken off a stalk of rhubarb in Strathleven House garden in July. *C. claripes*, very common in two different parts of the district; nesting in holes in old walls. *C. signatus*, one male and several females in Murroch Glen, July, 1902; not in Clyde list.

Odynerus trimarginatus, not uncommon on old walls, but generally well up on the hills; occasionally specimens are met with having four yellow bands on the body. *O. parietinus*, one specimen, Bonhill.

Andrena ruficrus, two specimens, ♂ and ♀, on the hill side near Murroch Glen; this species is not recorded in Clyde list. *A. varians*, by an oversight this species was not recorded in Clyde list, as the only specimen I possessed was not recognised until too late; Bonhill, 1899. *A. helvola*, also not in Clyde list but previously recorded by myself from Bonhill.

Bombus jonellus, one specimen in Murroch Glen.

The four specimens upon which the records are based for the species marked * are in the possession of Rev. F. D. Morice, to whom I am indebted for much assistance in the identification of the species.—J. R. MALLOCH, Bonhill, Dumbartonshire: *January, 1904.*

Variety of Hyphydrus ovatus, L.—The capture of a singularly distinct and apparently hitherto unnoticed variety of this common insect may be worth recording. The specimen (a female) was taken in a ditch near Lowestoft in April last. *H. ovatus* is a species which, although of wide distribution, appears but little subject to variation. Dr. Sharp records in his work on the *Dytiscidae* but one divergence from the type-form, var. *sanctus* from Syria, and this apparently varies more in character of punctuation than in markings. In the present insect, which is a trifle below the usual size, the punctuation is of the normal dull ♀ character, the colour testaceous, but the suture is marked by a dark fuscous band and each elytron by two similar bands, these latter coalescing somewhat before the apex. This is a form of lineature common to many of the tropical members of the genus, and which can be very distinctly seen in *H. bisulcatus*, Clark, from Malacca.

There are but two species of *Hyphydrus* known to inhabit Europe, *H. ovatus*, L., and *H. variegatus*, Aubé; the latter has been recorded from Cheshire, probably in error, as the Stephensian *H. variegatus* is merely a rather large and somewhat clouded form of *H. ovatus*. The whole genus comprises at present not more than thirty species.—W. E. SHARP, 9, Queen's Road, South Norwood: *Dec. 14th, 1903.*

Some Surrey Coleoptera captured during 1903.—The Coleopterist whose scene of operations is the northern half of the County of Surrey is exceedingly unlikely to add anything to the published fauna of that very well worked and indeed almost

classic district. A sense of recurrent disappointment at failing to rediscover those most desirable species—recorded in the past from almost every piece of woodland and every township there—is far more likely to be his portion. Hence any little interest which may attach to the present note will be derived from the record of the *Coleoptera* taken at odd times during so dismally abnormal a year as that which we have just experienced, rather than from the locality of their capture.

The spring and early summer of 1903 were indeed, from a collector's point of view, the very worst in my experience. After July, however, an improvement was discernible, and the autumn was distinguished in its finer moments by several unusual captures in more than one Order throughout the country, some of which may have been the results of involuntary migration.

At West Wickham Wood—that favourite collecting ground—*Cyrtotriplax bipustulata* was not uncommon in boletus on stumps in June, and in rotten wood *Syntomium æneum* and *Bolitochara lucida* frequent. *Bythinus curtisi* occurred in the same place, and in dead leaves a single specimen of the rather uncommon *Homalota silvicola*. Under heather in April *Acalles pinooides* and *Cænopsis waltoni* were not rare, but the only species obtained by beating and sweeping worth notice were *Cryptocephalus punctiger* and *Atactogenus exaratus*.

At Shirley the best capture was *Cænopsis fissirostris* among damp and rotten twigs, *Euplectus piceus*, *Mycetoporus clavicornis*, and *Halrocerus capillaricornis* occurring in the same situation, and in moss a single specimen of *Cæliodes exiguus*.

Sweeping among the herbage on the chalk downs of Sanderstead produced single specimens of *Thalycra sericea* and *Cænocara bovistæ*, several *Colenis dentipes*, *Phyllodecta cavifrons*, *Rhinoncus denticollis*, *Galerucella viburni*, and *Longitarsus ballotæ*; here also in September a single example of *Ceuthorrhynchidius frontalis* was swept, a singular locality for this usually littoral species. *Agathidium lævigatum* occurred under bark, and *Psylliodes dulcamaræ* by beating its food-plant.

At Woldingham in June *Malthinus fasciatus* and *M. balteatus*, *Malthodes fibulatus* and *M. pellucidus*, and *Apion flavimanum* were taken. *Longitarsus exoletus* and *Meligethes murinus* were very abundant on *Echium*, but *Ceuthorrhynchus echii* very rare.

I was able to pay but one visit to Box Hill, a very tempestuous day in August, when the sweeping net was useless. In moss on the hill side *Chrysomela gættinensis* was not uncommon, but very local, and I was pleased to secure a specimen of the form of *Harpalus latus* with steel-blue elytra, the var. *metallescens* of Rye. Under hedge trimmings in the road *Licinus depressus* and *Ocypus compressus* occurred, the latter very plentifully. A visit to Mitcham Common resulted in *Polydrusus confluens*, beaten from furze.—ID.

Reviews.

ICHNEUMONOLOGIA BRITANNICA: THE ICHNEUMONS OF GREAT BRITAIN. ICHNEUMONINÆ: by CLAUDE MORLEY, F.E.S. 366 pp., extra demy 8vo, cloth. Plymouth: J. H. Keys.

A book like this could only be adequately reviewed by an all-round entomologist who was also a specialist in the group of which it treats. I can speak of it only as

one who has studied to a certain extent other better-known Hymenopterous families, but who, though sorry to be ignorant of so beautiful and important a group as the Ichneumons, has hitherto feared to approach it precisely for want of such an introduction as this book claims, and appears, to supply.

It would seem from the preface that the author has devoted himself for a little more than five years to the special study of Ichneumons. One cannot but wonder that a work of such magnitude could have been completed in so short a time, and all the more so, when one notes the imposing list of authorities consulted, and the many aspects of the subject-matter with which Mr. Morley grapples. Over 300 British *Ichneumoninæ* are diagnosed, each at considerable length, their habits are often mentioned, and the records of their appearance in this country are always given and examined. There are apparently full Synoptic Tables of Tribes, Genera, and Species. In the Introductory pages, besides a detailed account of the structural characters which have been employed in distinguishing the species, we find a Glossary of the somewhat elaborate orismology adopted by the author, accounts of habits, metamorphoses, internal structure, &c., and also a "History of the study of the *Ichneumonidæ*," divided into sections (whose titles seem to me, if I may say so, rather oddly chosen—"Geological times," "Pre-Linnean times," "British authors," "Classification," &c., lack the uniformity one would expect in a series of sectional headings).

The author modestly owns that inaccuracies and imperfections will doubtless be found in his work, and this, under the circumstances, is almost bound to be so; but he tells us he thought it expedient not on this account to delay publication for an indefinite period. Personally I am grateful that Mr. Morley has not kept us longer in expectation; and even if hereafter he should be moved to supersede his own book—I know no one else who is likely to do so—by a more completely digested Monograph, the present work will surely at least have served a useful purpose in directing to the study of his favourite insects workers who would not otherwise have ventured upon it.

I am not in all cases quite pleased with the illustrations. Some of those giving structural details would have been better, I think, unshaded. And at least the smaller photographs of whole insects given in the Frontispiece convey to me very little idea of any particular "facies" by which one is to recognise them.—
F. D. MORICE.

BRITISH TYROGLYPHIDÆ: by ALBERT D. MICHAEL, F.L.S., F.Z.S., F.R.M.S., &c. Vol. I, pp. vii and 289, pl. A—C and xix (1901); Vol. II, pp. vii and 183, pl. xxix (1903). Ray Society.

Excepting as giving masterly descriptions and delineations with a delicacy that probably has seldom been equalled and probably never surpassed, there is no particular reason why a Book on a Family of British Mites should be noticed in a publication confined to Entomology. A sentimental reason is that the learned and very talented author has mixed himself up by his charming personality and that of his wife with the lower forms of animal life in all its aspects, and has continued to make tiny objects of disgust to many people serve as marvellously beautiful microscopical slides. It is not for us to enlarge upon the characteristics of individual

species. But to one species in Vol. II (*Histiogaster entomophagus*) some special interest is attached. This is commonly known as the "insect mite." And yet when Mr. Michael attempted to procure such individuals it was only great difficulty he was able to do so. Personal application, a statement of wishes in Journals, &c., proved in vain, and it was only at length that he obtained a small supply.

INSECTS AFFECTING FOREST TREES: by E. P. FELT, D.Sc., State Entomologist. Reprinted from the 7th Report Forest Fish and Game Commission. 4to, pp. 479-534, with 16 plates and numerous text illustrations. Albany: J. B. Lyon Co. 1903.

The extent and importance of this memoir is indicated by the title and its author. Mainly devoted to *Coleoptera* as is almost natural, it also includes some thoroughly worked-out life-histories of *Lepidoptera*, and of the "smaller" Orders. We think the figures of perfect insects of *Tomicidæ* could scarcely be surpassed. The least effective are probably the studies in black bark. Paper and get up are excellent.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *November 16th, 1903.*—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. G. W. Wynn read a short paper giving an account of all the rarer and more interesting *Lepidoptera* he had found in Wyre Forest, and illustrated the paper by a box full of selected specimens. The more noteworthy were our old friend *Endromis versicolora* L., *Hylophila bicolorana*, Fuessl. (very rare); the *Cymatophoridae*, all the British species of which have occurred there, *octogesima*, Hb., being the rarest; *Stauropus fagi*, L., one specimen only of which has been taken so far. *Drymonia chaonia*, Hb., of which he showed a specimen reared from an egg laid by a captured female (very rare), and *Plusia bractea*, F. (one only). Mr. W. H. Flint showed an example of *Argynnis lathonia*, L., taken in Wyre Forest (in the Worcestershire part) in 1899, where he believed he also saw one or two others; also Kent specimens for comparison. Mr. A. H. Martineau, *Aculeates*, the result of five or six days' collecting at various times during 1901-2 at Budleigh Salterton. He also gave an account of the district and collecting places, describing the coast line and geological formation, and the occurrence of each species in turn. Amongst the species taken were: *Pompilus rufipes*, L.; *P. cinctellus*, Spin.; *Gorytes tumidus*, Panz.; *G. bicinctus*, Rossi; *Andrena pilipes*, F.; *A. fuscipes*, Kirb.; *Stelis phæoptera*, Kirb., etc. etc. He also showed a specimen of the Tachinid *Miltogramma punctata*, Mg., bred from a pupa found inside a cocoon of *Trypoxylon figulus*, L. Mr. Gilbert Smith, a few nests of various species of *Hymenoptera* from different parts of the world. Mr. G. H. Kenrick, a number of *Lepidoptera*, all bred this year from various localities. Amongst others were *Endromis versicolora*, L., from Wyre Forest; *Thecla pruni*, L., *T. w-album*, Knoch, and *Xanthia gilvago*, Esp., from Northamptonshire; *Demas coryli*, L., and others from Sutherlandshire. He mentioned that in Sutherlandshire he had found larvæ of *Gonodontis bidentata*, Cl., commonly on birch in three well marked forms, one grey, one purple, and one black and white; each agreeing perfectly with

different parts of the birch trees but not confining themselves to the parts they resembled. Mr. W. H. Flint showed drawers containing his collection of the genus *Cucullia*, Schrk., and the *Sesiidæ*; both containing series of most of the species. In *Cucullia* was a fine series of *absinthii*, L., all taken in one night at light near Rossall; also *scrophulariæ*, Capiex., from Cambridge; *asteris*, Schiff., from Kent; and *lychnitis*, Rbr., from Arundel. Amongst the *Sesiidæ* were *Sesia formicæformis*, Esp., from Sutton Park (1), *S. vespiformis*, L. (*asiliformis*, Rott.) from near Knowle; *S. tipuliformis*, Cl., Sutton; *S. culiciformis*, L., near Knowle, Shirley and Wyre Forest; *S. ichneumoniformis*, F., a long series from the Forest of Dean; *S. scoliæformis*, Bkh., from Dolgelly, and *S. spheciformis*, Gerning, from Wyre Forest and Abrewar. Mr. Bethune-Baker showed various recently issued entomological works.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—
November 26th, 1903.—Mr. E. STEP, F.L.S., President, in the Chair.

This evening was set aside for the Annual Exhibition of Varieties, special forms and notable captures of the year. There was a very large attendance of members and their friends, and many interesting exhibits were made.

Mr. J. A. Clarke exhibited a gynandromorphous specimen of *Cyaniris argioides*, taken in Yorkshire in May, 1903; and a uniformly smoky example of *Ligdia adustata*, taken at Bexley in March, 1903. Mr. Chittenden, *Heodes (Chrysophanus) phlæas*, light and dark forms from Kent; *Hydriomena (Hypsipetes) sordidata* dark, from Yorkshire, and red-barred from Ashford; and black-fringed *Spilosoma lubricipeda*, var. *zatima*. Mr. McArthur, a very pale example of *Amorpha populi*, and a strongly suffused reddish example; with a photograph of a *Pieris rapæ*, having two large black spots on the under-side of the left lower wing. Mr. R. Adkin, examples of *Argynnis aglaia*, from Brighton (1) with the black markings on the upper-side elongated and joined up, as were also some of the silvery markings of the under-side; (2), also several richly coloured females; a partially bleached ♀ of *Epinephele jurtina (janira)*; a *Cleora glabraria*, with a much extended series of black markings; a hybrid *Smerinthus ocellatus-populi*, bred July, 1903, from a 1901 larva; and a long series of *Boarmia repandata*, from various localities, to show local variation. Dr. Chapman, a large number of specimens of *H. phlæas*, taken in various parts of Western Europe, especially to illustrate the geographical and seasonal variation rather than the possible aberrational variation. He discussed the named forms v. *suffusa*, v. *eleus*, and v. *hypophlæas*, with regard to size, form, tail development and colour. Mr. Simmonds, a long series of the rare *Cucullia guaphalii*, from Sevenoaks; and a variety of *Epunda lichenea* without the usual reddish or greenish markings, perhaps referable to var. *calvescens*. Mr. Colthrup, long and varied series of *Bryophila perla* and *B. muralis*, the various shades of green, a pink form from the Isle of Wight, a black form, very dark forms from South Devon, and most of the named forms of the latter species, including var. *par*; of the former species were many pale, dark, and suffused forms. Mr. G. B. Browne, varied forms of *Aplecta prasina (herbida)*, *Polyommatus icarus*, *H. phlæas*, *Camptogramma bilineata* (banded), *Melanthia ocellata* (dark black band), and a

brown form of *Tæniocampa munda*. Mr. Main, a living example of *Blatta australasiæ*, found among imported bananas. Mr. Dodds, some very remarkable and aberrant bred ♂ forms of *Ocneria dispar*, having numerous irregular patches and streaks of light colour on all four wings. The species had been inbred for three years. Mr. Pickett, series of *E. jurtina*, with bleached vars.; of *Polyommatus corydon*, with vars. and abs., *suffusa*, *marginata*, *obsoleta*, *striata*, &c., with dwarf examples; very deep banded ♀s of *Cyaniris argiolus*; various local races of *H. phlæas*, *Callimorpha dominula*, with much suffused hind wings; *Abraxas grossulariata* with var. *læticolor*, and a very dark form; long series of forms of *Angerona prunaria*, including numerous beautifully banded examples; a long and graduated series of *Arctia lubricipeda* and var. *radiata*, some being exceptionally dark; and a curiously marked *Arctia caja*, with streaked arrangement of the markings. Mr. Moore, *H. phlæas* from the Himalaya Mountains and from North America (Indiana to Cape Breton), the former was an exceedingly dark example, while the latter were much like the Lapland forms in Dr. Chapman's exhibit. Mr. Carpenter, series of *H. phlæas*, bred from Abbot's Wood, Folkestone and Bude, each of which showed a racial facies, although the divergence was but small. Mr. Montgomery, long series of *H. phlæas*, including many pale and sparsely spotted specimens, some of which had emerged as late as November. Mr. Harrison and Mr. Main, series of *Dianthæcia nana (conspersa)*, *Eupithecia venosata* and *Aplecta nebulosa*, showing their various geographical forms and races; series of *Noctua brunnea* and *Notodonta dromedarius*, bred from Delamere Forest larvæ, comparatively darker than South England forms; and Cornish specimens of *Hipparchia semele* considerably darker on the under-side than Eastbourne forms. Dr. J. H. Spitzby, discussed the variation of Edmund Reitter's group of the *Carabidæ*, *Carabi multisetosi*, and of *Cetonia aurata*, and exhibited a large number of examples from various parts of Europe. Dr. Sequiera, a box of most interesting and remarkable aberrations of *Lepidoptera*, including *Vanessa io*, slate-blue suffusion; *Catocala nupta*, with smoky black margins; *Polygonia c-album*, without a trace of the *c* mark; a strongly marked melanic form of *Hemerophila abruptaria* from the New Forest; *Nemeophila russula*, ♀, with black hind-wings; pale salmon-coloured *Anthrocera filipendulæ*, and *Colias edusa*, with exceedingly pale margins. Mr. Lucas, specimens of the earwig, *Labidura riparia* from Bournemouth, and a pupa of *Lucanus cervus*. Mr. Cannon, a series of *Euvanessa antiopa*, bred from ova deposited by a ♀ taken in the South of France; *Limenitis sibylla*, with only faint white markings showing through the almost uniform black of the upper-side; a long series of bred *Melitæa aurinia* from Ireland; bred *M. cinxia* from Isle of Wight larvæ; a very fine series of *Cænonympha typhon*, var. *rothliebii*, taken at Witherslack; a deeply marked ♀ of *Brenthis euphrosyne* from Reading; and captured examples of *Mellinia ocellaris*. Mr. Manger, a case containing more than twenty species or named forms of the gorgeous South American genera, *Catagramma*, *Perisama*, and *Callicore*, including the type form of the genus *Catagramma*, *C. astarte (hydaspes)*. Mr. Schooling, a varied series of *Spilosoma fuliginosa* bred from ova; and a fine series of *Xylocampa areola (lithorhiza)*. Microscopes were lent by Messrs. Cant, Edwards, Fremlin, Warne, and West (Streatham).—HY. J. TURNER, Hon. Secretary.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (8).

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

TRICHIOSOMA AND ABIA.

My last paper has brought me some interesting correspondence. From the Rev. E. N. Bloomfield I learn that *Oryssus abietinus* as a British insect does not rest solely on Stephens's records, but was taken near Hastings about 20 years ago by Mr. E. Collett and given to Mr. T. E. Billups; I must therefore withdraw my proposal to omit it from our List, though, like so many of our specimens of the *Siricidæ*, it is probably rather a chance visitor than an indigenous insect. I hear also from Mr. C. W. Dale that *Xiphydria camelus* has been recorded from the New Forest (Entomologist, vol. xxxiv, p. 54), and that *Ayela* is attached to the birch. Lastly, Mr. Bignell writes that the specimens of *Sirex* which he had as *juvencus* prove to belong really to *noctilio*. (If any collector has a British specimen corresponding to true *juvencus* as described in my last paper, I should be exceedingly grateful for a sight of it). It should perhaps have been said that some authorities regard *noctilio* and *juvencus* as a single species, but Thomson and Konow both look on them as certainly distinct, and Mr. Cameron, though expressing some doubt on the matter, keeps them apart in his Monograph.

Immediately after the *Siricidæ* in my Table of the British genera follows *Cimbex*. But, partly from lack of material, and partly in expectation of the result of certain investigations now being made by Herr Konow, I prefer to say nothing at present about our species of *Cimbex*; and, as this does not claim to be a systematic Monograph, I shall venture to postpone consideration of that genus, and pass on at once to *Trichiosoma* and *Abia*.

(1) Of *Trichiosoma* I know four British species, which appear to be the four described by Mr. Cameron; but, according to Konow's views, *lucorum* is the only one correctly identified in the Monograph. *Betuleti*, Cam. (*nec* Klug), is *tibialis*, Steph. *Scalesii*, Cam. (which is not *sorbi*, Htg., and is attached not to *Sorbus* but to *Salix*) is *latreillei*, Leach. *Vitellinæ*, Cam. (*nec* Linné) is *silvatica*, Leach.

Of these species *tibialis* belongs to the hawthorn, *lucorum* to the birch, and *latreillei* and *silvatica* to the willow. To remember this may be useful to collectors, for the external characters which distinguish the species are slight and somewhat troublesome to recognise.

The true *betuleti* (teste Konow) is a dark-legged var. of *lucorum*, and the true *vitellinæ*, L., does not seem to be a British insect.

SYNOPSIS OF BRITISH *TRICHIOSOMA*.

1. Abdomen black, not bronzy, dull, closely and rather coarsely punctured, and clothed right up to the apex with long, loose, grey, suberect hairs. (Attached to the birch) *lucorum*, L.
— Abdomen at least slightly metallic, somewhat shining, puncturation finer and more remote, hairs on apical segments shorter 2.
2. Abdomen rufescent beneath and often at the sides. (Attached to willow)...
..... *silvatica*, Leach.
— Abdomen bronzy-black throughout..... 3.
3. Tibiæ black or dark brown. (Attached to hawthorn) *tibialis*, Leach.
— Tibiæ yellow. Apical segments of abdomen clothed with longer hairs than the last species. (Attached to willow)..... *latreillei*, Leach.

I believe all the species are pretty widely distributed in this country and all over Northern Europe.

(2) Of *Abia* I possess native examples of all the species given by Mr. Cameron as British, viz., *sericea*, L., *candens*, Knw., *lonicerae*, L. (= *nigricornis*, Leach), and *fasciata*, L.

There is a mistake of some kind, which has often puzzled me, in Mr. Cameron's Synopsis of the species. He separates all the other species from *sericea* as having the fourth antennal joint "more than twice the length of the third." Possibly for "twice" we should read "half." At any rate, in all the species the third joint is, in fact, very much longer than the fourth, though not quite so long proportionately in the others as in *sericea*.

I should tabulate our species as follows:—

SYNOPSIS OF BRITISH *ABIA*.

1. Antennæ entirely yellow, their club consists of three clearly distinct joints. (Body brightly metallic, green or coppery) *sericea*, L.
— Antennæ not entirely yellow. The separation of the two apical joints in the club is obscure..... 2.
2. Basal and apical joint of antennæ black, the rest of them yellow. (Body metallic and very shining) *candens*, Knw.
— Antennæ entirely black 3.
3. Claws simple. Body shining black with a very slight metallic tinge of green: in the ♀ the propodeum (and generally the metathorax more or less) is white. The basal joint of the long and narrow club is nearly as long as the other two together *fasciata*, L.
— Claws bifid. Body brightly metallic, green or coppery. The basal joint forms only about a third of the whole club. *lonicerae*, L.

I do not know the ♂ of *fasciata*, but in the other species the ♂♂ may be told from the ♀♀ instantly by a curious pilose (velvety) stripe which runs longitudinally down the middle of the dorsal surface of the abdomen. It starts at (not counting the propodeum) the third segment and runs to the apex.

Sericea is a widely distributed and fairly common species. *Lonicerae* I have several times taken in this neighbourhood. *Candens* I owe to Colonel Yerbury, who took it at Barmouth. These three species, apart from their antennæ, might easily be confused; but *fasciata*, at least in the ♀, has a conspicuously different appearance. The latter species is very much at home in the New Forest, where (at Lyndhurst) Miss E. Chawner has repeatedly taken and bred it. All my own British specimens were kindly sent to me by her, either as imagines or as larvæ.

DESCRIPTION OF A NEW SPECIES OF THE GENUS *GLOBICEPS*
[*CAPSIDÆ*] FROM SPAIN.

BY PROF. O. M. REUTER.

GLOBICEPS PARVULUS, *sp. n.*

Niger, squamulis argenteis facilliter divellendis hic illic vestitis; femina capite basi pronoti circiter $\frac{1}{4}$ angustiore, vertice pone oculos ne minime quidem prolongato, oculo hand altiore, ante marginem posticum acute carinatum transversim impresso; antennis nigris, articulo primo apicem clypei subsuperante, secundo latitudine capituli paullo longiore et margini basali pronoti fere æque longo, versus apicem sensim sat incrassato; pronoto versus basin sat fortiter ampliato, basi longitudine paullo minus quam duplo latiore, lateribus late sinuatis, disco subhorizontali, sulco transversali medio deleto, callis distinguendis sed vix elevatis; hemielytris explicatis abdominis longitudine, corio cuneoque albidis, illo macula magna apicali subtriangulari medium corii subattingente, hoc apice sat late nigris, femoribus nigris, ipso apice tibiisque ferrugineis, his apice tarsisque nigris. Long., ♀, 3 mm.

Hab.: Soria (*Champion*).

Gl. picteti, Mey. et Fieb., affinis, sed multo minor, femina antennis multo brevioribus, pronoto magis transverso, postico fortius dilatate, lateribus minus fortiter sinuatis, sulco transversali minus profundo. Etiam *Gl. sordido*, Reut., minor, femina capite a supero viso multo magis transverso, vertice acute marginato, structura pronoti hemielytris explicatis mox distinguenda. Caput latum, nigrum, a supero visum pronoto paullo minus quam duplo brevius et longitudine sua fere triplo latius, vertice oculo circiter duplo latiore, fronte verticali, leviter convexiuscula. Oculi nigri. Rostrum nigro-piceum, coxas posticas subattingens. Antennæ totæ nigrae, articulo secundo primo

vix quadruplo longiore. Pronotum apice quam basi circiter $\frac{2}{3}$ angustiore, disco postico subtiliter ruguloso. Hemielytra membrana grisea, venis areolisque nigro-fuscis. Coxæ nigrae, apice albæ.

Gl. picteti, Mey. et Fieb., ♀, a specie superne descripta differt: statura majore ($4\frac{1}{4}$ — $4\frac{1}{3}$ mm. l.), capite basi pronoti solum paullulum angustiore, saepe vertice ferrugineo-bisignato, antennis articulo secundo latitudine capitis saltem $\frac{3}{4}$ longiore, articulo primo toto secundoque apicem versus ferrugineis, pronoto latitudine sua basali ad summum $\frac{1}{8}$ brevior, lateribus fortius sinuatis, callis majoribus, sulco medio distinctiore, tibiis usque in apicem ferrugineis.

Obs. Errores typographicæ in "New Species, &c., of Capsidæ" (Ent. Mo. Mag., 1903, pp. 119—121).

P. 119, sub *Deræocoris cordiger*, var. *fallaciosa*, legitur: Statura et punctura, nec structura antennarum, lege: *nec non*, &c.

P. 121, legitur: *Dicyphus geniculatus*, Fieb., var. *dispuncta*; lege: var. *disjuncta*.

Helsingfors: January 25th, 1904.

NEUROPTERA AND TRICHOPTERA OBSERVED IN THE LAKE DISTRICT.

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

A short visit to the Lake District in the first half of last September, was much too late in the season to enable one to obtain anything like a representative sample of its Neuropterous fauna, and it is superfluous to add that a worse year could hardly have been selected for collecting in an area which, even at its best, is a wet one. Notwithstanding these drawbacks, a very considerable amount of material was brought together, and as not too much has yet been put on record with regard to the *Neuroptera* of this grand district for water insects, I propose to give here a complete list of our captures.

By far the greater part of our collecting was done about Coniston Lake, but we ranged on cycles, as far north as Keswick and Ullswater. The distances to be covered on the longer excursions precluded us from doing much collecting either at our destination or on the way out and back. I am satisfied if one had ample time, a very interesting series of comparative observations could be made by assiduously collecting the *Trichoptera* found at the various lakes.

The most interesting species taken was *Mesophylax impunctatus*, an insect still imperfectly known in its type form, as a British insect, from a single ♂ taken by Service in Dumfriesshire, the Shetland

specimens taken by Roper-Curzon and King having been considered worthy of a varietal name. It belongs to a group of more or less allied species (belonging to more than one genus) which are purely nocturnal fliers, and which seem to be veritable *Troglydytes* in their daylight habits of concealment. As far as my experience goes, they hardly ever fall to the beating stick or get into the sweeping net in the daytime.

The following were the species taken :—

TRICHOPTERA.

Phryganea varia, F.—One ♀; the species was over.

Glyphotælius pellucidus, Retz.—At Coniston, but much commoner at Esthwaite; one ♂ a very beautiful dark variety.

Limnophilus marmoratus, Curt.—Very common. *L. lunatus*, Curt.—Most abundant. *L. vittatus*, F.—No doubt common, but only one or two kept. *L. auricula*, Curt.—Here and there. *L. sparsus*, Curt.—Common.

Anabolia nervosa, Curt.—In multitudes, differing much in size at different points of the lake.

Stenophylax stellatus, Curt.—Frequent; taken rather commonly hiding in the crevices of a wooden house at the Ferry near Bowness, Windermere. These lake examples are smaller than the average specimens from large rivers; they are also paler in colour than most of the other recent examples before me, this paler coloration being a local characteristic, while the small size seems to be connected with the lake habitat, similar small examples having been found by me at Loch Rannoch earlier in the summer. The Rannoch examples, however, are very dark. *S. latipennis*, Curt.—Occasionally at smaller streams.

Mesophylax impunctatus, McL.—Three ♀ were taken by beating and sweeping at night. They were all from a comparatively limited stretch of the lake margin at Coniston, near a point at which a beck enters the lake. The true character of the shore at this place I am unable to describe, as it was continuously flooded during the whole time of our stay, and it is impossible to say whether any little springs, such as those which *Micropterna* (and probably *Mesophylax*) delights in, occur there.

Halesus radiatus, Curt.—Rather common.

Drusus annulatus, Steph.—Very common.

Silo pallipes, F.—Only a few seen.

Crunæcia irrorata, Curt.—Frequent at suitable places near Coniston.

Lepidostoma hirtum, F.—One or two stragglers.

Beræa maurus, Curt.—One female.

Leptocerus fulvus, Ramb.—Seen only at Brothers' Water; the species was over. *L. cinereus*, Curt.—Coniston Lake. *L. dissimilis*, Steph.—Fresh specimens occurred at Coniston Lake, but were not very numerous.

Mystacides azurea, L.—Very abundant.

Oecetis lacustris, Piet.—Nearly over. *O. testacea*, Curt.—The ♀ was still pretty common at Coniston.

Setodes argentipunctella, McL.—This charming little insect was still in evidence at different points of Coniston Lake, but nearly all were ♀.

Hydropsyche instabilis, Curt.—One or two near Skelwith Bridge.

Philopotamus montanus, Donov.—Not common.

Wormaldia occipitalis, Pict.—Frequent in the same localities as *C. irrorata*.

W. subnigra, McL.—One at Skelwith Force.

Electrocnemia conspersa, Curt.—One or two only.

Polycentropus flavomaculatus, Pict.—Common.

Cyrnus trimaculatus, Curt.—At Coniston.

Tinodes wæneri, L.—Common.

Rhyacophila dorsalis, Curt.—Common. *R. obliterata*, McL.—Frequent.

Glossosoma vernale, Pict.—One at Torver beck.

The entire absence of *Hydroptilidæ* was attributable almost certainly to the deluges of rain.

NEUROPTERA-PLANIPENNIA.

Heмерobius orotypus, Wall.—This species was quite abundant in a larch-wood on the east side at Coniston Lake. The greater number of specimens were beaten out of hazel, but no doubt the species was really attached to the larch. *H. lutescens*, Steph., and *H. micans*, Oliv., both fairly common. *H. subnebulosus*, Steph.—One specimen.

ODONATA.

Lestes sponsa, Hans., occurred towards the south end of Coniston Lake and also near Elter Water. It was the only dragon-fly actually taken. *Enallagma cyathigerum* was seen, and pretty frequently stray specimens of *Æschna*, almost certainly *Æ. juncea*.

PERLIDÆ.

Nemoura inconspicua, Pict.—Frequent. *N. meyeri*, Pict.—A belated ♀.

Leuctra geniculata, Steph.—Common at the bridge over the river flowing out of Coniston Lake. *L. klópaléki*, Kempény.—In great abundance, as is usual in the early autumn.

PSOCIDÆ.

Psocus bifasciatus, Latr.—Not common on juniper. *P. variegata*, Latr.—A few on walls. *P. nebulosus*, Steph.—On yews, but not common. *P. sexpunctatus*, L.—Rather common on walls.

Stenopsocus immaculatus, Steph.—Not common.

Elipsocus hyalinus, Steph.—A few on walls. *E. abietis*, K.—On juniper.

Philotarsus flaviceps, Steph., *Cæcilus flavidus*, Curt., and *Peripsocus phæopterus*, Steph., a few of each.

13, Blackford Road, Edinburgh.

January, 1904.

A new Australian species of Psychopsis: Ps. illidgei, Froggatt.—Mr. W. W. Froggatt has recently described a certainly new species of *Psychopsis* in the Proc. Linn. Soc. N.S.W., Vol. xxviii, p. 405 (1903), and sends me a photo as a Christmas card. He names it *Ps. illidgei*; it is of large size (if the photo is natural size), and he does not say (on the photo) if more than one example was secured. Its affinities are apparently slightly vague, but on the whole, excepting in size, nearer to *P. elegans*, Guér. A distinct feature is the presence of a small pale lunule in the large sub-apical dark spot.—R. McLACHLAN, Lewisham, London: February 8th, 1904.

NEW GENERA OF EUROPEAN *PSYCHODIDÆ*.

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

Species of *Psychodidæ* being very numerous, it is desirable that they should be collected into smaller genera than hitherto current. I therefore propose a generical redistribution of *Pericoma* and *Psychoda* of authors, dealing only with European species.

Adopting the neurology of Professors Comstock and Needham, instead of that previously employed by me [*cf.* Ent. Mo. Mag., ser. 2, vol. iv, p. 7, woodcut (1893)], the numbered wing-veins are termed respectively:—0, Costa; 1, Subcosta for Mediastinal; 2, Radius for Subcosta; 3, 3' & 4, branches of the Radial Sector or Radial fork and Sector for Radius and Cubitus; 5, Median vein for Præbrachial; 6 & 6', Cubitus, Cubital fork, or 1st and 2nd Cubital veins for Po-brachial; 7, First Anal for Postical vein; 8, Second Anal for the Anal vein; 9, Third Anal for Axillar vein.

Although no new genus is at present proposed in the Sub-Family *Phlebotominae*, the genera may advantageously be passed under review, by way of introduction, without treating of them exhaustively. They may be classed in two series.

1ST SERIES, *NEMOPALPUS*, MACQUART, AND *PHLEBOTOMUS*, RONDANI.—Antennæ 16-jointed, with short 2-jointed scape, and long (the 1st joint very long) filiform joints in the flagellum; proboscis prolonged, and palpi elongate, with a flexible terminal joint. Alula rudimentary, erect, obtuse; anterior basal cell elongate, with only a shallow sinus in front before its apex; radial sector 3-branched, constituting the Sectional fork and a simple branch; the stem of this fork in *Nemopalpus* is extremely long, extending nearly to the middle of the anterior basal cell, the tines of the fork being very short; but in *Phlebotomus* the stem is shorter than the depth of the fork, and is confluent with the simple branch far beyond the cell. Third anal vein in *Phlebotomus* wanting or hardly distinguishable from the Anal furrow; in *Nemopalpus* short, descending to the wing-margin not far from the Anal cross-vein. The figures of *Nemopalpus* by Macquart (1838) and Loew, fig. 15 (1845), like those of *Phlebotomus* by Rondani (1843) and Loew (1844), do not accurately correspond in wing-neuration with my microscopical preparations, owing probably to their having omitted to denude their specimens sufficiently of hair. Wings narrower and more pointed than in flies of the other series.

Nemopalpus has genitalia similar in character to those of *Phlebotomus*; but through paucity of material I have only been able to view them *in situ* without denuding them and in the dry fly. My preparations of *Phlebotomus* at this date are also from the dry fly only, and therefore I will say nothing about the innermost parts on this occasion.

The basis upon which the inferior pair of genital appendages (hereafter abbreviated to *inf. app.*) of the ♂ fly are borne, is in reality the anal segment, which dorsally is abbreviated (sometimes to a hair-like loop) to make room for the opposed

pair of superior appendages (hereafter abbreviated to *sup. app.*) and the intromittent parts. Its homologue in the ♀ is termed the subgenital plate. In both series of genera in the present Sub-Family the *sup. app.* ♂ greatly exceed the *inf. app.* in strength and dimensions. The edge of the basis has been mistaken by several entomologists for a basal joint of the *inf. app.* viewed sideways; but a 2-jointed condition of the *inf. app.* is unknown in *Psychodidæ*.

♂ *app. sup.* in *Phlebotomus* composed of a stout basal joint and an elongate terminal joint armed with either spinules or with strong curved retentive bristles. *Inf. app.* longer than the basis, slender and submembranous in texture, with long, curved, stiff hairs or a single spine at their tips. External genitalia of ♀ inconspicuous.

2ND SERIES, *SYCORAX* AND *TRICHOMYIA*, HALIDAY.—Antennæ 15-jointed, with short 2-jointed scape; the 1st joint in the flagellum cylindrical or filiform, much the longest; the other joints, or some of them, subpastiniform and of moderate length. Proboscis not prolonged; palpi short and rather stout with the terminal joint firm. Alula as in the other series; anterior basal cell suddenly contracted by a deep almost right-angled sinus opposite the cubito-anal cross-vein. Radial sectors reduced to a single forked vein met by the cross-vein closing the basal cell and producing by its flexura the sudden widening of the cell before the sinus; both basal cells sphenoid basewards; 3rd anal vein in *Sycorax* short as in *Nemopalpus*, but in *Trichomyia* long. Basal joint in ♂ *app. sup.* relatively very stout; 2nd joint shorter and smaller, in *Sycorax* tapering to a point with a slender terminal spine. But in *Trichomyia* (viewed from above) this joint appears to be subquadrangular (being longer than broad and somewhat squarely truncate), cloven diametrically from its outer apical angle to its inner base, gaping along the fissure and excavated; upper lip of the aperture oblique, straight, everted and thickened, so as to present the appearance of a strong, straight, acute spine extending from the inner base to the obtuse diametrically opposite angle of the quadrangle; lower border of the aperture at first thin and suberulate, then stronger and decurved to form with the outer border an acute decurved point. The genitalia, viewed from the side, are shown in Ent. Mo. Mag., ser. 2, vol. iv, p. 34, figs. 2a, 2b, where fig. 3b ought to have been numbered fig. 4, and attributed to *Psychoda humeralis* instead of to *Sycorax*. Genital basis of ♂ short; *inf. app.* also short, rounded compressed or lamellar, inconspicuous. *Sycorax*, ♀, has minute rounded prominences, hardly distinguishable, in place of the ovipositor and subgenital plate; the valves in *Trichomyia* are short, broad, suboval laminæ, and the plate minute, subtriangular and subobtuse.

The genera *Psychoda*, *Pericoma* and *Uatomyia auctorum*, may now be taken together into consideration. In all of them the palpi are 4-jointed (*pace* Curtis and Schiner), and the radial sector 3-branched (usually constituting a forked vein and a simple vein); median vein single; eubitus forked; three anal veins. Maximum number of joints in the antennæ 16, sometimes reduced in ♂, of which two form the scape; the *facies* or general aspect of joints in or about the middle of the flagellum, and the form of the 1st, 3rd and apical joints of the whole antennæ in this sex are of chief importance. To avoid needless repetition, I pass unnoticed the greater bulk of the characteristics noted in my *Synopsis of British Psychodidæ*

and its *Supplement*, previously published in this Magazine in the volumes for the years 1893 to 1898. Description of new species is also as much as possible postponed until illustrations of their details can be produced—a work that will occupy many months to come.

Psychoda, auctorum, in 1898, was the generical name applied to all flies having:—♂ antennæ 14- to 16-jointed, with nodose flagellum composed of full-sized joints as far as the 13th joint of the antenna, followed by 1, 2, or 3 diminutive joints, and furnished with hair inserted upon the symmetrical or subsymmetrical nodes in verticils constituting a series of 11 long haired verticils closely moniliform, the 11th including the diminutive joint or joints. Wings ovate lanceolate, acute at the end of the median vein; subcosta very short and rudimentary, ending in the radius, and not linked to the costa. Among these I propose to distinguish European genera.

PHILOSEPEDON, *gen. nov.*

External ♀ genitalia short and obtuse (*cf.*, Ent. Mo. Mag., 2nd ser., vol. v, pl. iv, Ps. 6, ♀ *c*); the subgenital plate slightly narrowed from the base, and slightly emarginate at the tip. Antennæ of ♂ 16-jointed, with the last 3 joints diminutive: palpi lax, filiform, the 1st joint shorter than the 2nd, and this shorter than the 3rd, which is the longest when not subequal to the 4th. Inf. app. ♂ subequal in length to their basis, stout and bitenaculate, with long narrowly cuneate spinules. Radius without bristling hair, the ranks of which terminate at or opposite the fork on the sectors, and near the wing-margin on the anterior cubital branch and the 1st and 2rd anal veins.

Type, *Ph. humeralis* (Hoffmannsegg, MS.), Meigen.

In the other genera, the ♀ has a rostrate ovipositor; and the radius has bristling hair.

THRETICUS, *gen. nov.*

Inf. app. ♂ short and stout, usually obclaviform and tapering to a point, and subequal in length to, or very little longer than, their basis; their tenaculæ relatively long. Palpi filiform, the last three joints elongate, sometimes subequal to each other in length, or the 3rd may be by very little the longest. The ranks of bristling hair on the radius, the forked and the simple sector, the anterior cubitus, and on the 1st and 3rd anal veins terminate near the wing-margin. The name of the genus has reference to the activity of the flies when they find themselves in the net.

Threticus lucifugus, Haliday, has tritenaculate inf. app. ♂, and a subtriangular ♀ subgenital plate acutely excised at the apex with subobtuse points.

Threticus compar, sp. nov.

♂, inf. app. unitenaculate. Basal joint of ♂ app. sup. stout, oblique at the tip, shorter than the falcate 2nd joint, which is stout and externally gibbous in its basal half. Subgenital plate of ♀ transverse, subquadrilateral, and obtusely emarginate. Similar in appearance and average size to *Psychoda phalænoides*, Linn.

Hab.: Ireland, England, Algeria, and Madeira.

Threticus gemina, sp. nov.

A rather smaller species. ♂ inf. app. unitenaculate. Basal joint of the ♂ app.

sup. subcylindrical; 2nd joint, a strong curved acuminate claw, tapering evenly from base to point, and rather longer than the 1st. Liable to be mistaken in the net for *Ph. humeralis*, ♂. Subgenital ♀ plate truncate triangular, and roundly emarginate.

Hab.: Miry places in the country surrounding Seaton, Devon.

The remaining members of the old genus differ from the above in having the ♂ app. inf. slender, subulate, slightly incurved, longer than their basis, enlarged close to their articulation and unitenaculate with the tenacular spine cuneate or spathulate and short.

LOGIMA, *gen. nov.*

Bristling hair wanting on the posterior branch of the forked sector; present on the other branch, on the simple sector, the radius, the anterior cubitus, and the 1st and 3rd anal veins: its endings on the radius, the anterior branch of the forked sector, and on those two anal veins, approximated to the wing-margin, but those on the simple sector and the anterior cubitus remote from the margin and standing, with the next tuft on each side of them, abreast of the end of the 2nd anal vein. Joints 1 to 3 of the palpi subequal to one another, and rather shorter than the 4th joint. Basal joint of ♂ app. sup. curved and comparatively slender; 2nd joint shorter, slightly dilated near the base and falcate. Subgenital plate of ♀ very small, transverse, and roundly emarginate with obtuse points; blades of the ovipositor short, subtriangular and acute.

Type, *L. erminea*, Etn.

PSYCHODA, after the foregoing have been separated from it, resembles *Threticus* in the distribution of bristling hair on corresponding wing veins, and *Logima* in the general form of the ♂ app. inf. Of the published species, *Ps. phalænoides*, L., and *alternata*, Say (*sexpunctata*, Curt.), have antennæ 15-jointed in the ♂, but differ from each other in the form of the penis, and app. sup. ♂ (for the last. *cf.* Ent. Mo. Mag., 2nd ser., vol. v, pl. iv, *Ps.* 2a and 4a), and the shape of the ♀ subgenital plate,—subquadrate and emarginate, with the further corners rounded off in *phalænoides*; obovate-cuneate, and bifid in *alternata*. Describing this last species in *op. cit.*, June, 1898, p. 124, without microscopic preparations in Canada Balsam for reference, I reckoned the diminutive 15th joint of the antenna as an apiculus of the 14th joint, and therefore described them as “usually 14-jointed.”

Psychoda albipennis, Zett., however, has only 14 joints in the ♂ antennæ, the last diminutive.

TELMATOSCOPIUS, *gen. nov.*

Antennæ of the ♂ fly 16-jointed, nodose, with joints of full size at their tips: flagellum furnished with 14 sets of verticillate hair inserted upon the nodes, the verticils mostly cupuliform or bowl-shaped, and imbricate; several of the nodes, towards the base of the series, oblate or napiform, and gibbous or extended laterally into a rounded lobe, so as to render the thread or beak of the joint excentric instead of innate. App. inf., ♂, viewed from beneath, comparatively short and rather straight; their tenaculæ mostly short and setaceous: app. sup. with a strong curved subulate or claw-like terminal joint, usually much longer than the other joint. Subgenital plate of ♀ emarginate, with rounded points, or excised with acute points or fish-tailed with equal points and a curved or angular excision. The species can

be assorted with reference to the scape and 3rd joint of the ♂ antenna. Wing ovate lanceolate, either acute at the end of the median vein, or very little anterior thereto, or else subobtusate between the median and the sector: forked sector inserted into the stem, either at the medio-cubital cross vein, or on either side of it at a distance less than the apical width of the basal cell.

This genus is nearly co-extensive with Sections 3 C, 3 D, and 4 A of *Pericoma* in the Supplement of my Synopsis.

XENAPATES, *gen. nov.*

Xenapates fraudulenta is the Algerian species No. X, *op. cit.*, June, 1896, pp. 130 to 131. The verticils of hair of the flagellum are more elongate (almost eask-shaped) than in *Telmatoscopus*, and the fly is sufficiently described in respect of stature and colouring by the words, "similar to *Psychoda phalænoïdes*, Linn., but easily separated by the forked sector being inserted in the basal cell interior to the cross vein.

As I am leaving home for a few months, I must defer until my return the completion of this generical review. But it may be permissible to propose the name

CLYTOCERUS, *gen. nov.*

Co-extensive with *Pericoma*, Section 3 A of the Supplement to my Synopsis, *op. cit.*, June, 1896, and easily recognised by the peculiar tuft of hair of the 3rd joint in the ♂ antenna, *cf.*, *op. cit.*, 2nd ser., vol. v, pl. ii, fig. P. 16 ♂.

(*To be continued*).

Calosoma sycophanta in *Guernsey*.—I have pleasure in recording the capture of this fine beetle in *Guernsey*. The first specimen flew to light through the open window of a house, facing the sea, on the evening of July 13th, 1902, and was brought to me alive by its captor, Miss M. le Messurier, of Hauteville. The second was running along the road on July 10th, 1903, and was captured and brought to Mr. Sharp by one of his schoolboys. These are the first examples that I have seen in *Guernsey*, although it is recorded for this island by the late Dr. F. Lukis in *Ansted's Channel Islands*, 1862. In *Jersey* Mr. J. Sinel says that it occurs frequently.—W. A. LUFFE, *Guernsey*: *February*, 1904.

Monohammus sutor, L., in the *Derwent Valley*.—In July, 1902, my friend Mr. Johnson, of Byer Moor, Burnopfield, took a fine specimen of *Monohammus sutor*, L., from some timber in Byer Moor Colliery yard, whilst about five years ago he took a male *Acanthocinus ædilis*, L., at the same locality, both specimens of which he has most generously placed in my collection. Although these insects had evidently been imported with the timber, yet they are most desirable additions to our local list of *Coleoptera*. Mr. Bold records *M. sutor*, L., as having occurred once in *Newcastle-upon-Tyne* [*Nat. Hist. Trans. of Northumberland and Durham*, iv, p. 98 (1871)], but Mr. Johnson's is, I think, the first record from the *Derwent Valley*.—RICHARD S. BAGNALL, *The Groves, Winlaton-on-Tyne*: *February 13th*, 1904.

Oxyptoda misella, Er., &c., at Brandon.—I have this species to add to the list* of things taken at Brandon in June, 1903. It was not uncommon in little "pockets" on the "Breck," sands. A single specimen of *Stenus atratulus*, Er., may be added to the same list. Mr. Champion kindly identified both these species.—B. TOMLIN, Chester: January, 1904.

Longitarsus curtus, Allard, in the Isle of Man.—A *Longitarsus* taken sparingly last September at Colby, Isle of Man, has been identified for me by M. Bedel as *L. curtus*, Allard, a species described in the Ann. Soc. Ent. de France, 1860, p. 832. It has very much the appearance of a miniature *L. melanocephalus*, and has a wide range on the Continent. I hope to say more about it in a paper on some Manx captures.—ID.

Is Leptidia brevipennis a British insect?—In reply to Mr. Holland's query (*cf.* Ent. Mo. Mag., 2nd ser., vol. xv, p. 38), it may perhaps be of interest to note that among a number of unset *Coleoptera*, given to me when I began collecting twenty-four years ago by the late Mr. Samuel Stevens, was an example of this insect which he had apparently overlooked. No locality was appended, but Mr. Stevens told me that all the specimens in the box were British, and that they had all been taken by himself. This does not show, of course, that *L. brevipennis* is indigenous to Britain; but as Mr. Stevens had had the box of beetles by him for many years when he gave it to me, it does show that the species has existed in this country for perhaps half a century past.—THEODORE WOOD, The Vicarage, Lyford Road, Wandsworth Common, S.W.: February 6th, 1904.

Quedius longicornis, Kr., &c., in North Wales.—I have much pleasure in recording the capture of a specimen of *Quedius longicornis*, Kr., at the foot of Snowdon, in the first week of August last, more especially as I know of no other Welsh record for this rare species. It was found in moss on an old stump in the wood, through which the ascent of Snowdon is made from Llanberis. Owing to the excessive rainfall of last year I was astonished to find that the moss in the wood was exceedingly dry, and, with the above exception, proved most unprofitable to work. Among my other captures were a few examples each of *Anthophagus alpinus*, Payk., *Acidota crenata*, F., *Arpedium brachypterum*, Grav., *Stenus guynemeri*, Duv., and a fine series of *Chrysomela cerealis*, L. The latter species was only obtained after a very lengthy and careful search on three separate occasions, and then my success was entirely due to Mr. Burgess Sopp, who had kindly put me in the way of obtaining it.—E. C. BEDWELL, 29, Fleet Street, E.C.: February 1904.

Three Diptera new to the British List.—Both this year and last Mr. Collin has most kindly looked over and determined several boxes of *Diptera* for me. Among these he detected three species new to our list: *Dilophus ternatus*, Lw., of the *Bibionidæ* from Sherringham, near Cromer, in August, 1903; *Chyliza vittata*, Mg., of the *Psilidæ*, from near Bungay, in June, 1902; and *Tanypeza longimana*, Fln., of the *Ortaliidæ*, from Tostock, near Bury St. Edmunds, in July, 1899. He has also sent me the following notes and allowed me to give them here:—

* Ent. Mon. Mag., 1903, p. 204.

Dilophus ternatus, Lw., is easily recognised by the presence of three clumps of thorny processes on the front tibiæ instead of the usual two. *Chyliza vittata*, Mg., may be known by its having the thorax entirely reddish-yellow (♂), or with three wide black stripes (♀), and pleuræ yellow with a broad black stripe. In dark female specimens the thorax and pleuræ might well be called black with yellowish markings; the hind femora have a faint dark ring at the tip, and the wings are clouded as in *C. leptogaster*. Dr. J. H. Wood has taken this species at Stoke Wood, Herefordshire, also in June.

The genus *Tanypeza*, formerly considered to belong to the *Micropezidæ*, has been proved by Hendel (Wien. Ent. Zeit., 1903, pp., 201-5) to form a subfamily of the *Ortalidæ*, characterized by its bristly subcostal vein, by the absence of the prothoracic and sterno-pleural bristles, the approximating eyes of the male, the very long legs, the long narrow body, the well-developed transverse suture of the thorax, and partly by the narrowed first posterior cell of the wings.

I would add that Mr. A. Piffard, of Felden, had previously determined the *Tanypeza* for me; this I did not mention to Mr. Collin when I sent it to him. The *Dilophus* was sent to me by Mr. Claude Morley, the other two by Mr. W. Tuck, ofbury St. Edmunds.—E. N. BLOOMFIELD, Guestling: *January*, 1904.

Variation in Leucania favicolor.—Mr. Gervase F. Mathew, R.N., has most kindly allowed me to examine a grand series of this new *Leucania* which he secured at sugar near Harwich last June. These specimens give me a far more extended idea of this pretty species and its variations than we previously possessed. From the soft smooth honey colour of the typical forms these show the fore-wings tinged with red-drab in a less or greater degree, till a deep red, almost a coppery-red, is reached, with a gloss and smoothness very different from the dull and plain appearance of the allied species, and decidedly so from the more pinkish-red appearance of some forms of *L. pallens*, in which also are always closely placed white lines all over the fore-wings. Moreover, these *L. favicolor* maintain the greater breadth of the fore-wings, and the decidedly more robust habit of body. Still more interesting than these red specimens are two or three in which the fore-wings are of a distinctly light yellow, almost of the colour of *L. ritellina*. Altogether this series, apart from its rarity, is of extraordinary interest.—CHAS. G. BARRETT, Tremont, Peckham Rye, S.E.: *February*, 1904.

Vanessa cardui in great numbers near Hunstanton.—It was on a Thursday in October last that we were driving to Hunstanton. After passing Heacham there is a rise by Heacham Hall and then a short piece of level road till you come to the bottom of that steepest hill in this part of the country—Redgate Hill. Just after climbing this hill, and in Hunstanton parish, I first noticed a butterfly dash past, and during the next quarter of a mile of road, more particularly on the right hand side, the Painted Ladies kept rising from the road side in scores, flying round us, or settling again on the road or on flowers growing in the hedge side. I drove slowly to have a good look at them; there were rather pale ones (not worn) and lovely rich coloured ones. They were in splendid condition, and were very alert and shy, not a bit as though they had come off a long

journey. It was a lovely bright day, and they appeared to be enjoying the sunshine and the flowers, and they sailed about us as these butterflies *can* sail. I think this, the first company that we saw, covered three or four hundred yards of the road side, and were particularly attracted by the flowers of knapweed. This was a little after 12 o'clock noon. About ten minutes later we passed by Chilvers' Gardens. These are about half an acre in extent, partly upon the same road and about half a mile from the sea, and were laid out in flower beds. There were a good many beautiful asters, but bordering all the beds and paths were masses of lavender in full bloom. This lavender was perfectly alive with Painted Ladies; I could not possibly estimate the numbers, but there must have been thousands. I did not think of migration, as the butterflies were in such splendid condition! It looked as though the warm sunshine had hatched off a big brood. It is rather difficult to decide whether they were moving in any given direction, for they kept rising as we passed, flying on ahead, and around us; but the flight was certainly very local, since from the place where I saw the first to Chilvers', which seemed to be the attractive spot, could not be more than half a mile. Roughly, the road is a mile from the sea.—JAMES M. BARRETT, Gaywood, King's Lynn: *February 10th*, 1904.

Laphygma exigua at Chester.—I captured a specimen of *L. exigua* at one of the Chester electric lamps, September 25th, 1903. This is the second record of the species for the district—the first being that of Dr. Herbert Dobie (also at electric light) in 1900.—J. ARKLE, Chester: *January 12th*, 1904.

Hymenoptera Aculeata at Torcross, Devon.—During last August Colonel Yerbury was good enough to collect some *Hymenoptera* for me at Torcross, in Devonshire. In looking the contents of the box over casually at the time I received it I did not notice anything special amongst them, but on a more critical examination I find two species of great interest. These are: *Pompilus approximatus*, Smith, 1 ♀, and *Cilissa melanura*, Nyl., 2 ♂; the former has only been recorded in Britain from Scotland and Wales, and the latter only from Kent, so that their occurrence in Devonshire shows that they have a wide distribution in this country. They are both easily mistaken for their nearest allies, and will probably be found in many other places when they are better known. Other species worth noticing from the same locality are: *Crabro interruptus*, De Geer, *C. lituratus*, Pz., *Colletes picistigma*, Thoms., *Andrena pilipes*, Fab., and *Nomada jacobææ*, Pz., —EDWARD SAUNDERS, St. Ann's, Woking: *February 6th*, 1904.

Crabro carbonarius at Aviemore.—Some time ago, while looking over some *Aculeates* captured by Mr. J. J. F. X. King, at Aviemore, last year, I found two specimens that were not referable to any species I had met with before. On submitting them to Mr. Saunders they were discovered to belong to *C. carbonarius*, a species introduced to our list on the strength of a ♂ captured by Col. Yerbury at Aviemore in 1901. Both sexes were taken by Mr. King—the ♂ on July 9th, and the ♀ on August 12th. The localities where they were taken are about three or four miles apart. It is interesting to see both sexes from the same neighbourhood, and more so as I find the males of this genus are generally much rarer than the females—J. R. MALLOCH, Bonhill, Dumbartonshire: *February*, 1904.

Some Aculeate Hymenoptera from King's Lynn, Norfolk.—Among some Aculeates received from Mr. Atmore for identification I found some interesting and rare species that are worth recording. Some of them I submitted to Mr. Saunders as they were entirely new to me. Probably the best species were the following: *Pompilus spissus*, *P. pectinipes*, *Crabro scutatus* (one), *Mellinus sabulosus* (three), *Odynerus gracilis* (one), *Andrena ambigua*, *A. dorsata*, *A. argentata*, *A. tridentata* (one ♀), *A. denticulata*, *Megachile versicolor*, and *Macropis labiata*. This last species was taken off thistles Mr. Atmore informs me, and so far he has met with three specimens.—ID.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *January 18th*, 1904.—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Mr. R. C. Bradley exhibited *Celioxys acuminata*, Nyl., and *Crabro cetratus*, Schuck., both taken in his garden at Moseley in 1903. Mr. A. D. Imms read a paper upon Tsetse flies and nagana, in which, with the aid of lantern slides, black-board diagrams, &c., he gave an account of all that is known at present about the flies of the genus *Glossina*, their structure, life history, distribution, &c., and also described the disease nagana and the *Trypanosoma brucei*, which causes it.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—By the courtesy of the St. Helen's and District Naturalists' Society the concluding meeting of the present session was held in the Association Buildings, St. Helen's, on Monday, December 21st, the gathering partaking of the nature of a joint meeting of the two Societies, of which a large number of members were present. Mr. WM. WEBSTER, M.R.S.A.I., Vice-President, occupied the Chair.

On the motion of the Council it was unanimously resolved to elect Major Ronald Ross, F.R.C.S., F.R.S., &c., an Honorary Member of the Society. The following gentlemen were proposed for election as Ordinary Members in January: Messrs. H. Mousley, of Buxton, and Donald Kent, of Sefton Park, Liverpool.

Certain amendments to the rules of the Society having been adopted, communications were read by Messrs. R. S. Norman, F.G.S., and J. G. Wallbridge, M.P.S. Mr. R. S. Norman's paper on "Fossil Insects" dealt in an exhaustive manner with the palæontological branch of Historical Geology. Having first briefly described the process of formation of the great groups of stratified rocks, he dealt seriatim with the principal systems that have proved prolific of fossil insects remains in both Europe and America, special attention being paid to those occurring in Britain. Mr. J. G. Wallbridge's interesting communication on "Economic Insects" was divided into (1) a general survey of his subject under the headings of (a) beneficial, and (b) injurious, insects; and (2), the consideration of the life-histories of several of our better known hexapods, with special reference to the honey-bee. Treating of oak galls he remarked that perhaps the most commercially valuable was that of the Dyer's oak, *Quercus infectoria*. From this we obtain gallic and pyrogallic acid,

whilst the powdered galls constitute the essential ingredient in gall ointment, and are also largely used in the manufacture of inks and dyes. An interesting account of the blister beetle, *Cantharis vesicatoria*, was given, and the use of cantharides in hair restorers explained. The habitat and habits of the cochineal insect, *Coccus cacti*, were dealt with in full, and the commercial value of the carmine dyes commented on. The lac insect and others were also instructively referred to. On the conclusion of the papers an interesting discussion took place, in which many of the members participated, and a cordial vote of thanks was accorded the readers. Dr. Cotton exhibited *G. rhamnii*, *V. urticæ*, and *V. io*, *S. convolvuli*, *S. ligustri*, *M. stellatarum*, &c., and larvæ of *Cossus ligniperda*, feeding on poplar.—E. J. B. SOPP and FRED BIRCH, *Hon. Secs.*

The Annual Meeting was held in the Royal Institution, Liverpool, on Monday, January 18th, Mr. WILLIAM WEBSTER, M.R.S.A.I., Vice-President, in the Chair.

The minutes having been confirmed, Major Ronald Ross, C.B., F.R.S., F.R.C.S., was elected an Honorary Member; and Messrs. H. Mousley, of Buxton, and Donald Kent, Sefton Park, Liverpool, Ordinary Members of the Society.

The Secretary announced that arrangements had been made to meet in Manchester on February 15th, and in Chester on November 21st. The Report of the Council was read by Mr. E. J. B. Sopp, who congratulated the Society on its marked and steady progress. The Hon. Treasurer then presented his Balance Sheet, by which it was seen that, notwithstanding an increased expenditure, the credit balance in the Treasurer's hands was the largest of recent years. On the motion of Mr. F. N. Pierce, seconded by Mr. Rd. Wilding, it was resolved that the Council's Report and Treasurer's Balance Sheet be printed and circulated in the Annual Report of the Society. The following Officers were elected to serve during 1904:—President, Samuel J. Capper, Esq., F.E.S.; Vice-Presidents, Messrs. R. Tait, Jun., F. C. Thompson, and Rd. Wilding; Hon. Treasurer, Dr. J. Cotton, F.E.S.; Hon. Secretaries, Messrs. E. J. B. Sopp, F.R.Met.S., F.E.S., J. R. le B. Tomlin, M.A., F.E.S., and W. D. Harrison; Hon. Librarian, Mr. F. N. Pierce, F.E.S.; Council, Dr. G. W. Chaster, and Messrs. B. H. Crabtree, F.E.S., J. F. Dutton, A. Tippins, H. Tonkin, W. A. Tyermon, and Wm. Webster, M.R.S.A.I. It was resolved that the Summer Meeting be held at Petty Pool, Delamere Forest, on Saturday, June 11th. This concluding the business, the retiring Vice-President delivered his Address, entitled, "The Entomologist before the law," in which he ably reviewed those Laws of the Land which affect the entomologist in the pursuit of his "hobby." On the motion of Mr. R. Wilding, seconded by Dr. J. Cotton, a hearty vote of thanks was accorded Mr. Webster for his instructive discourse, as well as for his able services in the chair during the session just closed.

Mr. E. J. B. Sopp exhibited *Epilampra caraibea*, Sauss., captured in Liverpool, a Cuban cockroach which had not previously been recorded as having occurred in Britain. The insect had been kindly identified for him by Mr. M. Burr.—E. J. B. SOPP and J. R. LE B. TOMLIN, *Hon. Secretaries.*

Mr. Smallnan, of Herne Hill, and Mr. Anson, of Kingston-on-Thames, were elected Members.

Mr. Edwards exhibited a specimen of the floral simulator, the Orthopteron *Gongylus gongyloides* from India. Mr. McArthur (1) a specimen of *Heptialis humuli* ♂, showing white patches of scales on the under-side; (2) two examples of *Dianthæcia nana (conspersa)* from the South of Lewis, both very dark, and five examples from Shetland all much lighter, and two very much lighter from the development of white and orange patches. Mr. West (Greenwich) two species of Aquatic *Rhynchota* from near Montreal, the huge *Belostoma americanum*, and the smaller *Zaïtha fluminea*, as well as an example of *Cicada tibicen*. Mr. Dobson, a very light specimen of *Amphipyra pyramidea* taken in his garden at sugar; it was a striking contrast to the rich mahogany form characteristic of the New Forest race; *Pygæra curtula* bred, rich in colour, one captured at light, very pale; and a series of *S. fuliginosa* of a rich coloration. Dr. Chapman, a large number of species of *Lepidoptera* he had captured during a tour in Spain in company with Mr. Champion, and read notes on his journey.

January 14th, 1904.—The President in the Chair.

Mr. East, of Stoke Newington, was elected a Member.

Mr. R. Adkin exhibited a short bred series of *Acontia luctuosa*, and contributed notes on their life history. Mr. Edwards, ova of *Hybernia rupicaprararia*, and a specimen of a large and curious Orthopteron, sent by M. Montandon from near Bucharest. Mr. Tonge, a series of capital photographs of the ova of *Lepidoptera*, including *Hybernia rupicaprararia*, *Hemerophila abruptaria*, *Mellinea circellaris*, *Argynnis thore*, and *Anchocelis rufina*. Mr. West, specimens of *Dermestes lardarius*, which he had bred from almonds, among which it had occurred freely. Mr. Browne, a large number of species of *Lepidoptera* captured at Dawlish between July 23rd and August 7th, 1903. Mr. Turner, a few species of *Lepidoptera* taken at the same place and about the same time. Mr. Browne then read a paper descriptive of his holiday collecting at Dawlish, to which Mr. Turner added a few notes on the *Micro-Lepidoptera* and other Orders. The report of the Field Meeting held on July 11th, 1903, at Wendover was read.

January 28th.—ANNUAL MEETING.—The President in the Chair.

The first half of the Meeting was devoted to the receiving of the Treasurer's Report and Balance Sheet, the election of the Officers and Council for the ensuing year, and the reading of the Annual Address by the President. The following is a list of the Officers and Council for 1904:—President, Alfred Sieh, F.E.S.; Vice-Presidents, H. Main, B.Sc., F.E.S., H. Step, F.L.S.; Treasurer, T. W. Hall, F.E.S.; Librarian, A. W. Dodds; Curator, W. West (Greenwich); Hon. Secretaries, Stanley Edwards, F.L.S., &c. (Corresponding), H. J. Turner, F.E.S. (Report); Council, R. Adkin, F.E.S., F. Noad Clark, F. B. Carr, H. S. Fremlin, M.R.C.S., L.R.C.P., F.E.S., W. J. Lucas, B.A., F.E.S., H. A. Sauzé, W. West (Streatham). Subsequently Mr. Thompson, of "Garlands," Red Hill, was elected a Member.

Mr. Tonge exhibited several admirable photographs of the ova of *Lepidoptera*. Mr. Step, a specimen of the Dublin prawn. Mr. Turner read notes on the Natural History of Canada, sent to him by Mr. A. J. Croker.—H. J. TURNER, Hon. Sec.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, January 20th, 1904.* The 70th ANNUAL MEETING, Professor E. B. POULTON, D.Sc., F.R.S., President, in the Chair.

After an abstract of the Treasurer's accounts, showing a large balance in the Society's favour, had been read by one of the auditors, Mr. Herbert Goss, one of the Secretaries, read the Report of the Council. It was then announced that the following had been elected Officers and Council for the Session 1904-1905:—President, Prof. Edward B. Poulton, D.Sc., F.R.S.; Treasurer, Mr. Robert McLachlan, F.R.S.; Secretaries, Mr. Herbert Goss, F.L.S., and Mr. H. Rowland-Brown, M.A.; Librarian, Mr. George C. Champion, F.Z.S.; and as other Members of Council, Lieut-Colonel Charles Bingham, F.Z.S., Dr. Thomas A. Chapman, F.Z.S., Arthur John Chitty, M.A., James Edward Collin, Dr. Frederick A. Dixey, M.A., Hamilton H. C. J. Druce, F.Z.S., William John Lucas, B.A., the Rev. Francis D. Morice, M.A., the Hon. N. Charles Rothschild, M.A., F.L.S., Dr. David Sharp, M.A., F.R.S., Colonel Charles Swinhoe, M.A., F.L.S., and Colonel John W. Yerbury, R.A., F.Z.S.

The President referred to the loss sustained by the Society, in common with other communities for the advancement of science and thought, in the death of Mr. Herbert Spencer. He then spoke of the losses Entomology had sustained during the past Session by the deaths of Mr. F. Bates, Mr. W. D. Crotch, M.A., Mr. E. R. Dale, Herr Johannes Faust, Prof. A. Radcliffe Grote, the Rev. J. Hocking-Hocking, M.A., the Rev. T. A. Marshall, M.A., Mr. P. Brookes Mason, the Rev. Canon Bernard Smith, Mr. J. S. Stevens, and Mr. S. J. Wilkinson. He then delivered an Address on the subject of "What is a Species?" What is there to fill the vacancy left by the disappearance of the Linnean conception, founded on "special creation?" In many respects it would be advantageous to abandon the word, or to use it solely with its original logical meaning of "kind" or, as zoologists would say, "form." This view was, however, regarded as a "counsel of perfection," impossible of attainment; and the attempt was made to show that the conception of a naturally and freely interbreeding (or syngamic) community lies behind the usual definitions; and that the barrier between species is not sterility, but simply cessation of interbreeding (or asyngamy). A vote of thanks to the President for his Address was proposed by Dr. Dixey, seconded by Canon Fowler, and carried. Mr. Verrall proposed a vote of thanks to the other officers, this was seconded by Mr. Chitty and carried. Professor Poulton, Mr. Goss, and Mr. Rowland-Brown replied.—H. Goss, *Hon. Secretary.*

February 3rd.—The President in the Chair.

The President announced that he had nominated Dr. Thomas Algernon Chapman, M.D., F.Z.S., Dr. Frederick Augustus Dixey, M.A., M.D., and the Rev. Francis David Morice, M.A., as Vice-Presidents for the Session 1904-1905.

Mr. A. J. Chitty exhibited two specimens of *Ptinus tectus*, Boisd., taken by him in a granary in Holborn in the winter of 1892-93; also a complete series of the red *Apions* to compare with *A. sanguineum* from the late Frederick Smith's collection. Mr. O. E. Janson, specimens of *Papilio weiskei*, Ribbe, and *Troides meridionalis*, Rothschild, recently taken by Mr. A. S. Meek near the Aroa River in the interior of British New Guinea. Mr. E. C. Bedwell, the following species of

Coleoptera taken by him in North Wales (on Snowdon) in the first week of August, 1903—a fine series of *Chrysomela cerealis*, L, a pair of them being of the curiously dull form, *Antherophagus alpinus*, Payk., *Acidota crenata*, F., *Arpedium brachypterum*, Grav., and *Quedius longicornis*, Kr., the latter taken from moss on a stump in the wood at the foot of Snowdon, close to the Llanberis Falls. There appears to be no previous record of this species occurring in Wales. The Rev. F. D. Morice, a series of lantern slides illustrating the structure of concealed ventral segments in males of the Hymenopterous genus *Colletes*. Mr. W. J. Kaye, a Mullerian association of black and transparent species from the Potaro Road, British Guiana, consisting of *Ithomiinæ*, *Ithomia zarepha*, *Ithomia florula*, *Heterosais sylphis*, and *Napeogenes*, n. sp.; *Erycinidæ*, *Stalactis phædusa*, and *Stalactis evelina*; *Hypsidæ*, *Lauron partita*; *Geometridæ*, *Hyrmina*, n. sp. The whole of the specimens had been caught on one single forest road, some 170 miles inland. Mr. Kaye called particular attention to the new species of *Napeogenes*, and said it was a most remarkable divergence from the usual coloration of the genus *Napeogenes* as a whole, where brown-yellow and black were the prevailing colours, while the present insect was black and transparent only, and conformed in a wonderful way with many true members of the genus *Ithomia*. The President, a male and female of *Papilio dardanus*, captured *in coitu* by Mr. Geo. F. Leigh, F.E.S., at Durban in 1902, and examples of the offspring reared from the eggs laid by the female. The latter was of the *cenea* form, as were the great majority of the female offspring; three, however, were of the black and white *hippocoon* form. More recently, in 1903, Mr. Leigh had captured a female of the rare *trophonius* form, and had bred from the seven eggs laid by it five butterflies, of which the two females were both of the commonest *cenea* form. The female *trophonius* was also exhibited together with the five offspring. Capt. C. E. Williams read a paper upon "The Life History and Habits of *Gongylus gongyloides*, a Mantis of the tribe *Erupasides*, and a floral simulation," and exhibited a living ♀ in the nymph stage, together with coloured drawings, photographs, and lantern slides showing both the adult and immature insect in various positions. The chief features of interest in the exhibitions lay in the peculiar modifications of shape and colouring by which the Mantis conceals itself and attacks the *Lepidoptera* and *Diptera*, which constitute its prey. The specimen exhibited was the sole survivor of 21 brought to England in June, from Rangoon. It was hatched during January, and had passed through eleven ecdyses, but failed to effect the last change to the imago stage in October, 1903. Mr. G. A. J. Rothney communicated "Descriptions of new species of *Cryptinæ* from the Khasia Hills, Assam, and a new species of *Bembex*," by Peter Cameron. Mr. Malcolm Burr contributed "Systematic Observations upon the *Dermatoptera*." Dr. T. A. Chapman read a paper "On a new species of *Heterogynis*," and exhibited specimens of this and other allied species. Mr. Roland Trimen, F.R.S., read a paper "On some new or imperfectly known forms of South African butterflies," and exhibited among other specimens, illustrating his remarks, typical and aberrational forms of *Acræa rahira*, *Zeritis felthami*, a new species, *Z. molome*, Trim., and *Z. damarensis*, Trim.; typical *Colias electra*, Linn., from Natal, and a remarkable melanic aberration of the same species; also *Kedestas tucusa*, a very rare and unfigured *Hesperiid* ♀ and ♂ from Johannesburg.—H. ROWLAND BROWN, *Hon. Sec*

ANTIPODEAN FIELD NOTES.

II.—A YEAR'S INSECT HUNTING IN NEW ZEALAND.

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

(Continued from page 28).

and inferior in size. On the other hand, we find numerous, and sometimes conspicuous and handsome forms, among the *Carabidæ*, *Lucanidæ*, *Elateridæ*, and the *Longicornes*, and the *Pselaphidæ*, *Dascillidæ*, and *Anthribidæ* abound in varied and curious species. The most isolated and extraordinary forms are found in the *Colydiidæ* and the *Curculionidæ*, these two families forming a greater portion of the entire Coleopterous fauna than in any other region of the globe; while one section of the latter family, the *Cossonides*, is better represented, in proportion to the total number of species of beetles, only in the single locality of St. Helena.

Here I can only allude in passing to the deep-seated and probably very ancient affinity which undoubtedly exists between the fauna of New Zealand and that of other regions of the South Temperate Zone, especially of Chile and Tasmania; but I hope to be able to speak more fully on this subject on a future occasion.

The *Lepidoptera* present the same remarkable inequality in the different sections, while they are not nearly as well represented as the *Coleoptera*, only 236 species, to the end of the "*Noctuæ*," being enumerated in Mr. G. V. Hudson's well-illustrated work, "New Zealand Butterflies and Moths" (London, 1898). The only hawk-moth is the almost cosmopolitan *Protoparce convolvuli*, L., and the "*Bombyces*" include only five species, of which our *Deiopeia pulchella*, L., is one. The very small number of species of butterflies in New Zealand, with its mild climate, luxuriant vegetation, and varied surface, is truly astonishing, and sufficiently indicates its isolation through long ages from the great continental land-masses. Twelve species only are truly indigenous, and the two most interesting of these, *Erebia* (*Percnodaimon*) *pluto*, Butl., and *E.* (*Erebiola*) *butleri*, Fereday, are confined to the stony slopes and summits of the South Island mountains above 4,000 feet elevation, and I had no opportunity of observing these. Two other species, *Argyrophenax antipodum*, Doubl., and *Lycæna oxleyi*, also appear to be peculiar to the South Island, while *Pyrameis itea*, Fab., and *Junonia vellida*, L., have not yet been certainly observed south of Cook's Strait. The rare and local *Dodonidia helmsi*, Butl., is found in a few places in both Islands, throughout which the remaining species are fairly well distributed.

The wandering *Anosia plexippus*, L. (*Danaïd archippus*, Fab.), may be regarded as being tolerably well naturalized in the warmer parts of New Zealand, though it is nowhere very common, and I never saw it myself. It seems to have been first observed in the Islands as far back as the end of the year 1840 (F. W. Sturm, Trans. N.Z. Inst., x, p. 265), nearly at the same date when, as I was informed, it made its first appearance in the Marquesas Islands (*cf.* Ent. Mo. Mag., ser. 1, Vol. xxii, p. 219). Another conspicuous butterfly, *Hypolimnas bolina*, L., occurs, usually in worn condition, as a rare straggler from the Pacific Islands or from Tropical Australia. A more unexpected visitor is our own "Red Admiral," *Pyrameis atalanta*, L., of which a specimen is reported to have been taken in 1881, in the Botanical Gardens at Wellington, by Mr. T. W. Kirk, who subsequently saw several more (Kirk, Trans. N.Z. Inst., xvi, p. 550). When I was last at Wellington in March, 1903, Mr. Hudson showed me a specimen of *P. atalanta*, unset and in quite good condition, which he had just received from Orepuki, on the west coast of the South Island. As far as I am aware, the nearest locality to New Zealand where *P. atalanta* is found is the Sandwich Islands, to which it has spread from North America and become naturalized; but even the powerful flight and known migratory tendencies of this butterfly appear altogether inadequate to carry it unaided over the 4,000 miles of almost unbroken ocean which separate the two localities from one another, and it is most difficult to account for its undoubted occurrence at so remote a spot as Orepuki.

The *Neuroptera*, *Hymenoptera*, and *Diptera* include a few fine and conspicuous insects, and among the *Orthoptera* the large apterous crickets of the family *Stenopelmatidæ*, called "Weta" by the Maoris, deserve especial mention for the great size and formidable appearance of some of the species. The largest of all, the "Weta-punga" *Deinacrida heteracantha*, White, was once not rare north of Auckland, but is now nearly or quite extinct on the mainland, having been, it is reported, exterminated by the introduced rats. It is still to be found on the Little Barrier Island, in the Hauraki Gulf, which is fortunately reserved by the New Zealand Government as a sanctuary for the indigenous fauna and flora. Another species, almost as large and even more truculent in appearance, is *Hemideina megacephala*, Buller, which is common under logs, &c., at Wellington and elsewhere, and is conspicuous from the enormous development of the head and mandibles in the ♂. These huge crickets are very savage, and can give a severe bite if incautiously handled. The *Hemiptera* are

singularly poor in species, and with few exceptions, rare as individuals, and there is not a single large or conspicuous form. A large and fine earwig, *Anisolabis littorea*, White, is common on almost every sandy beach; and our familiar *Forficula auricularia*, L., which is now as abundant in Tasmania as at home, was found by me sparingly on one occasion only, at Whitecliffs, on the Canterbury Plains.

Collecting in New Zealand is very pleasant, but entails a good deal of hard work, as most of the best places are situated on steep hillsides and in densely tangled gullies, and many big logs and stones have to be turned over in a successful day's hunting. Frequently the hills are too precipitous to be worked at all, except along the roads, which are generally mere narrow shelves cut with great labour out of the solid rock. But except for too numerous barbed-wire fences, there is absolutely no restriction to going wherever one pleases. There is also a very agreeable absence of the numerous pests, such as stinging ants, spiders, centipedes, scorpions, &c.—not to mention snakes, which are quite absent from New Zealand—constantly met with in Australian collecting. The “Katipo,” *Latrodectus hasselti*, Koch, a small globular black spider marked on the upper side with brilliant scarlet, and usually found under stones, &c., quite close to the sea, is the only venomous creature found in the colony, and its bite unquestionably produces very severe symptoms at times, and has even been known to result in death. Mosquitoes and sandflies abound in some localities, but I was not often troubled with them. The most unpleasant creature usually encountered is the so-called “Maori bug,” a large and very evil-smelling wingless black cockroach, *Periplaneta fortipes*, Walk., which sometimes swarms under loose dry bark and logs, but is quite mild in flavour in comparison with several of the Australian species.

I now proceed to give some details of general collecting in the principal localities visited during my stay in New Zealand.

I.—WELLINGTON.

As Wellington, the capital of New Zealand, was the head-quarters of the “Ringarooma” during the thirteen months that she was on this part of the Australian station, our visits here were frequent, and my collections from this locality are more complete and extensive than from any other place in the Colony. Fortunately it is still one of the best centres for collecting, and on each successive visit I never failed to find many interesting forms that were new to me. Mr. G. V. Hudson, the well-known writer on the Entomology of New Zealand,

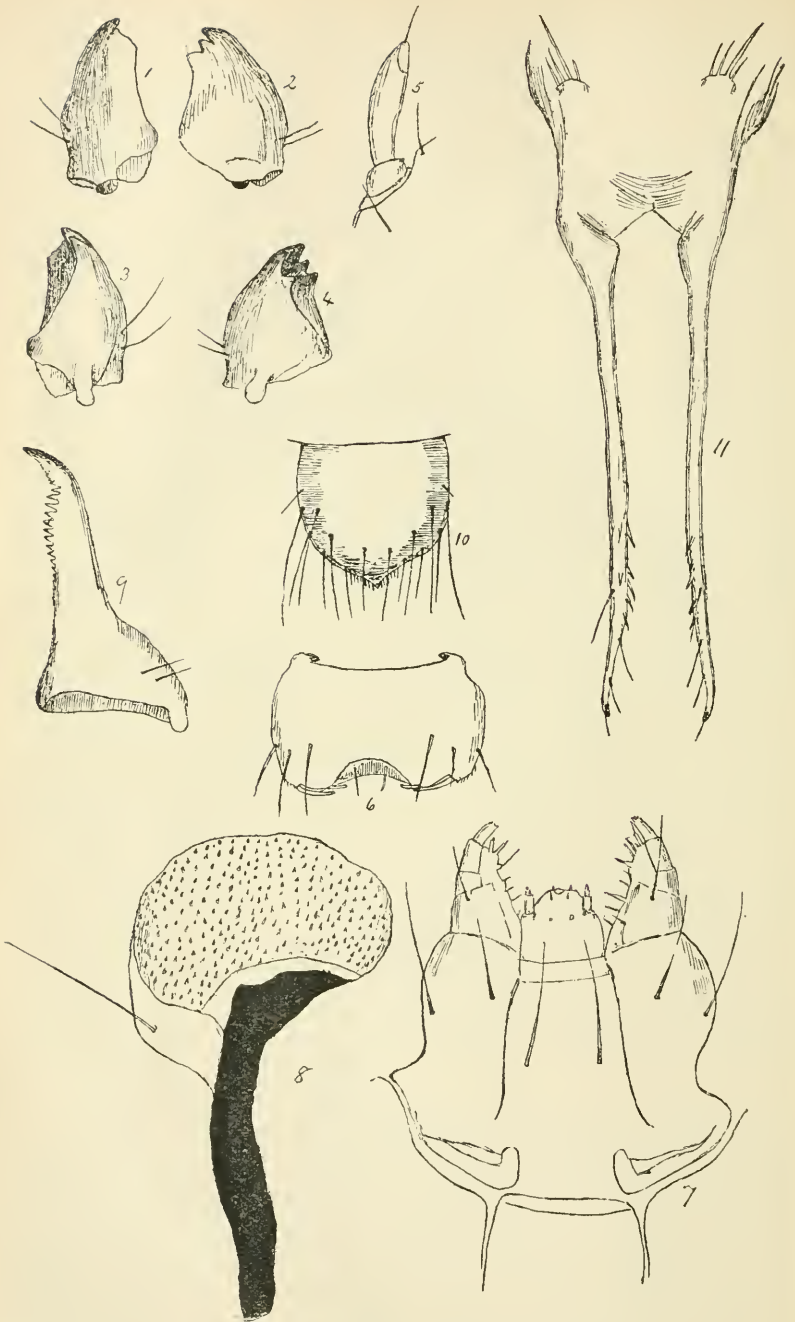
was my companion on many pleasant little excursions, and I am specially indebted to him for guiding me to the most productive spots in the vicinity of the city.

Wellington is built at the foot of a range of high steep hills, which on three sides enclose Lambton Harbour, an arm of the fine inlet known as Port Nicholson. These hills appear to concentrate on the harbour all the winds of the stormy Cook's Strait, and at all times of the year, the boisterous breezes for which Wellington is notorious render communication with the shore often unpleasant and sometimes impossible. Until a comparatively recent date, the hills were covered with fine "bush" which has been entirely cleared away on the side facing the harbour, leaving nothing but steep slopes of poor pasture-land with patches of gorse, and with here and there a big decayed log, or a more durable tree-fern stump, as a memento of the vanished woodland. But on going a short distance inland, one meets with a fair amount of the original forest-growth, usually on the sides of deep gullies where it is frequently rather difficult of access; and many stumps, logs, and occasional standing dead trees of large size, are scattered over the hills. The best and most characteristic piece of woodland within easy walking distance of the city, called "Wilton's Bush," still contains many noble trees, chiefly "Rimu" and "Matai" pines, the lofty "Rewa-rewa" (*Knightsia excelsa*), the "Hinai" (*Elæocarpus dentatus*) a handsome tree of the order *Tiliacæ*, tree-ferns of great size and beauty, and a very varied undergrowth. A *Fuchsia* (*F. excorticata*) attains the size of a forest tree, as it is sometimes seen forty feet in height, with a hard wood trunk two feet or more in diameter. The "Kawa-kawa" (*Piper excelsum*) is also a characteristic feature of the "bush" and is the giant of the pepper tribe, growing to a height of fifteen feet or more, with a jointed woody stem as thick as one's arm. All the larger trees are loaded with climbing and epiphytic plants, such as the "Kiekie" (*Breytinia banksii*), one of the *Pandanacæ* or "screw-pines," which forms huge tufts of long sword-shaped leaves among the branches of its host; the climbing Rata (*Metrosideros scandens*); and, in the damper and more shady places, with creeping ferns (*Hymenophyllum*), &c., in great variety and of exquisite beauty. The whole "bush" presents an aspect of luxuriance and vigour which is rare in the temperate Australian forest, except in a few favoured spots. Many of the trees at "Wilton's Bush" are in an advanced stage of decay, and there is an abundance of loose bark, rotten wood of every degree of dryness or moisture, dead leaves and sticks, and decaying vegetable matter to

work at, all of which yield their quota of interesting *Coleoptera*. In and under damp rotten logs, that most curious and interesting creature, *Peripatus novæ-zelandiæ*, Hutton, may often be met with in considerable numbers.

To enumerate only a few of the *Coleoptera* met with in the "bush" near Wellington, the *Carabidæ* are represented by several forms allied to *Pterostichus*, of which the shining black *Trichosternus planiusculus*, White, and *T. difformipes*, Bates, are the largest and most conspicuous. They are both common under logs and stones, and the first-named is certainly the most unpleasantly-smelling beetle I have ever met with, its odour resembling, on an exaggerated scale, that of our *Omalium rivulare*, or the little evil-smelling ants of the genus *Cremastogaster*. A curious and anomalous form is *Amarotypus edwardsi*, Sharp, which is superficially very like an *Amara* in appearance, but in habit is entirely arboreal, and is taken not rarely by beating foliage in company with two elegant *Dromius*-like insects, *Demetriida nasuta*, White, and *D. lineella*, White. *Agonocheila binotata*, White, a very Australian-looking form, occurs under loose bark, and on one occasion only I found the rare and very pretty little *Wakefieldia vittata*, Broun, among dead leaves. *Actenonyx bembidioides*, White, a curious and handsome little bronzy beetle referred to the *Lebiinæ*, is found abundantly in wet shingle in the bed of a stream in the Wilton's Bush gully, with some peculiar *Bembidia*, and *Syllectus anomalus*, Sharp, a queer little creature near *Anisodactylus*. *Anchomenus* is represented by several species not very unlike our own, and the anomalous *Zolus helmsi*, Sharp, and *Z. femoralis*, Br., occur under logs and bark. A handsome little convex green beetle referred to the *Philhydrida*, *Rygmodes modestus*, White, comes not rarely in early summer off the pink flowers of the "mako-mako," *Aristotelia racemosa*, a small tree of the order *Tiliaceæ*, the trunk of which is often riddled with the burrows of the larva of the great green Hepialid moth, *Charagia virescens*, Doubl.

Among the *Staphylinidæ* we meet with a number of interesting small forms, and a few of larger size, such as *Xantholinus sharpi*, Br., and *X. arecæ*, Br., both rather fine species; several *Quedii*, the largest of these, *Q. antipodum*, Sharp, being found rarely in carrion, with the much more common *Creophilus oculatus*, Fab., remarkable for the bright red spot behind each eye, and our British *Philonthus æneus*, Rossi, which is now generally distributed throughout New Zealand. The highly-coloured but sluggish *Xantholinid*, *Metoponcus browni*, Sharp, is not rare under the bark of the Rimu, and is one of the very



ADICELLA FILICORNIS, PICTET.

few beetles of its family which smell really nice, as it emits, in a concentrated form, the very pleasant balsamic fragrance of the resin of that tree.* Several *Pselaphidæ*, of which the finest forms belong to the genus *Sagola*, occur under bark and logs, but are not generally common. Among the Clavicorns, the handsome little *Silpha*-like form *Neerophilus prolongatus*, Sharp, was first found here by me, but appears to be very rare in the district. *Scaphisoma* abounds under damp logs, and *Histeridæ*, of small or minute size (*Epierus*, *Abræus*) are found under loose bark, with the extraordinary Rhizophagid, *Lenax mirandus*, Sharp, the active *Parabrontes setigerus*, Br., and *Cryptomorpha brevicornis*, White, the more sluggish *Brontopriscus sinuatus*, Sharp, *Leperina nigrosparsa*, White, and *L. sobrina*, White, and the flat elongate shining *Diagrypnodes wakefieldi*, Wat., looking at first sight, with its greatly abbreviated elytra, exceedingly like a Staphylinid. The curious little spinose black *Soronia hystrix*, Sharp, unlike most of its tribe, is usually taken by beating, and the fine black *Chætosoma scaritides*, Westw., remarkable for the very long hairs on the elytra, is found sparingly under dry bark. The *Colydiidæ* include two or three comparatively large and stout species of *Enarsus*, found clinging to the under-side of pieces of wood; *Ulonotus*, of which genus *U. antarcticus*, White, not unlike our rare *Endophlæus spinulosus*, Latr., in appearance, is the largest and most common; *Coxelus*, *Notoulus*, and other small forms, some of which, as *Bitoma sellata*, Sharp, *Tarphiomimus wollastoni*, Sharp, and *T. indentatus*, Woll., are remarkable for the curiously lobed side margins of the prothorax, and the irregular upper surface. Two of the most interesting and singular Clavicorn forms are found deep in the interior of logs in an advanced stage of decay, often in some numbers together; these are the cylindrical, black, deeply striate *Rhysodes aterrimus*, Br., and the very flat testaceous-red *Dryocora howitti*, Pasc., remarkable in all its stages for the curious shape of its head, which in the larva and pupa, as well as in the perfect beetle, is produced behind into two conspicuous lobes. *Cryptodacne*, a very anomalous form of the *Erotylidæ*, is represented by three species, occurring usually among fungoid growth on moist dead timber, and the hairy *Alloparnus agrestis*, Broun, is found in the deep gullies under very damp logs near water.

Several members of the family *Lucanidæ* are met with rather commonly under logs and bark, as *Dorcus squamidorsis*, White, *D. abditus*, Sharp, and the prettily variegated *Mitophyllus parryanus*,

* I have recently taken in the Illawarra District, New South Wales, another species of *Metoponus* (*cyanipennis*, Mael.), which possesses in an eminent degree the nutmeg-like scent of the bark of the Sassafras (*Atherosperma moschatum*) under which it is found.—J. J. W.

White, and *M. irroratus*, Parry. The largest indigenous member of the family, the singular Dynastid-like *Dendroblax earlei*, White, was taken, flying at dusk in some numbers, by Mr. Hudson, at Wainui-omatai, a few miles from Wellington, but I did not myself meet with it. Another conspicuous beetle, the large apple-green chafer, *Stethaspis suturalis*, Hope, is not rare in early summer, and is sometimes seen on the wing by day. The two sole representatives of the *Buprestidæ* in the Islands, *Nascio enysii*, Sharp, and *Cisseis eremita*, White, are found sparingly by beating near Wellington. Two fine forms of the *Elateridæ*, *Thoramus wakefieldi*, Sharp, and *Metablax acutipennis*, White, each fully an inch in length, are not rare, and the last-named is sometimes taken flying in the sunshine; the very Australian-looking *Monocrepidius exsul*, Sharp, flies at dusk in grassy places, and some pretty and singular species of the genera *Corymbites*, *Mecastrus*, *Geranus*, and *Protelater*, may be beaten from flowers, and are also met with under bark and in rotten wood. Several species of *Cyphon* (with *Scymnus* and *Acalles*), form the greater part of the "small fry" which fall into the umbrella during the operation of beating; and some pretty *Cleridæ* are taken in this way, including the flat, long-legged, pallid-testaceous *Paupris aptera*, Sharp, and the brilliant little purple and golden *Phymatophæa electa*, Klug.

The largest forms of the *Heteromera* are the rugose, brown *Syrphetodes marginatus*, Pasc., and *S. tuberculicostatus*, White, which are common enough under old timber, &c. The stumpy little *Paraphylax squamiger*, Br., is much less frequently met with, but on one occasion was taken in large numbers by Mr. G. V. Hudson and myself, clinging to the under-side of a large dry fungus resting on a log, its rugose surface and obscure colour making it most difficult of detection at first sight. In very rotten wood, the shining brown *Prioscelis* (*Uloma*) *tenebrionoides*, White, and its smaller but very similar relative, *Aphthora rufipes*, Bates, are very common at times, and the first-named emits a strong but not unpleasant odour very like that of creosote. A fine elongate black beetle, *Zolodinus zealandicus*, Blanch., and the *Helops*-like *Artystona wakefieldi*, Bates, and *A. rugiceps*, Bates, are found under bark, but the two first-named are scarce. General beating sometimes produces a rather large metallic Cistelid, *Tanychilus metallicus*, White, and several active forms of *Melandryadæ*, of which the largest and most conspicuous is the beautiful *Chalcodrya variegata*, Redt. Species of *Mordella*, *Anthicus*, and the larger pallid *Cotes*, are obtained by beating flowers, and the singular little pyriform *Apeosina stewarti*, Br., occurs as a rarity under bark.

In the Longicorns we find some handsome species of moderate size, and a good many small and obscure forms, by beating the dense tangled festoons of *Rubus australis*, especially when these include plenty of dry stems and hanging dead leaves. The beautifully marbled *Tetrorea cilipes*, White, and the stout ochreous *Diastamerus tomentosus*, Pasc., are not uncommon, with the elegant fulvous *Ophryops dispar*, Sharp, *Asthetolca pauper*, Bates, and *Asthetolida lucida*, Br., two small shining reddish species of great activity, the rare elongate *Epheus costifer*, Br., *Navomorpha lineata*, Fab., and *N. sulcata*, Fab., both elegantly marked with longitudinal white lines on a dark ground; and numbers of rather dull-looking forms of the genera *Xylotoles* (the most extensive genus of the section in New Zealand), *Hybolasius*, *Eurychæna*, &c. Other Longicorns frequent the blossoms of the *Leptospermum* and the white Rata (*Metrosideros alba*), such as the narrow brown *Stenopotes pallidus*, Pasc., the grass-green *Calliprason sinclairi*, White, and the handsome ochreous *Votum mundum*, Br. and *Xuthodes divergens*, Br. Some species are found under the bark, or in burrows in the Coniferous trees, as *Ambeodontus tristis*, Fab., and the rare and beautiful *Pseudosemnus amabilis*, Br., of which I took a fine series in August, 1902, in a standing dead "Rimu"; and others again, as the robust little species of *Somatidia* (allied to the Mediterranean genus *Parmena*), are found under pieces of wood, or dead leafy boughs on the ground. *Phytophaga* are but little in evidence, the most noticeable species being the nearly white *Adoxia vulgaris*, Br., which abounds on *Piper excelsum* and other shrubs.

Unquestionably the finest and most remarkable beetle found in New Zealand is the enormous Brethrenid, *Lasiorrhynchus barbicornis*, Fab., which appears to be not rare at times near Wellington, but I never had the good fortune to see it alive, and found only one or two dead specimens. *Anthribidæ*, nearly all of small forms, are fairly common by beating, *Anthribus ornatus*, Sharp, being the largest and most handsome; *A. vates*, Sharp, which is not rare under loose dry bark, is possessed of considerable leaping powers. The *Rhynchophora* usually form the greater part of the beetles taken in any collecting excursion, and of these the most frequent are perhaps the genus *Acalles* and its allies. Some of these are quite the tiniest weevils I have ever seen, while others (*Crisius*, *Tychanus*, *Sympedius*, &c.) are of quite respectable size, and one of the finest and largest of the group, *Rhynchodes ursus*, White, is sometimes taken walking on dead timber. General beating of flowers and foliage produces a number of

most singular knobbed and spinose forms (*Scolopterus*, *Ancistropterus*, *Nyxetes*, *Oropterus*, *Empæotes*, *Inophlæus*, *Eugnomus*, and the singularly beautiful *Amylopterus prasinus*, Br.), with many small species allied to *Erirrhinus*, &c. ; and under logs various curious and protective-looking forms (*Phrynixus*, *Catoptes*, more *Acalles*, &c.) may be found by diligent search. Several very interesting *Cossonidæ*, as well as *Scolytidæ* (*Stenopus*, *Pachycotes*, *Tomicus*, and *Platypus*), are met with in timber in various stages of decay.

I occasionally varied my bush collecting by a walk to Lyall Bay, a fine curved beach of dark sand opening on Cook's Strait, where a good many insects which did not occur elsewhere could be found. Here, throughout the year, and usually in company with two or three good-sized species of *Cafius*, the stout pallid Heteromeron, *Chærodes trachyscelides*, White, may be obtained in almost any number under seaweed, often at a considerable depth in the wet sand. Dead fish and other refuse produce three fine species of *Histeridæ*, *Saprinus pseudocyanus*, White, *Pachylopus lepidulus*, Br. (not very unlike our *Saprinus 4-striatus*, Hoff.), and, very rarely, the most singular *P. pedator*, Sharp, with its enormously developed hind femora and spiny fossorial tibiæ. At the roots of bent-grass, the curious little Heteromeron, *Lagrioida browni*, Pasc., is often common, and in damp saline places I met with the anomalous blind Lamellicorn, *Phycochus graniceps*, Br., for the first time in my visit to New Zealand, in October, 1901. It is superficially like a small shining species of *Ægialia** On the sandhills at the back of the beach are found *Læmosthenes complanatus*, Dej. (a common New Zealand insect), "*Calathus*" *zealandicus*, Redt., the elegant *Otenognathus (Anchomenus) actochares*, Br., *Hypharpace abstrusus*, Bates, and other small *Carabidæ*; *Cilibe elongata*, Brême, an *Asida*-like Heteromeron, is abundant under stones, and *Proctophanes sculptus*, Hope, an introduction from Australia, occurs here in cow-dung with our familiar *Aphodius granarius*, L. A very pretty little Cossonid weevil, *Microtribus huttoni*, Woll., is found abundantly in the dry *débris* of the native flax, *Phormium tenax*.

Wellington does not appear to be a particularly good place for butterflies, and in all my visits I saw only the two common and widely distributed species, *Pyrameis gonerilla*, Fab., and *Chrysophanus salustius*, F. The rarest and most beautiful of all the New Zealand butterflies, *Dodonidia helmsi*, Fereday, is found at Silverstream, in the Hutt Valley, eighteen miles from Wellington, and Mr. Hudson has

* This remarkable little beetle is also found in Tasmania. I took a single example on the beach at Sandy Bay, Hobart, on June 30th, 1901, and it has since been obtained sparingly in the same spot at the roots of bent-grass, in company with an allied but distinct species (*P. sulcatus*, Lea, MS.) by Mr. A. M. Lea and myself.—J. J. W.

reared it from larvæ collected there on *Gahnia procera*, a large and stout "cutting-grass" allied to *Scirpus*. Mr. Hudson having kindly indicated the exact locality of *Dodonidia helmsi* to me, I went to Silverstream twice in February, when the butterfly is on the wing. On both occasions I had the satisfaction (?) of seeing it, but to catch it was quite another matter, for the place—a narrow, disused tram-road on the side of a densely wooded and very steep gully—was very impracticable, and as the butterfly kept high up among the tops of the brushwood out of reach of an ordinary net, I failed to secure a single specimen. *Dodonidia* is a very bright and attractive looking butterfly, of decidedly strong flight for a Satyrid, and on the wing has somewhat of the aspect of a small Vanessid. I got some very nice beetles here that I had not met with at Wellington, including the fine and scarce Longicorns, *Leptachrous strigipennis*, Westw., and the green *Pseudocalliprason marginatum*, White; a large and handsome weevil, *Agathinus sextuberculatus*, White, and many other interesting species.

II.—AUCKLAND, &c.

My first visit to Auckland was made in January, 1902, and lasted about a fortnight; and this Port was the head-quarters of H.M.S. "Ringarooma" during the following April and May. A flying visit of two days, not unproductive in an entomological sense, was made on our way to Sydney in November, and we spent the first week of March, 1903, there, in company with the Australian Squadron.

Situated on the south shore of the noble Waitemata Harbour, the entrance of which is guarded by the scarcely extinct volcanic island of Rangitoto, Auckland presents a very beautiful aspect from seaward, and occupies a site of highly diversified character, though the surrounding country is of less elevation than is usual in New Zealand. From the top of Mount Eden, a very perfect little extinct volcano 623 feet in height, almost in the city, no fewer than sixty eruptive cones, mostly of small size, may be counted in an area of a few square miles, and the isthmus between Waitemata Harbour on the east, and Manukau Harbour on the west, is in large part occupied by rugged lava-fields, which look as if they had cooled down only a few years ago. Very little of the original "bush" is left near Auckland, except a few groves of "Karaka" (*Corynocarpus lævigatus*) and "Puriri" (*Vitex littoralis*) both trees of no great size, but a few noble Kauri pines still survive in some of the sequestered gullies on the north shore of the harbour.

(To be continued).

CATOPS SERICATUS, CHAUD., A BRITISH INSECT.

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

Two recognised species are confused under the name *Catops sericeus*, Panz., in our collections, one of them being *C. sericatus*, Chaud., an insect not hitherto recorded as British. In Chaudoir's description of the latter [Bull. Mosc., xlv, 2, p. 199 (1845)], he states that it is very much smaller than *C. sericeus*, and has the elytral rugæ less marked, the terminal joint of the antennæ less obtuse, &c. Dr. Seidlitz, in his table of the species of the genus *Ptomaphagus* [= *Catops*] (Deutsch. ent. Zeitschr., 1887, pp. 90-92), and Ganglbauer [Die Käfer von Mitteleuropa, iii, p. 142 (1899)], both place *C. sericatus* in a group having the posterior tibiæ straight in both sexes, whereas *C. sericeus* is included in the section with the posterior tibiæ excavated or crooked in the ♂ and straight in the ♀. The character derived from the form of the posterior tibiæ of the male of *C. sericeus* applies, however, to well-developed specimens only; nevertheless, the two forms may be separated thus:—

Larger and more convex; elytral rugæ very distinct; anterior tarsi of ♂ broadly dilated, as wide as or wider than the antennal club; posterior tibiæ of well-developed ♂s more or less hollowed below the base (and appearing widened thence to the apex), straight in feebly developed ♂s, as in the ♀...

sericeus, Panz.

Smaller and more depressed; elytral rugæ very fine; anterior tarsi of the ♂ much less dilated, narrower than the antennal club; posterior tibiæ straight in both sexes; pubescence of the upper surface finer and more silky...

sericatus, Chaud.

C. sericeus is extremely variable in size, the small individuals with straight posterior tibiæ in the ♂ being intermediate in this respect between it and *C. sericatus*, but the two forms can be separated without difficulty by the structure of the anterior tarsi of the male and the finer sculpture; *C. sericatus* is constantly of the same size as very small examples of *C. sericeus*, and the silky texture of the pubescence is particularly noticeable. Murray, in his "Monograph," treats Chaudoir's insect as a var. minor of *C. sericeus*; the ♂ characters he ignored altogether. *C. sericatus* has been recorded from Russia, Germany, Austria, the Pyrenees, Spain, &c.; I have specimens of it from Sanderstead, Caterham, Gomshall, Chatham, Sheppey, Brighton, etc., and the species is no doubt widely distributed in Britain.

Horsell, Woking:

March 5th, 1904.

RHYNCHITES SERICEUS, HERBST, NOT A BRITISH INSECT.

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

Rhynchites sericeus, Herbst, has long appeared on the British list, various continental authorities having treated it as synonymous with the subsequently described *R. ophthalmicus*, Steph. But this is a mistake, as *R. sericeus* is not a British insect, and the true *R. ophthalmicus*, Steph., = *R. olivaceus*, Gyll., the latter name post-dating that of Stephens by two years. *R. sericeus*, Herbst, of which I captured numerous specimens in Northern Spain last year, is readily separable from *R. ophthalmicus* by its larger size, the brighter metallic colour, and the *multipunctate* elytral interstices. Herbst's coloured figure, rough as it is, is sufficient to show that his insect could not have been synonymous with that of Stephens.

Horsell, Woking :

March 5th, 1904.

SUFFOLK LEPIDOPTERA IN 1903.

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

For the third year in succession Mr. A. E. Gibbs, F.L.S., of St. Albans, has collected in the same district of East Suffolk, at Felixstowe, Orford, Bentley, &c. Of course the greater part of the species taken are the same as in former years, but there are a few not before met with, and others whose occurrence may be worth mention.

The season is generally considered to have been very unfavourable, but Mr. Gibbs reports that no inconsiderable number of the seaside species have been unusually abundant.

He has furnished me with a list of the Macros, and Mr. C. G. Barrett has most kindly looked over the Micros, and determined the more obscure species. The following gentlemen have also sent me lists of their captures, the Rev. A. P. Waller, at Hemley and Waldringfield; Messrs. H. Lingwood, at Needham Market and Dunwich; W. J. Ogden, at Kessingland; and A. E. Tonge, at Lowestoft.

Rhopalocera were generally scarce, and none worth mention were taken, though Mr. Waller reports *Thecla rubi*, L., and *Lycæna argiolus*, L., as common at Hemley, and Mr. Lingwood, *L. Ægon*, Schiff., common at Dunwich.

Of the Bombyces there was a dearth, though *Halias prasinana*, L., and *Calligenia miniata*, Forst., were netted at Bentley, *Nola confusalis*, H.-S., and *Nudaria senex*, Hb., at Hemley, *Porthesia chrysorrhæa*, L., at Felixstowe, and a larva of *Stauropus fagi*, L., at Needham Market.

Of the *Noctuæ* the following may be mentioned, *Cymatophora ocularis*, L., one at sugar at Hemley, a few *Simyra venosa*, Bork., and good series of *Leucania straminea*, Tr., and *Nonagria neurica*, Hb., at Needham Market. *L. littoralis*, Curt., "swarmed" at Kessingland. **L. obsoleta*, Hb., one, *L. straminea*, Tr., and *Senta ulvæ*, Hb. (*maritima*), from Lowestoft, were exhibited by Mr. A. E. Tonge at the October meeting of the South London Entomological Society. *Tapinostola elymi*, Tr., a long series at Kessingland, but very local, and almost confined to a single large patch of its food plant. *Neuria saponariæ*, Esp., a few, and *Mamestra abjecta*, Hb., not uncommon, while *M. albicolon*, Hb., *Agrotis valligera*, Hüb., *A. ripæ*, Hb., &c., were abundant, at Felixstowe; *A. præcox*, L., Dunwich, one only; *Miana arcuosa*, Haw., singly at Hemley and Felixstowe; *Triphæna fimbria*, L., and *Noctua rhomboidea*, Tr., one of each at Hemley; *Dianthæcia conspersa*, Esp., at Kessingland, *Cucullia absinthii*, L., at Orford, and *Heliothis armiger*, Hb., at Needham Market.

Among the *Geometræ* are several interesting species, *Acidalia emutaria*, Hb., at Orford, *Macaria notata*, L., at Bentley, *Minoa euphorbiata*, Schiff., at Needham Market (this is given as doubtful in my Suffolk list); *Eupithecia liniariata*, F., and *E. succentaureata*, L., at Felixstowe, the latter also at Needham Market, *Melanippe galiata*, Hb., one at Chelmondiston, a very rare species in Suffolk, and *Aventia flexula*, F., at Sudbourn, near Orford.

The only *Pyralides* worth mention are *Scoparia basistrigalis*, Knaggs, and *S. cratægella*, Hb., from Waldringfield, and the very rare **Botys nubilalis*, Hb. (*silacealis*, Hb.), from Felixstowe, mentioned in the accompanying note.

Pterophori:—*Platyptilia ochrodactyla*, Hb. (*Bertrami*), at Hemley and Orford; **Mimæseoptilus phæodactylus*, Hb., and *Leioptilus lienigianus*, Zell., at Felixstowe.

Phycidæ:—*Homæosoma eluviella*, Gn. (*binærella*), Felixstowe and Bawdsey near Hemley; *Nyctegretes achatinella*, Hb., *Rhodophæa suarella*, Zinck., and *R. advenella*, Zinck., at Felixstowe; *R. formosa*, Haw., at Bawdsey; *Phycis spissicella*, F., at Hemley; *Melissoblaptus anellus*, Schiff. (*bipunctanus*, Zell.), a nice series on the fences at Felixstowe one windy night.

The rarer *Tortrices* were a few **Tortrix diversana*, Hb., *Peronea hastiana*, L., **Sideria achatana*, F., and *Orthotænia striana*, Schiff., at Hemley; *O. antiquana*, Hb.; *O. purpurana*, Haw., a curious grey variety, and *Phtheochroa rugosana*, Hb., Felixstowe, *Sciaphila pascuana*, Hb., at Orford; *S. hybridana*, Hb., *Pædisca occultana*, Dougl., *Semasia ianthinana*, Dup., *S. rufillana*, Wilk., *Catoptria expallidana*, Haw., and *Chrosis tesserana*, Tr., all at Felixstowe, where *Stigmonota regiana*, Zell., occurred abundantly blown out of the sycamore trees. *Opadia funebrana*, Tr., at Orford, this is seldom taken in the perfect state, *Dicrorampha simpliciana*, Haw., and *Argyrolepis badiana*, Hb., at Orford; *Trycheris mediana*, Fab., and *Idiographis inopiana*, Haw., at Hemley.

The *Tineæ* are not so well represented, and I would only mention *Harpapteryx nemorella*, L., among honeysuckle, *Swammerdamia oxyacanthella*, Dup., and *Gelechia cinerella*, Clerck., at Hemley, *G. umbrosella*, Zell., at Tuddenham (C. Morley), **G. sequax*, Haw., Orwell, *G. luculella*, Hb., at Bentley, and **Parasia carlinella*, Dougl., at Orford.

Several of the above named correspondents have sent me notices of their captures in previous years, principally in 1902. I would mention the following:—

Lowestoft—*Senta ulva*, Hb. (*maritima*), not uncommon in one marsh, and *Hadena suasa*, Bork., common.

Kessingland—*Aporophyla australis*, Bdv., *Agrotis praecox*, L., three in 1902, *Noctua glareosa*, Esp., in plenty on one night, and *Cirrhædia xerampelina*, Hb., on ash trunks, this species is sometimes not uncommon at Hemley, where in 1902 thirty-six males of *Amphidasys prodromaria*, Schiff., were taken by “sembling.”

Southwold—*Acidalia ornata*, Scop., one (Lingwood), in 1902; this species is very rare in Suffolk. Needham Market—*Xanthia aurago*, Schiff., two specimens.

Species marked * are new to the county.

Guestling: *March*, 1904.

NOTE ON DROWNING IN LEPIDOPTEROUS LARVÆ

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

I suppose few Lepidopterists have been without the experience that larvæ placed on a branch of the food plant in water, are very apt to avail themselves of any oversight in the arrangements, and to crawl down into the water and get drowned.

When this happens, it most frequently occurs that the larva is asphyxiated when it has crawled about a couple of inches beneath the water, it may then fall off and sink, or remain clinging to the twig till it dies.

My observations of this occurrence led me to use this means of producing anæsthesia in any larvæ I wanted to have quiescent for examination or experiment, as I found that a few minutes under water produced a death-like stillness, which, if not prolonged, was completely recovered from, without any apparent ill-effect; whilst the use of chloroform or any anæsthetic of that sort seemed to produce intense discomfort and usually sickness in nearly all cases, and in fact was seriously damaging, and prejudiced the chance of rearing them.

I have treated a good many larvæ in this way, and few required more than a few minutes' submersion, and none more than a quarter of an hour to become quietly asleep.

I was much astonished last autumn to meet with a remarkable exception. On October 21st I found a *Tortrix* larva, which was, I have no doubt, that of *D. petiverella*, in a stem of *Achillea millefolium*; I dropped it into water, and it sank to the bottom. Twenty hours later, on the 22nd, it lay quiet at the bottom of the water, but when touched proved to be quite lively and active. On the 23rd, after forty-eight hours' immersion, when touched it moved freely, but a little sluggishly, and seemed a little swollen. (Many larvæ imbibe

water (by endosmosis?) when immersed, and swell up very much, they may recover (in some species only?) after this has made some progress.) I took it out and left it out two hours, it was then quite active and seemed normal; I then re-immersed it.

The next day, the 24th, after twenty-four hours' immersion, it seemed quite well; on the 25th (forty-eight hours under water), it seemed quite lively; 26th, still quite active after seventy-two hours' continuous immersion. On the 27th, ninety-six hours' immersion, is rather distended, and apparently dead; removed it from the water, and in ninety minutes after it had shrunk perceptibly, and moved when touched. On the 28th, after being out of the water twenty-four hours, it seemed quite well and active, but after twenty-two hours re-immersion it appeared to be dead, and though removed from the water did not recover. I imagine removal from its food plant had more to do with killing it than the immersion.

I have not since had an opportunity of experimenting with any internal-feeding larva to test the question, but it seems probable that the possibility of being overwhelmed by sap or other moisture in its burrow, has been provided against by this great power of resistance to drowning, to which most Lepidopterous larvæ rapidly succumb.

Betula, Reigate:

March, 1904.

THE PREPARATORY STAGES OF *ADICELLA FILICORNIS*, PICTET.

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

A good many years ago I published in this Magazine (1890) details of the earlier stages of the less typical species of *Leptoceridæ*, intending to deal with other genera later, but circumstances at the time prevented me from carrying out my plans. In the meantime, the work has been taken up by other hands who have dealt with it more thoroughly than I should have been able ever to do. None of the vigorous workers in this field seem, however, to have met with this *Adicella*, and it is desirable therefore that what I have noted down concerning the larva, nymph and case should not be lost. Although I have not now the material available to enable me to revise what I had written so long ago, the details are, I think, on the whole, accurate.

The species was known to Pictet even in its larval state, and he gives a very good figure of the larva and case. His descriptions are, however, hardly adequate for present day requirements. The insect

itself is one of the most interesting little things imaginable, and to have watched it fluttering about in the warm sunlit glades that it loves is to have seen one of the most delicate and charming pictures of insect life: the interest being enhanced when one knows where it has come from, and how it has spent its earlier life.

The detailed descriptions follow:—

Larva slender, with reddish head, prothorax and legs, the rest of the body whitish.

Head elongate, oval, sparingly beheaded; clypeus short and broad; under-piece large, subquadrangular, angles rounded, slightly narrower in its posterior part. Antennæ very highly developed, long, fusiform, placed on a rounded base, obliquely truncate at apex, which bears a single spinous hair. Labrum transverse, sides rounded, anterior margin rounded and excised; disc with six or so strong hairs. Mandibles rather short; right deeply toothed, left less conspicuously so. Maxillæ elongate, with 3-jointed palpi; labium sub-conical.

Prothorax, seen from above, little broader than the head; pronotal plate pilose, broadly transverse, nearly straight in front, sides slightly rounded, posterior margin shallowly excised. Mesothorax broader, the notal plate indistinct, because concolorous with the metanotum, which is membranous. The legs, which are pilose, are comparatively strong, and there is not such great disparity between the length of the pairs as in some other genera, the distal joints, especially of the fore legs, spined internally.

Abdomen: first segment broadest of all, gradually tapering thereafter; the first segment bears the usual protuberances, dorsal and lateral, the latter in the shape of a rounded space covered with points and posteriorly running into a long black chitinous band. Tracheal branchiæ apparently ill-developed, filamentose, single. Fringe also ill-developed, composed of minute hairs, modified on 8th segment to a row of strong points. Free part of anal limbs short, provided with double hooks; about the anal region are several series of regular spines or spinous hairs.

Nymph: very long and slender, cylindrical. Antennæ very long, wound round the posterior end of the abdomen. Labrum shield-shaped; mandibles slender, falcate, deeply dentate. Apparently only 2nd pair of legs fringed, fringe very slightly developed. Wing-cases long, narrow and acute, reaching beyond 6th abdominal segment.

Dorsal armature of abdomen: 1st segment with a rounded wart (on each side) covered with points, which also occur along the posterior margin of the segment; 3rd to 7th segments each with two anterior elliptical plates with backward directed teeth, three or four teeth on segments 3rd and 4th, three teeth in segment 5th, two or three teeth in segment 6th, and two teeth in segment 7th. The posterior plates in segment 5th are large, transverse, contiguous, each with twelve or so forward directed teeth arranged in double series.

Lateral fringe of very fine short hairs, commencing on 3rd segment and running to 8th, joining beneath. The terminal appendages reach a maximum development in this species; they are very long and slender, slightly curved at the tips, which bear a number of points and a few hairs.

The cases are strongly curved and tapering, 8 to 10 mm. long ; they are russet coloured, sometimes partially blackish, and are so smooth that they look as if altogether membranous ; they seem to be composed of very fine sand or mud fixed to a strong inner silken tube. They are usually found attached to mosses growing in and around trickling springs, which the insect haunts along with *Beræa*, *Crunæcia*, and *Diplectrona*.

On the whole, the early stages of *Adicella* seem to confirm its position between *Triænodes* and *Æcctis*. The larva bears the same relationship, it may be said, to that of *Triænodes* in the matter of colour and in some other respects as the larva of *Beræa* does to that of *Beræodes*. As we find in *Beræa* the head and prothorax are unicolorously reddish, and the posterior legs are not of extreme length, and in *Beræodes* the same segments are greenish, with rich dark markings, while the posterior legs are of great length ; so in *Adicella* a red unmarked head and prothorax, combined with legs of moderate length, may be contrasted with the longer legs and more decided markings to be found in *Triænodes*.

These points may be held to suggest a certain correlation between a red uniform colour, posterior legs of moderate length, and habits more or less concealed, and between a greenish colour with a pattern, long posterior legs, and more light seeking habits. In the *Hydro-psychidæ* something almost parallel may be found, at least as regards colour, if the groups of *Philopotamus* and *Wormaldia* are contrasted with those of *Plectrocnemia* and *Polycentropus*.

EXPLANATION OF FIGURES.

LARVA.

1. Mandible, left from above.
2. do. right do.
3. do. left from beneath.
4. do. right do.
5. Antenna.
6. Labrum from above.
7. Maxillæ and labium from beneath.
8. Lateral protuberance and chitinous band.

NYMPH.

9. Mandible.
10. Labrum.
11. Appendages.

13, Blackford Road, Edinburgh :

February 1st, 1904.

Xylophilus versus Hylophilus.—M. Pic, in his recent "Contribution à l'étude générale des Hylophilidæ" [Ann. Soc. Ent. Fr., lxxii, pp. 65-107 (1903)], has recently adopted the name *Hylophilus*, Berthold (1825), for the well-known genus *Xylophilus*, Latreille (1825), on account of the latter having been used two years earlier by Mannerheim for a subgenus of *Eucnemis*. But this change only makes confusion worse confounded, *Hylophilus* being a recognised genus of birds (Temminck, 1823), and antedating that by Berthold by two years. If *Xylophilus** is to be rejected, the name *Aderus*, Westwood (1829), is available. Reitter uses *Englenes*, Westw.—G. C. CHAMPION, Horsell, Woking: *March 5th*, 1904.

A further note on Ptinus tectus, Boield., &c.—Apropos of Prof. Beare's recent record of the capture of *Ptinus tectus* in granaries in London and Strood, Kent (*anteò*, pp. 4, 5), it may be worth noting that Mr. A. M. Lea, Government Entomologist of Tasmania, has recently sent me for determination specimens of it from Hobart, from whence the species was originally described by Boieldieu. Mr. J. J. Walker, too, has recently obtained it at Christchurch, New Zealand, and there are others from the same country received from Mr. Wakefield in the National Collection. Mr. Lea forwarded the *Ptinus* with various other species that he supposed had been introduced into Australia or Tasmania. These include *Trigonogenius globulum*, Sol., from Hobart (a species originally recorded from South America, and also found at Hobart in 1891 by Mr. J. J. Walker: this insect, it may be remembered, has established itself in a flour mill at Oldham, Lane.†); a *Mezium* from Swan River (probably *M. sulcatum*, Fabr.; also found by Mr. Walker at Fremantle in 1890, and more recently at Sydney); *Typhæa fumata*, Linn., from New South Wales; *Monotoma quadricollis*, Aubé, from Hobart; *Cercyon flavipes*, Fabr., from Hobart (found abundantly in dung throughout New Zealand by Mr. Walker), &c.—Id.

Ptinus tectus, Boield., in Liverpool.—I have just examined specimens of this species, sent to me by Mr. Burgess Sopp for confirmation as to their identity. He informs me in a covering letter that they were sent to him by Mr. J. J. Richardson of Liverpool, who stated that the insect had infested his bird seed for over two years, and had done considerable damage.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: *March 9th*, 1904.

Occurrence of Tetropium castaneum, L., in Norfolk.—Last summer I was fortunate enough to capture two fine specimens of this recent addition to our fauna. They were both taken in a thickly wooded district three or four miles from the town of King's Lynn. The first specimen (a ♀) was met with on June 18th, when it was sunning itself on the trunk of a recently felled Scotch fir tree; my second example (a fine ♂) occurred three weeks later at 4 o'clock in the afternoon, and under similar circumstances, but about half a mile from the spot where the first specimen was taken. I am indebted to Mr. E. A. Newbery for kindly identifying these and other insects sent to him.—E. A. ATMORE, King's Lynn, Norfolk: *January 18th*, 1904.

* cf. Ent. Mo. Mag., xxvi, pp. 264-269.

† cf. Ent. Mo. Mag., xxxviii, p. 9 (1902).

Tetropium castaneum, L., and *T. fuscum*, F.: supplementary note.—Specimens of *Tetropium* have been found recently in several parts of England: *fuscum* has been recorded from Brockenhurst by Dr. Sharp (Ent. Mo. Mag., xxxix, p. 198), and from Betchworth by Mr. Saunders (*loc. cit.*, p. 228); *castaneum* from near Leicester by Mr. Bouskell; and an unrecorded *Tetropium* has been taken near Esher. As remarked by Dr. Sharp (*loc. cit.*) the genus is more closely allied to *Asemum* than to any other British genus, but can easily be separated by its eyes being divided almost to the base, and the thorax being about as long as broad. In *Asemum* the eyes are but slightly divided, and the thorax is conspicuously broader than long. The following are the principal characters given by Ganglbauer (Best. Tab., vii-viii) to separate the two species:—

Disc (as well as margins) of thorax closely punctured, dull; basal fourth of elytra covered with closer pubescence than the rest of its surface, giving the appearance of a pale basal band *T. fuscum*, F.
Disc of thorax scantily punctured, shiny, elytra without a pale band...

T. castaneum, L.

Like many of the Longicorns in this group the colour varies from black or pitchy to pale brown. Mr. Atmore's specimens are typical black *castaneum*. Mr. Saunders's black ♀ has the shiny thorax of *castaneum* and the pubescence of *fuscum*. Mulsant, Redtenbacher, and some others consider *fuscum* simply to be a pale closely punctured var. of *castaneum*; the last European Catalogue (1891) follows Ganglbauer.—E. A. NEWBERRY, 12, Churchill Road, Dartmouth Park: Jan. 23rd, 1904.

Ceuthorrhynchus angulosus, Boh., at King's Lynn, Norfolk.—Among the specimens sent to me for names by Mr. E. A. Atmore (see *ante*) was a fine example of the above rarity.—ID.

Stenostola ferrea, Schr., and other Longicorns in the Derwent Valley.—In the summer of 1902 I met with four specimens of *Stenostola ferrea*, Schr., in the woods bordering the river Derwent, between Rowland's Hill and Winlton Mill. The first was taken at Lockhaugh, near Rowland's Glen, on June 14th, whilst the other three occurred near Winlton Mill, two on the morning of June 21st, and the last on July 17th; all were found on coarse grass. It is interesting to note that more than a month elapsed between the first and last capture. On March 3rd, 1903, I took *Pogonochærus bidentatus*, Thoms. (*hispidus*, Brit. Cat.), from under the bark of a plane tree; this, I think, the first record of this insect from our district. *Clytus arietis*, L., is not rare in the valley, whilst two species of *Rhagium*—*inquisitor*, F., and *bifasciatum*, F., are common in all their stages, especially the former, under the bark of oaks, &c. In 1902 *Strangalia armata*, Herbst, and *Grammoptera ruficornis*, F., were plentiful on Umbelliferous flowers; and *Pachyta cerambyciformis*, Schr. (*octomaculata*, F.), appeared in such numbers at Gibside and Lockhaugh that had I wished I could have easily captured from two to three hundred in a couple of hours, as many as sixteen having been seen congregated on one flower head! In 1901 (July?) a red variety of *Toxotus meridianus*, Panz., was taken at Lockhaugh, whilst in the same month *Grammoptera tabacicolor*, De G. (*lævis*, F.), occurred occasionally at the same locality. On the lichen-covered rails dividing Hollinside

and Gibside *Leiopus nebulosus*, L., was met with in plenty, this insect harmonizing so well in colour with the grey lichen rails as to be most difficult to detect. *Strangalia quadrifasciata*, L., and *S. melanura*, L., seem to be somewhat uncommon. Of the former I have taken two fine specimens, one on July 7th, near Winlaton Hill, and the other at Lockhaugh on July 21st, 1902. Of *S. melanura* three examples were captured on July 13th, 1902, either at Gibside or Lockhaugh.—RICHARD S. BAGNALL, The Groves, Winlaton-on-Tyne: *March 14th, 1904.*

Coleoptera, &c., at Brandon, in August, 1903.—Amongst the *Coleoptera* met with by me during a three days' visit to Brandon at the end of August last (during which the weather only allowed me a few hours' collecting), were several species of interest. They included: *Cænocara bovistæ*, *Platycis minuta*, and *Apion sanguineum*, by sweeping; two ♂s of *Harpalus discoideus* under stones, one specimen being green and the other black; and *Balaninus rubidus* (3) by beating birch. By the side of the Ouse I got a pair of *Chrysomela graminis*, a few *Donacia sparganii*, and *Epitrix pubescens*, and a single *Chilocorus similis*, the latter being a scarce insect in my experience. I also have single examples of two species of *Anisotomidæ*, obtained by sweeping under firs, and neither of which I have yet been able to satisfactorily determine. Mr. Morley, who kindly furnished me with an excellent plan of the district, asked me to pay especial attention to the *Hemiptera*, but unfortunately these were scarce. One interesting form turned up, however, in the shape of *Drymus pilicornis*, Muls., of which I swept a single very dark individual in a sandy place, and which Mr. Saunders has kindly examined and named. Other species noticed were *Corizus parumpunctatus* (rather common in flowery places), *Halticus apterus*, and *Serenthia læta* (1).—F. B. JENNINGS, 152, Silver Street, Upper Edmonton, N.: *January 19th, 1904.*

Some rare Aculeates at Rochester.—A few days ago I submitted to Mr. Saunders specimens of three species taken at Rochester for identification, and they all prove to be rare, viz., *Cilissa melanura*, *Halictus quadricinctus*, and *Anthophora quadrimaculata*. The locality is, I believe, one from which they have not been previously recorded. The specimens were taken last August.—J. R. MALLOCH, Bonhill, Dumbartonshire: *February, 1904.*

Formica fusca, winged females in spring.—With reference to Mr. J. Malloch's note (*ante p. 42*) regarding the occurrence of a female *Formica fusca* with wings in April, Mr. Malloch is evidently of the opinion that this is a case of early emergence. I am fully convinced, however, that he is wrong in surmising this, believing that such specimens hibernate with their wings still intact, and accordingly this must be regarded as a late date rather than an early one. I have seen winged females in nests in the month of March, and on May 12th, 1900, took as many as seven females of *M. rubra* from one nest on the shore at West Kilbride. If Mr. Malloch had attempted to set out the wings of his specimen he would no doubt have discovered that the sinews had become so useless that the wings would have broken off under the operation. That has occurred with all specimens I have tried to set of winged

females taken in the spring. *Phyllotoma microcephala* was recorded by Cameron as common at Cadder, Clober, &c.—AND. ADIE DALGLISH : February, 1904.

Diptera from Jersey in 1903.—During Mr. E. Saunders' visit to Jersey last May and June he collected a few *Diptera* which he very kindly gave to me. The *Tenthredinidæ*, the *Hemiptera*, and the *Aculeate Hymenoptera* then taken have already been enumerated in this Magazine (Vol. xxxix, pp. 172, 173, 245), and I now send a list of the *Diptera*. So little is known of the *Diptera* of Jersey, that I give them all, however usually common they may be: *Chloromyia formosa*, Scop.; *Chrysopilus auratus*, F.; *Dysmachus trigonus*, Mg., ♂ and ♀; *Anthrax velutina*, Mg., St. Ouen's Bay; this species does not occur in Britain—there are several very nearly allied species. It has been taken also in Jersey by Mr. Luff. *Thereva nobilitata*, F., ♂ and ♀; *T. annulata*, F., three ♂ and two ♀; *Empis trigramma*, Mg.; *Hydrophorus præcox*, Lehm., running over rock pools at low tide; and *Aphrosylus raptor*, Hal., two ♂. The *Syrphidæ* were much better represented than the preceding families; they were, *Liogaster metallina*, F.; *Chrysogaster splendens*, Mg.; *C. hirtella*, Lw.; *Chilosia illustrata*, Harr.; *C. impressa*, Lw.; *Platychirus manicatus*, Mg.; *P. albigannus*, F.; the handsome *Xanthogramma ornatum*, Mg.; with *Volucella bombylans*, L.; and *Merodon equestris*, F.; these two look at first sight exactly alike, both being black with the terminal segments red, and both seeming to mimic *Bombus lapidarius*; *Xylota segnis*, L.; *Syritta pipiens*, L.; *Eumerus sabulonum*, Fln.; and *Chrysotoxum festivum*, L. Only a few of other families were sent; these were—*Myopa buccata*, L., two specimens, one of them from Bel Royal; the two fine Tachinids, *Gonia ornata*, Mg., and *Zophomyia tenula*, Scop.; *Fucellia maritima*, Hal.; and *Ædoparea buccata*, Fln.; this last also taken by Mr. Luff. All the above were from St. Brelade's, except the two for which localities are given. I have to thank Mr. Collin for determining those species which I did not recognise, and confirming several others.—E. N. BLOOMFIELD, Guestling : January, 1904.

Diptera from the Shetlands and Orkneys.—When the Rev. F. D. Morice visited these Islands in the autumn of 1894, as recorded in Ent. Mo. Mag., Vol. xxx, p. 259, of that year, he brought home a few *Syrphidæ* which it may be well to put on record. His stay in the Shetlands was from August 27th to September 13th, but he was only one day, September 14th, in the Orkneys. The species taken were: *Chilosia illustrata*, Harr., and *Platychirus peltatus*, Mg., both from the Orkneys; *Syrphus corollæ*, F., from Unst and Lerwick; *Helophilus pendulus*, L., Unst, Lerwick, and Orkneys; *Eristalis arbustorum*, L., Unst and Scalloway; and *Sericomyia borealis*, Fln., Lerwick and Orkney.—E. N. BLOOMFIELD, Guestling : January, 1904.

Flies dying on Jessamine Leaves.—The following correspondence on the cause of death of house flies in Ceylon has been forwarded to us by Mr. E. Ernest Green, which we think may interest our readers:—

“Lunugala : Jan. 9th.

“SIR,—Can you, or any of your readers, explain whether jessamine leaves are fatal to the common house fly, and, if so, why? Some jessamine bushes just in front of our house are at present bearing a heavy crop of dead flies, as per sample leaf enclosed.—VASTATOR.”

“ Royal Botanic Gardens, Peradeniya :

“ Jan. 12th.

“ DEAR SIR,—The flies have not been killed by the jessamine leaves ; but have succumbed to a disease caused by a parasite fungus. The bodies of the dead flies are full of the mycelium and spores of the fungus. These flies had probably been feasting together upon some infected material, had simultaneously caught the disease, and had gone off to die together upon the leaves of the first convenient plant. This habit of congregating before death is not unusual with flies. A similar case came to my notice two years ago, when a correspondent sent me a leaf of a ‘ Malaboda ’ (*Myristica laurifolia*) upon which were some thirty dead ‘ blue bottle ’ flies. He wrote me that this leaf was one from a small bush growing by the side of a jungle path, and that each leaf was similarly ornamented with dead flies, so much so, that the bush looked quite blue. An occurrence of the same kind is recorded in the American publication ‘ Insect Life ’ (Vol. iv, p. 153), in which the following paragraph appears :—

“ ‘ The comparative scarcity of flies of all sorts this summer in the district has been a matter of comment, whereas in neighbouring towns flies have been unusually troublesome. This anomaly may find its explanation in the remarkable destruction of certain flies by a common *Empusa* disease. In a recent stroll through the grounds of the Agricultural Department, the under-side of the leaves of various trees were found to be quite thickly covered with dead flies, attached by a fungous growth. The abundance of the flies can be surmised from the fact that a single leaf not infrequently contained as many as eight or ten specimens. The flies, for the most part, belong to a common species, *Pollenia rudis*, which occurs abundantly in the late summer on outdoor vegetation, but include various smaller forms, some of which are probably referable to the house-fly. The disease is not the common fungous disease of the house-fly (*Empusa muscæ*), isolated cases of which are not uncommon in houses, but of *E. americana*, which occurs as far as known always outdoors on vegetation, &c.’

“ It would be interesting to learn whether your correspondent has observed any local diminution in the number of house flies as a result of the prevalence of this disease

“ The Government Mycologist has examined the fungus, and reports that it is undoubtedly a species of *Empusa*, and either identical with or closely allied to *E. muscæ*.—Yours sincerely,

“ ERNEST E. GREEN,

“ Government Entomologist.”

Ceylon Observer : Jan. 13th, 1904.

Botys nubilalis Hb., in *Suffolk*.—My friend Mr. A. E. Gibbs has allowed me the opportunity of examining a *Pyralis* which fell to his net last summer while at Felixtowe, but which he was not acquainted with. It proves to be the extremely rare *Botys nubilalis*, Hb., = *silacealis*, Hb., *lupulinalis*, L., and as it occurred, as usual, singly, furnished no clue to the habits of the species. It is not of the brownish-olive form, but pale yellow, = the *silacealis* variety.—CHAS. G. BARRETT, Tremont, Peekham Rye : *March 7th*, 1904.

Review.

A LIST OF THE YORKSHIRE LEPIDOPTERA: by GEORGE T. PORRITT, F.L.S., F.E.S. Second Edition (Ent. Trans. York. Nat. Union). Svo, pp. 269. London: A. Brown and Co., Limited. 1904.

Near about 20 years [*cf.* Ent. Mo. Mag. (1), xx, p. 89] have elapsed since Mr. Porritt and certain colleagues published the first edition of this List. It is natural that during that time much has been done. The greater part of the work consists of a List with additional records of new species, notes on variation, &c. Fifty-three species (one or two slightly doubtful) have been added; and much has been done in elucidating that curious feature of melanism so prominent, and yet so little understood, in the *Lepidoptera* of our largest county. That Mr. Porritt and his fellow workers have done well goes without saying.

Societies.

LANCASHIRE, CHESHIRE, AND MANCHESTER ENTOMOLOGICAL SOCIETIES: *February 15th*, 1904.—The first ordinary gathering of the current session took the form of a joint meeting of the two Societies, which, by the kind invitation of Dr. HOYLE, was held in the Museum, Owen's College, Manchester. The President of the Manchester Society, Dr. W. E. HOYLE, presided.

On the invitation of the Chairman, Mr. J. Cosmo Melvill, M.A. (Manchester), extended a hearty welcome to the visiting Society.

Dr. Hoyle intimated that the Manchester Society hoped shortly to issue a List of the *Lepidoptera* of the District. Letters having been read from Mr. S. J. Capper, F.E.S., President of the Lancashire and Cheshire Entomological Society, and Major Ronald Ross, C.B., F.R.S., the Chairman called on Mr. F. N. Pierce, F.E.S. (Liverpool), who communicated an excellent paper on "The Structure of the *Lepidoptera*," which was illustrated by the author's preparations thrown on the screen by a new micro-lantern, shown by Mr. Greenwood. The lecturer dealt with his subject in an interesting and instructive manner, and by the aid of a long series of beautiful slides showed the undoubted relationship existing between certain species and groups of moths as exhibited by the genitalia. The following amongst other exhibits were shown: *Nonagria geminipuncta* from the Isle of Wight, by Mr. R. Tait, jun. (Ashton-on-Mersey), who mentioned the fact of its attacking the reeds where they are more scattered, as in the bordering hedge-rows rather than where they grow more closely in the centre of the marshes. He also showed two very fine dark forms of *Boarmia abietaria*. Mr. B. H. Crabtree (Manchester) exhibited *Melitaea aurinia* from various English and Irish localities; the latter possessing clearer and more defined markings than the English specimens, which have a browner tinge. Mr. J. Collins (Warrington) showed a valuable representative collection of *Crambidae*. Mr. L. Krahl (Manchester), fine specimens of *Caligula japonica*, and *Rhodia fugax* bred in England from Japanese ova, in exhibiting which he gave some interesting details regarding their food plants, and stated that the cocoon of the former, consisting of a fine network, was usually attached either to a piece of stick or to folded leaves. Mr. J. Kidson Taylor's (Buxton), British *Coleoptera*, containing amongst many other rarities, *Meloë brevicollis* (Millersdale); *Cryptocephalus coryli* (Sherwood), and *C. sexpunctatus* (St. Osyth); *Heptaclacus*

villosus, *Osphya bipunctata* (Cheltenham); and *Silpha reticulata* (Barmouth). Mr. J. Ray Hardy's (Manchester) extensive collection of the *Rhynchophora* of the world found many admirers. He also exhibited three specimens of the very rare *Raphidia notata* captured in Sherwood Forest, and gave some interesting introductory remarks anent the well-known Reston collection of British *Coleoptera* which, through the kindness of Dr. Hoyle and Mr. Hardy, was also on view. *Cynthia crota*, *Papilio epius*, and other exotic *Lepidoptera* were shown mounted between slips of glass, with the object of facilitating the examination of either side.—E. J. B. SOPP and R. J. WIGELSWORTH, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
February 11th, 1904.—Mr. A. SICH, F.E.S., President, in the Chair.

Mr. Montgomery exhibited a curious malformation of the wings which had occurred in a brood of *Ocneria dispar*. A pair of the malformed specimens were selected and from them was produced a brood, nearly the whole of which had the same peculiarity, a large semicircular portion of the apical part of the hind-wings being undeveloped. Mr. South, albino and xanthic aberrations of *Epinephele tithonus*, taken by Mr. G. M. Russell on the chalk downs in South Hampshire, in 1898-99-1900. Mr. R. Adkin, series of *Leucoma (Liparis) salicis* reared from pupæ collected at Herne Bay last year, and made remarks on the scarcity and abundance of the species for some years past. Mr. Newbery, several conspicuous species of Indian *Coleoptera*, and a very large species of water bug. Mr. West (Greenwich), an example of the rare *Coleopteron*, *Gynandrophthalma affinis*, from Wychwood, Oxford, where it was discovered in 1899. Mr. H. Moore, specimens of *Coleoptera* and *Orthoptera* from Natal. Dr. Chapman, brilliant but dwarf specimens of *Cyaniris argiolus*, and bred examples of *Arctia fasciata*, one of the most gorgeous of Continental "Tigers" from Moneayo, Spain, together with a bred series of *Chrysophanus amphidamus*. Mr. Sich read a paper, "Notes on the genus *Coleophora*," dealing chiefly with the life history of *C. fuscedinella*, including description of its egg, and with its method of constructing and enlarging its case.

February 25th, 1904.—The President in the Chair.

Mr. Edwards exhibited a striking variety of *Hypena rostralis*, having a broad light brown costa, and other unusual markings of the same colour. Mr. Colthrup (1), a very light aberration of *Abraxas grossulariata*, having only a few black dots and marks on the disc and margins, with a narrow yellow band at base; (2), a blotched form of *Brenthis euphrosyne*; and (3), a series of photographs of varieties of *Bryophila muralis*, *B. perla*, *Polia chi*, and *Psilura monacha*. Mr. Manger, an example of *Helicopsis cupido* from Demerara, which was of a beautiful light ground colour, with more or less suppressed and diminished dark markings, together with the typical form from Brazil for comparison. Mr. Sich, a specimen of *Bedellia somnulentella* with its pupa case, which closely resembled that of a Pierid in miniature. Mr. Montgomery, long and varied bred series of *Pieris napi*, largely from Ireland, and contributed notes. A large number of lantern slides were then exhibited of larvæ and ova of *Lepidoptera*, protective resemblance in insects, &c.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *March 2nd, 1904*.—Professor E. B. POULTON, M.A., D.Sc., F.R.S., President, in the Chair.

Mr. L. C. H. Young, of 1, Rampart Row, Bombay, was elected a Fellow of the Society.

Mr. J. J. Walker, R.N., exhibited (1) *Hecatesia fenestrata*, Bdv., an interesting Australian moth, the ♂ possessed of a very marked power of stridulation (stridulating organ on longitudinal transparent bar of fore-wing), known in N. S. Wales as the "Whistling Moth;" (2) *Dodonidia helmsi*, Butler, a rare Satyrid butterfly from New Zealand; and (3) a gigantic species of the Thysanurid genus *Jappa*, found at Picton, New Zealand. Mr. C. O. Waterhouse exhibited and commented on the diagram of the mouth of one of the *Mallophaga* (*Læmbothrium titan*). Dr. F. A. Dixey read a note on the "Bugong" moth, which is used for food by some Australian natives. He pointed out that it was not a *Euplœa* at all, as supposed by Kirby in his "Bridgwater Treatise," but a *Euxoa*; and not a butterfly, as further stated by Westwood. Mr. G. C. Champion exhibited specimens of two species of *Dorcadion* found during his recent journey in Spain; *D. almarzense*, Esc.?, from the summit of Moncayo, and *D. neilense*, Esc., from the Sierra de Logroño; also numerous examples of *Pyropsyche moncaunella*, Chapm., found by Dr. Chapman and himself on Moncayo. Mr. A. J. Chitty, Mr. Jennings and other Fellows, specimens of the genus *Tropiphorus*, which seemed to show that *T. mercurialis* and *T. obtusus* were in reality the sexes of the same species. The President, a specimen of a beetle, *Glenea pulchella* (Thoms.), one of three individuals of the species taken last year, near Barwood in the Nilgiris, by Mr. Leslie Andrewes; the most striking of which clearly mimics a large ichneumon fly, not yet identified. Mr. L. B. Prout, on behalf of Mr. A. Bacot, long bred series of *Triphæna comes*, Hb., the result of breeding for two generations from a wild ♀ of the *curtisii* form, taken near Forres. In the first generation, rather more than half the progeny followed, to a certain extent, the parent ♀, though varying from rich deep red to almost black. Pairings of these dark specimens resulted in a brood in which the percentage of ab. *curtisii* was slightly increased, although the type forms were still well represented; but it was noticeable that in every specimen the orbicular stigma was filled up with the darker or melanic colour. Mr. Arthur M. Lea communicated "Notes on Australian and Tasmanian Cryptocephalides, with descriptions of New Species." Mr. Gilbert J. Arrow communicated "A Revision of the subfamily *Pelidnotinæ* of the Coleopterous family *Rutelidæ*, with descriptions of New Genera and Species," by the late Frederick Bates. Colonel Charles Swinhoe, M.A., F.L.S., read a paper "On some new species of Eastern Australian and African Moths in the British Museum." Mr. George Charles Champion, F.Z.S., read a paper on "An Entomological Excursion to Moncayo, Spain, with some remarks on the habits of *Xyleborus dispar*, Fabr., by Dr. Thomas Algernon Chapman, M.D." Mr. Kenneth J. Morton communicated "Further Notes on *Hydroptilidæ* belonging to the European Fauna, with descriptions of New Species;" and Mr. R. Shelford, M.A., communicated "A Note on *Elymnias borneiensis*, Wallace." A discussion on "What is a Species?" was opened by the Rev. F. D. Morice, in which Mr. H. J. Elwes, Professor F. A. Dixey, Mr. A. J. Chitty, Mr. W. E. Sharp, The President, and other Fellows joined.—H. ROWLAND BROWN, *Hon. Sec.*

A LIST OF THE BRITISH *CECIDOMYIDÆ* ARRANGED ACCORDING
TO THE VIEWS OF RECENT AUTHORS.

BY JAMES E. COLLIN, F.E.S.

The arrangement of the *CECIDOMYIDÆ* in Verrall's List of British *Diptera* not having been revised for the Second Edition (1901) is so completely out of date, that any student taking up the family would be at a disadvantage in having first to trace a British species to its correct genus in European Lists; I have therefore compiled the following List for the benefit of British workers in this family.

The synonymy only includes the names of species which have been recorded from time to time as British; and in all cases where I have made any alteration in the name of a species which was in Verrall's List, or added a species which had previously only been known as British by the gall, I have given authorities for such change or addition.

The arrangement is that of Kertész in his *Catalogus Dipteroꝝ*, volume ii, 1902.

CECIDOMYIDÆ.

LESTREMINÆ.

LASIOPTERYX, Westw.

DIOMYZA, Schin. (*nec* Westw.)

obfuscata, Mg.

CAMPYLOMYZA, Mg.

aceris, Mg.

bicolor, Mg.

flavipes, Mg.

? *globifera*, Hal. (1)

? *halterata*, Ztt. (2)

atra, Wlk. (*nec* Mg.)

CATOCHA, Hal.

latipes, Hal.

brevinervis, Ztt.

LESTREMIA, Mcq.

carnea, Lw.

cinerea, Mcq.

fusca, Mg.

leucophæa, Mg.

CECIDOMYINÆ.

BRACHIYNEURA, Rnd.

stygia, Wlk. (*nec* Mg.) (3)

LASIOPTERA, Mg.

albipennis, Mg.

rubi, Heeg.

argyrosticta, Mg.

? *fuliginosa*, Steph.

? *fusca*, Mg.

? *picta*, Mg.

? *pulchra*, Mg.

RHABDOPHAGA, Westw.

heterobia, Lw.

saligna, Hardy

strobilina, Bremi

rosaria, Lw.

cinerearum, Hardy

saliciperda, Duf.

albipennis, Lw.

salicis, Schrk.

viminalis, Westw. (4)

DASYNEURA, Rnd.

DASYNEURA, *s. str.*

brassicæ, Winn.

salicina, Schrk.

sisymbrii, Schrk.

- PERRISIA, Rnd.
 acrophila, Winn.
 *affinis, Kieff. (5)
 alpina, F. Lw.
 *apariues, Kieff. (6)
 capitigena, Bremi
euphorbiæ, Lw.
 cardaminis, Winn.
 cerastii, Binnie
 cratægi, Winn.
 filicina, Kieff.
pteridis, Müll.
 *frazini, Kieff. (7)
frazinicola, Hardy
 galeobdolonis, Winn.
strumosa, Bremi
 galii, Lw.
 *galiicola, F. Lw. (8)
 *hyperici, Bremi (9)
 ignorata, Wachtl (10)
medicaginis, Bremi
 inebaldiana, Mik (11)
clausilia, Meade
 lathyricola, Rübs. (12)
lathyri, Frfld.
 *loticola, Rübs. (13)
 marginentorquens (Bremi) Winn.
 muricatæ, Meade
 onobrychidis, Bremi (14)
giraudii, Frfld.
 persicariæ, L.
 plicatrix, Lw.
 potentillæ, Wachtl
 pyri, Bouché
 ranunculi, Bremi
 rosarum, Hardy
rosæ, Bremi
serotina, Winn. (15)
 ? taxi, Inehb. (16)
 terminalis, Lw.
 tiliamvolvens, Rübs. (17)
tiliæ, Schrk.
 trachelii, Wachtl (18)
campanulæ, Müll.
 trifolii, F. Lw.
 tubicola, Kieff.
 ulmarie, Bremi
 urticæ, Perris
 veronicæ, Vallot
chamedrys, Inehb.
 vicæ, Kieff. (19)
 violæ, F. Lw.
- MACROLABIS, Kieff.
 corrugans, F. Lw.
heraclei, Kalt.
 pilosellæ, Binnie
- ARNOLDIA, Kieff.
 quercus, Binnie
- SCHIZOMYIA, Kieff.
 SCHIZOMYIA, *s. str.*
 galiorum, Kieff.
 KIEFFERIA, Mik
 pimpinellæ, F. Lw.
- ASPHONDYLIA, Lw.
 *doryenii (Müll.), F. Lw. (20)
 genistæ, Lw.
 *mayeri, Lieb. (21)
 sarothamni, Lw.
 *thymi, Kieff. (22)
 ulicis (Trail) Verr.
- RHOPALOMYIA, Rübs.
 foliorum, Lw.
abrotani, Trail
 millefolii, Lw.
achilleæ, Inehb.
 ptarmicæ, Vallot
floricola, Winn.
 *tanaceticola, Karsch (23)
- OLIGOTROPHUS, Latr.
 annulipes, Hart.
piliger, Lw.
 betulæ, Winn.
 bursarius, Bremi
 capræ, Winn.
salicis-folii, Hardy
 corni, Gir.
 juniperinus, L.
- MAYETIOLA, Kieff.
 destructor, Say
bromi, Hmrschm.
 poæ, Bosc
graminicola, Winn.

- MIKIOLA, Kieff.
fagi, Hart.
- HORMOMYIA, Lw.
fischeri, Frfld.
grandis, Mg.
fasciata, Mg.
- ARTHROCNOBAX, Rübs.
fraxinella, Meade
- MYCODIPLOSI, Rübs.
coniophaga, Winn.
? *oidii*, Hardy
- MONARTHROPALPUS, Rübs.
buxi, Laboulb.
- CONTARINIA, Rnd.
CONTARINIA, *s. str.*
betulina, Kieff.
helianthemi, Hardy
jacobæ, Lw.
linariæ, Winn.
loti, De G.
pyrivora, Riley
? *nigra*, Mg.
*quercina, Rübs. (24)
dryophila, Kieff.
*steini, Karsch (25)
*trailsi, Kieff. (26)
tritici, Kirby
- MACRODIPLOSI, Kieff.
dryobia, F. Lw.
volvans, Kieff. (27)
pustularis, Bremi
roboris, Hardy
* Species marked with an asterisk are new names to the "List."
- HARMANDIA, Kieff.
tremulæ, Winn.
- PUTIONIELLA, Kieff.
marsupialis, F. Lw. (28)
pruni, Kalt.
- CECIDOMYIA, Mg.
DIPLOSI, Lw.
flava, Mg.
pini, De G.
pini-maritimæ, Duf.
verna, Curt.
- MASSALONGIA, Kieff.
rubra, Kieff.
- CLINODIPLOSI, Kieff.
botulariæ, Winn.
? *fraxini*, Bremi
*thalietricola, Rübs. (29)
thalietri, Trail
- LESTODIPLOSI, Kieff.
LESTODIPLOSI, *s. str.*
callida, Winn.
centralis, Winn.
? *annulipes*, Mg.
- DIRRHIZA, Lw.
rhodophila, Hardy
- PORRICONDYLA, Rnd.
EPIDOSIS, Lw.
PORRICONDYLA, *s. str.*
longipes, Lw.
- WINNERTZIA, Rnd.
tenella, Wlk.

* Species marked with an asterisk are new names to the "List."

- (1) The query to this species refers to a doubt as to its belonging to this genus (v. Kieffer, Synop. Cecid. d'Europe et d'Algerie, 1898, 51).
- (2) This species is placed in the genus *Campylomyza* with a query by Kieffer (*ibid.* p. 51), the genus *Micromyia* being retained for *lucorum*, Rnd., only. *Campylomyza brevipennis*, Wlk., occurs twice in Verrall's "List"; its correct position is in the genus *Bradysia* (MYCETOPHILIDÆ).
- (3) *Lasioptera stygia*, Mg., belongs to the genus *Choristoneura*, Rübs., but *L. stygia*, Wlk. (*nec* Mg.) to the genus *Brachyneura*, Rnd., according to Kertész's Catalog. Dipt., ii (1902).
- (4) See Rüssaamen, Berl. Ent. Zeitschr., 1891, 25 f, and Kertész, Catalog. Dipt., ii, 1902, 27. This species has been considered a synonym of *saliciperda*, Duf., but may be distinct.

- (5) This is the species that makes galls on the leaves of various species of *Viola* mentioned by Trail (Scot. Nat., i, 1873, 124) v. Kieffer, Ann. Soc. Ent. Fr., 1901, 552.
- (6) The galls of this species were described by Trail (Scot. Nat., iv, 1877, 15, and Trans. Nat. Hist. Soc. Aberdeen, 1878, 63) v. Kieffer, Ent. Nachr., xv, 1889, 208.
- (7) This is the species that makes the galls on the midrib of ash leaves (v. Kieffer Bull. Soc. Ent. Fr., 1897, 301), *Clinodiplosis botulariæ*, Winn., being only an inquiline. If the inquiline be British the maker of the gall must naturally be so too.
- (8) The galls of this species were described by Trail (Scot. Nat., i, 1871, 156, and Trans. Nat. Hist. Soc. Aberdeen, 1878, 63) v. F. Loew, Verh. z.-b. Wien, xxx, 1880, 34.
- (9) Galls described by Trail (Scot. Nat., ii, 1873, 31) v. Kieffer, Ann. Soc. Ent. Fr., 1901, 341.
- (10) For synonymy, see Wachtl., Wien. Ent. Zeit., iii, 1884, 163.
- (11) For synonymy, see Mik, Wien. Ent. Zeit., v, 1886, 317.
- (12) I have not been able to refer to Rübsaamen's description in Verh. Nat. Ver. Rheinl., &c., xlvii, 1890, 26, but Kieffer in Ann. Soc. Ent. Fr., 1901, 351, evidently considers the synonymy given by me correct. Franenfeld only described the gall.
- (13) Gall described by Trail (Scot. Nat., i, 1871, 124) v. Kieffer, Ann. Soc. Ent. Fr., 1901, 360, where he wrongly gives the date of Trail's description as 1878.
- (14) For synonymy, see Mik, Wien. Ent. Zeit., iii, 1884, 215.
- (15) I put this species in italics at present, as the galls described by Trail (Scot. Nat., ii, 1873, 31) for this species are those of *Perrisia hyperici*, Bremi, according to Kieffer, Ann. Soc. Ent. Fr., 1901, 341.
- (16) The query refers to a doubt as to the species belonging to this genus (v. Kieffer, Synop. Cecid. d'Eur. et d'Alger., 1898, 13).
- (17) For synonymy, see Rübsaamen, Berl. Ent. Zeitschr., xxxiii, 1889, 57.
- (18) For synonymy, see Wachtl, Wien. Ent. Zeit., iv, 1885, 196.
- (19) Galls described by Trail (Scot. Nat., ii, 1873, 78, and Trans. Nat. Hist. Soc. Aberdeen, 1878, 59) v. Kieffer, Verh. z.-b. Wien, xxxviii, 1888, 106.
- (20) Galls described by Müller (Ent. Mo. Mag., vii, 1870, 76) v. F. Loew, Verh. z.-b. Wien, xxx, 1880, 37.
- (21) Galls in the seedpods of *Sarothamnus* described by Binnie (Proc. Glasgow Nat. Hist. Soc., 1877, 112) v. Kieffer, Ent. Nachr., xvii, 1891, 252.
- (22) Galls described by Trail (Scot. Nat., ii, 1873, 252) v. Kieffer, Ann. Soc. Ent. Fr., 1901, 529.
- (23) This is probably the species described by Hardy, but unnamed in Zoolog., vi, 1848, 2166 (v. Walker, Ins. Brit. Dipt., iii, 1856, 131).
- (24) Galls described by Trail (Scot. Nat., iv, 1877), v. Kieffer, Ann. Soc. Ent. Fr., 1901, 462. For synonymy, see Kieffer, Wien. Ent. Zeit., xv, 1896, 99.
- (25) This is apparently the species of which the galls and larvæ were described by Binnie (Proc. Glasgow Nat. Hist. Soc., 1876, 184) v. Kieffer, Ann. Soc. Ent. Fr., 1901, 360.

The gall described by Barrett (Ent. Mo. Mag., viii, 1872, 205) would appear to belong to a different species, possibly *Perrisia lychnidis*, Heyd.

- (26) This, according to Kieffer (Wien. Ent. Zeit., viii, 1889, 262) is the species inhabiting the galls described by Binnic, Proc. Glasgow Nat. Hist. Soc., 1877, 185.
- (27) The galls described by Bremi (Mitth. Ges. Zurich, 1847, 10) as the work of a species he proposed to call *Cec. ? pustularis*, by Hardy (Scot. Gard., iii, 1854, 108, *Cec. ? roboris*), and by Müller (Ent. Mo. Mag., vii, 1870, 89) are apparently those of *Macrodiplosis volvens*, Kieff. (v. Kieffer, Ann. Soc. Ent. Fr., 1901, 463), therefore the names are placed as synonyms of Kieffer's species.
- (28) For synonymy, see F. Loew, Verh. z.-b. Wien, xxxix, 1889, 538.
- (29) The gall mentioned by Trail in Proc. Ent. Soc. Lond. of September 7th, 1881, and in Botan. Exch. Rep., 1883, 83, is apparently that of the species described by Rübsaamen as *Clinodiplosis thalyctricola* (v. Kieffer, Ann. Soc. Ent. Fr., 1901, 526).

SUPPLEMENTAL NOTE.

Oligotrophus alopecuri, Reut. I am indebted to Herr E. Bergroth for pointing out to me that Reuter in describing this species (Acta Soc. Fauna et Flora Fenn., xi, 1895, Sep., p. 3) remarked that Miss Ormerod in her Eighth Rep. of Injurious Insects, 1885, p. 32, was almost certainly referring to the larvæ of this species as having been very injurious to *Alopecurus pratensis* in Chester in 1883 and 1884. It is therefore a British insect, and an addition to our List.

The following is an alphabetical list of the names of species reputed as British (mostly by Walker) :—

agilis, Winn.	brachytera, Schw.	fragilis, Lw.
albicornis, Mg.	bryonæ, Bouché	fuscicollis, Mg.
albilabris, Winn.	cæomatis, Winn.	fuscipennis, Mg.
albinana, Winn.	carnea, Mg.	fuscipes, Mg.
albitarsis, Mg.	cerasi, Lw.,	geniculata, Winn.
alni, F. Lw.	= aphidimyza, Rnd.	gibba, Ztt.
<i>tertilis</i> , Bremi	cerealis, Saut.	gracilis, Winn.
amœna, Lw.	cilipes, Winn.	griseicollis, Mg.
analis, Winn.	cingulata, Winn.	griseola, Mg.
angustipennis, Winn.	circumdata, Winn.	guttata, Lw.
anthemidis, Lw.	crassipes, Lw.	hieracii, F. Lw.
aphidimyza, Rnd.	cucullata, Mg.	<i>sanguinea</i> , Bremi
<i>cerasi</i> , Lw.	decorata, Lw.	hirtipes, Ztt.
areolata, Winn.	defecta, Lw.	hypericii, Bremi
artemesiæ, Bouché	digitata, Lw.	immunda, Ztt.
atra, Mg.	dorsalis, Winn.	impudica, Winn.
aurantiaca, Meq.	dumetorum, Winn.	inclusa, Frfld.
auricincta, Winn.	echii, Lw.	? <i>scutellata</i> , Mg.
berberina, Schrk.	elegans, Winn.	inulæ, Lw.
bicolor, Mg.	ericæ-scopariæ, Scop.	invocata, Winn.
bipunctata, Winn.	fuscipennis, Winn.	iteophila, Lw.
<i>boucheana</i> Lw.,	flaveolata, Winn.	klugii, Mg.
= <i>salicis</i> , Bouché		

- lateralis*, Mg.
latibulorum, Winn.
leontodontis, Bremi,
 = *taraxaci*, Kieff.
lentipes, Winn.
leucopeza, Mg.
limbata, Winn.
lithospermi, Lw.
longicauda, Lw.
longicollis, Lw.
longicornis, L.
luculenta, Mg.
lugubris, Winn.
lutea, Mg.
maculata, Winn.
minuta, Winn.
modesta, Winn.
mutabilis, Winn.
nana, Winn.
nemoralis, Winn.
nigricollis, Mg.
nigritarsis, Ztt.
 præcox, Winn.
nodicornis, Winn.
ochracea, Winn.
pallida, Mg.
pallipes, Winn.
palustris, L.
papaveris, Winn.
pavida, Winn.
pavonia, Lw.
pectoralis, Winn.
pennicornis, L.
peregrina, Winn.
pictipennis, Mg.
polypori, Lw.
populi, Duf.
præcox, Winn.,
 = *nigritarsis*, Ztt.
pratorum, Winn.
producta, Mg.
protuberans, Ztt.
pulchella, Winn.
pusilla, Mg.
pygmæa, Mcq.
ranunculi, Bremi
reaumuri, Bremi
ribesii, Mg.
riparia, Winn.
rosea, Ztt.
rumicis, Lw.
saliceti, Lw.
salicis, Bouché
 boucheana, Lw.
sanguinea, Bremi,
 = *hieracii*, F. Lw.
scutellata, Mg.?
 = *inclusa*, Frfld.
sericata, Lw.
signata, Winn.
simplex, Lw.
socialis, Winn.
sonchi (Bremi), F. Lw.
stachydis, Bremi
strobi, Winn.
sylvatica, Winn.
syngenesiæ, Lw.
taraxaci, Kieff.
 leontodontis, Bremi
tenuis, Lw.
tibialis, Winn.
tortilis, Bremi,
 = *alni*, F. Lw.
tubifex, Bouché
unicolor, Lw.
valvata, Winn.
variegata, Mcq.
venusta, Winn.
verbasci, Vall.
xanthopyga, Winn.

List of species described by Walker, but probably unrecognisable:—

- | | | |
|----------------------------|---------------------------|----------------------------|
| ASPHONDYLIA, Lw. | DIPLOSIIS, Lw. | decora, Wlk. |
| <i>æthiops</i> , Wlk. | <i>abrupta</i> , Wlk. | <i>discalis</i> , Wlk. |
| <i>albonotata</i> , Wlk. | <i>albiceps</i> , Wlk. | <i>concolor</i> , Wlk. |
| <i>crassicornis</i> , Wlk. | <i>albipes</i> , Wlk. | <i>disjuncta</i> , Wlk. |
| <i>innotata</i> , Wlk. | <i>apicalis</i> , Wlk. | <i>dolosa</i> , Wlk. |
| <i>plena</i> , Wlk. | <i>arcuata</i> , Wlk., | <i>elegans</i> , Wlk., |
| CECIDOMYIA, Mg. | = <i>flexa</i> , Wlk. | = <i>concinna</i> , Wlk. |
| <i>basalis</i> , Wlk. | <i>articulata</i> , Wlk. | <i>evanescens</i> , Wlk. |
| <i>cinctipes</i> , Wlk. | <i>atriceps</i> , Wlk. | <i>expandens</i> , Wlk. |
| <i>costalis</i> , Wlk. | <i>brevicornis</i> , Wlk. | <i>filipes</i> , Wlk. |
| <i>danaë</i> , Hal. | <i>brevis</i> , Wlk. | <i>finalis</i> , Wlk. |
| <i>decolorata</i> , Wlk. | <i>ciliata</i> , Wlk. | = <i>terminalis</i> , Wlk. |
| <i>discolor</i> , Wlk. | <i>concinna</i> , Wlk. | <i>fixa</i> , Wlk. |
| <i>innotata</i> , Wlk. | <i>elegans</i> , Wlk. | <i>flexa</i> , Wlk. |
| <i>sociata</i> , Wlk. | <i>concolor</i> , Wlk., | = <i>arcuata</i> , Wlk. |
| <i>tecta</i> , Wlk. | = <i>discalis</i> , Wlk. | <i>incompleta</i> , Wlk. |
| <i>testacea</i> , Wlk. | <i>conformis</i> , Wlk. | <i>invaria</i> , Wlk. |

latipennis, Wlk.	plagiata, Wlk.	<i>terminalis</i> , Wlk.,
latiuscula, Wlk.	pubescens, Wlk.	= <i>finalis</i> , Wlk.
leacheana, Wlk.	repleta, Wlk.	HORMOMYIA, Lw.
linearis, Wlk.	semiopaca, Wlk.	ampla, Wlk.
marginata, Wlk.	sobria, Wlk.	extrema, Wlk.
maura, Wlk.	<i>mæsta</i> , Wlk.	funesta, Wlk.
<i>mæsta</i> , Wlk.,	solemnis, Wlk.	EPIDOSIS, Lw.
= <i>sobria</i> , Wlk.	tendens, Wlk.	nigrita, Wlk.
notabilis, Wlk.	tenuicornis, Wlk.	
nubeculosa, Wlk.		

Newmarket: *January*, 1904.

THE FOOD-PLANT OF *TERACOLUS NOUNA*, LUCAS (STGR-RBL., 80a).

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

I have to-day had the pleasure of setting a bred specimen of *Teracolus दौरα*, Klug + *nouna*, Lucas, of which I believe the larva has been previously unknown. My Italian valet Sola found the first larva, apparently full-fed, on February 17th feeding on the under-side of leaves of *Capparis spinosa*, L.; this larva pupated a few days later, but the chrysalis has apparently died. A second larva which I found on March 5th produced a fine ♂ to-day (S.IV). *Capparis* grows in the crevices among rocks along the ridges of the hills behind Hamm-es-Salahin here, at about half the total elevation of the range, but is not a very abundant plant anywhere. Several bushes were much eaten, I presume by this larva, as well as by a mining larva of one of the *Micro-Lepidoptera* not yet bred, but I have seen only two larvæ of *Teracolus nouna* here, and as the *Rhopalocera* possess for me a rather inferior interest I made no description. The prevailing colour of the larva was green, but at the last change of skin both assumed a brownish tinge and greatly resembled the ordinary forms of the genus *Euchlœe* (*Anthocharis*). Although there can be no doubt that the butterfly is already on the wing, since I had a pupa about February 25th, no less than three collectors, beside myself, intent on its capture have so far failed to see a specimen this season, and on the last occasion, less than a week ago, when I was on the spot in favourable weather, it was certainly not flying among the plant on which I found the larvæ.

Biskra, Algérie:
April 8th, 1904.

RHADINOCERÆA MICANS, KLUG: A NEW BRITISH SAW-FLY.

BY THE REV. F. D. MORICE, M.A., V.-P. ENT. SOC.

In Vol. i of Mr. Cameron's Monograph he described as British a *Blennocampa micans*, Klug, but in Vol. iv he withdrew this identi-

fication, stating that his insect was not *micans*, Klug, which is a *Rhadinoceræa*, but a species of *Tomostethus* which he proposed to call *brachycera*.

The true *micans*, however, also occurs in this country. I found it first in Mr. McLachlan's collection, mixed with *Phymatoceros aterrima*, which in general appearance it much resembles. There were specimens of both sexes taken long ago by Mr. McLachlan himself at Staines in June; and I have since found a ♀ among my own specimens of *aterrima*, which I took at Woking on April 30th, 1894. I sent a pair of Mr. McLachlan's insects to Herr Konow for verification, and he pronounces them to be the true *micans*, Klug.

Micans is the only British representative of Konow's genus *Rhadinoceræa*, the distinguishing characters of which are given in No. 4 of my "Help Notes," &c. (Ent. Mo. Mag., August, 1903). In general facies, size and colour, that of the wings included, it resembles *aterrima* very closely; and the latter is, I think, the only one of our Blennocampids for which it is likely to be mistaken. But on close examination the two insects will be found to differ considerably in structure. In *micans* the third antennal joint is fully as long as the fourth, in *aterrima* it is decidedly shorter. The remarkable ciliation of the ♂ antennæ in *aterrima* does not appear in *micans*. The "gena" or space between the eye and mandible is much more developed in *micans*, its breast is without "præsterna discretæ," its claws are not bifid, and the dorsal surface of its abdomen appears quite smooth and polished without the evident puncturation of the other species.

Klug's original diagnosis is as follows:—

"Antennis thoracæ sublongioribus, nigra, subnitida, alis nigricantibus unicoloribus, mandibulis apice ferrugineis, abdomine lateribus sericeomicante."

This completely suits our insect, and so do his further remarks in the German description as to the colour of its legs, wing-nervures, cœnchri, &c. Naturally he does not mention the small structural characters which make it, according to Konow's classification, a *Rhadinoceræa*.

Brunswick, Woking:
April, 1904.

COLLECTING (CHIEFLY COLEOPTERA) IN OLD HEDGES NEAR FAVERSHAM, KENT.

BY A. J. CHITTY, M.A., F.E.S.

On or about September 19th, 1902, I drove over in the afternoon from Huntingfield to Charing Hill to look for beetles on the slope to which Mr. Jennings, in Ent. Mo. Mag., 1902, p. 179, refers, and after an unsuccessful search at the spot where the beetles recorded by him were taken, I proceeded to walk home through the

woods and glades that lie between the hill and my house, and had nearly got there without finding anything worth taking. It was a new experience to me, as up to that time I had always found something new or interesting during every week-end on which I had been able to collect, and this time I had absolutely nothing. Failure in collecting is only an incentive to new devices, and fortunately I thought of my friend Mr. J. J. Walker's advice in 1898, when collecting not many miles off in the Sittingbourne district, not to neglect old hedges. I had tried them before, but had never been successful in getting anything worth taking by this means of collecting, but I am now inclined to think that this was to a large extent due to attempting to find the insects at the wrong time of the year.

The time for searching them is, I think, the late autumn, as then not only are the regular wood and lichen feeders abundant, but an immense number of insects have crawled away from the open places to the protection afforded by the bottom of an old hedge, and are to be taken if the proper mode of collecting is followed; at the same time many hedges are quite unproductive. The first place at which I tried my luck was a place where the broken-down hedge had been mended up by long hazel boughs and loose bundles, and at once I beat out into my net an insect like a small *Anthribus*, accompanied by a host of the common Hemipteron, *Aneurus lœvis*, Fab., and many *Rhinosimus planirostris*, Fab. Leaving this spot I proceeded to beat the hedge which bordered the field through which my way lay, separating it from a beech coppice, without much further success, until I came to a place where there was a path through the wood, and a spur of the hedge ran out at an angle from the wood to a gate. This spur, some 20 to 30 feet long, was open on both sides, and composed entirely of dead wood. The upright stakes were chiefly of birch, and there were long horizontal boughs of hazel entwined; it was in the last stage of decay, but still standing, and formed an ideal spot for wood-feeders. It was, as I soon found, full of life. In a very few minutes the true *Anthribus albinus*, L., of both sexes tumbled into the net, and some specimens of the insect previously taken, which proved the rare *Tropideres niveirostris*, F.

These captures induced me to give a good deal more attention to hedge collecting, and it proved very profitable, and though very few of the better insects taken by me occurred in any considerable numbers, the total taken from this little spur is very remarkable. The spur, alas, is now finished for collecting purposes, it has totally collapsed, and a large portion has no doubt gone to light the fires of cottagers passing by the path; in all, about thirty *T. niveirostris* were taken in 1902, and about six last year, and most of these have been distributed by me. A few *Anthribus albinus*, L., occurred in the hedge, and a few more in another hedge in an even greater state of collapse, not far off.

Before giving a list of beetles and other insects from the hedge, I may add something as to the life of the *Tropideres* and *Anthribus*; the former appears to emerge as a perfect insect in August, and to be about until the frosts, its hole was not difficult to find in the hazel boughs, but its life appeared to be spent to a large extent at the bottom of the hedge, and the best way of finding it was to shake the *débris* at the bottom or the lower entwined pieces over a tray, such as Lepidopterists use for larvæ, or a white sheet, which should be inserted under the hedge as far as possible, and the hedge pulled over it. The beetle appears not to hibernate; I think it probably passes through a whole generation in a year, as I found it again

in 1903 in the same hedge; the perfect insects, I think, injure one another if kept in the same box: at any rate, I found several with parts of legs or antennæ missing. *Anthrribus*, on the other hand, lives near the top of the hedge, generally in the uprights, but sometimes in the upper entwined boughs; the hole is very conspicuous, and it is worth while searching for a place where the holes are particularly abundant, and then bending the hedge over and beating. The insect occurs in small numbers all over a considerable area, unlike *Tropideres*, which I have only found at the one spot; still, I have taken more *Tropideres* than *Anthrribus*. The latter hibernates, and I have taken one female in April; I think it takes two years at least to feed up, as the perfect insect is about in August, and some years ago I think Mr. Donisthorpe took it in May or June. Another wood-feeder which lives in the hazel is *Lissodema 4-pustulatum*, Marsh., but this is very rare, while *Acalles turbatus*, Boh., lives apparently in the same way. This latter insect is very abundant in a suitable old hedge; it mimics the buds of the twigs, and when it falls in the tray lies with the tibiæ folded back on the femora, but with the six folded legs left standing straight out all together in a bunch, exactly like the nearly allied *Cryptorrhynchus lapathi*, L. Altogether the 30 ft. of hedge produced in 1902, some 78 beetles and 18 Hemiptera, besides Hymenoptera (ants and *Proctotrupidæ*), Neuroptera (*Psocidæ*), and Aptera. No doubt there were also ichneumonous and Braconids, but my method of collecting was unsuitable for them. *Carabidæ* were represented by five chance species, *Demetrius atricapillus*, L., being the commonest, also by five others, which are, I think, subcortical feeders, viz., *Dromius meridionalis*, Dj., *linearis*, Ol., *melanocephalus*, Dj., *4-notatus*, Panz., in great numbers, and *4-maculatus*, L.; mimicking these, or, at any rate, coloured so that they can be arranged in a corresponding series, are the heteromerous *Rhinosimus viridipennis*, Steph., *planirostris*, F., *Lissodema 4-pustulatum*, Marsh., besides *Cerylon histeroides*, F., and *Litargus bifasciatus*, F.

Other fungus feeders were:—*Ennearthron cornutum*, Gyll., *Cis hispidus*, Payk., *Anisoxya fuscata*, Ill., *Clinocara tetratoma*, Thoms., and *Tetratoma ancora*, F.

Wood feeders resembling lichen-covered wood were *Anthrribus* and *Tropideres*, mentioned before, and two *Pogonochæri*, viz., *hispidus*, L. (*bimaculatus*, F.), and *dentatus*, Fourc.; the white spot at the end of the elytra of the two first mentioned perhaps rather more resembles the broken section of a little twig than lichen, but Mr. Donisthorpe has shown at the Entomological Society *Anthrribus* arranged in its natural surroundings, and making it evident how well protected it is. The protective resemblance is even carried out in the long antennæ of the male. The insect is very variable in size, the largest specimen being quite twice the length of the smallest.

To continue the list of species there were conspicuous (but distasteful?) species, e. g., among the *Coccinellidæ*: *Platynaspis luteorubra*, Goeze, living in wood, a *Scymnus* (probably *testaceus*, var. *scutellaris*, Muls., but it has black tarsal claws like *lividus*, of Bold), *Rhizobius litura*, F., *Coccinella 7-punctata*, L., *11-punctata*, L., and its var. *confuens*, and *bipunctata*, L.

Among the *Phytophaga*, *Lema melanopa*, L., *Haltica pusilla*, Duft., *Aphthona herbigrada*, Curt., *Mantura matthewsi*, Curt., a rather dull form, *Phyllotreta nodicornis*, Marsh., and *vittula*, Redt., *Plectroscelis concinna*, Marsh., *Longitarsus pulex*, Schr., and *atricilla*, L. Of *Rhynchophora*, *Xylocleptes bispinus*, Duf., *Strophosomus*

retusus, Marsh., two species of *Sitones*, *Anthonomus pedicularius*, L., *Orchestes fagi*, L., *Gymnetron beccabungæ*, L., *Ceuthorrhynchidius frontalis*, Bris., *Hypera trilineata*, Marsh., *variabilis*, Hbst., *plantaginis*, De G., *Mecinus pyraister*, Hbst., and several of the common *Apions* occurred. Of *Staphylinidæ* there were *Bolitochara lucida*, Grav., *Stilicus affinis*, Er., *Sunius angustatus*, Payk., *Pæderus littoralis*, Grav., *Stenus ater*, Mann., and other common *Steni*, *Homalium vile*, Er., *Oxygoda* (? *umbrata*), *Hypocyrtus longicornis*, Pk., *Conosoma lividum*, Er., and several *Tachypori*. Among the *Clavicorns* there were four or five species of the commoner *Phalacridæ*.

In the spring of 1903, besides *Anthrribus*, *Tetratoma ancora*, F., *Hedobia imperialis*, L., and several other species again turned up in another hedge, and in the autumn of 1903 the remnants of the old hedge produced *Scaphidium 4-maculatum*, Ol., in very rotten wood, *Bolitochara bella*, Märk., *Ceuthorrhynchus euphorbiæ*, Bris., and *Rhinoncus denticollis*, Gyll (*Phytobius quadridosus*), also a *Helophorus*, the common *Stenus declaratus*, Er., besides *Micropeplus staphylinoides*, Marsh., and most of the things taken in 1903, but not *Anisoxya*.

From other hedges in the neighbourhood *Agathidium varians*, Beck., *Scaphidema aneum*, Pk., and at one place in some numbers, *Leptusa ruficollis*, Er.

My list of *Hemiptera* from the hedge includes *Corimelæna scarabæoides*, L., *Corizus capitatus*, Fab., *Berytus crassipes*, H.-S., *Aphanus pini*, L., *Peritrechus luniger*, Schill., *Dictyonota strichnocera*, Fieb., *Monanthia cardui*, L., *dumetorum*, H.-S., *Nabis lativentris*, Fab., and *limbatus*, Dahlb.; hard by, but not, I think, actually from the hedge, *ferus*, L., *brevipennis*, Hahn, and *major*, Cost.

Last autumn I have also from the last remnants of the hedge several species of *Proctotrupidæ*, no doubt largely parasitic on the *Coleoptera* living there. *Perisemus triareolatus*, of course, abundant, but though I have attempted to assign names to the other species, I should not at present care to publish them.

In the above I have recorded many common things, but my object is to bring together the inhabitants of one small spot, hoping thereby to add something to the life history of the insects recorded.

With reference to the suggestion that *Anthrribus* hibernates, I ought to say that the spring specimen was quite fresh, and some of the autumn specimens were distinctly worn. Those I tried to keep in confinement died in January, but were not kept damp enough. With reference to the length of life of insects very little is, I think, known. I have a pair of *Dytiscus circumflexus* still alive which were captured by me in October, 1902. There is no reason why the perfect *Anthrribus* should not live for an equal length of time, and it may emerge in the spring.

Huntingfield, Faversham, Kent :

February 15th, 1904.

A NOTE ON *LASIOSOMA HIRTA*

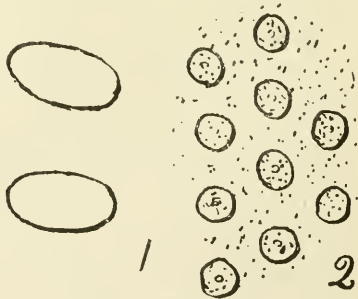
BY T. A. CHAPMAN, M.D., V.-P. ENT. SOC.

Having brought into the house in November some pieces of *Dardalia quercina*, I found recently that they had contained larvæ of

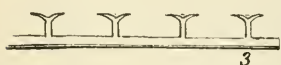
a Mycetophilid, one of which has emerged; and on being submitted to Dr. Sharp is pronounced by him to be probably a var. of the very variable *Lasiosoma hirta*.

The larvæ presented no characters that interested me, and seemed to agree with descriptions of Mycetophilid larvæ, with spiracles down either side. The pupa, however, interested me as presenting some characters very similar to those of *Lepidoptera*. The few pupæ of *Nematocera* of which I know anything are closely parallel to those of the *Lepidoptera incompleta*, but in the species before us the pupa is a parallel to the *Obtectæ*, all the segments being soldered together, and the pupa incapable of movement. Similarly, whilst the *Tipulidæ*, *Cecidomyidæ*, &c., have pupæ that emerge from the puparium for eclosion as the "incomplete" Lepidopterous pupa does; that of *Lasiosoma hirta* remains in its cocoon like the "obtect" Lepidopteron. In noting these facts I am probably saying what is familiar to Dip-terists, but I do not remember noticing attention being called to the parallel evolution in the two Orders. The eggs laid by this fly struck me as curious, and of interest to me on account of their being probably instances of an adventitious coating, expanding after laying, very similar to that in *Micropteryx*.

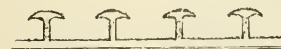
The eggs (1, 2) are oval (egg-shaped), and have a long diameter of about 0.34 mm., and a transverse of 0.18. They are white, or with a faint straw tint. On a first glance with a lens they seem to be marked with a hexagonal pattern or netting, of which the lines are exceedingly wide and the hollows are circular. A closer examination reveals a much more curious and elaborate structure. The circles are seen to be raised and convex, and rather more than their own diameter apart, and number about twelve across an egg, and are therefore in diameter about $0.18 \text{ mm.} \div 24 = 0.008 \text{ mm.}$ Getting them in profile towards



the side of the egg each of the convex circles is seen to be raised on a stalk, so that the stalk and the summit together look exactly like a mushroom (*Agaricus*) (4). Any attempt to handle these eggs results in a certain amount of damage to their



3



4

structures, one form of which is to remove from the egg a thin coating, to which are still attached these mushroom structures uninjured. The egg surface that is left is smooth and glistening, and seems in fact to be the egg proper. The removed coating is adventitious, and has a corky or snowy sort of texture,

which gives rise, why is not very clear, to the idea that when laid the egg has this

coating lying flat, and that the mushrooms expand and the coat itself thickens (by absorption of air?) after it is laid.

This idea is supported by some of the mushrooms having a form not of a mushroom, but of a chantarelle, *i. e.*, wineglass-shaped, as though they had not fully expanded (3).

This coating reminds one very much of the snowy portions on the eggs of *Micropteryx*. In *Micropteryx* these are much more delicate, and destroyed by a touch. One may suppose both to have the same purpose, which is probably to prevent the egg actually touching a too wet surface.

The larva is about 12 mm. long, long and slender (0.6 mm. thick), spindle-shaped, *i. e.*, thickest at the middle, but thinning to either extremity in a long curved sweeping outline continuous from end to end. It varies a good deal in length during its movements. The head is a well marked separate structure, with well developed mouth parts, and whilst under examination it keeps spinning silk by a slapping motion of the head against the surface under the thoracic segments.

The twelfth segment is small, the 13th much smaller, whilst the 14th is a mere small appendix, yet has a small conical addition beyond it (or part of it); this extremity seems usable as a pseudopod. There are no hairs, feet or other appendages and movement seems to be of a vermiform character, the under surface is pale and apparently adapted to glide over the prepared silken way. The dorsum is dark in a pattern varying somewhat from segment to segment. The recurved and 3rd abdominal segments have indications of subsegmentation into two equal portions, and this is very marked in 5th, 6th and 7th, which are longer than the others.

Some of the dark dorsal chitinous patches seem to be rather stiff and solid, but the paler portions of skin are quite flexible, but not collapsible.

Pupa of Mycetophilid fly, February 22nd, 1904. In a cocoon consisting of a very spider-like silk tissue, three quarter inch long and half inch broad. The cocoon is smooth inside, *i. e.*, the pupa is in a cavity and not hung amongst threads. There is no cremaster.

The pupa (5, 6) is about 4.3 mm. long and 1.2 mm. wide. Form somewhat cylindrical, abruptly truncate in front, tapering behind, more dorsally than ventrally for the last 1.5 mm. Seen dorsally the mesothorax is large, 1 mm. in length, front angles rounded, and spiracular points just showing beyond. The metathorax is narrow, then follow the abdominal segments, of which the first six are of about equal diameter, the 6th narrowing as a beginning of the rounding of the posterior extremity. The first abdominal segment has no spiracle, *i. e.*, it is beneath the wing; the next six (2-7) have spiracles elevated on slender cones; a



mark that may be the scar of one is visible on 8th segment; and the 10th segment is hardly made out with certainty. In most views there appear to be only nine abdominal segments. The wings arise some way in front of the hind margin of the mesothorax, so that their inner borders instead of being continuous (as in *Lepidoptera*) with the posterior margin of segment, run straight up over it, just as they do over the other segments, the suture ending abruptly about one-third up the segment. From the metathorax there extends downwards on each side along and showing from beneath inner margin of upper wing for nearly the width of first abdominal segment, a narrow margin of what can only be called hind-wing, and exactly like the hind-wing as seen in many Lepidopterous pupæ, but shorter and narrower.

The pupa is of the brown chitinous aspect of ordinary Lepidopterous pupæ. All the segments appear to be soldered solidly, admitting of no movement, though at each incision the transparency of the pupa allows to be seen an intersegmental membrane extending inwards and upwards. There is a central prominence of the mesothorax, and the metathorax and first four abdominal segments have this repeated as a dorsal ridge along their anterior halves, rather more raised at the anterior margin. No other sculpturing or any hairs are detected, beyond the minute surface texture.

Seen laterally the outline is less that of a cylinder, the ventral aspect is quite straight, except for a slight prominence of the head. The truncate front is formed by the head, but chiefly by the mesothorax, which being rounded above looks like a ball with the head stuck on in front. The prothorax a very narrow inconspicuous stripe. There is a slight waist behind the mesothorax dorsally, and the rest of the dorsal line sweeps in a regular curve from this point to the posterior extremity, first rising a little, then nearly (but being curved not quite) parallel to the venter for several segments, and then bending forwards. The wings on the lateral aspect appear large, and extend down to middle of 4th abdominal segment, and are soldered down, just as in a *Noctua* or *Geometer* pupa; down the side in front of spiracles is, rather a depression, as between dorsal and ventral plates, than a flange. The wing origin is marked by a good deal of complicated grooving and elevation. The 10th abdominal segment can be seen better in this view, but even so doubtfully. The first spiracle, like the others, is small, on the summit of a conical elevation, it seems to have a cribriform structure. No hairs can be made out in this lateral view on either the dorsal or ventral surface. The wing neuration is well marked by raised ridges.

The front view again shows the sides nearly parallel, being in outline of course the same as the dorsal view. The anterior portion (0.9 mm.) is occupied by the face down to the end of the labrum; then comes another portion about 0.4 mm. long with rounded margins, that makes the face with this portion above nearly a circle. The curving of the lower margin of this piece, and of the antennæ, give this effect, but none of the lines are continuous and no definite circle is really outlined. After a very narrow space continuous with the first leg is a diamond-shaped piece, that in a *Lepidopteron* one would call proboscis. Outside these pieces is the first leg, which continues beyond them, touching its fellow in the middle line from a position 1.65 to one 3.45 mm. from anterior end. At its extremity the other two pairs of legs are ranged beside it, and they terminate (and are soldered to) on the front of the 6th abdominal segment a little in front of its posterior margin. Upwards the second leg appears from below the end of the antennæ at 1.20 mm. (from front), and the third from beneath the wing at 2.50.

The antennæ arise quite in front and sweep round, the two forming together the greater part of a circle; they form the margin of the actual flat face of the pupa, but portions of the mesothorax extend beyond them, as well as the pyramid carrying the first spiracle. The wing margin slightly overlaps the antennæ, not the antennæ the wing.

The nature of all the parts marked out on the front of the pupa is not very clear to me, and resemblances to *Lepidoptera* are probably misleading. The two central lappets under the face are probably clypeus and labrum. The upcurving pieces that proceed from near the end of these and disappear forward beneath the antennæ, can hardly be maxillary palpi, though they are where these organs are in *Lepidopterous* pupæ. Below the labrum (?) begins a median suture, on either side of this are two incomplete concentric curved lines. I fancy these divide the first leg into trochanter, femur and tibia, the straight portion below being tarsus. In the diamond-shaped space below the upper portions are parts (trochanter or coxa) of second pair of legs and the lower of third.

EXPLANATION OF FIGURES.

- Fig. 1—Outline of egg of *L. hirta*, $\times 45$ diams.
 „ 2—View of egg surface, $\times 620$. The dots are intended to indicate the irregular corky aspect.
 „ 3—Side view of a row of “fungus” process of chantarelle form, $\times 620$.
 „ 4—More usual agaric form of these processes, $\times 620$. The lower line represents egg proper, the others the outline (in section) of the corky covering.
 „ 5—Front view of pupa, $\times 11$.
 „ 6—Lateral view of pupa, $\times 11$.

Betula, Reigate :
 April, 1904.

Ptinus tectus, Boield., in Hoylake.—Referring to the interesting notes appearing in the current number of the Ent. Mo. Mag. on the distribution of this species, I am able to add another British locality to those already published. On recently looking through some insects which I had put aside from time to time for future identification, my friend Mr. Brockton Tomlin at once discovered six specimens of *Ptinus tectus*. These had been sent with some *Trigonogenius globulum*, Sol., from Hoylake during the first week of September last; but being much occupied by reason of the preparations for the visit of the British Association to Southport on the 9th of the month, I had put them away and forgotten them. Consignments of *Trigonogenius globulum*, to which Mr. Champion also refers in his note, have been received at intervals by me from Mr. Jennings, Hoylake, ever since my first record of the species from that locality in the autumn of 1901 (Ent. Mo. Mag., n. s., xiii, p. 9).—E. J. B. SORP, Birkdale: April 13th, 1904.

Apion brunnipes, Boh. (*laevigatum*, Kirby), at Oxford.—In recently looking over a number of *Apions* taken by myself in June, 1903, in a sandy place a few miles from Oxford, I found one specimen of a very smooth and shining dark violet species, quite strange in aspect to me. As I could find nothing like it on comparison with the British species of *Apion* in the collections at the University Museum, I referred to Canon Fowler's work on the British *Coleoptera*, and made it out to be the very rare *A. laevigatum*, Kirby. For further confirmation the insect has been kindly compared by Mr. J. J. Walker and Mr. G. C. Champion with specimens of *A. laevigatum* in the cabinet of the latter, and has been returned to me as undoubtedly a ♀ of that species. I hope in the forthcoming season to "follow up" the *Apion* and to find out more about it. I may add that *Trachys pumila*, Ill., occurs at the same place, as well as at Wychwood Forest.—W. HOLLAND, University Museum, Oxford: April 11th, 1904.

Clinocara undulata, Kr., in the Northumberland and Durham district.—In the autumn of 1901 I took a few examples of *Clinocara undulata*, Kr., near Winlaton Mill, whilst in 1902 I came across it in some numbers at two different localities (about half a mile distant from each other). The first specimens were found on September 25th in Thornley Burn Wood, near Winlaton Mill, where I saw fully thirty clustered on some white fungoid growth, beneath the bark of a small dead tree, and the others on October 16th in a wood bordering the River Derwent, near Lockhaugh. Notwithstanding their very lively and ludicrous movements I managed to take a nice series on each of the above dates. Again, in the latter part of September, 1903, I saw a specimen of this insect resting on a rail post, at the border of Thoruley Burn Wood, near Winlaton Mill. This is, so far as I am aware, the first record of *C. undulata*, Kr., from the Northumberland and Durham district, for it is not mentioned by Canon Fowler in his "British *Coleoptera*" as having been taken in these counties, nor has Mr. Bold catalogued it in his list of our local *Coleoptera*.—RICHARD S. BAGNALL, The Groves, Winlayton-on-Tyne: March 23rd, 1904.

Triplax ænea, Schall., in the Derwent Valley.—I have found *Triplax ænea*, Schall., very commonly under the bark of dead hollies, and in one case under that

of a large felled beech tree in the Gibside, Hollinside, and Winlaton Mill Woods. They occurred mostly in and on a fine white fungoid growth, as well as on the under portion of the bark, and seemed to prefer trees growing or lying in a damp situation. The specimens captured varied a great deal in size, some scarcely measuring 3 mm., and others as much as 4.75 mm.—ID.

Ptinus tectus and *Lathridius bergrothi* in Holborn.—It may be interesting to record *Ptinus tectus*, Boield., and *Lathridius bergrothi*, Reitt., both taken from a granary in Holborn in 1892.—A. J. CHITTY, 27, Hereford Square, S.W.: March 25th, 1904.

Formica fusca, winged female in spring.—In answer to Mr. Dalglish's remarks on my note on this species (*ante* p. 87) I should like to explain that he has fallen into error in supposing that I was under the impression that the specimen was an early emergence. I was, and am still, of the opinion that the specimen was an example of retarded emergence which had not left the nest in the autumn. Possibly the wording of my note, *i. e.*, "thus early" instead of "at this time of the year" was partly responsible for his mistake. As to the wings breaking off in setting, they did not, in fact they set out as easily as under ordinary circumstances. Mr. Cameron recorded *Phyllotoma microcephala* in the 1876 list for the West of Scotland, but this species, as well as a large number more of that gentleman's records, was not included in the 1901 list.—J. R. MALLOCH, Bonhill, Dumbartonshire: April, 1904.

Andrena albicans and *Nomada bifida* at Bonhill.—While digging for bees in a sandy embankment on March 19th last, I unearthed a female of each of the above species in adjoining cells off the same burrow. The cells were so close that they were practically touching each other. These species are I believe generally looked upon as host and parasite, but perhaps this record may prove interesting.—ID.

Notes on Diptera in the New Forest, 1903.—The low average temperature, record rainfall, and strong gales will cause the past year to be remembered by entomologists as one of the worst ever known. Although I experienced much of the bad weather, I was fortunate enough to be at Lyndhurst on two occasions when there was some sunshine. First, about the third week of May, and later when there was nearly three weeks of hot summer weather from Midsummer Day to the 18th of July. Owing to severe frosts, collecting in the early spring was very bad, and only redeemed in my case by the capture of a second specimen of a fly which at present is nameless. The first was taken in my garden on April 9th, 1899, and later on submitted to Mr. Austen, who, however, could make little of it during our short interview, but he advised me to send it to Mr. Collin who at the time was working out the *Helomyzidae*, a family which at first sight it strongly resembles. This I did, and he subsequently wrote: "I consider your fly to be a species of *Palloptera* and not a *Blepharoptera* or *Helomyza*, but can find no described species to which to refer to it." And again, rather later, "Mr. Verrall is also satisfied it is a *Palloptera*." So the matter rested, and I never saw another specimen until now,

when curiously enough I caught the second in the same locality on April 10th. I took them both to Mr. Verrall's meeting of the Entomological Club last January, where they were seen by another expert, whose opinion carries weight, and he expressed strong doubts as to their being a *Palloptera*, so they remain nameless, and *P. adamsi*, Coll., does not yet find a place in the British List. Owing to the very forward state of the hawthorn foliage I came to the conclusion there would be scarcely any blossom later on, and this unfortunately turned out to be true. Partly on account of this collecting in May showed little improvement, but the common *Berberis*, at Rhinefields, attracted fair numbers of *Conops vesicularis*, L. ($\delta \delta$ only), a few *Criorrhina berberina*, F., and *C. oxyacanthæ* about as common as usual. What little hawthorn there was came out early, and on going to a favourite tree on which I took four *Psilota anthracina*, Mg., in 1901, I found it once more an exception to the general rule, as it had no blossom in 1902, but again this year carried a good head of flower. In about five minutes I boxed a female of the above which raised hopes of a record bag, but alas, it was the only one on this or any later visit. As this tree had nothing else near to attract away insects, the very small number of even the commonest species coming to it was a clear proof of the scarcity of *Diptera*. Wood Spurge which had dwindled during previous dry years, once more showed strong growth, and its flowers attracted numerous *Syrphidæ*, amongst which I took *Syrphus albostrigatus*, Fln., *S. tricinctus*, Fln., and three *S. torvus*, O.S., the latter no doubt often overlooked through its strong resemblance to the common *S. ribesii*, L. Returning to Lyndhurst on June 22nd I still found flies scarce, even those previously out having apparently been destroyed by the torrential rains earlier in the month. Fine hot weather, however, set in, and as it was not yet too late for *Microdon mutabilis*, L., I turned my attention to Matley Bog, but did not even see one on this or subsequent occasions, nor did I meet with either *Mallota cimbiciformis*, Fln., or *Callicera ænea*, F., although the Rhododendrons were not over, and Portugal laurels were coming out at Rhinefields, and wild roses and brambles were in bloom at Brick Kiln and other enclosures. On the Portugal laurel, however, I took one *Brachypalpus bimaculatus*, Mcq., and *Alophora hemiptera*, F., was fairly common. About a week later on Umbelliferæ at Matley Bog I took a series of *Anthrax fenestratus*, Fln., and a single *Ischyrosyrphus laternarius*, Müll., a species I had never seen before in the Lyndhurst district. *Tabanidæ* were in strong evidence, especially *T. bovinus*, L., and in less numbers *Atylotus fulvus*, Mg., but I only succeeded in netting two of the latter as they have an awkward way of settling on one's clothes exactly where you cannot get at them. I left on July 22nd, the fine weather having already broken up, and it was not better when I returned in the middle of August. Rain being the prevailing feature, my collecting was chiefly confined to near home, working Umbelliferæ and sweeping in an adjacent field. On the former amongst various small *Anthomyidæ* were several *Azelia zetterstedti*, Rnd., one *A. triquetra*, W., two *A. aterrima*, Mg., and one *Anthomyia albicincta*, Fln., the two latter being described by the late Dr. Meade as "very rare." Sweeping was not remunerative; two *Urophora quadrifasciata*, Mg., and two *Tephritis corniculata*, Fln., alone calling for attention. During bright intervals *Arctophila mussitans*, F., was plentiful on Scabious, and my garden produced numerous *Xanthandrus comtus*, Harr., both flies seeming to thrive in wet seasons. To the above I can only add one *Leptomorphus walkeri*, Curt., one *Ceroplatus*

tipuloides, F., and one *Neottiophilum præustum*, Mg., taken at various times, and one *Ctenophora flaveolata*, F., obtained from Mr. F. Gulliver, who asked me to name a few insects for him. Considering that I only devote a few hours in the morning to collecting, this is perhaps a fair list for a bad season, and noticeable for the number of single specimens taken in most instances.—FREDK. C. ADAMS, 50, Ashley Gardens, S.W.: *March*, 1904.

Capture of Peribalus vernalis, Wolff, at Huntingfield.—I have much pleasure in recording the capture of this scarce insect from this locality. My specimen was taken on August 12th, 1902. It has now been recorded from such diverse localities that possibly its rarity arises from its being overlooked; I think it very likely that I have overlooked it on former occasions, as its facies is that of a very ordinary greenish-brown bug!—A. J. CHITTY, Huntingfield, Faversham, Kent: *March*, 1904.

Orthetrum cærulescens in Cumberland.—When walking through Borrowdale on June 30th last on my way to Seaw Fell, I picked up a few insects of various Orders by desultory collecting along the road side, among which was a fine male specimen of *O. cærulescens*. Recognising in this dragon-fly something new to the meagre Cumberland list of *Odonata*, I kept a sharp look out for more, but unsuccessfully, the day being a cloudy one and unfavourable to these insects. According to Lucas this species does not range further than Cheshire. The present record, therefore, extends its distribution upwards of 100 miles in a northerly direction.—F. H. DAY, 27, Currock Terrace, Carlisle: *March 16th*, 1904.

Wicken Fen: another disastrous fire.—It is the old, old story: a lighted match carelessly thrown down, and an uncontrollable fire started at once. On Saturday, April 9th, about 3 p.m., a fire was started in this manner at the north-west corner of the large block of the Fen lying towards the south-east, and almost the whole of that block, as well as a few acres to the north of it, amounting to about 100 acres, was burnt in less than three hours. A very powerful north-west gale was blowing at the time, which quickly caused a furious fire. The damage done to the sedge crop alone will amount to some hundreds of pounds, while the damage done to Natural History cannot be calculated. Owing to the rapidity of the fire it is probable that not much harm has been done to the roots of plants and the ground herbage, but the shrubs and all pupæ or larvæ or even eggs in or on the upright sedge must have been destroyed, and they may never be replaced, while the herbage will take some years to recover. Only last June about 15 acres of the Fen situated in a different part were destroyed from the same cause.

Is it possible that a fire was the original cause of the extermination of *P. dispar*?

Visitors to the Fen ought to know that the charge of sixpence commonly made goes to the owner of less than one-sixth of the Fen; the other five-sixths being at present free, provided leave be applied for and reasonable care taken that no damage be done. It will serve to equalize matters that the owner who makes a charge is the biggest sufferer from the present fire.—G. H. VERRALL, Sussex Lodge, Newmarket: *April*, 1904.

Obituary.

Joseph Merrin.—According to the Stroud Journal of March 25th, J. Merrin died at Gloucester a day or two ago, aged 82 years. He was born in London, but was associated with journalism nearly all his life, and at one time was an intimate acquaintance of the late Sir Isaac Pitman, of short-hand fame. At the time of his death he was occupied with Mr. V. R. Perkins on the yet unpublished County List of the Victoria Natural History. The principal feature of Mr. Merrin's history was his intense love of nature, which occupied all his spare time. He published "Butterflies with the poets," and other (some of them more pretentious) works; but undoubtedly his principal labour was concentrated on the "Lepidopterists' Calendar," which ran through two editions, and was of real use. He also contributed much on the Fauna, Flora, and Archæology of Gloucestershire. Mr. C. J. Watkins has kindly furnished some hints in writing this notice.

Societies.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *February 15th, 1904.* — ANNUAL MEETING.—Mr. R. C. BRADLEY, Vice-President, in the Chair.

The various Annual Reports were read, Officers and Council elected for the ensuing year.

Mr. G. W. Wynn exhibited a box full of varieties of various *Lepidoptera*, including amongst others the following: *Argynnis valesina*, Esp., from the New Forest; pale *Vanessa urticæ*, L., from Teignmouth; *Spilosoma lubricipeda*, L., *ab. zatima*, Cr.; black *Hadena monoglypha*, Hufn., from Hampton-in-Arden; *Agrotis exclamationis*, L., from Wyre, with spots on fore-wings confluent; a beautifully marbled variety of *A. corticea*, Hb., from Lapworth; *A. cinerea*, Hb., var. *obscura*, from Wyre Forest; and *Mamestra pisi*, L., with the white spots continued as a distinct line right across the wings, from Sutton Park. Mr. J. T. Fountain, a series of *Larentia autumnalis*, Ström. (*impluviata*, Hb.), bred from sallow bloom from the Wyre Valley. The blossoms which still remained attached in June to the stems of female trees were collected, and from them a few larvæ obtained. There were but a few larvæ, but the resulting imagines showed almost the whole range of the variation of the species, unicolorous black, barred forms, dark marbled ones, light marbled ones nearly all green, and some with ochreous ground colour. Mr. H. W. Ellis, eight drawers from the cabinets containing his collection of the *Geodephaga*, and gave a general account of the division, and a detailed account of the species and their local occurrence.

March 21st, 1904.—Mr. G. T. BETHUNE-BAKER, President, in the Chair.

Rev. J. Harvey Bloom, Whitchurch Rectory, Stratford-on-Avon, was elected a Member of the Society.

Mr. J. T. Fountain exhibited a series of *Agrotis fimbria*, L., bred from larvæ from Marston Green; also *Phigalia pedaria*, F., from Highbury, where he found four on one lamp, and could find no others. Mr. Gilbert Smith, an aberration of *Arctia caju*, L., bred some years ago, in which the two sides were unequal in size,

and quite different in markings. Mr. W. H. Flint gave an account of the structure, allies, habits, methods of capture, &c., of the genus *Tephroclystis*, Hb. (*Eupithecia*), with a detailed account of the species. He exhibited his collection of the same, including many rare ones, the most interesting being *insignata*, Hb. (*consignata*, Bleh.), of which he took seven specimens at Kingswood, Warwickshire, some years ago.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
March 10th, 1904.—Mr. A. SICH, F.E.S., President, in the Chair.

Mr. Longe exhibited (1) specimens of *Danaïs chrysippus* and *Anosia plexippus*, with other species of butterflies he had just received from Siam ; (2) a photograph of a ♀ *Lycæna iolas*, bred by Dr. Chapman, showing its resting pose ; (3) photographs of the ova of *Thera juniperata*, *in situ*, on a juniper leaf, and also of the ova of *Ilybernia rupicaprarria*. Mr. Moore, a living specimen of the locust, *Acridium egypticum*, found in Covent Garden Market in a basket of *Mimosa*, and read notes on its habits. Mr. Adkin, (1) a ♂ aberration of *Bupalus piniaria*, in which the usual dark markings were represented only by two small spots on the costa, and a few spots on the fringes, the remainder being of a pale brown ; (2) an aberration of *Callimorpha dominula*, with the usual red colour of the hind-wings replaced by yellow. Mr. Sich, sketches of larvæ illustrating the main characters of the various Lepidopterous groups. Mr. McArthur, two specimens of the extraordinary S. American Owl moth, *Thysania agrippina (strix)*, one of which measured more than ten inches across the expanded wings. Mr. Tutt gave an address, entitled, "Some modern requirements in oval and larval description," illustrating his remarks by blackboard sketches, and a large number of diagrams prepared by Mr. Bacot ; a considerable discussion took place.

March 24th, 1904.—The President in the Chair.

Mr. H. Rowland Brown, F.E.S., of Harrow, was elected a Member.

Mr. Main exhibited a collection of *Coleoptera* from Cape Colony, *Hemiptera* from W. Africa, and a spider found in a cargo of sugar from Java. Mr. Goulton, photographs of the ova of *Ptilophora plumigera* and *Eubolia cervinata*, with notes on their characteristics ; he also showed photographs of various species of Lepidopterous larvæ in their resting positions. Mr. Manger, a large Coleopteron, *Macrodonia cervicornis* from Demerara. Mr. West, an example of the rare British Longicorn, *Monohammus sutor*, taken on a doorstep at Great Yarmouth in 1903. Mr. Malcolm Burr gave a very interesting Address on his tour in Montenegro, along the mountains on the eastern coast of the Adriatic, and illustrated his remarks with a large number of lantern slides made from photographs taken by himself.—HENRY J. TURNER, *Hon. Secretary.*

ENTOMOLOGICAL SOCIETY OF LONDON : *March 16th, 1904.*—Professor E. B. POULTON, M.A., D.Sc., F.R.S., President, in the Chair.

Miss M. Maude Alderson, of Park House, Worksop, Notts. ; the Hon. Richard

Orlando Beaconsfield Bridgeman, R.N., of Weston Park, Shifnal, Salop, and H.M.S. "Clio," Australian Station; Mr. W. A. Luff, of Brock Road, Guernsey; Mr. Frank S. Mumford, of 10, Mountfield Gardens, Tunbridge Wells; Mr. Edward Harris, of 2, Chardmore Road, Upper Clapton, N.E.; Mr. Thomas Frederick Furnival, of Bushey Heath, and Bishopstone, Sussex; and Mr. Geoffrey Meade-Waldo, of Edenbridge, Kent, and Magdalen College, Oxford; were elected Fellows of the Society.

Mr. G. T. Porritt exhibited a pair of *Æschna isosceles* taken by him in the Norfolk Broads last summer. The species had been regarded as almost lost to the British list for many years. Mr. J. E. Collin, *Phora formicarum*, Verr., which is parasitic on the ant, *Lasius niger*, obtained by sweeping the herbage in a paddock at Newmarket: a species that has not been found or recognised by continental Dipterologists; and *Phora* sp. found in a garden at Newmarket, running about at the entrance to a nest of *Bombus*. Commander J. J. Walker, (1) a series of *Buprestidæ* from Sydney, N.S.W., and the adjoining district (including the nearest part of the Blue Mountains), comprising about 120 species, of which 70 belonged to the genus *Stigmodera*; also a dried specimen of *Angophora cordifolia*, Cav., a small tree of the natural Order *Myrtaceæ*, the flowers of which are the great attraction in New South Wales for the *Buprestidæ*, as well as for very many other *Coleoptera*. (2) Specimens of the "Bugong" Moth, *Agrotis spina*, Guenée, from Jervis Bay, N.S.W. (referred to at the previous meeting); and (3) *Carthæa saturnoides*, Walk., a remarkable moth from Perth, W.A., referred to the *Geometrina* but possessing an extraordinary superficial resemblance to a *Saturniid* in aspect, though not to any one of the known Australian species of that family. Mr. A. J. Chitty, a specimen of *Peribatulus vernalis*, Wolff, a rare bug, of which only five or six specimens appear to have been taken, and pointed out that as the records in Saunders' *Hemiptera* included Cumberland and Weston-super-Mare, and his own specimen was taken at Huntingfield, Kent, it was probably overlooked. Mr. Claude Morley had also taken one specimen in Essex. Dr. F. A. Dixey, a remarkable pale form of *Mamestra brassicæ*, taken by Dr. G. B. Longstaff and himself at Morteohoe, North Devon, on July 16th, 1903. The specimen showed the usual markings of the species on a cream coloured ground, faintly shot with pinkish or apricot. There was a slight smoky shade over the central area of the fore-wing, the hind-wings were yellowish-grey, the thorax yellowish-brown, the abdomen apricot coloured, with a dorsal chain of dark tufts. The President, Professor Poulton, read the following observations on the gregarious hibernation of certain Californian insects, communicated to him by Professor Vernon L. Kellogg, of the Leland Stanford Junior University, California; he also read a paper on "The habit of some insects to seek high and exposed elevations." A discussion followed, in which Dr. Chapman, Mr. Champion, Dr. Dixey, Mr. Tutt, Col. Swinhoe, and others joined. Mr. O. E. Janson contributed on behalf of Mr. F. P. Dodd, of Townsville, Queensland, a note upon "Maternal Instinct in *Rhynchota*," and Mr. H. Rowland Brown read a "Note on *Oncoptera intricata*," a moth extremely destructive to pastures in Tasmania, by Mr. F. M. Littler, M.A.O.U., of Launceston, Tasmania. He also exhibited examples of the imago and larva of the species, the latter closely resembling that of a *Hepialid*.

—H. ROWLAND BROWN, *Hon. Sec.*

ANTIPODEAN FIELD NOTES.

II.—A YEAR'S INSECT HUNTING IN NEW ZEALAND.

BY JAMES J. WALKER, R.N., F.I.S.

(Continued from page 77).

The Domain, 180 acres in extent, is well timbered, but chiefly with oaks, willows, poplars, and *Pinus insignis*, so that here it would be easy to fancy oneself in an English wood, though some pretty little patches of the native vegetation have been allowed to remain. Almost in the heart of the city, the "Cemetery Gully," a deep ravine full of tangled scrub and noble tree-ferns of great age (*Cyathea medullaris* and *C. dealbata*), forms one of the best and most accessible collecting-grounds in the district.

Coleoptera are scarcely as plentiful here as at Wellington, and there is a great lack of logs, &c., available for working, though two fine *Carabidæ*, *Trichosternus aucklandicus*, Br., and *Anchomenus batesi*, Br., are to be found rarely under the few that are met with. *A. suborbithorax*, Br., in company with *Cilibe elongata*, Brême, is abundant under lava-blocks in the driest situations, and the shining jet-black *Dicrochile aterrima*, Bates, is taken in the Domain in very wet places. Almost the only place in New Zealand where I met with water-beetles in any number was a pond occupying the crater of "Mount St. John," in the suburb of Remuera. In this pond, which was first pointed out to me by my entomological friend Dr. Harold Swale, late of Tavistock, Devon, I found our familiar *Rhantus pulverosus*, Steph., in plenty, with a few of the more elegant *Lancetes lanceolatus*, Sharp, and of *Antiporus duplex*, Sharp; a tiny *Bidessus (plicatus)*, Sharp) was taken abundantly, with *Philhydrus tritus*, Br., *Hydrobius zealandicus*, Br., and the very minute *H. nitidiusculus*, Br. Under lava-blocks near the water, the elegant *Anchomenus submetallicus*, White, a widely distributed species, occurs in swarms, with, very rarely, the little iridescent *Physolæsthus insularis*, Bates, curiously like our *Badister peltatus*, Panz. Beating in the "Cemetery Gully" and elsewhere produces a variety of small beetles, the most remunerative stuff being the dry dead stems of the so-called "Cape Ivy," *Senecio mikanioides*. This is a naturalized creeper which grows here most luxuriantly and covers the "dry-stone" walls and bushes with dense masses of tangled vegetation; and it is now the favourite food-plant of the conspicuous black-and-white day-flying moth *Nyctemera annulata*, Bdv., the hairy larva of which may be seen on it in hundreds. Out of it may be beaten the curious little Colydiid, *Tarphiomimus indentatus*, Sharp, quite commonly, along with species of *Telmatophilus*,

Scymnus, *Cryptophagus*, *Salpingus*, &c. *Demetrída nasuta*, White, and *Paupris aptera*, Sharp, are not rare, with several *Anthríbidæ*, including *Anthríbus brouni*, Sharp, and the long-horned *Exilis lawsoni*, Sharp, and *E. variabilis*, Sharp, in plenty: the little stumpy *Dysnocryptus nigricans*, Br., superficially very like a Scolytid in appearance, being very rare. More general beating produces various *Elateridæ* (*Geranus*, *Mecastrus*, *Corymbites*, the elegant *Metabrax cinctiger*, White, and the curious downy *Parinus villosus*, Sharp), *Macratría exilis*, Pasc., many small weevils, among which forms allied to *Acalles* predominate as usual, and several Longicorns, of which the genus *Xylotoles* includes *X. humeratus*, Bates, *griseus*, Westw., *lætus*, White, *rugicollis*, Bates, the minute *nanus*, Bates, and the shining blackish-olive *X. nudus*, Bates. *Prionoplus reticularis*, White, the largest of the indigenous Longicorns, is not rare, and its larva takes very kindly to the numerous stumps of *Pinus insignis*; and a fine example of its rare ally *Ochrocydus huttoni*, Pasc., the only one I got in New Zealand was brought to me on May 24th. The elegant *Tessaromma undatum*, Newm., as well as a common weevil of the genus *Gonipterus*, has accompanied the *Eucalypti* from Australia, and both are now not rare near Auckland. *Alema paradoxa*, Sharp, a curious little red beetle allied to *Crioceris*, but possessed of considerable powers of leaping, comes plentifully off the fronds of the tree-fern *Cyathea dealbata*; and by breaking open the decaying rachis of the fronds of this plant, as well as the much larger and more succulent stalks of *C. medullaris*, a very interesting series of small beetles peculiar to these ferns may be obtained. These include the Cossonids, *Pentarthrum sharpianum*, Woll., and *P. longirostre*, Woll., and the minute *Rhinanisis fulvicornis*, Br., all of which are plentiful; while two very fine species of this group, *Exomesites optimus*, Br., and *Lasiorrhinus opacus*, Br. (the ♂ of the latter conspicuous by its rostrum being clothed with long golden-brown hairs), are met with rarely. A curious elongate Nitidulid form, *Xenoscelis prolixa*, Sharp, is scarce at Auckland, though it is found commonly in the fern-stalks in other localities; *Lorelus priscus*, Sharp, a flat brown Heteromeron, is plentiful in the drier stems; and a very interesting minute Colydiid, *Rhizonium antiquum*, Sharp, is confined to those of the *Cyathea dealbata*.

Under such loose bark as can be found in the Domain and elsewhere, *Lacon variabilis*, Cand., an imported Australian species, is the most common beetle, and *Platysoma cognatum*, Sharp, *Leperina sobrina*, Br., *Mitophyllus irroratus*, White, and the fine grey weevil *Aldonus*

celator, Pase., occur sparingly. In March, 1903, a small quantity of vegetable *débris* and leaf-mould hastily collected in a little patch of bush at the foot of Mount Eden yielded a very nice lot of beetles, including the small Coprid, *Saphobius squamulosus*, Br., *Encephalus latulus*, Br., and a very fine *Homalota*-like form, "*Gyrophæna*" *cornigera*, Br., the ♂ of which has a prominent upright horn on the first and fourth abdominal segments, all in some numbers; with, more rarely, *Wakefieldia vittata*, Br., the anomalous minute Elater, *Amphiplatys lawsoni*, Janson, the very curious *Choleva*-like *Camiarus thoracicus*, Sharp. and some interesting *Pselaphidæ*, weevils, &c.

There are some excellent sandy beaches near Auckland, especially north of the harbour's mouth, and on these *Chærodes trachyscelides*, White, much more variable in colour and marking than at Wellington, may be found abundantly at high-tide mark, with its much smaller but very similar relative *C. lætus*, Br., in almost equal numbers. *Cafius* includes the very singular *C. caviceps*, Br., in the ♂ of which the forehead is deeply hollowed out; this species was found by Dr. Swale under stones embedded in the sand, and I met with it rarely at Waimati Island in the Hauraki Gulf.

I saw but few butterflies at Auckland, though three species were not observed by me elsewhere in New Zealand. These were *Pyrameis cardui* var. *kershawi*, McCoy, *P. itea*, Fab., and *Junonia vellida*, L. All three were very scarce, but I found *P. itea* on the summit of Mount Eden flying in company with *P. gonerilla*, and secured two fine specimens. A rather dull form of the little *Lycæna phæbe*, Murray, a very widely distributed species in the Australian region, was common in grassy waste places, and was observed at Rotorua in great numbers in March, 1903; and *Chrysophanus salustius*, Fab., larger and paler than in more southern localities, occurred rather sparingly.

Several very interesting excursions were made from Auckland during my visits to that port. The first of these, on January 21st, 1902, was to Woodhills, thirty-two miles north of the city by rail, and it introduced me to the most extensive and highest coast sandhills I have ever seen. A belt of these sand-dunes, several miles wide in parts, fringes the west coast of the northern peninsula with very few interruptions from Manukau Harbour to the North Cape, a distance of little less than 200 miles. At Woodhills, these hills of clean white sand are three miles in width, and sometimes 300 feet high, and I found it very trying work tramping across them to the coast under a hot sun. The beautiful little *Cicindela perhispidæ*, Br., by far the most active of the New Zealand species of its genus, was very

plentiful, but most difficult to detect on the dry white sand; but its preference for spots where the presence of a little moisture caused it to show up better against a darker background, led to the capture of a fine series. On the sand, too, were found defunct specimens of three species of the Dynastid genus *Pericoptus*, with *Stethaspis*, *Dendroblax*, and the fine and rare Carabid, *Brullæa antarctica*, Cast., and in the very brief time at my disposal when I reached the sea-beach, I took a series of a beautiful little shining-white Heteromeron, *Actizeta albata*, Pasc., under a small dead fish, and a dark form of *Chærodes (concolor)*, Sharp, not previously met with by me.

Another station, Waitakerei, on the same railway line, but rather nearer to Auckland, was visited by me on May 31st and June 18th. Here a range of hills, not exceeding 900 feet in height, still retains a good deal of fine woodland, including some grand Kauri pines; and the "Nikau" palm, *Rhopalostylis sapida*, is very abundant and of fine growth. This palm yields its special and very interesting series of *Coleoptera*, which are most easily obtained by pulling away the lowermost dead fronds from the trunk and searching their sheathing bases. In this situation I met with the curious Anthribid *Arecopais (Exilis) spectabilis*, Br., in numbers, sitting quietly with its immensely long antennæ (in the ♂) stuck straight out in front and slightly diverging, and accompanied by several remarkable forms of Cossonid weevils. Of these *Arecophaga varia*, Br., and *Eucossonus comptus*, Br., were the most abundant, the very elongate *Dioedimorpha (Pentarthrum) wollastoniana*, Sharp, and the still more curious *Diacanthorrhinus bellus*, Br., occurring but sparingly. With these were found a very flat *Omalius (hebes)*, Br. and numbers of the Cucujid, *Cryptamorpha brevicornis*, White, as well as the smaller and brighter-looking *C. lateralis*, which is perhaps identical with the Canarian *C. musæ*, Woll. Other *Cossonidæ* were taken in stumps and logs of *Pinus insignis*, notably the fine *Xenocnema spinipes*, Woll., which had deserted its natural habitat the Kauri, for this imported tree.

In May, 1902, I spent a week's leave at Te Aroha, a rising health resort on the banks of the Waihou or Thames River, and 115 miles from Auckland by rail. It is an exceedingly pretty place, situated at the foot of a fine forest-clad mountain 3120 feet high, and is evidently a first-rate locality for insects of all Orders. But as it rained more or less, with scarcely an hour's cessation during the whole of my stay, my captures were very limited in number. The commonest beetle in the low ground near the river was an introduced Australian Carabid, *Rhytisternus puella*, Macl., which occurred abundantly under stones

with three or four *Anchomeni*, an undescribed *Dicrochile* (*cordicollis*, Broun), *Clivina rugithorax*, Putz., the sole New Zealand species of the genus, so copiously represented in Australia, and astonishing numbers of that common British woodlouse *Porcellio scaber*, Latr., (*c.f.* Ent. Mo. Mag., ser. 2, Vol. xiii, p. 160). On the mountain, the summit of which the weather did not allow me to reach, though there is a fairly good track thither, my principal captures were a single example of the fine and rare black Carabid, *Parabaris atratus*, Br., at a rather high altitude, *Saphobius squamulosus*, Br. (not rare), the curious stout *Colydiidæ*, *Recyntus insignis*, Br., and *Syncealus hystrix*, Sharp, *Brontopriscus pleuralis*, Sharp, *Menimus cæcus*, Sharp, and a new Carabid of the genus *Tarastethus* (*lævicollis*, Broun), all clinging to the under-side of pieces of wet wood. The elegant *Adelium aucklandicum*, Br., which occurs also at Wellington and Waitakerei, was found here sparingly among dead leaves.

Lastly, in March, 1903, I paid a visit of two days' duration only, to Rotorua, in the celebrated "Hot Lakes" district, which is one of the chief "lions" of New Zealand. But my time was so fully taken up in seeing the numerous geysers, boiling springs, mud volcanoes, and other most interesting sights of the neighbourhood, that I got only one afternoon's collecting with my friend Dr. Swale, who was then residing at Rotorua. After driving to the summit of Mount Ngongotaha, 2554 feet high, which overlooks the plain and lake of Rotorua, and having enjoyed the extensive and most striking view from thence, we walked down to the plain through a very fine and luxuriant piece of "bush." Some very good beetles were taken on this occasion, including the curious weevils *Ectopsis ferrugalis*, Sharp, and *Indecentia nubila*, Br. Dr. Swale secured a specimen of the fine and rare Longicorn, *Navomorpha stictica*, Br., on the top of the mountain, and I met with its congener *N. lineata*, F., on the plain at Rotorua the next morning.

III.—LYTTELTON.

Next to Wellington, the port in New Zealand visited most frequently by the "Ringarooma" was Lyttelton, our longest stay here being from October 30th to December 21st, 1901, when, during the greater part of this time, we enjoyed the company of the Antarctic exploring ship "Discovery," previous to her adventurous voyage to the South Polar Regions.

The harbour of Lyttelton is decidedly the best sheltered and most commodious port in the Islands, it being situated not far from

the head of Port Victoria, a deep inlet in the rugged and mountainous Banks Peninsula, and further improved by the construction of a very fine breakwater. The town is built at the foot of a splendid amphitheatre of hills, the remains of a vast crater which has long been extinct. On their steep grassy sides there is in places a fair amount of low scrubby "bush," but no trees of any size; and from their summits, 1200 to 1600 feet high, on a clear day, a magnificent view of the city of Christchurch and the broad Canterbury Plains, with their background of snow-tipped mountains and long, gently curving foreshores, may be obtained. Access to these Plains is easily gained by the railway to Christchurch, which is carried through the hills by a tunnel nearly two miles long. The flat meadows near the city, with their weeping willows, poplars, hawthorn hedges and patches of furze, and the familiar home weeds meeting the eye at every turn to the practical exclusion of every indigenous plant, have a more completely English aspect than any other part of New Zealand that I have seen. Christchurch is a pleasant, thriving, and well-built city, and boasts of an exceedingly fine museum, in which the remains of those strange and gigantic birds the "Moas," so abundant up to a comparatively recent date in the Islands, are especially well represented. The Museum also contains a first-rate collection of New Zealand insects of all orders, to which, thanks to the kindness of the learned and genial Curator, Capt. F. W. Hutton, F.R.S., I was allowed to have unrestricted access at all times.

Very few insects are apparently to be met with on these plains, but the rugged hillsides behind Lyttelton produce a good many interesting *Coleoptera*. The commonest and most conspicuous of the *Carabidæ* is the large shining green *Trichosternus antarcticus*, Chaud., an exceedingly handsome beetle found usually under stones, and in this situation the smaller black *Pterostichus suteri*, Br., *P. procerulus*, Br., *Dicrochile subopaca*, Bates, and the flat *Demetrida picea*, Chaud., all occur in some numbers. Three species of the Heteromorous genus *Cilibe*, *tibialis*, Bates, *granulosa*, Brême, and *opacula*, Bates, the last being the largest and commonest, are found under the loose blocks of lava in plenty, and a fourth smaller species, *C. huttoni*, Sharp, is apparently restricted to the seashore. Under small pieces of decayed wood in some patches of weather-beaten scrub on the hill-tops I got quite a number of interesting little weevils, *Colydiidæ*, and Longicorns (*Somatidia*, &c.), and the curious spiny ♂ of the weevil *Psepholax coronatus*, White, was found here in the wood of the "ribbon-bark" tree, *Plagianthus betulinus*. At a somewhat lower elevation, beating

ROBERT MCLACHLAN died at his residence, West View, Lewisham, on the 23rd inst.

We know that this announcement will be received with sorrow throughout the Entomological World, and especially in the circle of the readers of our Magazine, but to us, as Editors, who have always looked up to him as our Chief, his death is a loss which it will take long to realize and still longer to repair. As the sad news did not reach us till after this number was in print, we must ask our readers to await further particulars, until we can give a full obituary notice in our next.—EDS.

May, 1904.

produces not rarely, among many other small beetles, the lovely little Longicorn *Zorion castum*, Br., a perfect little gem in dark shining blue armour varied with golden-orange; and *Gastrosarus nigricollis*, Bates, a rare and curious member of the same group, turned up on one occasion almost in the town. The small yellow flowers of the "Spaniard," *Aciphylla squarrosa*, a quaint spiny resinous-scented Umbellifer, usually swarm with small forms allied to *Dasytes*, and with the olive-grey weevil *Cyttalia dispar*, Br.; the blue Telephorid-looking Heteromeron *Selenopalpus cyaneus*, Fab., occurring more rarely. Dry carcasses of sheep, which are not infrequent on the hill-tops yield the usual *Creophilus oculus*, Fab., *Epuræa antarctica*, White, and our *Omosita colon*, L., and *Necrobia rufipes*, De G., in abundance; the fine *Quedius antipodum*, Sharp, is much more rare, and on one occasion only I met with our *Carcinops 14-striata*, Steph.

At Sumner and New Brighton, two favourite little watering-places within easy reach of Christchurch, are fine sandy beaches on which some interesting beetles are found. *Pachylopus lepidulus*, Br., *Actizeta albata*, Pasc., *Lagrioida brouni*, Pasc., and two species of *Phycosceis* occur more or less commonly under dead birds and fish, and among the littoral weevils are two species (*alternata*, Broun, and *discors*, Broun) of the *Hypera*-like genus *Cecyropa*; *Philacta maculifera*, Broun., like a pallid *Erirrhinus* in aspect; and the little rugose testaceous-red *Aphela pictipes*, Broun. All these four, detected for the first time by myself, occur under seaweed, &c., at (and sometimes below) high-tide mark, and in the loose sand at the roots of the maritime rush *Desmoschænus spiralis*.

Some of the indigenous butterflies are more plentiful at Lyttelton than the appearance of the locality would lead one to expect, and this is especially the case with *Pyramcis gonerilla*, Fab. This beautiful insect, the Antipodean representative of our *P. atalanta*, resembles it greatly in flight and habits, and may be seen on the wing almost throughout the year. Specimens in quite fine condition occur even in July (mid-winter) but it is in its prime in February and March; and in December, the larvæ in almost any number may be collected from the foliage of their food-plant, *Urtica ferox*. This is, as its name would suggest, a particularly formidable member of its genus, and is a shrub often six feet high, with a woody stem as thick as one's arm, the leaves and their stalks densely set with whitish spines rather than hairs, possessed of most pronounced stinging powers. The larva of *P. gonerilla*, like that of its English relative, inhabits a little tent formed by drawing three or four leaves of its food-plant together

(*cf.*, Mathew, *Entomologist*, Vol. xvii, p. 220), and is quite easy to find; but searching the plants resulted in so many stings, that I adopted the method of gently stirring the foliage of the *Urtica* with a stick at arm's length over the umbrella, when the caterpillars tumbled out readily enough. They vary greatly in colour, from very pale to dark greenish-grey, and the lighter-coloured ones, especially when about half-grown, bear a striking resemblance to the broken-off leaf-stalks of the nettle, with their bristling array of pale spines. A few pupæ were found attached to the nettle leaves, and I bred a very fine series of the butterfly in January, the duration of the chrysalis stage being about three weeks.

The bright and lively little "copper," *Chrysophanus salustius*, Fab., appears on the wing early in November very commonly, and frequents the flowers of *Sisymbrium*, white clover, and other weeds growing along the roadsides. A second brood of smaller and darker specimens comes out in March, but is much less numerous than the earlier one. Its congener, *C. enysii*, Butl., is much less generally distributed, but I found it commonly on the road between Lyttelton and Sumner, in November, 1901. It is partial to the greenish-white flowers of a climbing species of *Muehlenbeckia*, and its rich dark appearance readily distinguishes it from *C. salustius* when flying. I have bred *C. enysii* in March from a small pea-green onisciform larva found on the common sorrel, *Rumex acetosa*. *Lycæna oxleyi*, Feld., a small but distinct species, is taken in the same situations, but is by no means common.

I made two excursions, in November and March respectively, to Rakaia, thirty-six miles by rail south of Christchurch. It is a small town situated on the river of the same name, the shingle bed of which is a very characteristic piece of South Island scenery. The Rakaia, a rapid torrent of considerable volume as it issues from the central mountain-range, flows south-eastwards through the Canterbury Plains in a level expanse, a mile or more in width, of blown sand, gravel, shingle, and boulders as big as one's head or larger, the shingle predominating. In most parts of this river-bed there is a fair amount of dwarf vegetation of a very peculiar and interesting character, competing with the imported furze, broom, and the American *Lupinus luteus*, which last has been extensively planted on the sandy seashores, and is spreading rapidly. My chief object in visiting Rakaia was to obtain the very local and distinct *Cicindela wakefieldi*, Bates, but on the first occasion it did not put in an appearance. However, I took a

number of interesting *Bembidia*, *Staphylinidæ*, &c., on the moist sand, and a single example of the rare and curious little Lamellicorn, *Psilodontria viridescens*, Br., basking on a hot stone. I was rather surprised, too, to meet with a few specimens of the pretty Satyrid butterfly, *Argyrophenga antipodum*, Dbld., among the tussock grass, surely at a very early date (November 1st) for this species. On my second visit collecting was rendered almost impossible by the clouds of dust and sand raised by a hot north-west wind, but I managed to take a small series of *C. wakefieldi* (which was almost over) and found a few of what is probably our British *Gnathoncus nannetensis*, Mars., in the remains of a long defunct horse partly buried in the sand.

IV.—PORT CHALMERS, TIMARU, AKAROA.

We saw but little of Dunedin and of Port Chalmers, its seaport, as we were at the latter place for a very few days on two occasions only, in October, 1901, and September, 1902; but my success in collecting here, under conditions of weather by no means favourable, has often made me wish that our visits to this picturesque and interesting locality had been more frequent and of longer duration.

For several miles round Port Chalmers the country is even more hilly and broken than at Wellington, and has evidently been covered up to a quite recent date with fine "bush," large patches of which still remain on some of the higher slopes. In October, the steep pasture-lands looked as if they were covered with a light fall of snow, from the abundance of our English daisy, *Bellis perennis*, and these were varied by acres of golden broom and gorse, in the most profuse and beautiful bloom that I have ever seen. These flowers are however quite unattractive to the indigenous insects, and very few were obtained by general beating. Under the big logs in all stages of decay, which are plentifully strewn about on the slopes, some interesting *Carabidæ* were found, the largest of these being *Mecodema sculpturatum*, Chaud. This fine species has quite the habit of its relative, our familiar *Brosicus cephalotes*, L., of feigning death by opening its mandibles to their widest extent, and sticking out its legs rigidly in every direction. Its ally, the shining brenzy *Oregus inæqualis*, Cast., was found sparingly, and a large and fine form of *Enarsus* was not rare, clinging to the under-side of pieces of wood, apparently preferring those that had been charred; and on one of the highest hills I found a rare and pretty Elater, *Evæolus obsoletus*, Br. Under the bark of "Rimu," several nice Longicorns were taken, including the

very pretty sage-green *Agapanthida pulchella*, White, *Eburida sericea*, Sm., and *Somatulia antarctica*, White, one of the largest of the genus; a red-spotted form of *Chaetosoma scaritides*, Westw., the flat *Promanus depressus*, Sharp, *Pycnomerus*, *Philothermus* (very like *Cerylon*), *Diagrypnodes*, and other interesting Clavicorns, occurring in the same situation. *Anchomenus otagoensis*, Bates, and a rather fine *Cilibe* (*otagenis*, F. Bates) were fairly common under stones near the seashore.

During our September visit the weather was very cold and stormy throughout, the hills were more than once whitened with snow to the water's edge, and collecting was by no means easy. Still I managed to pick up a few good beetles, and of these the most interesting was the minute blind Carabid, *Cilenum* (?) *subcæcum*, Sharp, which was pointed out to me under deeply imbedded stones by my friend Mr. J. H. Lewis, of Ophir, Otago, with whom I had a pleasant afternoon's beetle-hunting. Under bark, both old and recent, I found *Agapanthida pulchella*, White (not rare), *Lenax mirandus*, Sharp, *Ulonotus*, *Platypus*, *Tomicus*, *Cryptodacne*, and *Artystonus erichsoni*, White, the largest of its genus. A few Longicorns, *Didymacantha ægrotæ*, Bates, and *Hybolasius crista*, Fab., among them, were shaken out of dead leafy boughs on the ground, and *Necrophilus prolongatus*, Sharp, was found in large numbers in a dead cat.

Leaving Port Chalmers on September 22nd, a call of three or four days' duration was made at the thriving little seaport of Timaru, 120 miles to the northward, on a low straight open coast fronting the South Canterbury Plains, but possessing a fine breakwater which makes a good artificial harbour. In one or two walks on shore, I found the country very unsuitable for collecting, it being nearly all dry pasture, arable, or "tussock" land, with endless hedges of furze and belts of pine and "blue-gum," but not a bit of native "bush" within several miles. Among the few *Coleoptera* found here were two fine species of *Trichosternus*, the green *T. vivens*, Br., and a species very like *T. antarcticus* in size and build, but coal-black in colour; and a fine *Cilibe* allied to *C. opacula*, Bates, but probably distinct. A small patch of sand, which had accumulated on the shingly beach since the construction of the breakwater, produced a pretty little *Bledius* commonly, *Cecyropa*, *Lagrioida*, and a plentiful supply of *Pachylopus lepidulus*, Br., under a big dead skate.

Further up the coast, near the head of a fine well-sheltered inlet in Banks Peninsula, is Akaroa, a quiet and pretty little town much

resorted to by visitors from Christchurch. It is almost hidden in groves of English fruit trees, and behind it the hills rise in a fine amphitheatre to a height of 2000 to 2500 feet. As usual, very little of their original forest clothing is left, except bleached logs and stumps; and a few noble Totara pines scattered over the slopes testify to its former beauty and luxuriance. We were here for two or three days in March, 1902, but I then found little except a fine undescribed species of *Trichosternus* (*akaroensis*, Broun) which was not rare under logs and stones; and the little "Blue," *Lycæna oxleyi*, Feld., was taken in some numbers flitting along the roadsides among white clover.

In the following October the conditions were much more favourable for collecting, and I met with some very nice insects. The Kowhai trees (*Sophora tetraphylla*) were then in full golden blossom, and looked almost as brilliant as laburnums; and their profuse store of honey was attractive to multitudes of hive-bees, as well as to those beautiful birds the Tui or "Parson-bird" (*Prothemadera novæ-zelandiæ*), and the Korimako or "Bell-bird" (*Anthornis melanura*) the most melodious of New Zealand's songsters, but both rarely seen and heard so near to civilization now-a-days. *Coleoptera* did not seem to appreciate these flowers, but a good many small forms were taken by general beating, among them the lovely *Zorion castum*, Br., in some numbers. Under stones and logs occurred two species of *Enarsus*, *Dorcus squamidorsis*, White, *Somatidia antarctica*, White, and *Trichosternus akaroensis* again in plenty; more sparingly a rather handsome Staphylinid, *Creophilus huttoni*, Br., and a very fine, nearly smooth form of *Mecodema* of large size, *M. walkeri*, Broun. In a very rotten log I found an interesting and rather rare little stag-beetle, *Ceratognathus helotoides*, Thoms., in considerable numbers.

V.—PICTON, PELORUS SOUND.

The north-eastern corner of the South Island, at the entrance of Cook's Strait, is indented by an intricate series of deep narrow inlets or "sounds," presenting some of the most picturesque and striking scenery in New Zealand. At the head of one of the largest of these, Queen Charlotte's Sound (Captain Cook's favourite harbour in New Zealand) is the small town of Picton, on a beautiful little harbour, completely land-locked and surrounded by lofty hills, which are still well wooded, though fire and axe have worked sad havoc on the once luxuriant forest which clothed the shores of the Sounds.

We were at Picton for three days in February, and ten days in March, 1902, and I found it a very good and interesting locality for collecting, though by no means easy to work, from the steep and rugged character of the hillsides, and the paucity of available paths. One afternoon's work in February produced the respectable number of 52 species of *Coleoptera*, including 12 Longicorns, obtained almost entirely by general beating. A large felled "Tawhai" (*Fagus sp.*) retaining most of its dry leaves, was especially productive, and from it I got, among many others, the Longicorns *Diastamerus tomentosus*, Pasc., *Hybolasius viridescens*, Bates, *Didymacantha jucunda*, Br., and the neat little *Stenellipsis cuneata*, Sharp, as well as the very pretty *Anthribus rudis*, Sharp, conspicuous for its bright white thoracic basal spot, all in some numbers. Among the numerous weevils, the curious *Stephanorrhynchus curvipes*, White, came rather freely off the arborescent *Fuchsia*; this beetle, when feigning death in the umbrella, with its legs closely tucked up, bears in shape as well as in colour, a really ludicrous resemblance (*very* much in miniature) to a duck plucked and trussed ready for roasting. Under logs a form of the evil-smelling *Trichosternus planiusculus*, White, with red legs, and the ebony-black *Holeaspis myrmidon*, Sharp, were common, and *Zæopæcilus calcaratus*, Sharp, a really brilliant Carabid of fairly large size, occurred sparingly; also *Zolodinus zealandicus*, Blanch., and an apparently undescribed species of *Syrphetodes (simplex)*, Broun). A rather dark form of *Cicindela latecincta*, White, was common in dry open places, and one example of the pretty little *C. huttoni*, Br., was taken running among grass. Almost the only butterfly observed at Picton was the common *Lycæna phæbe*, Murray.

In July, 1902, a visit of two days only was paid to Pelorus Sound in the same district, and I was enabled to collect in a beautiful wooded gully, left intact amid the general wreck of the forest. The weather was very cold, and hoar-frost lingered throughout the day in sheltered places, but a good many interesting beetles were met with. *Zolus femoralis*, Br., *Brontopriscus sinuatus*, Sharp, *Parabrantes setiger*, Br., *Recyntus tuberculatus*, Br., *Ulonotus viridipictus*, Woll., and another undescribed *Syrphetodes (nodosalis)*, Broun) were found more or less plentifully under loose bark, and were all fairly active, though they were frequently picked out from among pieces of ice; and the deeply sculptured *Holcaspis ædinemema*, Bates, was very common under logs in open places.

(To be continued).

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (9).

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

ARGINI.

In my last paper I separated *Trichiosoma tibialis* (the hawthorn-species) from *T. latreillei* (attached to the willow) chiefly by its having the tibiæ black or brown instead of yellow. Mr. Claude Morley, however, has been good enough to send me a number of *Trichiosoma* specimens bred from hawthorn, from which it is evident that this character is reliable only for the ♀♀—all of that sex in his “sending” having dark tibiæ, and all the ♂♂ yellow ones. Before attempting to correct my Table, however, I ought to have more materials than at present in the shape of fresh British specimens of *tibialis* and *latreillei* ♂♂. Konow, besides the colour of the tibiæ which he warns us may be deceptive, gives pilosity-characters which he regards as more important. But I must own I have failed to recognise the “sammtschwarzen Hinterleibsrücken” ascribed by him to *tibialis* in Mr. Morley’s ♂♂, though it is sufficiently apparent in the ♀♀. All I can do at present is to acknowledge the imperfection of my Table, but leave it uncorrected till I get fresh light on the matter.

We come now to the remarkable Genus *Arge*, Schrank (= *Hylotoma*, auctt.). Here again I am under the disadvantage that my collection consists mainly of foreign specimens; and it may be, therefore, that the Tables I have constructed should be modified in some points to make them hold good for the British forms of certain species: e.g., the aberrations of *ustulata* described by Mr. Cameron as not unfrequent in Scotland are quite unknown to me, and I have had to leave them out of account. As far as my own experience goes, the characters I shall mention for separating *Arge*-species are constant and easy to recognise. But in several cases I know only continental forms of species recorded by Mr. Cameron as British, and it is quite possible that these may differ somewhat from those occurring in this country.

SYNOPSIS OF BRITISH *ARGE*.

1. Abdomen orange-yellowS.
- Abdomen purplish-black, or metallic blue or blue-green.....2.
2. Legs entirely dark; basal half (or more) of upper wing generally fusco-violaceous, costa and stigma entirely of that colour; pilosity of head and thorax dark and very short, inconspicuous3.

- At least the hind tibiæ pale; wings, except for a dark streak near the base of the stigma, either clear or yellow, in the latter case the costa and the apex of the stigma are also yellow; pilosity of head and thorax (see especially the mesopleuræ) longish, pale, and in some lights very conspicuous5.
3. The sides of the 3rd cubital cell formed respectively by the radius and the cubitus, are nearly equal4.
- The 3rd cubital cell is very much longer on the radius than on the cubitus, its apical height also strikingly exceeds its basal height (nearly twice as high!). The smallest and slenderest of our species*cærulescens*, Geoffr.
4. 3rd cubital *n.* almost straight (wings very dark)*cæruleipennis*, Retz.
- 3rd cubital *n.* arcuate, its centre bulging out considerably towards the apex of the wing. (Wings generally less deeply infuscated than in the preceding species).
enodis, Linn.
5. Wings yellowish, costa and apex of stigma yellow6.
- Wings nearly clear, costa and stigma fuscous7.
6. Radial cell with a dusky streak crossing its base and that of the stigma, but with its apex clear and unclouded. Colour of body uniform, brightly metallic, greenish. All tibiæ and tarsi pale*ustulata*.
- Radial cell dusky both at base and apex. Body blackish, hardly metallic, with pale subtriangular apical marks (distinct in the ♀ but hardly visible in the ♂) on the first three or four dorsal segments at the abdomen. Legs as in *ustulata**atrata*, Först.
7. Hind tibiæ white at base. Wings without conspicuous dusky streak at base of radial cell*ciliaris*, Linn.
- Hind tibiæ generally dusky at base. Base of radial cell with a distinct fuscous streak*fuscipes*, Fall.
8. Prothorax entirely orange. Saw sheath of ♀ laterally compressed, making it look narrow as viewed from above. Tibiæ and tarsi ringed at their apices with black. Wings yellowish, with dark costa and stigma, no fuscous streak at base of the radial cell*roseæ*, De G.
- Prothorax never entirely orange, generally concolorous with the mesonotum (blue-black or green-black). Saw sheath of ♀ not compressed, forming (as viewed from above) two wide bulging lobes9.
9. Sides of thorax and legs more or less obscurely variegated with dull reddish-yellow. Wings rather faintly clouded throughout with violaceous brown (not yellow). Costa and stigma fuscous. No conspicuous streak at base of radial *c.**pagana*, var. *stephensii*, Leach.
- Sides of thorax immaculate10.
10. Wing fusco-violaceous; costa, stigma, and legs entirely, dark...*pagana*, Panz.
- Basal half of wings, costa, apex of stigma, and legs in part, yellow11.
11. Hind femora partly yellow. Wings with a very conspicuous dark streak at the base of radial *c.* Metallic reflections of thorax and legs generally intensely blue*cyanocrocea*, Först.
- Hind femora entirely dark (only tibiæ and part of tarsi yellow). Fuscous streak at base of radial *c.* seldom very conspicuous, sometimes quite obsolete. Blue reflections of body, &c., less vivid, sometimes decidedly greenish*melanochroa*, Gmel.

The names of species in the above Table all agree with those used by Mr. Cameron in the "Monograph" except *cærulescens*, Geoffr., which is his *gracilicornis* (= *cyanella*), Klug.

In his Plate I, Vol. iii, however, several of the Figures seem to be wrongly numbered. Thus Fig. 9 (not 10) certainly represents *atrata*; and, to judge from the neururation, Fig. 6 (not 7) must be his *gracilicornis* (= *cærulescens*), and Fig. 7 (not 6) *enodis*, but the 3rd cubital *n.* in the latter is hardly curved enough, and the wings in this species are generally lighter (not darker) than in *cærulescens* and *cæruleipennis*. His Fig. 8 seems to be, as he calls it, *ustulata*; but all the specimens I have seen, both British and foreign, are greener, and have far paler legs. Fig. 10 cannot possibly be *atrata*; but what it is I know not, unless it be a *ciliaris* with abnormally dark wings and hind tibiæ. (My own specimens of *ciliaris* are all foreigners). Fig. 1, *pagana*, does not represent the typical form of that species, but apparently the variety *stephensi* (to which, I may say, all the British specimens of *pagana* as yet seen by me belong).

I am afraid I can say nothing worth saying as to their distribution in this country, except that *cyanoerocea* is certainly far the commonest species—more common than all the rest together! It is especially partial to umbellifers. I have seen very few British examples of *fuscipes* or *atrata*, and none, to my recollection, of *cæruleipennis*, *melanochroa* (though C. calls it "common in the South of England"), or the typical form of *pagana*, though I have several British specimens of its var. *stephensi*.

Schizoceros, as Konow writes it (= *Schizocera*, C., = *Cyphona*, Thoms.) is closely related to *Arge*. To the characters given for distinguishing them in my Generic Table it may be added that in *Schizoceros* the hind tibiæ are not *spined* as in the other genus. Two species are recorded as British and these are separable at a glance, *furcatus*, Vill., being larger and with the abdomen orange-red, while in *geminatus*, Gir., it is black like the head and thorax. I have only foreign specimens of *furcatus*; but of *geminatus* I have a British ♂ taken by Col. Yerbury, and labelled "Cusop. 2, vi, 1902," and a ♀ from the collection of Dr. Capron. In the Cameron collection at South Kensington there is only one *Schizoceros*, which stands to represent *furcatus*, but evidently belongs to the other species. Stephens says he has "seen" specimens of *furcatus* only from "Somersetshire, near Bristol." In his collection there are a few specimens without mark of locality. (*Query*—Does it now occur in Britain?).

As I have already done in the case of *Cimbex*, I must at present ask to be excused from discussing the British species of *Lophyrus*. I have never collected in Scotland, which seems to be their headquarters; and all the specimens I possess, except a few of *pini*, are foreigners. Under these circumstances I think my readers will lose nothing if I pass on at once to the groups with whose British representatives I am more familiar. In the next paper, therefore, I hope to commence dealing with the Nematids, whose discrimination seems at present to be found very difficult by most English collectors. I cannot hope to remove these difficulties altogether, but I may perhaps be able to diminish them, mainly by presenting to my readers the results arrived at by Herr Konow in his latest researches, so far as they concern species known to me as British.

NEW HAWAIIAN LEPIDOPTERA.

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

The five following new species were included amongst some insects taken by Mr. R. C. L. Perkins whilst collecting on his own account (not on behalf of the British Association Committee) in the island of Molokai, and sent to me for determination.

HYPENODES LEPTOXANTHA, *n. sp.*

♂. 18 mm. *Head* and *thorax* dark fuscous, irregularly mixed with pale yellowish. *Palpi* 7. *Antennæ* moderately bipectinated, towards apex filiform. *Fore-wings* as in *H. epichalca*; dark fuscous, with some fine scattered pale yellowish scales; lines very slender, pale yellow, subbasal inwardly oblique, first angulated near costa, second forming a wide quadrangular loop outward between $\frac{1}{3}$ and $\frac{2}{3}$; several yellow dots on costa posteriorly. *Hind-wings* dark fuscous.

One specimen, Molokai, at 4500 feet, in February. Probably most allied to *H. epichalca*, having shorter and broader wings than the other five Hawaiian species of the genus, and longer palpi even than *epichalca*, from which it differs obviously by the much finer yellow lines, and dark fuscous hind-wings.

HYMENIA EXODIAS, *n. sp.*

♂. 24 mm. *Head* dark fuscous mixed with ochreous-whitish, back of crown ochreous-white. *Palpi* dark fuscous, second joint with upper $\frac{2}{3}$ ochreous-white except fuscous apex. *Thorax* dark fuscous. *Abdomen* dark fuscous, segmental margins white. *Fore-wings* with costa obviously sinuate, termen waved, obliquely bowed; dark fuscous; dorsal extremity of first line whitish; a transverse-oblong discal spot indicated by whitish lateral margins, resting beneath on angle of second line; second line sharply marked, thick, ochreous-white, rising from $\frac{5}{4}$ of costa

parallel to termen, middle third thinner, waved, rather abruptly curved outwards, then rectangularly angulated inwards beneath discal spot, lower third much broader and fascia-like, perpendicular to dorsum; a pale brownish-ochreous streak mixed with whitish connecting dorsal extremity of this line with lower part of median curve: cilia fuscous, darker towards base, irregularly barred with whitish, more broadly above middle of termen and above tornus. *Hind-wings* with termen waved, sinuate beneath apex; dark fuscous; an irregular white median fascia, broadest in the middle; a cloudy fuscous-whitish slightly sinuate postmedian line; cilia ochreous-white, basal half spotted with dark fuscous.

One specimen, Molokai, at 1000 feet, in January. This is a very curious insect; it has the normal structure of *Hymenia*, and its specific relationship to *H. fascialis* is obvious; it is certainly not an abnormal variety of that species, being quite different in form of wing (especially in the sinuate costa) as well as in markings, but as a derivative species it is certainly unexpected. It is conceivable that it might be a natural hybrid between *H. fascialis* and one of the native allied (but structurally very distinct) species of *Omiodes*; the modification of form and markings is such as might be expected in this case, but this is a mere suggestion, which will be sufficiently disproved if other examples are taken.

MESTOLOBES SICARIA, *n. sp.*

♂. 18-22 mm. *Head, thorax* and *abdomen* dark fuscous, anal tuft pale brownish-ochreous. *Palpi* fuscous. *Legs* fuscous, obscurely ringed with whitish-ochreous. *Fore-wings* rather dark fuscous; lines obsolete; a more or less obscure small pale ochreous spot on costa about $\frac{3}{4}$: cilia fuscous, with dark fuscous basal line. *Hind-wings* blackish; dorsal lobe long, ochreous-whitish, terminal hairs dark fuscous towards extremity; costal hairpencil whitish-yellowish; cilia as in *fore-wings*.

Twelve specimens, Molokai, at 4000 feet, in February. An obscure-looking but quite distinct species.

SCOPARIA GYMNOPSIS, *n. sp.*

♂. 21 mm. *Head* dark fuscous, with a few white scales. *Palpi* dark fuscous, base white. *Thorax* orange mixed with dark fuscous, with a few white scales. *Abdomen* pale greyish-ochreous. *Fore-wings* orange, mixed with dark fuscous, costa narrowly, termen and dorsum broadly suffused with dark fuscous, with some scattered white scales; first line silvery-white, oblique, rather irregular; orbicular and claviform almost obsolete; discal represented by some undefined dark fuscous suffusion, preceded by a naked oval patch, in which is a longitudinal narrow cylindrical bladderly swelling; second and irregular subterminal lines indicated by scattered white scales; an interrupted white terminal line: cilia pale fuscous mixed with darker and barred with white, with a dark subbasal line. *Hind-wings* whitish-fuscous, termen narrowly suffused with fuscous; cilia fuscous-whitish, with fuscous subbasal line.

One specimen, Molokai, at 4500 feet, in February. Allied to *S. ianthes*, but much less ornamentally coloured; the conspicuously defined naked discal patch is an obvious characteristic; a similar structure is found in the male of *ianthes*, but less marked, so that I had in that species mistaken it for an accidental denudation.

SCOPARIA ISOPHÆA, *n. sp.*

♂. 15 mm. *Head* ferruginous-brown, somewhat whitish-sprinkled. *Palpi* ferruginous-brown, base white, apex of maxillary palpi mixed with white. *Thorax* fuscous, somewhat whitish-sprinkled. *Abdomen* light greyish-ochreous. *Fore-wings* ochreous-brown, irrorated with fuscous and sprinkled with whitish; first line indicated by slightly curved rather strongly oblique posterior ferruginous shade mixed with dark fuscous, becoming obsolete towards dorsum; discal spot transverse, suffused, ferruginous mixed with dark fuscous: cilia whitish-ochreous, with fuscous subbasal line. *Hind-wings* fuscous-whitish, posteriorly suffused with fuscous irroration; cilia whitish.

One specimen, Molokai, at 3000 feet, in February. An obscure species, possibly allied to *S. bucolica*.

Pieris rapæ, L., has recently appeared in the islands, doubtless from an accidental importation, and is now common at Honolulu. With reference to this species Mr. Perkins writes—"There is no seasonal dimorphism with it here. It breeds freely on the coast in rocky uninhabited places on *Capparis sandwichiana* (belonging to the order *Capparidaceæ*). Though not parasitised, nor attacked much, if at all, in the caterpillar stage by birds, it does not multiply very enormously, since the ants freely devour the eggs, and an introduced wasp skins and carries off the skins of the caterpillar. The butterfly is common in the winter months, but in Oahu becomes very scarce in the summer months. It is already, I believe, on several of the islands, including Hawaii."

The following fifteen species have not previously been recorded from Molokai; it may be observed that the progress of discovery is tending to reduce the proportion of peculiar species confined each to a single island.

Cosmophila noctivolans, Butl. Varying much in colour.

Eucymatoge craterias, Meyr. One at 4500 feet.

Scotorythra syngonopa, Meyr. Five, taken and bred, up to 1000 feet, in January and February; previously unique, from Kauai. ♂ ♀ 39—45 mm.; one ♀ has narrow ochreous-white fasciæ preceding first and following second lines. *S. triscia*, Meyr. Two at 1000 feet, in January. *S. rara*, Butl. Two at 3000 feet, in February.

Deilephila calida, Butl. Bred from larvæ on *Gardenia*, &c., in February.

Phlyctænia platylenca, Meyr. Two at 4000 feet, in February; also from Oahu.

Pyrausta thermantis, Meyr. Three at 4000 feet, in February; I have this also (unrecorded) from Haleakala, Maui.

Loxostege conisalias, Meyr. One at 4000 feet in February; also from Oahu.

Mestolobes xanthoscia, Meyr. Two at 3000 feet, in February.

Scoparia balanopis, Meyr. One at 3000 feet, in February; also from Oahu. *S. catactis*, Meyr. Six, 1000—3000 feet, in January and February. *S. marmarias*, Meyr. One at 4000 feet, in February; also from Maui. *S. erebochalca*, Meyr. Four at 4500 feet, in February. *S. venosa*, Butl. Three at 3000 feet, in February. *S. hawaiiensis*, Butl., whose occurrence in Molokai needed confirmation, is now established as resident by the capture of two specimens; also taken in Oahu and Maui.

Phlyctænia ommatias, Meyr., and *P. caminopis*, Meyr., are confirmed as good species by the capture of further specimens of both sexes; the former occurs also in Oahu.

Mestolobes arctura, Meyr. A ♂ at 3000 feet, in February, this sex being previously unknown; dorsal lobe of *hind-wings* small, dark fuscous, ending in tuft of fuscous hairs; no costal hairpencil.

The following are unrecorded occurrences in other islands:—

Hyperectis dioctias, Meyr. One female, Kona, Hawaii; resembles the ♂ except by the absence of secondary sexual structures.

Pyrausta litorea, Butl. Bred from *Scævola lobelia*, Waialua coast, Oahu; these are the first good specimens obtained.

Mecyna aurora, Butl. One, Lihue, Kauai.

Scoparia formosa, Butl. One, Waianae Mountains, Oahu, in January. *S. jucunda*, Butl. One, Waianae Mountains, Oahu, in January.

Marlborough: April, 1904.

ON SOME COLEOPTERA IN THE POWER COLLECTION WHICH ARE ERRONEOUSLY DETERMINED.

BY E. A. NEWBERY.

Having recently had occasion to examine the *Cureulionidæ* in the Power Collection I detected some errors of determination, and subjoin a list of them.

Apion opeticum, Bach.—This insect was added to the British list somewhat doubtfully by Rye in 1874 (Ent. Mo. Mag., xi, p. 156), and it has been retained ever since. *A. opeticum* is described by Wencker (Mon. des Apionides, p. 10) as *entirely black*, a point upon which he insists a second time when comparing the insect with *pomona*, F. The description of *opeticum* is correctly given by Fowler, and Rye himself (*loc. cit.*) refers to its invariable black colour. The insects in the Power Collection (♂ and ♀) have dark blue elytra, with the sutural

striae not quite reaching the base, an important structural character. They are certainly not *opeticum*, Bach., which must be deleted from our lists.

With regard to what these insects really are, I have had a specimen identical with Dr. Power's in my collection under the MS. name of *purpuratum*, nov. sp., since 1884, taken by me in company with *pomonæ* on the Deal sandhills in August of that year. Not knowing all the European species in the *pomonæ* group I hesitated to bring it forward as new. About a year ago my friend Mr. E. A. Butler gave me a small series of a blue *Apion* to examine, somewhat variable in size, and none perhaps quite so small as my insect. The conclusion that I came to was that they formed connecting links between my specimen and *pomonæ*, and that notwithstanding its minute size, slight differences in the shape of the rostrum and thorax, and more marked difference in the punctuation of the latter, it must be looked upon as an extreme form of *pomonæ*. It may possibly be a new species, since nothing could be more unlike than the general appearance of the two insects, but it cannot be referred to *opeticum*, Bach.

Orchestes sparsus, Fahr.—The "unique" British specimen is a small form of *ilicis*, F. It was confirmed by M. Brisout, but I believe in error, and it should be deleted from our lists.

Hypera elongata, Pk.—The single specimen in the collection is considered by Mr. E. A. Waterhouse to be a rubbed example of *suspiciosa*, Herbst; with this view I concur.

Bagous petro, Hbst., = *Helminthimorphus aubei*.—The insects standing as *petro*, Hbst., all belong to other species. *B. petro* has only occurred in Britain at Askham Bog, York. It is not represented in the Power Collection.

Thryogenes scirrhosus, Gyll.—If Bedel's diagnosis of the above species is correct, and I believe it is, the insects standing as *scirrhosus* are certainly not that species; most of the localities given by Fowler refer to *nerveis*, Pk. Do any of them refer to the true *scirrhosus*?

Although not *Curculionidæ*, the following may be included:—

Lema erichsoni, Suff.—The specimens must all be referred to *septentrionis*, Weise. *L. erichsoni* is not represented.

Haltica ampelophaga, Guér.—The insects are *brevicollis*, Foud., = *coryli*, All. *H. ampelophaga*, Guér., feeds on the vine, and has not been found in Britain.

NOTES ON LEPIDOPTERA FROM HERTFORDSHIRE.

BY A. E. GIBBS, F.L.S.

At a meeting of the Hertfordshire Natural History Society on March 29th, Mr. B. Daydon-Jackson, Sec. Linn. Soc., President, in the Chair. Mr. A. E. Gibbs, F.L.S., Recorder of the Insecta, presented a report on the *Lepidoptera* observed in the county principally during 1903. It was, he said, satisfactory, at the close of a season which had proved so disappointing to collectors, to be able to announce the addition to the county list of no less than nine species of *Lepidoptera*, bringing up the total number of species on the county list to 1158. It was true that these records could not all be credited to 1903, but the majority of them were the result of the past season's work. The new species were (1) *Tapinostola hellmanni*, taken at light by Mr. A. H. Foster, of The Grange, Hitchin. This same observer had also discovered four other specimens of *T. hellmanni* in the collection of Mr. William Hill, of the same town, which are believed to have been taken locally, but the evidence was not sufficiently clear to permit them to be recorded as genuine Hertfordshire specimens. As *T. hellmanni* is a Fen insect occurring in Cambridgeshire and Huntingdonshire, it is not altogether to be wondered at that it should find its way across the county border. (2), *Mamestra furva*: Mr. Foster took a specimen of this West Country insect at light at Hitchin in 1902, and in the same way captured (3) *Agrotis aquilina* in 1903. (4), *Noctua glareosa* was found by Mr. A. T. Goodson, of Tringley, searching the heather bloom on Ashridge Common at night. (5), one of the most interesting captures of the year was that of *Dicycla oo* which was taken at sugar on an apple tree in the garden at New Farm, St. Albans, on July 15th, by Miss Alice Dickinson; it is to be hoped that *Dicycla oo* has come to stay. (6), *Polia chi* was bred by Mr. Foster in 1902, from a larva found at Hitchin on Monkshood, when searching for pupæ of *Plusia moneta*. The specimen is a remarkably light one. (7), *Asthena sylvata* was taken at light at Hitchin by Mr. Foster in 1902. (8), two examples of that beautiful little pyralid, *Pyrausta aurata*, were taken by Mr. A. H. Goodson on the Buckinghamshire border at Dancer's End. (9), the only Tortrix added to the list in 1903 was *Eriopsela fractifasciana*, taken by Mr. Philip J. Barraud, who obtained two specimens by beating a hedge at Aldbury on May 25th. Most of the above nine additions to the insect fauna of the county were exhibited by Mr. Gibbs, who also had on view other *Lepidoptera* taken in Hertfordshire and elsewhere, including long and varied series of *Polia flavicincta* and *Hypena rostralis*, which had been unusually abundant, at sugar in his garden at St. Albans, during the bright spell of autumn weather in October. Mr. Gibbs further remarked that an interesting result of the work of local Lepidopterists during the last few seasons had been the confirmation of several records made by Mr. F. J. Stephens in the early years of the 19th century, thus re-establishing in the county list species which it was feared had disappeared from Hertfordshire. In the "Illustrations of British Entomology" the Purple Emperor, *Apatura iris*, is stated to have occurred near Hertford in July, 1833, "and," continued Mr. Gibbs, "from that time until now, so far as I am aware, no note of the presence of this insect in the county has appeared. I am glad to learn that there is a likelihood, amounting almost to a certainty, that it is still with us, and I sincerely hope that in next year's report I may be able to definitely reinstate the

Purple Emperor in our list. For some most interesting notes on the subject I am indebted to Mr. A. H. Foster, who saw, but having no net was unable to catch, a specimen in 1899 or 1900, settled in the middle of the road which leads by the side of Hitch Wood towards Whitwell. Mr. Foster believes that *A. iris* is to be found in Hitch Wood and also in Knebworth Great Wood, Mardley Heath Woods, and Welwyn Tunnel Woods. The keepers both at Knebworth and Welwyn informed him a few years ago that they not infrequently saw a beautiful purple butterfly settling on dead birds, rats, &c., hanging in their 'larders.' I agree with Mr. Foster that although this is only hearsay evidence it is very suggestive, and coupled with the sight which he obtained of a specimen near the wood it appears conclusive. Mr. Foster further informs me that the late Mr. Frank Latchmore used to tell how, whilst driving by Hitch Wood, he saw a specimen settled in the road. He stopped his horse and tried to catch it with his hat, but failed; an experience very similar to Mr. Foster's. Another of Stephens's early records which has received confirmation is that of the occurrence of *Acontia luctuosa*. For this also we are indebted to Mr. Foster, who possesses two local specimens: one taken on Willbury Hill in 1902, when he missed a second, and another captured in a clover field on the top of Pegsden Hills in 1903. Mr. Grellett also took a specimen last year near Hitchin." A third of Stephens's insects which has again been met with is *Myelophila cribrella*, which was taken at light at Cheshunt by Mr. W. C. Boyd. Allusion was then made by the writer in the paper to the unfortunate meteorological conditions which prevailed during 1903, and their prejudicial influence upon insect life. The bright interval at the beginning of October was one of the redeeming features of a bad year. At this time *Noctux* came freely to sugar, and during the day butterflies were abundant. The great immigration of *Vanessa cardui* was alluded to, and the paper was concluded by quotations from the reports of observers in various parts of the county. A second short paper was then read by the same gentleman recording the addition of thirteen new species to the list of Hertfordshire *Coleoptera*. In the first volume of the "Victoria History of Hertfordshire," Mr. E. George Elliman, of Chesham, had published a most valuable list of 1542 species taken in the county, and he there expressed the belief that these figures represent very inadequately the total number likely to be found, he having observed nearly a hundred additional species in Buckinghamshire, within three or four miles of the Hertfordshire boundary. The thirteen beetles which Mr. Elliman now added to the list brought up the total to 1555.

Meloë brevicollis, Panz., in the Buxton district.—On Friday last, May 6th, I took in Miller's Dale, five miles from here, five specimens of *Meloë brevicollis*. This is the third year in succession in which this insect has occurred to me. The species is extremely local, and is only to be found in a very limited area, say about 300 yards, on a grassy flat near the river. It is not gregarious like its allies, but is found, so far as my experience goes, singly. On the same day, which was brilliantly fine and hot, *M. proscarabæus* occurred in the utmost confusion; some specimens were seen feeding on the flower stalks of the lesser Celandine. The previous week I found several examples of *M. violaceus* in a sandy lane on Goyt Moor, 1100 feet above sea level; this I also took in the same place last year.—J. KIDSON TAYLOR, 35, South Avenue, Buxton: May 9th, 1904.

Request for notes—published or unpublished—of records of Coleoptera in the Isle of Man.—I am at present engaged in the collection of material for the preparation of a Coleopterous fauna of the Isle of Man, which I hope to have ready for publication in the course of some months. With a view to making it as complete as possible, I should be very glad if any "Coleopterists" who have collected at any time in the island would favour me with records of their captures. References to any mention of Manx beetles in entomological literature—especially periodicals—would also be welcomed, in addition to the following somewhat scant bibliography which I have notes of already.

No doubt the first naturalist to visit the Isle of Man was John Ray, but his researches were chiefly botanical: he described the yellow-horned poppy from plants found by him near Ramsey. I am not able to refer to Ray's "Historia Insectorum" (1710) in order to see whether any mention of Manx beetles is made therein.

In Stephens' "Manual of British Coleoptera" (1839) the only species recorded as Manx are *Carabus granulatus*, L., and *Harpalus ruficeps*, Oeskey. To what species does the latter refer?* I cannot ascertain from whom these records were received. It is just possible that the Rev. J. S. Henslow may have done some collecting during his stay in the island in 1819 when he was studying its geology.

Edward Forbes collected natural history specimens during his boyhood in the Isle of Man and afterwards when spending his student vacations. He proposed to write a work on the entire Natural History of the Isle of Man, but only partially carried this out, publishing a small volume on Manx molluscs in 1838, and contributing notes on the Flora for Cummings' "Isle of Man" (1848). He supplied to the later editions of "Quiggin's Guide" a chapter on the Natural History, the only reference to the entomology being as follows:—"The entomology of the island is not attractive, though a few of the rarer *Coleoptera* may be found on the sandy district of the north." Every Coleopterist owes a debt of gratitude to Edward Forbes, for he was one of the pioneers of the study of the geographical distribution of plants and animals, and in his paper "On the Connexion between the Existing Fauna and Flora of the British Isles, and the geological changes which have affected their area" (1846), he enunciates his theory of specific centres of distribution, discusses former land connections, and deals with the Asturian element in the British and more especially in the Irish fauna and flora.

The Rev. Hamlet Clark records a black variety of *Hydroporus 12-pustulatus* from the Isle of Man (Zoologist, 1855, p. 4858).

The Rev. H. A. Stowell, when Chaplain of Christ Church, Maughold, collected beetles for two or three years, and contributed a paper on the Manx *Coleoptera* to the Zoologist, 1862, p. 7895: he mentions that he captured 406 species, chiefly in the neighbourhood of Maughold, but unfortunately only enumerated 82 of them by name. The same writer contributed a chapter on the *Coleoptera* to Thwaite's "Directory of the Isle of Man" (1863), in which a few additional species are named, bring the total up to 100: the number of his captures are now given as 504. I should be glad of any information as to what has become of this collection.

E. C. Rye contributed a "Note on possible effects of isolation" to the Ent. Mo. Mag., March, 1873, p. 243, with reference to a few Manx beetles sent to him for naming by Mr. Joseph Chappell. In this note Mr. Rye mentions a previous

* The *H. ruficeps* of Curtis and Stephens was probably *H. latus*, L., var. *erythrocephalus*, F.—G. C. C.

record in the Ent. Mo. Mag. of *Meloë proscarabæus* from the Isle of Man: I should be glad of reference to this.

E. Birchall mentions three species from the Isle of Man (Ent. Mo. Mag., 1876, p. 65).

In Canon Fowler's "Coleoptera of the British Islands," only 22 species are recorded from the Isle of Man, the Rev. R. P. Murray being given as the authority for two of them, and the Rev. H. A. Stowell, Joseph Chappell and W. G. Blatch, one each.

Dr. J. W. Ellis, in "Contribution towards a Coleopterous Fauna of the Isle of Man" (Proceedings Isle of Man Natural History Society, vol. ii, p. 45), enumerates 50 species taken at Port Erin and neighbourhood, June and August, 1892.

My own notes during the past two years in the Ent. Mo. Mag. I need not detail.—J. HAROLD BAILEY, Port Erin, Isle of Man: May 5th, 1904.

Coleoptera in the Dean Forest.—I have taken on different excursions into this district—*Melasis buprestoides*, scarce; *Elater (lythropterus?)*, a few; *Trichius (fasciatus?)*, scarce; *Phléophilus edwardsi*, one; *Prionus coriarius*, scarce; *Pachyta cerambyciformis*, common; *Metæcus paradoxus*, one ♂; *Orchesia undulata*, a few under beech bark; and one female *Corymbites castaneus*, found settled on my coat during a drive taken on June 24th.—E. W. MORSE, 9, Hill Top Mount, Leeds: April, 1904.

Stridulating Coleoptera: a correction.—I can now state that the loud and free stridulation of *Hydrobius oblongus*, Herbst, arises (*cf.* Ent. Mo. Mag., 1902, p. 249) from friction of the abdomen upon the elytra, which fact I have noticed both during life and by pressing the basal ventral segments of the recent insect, when the sound is distinct though much feebler than when alive.

Geotrupes typhæus, I am now in a position to affirm, stridulates loudly in the manner indicated by Mr. Gahan (Trans. Ent. Soc., 1900, p. 446), and not as I have thought (Ent. Mo. Mag., 1901, p. 66) upon the elytra, though the latter is certainly the method of *G. sylvaticus*. My error arose from the fact that to obviate all sound the hind coxæ must be held quite vertically deflexed, and I have found it difficult to reproduce more than the faintest resonance after death.—CLAUDE MORLEY, Ipswich: May, 1904.

Oxylæmus variolosus, Duft., and *Choleva colonoides*, Kraatz, at Bagley Wood, Berks.—On the afternoon of May 14th I paid my first visit to Bagley Wood, that happy hunting ground of many generations of Oxford entomologists, under the guidance of my friend Mr. W. Holland. The day was fine, and the Wood impressed me very favourably as a collecting ground; but there were few insects on the move, and we did not meet with anything noteworthy until we came across a few faggots of gnarled oak boughs lying in a little flowery glade haunted by midges of the most ferocious description. These faggots were very dry, and so far gone into decay as to break by their own weight when lifted; but from almost the first one shaken over my brown paper I was greatly pleased to turn out a single example of the very rare *Oxylæmus variolosus*, Duft. This curious beetle appears to be of exceedingly sluggish habits, and may quite easily be overlooked as a common *Rhizophagus*. It has already been recorded in this Magazine from the Reading district of Berkshire by Dr. Norman H. Joy (Ent. Mo. Mag., ser. 2, xiv, 1903, p. 174).

Another brief visit to Bagley Wood two days later was unsuccessful so far as *Oxylæmus* was concerned, but the same lot of faggots produced one specimen of *Choleva colonoides*, Kraatz, as well as *Coryphium angusticolle*, Steph., and other more common species.—JAMES J. WALKER, Oxford: May 18th, 1904.

British Diptera wanted.—I should be much obliged if any one would send me fresh or recent specimens for examination and description of *Xylomyia varia*, Meig., ♂ ♀, and *X. marginata*, Meig., ♀. *Beris geniculata*, Hal.: I know the female of the species, which is distinct from *B. fuscipes*, but I have not seen a male. *Sargus*: any yellow legged species except *S. flavipes*, also *S. nubeculosus*, ♂, if such a thing exists. *Pachygaster minutissima*, Zett. *Stratiomys furcata*, Fall.: I cannot distinguish what I have seen from *S. riparia*. *Odontomyia*: any species except *O. ornata*, *tigrina*, and *niridula*; I expect three or four species unknown to me occur in Britain. *Oxycera dives*, Lw., and *O. falleni*, Stæg. *Nemotelus brevirostris*, Meig.: I fear all ours are *N. notatus*, Zett. *Leptis conspicua*, Meig., said to be common in some places, but although I can distinguish *Syrphus ribesii* and *vitripennis* by the naked eye at half a dozen yards distance, I cannot distinguish *L. conspicua* yet even with the aid of a microscope. *L. strigosa*, Meig.: I have never seen any British specimens at all like this. *L.* —*sp.*?: one or two large species of *Leptis* occur in Britain which have no yellowish markings; I want to see more of them. *L. annulata*, De G.: I have never seen this from Britain. *Symphoromyia melæna*, Meig. *Spania nigra*, Meig., ♀. *Xylophagus cinctus*, De G. *Hæmatopota italica*, Meig., ♂: the species probably occurs freely at the mouth of the Thames Valley. *Tabanus glaucopsis*, Meig., ♂. *Chrysops sepulchralis*, Fabr. *Anthrax*: any clear winged species except *A. paniscus*; I believe at least three others occur in Britain. *Bombylius*: any clear winged species. *Psilocephala ardea*, Fabr. *Oncodes pallipes*, Latr. *O. varius*, Latr. *Dioctria linearis*, Fabr., as distinguished from *D. flavipes*, Meig. *Asilus*: several species unknown to me ought to occur in Britain belonging to the old genus *Asilus*, especially such as *Antipalus varipes*, Meig., *Neoitamus socius*, Lw., *Dysmachus* sp.?, &c. *Eutolmus rufibarbis*, Meig. *Scenopinus niger*, De G., and *S. glabrifrons*, Meig., ♂. Or anything else apparently unrecorded as British in the above Families.—G. H. VERRALL, Sussex Lodge, Newmarket: May, 1904.

Anthophora retusa, L.: use of its mandibles as a support.—I was interested the other day at Margate in watching a fine freshly emerged example of the ♂ of the above species, completing its drying and cleaning arrangements before taking flight. It had evidently only left its case a few minutes, and was basking in the morning sun (about 10 a.m.) on a dry grass stem; by clinging on with its mandibles it was able to use its legs freely to clean or dry its sides, wings, &c.; it occasionally balanced itself by using a leg or two, but its mandibles were clearly its chief support. I have often known of species of *Nomada* and other genera being found asleep merely hanging on by these organs, but I have never had the opportunity of personally seeing the mandibles put into use for this purpose; the strength required to thus support the whole body must be enormous in proportion to the size of the insect, but it appeared to be merely a matter of convenience to the creature itself.—EDWARD SAUNDERS, St. Ann's, Woking: May 12th, 1904.

Obituary.

Señor D. Serafín de Uhagon y Vedia, a well-known Spanish Coleopterist, died at Madrid, at an advanced age, on May 5th, 1904. He was one of the original members of the Sociedad Española de Historia Natural, the "Anales" of this Society dating from 1872. He joined the Société Entomologique de France in 1867. His contributions to entomological literature have been mostly upon the *Curculionidæ*, the *Silphidæ*, and the *Malacodermata*. I had the pleasure of making his acquaintance in Madrid in 1901.—G. C. C.

Reviews.

A CATALOGUE OF BRITISH COLEOPTERA: by T. HUDSON BEARE, B.Sc., F.R.S.E., F.E.S., and H. ST. J. K. DONISTHORPE, F.L.S., F.E.S. London: O. E. Janson and Son.

We gladly welcome the appearance of this new catalogue by Professor Beare and Mr. Donisthorpe; eleven years have elapsed since the last catalogue appeared, and since 1893 a considerable number of additions to our list have been discovered by the numerous rising workers at the British *Coleoptera*, and many points of synonymy have been cleared up; as a result about 60 new names have been added, and some 43 names have been removed from the body of the catalogue to the doubtful and introduced lists which are given at the end: the latter list strikes us as well-considered and accurate, but we should have been inclined to increase the list of doubtful species by the addition of such insects as *Tribolium ferrugineum*, *Lathecticus oryzæ*, *Silvanus surinamensis*, and others of the same nature. It is, however, notoriously difficult to draw the line in these cases, and after a species has established itself for a good many years, it ought perhaps to be regarded as naturalized.

As the arrangement followed is our own we are not likely to find fault with it, but we are by no means satisfied with its general correctness, although it is perhaps the best arrangement to work by: no linear arrangement of the *Coleoptera* can be really correct, nor in hardly any case can the affinities be confined to the preceding and succeeding groups. In doubtful matters of synonymy the authors state that they have, as far as possible, brought the list into agreement with the European Catalogue of Heyden, Reitter and Weise; we are glad to see, however, that comparatively very few changes are made in nomenclature. A fresh European catalogue is very much needed, and we hope that before long it may be forthcoming.

With regard to the catalogue in general we must congratulate the authors on its accuracy and completeness; we know from experience how very difficult it is to avoid leaving out a species or genus, even when every care is taken, but we have not detected any such omissions; the type is distinct and clear, and there is a good index; one especial feature of the edition printed on one side of the paper only is that the right hand page alone contains any matter, so that this form of the catalogue can be used as though interleaved for notes and additions. The catalogue is much to be commended, and is indispensable to all who belong to the numerous and increasing body of British Coleopterists.—W. W. F.

THE HONEY BEE: ITS NATURAL HISTORY, ANATOMY, AND PHYSIOLOGY: by T. W. COWAN, F.L.S., F.G.S., F.R.M.S., &c. Houlston and Sons. 2nd edition, 1904.

It is a pleasure to record the appearance of the second edition of this valuable

standard work, which has been revised and corrected by the author. It now contains over 200 pages of matter, with 138 illustrations. The author, who is a skilled microscopist, has taken great pains to verify the important discoveries of others, and has added to these a number of his own original observations. The work is very concisely and clearly written, and has been adopted as the text-book on the subject in colleges and for examination. It has been translated into French, German, and Russian. At 2/6 it is one of the cheapest scientific works published, and it should find a place in the library of every entomologist, as well as that of every bee-keeper.—F. W. L. SLADEN.

BIRMINGHAM ENTOMOLOGICAL SOCIETY: *April 18th, 1904.*—Mr. G. T. BUTHUNE-BAKER, President, in the Chair.

Mr. W. H. Flint exhibited a number of specimens of the genus *Dianthæcia* and some of its allies; amongst the more noteworthy species were *D. compta*, F., from East Ireland, *D. cesia*, Bkh., from Isle of Man, *D. albimacula*, Bkh., from Folkestone, *D. irregularis*, Hufn., from Cambridge, *Calymnia pyralina*, View., from Kingswood, *C. diffinis*, L., from Marston Green, and a specimen of *Valeria oleagina*, F., from an old collection.—COLBRAN J. WAINWRIGHT, *Hon. Sec.*

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: *March 21st, 1904.*—The second ordinary meeting of the session was held in the Royal Institution, Liverpool, Mr. ROBERT TAIT, junr., presiding over a large attendance of members.

In his opening remarks the Chairman congratulated the Society on its steady progress, and dwelt on the fact that although the published proceedings had been considerably increased in the Report just issued, the credit balance in the hands of the Treasurer was much greater than it had been for many years past.

Mr. Wm. Mausbridge, F.E.S., Sefton Park, Liverpool, was elected a member of the Society. Donations to the Library were announced by the Secretary from the Rev. C. J. Buckmaster, M.A., and Messrs. Wm. Webster, M.R.S.A.I., and Fredk. Birch.

The paper was contributed by Dr. J. Cotton, F.E.S., on "Notes of Captures, &c., near Simonswood Moss." After describing the situation and limits of the moss, which is roughly a mile long by three quarters of a mile broad, the lecturer entered into details of the best methods and most suitable nights for sugaring. He prefers to work with a sheet and acetylene lamp, manufacturing the gas on the spot by means of a simple and portable apparatus. The extent of ground to be covered makes a companion desirable for the possibility of meeting with poachers is not a remote one. The only time when a friend seems *de trop* is when single rarities—such as *Acronycta alni* or black *A. leporina*—turn up, and there comes the inevitable division of the spoil! The paper was largely devoted to a description of some 20 of the most noteworthy forms which occur on the moss, including *Notodonta camelina*, *N. dictæoides*, *N. dromedarius*, *Hadena glauca*, *Tryphæna fimbria*, &c., with earliest and latest dates of capture. An enumeration of the *Lepidoptera* taken on this moss shows a total of 156 species, 12 of these being butterflies. A discussion was afterwards carried on by Major Ross, C.B., Messrs. R. Tait, junr., R. Wilding, F. N. Pierce, F. Birch, and E. J. B. Sopp, and it was generally accepted that all the evidence forthcoming corroborated the theory that dampness is the predominant

factor in producing melanism. On the motion of Mr. R. Wilding a hearty vote of thanks was accorded the lecturer. Dr. G. W. Chaster (Southport) exhibited all the species of the genus *Agathidium*, including the recent addition to the British List, *A. badium*. Mr. C. E. Stott (Swinton) showed *Periplaneta australasica*, a cockroach which has now become naturalized at Worsley (Lanes.). Mr. F. N. Pierce, a specimen of *Cryptophagus acutangulus* from Manchester. Mr. J. J. Richardson, *Ptinus tectus* from Liverpool, and Mr. Sopp (Birkhd.) *Panchlora viridis* and *P. virescens* from Liverpool, which had been kindly indentified for him by Mr. Malcolm Burr.

April 18th, 1904.—Mr. RICHARD WILDING, Vice-President, in the Chair.

The third ordinary meeting was held in the Society's Rooms, Royal Institution, Liverpool.

Messrs. William Clitheroe, F.L.S., Ashton-on-Ribble; Thomas Dewhurst, Preston; Walter Rimmer Teare, Birkenhead; and Thos. Temple Morgan, Liverpool; were elected members of the Society. Donations to the Library were announced from Mr. H. St. John K. Donisthorpe, F.Z.S., and the Council of the Manchester Entomological Society.

Communications were read by the Secretary from Major Ronald Ross, C.B., F.R.S., inviting the Society to hold its next meeting, on May 16th, in the Johnston Tropical Laboratory, University of Liverpool, and from the Manchester Entomological Society, accepting the invitation to visit Liverpool in October next.

On the motion of Mr. J. R. le B. Tomlin, M.A., seconded from the Chair, it was unanimously resolved that Rule iv be reconstructed to permit of the election of a certain number of persons residing outside the counties of Lancashire and Cheshire as Corresponding Members of the Society, at half the ordinary subscription: such members to enjoy all the privileges of ordinary members.

Mr. E. J. B. Sopp, F.R.Met.S., communicated a note "On the callipers of earwigs." Mr. F. N. Pierce, F.E.S., read a paper "On the minor-structure of the *Lepidoptera*," in which, by the aid of a long and beautiful series of his preparations shown by the micro-lantern, he was able to show the undoubted general likeness to one another exhibited by the genitalia in certain groups of the Order, which was in many cases very marked. A cordial vote of thanks was accorded the lecturer on the motion of Mr. Wilding, seconded by Mr. Willoughby Gardner, F.L.S., who congratulated Mr. Pierce on the excellence of his slides, and referred to the interest of the subject, as instanced, for example, in *Agrotis ashworthii*, which was shown by the genitalia to be a *Noctua*. Amongst the exhibits were the following:—By Mr. F. N. Pierce, *Cucullia scrophularia*, *C. verbasci*, and *C. lychnitis*; *Acronycta venosa* and *A. albovenosa*. Mr. Willoughby Gardner, specimens of the carpenter bee *Xylocopa violacea* from Northern Italy, with diagrams of its burrows in pine wood, in showing which he gave some interesting facts of its life-history; also live examples of *Nyssia zonaria* taken near the mouth of the Conway, North Wales. Mr. J. J. Richardson, a case of South American, East Indian, and Malayan Hawk Moths. Mr. J. R. le Brockton Tomlin, long series of the red *Elaters*, *E. lythrop-terus*, *E. pomonæ*, *E. elongatulus*, and *E. sanguinolentus*, from Wimbledon, Sherwood, and the New Forest. Mr. W. Mallinson, ova of *Tæniocampa opima*, *in situ* on branches of *Rosa spinosissima* from Wallasey. Mr. E. J. B. Sopp, a

pair of the largest of the European grasshoppers, *Aceridium egyptium*, captured in Southport during 1903; for comparison he also exhibited *Aceridium cristatum* from British Guiana, one of the largest of the genus, and *Locusta viridissima*, the largest of our British grasshoppers, from Freshwater Bay, I. of Wight.—E. J. B. SOPP and J. R. le B. TOMLIN, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
April 14th, 1904.—Mr. A. SICH, F.E.S., President, in the Chair.

Mr. Tonge exhibited a further series of photographs of the ova of *Lepidoptera*, including *Pamphila comma*, *Anticlea badiata*, *Biston hirtaria*, *Oporina croceago*, *Cerastis vaccinii*, and *Hybernia marginaria*. Mr. Main, photographs of *Gonepteryx cleopatra* (bred from Cannes), of *Nyssia hispidaria* in their resting position, and also of the larvæ of *Seienia bilunaria*; also ova of *Colias edusa*, var. *helice*, laid by a ♀ sent to him from Hyerès by Dr. Chapman: they were deposited upright on a glutinous pellucid base, singly or in small batches.

April 28th, 1904.—The President in the Chair.

Mr. Tonge exhibited an album of photographs of a further series of the ova of *Lepidoptera*, including *Tæniocampa munda*, *T. instabilis*, *T. cruda*, *T. populeti*, *Asphalia flavicornis*, *Pachnobia rubricosa*, *Asteroscopus nubeculosa*, &c. As several members expressed the difficulty they had in breeding the last named species, Mr. Adkin said that he had been very successful, no doubt from the care he had taken, first in well washing the food before giving it to the larvæ, secondly by giving sufficient friable earth for the larvæ to pupate in, and thirdly by never disturbing the pupæ. Rev. H. Wood, a number of spiders to illustrate his paper, including *Epeira angulata*, *E. gibbosa*, *E. diademata*, *E. cucurbitina*, and others, obtained by Mr. Carr in the New Forest, with living examples of *Aryyroneta aquatica* (the water spider). Mr. Carr, a specimen of the rare beetle *Elater pomorum* taken from a birch stump in the New Forest. Mr. Garrett, ova of *Brephos parthenias* deposited by a ♀ taken on Wimbledon Common, and placed in a glass shade with twigs of birch in the sunshine. Mr. Tonge, photographs of the ova of the above species. Mr. Manger, a very perfect example of the Elephant Beetle, *Megasoma elephas*, from Venezuela. Mr. Edwards, specimens of *Papilio neptunus* from the Malay region, *P. karna* from Java, *P. andraemon* from South America, and *Morpho anaxibia* ♂ and ♀ from Brazil. Mr. H. J. Turner, living larva of (1) *Coleophora licella*, with its case made of pieces of grass leaves; (2) *C. conyzæ*, with its case made from the hairy cuticle of *Inula conyza*; and (3) *C. troglodytella* with its smooth case made of silk: and he contributed full notes. All were received from Mr. Eustace Bankes, of Corfe Castle, who took them in the Isle of Purbeck, and to whom he was indebted for many details of their life history. Mr. Sich, a short series of *Crambus chrysonuchellus* from the chalk hills east of Guildford, with ♂♂ and ♀♀, and cases of *Taleporia tabulosa* (*pseudo-bombycella*). Mr. Wood read a paper entitled "Notes on *Aryyroneta aquatica* and other Spiders," and a considerable discussion ensued.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *April 20th, 1904.*—Dr. F. A. DIXEY, M.A., M.D., Vice-President, in the Chair.

Mr. Jules Bourgeois, St. Marie-aux-Mines (Markirch), Germany; Mr. James E. Black, Nethercroft, Peebles, N.B.; Mr. Maurice Frederic Bliss, "Coningsburgh," Montpelier Road, Ealing, W.; Mr. Edward F. S. Tyleeote, M.A., Durham House, Lansdowne Road, Bournemouth; Mr. Francis Gilliat, B.A., of Lloyds', E.C., and Forest Dene, Worth, Sussex; were elected Fellows of the Society.

Mr. M. Jacoby exhibited a ♂ specimen of the beetle *Sagra senegalensis* with ♀ characters received from Mr. Barber in Natal, who had taken it *in cop.* Dr. Norman Joy, *Orochares angustata*, Er., taken at Bradfield, Berks., in December 1903—the second recorded British specimen; a species of *Tychius*, which he said might be a variety of *Tychius polylineatus*, Germ. (not now included in the British List), or, more probably, a new species closely allied to it, taken near Streatley, Berks., last year; and two specimens of *Pselaphus dresdensis*, Herbst, taken near Newbury this year. Mr. C. O. Waterhouse, an unnamed species of *Nemoptera* from Asia Minor, resembling *Nemoptera huttei* from Australia. Mr. F. Enock, F.L.S., read a paper on "Nature's Protection of Insect Life illustrated by Colour Photography," and exhibited a number of lantern slides. Mr. P. I. Lathy, F.Z.S., communicated a paper on "New Species of South American *Erycinidæ*."

A discussion followed on specimens of the Dipterous families *Stratiomyidæ* to *Cyrtidæ*, opened by Mr. G. H. Verrall, who said that the object of the discussion was to determine as far as possible the number and distribution of the British Species comprised in these families. The total number of species was but small, as we have only from 130 to 150 in Britain, but the extreme difficulty lies in finding out the correct names for them. This arises from two causes—the paucity of British species as compared with the richness of the European Fauna; and the inadequate descriptions of supposedly well-known species. Colonel J. W. Yerbury, who exhibited some specimens on behalf of Professor E. B. Poulton, F.R.S., said they were of interest mainly on account of the specific names used, which names were useful as showing the nomenclature employed by a past school of Dipterologists, and might give a clue to the manner in which some reputed species have found their way into the British List. The species to which he particularly drew attention were as follows:—(i) *Ephippionymia ephippium*, an insect reputed to have been taken at Combe and Darenth Woods, of undoubtedly German origin; (ii) *Isopogon brevisrostris*, probably the identical specimen referred to in Curtis' British Entomology, as having been taken on The Devil's Ditch, Newmarket; (iii) *Laphria marginata*, stated to have been bred from a hornet's nest; and (iv) some specimens of an Asilid taken by Mr. Holland at Tubney Wood, near Oxford, and which might prove to be *Machinus rusticus*, an insect with a doubtful claim to a place in the British fauna. Mr. Colbran J. Wainwright exhibited and commented upon two specimens of *Anthrax* referred to by Mr. Verrall. He said that hitherto Mr. Verrall had believed that we had lost two species of *Anthrax* in this country, *A. fenestratus* and *A. paniscus*, but that these two specimens, though allied to *A. paniscus*, were abundantly distinct, and could be separated at a glance by the much darker fore-edge to the wings, differing besides in other respects. One had been taken by Mr. R. C. Bradley at Bournemouth, the other by Mr. W. S. Blatch at Poole. Dr. F. A. Dixey and other Fellows joined in the discussion.—H. ROWLAND BROWN, *Hon. Sec.*

In Memoriam.

ROBERT McLACHLAN.

Robert McLachlan, the last Acting Editor of the First Editorial Staff of this Magazine, died in his 67th year on the 23rd of May at Lewisham, and was buried on the 25th in the Tower Hamlets Cemetery, E.C. Born near Ongar in Essex, a liking for Butterflies in childhood impelled him to study botany as a means of ascertaining food-plants of larvæ: and when the local flora failed as a source of novelties for his herbarium, handfuls of foreign hay snatched from passing waggons in town, or obtained from packing cases, were ransacked carefully for exotic grasses. The botanical skill thus acquired was turned to account when (a lad of 18 years) he went on a voyage to Australia and China. He brought back a large collection of Australian plants: the difficulty was to get them named. Assuming that the Keeper of the Botanical Department of the British Museum would be a man likely to know something about them, he conveyed the precious bundles to Bloomsbury, and asked the famous botanist Robert Brown (who held that post) to name the specimens. Mr. Brown good-naturedly complied with the request, devoting a considerable time to the work of identification: and then when all was finished, he proceeded kindly to point out to his visitor, that a public official should not be asked to occupy official hours with private business!

Besides Robert Brown, the late John Van Voorst, of Paternoster Row, took a prominent part in introducing young McLachlan into scientific coteries; and it was probably owing to Van Voorst that he reverted from botany to the pursuit of entomology. Association with Stainton and other specialists of the period when Coombe Wood and Darenth Wood were cited more frequently than now as localities for rarities had, doubtless, much also to do in determining his bent, since for several years *Lepidoptera* and some other Orders (not *Diptera* nor *Coleoptera*) received his attention; for those were the days when General Collecting was much in vogue. This gave him

a largeness of view in entomology, and in his later years a style of action (a survival of the habit of beating for larvæ) more vigorous than was absolutely necessary for the capture of *Neuroptera*, which gives point to the following story. He and a friend, trespassing in West Wickham Wood in quest of *Endromis versicolor*, were surprised by a gamekeeper and promptly turned out. "What, Sir!" said the keeper, in reply to some mild remark, "Not a doing of no harm? Now, then, I tell you Sir, I won't be denying as how cats is bad; aye, and stöats is proper bad: but to my mind, Sir, of all the varmint, you fly-catchers be a long sight the worst!"

In the later "fifties," when Dr Hagen began to contribute "A Synopsis of the British *Neuroptera*" to the Entomologists' Annual, this Order (in the widest sense) became McLachlan's speciality. Hagen and Brauer had indicated the necessity of taking something more than colour and size into account with regard to species: McLachlan proceeded to create a road to exactitude, and with microscope and camera lucida devoted years to the elucidation of structural detail, establishing standards of procedure in working out *Trichoptera* and some of the other Families of *Neuroptera*. The application of his methods to the *Ephemeridæ* and *Perlidæ* was left to others enjoying facilities for their study in the field greater than a London resident could command.

Meanwhile his collection of *Neuroptera* grew apace,—partly through his own captures at home and abroad, and still more largely by purchase, gift and exchange,—until it became the most important in the United Kingdom, rich in specimens authentically named, and in species not yet described. And so Westview, Lewisham, became a resort for Neuropterists of all countries, and a focus of correspondence concerning *Neuroptera* from all parts of the world.

Some time ago he contemplated making over his collections by Deed of Gift to the British Museum (Natural History); but the deed prepared was never executed,—probably because earlier hours for working can be secured at home than are permissible in any public museum, and because while they remained his own property he felt free to break up unique specimens when it was necessary to do so for the advancement of knowledge, piecing them together afterwards with a skill that none but a specialist could admire or appreciate.

While taking a general interest in questions of speculative or theoretical Entomology, McLachlan had no great opinion of writers or speakers whose sole equipment for the discussion of that class of subjects was pen, scissors and paste. Ingenious guessing at

things incapable of demonstration or of actual observation, possessed little attraction to his mind: his tastes and sympathies lay rather with original work and research.

It is impossible here to give any detailed list of his publications. In *Lepidoptera* the earliest was probably in the Entomologist's Weekly Intelligencer, an article on *Acentropus*, Vol. ix, p. 132 (1861). This with another in Vol. x, p. 157, on "Influence of Food upon Variation," and a paper "On the British Species of Tortrices belonging to the genus *Eupæcilia* of Curtis," in the Entomologist's Annual for 1869, p. 83, are his most important contributions in this Order. His first Neuropterous paper appears to have been in the Entomologist's Annual, 1861, pp. 52-58: "Some Suggestions for the Successful Pursuit of the Study of *Phryganidæ*, with a Description of a New British Species." His "Monograph of the British Species of Caddisflies," Trans. Ent. Soc. Lond., 3rd ser., v, pp. 1-184, pls. i-xiv, his "Monograph of the British *Neuroptera-Planipennia*," Trans. Ent. Soc. Lond., 1868, pp. 145-224, pls. viii-xi, his "Monograph of the British *Psocidæ*, Ent. Mo. Mag., vol. iii, and his "Catalogue of British *Neuroptera*," 1870, published by the Entomological Society, are valuable helps to British Neuropterists. He refrained from writing a Monograph of British *Odonata*, on account of his friend Dr. Hagen having published a synopsis of them in the Entomologist's Annual. But the great work of his life was his "Monographic Revision and Synopsis of the *Trichoptera* of the European Fauna," a thick volume of 523 pages, and Supplement of 103 pages and 59 Plates, full of structural details from his own drawings under the camera, the figures altogether numbering about 2000. This was originally published in nine Parts, of which the dates are carefully given at the back of the title page. Other works specially worthy of notice are his article on "Insects" in the 9th Edition of the Encyclopædia Britannica; "Report on the Insecta collected during the Last Arctic Expedition" (Linnean Society); and the "*Neuroptera* of Fedtschenko's Voyage to Turkestan," &c., which, having been translated and printed in Russian, he was unable himself to read after publication, the original MS. therefore had to be returned to him. In the pages of the "Transactions of the Entomological Society of London," the "Journal of the Linnean Society," the "Annales de la Société Entomologique de Belgique," the "Annales de la Société Entomologique de France," the "Stettiner Entomologische Zeitung," the "Annals and Magazine of Natural History," the "Tidjschrift voor Entomologie," the "Horæ Societatis Entomologicæ Rossicæ," the "Meddelelser," the

Soc. pro Fauna et Flora Fennica," the "Revue d'Entomologie, the Mittheilungen der Schweizer. Ent. Gesellschaft," and the "Entomologist's Monthly Magazine," will be found Papers dealing with *Neuroptera* from nearly every part of the globe, the "*Termitidæ*," or "White Ants," however, were practically untouched by him.

He was elected into the Entomological Society of London in 1858, of which he was Secretary from 1868 to 1872, Treasurer from 1873 to 1875, and again from 1891 to the time of his death; and President during the years 1885 and 1886. He became a Fellow of the Linnean Society in 1862, the Royal Society in 1877, the Zoological Society in 1881, and the Royal Horticultural Society in 1888. He was also on the Council of the Ray Society, and an Honorary Member of the South London Entomological and Natural History Society, and of the Natural History Society of Glasgow.

He was a Member of numerous Continental Societies and on the Honorary Lists of the Entomological Societies of Belgium, Holland, Sweden, Switzerland, of the Société Impériale des Amis des Sciences Naturelles, Moscow, and the Societas pro Fauna et Flora Fennica of Helsingfors; he was also an Honorary Member of the New Zealand Institute.

In the affairs of the West Kent Natural History Society, of which he was a prominent Member, and President in 1892-3, he always took a keen interest.

Such has been the life labour, and such were the associations of him whose loss we are now deploring. No more words are wanting to show how great a blow Science has sustained from his death.—A. E. E. and E. S.

EDITORIAL.

We are glad to welcome Mr. J. J. WALKER, R.N., F.L.S., as a member of our Staff; he is so well known to Entomologists, and has been for so long a contributor to our pages, that we are sure no further introduction will be required by our readers. It may, however, interest them to know that he was selected some months ago by our late lamented Editor-in-Chief as a fit person to fill his place and to conduct the affairs of the Magazine.

At Mr. Walker's wish we postponed his appointment until he had been placed on the Retired List of the Navy: he is now able to join us, and we shall look to him in future as our Acting Editor.

ANTIPODEAN FIELD NOTES.

II.—A YEAR'S INSECT HUNTING IN NEW ZEALAND.

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

(Concluded from page 125).

VI.—WESTPORT, &c.

It was my good fortune to be sent on duty to Westport on two occasions, in November and December, 1901. Besides introducing me to a new and highly productive locality these two trips enabled me to see something of the celebrated mountain scenery of the South Island. The first journey across country was performed in very indifferent weather, and as I was then unable to do any collecting on the way, I defer the description of the route to the narrative of my second visit to Westport.

On my arrival at this thriving little town, the headquarters of the coal industry of New Zealand, on the evening of November 14th, I found myself in a flat and well-timbered country, rather swampy in places, and only partially cleared by the usual rough and ready methods. The Buller River is here improved into a fine artificial harbour, by far the best on the west coast of the Islands; and on either side of its mouth a beautiful white sandy beach, in parts sufficiently auriferous to repay washing, extends north and south for several miles. On my first visit to Westport this beach was my only collecting-ground, as the "bush" was impracticable, from the almost continuous downpour of rain which prevailed during the first five days.

On the few occasions between the showers when I was able to get on to the beach, I met with some very interesting beetles, chiefly under the innumerable logs and pieces of driftwood at and above high-water mark. *Cafius*, *Lagrioida*, *Phycosecis*, *Pachylopus lepidulus*, and a very pale form of *Chærodes* (? *unicolor*, Sharp) were all abundant, and under the larger logs were *Mitophyllus parryanus*, White, and a smaller undescribed species of the genus (*M. comognathus*, Broun) sparingly, with numbers of a species of the Heteromerous genus *Sessinia*, so pallid in colour and soft in consistence that at first I thought that they were all immature. *Phycochus graniceps*, Br., was abundant under the more deeply imbedded logs just above the usual high-tide mark, apparently leading an entirely subterranean life; indeed, I doubt whether it ever comes to the surface at all. In the same situation I frequently found the broken remains, and occasionally a living specimen, of *Brullæa antarctica*, Cast., one of the finest

of the New Zealand *Carabidæ*; it is a handsome flattened pitchy-black *Scarites*-like beetle, nearly an inch in length, with remarkably stout fossorial legs.

On the 19th the Buller River was in high flood after the rain, running down at the rate of more than ten miles an hour, and carrying great quantities of drift timber, large and small, out to sea. The next day was fine, and when I went down to the beach I found it literally teeming with beetle life, under the driftwood and other *débris* thrown up by the tide on the clean sand. As many as ten or a dozen species of *Coleoptera* were sometimes found under a single small piece of wood, and three hours' work gave me no fewer than 105 species, a number unprecedented, I should say, in a day's collecting in New Zealand. These, when sorted out, were distributed as follows: *Carabidæ* 20, *Dytiscidæ* 1, *Hydrophilidæ* 4, *Staphylinidæ* 11, *Pselaphidæ* 2, Clavicorns 13, *Lucanidæ* 2, Lamellicorns 10, *Elateridæ* 10, *Malacodermata* 6, *Heteromera* 12, *Rhynchophora* 10, and *Phytophaga* 4 species. A large proportion of these had probably been brought down for a distance of many miles by the flooded Buller River and its tributaries, and small river-bank and shingle-frequenting *Staphylinidæ* and *Carabidæ* (*Anchomenus*, *Actenonyx*, *Oöpterus*, *Bembidium*, &c.) with three or four *Elateridæ*, were individually the most numerous. But larger forms were by no means absent, and I took, for the first time, *Amarotypus edwardsi*, Sharp, the very elegant *Demetrida lineella*, White, three species of *Mecodema*, including a single example of the rare *M. ducale*, Sharp, an apparently new *Zolus*, *Saphobius setosus*, Sharp, and two very nice Heteromerous forms, *Mesopatrum granulolum*, Br., and *Cerodolus chrysomeloides*, Sharp. Two hours' work next morning on the same ground gave me 80 species of beetles, and these figures will, I think, go far to show that New Zealand is not as poor a region for the Coleopterist as has sometimes been stated.

I started on my second trip to Westport from Port Chalmers on December 23rd, and arrived at Springfield, 45 miles inland from Christchurch, on the following day. So far my route had traversed the famous "Canterbury Plains" which extend for many miles, as an apparently dead level expanse of pasture and arable land, broken at intervals by the wide shingly beds of the rivers, and by long belts of the *Pinus insignis* and *Eucalyptus globulus*, which are planted to break the prevailing high winds. These Plains slope upwards almost imperceptibly from the sea to a height of 1200 feet at Springfield, where they merge into the central mountain-range of the Island. Up to about 3000 feet, the hills are for the most part covered with a

uniform and monotonous growth of yellow "tussock-grass," and the curious palm-lily, *Cordylina (Dracæna) australis*, the "cabbage-tree" of the colonists, is plentifully scattered over the slopes, and is often seen 30 feet in height, with a soft-wood stem more than a foot thick. A few patches of *Fagus* forest are also met with, but the real New Zealand "bush" is not encountered until the centre of the island is reached.

At Springfield I had to wait until the 27th for a cross-country coach, a matter I did not regret, as I enjoyed the congenial company of one of the leading New Zealand botanists, Mr. L. Cockayne, of Christchurch, who was spending Christmas here. I had already made two flying trips to Springfield in December, in search of *Argyrophenga antipodum*, Dbld., but owing to very bad weather on both occasions, had only just succeeded in finding it. This time the ♂ was common enough, and in fine condition on the 26th, the first sunny day, but the ♀ was quite rare. This very interesting butterfly, when not disturbed, flies quietly and steadily over the tussock-grass about three feet above ground, with the usual action of the moderate-sized *Satyridæ*, but it can travel at a good pace when alarmed, and then often soars high in the air. When the sun is shining it settles but rarely, and with wings fully expanded, but on a cloud passing over, it may sometimes be seen to dive into a "tussock" where it becomes at once most difficult to detect. When fully at rest, it sits head downwards with the body and palpi closely applied to a grass-stem, and the fore-wings depressed and almost entirely concealed by the hinder pair. The soft ochreous ground-colour of these accurately matches that of the withered tussock-grass, and the longitudinal silvery stripes that are so conspicuous when the butterfly is in the cabinet, imitate with an exactness which must be seen to be realized, the effect of the light and shade of its immediate surroundings. It is in fact fully as striking and beautiful an instance of "protective resemblance" as the well-known case of *Euchlœ cardamines* at home, in its favourite resting place on white Umbelliferous flowers. Another very interesting butterfly met with here was the tiny *Chrysophanus boldenarum*, White, with the upper-side, in the ♂ especially, glossed with most brilliant purple; this was not rare in dry stony places, but was not at all easy to catch, as it flew very close to the ground, and when settled as usual on a stone, its protectively coloured grey mottled under-side rendered it almost invisible. *C. salustius*, F., was here abundant and fine, and was very fond of resting on the yellow flowers of the Asphodel-like plant *Anthericum hookeri*, with which the colour of its under-side harmonized very well.

Leaving Springfield at noon on December 27th in a coach drawn by a team of five fine horses, a drive of two hours brought us to the summit of Porter's Pass, 3200 feet above sea level, the highest carriage-road in New Zealand. Here a halt of a few minutes enabled me to take *Chrysophanus boldenarum* and *Argyrophenga antipodum* again, the latter being a smaller, paler, and brighter-looking form than that from a lower elevation. The large and powerful dragon-fly *Uropetala carovei*, White, was very common up here, and could easily be caught by hand, while the low bushes were swarming with *Pyronota festiva*, Fab., and a darker species, *P. lugubris*, Sharp. The night was spent at Bealey (2140 feet) where I got a few beetles before breakfast, and at 7 a.m. next day we resumed our journey through the celebrated Otira Gorge.

Crossing the wide shingly bed of the Waimakiriri River, the road enters a deep ravine among steep snow-capped mountains, covered with dense forest on their flanks, and seamed with long glacier-like strips of loose shingle, the home of *Erebia pluto*, which rarely, if ever, descends below a height of 4000 feet. At "Arthur's Pass," the road ascends to 3080 feet, and here I enjoyed a few minutes in a lovely subalpine meadow, waist-deep in showy flowers—*Celmisias*, like daisies enlarged to the size of a breakfast-cup, beautiful golden-yellow *Erechthites* and other *Compositæ*, and above all the noble *Ranunculus lyallii*, or "Mountain Lily," with its great reniform leaves and clusters of pure white flowers two inches in diameter. The steep descent to Otira was a truly glorious piece of scenery, though to look from the top of the coach on a narrow shelf-like road unprotected by any fence, down a sheer drop of 600 feet or more to the raging torrent at the bottom of the ravine, required no small amount of nerve, as well as confidence in the driver. From Otira I proceeded by train to Reefton, making a brief détour to the flourishing seaport of Greymouth, where, on the beach, I picked up a fine pair of *Brullæa antarctica*.

I had to wait a day at Reefton, a small mining town prettily situated on the Inangahua River, and here I got a few interesting beetles, the little brown *Cicindela parryi*, White, which flies scarcely at all and unlike most of its congeners may be easily caught by hand, being found here in plenty by me for the first time. Another capture was *Panspæus guttatus*, Sharp, quite the most minute Elaterid I have ever seen, as it barely reaches 2 mm. in length. Reefton is built almost entirely of the native "white pine" or Kahikatea (*Podocarpus dacrydioides*), and many of the houses are literally falling to

pieces from the ravages of our familiar *Anobium domesticum*, Fourc., assisted by two or three of the native Cossonids, and any number of these beetles could be picked off the wooden walls.

Resuming my journey by coach on the morning of the 30th, the first twenty miles lay through a wide and hideous belt of burnt and ruined forest on either side of the road. Under the dead trees the common bramble (*Rubus fruticosus*) formed a continuous tangled brake often ten feet high, and far more difficult to eradicate than the original undergrowth. Then for twenty miles more the road passed through the magnificent gorge of the Buller River, which is I think even grander than the Otira Gorge, though the mountains here do not exceed 4500 feet in height, and are covered with forest to their summits. At this time the crimson Rata (*Metrosideros robusta*) was in full blossom, and I have seen few if any finer sights than that of a forest tree as large as a well-grown English oak, with its foliage almost hidden by the profusion of its many-stamened deep crimson flowers. In many ways the general character of the scenery at the Buller Gorge, as well as the aspect of the forest-growth, which largely consists of two or three species of *Fagus*, recalled to my mind the half-forgotten memories of the wild shores of the Western Patagonian channels.

My stay at Westport from December 31st to January 4th did not produce as many insects as my former visit; the weather was now fine and dry, and the beach being in but poor condition for working, I confined my attention to the "bush" close to the town. Here I found a few nice Longicorns, including *Didymacantha robusta*, Br., previously taken only singly at Bealey; a fine Elater, *Geranus fulvus*, Sharp, rarely, and a handsome grey weevil, *Aldonus hylobioides*, White, in some numbers under loose bark. Two specimens of the fine *Mecodema ducale*, Sharp, were taken under logs, and the robust Prionid, *Prionoplus reticularis*, White, was common in the town at light, and any number of smashed specimens could be seen on the pavements in the morning; and its fat white larva, which, under the name of "Huhu," is esteemed a great delicacy by the Maoris, was abundant, here as elsewhere, in decayed logs, preferring those of Coniferous wood.

From Westport I proceeded by sea to Wellington, and thence partly overland to rejoin my ship at Auckland; this journey gave me the only view I enjoyed of the noble isolated volcanic cone of Mount Egmont (8270 feet) one of the most perfectly beautiful mountains I have ever seen.

To conclude this record of my New Zealand experiences, on February 27th, 1903, I had a few hours on shore at Russell, on the Bay of Islands, one of the oldest settlements in the colony. The collecting-ground was very poor, the "bush" having long been cleared away and replaced by fern and "tea-tree;" and my only captures were made on a sandy beach, and included *Chærodes lætus*, Br., and single examples of the rare *Pachylopus pedator*, Sharp, and the Lamellicorn, *Xylostygnus piceus*, Br., which last had, I believe, been previously recorded only from Little Barrier Island, near Auckland.

H.M.S. "Ringarooma," Sydney, N.S.W. :

June 15th, 1903.

SOME DIPTEROLOGICAL AND OTHER NOTES ON A VISIT TO THE
SCILLY ISLES.

BY COL. J. W. YERBURY, R.A., F.Z.S., &c.

As nothing seems to have been put on record regarding the *Diptera* of the Scilly Isles, the following list may be of interest; though as a hunting ground the islands turned out disappointing, and, except among the seaweed frequenters, specimens were few and far between, and species commonplace.

The following list records all species of which specimens have been brought away; it will be seen at a glance that it contains nothing of special interest, except *Scatophaga villipes* and *Tephrochlamys flavipes* (should the latter be correctly identified).

Bibio laniger, ♂♂, St. Mary's, 9 and 10/4/04; Tresco, 11/4/04, very common.

B. johannis, ♂, Tresco, 11/4/04, apparently uncommon.

Ptychoptera paludosa, ♂, St. Mary's, 9/4/04.

Limnophila meigenii, ♂, St. Mary's, 9/4/04.

Tipula oleracea, St. Mary's, 10/4/04; Tresco, 11/4/04, very common on the sandhills at Tresco.

Clinocera fontinalis, St. Mary's, 10/4/04, not uncommon.

Eristalis æneus, Tresco, 11/4/04, a single specimen in the Abbey gardens at the flowers of a small pink *Mesembryanthemum*: this plant grows in profusion over the rocks, and later in the year must be a mass of bloom, it was particularly attractive to the *Eristalinæ* and also to *Hymenoptera*. *E. tenax*, Tresco, 11/4/04, in company with the foregoing species. *E. intricarius*, St. Mary's, 9/4/04. *E. nemorum*, St. Mary's, 9/4/04.

Sarcophaga nigriventris, Tresco, 11/4/04.

Spilogaster duplicata, ♂♂, St. Mary's, 9/4/04; Tresco, 11/4/04.

Phorbia cepetorum, St. Mary's, 10/4/04.

Fucellia maritima, St. Mary's, 9/4/04, probably common on all coasts.

Schœnomyza litorella, ♀, St. Mary's, 10/4/04; following the modern view this species has been placed among the *Anthomyidæ*, though not without grave misgivings on the point.

Scatophaga stercoraria, St. Mary's, 9 and 10/4/04; Tresco, 11/4/04, very common. *Sc. litorea*, St. Mary's and Tresco; the commonest Dipteron met with, it occurred in numbers sitting on the roads, on the seaweed, and was a positive nuisance when sweeping in the freshwater marshes. *Sc. villipes*, St. Mary's and Tresco, 4 ♂, 3 ♀, not uncommon, had the species been immediately recognised probably many more specimens would have been obtained; its favourite haunt is under the seaweed, but it was taken also on rhododendron leaves in the Abbey garden at Tresco. Although this species appears in italics in Verrall's list, it has been met with in several localities within the British Isles, *e. g.*, Devonshire, The Shetland Isles, &c. I was lucky enough to obtain a female "*in coitu*," and as, according to Becker, this sex is unknown, the following note may be of interest:—

Following the table for the discrimination of the various species of *Scatophaga* given by Becker [Berl. Ent. Zeit., Bd. xxxix (1894), p. 162], the two sexes of *Sc. villipes* must separate at (23) the ♂ possessing no bristles on the hind tibia, while the ♀ has eight distinct bristles; this takes her on to (25) where she comes into contrast with *Sc. islandica* somewhat as follows:—

25. Pubescence of the whole body but particularly of the legs and breast sides very long and fine, hind tibiæ with from six to eight bristles26.
 Pubescence of the body neither remarkably long nor fine, hind tibiæ with from six to eleven bristles27 (this refers only to *Sc. litorea*).
26. All femora, tibiæ of the middle legs, and the bases only of the fore- and hind-legs entirely blackish-brown, ground colour of all legs dark reddish-brown, hind tibiæ with six to eight bristles*islandica*.
 The femora of the fore-legs only in part blackish-brown, the femora of the middle- and hind-legs, and the other parts of all legs including the tips of the fore-femora, entirely reddish-yellow, hind-tibiæ with eight bristles...
villipes, ♀.

With reference to the above it is to be noted that the female taken at Tresco has a distinct dark ring round all the femora; further, it is desirable to draw attention to what is apparently an interesting (autumn?) form of the male, with entirely reddish-yellow legs; this form occurs in Devonshire, where it has been found during October, the normal form having been taken in the same locality during the previous March.

Tephrochlamys flavipes, St. Mary's, 9/4/04; I have some doubt about the correct identification of this specimen, it is a *Tephrochlamys*, and is not *rustiventris*, still it does not agree well with Loew's description of *T. flavipes*.

Hydrellia griseola, St. Mary's, 10/4/04.

Parydra quadripunctata, St. Mary's, 10/4/04. *P. coarctata*, St. Mary's, 10/4/04. According to Becker's table, Berl. Ent. Zeit., Bd. xli (1896), p. 208, these three specimens of *Parydra* belong as above, still I am not satisfied about their specific distinction.

Borborus nitidus, St. Mary's, 9/4/04, very common.

Limosina, sp. (*limosa*?), probably more than one species of this genus occurred, individuals were to be found in great numbers under seaweed, and on one occasion probably thousands were sitting on the ground in the streets of Hugh Town.

Orygma luctuosa, St. Mary's, 9 and 10/4/04; Tresco, 11/4/04, probably common everywhere round the coast.

Eucomyia frigida, common everywhere round the coast.

Cælopa pilipes, Tresco, 11/4/04.

In addition to the above, specimens of the following families were seen, but left severely alone, viz., *Psychodidæ*, *Simulidæ*, *Cecidomyidæ*, and *Chironomidæ*, and also some *Muscidæ*, e. g., *Stomoxys calcitrans*, *Poliates lardaria*, *Calliphora* sp., *Pyrellia* sp., *Lucilia* sp. If specimens had been taken of every species seen it is doubtful whether the total would have reached fifty species.

Mr. Jenkinson has kindly sent me records of the following additional species, which were met with by him during his stay in Tresco in March, 1902: *Sceptonia nigra*, *Campsicnemus scambus*, *Eristalis arbustorum*, *Syrphus torvus*, *S. auricollis*, *S. luniger*, and *Elachyptera cornuta*.

In other Orders some kind friends have helped me, and Mr. Saunders has named the *Aculeate Hymenoptera* which I met with:—

Andrena nigroænea, Kirb., 5 ♂, St. Mary's, 9/4/04; *A. afzeliella*, Kirb., 1 ♂, a very interesting specimen, with the hairs of the face nearly black (as in *fulvicrus*).

Bombus smithianus, White, 1 ♀ of the typical form, viz., with the hairs of the under-side deep black; this form, which is common in the Shetland Isles and the extreme north, has only occurred in the south in Scilly, and as single examples, near Dover, and elsewhere in Kent, whereas the form with the pale ventral hairs is widely distributed over the southern parts of Great Britain.

Regarding the species seen but of which no specimens have been brought away, they were as follows: two common species of *Bombus*, and a small species of the same genus (*jonellus*?), a handsome *Anthophora* with bright brownish-red pubescence (probably *retusa*, Kirb., ♂), and the Honey Bee.

Mr. Waterhouse has kindly sent the accompanying list of the few *Coleoptera* collected in the islands:—

Cicindela campestris, L., *Calathus cisteloides*, L., *C. melanocephalus*, L. *Harpalus latus*, L., *Amara trivialis*, L., *Creophilus maxillosus*, L., *Cafius fucicola*, Curtis, *C. xantholoma*, Grav., *Myrmedonia canaliculata*, Fabr., *Xantholinus longiventris*, Heer, *Stenus junco*, F., *Omalium leviusculum*, Gyll., *O. riparium*, Th., *Tachinus subterraneus*, L., *Cercyon littoralis*, Gyll., *Saprinus maritimus*, Steph., *Aphodius punctatosulcatus*, S., *A. finetarius*, L., *Geotrupes vulgaris*, L., *Helops striatus*, Fourcr., *Heliopathes gibbus*, Fabr., *Meloë proscarabæus*, L., *Sitones cambricus*, Steph., *Hypera plantaginis*, De Geer, *Otiorrhynchus atroapterus*, De Geer, *O. ligneus*, Oliv.

Army and Navy Club, Pall Mall:

May 6th, 1904.

DESCRIPTION OF TWO NEW SPECIES OF *DIGLOSSA* (*DIGLOTTA*)
FROM THE ISLAND OF PERIM.

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

DIGLOSSA TESTACEA, *n. sp.*

Elongate, parallel, abdomen not constricted at the base, clear testaceous-yellow, thickly clothed with yellowish pubescence and very finely alutaceous on the fore parts. Antennæ, palpi, and legs testaceous. Abdomen shining, sparingly pubescent finely punctulated, apical margin of 4th, and whole of 5th segment, black.

Length, 2—2½ mm.

Head almost the breadth of the thorax, very finely alutaceous, thickly covered with yellowish pubescence; eyes large; vertex impressed in the ♀. Thorax trapezoidal, subcordate, a little broader than long, very finely alutaceous and thickly pubescent. In the ♂ a fine impressed line runs across the disc behind and parallel to the anterior margin. In the ♀ the disc is furnished with a longitudinal oval impression in the middle line, which is better marked in some specimens than in others. Elytra a little longer than the thorax, square, the sculpture and pubescence finer than that of the thorax. Abdomen nearly as broad as the elytra, shining, finely punctulated, pubescence not thick; apical margin of 4th, and whole of 5th segment, black. Sexual differences: ♂ with 7th dorsal segment deeply emarginate on each side, thus forming two strong lateral teeth separated by a broad median lobe; 7th ventral segment with four teeth, the external short and stout, the internal long and pointed; antennæ with 7th, 8th, 9th, and 10th joints slightly transverse. In the ♀ all the antennal joints are longer than broad, and the vertex and disc of thorax are more or less impressed. In both sexes the 11th joint is about twice as long as broad.

Hab.: Island of Perim, February, 1903, in seaweed.

DIGLOSSA SUBTILISSIMA, *n. sp.*

Narrow, elongate, pale testaceous, abdomen constricted at the base, clothed with yellowish pubescence and very finely alutaceous. Antennæ, palpi and legs pale testaceous. Abdomen rather shining, pale testaceous, 4th and 5th segments black, finely punctulated, scantily pubescent.

Length 1½ mm.

Head as broad as thorax, very finely alutaceous and moderately pubescent; eyes large; 2nd joint of antennæ shorter than 1st, 4th to 10th, about as broad as long. Thorax longer than broad, trapezoidal, subcordate, sculpture and pubescence as on head. Elytra shorter than the thorax, quadrate, very finely alutaceous and pubescent. Abdomen constricted at the base, shining, very finely punctulated and less pubescent than the fore parts, 4th and 5th segments black.

Hab.: Island of Perim, with the preceding.

This very fragile insect is at once distinguished from *D. testacea* by its much smaller and narrower build, the contracted abdomen, and the scantier pubescence. But three species of the genus have up to the present been described, the two well-known European examples and one from Celebes, *D. celebensis*, Fvl. (Ann. del Mus. Civ. di

Genova, 1878, xii, p. 301). Besides the two now added, another, *D. cameroni*, Fvl. (in litt.), is found on the southern littoral of the Red Sea, at Perim, Hodeidah, Camaran (not uncommon), and the Hartau Peninsula (Italian Somaliland). This could not be confused with those described by me. It is of a reddish-brown colour, with the 4th and 5th segments of the abdomen infuscate, and sometimes the whole of the latter is suffused. The elytra are very short, trapezoidal, with the apex deeply sinuate on either side; the abdomen is constricted at the base, and owing to the scantier pubescence, the whole insect is more shining. The main differences between the three species are quite obvious to the naked eye.

R. N. Gunnery School, Sheerness :

June 2nd, 1904.

Rhinomacer attelaboides, F., at Sherwood.—This northern species occurred in some numbers to my friends, J. Ray Hardy and B. R. Lucas, and to myself, by beating Scotch firs in the forest. From my own knowledge this is the first record of its capture in this locality.—J. KIDSON-TAYLOR, 35, South Avenue, Buxton : May, 1904.

Catops sericatus, Chaud., in Bucks.—The bringing forward of *Catops sericatus*, Chaud., as a British insect, led me to examine a series of a uniformly small *Catops* taken here a year or two back, in a decaying ash tree; as they seemed to be referable to *C. sericatus*, I submitted specimens to Mr. Champion, who finds that they certainly are that species.—E. GEO. ELLIMAN, Chesham : May 20th, 1904.

Re-occurrence of Bagoüs brevis, Gyll., at Woking.—This interesting aquatic weevil has been taken at intervals since April 18th (the date of the first capture) by Mr. G. C. Champion and myself in very scanty numbers, and usually in a worn and broken condition, in a small pond on Horsell Common. The pond is by no means inviting in appearance, being a receptacle for derelict kettles and other miscellaneous tinware, and in some summers is entirely dried up. It may be the very place where the late Dr. J. A. Power (*cf.* Entom. Annual, 1874, p. 103) captured his specimens of *B. brevis* fully thirty years ago. It was found by us almost exclusively in one spot of a few square feet in extent, among *Ranunculus aqualilis* and other water-weeds; and the creature appears to be, if possible, even more sluggish and retiring in its habits than any of its congeners. The only way to obtain it was to wring the contents of the water-net as dry as possible, and to expose them to the sun on a sheet of paper, when the *Bagoüs*, if present, would after a time walk lazily out, but even then it was not at all easily detected without a close scrutiny.

A considerable variety of *Hydradephaga*, *Philhydrida*, and subaquatic *Coleoptera* was met with in and about the same little pond, and among these the following seem worthy of mention. *Pelobius tardus*, Hbst., was common in the spot where the *Bagoüs* was found, along with *Celambus impressopunctatus*, Schall. (*picipes*,

Fab.), *Hydroporus obscurus*, Sturm, *Agabus femoralis*, Payk., *Rhantus pulverosus*, Steph. (last seen alive by me in New Zealand), *bistriatus*, Berg., and *exoletus*, Forst., *Paracymus æneus*, Germ., and *Berosus signaticollis*, Charp., all more or less commonly. *Bidessus geminus*, Fab., and *Hydroporus flavipes*, Ol., were both abundant, the former preferring the shallow sun-warmed water among short grass at the edge of the pond, whence also *Parnus algericus*, Luc. (*striatellus*, Fairm.), came up in the water-net in considerable numbers, and *Stenus longitarsis*, Thoms., was found on one occasion. Single examples of *Helophorus laticollis*, Thoms., and *Ochthebius æneus*, Steph., also occurred, and are interesting as being recorded from here for the first time since the days of Dr. Power (cf. Entom. Annual, 1872, p. 47).

Another small pond among the pines on the Common produced, besides several of the above-mentioned species, a few examples of *Hydroporus tristis*, Payk., usually a northern species in its distribution.—JAMES J. WALKER, "Aorangi," Lonsdale Road, Summertown, Oxford: June 13th, 1904.

Metæcus paradoxus, L., in the Derwent Valley.—On September 12th, 1902, I took a fine example of *Metæcus paradoxus*, L., from a common dock flower growing by the river side at Lockhaugh, near Rowlands Gill, whilst again, on October 16th of the same year, I met with another specimen, this time clinging to bracken, scarcely fifty yards distant from the locality of my first capture. That which I took in September was a male, and in comparison with other examples of *M. paradoxus* I have seen, was, I think, an unusually fine insect. The other (also a large example) proved to be a female, which I believe is not represented in Bold's collection. Though I searched the district high and low for a wasps' nest I met with no success in the immediate neighbourhood, but later in the year I came across a nest, of *Vespa rufa* I think, in Gibside, at a spot fully a mile from Lockhaugh. As both the *Metæcus* took readily to wing and seemed to possess strong flying powers, they could easily have crossed the river from Gibside, a place where various wasps abound.—RICHARD S. BAGNALL, The Groves, Winlaton-on-Tyne: June 13th, 1904.

Deilephila lineata, F., = *livornica*, Esp.—On Wednesday, May 18th, a living imago of the above was brought to me, having been just taken by a fisherman, who found it settled on the beach, presumably blown over by the strong S.S.W. wind then prevailing.—H. L. F. GUERMONPREZ, Dalkeith, Bognor, Sussex: May 23rd, 1904.

Andrena niveata, Friese, at Margate.—This little species hitherto rare in this country was very abundant at Margate in May this year on the flowers of *Lepidium draba*, which plant is quite a feature of the coast. Occasionally it seems to visit daisies, and occasionally dandelions, as well as umbelliferous plants, but *Lepidium* seems to be its favourite. I was very pleased to meet with it in numbers as it is such a close ally of *A. nana*, K., that hitherto I have had doubt as to whether it might not be an extra pubescent form of that species; all the specimens however, which I have taken keep the characters of *niveata* very clearly defined, viz, the very broad white pubescent apical bands and the punctured apices of the abdominal segments, and I can find no intermediate forms. I captured as many as I could from localities further from the coast where it is far less abundant but they

all have the peculiarities of true *niveata*. As *niveata* has occurred near Reading, there is no reason for considering it a maritime form. On one occasion during my stay at Margate I went over to Walmer to see Mr. F. W. L. Sladen, and there again we found it, but rarely, on the same plant. I expect it only wants looking for to be found freely in many places. Curiously enough it was the only Aculeate worth noticing that I found during a fortnight's visit.—EDWARD SAUNDERS, St. Ann's, Woking: June 5th, 1904.

Andrena ferox, Smith, ♀ at *Huntingfield, Kent*.—I have to correct an error in the determination of this insect, which I recorded by mistake as taken on May 22nd, 1902 (see Ent. Mo. Mag., xxxviii, p. 182). Mr. Saunders kindly pointed out to me last autumn that the ♀ insect in my collection under that name was only *angustior*. The matter being not very important as I had taken the ♂, I decided to wait until the ♀ turned up before correcting the mistake, and I now record it as taken at the same locality on May 25th and 26th this year. Mr. Morice came to spend a few days with me to take it, and we had not been on the ground for more than a few minutes before he netted a specimen, and the following day at precisely the same spot and within a few minutes of the same hour (about 11 o'clock) I caught a second specimen. After that we decided to give the insect a rest in the hope of next year taking the ♀, which was evidently over. These ♀ ♀ were taken not ten yards away from where the ♂ occurred in 1902. I think they were captured within a few feet of their burrows. My specimen was devoid of pollen, and Mr. Morice's had very little attached to it, whereas, two *Andrena humilis* ♀ ♀ taken earlier in the day were laden. Neither days were really sunny though very warm, and curiously I have been able to get very few suitable days for this bee during the last three years at the time when it was about. The bee must however, I think, be an indifferent worker, and only flies for a short time in the day. The spot is on a steep hill side facing S.E. near the bottom, where a hedge separates it from a hop field; it gets all the morning sun. Both specimens were taken flying over the ground. There were a very few hawthorn blossoms on the hedge, up and down which *A. nigroænea* and *A. wilkella* were flying in some numbers. The ground flowers comprised daisies, buttercups, and I think dandelions and a hawkweed, probably it was visiting these and not the hawthorn. I hope to ascertain more about its habits next year.—A. J. CHITTY, Huntingfield, Faversham, Kent: June 13th, 1904.

Obituary.

E. G. J. Sparke, B.A., F.E.S.—The sudden death at Tooting during the night of 2nd—3rd of May of this Suffolk Entomologist, is the third loss to the science the County has suffered during the past year. Few men are better acquainted with the *Lepidoptera* of Suffolk than was Mr. Sparke, and none knew the fauna of the Breck District, and especially of Tuddenham Fen, where his uncle was for a great number of years Rector, so well. Five days before his death he had been collecting at Henley Hall, near Ipswich; and the writer has the liveliest recollection of his unfailing unselfishness and good fellowship in the field. "A man's good name is his best monument."—CLAUDE MORLEY.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: 16th May, 1904.—By the kind invitation of Major Ronald Ross, C.B., F.R.S., Professor of Tropical Medicine, University of Liverpool, Hon. Member of the Society, a meeting was held in the Johnston Laboratory, Liverpool University.

The following were elected Members of the Society:—Corresponding Members—Professors T. Hudson Beare, B.Sc., F.R.S.E., F.E.S., and Edward B. Poulton, M.A., D.Sc., F.R.S., F.L.S., F.E.S.; Drs. C. R. Billups and Geo. E. J. Crallan, M.A., L.S.A.; and Messrs. Geo. T. Bethune-Baker, F.L.S., F.Z.S., Chas. Capper, A. J. Chitty, M.A., F.E.S., H. St. J. K. Donisthorpe, F.Z.S., F.E.S., W. H. Harwood, J. H. Keys, W. J. Lucas, B.A., F.E.S., B. G. Nevinson, M.A., F.E.S., E. G. B. Nevinson, F.Z.S., F.E.S., E. A. Newbery and Edward Saunders, F.R.S., F.L.S., F.E.S. Ordinary Members—Messrs. W. P. Blackburne-Maze and H. Berkley Score, F.R.G.S., F.R.Hist.S. The following donation to the Library was made by Major Ross, “The Hibernation of English Mosquitoes” by H. E. Annett, M.D. and J. Everett Dutton, M.B.

Professor Ross, Dr. Stevens and the Staff of the Liverpool School of Tropical Medicine, gave demonstrations “On Mosquitoes and other flies in connection with Tropical diseases.” Amongst the many interesting exhibits described, were live *Trypanosomata* of the sleeping sickness and Tsetse Fly diseases, specimens of the Tsetse Fly (*Glossina morsitans*), &c., and a series of microscopic preparations showing the characteristic differences in appearance and structure existing between the malarial and harmless gnats, &c., &c. At 8.30, an adjournment was made to the lecture theatre, where Major Ross gave a most instructive and interesting lecture on the connection between malaria and mosquitoes, copiously illustrated by lantern slides.

The species of *Anopheles* are by no means all harmful: those that cause malaria can be always distinguished by the black spots along the anterior nervures of the wings, the usual species being *A. corticalis* and *A. funestus*. Their egg-masses are canoe-shaped. The larvæ breed in shallow pools of stagnant water, floating flat upon the surface, and feed on confervæ. They have no breathing tube, and can thus be easily distinguished from the larvæ of our commoner gnats which belong to the genera *Culex* and *Stegomyia*, and hang head downwards in the water with a long breathing tube projected upwards to the surface. The larvæ of the latter insects breed in tubs, pots, and other vessels lying close to houses. Since the pools were drained and filled up at Ismailia, a town of 6000 inhabitants, the cases of malaria have fallen from 2000 to 200 per annum, and these are nearly all relapses, as only 10 actually fresh cases were reported last year.

On the motion of Mr. Richard Wilding, seconded by Mr. Willoughby Gardner, F.L.S., F.E.S., a cordial vote of thanks was accorded the lecturer.—E. J. B. SOPP and J. R. le B. TOMLIN, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: May 12th, 1904.—Mr. A. SICH, F.E.S., President, in the Chair.

Mr. Goulton exhibited another series of fine photographs of the larvæ of

Lepidoptera, including those of *Aventia flexula*, *Hepialus humuli*, *Phibalapteryx lapidata*, *Enodia hyperanthus*, *Leucania pallens*, &c. Mr. Stonell, several varieties of British *Lepidoptera*. Mr. Anson, five specimens of *Dytiscus circumflexus*, taken from one small pond at Northwood. Mr. Rayward, ova of *Pachnobia rubricosa* and *Saturnia pavonia*, from Wimbledon and the New Forest, respectively, and the larvæ of *Noctua baja*. Mr. Tonge, an album of photographs of ova. The chief species were *Thais polyxena*, var. *cassandra*, *Brephos notha*, *Tephrosia biundularia*, *T. cinctaria*, *Demas coryli*, and *Selenia illunaria*. Mr. Turner, larvæ and cases of the following species of the genus *Coleophora* (1) *C. pyrrolipennella*, a black silken case on heather from Mr. Main in the New Forest, and Mr. West at Shirley; (2) *C. alcyonipennella*, a very similar case but not so compressed, on *Centaurea nigra*, from Ranmore; (3) *C. solitariella*, a slender whitish tubular case, on *Stellaria holostea*, from Mr. Sich at Chiswick and also from Lewisham; (4) *C. hemerobiella*, a tubular, upright dark brown case, on hawthorn, from Mr. Sich, Chiswick; (5) *C. albitarsella*, a compressed, blackish, hairy case, on marjoram, sent by Mr. Bankes from Dorset; (6) *C. olivacella*, a long slender brown case, on *S. holostea*, the rare but close companion of *C. solitariella*, from Lewisham; and (7) *C. lineolea*, a large rough case on *Ballota nigra*, from Lewisham. Mr. Main, a very large species of "Silver-fish," which came over from Java in a cargo of sugar. Mr. McArthur, a nice series of finely marked *Agrotis cinerea*, from Brighton. Mr. Barnett, *Plusia moneta*, from Welling, Kent. Mr. Carpenter, a photograph of a pupa of *Euchloe cardamines*. Mr. Lucas gave a very interesting address with lantern illustrations, on "British Orthoptera."

May 26th, 1904.—The PRESIDENT in the Chair.

The President referred in suitable terms to the loss Entomology had received by the death of Mr. MacLachlan, F.R.S., a member of the Society for many years. After similar expressions of regret from Mr. Rowland Brown, as brother officer in the Council of the Entomological Society of London, from Dr. Chapman, as a personal friend for many years, and from Mr. Adkin, as near neighbour and friend, a vote of condolence with the relatives was passed.

Dr. Chapman exhibited (1) a few species of butterflies taken at Pont du Gard (S. France), including a fine specimen of *Chrysophanus gordius* and some *Syrichthus sidæ*; (2) a larva of *Thais polyxena*, var. *cassandra*, suspended for pupation, showing the curious adjustment of the girth; and also a pupa of *Libythea celtis*, showing how curiously the suspended pupa lies against the surface of attachment. Mr. Carr, the larva of *Phorodesma bajularia*, in its covering made of the débris of the male flowers of the oak. Mr. West (Greenwich), a short series of the rare Coleopteron, *Osphya bipunctata*, from Gloucester, to show the extreme sexual dimorphism. Mr. Sich, the pupa of *Ocyrops olens*. Mr. Turner, cases and larvæ of (1) *Coleophora vinitetella*, from Chalfont, on sallow; (2) *C. ladiipennella*, from Lewisham, on elm; (3) *C. ochrea*, sent from Dorset by Mr. Bankes, on *Helianthemum vulgare*; and (4) *C. ibipennella*, feeding on birch, and found by Mr. Sich at Ashted; also a pupa case of *Adela viridella* protruding from its curious fiddle-shaped cocoon. Mr. Main, reported larvæ to be very scarce in the New Forest, and members generally considered the season late. Mr. Rowland Brown read a paper entitled "Collecting Butterflies in the Alps."—HY. J. TURNER, *Hon. Sec.*

ENTOMOLOGICAL SOCIETY OF LONDON: *May 1th*, 1904.—Professor E. B. POULTON, M.A., D.Sc., F.R.S., President, in the Chair.

Mr. W. J. Kaye exhibited a piece of a plant of *Eupatorium macrophyllum* from British Guiana. It was stated that the white flowers were very attractive to the *Lycorea*, *Melinæa* and *Mechanitis* species of that region. Vast numbers were often to be seen congregated on one single bush. He also exhibited a remarkable larva, like a twig of birch, found on Oxshott Heath, and, on behalf of Mr. C. P. Pickett, a pupa of *Rumia cratægata*, the larva of which had spun up in an empty pupa-case of *Pieris brassicæ*. The latter was on the roof of a breeding-cage and the Geometrid larva had crept completely inside to spin its cocoon. Mr. J. E. Collin, a specimen of *Corethra obscuripes*, v. d. Wulp (? = *C. fusca*, Stæg.), a little-known species of the genus, and new to the British List, which he had found in some numbers at Newmarket. Mr. G. T. Porritt, a living larva of *Agrotis ashworthii*, of which he had found considerable numbers on one of the mountains of Carnarvonshire during the last week in April. Commander J. J. Walker, a gall sent him by Mr. Harold S. Mort, identified by Mr. Froggatt as *Brachyscelis duplex*, Schrader, and found at Wentworth Falls, Blue Mountains, N.S.W., where it was by no means common. Mr. Mort wrote that he thought at first it was made by joining two leaves, but noticed afterwards that it grew direct from the trunk of the tree (a Eucalyptus), while Mr. Froggatt had informed him that the whole of the gall (which resembled a large locust-bean), including the ears, was made by the insect. Mr. G. H. Verrall, three specimens from the Hope Collection at Oxford of *Neoitamus cothurnatus*, Meig., an Asilid not previously recorded as British. They were taken near Oxford by Mr. W. Holland. He also stated that the *Anthrax* exhibited at the last meeting on behalf of Mr. R. G. Bradley was *A. circumdata*, Meig., a species recorded before, but not observed for more than fifty years past. The President, a Longicorn beetle, *Nitocris nigricornis*, captured near Malvern, Natal, by Mr. C. N. Barker, together with a large Braconid from the same locality, bearing an extraordinary likeness to one another on the wing, though no one would suspect a similarity in the cabinet. Mr. H. J. Turner, living larvæ and cases of several species of the Lepidopterous genus *Coleophora*, and contributed notes on *C. conyzæ*, *C. lixella*, *C. laricella*, *C. hemerobiella*, *C. solitarella*, *C. pyrrhulipennella*, and *C. aleyonipennella*. Dr. A. Jefferis Turner, M.D., communicated a paper entitled "A classification of the Australian *Lymantriadæ*." Dr. F. A. Dixey communicated, and commented upon a paper by Major Neville Manders, R.A.M.C., entitled "Some Breeding Experiments on *Catopsilia pyranthe*, and Notes on the Migration of Butterflies in Ceylon." The President communicated an observation of Professor Minchin's of an attack made by a bird upon a species of *Elymnias*, and also read part of a letter recently received from Mr. J. C. Kershaw, living at Macao, throwing light upon the struggle for life endured by *Rhopalocampta benjamini*, a butterfly of that locality.—H. ROWLAND BROWN, *Hon. Sec.*

LIST OF BRITISH *DOLICHOPODIDÆ*, WITH TABLES AND NOTES.

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

As there does not seem to be any probability of a volume on British *Dolichopodidæ* appearing for several years, I take an opportunity of giving tables of the genera and species, with short notes which are mainly derived from my own collecting.

These tables may enable students of the British species to name their captures in, at any rate, a rough and ready way, but it must not be imagined that they will suffice for critical distinctions; but whereas the apparent monotony of the numerous species has deterred many collectors from collecting, as a matter of fact the species are some of the most distinct and most easily named of all the *Diptera*. The females, however, do not lend themselves to distinction so readily as the more showy males, and consequently in this paper I have principally dealt with the males, but as the species whenever they occur usually congregate in large numbers, it is comparatively easy at such times to obtain the females, and to associate them at once with their respective males.

The family has fortunately attracted the attention of numerous workers of the highest class, such as Haliday, Stannius, Zetterstedt, Stæger, Loew, and more recently Mik and Kowarz, to say nothing of those who are now building up on the strong foundations laid by their predecessors, not only in Europe, but also in North America. These workers have rendered the study of the family very attractive, because of the preciseness of the generic and specific descriptions.

PSILOPUS *Meig.*platypterus *Fabr.*Wiedemanni *Fall.*longulus *Fall.*lætus *Meig.*contristans *Wied.*NEURIGONA *Rond.*pallida *Fall.*quadrifasciata *Fabr.*suturalis *Fall.*EUTARSUS *Lw.*aulicus *Meig.*

HYGROCELEUTHUS

*Lw.*diadema *Hal.*latipennis *Fall.*DOLICHOPLUS *Latr.*atratus *Meig.*Falleni *Lw.*melanopus *Meig.*picipes *Meig.*campestris *Meig.*planitarsis *Fall.*lepidus *Stæg.*laticola *Verr.*atripes *Meig.*phæopus *Hal.*vitripennis *Meig.*claviger *Stann.*discifer *Stann.*confusus *Zett.*plumipes *Scop.*Wahlbergi *Zett.*pennatus *Meig.*popularis *Wied.*signatus *Meig.*urbanus *Meig.*trivialis *Hal.*festivus *Hal.*virgultorum *Hal.*arbustorum *Stann.*nitidus *Fall.*griseipennis *Stann.*signifer *Hal.*clavipes *Hal.*sabinus *Hal.*acuticornis *Wied.*longicornis *Stann.*puncticornis *Zett.*linearis *Meig.*

- nubilus *Meig.*
 latelimbatus *Macq.*
 andalusiacus *Strobl*
 mediicornis *Verr.*
 lineaticornis *Zett.*
 strigipes *Verr.*
 simplex *Meig.*
 ungulatus *L.*
 longitarsis *Stann.*
 brevipennis *Meig.*
 rupestris *Hol.*
- TACHYTRECHUS *Stann.*
 notatus *Stann.*
 consobrinus *Walk.*
 insignis *Stann.*
 ripicola *Lw.*
- PECILOBOTHRUS *Mik*
 nobilitatus *L.*
 ducalis *Lw.*
 principalis *Lw.*
- HERCOSTOMUS *Lw.*
 gracilis *Stann.*
 cretifer *Walk.*
 germanus *Wied.*
 chærophylli *Meig.*
 nigriplantis *Stann.*
 nigripennis *Fall.*
 chrysozygos *Wied.*
 plagiatus *Lw.*
 fulvicandis *Walk.*
 atrovirens *Lw.*
 parvilamellatus *Macq.*
 nanus *Macq.*
- HYPOPHYLLUS *Lw.*
 discipes *Ahr.*
 obscurellus *Fall.*
- ORTHOCHILE *Latr.*
 nigrocœrulea *Latr.*
- GYMNOPTERNUS *Lw.*
 cupreus *Fall.*
 celer *Meig.*
 metallicus *Stann.*
 chalybeus *Wied.*
 assimilis *Stæg.*
 ærosus *Fall.*
- LAMPROCHROMUS
Mik
 elegans *Meig.*
- CHRYSOOTUS *Meig.*
 neglectus *Wied.*
 cilipes *Meig.*
 pulchellus *Kow.*
 palustris *Verr.*
 læsus *Wied.*
 cupreus *Macq.*
 amplicornis *Zett.*
 blepharosceles *Kow.*
 monochætus *Kow.*
 microcerus *Kow.*
 gramineus *Fall.*
 angulicornis *Kow.*
- MELANOSTOLUS *Kow.*
 melancholicus *Lw.*
- DIAPHORUS *Meig.*
 oculatus *Fall.*
 Hoffmansseggii *Meig.*
 nigricans *Meig.*
 Winthemi *Meig.*
- ARGYRA *Macq.*
 diaphana *Fabr.*
 leucocephala *Meig.*
 argyria *Meig.*
 argentina *Meig.*
 confinis *Zett.*
 atriceps *Lw.*
 clongata *Zett.*
- LEUCOSTOLA *Lw.*
 vestita *Wied.*
- THIRYPTICUS *Gerst.*
 bellus *Lw.*
- RHAPHIUM *Meig.*
 longicorne *Fall.*
- MACHÆRIUM *Hal.*
 maritimæ *Hal.*
- PORPHYROPS *Meig.*
 antennata *Carl.*
 spinicoxa *Lw.*
 fascipes *Meig.*
 elegantula *Meig.*
- patula *Radd.*
 nemorum *Meig.*
 crassipes *Meig.*
 pectinata *Lw.*
 consobrina *Zett.*
 micans *Meig.*
 nasuta *Fall.*
 riparia *Meig.*
 penicillata *Lw.*
- XIPIANDRIUM *Lw.*
 fasciatum *Meig.*
 monotrichum *Lw.*
 auctum *Lw.*
 caliginosum *Meig.*
 appendiculatum *Zett.*
 brevicorne *Curt.*
 fissum *Lw.*
- SYSTEMUS *Lw.*
 adpropinquans *Lw.*
- SYNTORMON *Lw.*
 tarsatus *Fall.*
 monilis *Walk.*
 pumilus *Meig.*
 denticulatus *Zett.*
 Zelleri *Lw.*
 pallipes *Fabr.*
 sulcipes *Meig.*
- ACHALCUS *Lw.*
 cinereus *Walk.*
 flavicollis *Meig.*
- MEDETERUS *Fisch.*
 micaceus *Lw.*
 muralis *Meig.*
 tristis *Zett.*
 apicalis *Zett.*
 pallipes *Zett.*
 diadema *L.*
 flavipes *Meig.*
 jaculus *Meig.*
 truncorum *Meig.*
 dendrobænus *Kow.*
 petrophilus *Kow.*
- SCELLUS *Lw.*
 notatus *Fabr.*

HYDROPHORUS <i>Whlbg.</i>	<i>pectinulatus Lw.</i>	XANTHOCHLORUS <i>Lw.</i>
<i>bisctus Lw.</i>	<i>picticornis Zett.</i>	<i>ornatus Hal.</i>
<i>balticus Meig.</i>	ECTOMUS <i>Mik</i>	<i>tenellus Wied.</i>
<i>præcox Lehm.</i>	<i>alpinus Hal.</i>	ANEPSIOMYIA <i>Bezzi</i>
<i>litoreus Fall.</i>	TEUCHOPHORUS <i>Lw.</i>	<i>flaviventris Meig.</i>
<i>viridis Meig.</i>	<i>spinigerellus Zett.</i>	MICROMORPHUS <i>Mik</i>
<i>bipunctatus Lehm.</i>	<i>monacanthus Lw.</i>	<i>albipes Zett.</i>
<i>borealis Lw.</i>	<i>pectinifer Kow.</i>	THINOPHILUS <i>Whlbg.</i>
<i>rufibarbis Gerst.</i>	<i>simplex Mik</i>	<i>flavipalpis Zett.</i>
<i>nebulosus Fall.</i>	SYMPYCNUS <i>Lw.</i>	<i>ruficornis Hal.</i>
LIANCALUS <i>Lw.</i>	<i>spiculatus Gerst.</i>	SCHENOPHILUS <i>Mik</i>
<i>virens Scop.</i>	<i>cirripes Walk.</i>	<i>versutus Walk.</i>
<i>lacustris Scop.</i>	<i>annulipes Meig.</i>	APHROSYLUS <i>Walk.</i>
CAMPSICNEMUS <i>Walk.</i>	<i>æneicoxa Meig.</i>	<i>celtiber Hal.</i>
<i>maginus Lw.</i>	BATHYCRANIUM <i>Strobl</i>	<i>raptor Walk.</i>
<i>pusillus Meig.</i>	<i>bicolorellum Zett.</i>	<i>ferox Walk.</i>
<i>scambus Fall.</i>	CHRYSOTIMUS <i>Lw.</i>	
<i>curvipes Fall.</i>	<i>molliculus Fall.</i>	
<i>loripes Hal.</i>	<i>concinus Zett.</i>	
<i>armatus Zett.</i>		

Species described from British specimens, but never recognised since, and now omitted:—

Psilopus obscurus Meig. ; now considered a synonym of *P. longulus* Fall.

Dolichopus prætextatus Hal. ; possibly a *Pecilotothrus*.

Porphyrops gravipes Walk. ; probably *P. patula* Radd.

Species described in Walker's Ins. Brit. Dipt., but now omitted:—

Psilopus lugens Meig. ; now considered a synonym of *P. longulus* Fall.

Neurigona Erichsonii Zett. ; never absolutely recorded as British yet.

Tachytrechus ammobates Stann. ; never absolutely recorded as British yet.

TABLE OF GENERA.

- 1 (68) Thorax with acrostichal bristles.*
- 2 (53) Acrostichal bristles in pairs (*i. e.*, two rows).
- 3 (36) Arista dorsal (subapical in 13 *Chrysotus*, and 25 *Achalcus*).
- 4 (5) Discal vein forked1. *Psilopus* Meig.
- 5 (4) Discal vein not forked.
- 6 (9) Colour not metallic.
- 7 (8) Hypopygium free, plump, and turned downwards ...2. *Neurigona* Rnd.
- 8 (7) Hypopygium small, and concealed.....3. *Eutarsus* Lw.
- 9 (6) Colour metallic.
- 10 (13) Basal joint of hind tarsi bearing one or more bristles above.
- 11 (12) Face extending as low down as the bottom of the eyes (*conf. Dol. laticola*)
4. *Hygroceleuthus* Lw.

* The acrostichal bristles are the tiny bristles which run down the actual middle of the thorax between the two rows of the large dorso-central bristles.

- 12 (11) Face not extending downwards as low as the bottom of the eyes...
5. *Dolichopus* Latr.
- 13 (10) Basal joint of hind tarsi without any bristle above.
- 14 (15) Hind femora with a row of erect bristles in front...
6. *Tachytrechus* Stann.
- 15 (14) Hind femora without a row of erect bristles in front.
- 16 (33) Hind coxæ with only one erect bristle outside.
- 17 (28) Hind femora with a preapical bristle.
- 18 (25) First posterior cell narrowed towards end (conf. *Gymn. assimilis*).
- 19 (20) Arista evidently hairy7. *Pæcilobothrus* Mik
- 20 (19) Arista not evidently hairy.
- 21 (24) Proboscis shorter than head.
- 22 (23) Hypopygium sessile8. *Herostomus* Lw.
- 23 (22) Hypopygium pedunculate; basal joint of arista very long...
9. *Hypophyllus* Lw.
- 24 (21) Proboscis longer than head10. *Orthochile* Latr.
- 25 (18) First posterior cell not narrowed towards end.
- 26 (27) Thorax without distinct velvety spots11. *Gymnopternus* Lw.
- 27 (26) Thorax with four black velvety spots; third antennal joint pointed and
hairy12. *Lamprochromus* Mik
- 28 (17) Hind femora without a preapical bristle.
- 29 (30) Arista subapical; eyes (σ) usually approximated on face, but not on
frons; pulvilli of front feet short.....13. *Chrysotus* Meig.
- 30 (29) Arista distinctly dorsal; eyes (σ) not approximated on face, but often so
on frons; pulvilli of front feet often elongate.
- 31 (32) Wings ovate; eyes (σ) wide apart on frons.....14. *Melanostolus* Kow.
- 32 (31) Wings narrowed about base; eyes (σ) touching, or closely approximated
on frons15. *Diaphorus* Meig.
- 33 (16) Hind coxæ with more than one erect bristle outside; species usually with
glistening silvery appearance.
- 34 (35) Basal joint of antennæ hairy above16. *Argyra* Macq.
- 35 (34) Basal joint of antennæ quite bare above17. *Leucostola* Lw.
- 36 (3) Arista apical, or practically so (conf. 13. *Chrysotus*).
- 37 (50) Colour metallic green or blue (some species of *Medeterus* are rather
greenish, but have very short antennæ rounded at tip).
- 38 (39) Antennæ short, rounded at tip; anal vein absent; bristles on thorax
yellow; very small species18. *Thrypticus* Gerst.
- 39 (38) Antennæ (σ) long, pointed at the tip.
- 40 (49) Second antennal joint simple, transverse.
- 41 (48) Hypopygium sessile, more or less imbedded, but lamellæ (often filiform)
usually conspicuous.
- 42 (43) Hind coxæ with two (one large) conspicuous black bristles; basal joint
of antennæ cylindrical, nearly three times as long as deep, third joint
long and linear in both sexes, not larger at its base than second;
abdomen rather long19. *Rhaphium* Meig.
- 43 (42) Hind coxæ with only one distinct black bristle or with none; basal joint
of antennæ not much longer than deep, third joint larger at its base
than second.

- 44 (45) Third joint of antennæ abruptly dilated at its base, and then almost excised beneath, long in both sexes; abdomen rather short; hind coxæ with a conspicuous black bristle.....20. *Macharium* Hal.
- 45 (44) Third joint of antennæ not abruptly dilated about its base; antennæ of female short.
- 46 (47) Hind coxæ without any distinct black bristle (except in *P. micans*); third joint of antennæ moderately elongate (σ), being not more than three times as long as deep; larger, hairier species...
21. *Porphyrops* Meig.
- 47 (46) Hind coxæ with one distinct black bristle (except in the section with frons glossed with white); third joint of antennæ remarkably elongate (σ), being 6—10 times as long as deep (4 times in *X. brevicorne*); small, moderately hairy species22. *Xiphandrium* Lw.
- 48 (41) Hypopygium pedunculate, free23. *Systemus* Lw.
- 49 (40) Second antennal joint inserted like a thumb into the third; acrostichal bristles hardly more than a single row24. *Syntormon* Lw.
- 50 (37) Colour not metallic green or blue (sometimes rather metallic in *Medeterus*, but then antennæ short and rounded at tip); anal vein absent or weak.
- 51 (52) Third joint of antennæ ovate, acute; arista subapical; anal vein absent; preapical bristle distinct; hypopygium short.....25. *Achalca* Lw.
- 52 (51) Third joint of antennæ short and rounded; arista apical; preapical bristle absent; hypopygium disengaged, long and conspicuous...
26. *Medeterus* Fisch.
- 53 (2) Acrostichal bristles not in two rows, being either in one row or irregular.
- 54 (55) Antennæ long (σ), arista apical (subapical in *S. tarsatus*); second joint of antennæ inserted like a thumb into the third (conf. 31. *Bathycranium*)24. *Syntormon* Lw.
- 55 (54) Antennæ short, arista dorsal (subapical in 34 *Bathycranium*).
- 56 (61) Discal cross-vein as long as, or longer than, last piece of postical (fifth) vein.
- 57 (58) Front femora beneath with remarkably long spines27. *Scellus* Lw.
- 58 (57) Front femora beneath without, or with only short, spines.
- 59 (60) Front femora thickened at base and (σ) with short spines beneath...
28. *Hydrophorus* Fall.
- 60 (59) Front femora not thickened at base nor spinose beneath...
29. *Liancalus* Lw.
- 61 (56) Discal cross-vein shorter than last piece of postical (fifth) vein.
- 62 (65) Abdomen depressed; face contracted below antennæ, but widening towards mouth.
- 63 (64) Acrostichal bristles existing; wings of normal shape; legs (σ) usually contorted or ciliated30. *Campsicnemus* Walk.
- 64 (63) Acrostichal bristles absent; wings ninepin shaped (σ); legs almost simple31. *Ectomus* Mik
- 65 (62) Abdomen compressed; face either equally wide or narrowed towards mouth.
- 66 (69) Antennæ and abdomen entirely, or almost entirely, dark coloured.
- 67 (68) Frons metallic; costa (σ) with a long black swelling...
32. *Teuchophorus* Lw.

- 68 (67) Frons not metallic; costa without a black swelling; hind tarsi (in British species) with a brush of hairs on the third joint (σ)...
33. *Sympycnus* Lw.
- 69 (66) Antennæ and abdomen mainly orange34. *Bathycranium* Strobl
- 70 (1) Acrostichal bristles entirely absent.
- 71 (74) Bristles on thorax and scutellum yellow.
- 72 (73) Hypopygium small; arista nearly apical35. *Chrysotimus* Lw.
- 73 (72) Hypopygium a large swollen knob; arista obviously dorsal...
36. *Xanthochlorus* Lw.
- 74 (71) Bristles on thorax and scutellum black.
- 75 (78) Palpi not large; arista near base of third antennal joint.
- 76 (77) Thorax metallic, brilliant brownish-black; third joint of antennæ (σ) elongate oblong; genital lamellæ obvious (conf. *Chrysotus læsus*, green, with antennæ short and blunt)37. *Anepsioniya* Bezzi
- 77 (76) Thorax not metallic, dull grey; third joint of antennæ short; genital lamellæ concealed; face broad (conf. 31 *Ectomus*, face narrowed below antennæ)38. *Micromorphus* Mik
- 78 (75) Palpi very large; arista not near base of third antennal joint.
- 79 (82) Third joint of antennæ short and rounded at tip.
- 80 (81) Arista dorsal; species rather large39. *Thinophilus* Whlbg.
- 81 (80) Arista subapical; species small40. *Schœnophilus* Mik
- 82 (79) Third joint of antennæ elongate, attenuated, pointed, and with an apical arista41. *Aphrosylus* Walk.

1. *PSILOPUS* Meig.

- 1 (2) Basal joint of hind tarsi much longer than the second; middle tarsi (σ) with the third and fourth joints white1. *platypterus* Fabr.
- 2 (1) Basal joint of hind tarsi barely longer than the second; middle tarsi normal.
- 3 (4) Front tarsi with the fourth joint lobed (σ).....2. *Wiedemanni* Fall.
- 4 (3) Front tarsi with the fourth joint normal.
- 5 (8) Abdomen with inconspicuous bands.
- 6 (7) Dusty green; antennæ pale at the base3. *longulus* Fall.
- 7 (6) Brilliant green; antennæ wholly black4. *lætus* Meig.
- 8 (5) Abdomen with broad dark bands.....5. *contristans* Wied.

1. *P. platypterus* Fabr.: common on tree trunks, palings, &c., from Penzance to Inverness.
2. *P. Wiedemanni* Fall.: not uncommon near the coast from Bournemouth to Aberlady, but also occurring as much inland as Newmarket or Woking.
3. *P. longulus* Fall.: occurring locally in abundance in the southern half of England.
4. *P. lætus* Meig.: a little known and very rare species, of which I have seen one male from Fawley, and one female from Bournemouth.

1. *H. diadema* Hal. : occurring on the coast, and often in abundance, from Bournemouth to Llanbedr and Aberlady ; Col. Yerbury has taken it at Beer Ferris, near Plymouth.
2. *H. latipennis* Fall. : in Walker's Ins. Brit. Dipt. this species is given as "Rare, on the sea-coasts (E. I.)." I do not in the least doubt its authenticity as a British species, but I have never met with it. The elongated basal joints of the antennæ distinguish it from any European species of this or the allied genera.

In dealing with the genus *Hygroceleuthus* a comparison should be made with the new species *Dolichopus laticola*.

5. *DOLICHOPUS* Latr.

MALES.

- 1 (22) Femora black ; antennæ always wholly black (femora dusky, conf. 27 *signifer*, 28 *clavipes*, and 44 *rupestris*).
- 2 (17) Lower postocular cilia black.
- 3 (10) Tibiæ black (at the utmost knees pale), or dark piccous when immature (conf. 8 *laticola*).
- 4 (5) Wings blackish on outer half ; basal joint of hind tarsi very bristly...
1. *atratus* Meig.
- 5 (4) Wings not blackish on outer half ; basal joint of hind tarsi only moderately bristly.
- 6 (9) Last joint of front tarsi dilated.
- 7 (8) Hind femora with a whitish fringe beneath near base ; anterior knees and middle joints of front tarsi ferruginous2. *Falleii* Lw.
- 8 (7) Hind femora with a short black fringe beneath ; legs entirely black, except absolute knee joints.....3. *melanopus* Meig.
- 9 (6) Last joint of front tarsi normal ; tibiæ sometimes piccous...
4. *picipes* Meig.
- 10 (3) Anterior tibiæ yellow or pale ferruginous.
- 11 (12) Middle femora with two preapical spines5. *campestris* Meig.
- 12 (11) Middle femora with only one preapical spine.
- 13 (14) Last joint of middle tarsi dilated.....6. *planitarsis* Fall.
- 14 (13) Last joint of middle tarsi normal.
- 15 (16) Face ochreous ; hind femora with long blackish fringe...7. *lepidus* Stæg.
- 16 (15) Face silvery-white ; hind femora without any fringe (conf. 4 *picipes*)...
8. *laticola* n. sp.
- 17 (2) Lower postocular cilia pale.
- 18 (19) Face ochreous ; legs almost wholly black.....9. *atripes* Meig.
- 19 (18) Face white ; anterior tibiæ mainly ferruginous.
- 20 (21) Hind tibiæ blackish (tarsi with only one bristle above)...
10. *phæopus* Hal.
- 21 (20) Hind tibiæ blackish at tip only11. *vitripennis* Meig.
- 22 (1) Femora pale (occasionally dusky, conf. 27 *signifer*, and especially 28 *clavipes*).

- 23 (80) Lower postocular cilia pale.
- 24 (41) Front or middle tarsi adorned, *i. e.*, one or more joints plumed, dilated, or silvery.
- 25 (30) Last joint of front tarsi dilated; middle tarsi normal.
- 26 (27) Hind femora with more than one preapical bristle; squamæ pale fringed...
12. *claviger* Stann.
- 27 (26) Hind femora with only one preapical bristle; squamæ black fringed.
- 28 (29) Discal vein scarcely bent; basal joint of front tarsi as long as next two together13. *discifer* Stann.
- 29 (28) Discal vein almost (or quite) rectangularly bent; basal joint of front tarsi longer than next three together14. *confusus* Zett.
- 30 (25) Last joint of front tarsi normal; middle tarsi partly dilated, or plumed, or silvery.
- 31 (34) Basal joint of middle tarsi feathered, others normal.
- 32 (33) Hind tibiæ at tip, and all hind tarsi, black15. *plumipes* Scop.
- 33 (32) Hind tibiæ entirely, and base of hind tarsi, pale...16. *Wahlbergi*, Zett.
- 34 (31) Basal joint of middle tarsi simple.
- 35 (36) Second joint of middle tarsi plumed (also third), while last two joints silvery.....17. *pennatus* Meig.
- 36 (35) Second joint of middle tarsi normal.
- 37 (38) Third and fourth joints of middle tarsi black-plumed, fifth joint silvery; hind femora with more than one preapical bristle...
18. *popularis* Wied.
- 38 (37) Third and fourth joints of middle tarsi not plumed, but middle tarsi silvery at tip.
- 39 (40) Hind tibiæ black at tip only; last two joints of middle tarsi silvery...
19. *signatus* Meig.
- 40 (39) Hind tibiæ wholly black; last joint of middle tarsi silvery; hind femora with more than one preapical bristle20. *urbanus* Meig.
- 41 (24) All tarsi unadorned.
- 42 (49) Basal joint of middle tarsi with one bristle above; hind femora fringed beneath.
- 43 (46) Wings with a black costal swelling.
- 44 (45) Antennæ black, but tawny beneath basal joint 21. *trivialis* Hal.
- 45 (44) Antennæ tawny, but dusky at tip22. *festivus* Hal.
- 46 (43) Wings without any black costal swelling.
- 47 (48) Hind tarsi pale at base23. *virgultorum* Walk.
- 48 (47) Hind tarsi wholly black24. *arbustorum* Stann.
- 49 (42) Basal joint of middle tarsi without any bristle above.
- 50 (53) Discal vein bent rectangularly, and usually with a small recurrent veinlet (conf. *H. diadema*); front tibiæ with a long thin hair at tip.
- 51 (52) Basal joint of hind tarsi black at tip only; hind femora not fringed beneath; basal joint of hind tarsi with two bristles above...
25. *nitidus* Fall.
- 52 (51) Basal joint of hind tarsi wholly black; hind femora black fringed beneath; basal joint of hind tarsi with only one bristle above...
26. *griseipennis* Stann.
- 53 (50) Discal vein bent obtusely.

- 54 (57) Basal joint of hind tarsi with only one bristle above; hind femora fringed beneath; all femora more or less dusky.
- 55 (56) Wings with a blackish blotch occupying tip; hind tibiæ simple...
27. *signifer* Hal.
- 56 (55) Wings without any blackish blotch occupying tip; hind tibiæ dilated...
28. *clavipes* Hal.
- 57 (54) Basal joint of hind tarsi with at least two bristles above.
- 58 (59) Wings conspicuously dusky about costa on apical half (conf *nubilus*); costal swelling slight.....29. *sabinus* Hal.
- 59 (58) Wings not conspicuously dusky anywhere.
- 60 (67) Wings with a black costal swelling.
- 61 (64) Third antennal joint long, pointed, and turned up at tip.
- 62 (63) Antennæ black, with under-side of basal joint tawny; tibiæ black at tip...
30. *acuticornis* Wied.
- 63 (62) Antennæ tawny, but blackish above and at tip; tibiæ all pale...
31. *longicornis* Stann.
- 64 (61) Third antennal joint short as usual.
- 65 (66) Face ochreous32. *puncticornis* Zett.
- 66 (65) Face silvery-white; front coxæ bare33. *linearis* Meig.
- 67 (60) Wings without any black costal swelling.
- 68 (77) Antennæ apparently wholly black, but under-side of basal joint inconspicuously tawny.
- 69 (70) Squamæ with yellow fringes34. *nubilus* Meig.
- 70 (69) Squamæ with black fringes.
- 71 (72) Front tibiæ at tip with a long thin hair; front coxæ all yellow...
35. *latilimbatus* Macq.
- 72 (71) Front tibiæ at tip without a long thin hair.
- 73 (74) Antennæ short as usual, all black; front femora mainly blackish; front coxæ mainly cinereous.....36. *andalusiacus* Strobl.
- 74 (73) Antennæ subelongate, obviously tawny beneath basal joint; front femora all yellow; front coxæ all orange.
- 75 (76) Medium sized species; face pale yellow37. *medicornis* Verr.
- 76 (75) Largish species; face ochreous-yellow38. *lineaticornis* Zett.
- 77 (68) Antennæ conspicuously tawny about all base.
- 78 (79) Squamæ with yellow fringes; femora with dusky stripes; frons blue...
39. *strigipes* Verr.
- 79 (78) Squamæ with black fringes; femora all yellow; frons greenish...
40. *simplex* Meig.
- 80 (23) Lower postocular cilia black.
- 81 (82) Hind femora with three or more preapical bristles ...41. *ungulatus* L.
(= *veneus* De G.)
- 82 (81) Hind femora with only one preapical bristle.
- 83 (84) Face white; hind femora black fringed42. *longitarsis* Stann.
(= *equestris* Hal.)
- 84 (83) Face ochreous.
- 85 (86) Last joint of front tarsi dilated; femora pale fringed...
43. *brevipennis* Meig.
- 86 (85) Last joint of front tarsi normal; femora dusky, not fringed...
44. *rupestris* Hal.

(To be continued).

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (10).

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

We come now to what in Konow's system forms Tribe 1 of the *Tenthredinini*, viz., the *Nematides*.

These insects are divided by Thomson, entirely on neuration characters, into two short genera, *Cladius* and *Leptocercus*, and one exceedingly long one, *Nematus*, the latter including over 100 species, and the former two together only 11. Konow, on the other hand, recognises no less than 17 distinct genera of *Nematides*, 12 of which represent Thomson's one long genus *Nematus*. Yet these two classifications are by no means so different as might be supposed; for Thomson in describing the species of his genus arranges them in a number of subsections, which, though he does not give them separate names, agree on the whole pretty closely with the groups which Konow has preferred to treat as separate genera, and are distinguished in the main by the same characters. What Konow, in short, has done is not to upset Thomson's classification as a whole, but to revise carefully the groups established by the elder author, occasionally altering the position of species which appear to him wrongly placed, and then to raise these revised groups from the rank of unnamed sections to that of named genera. By this, it seems to me, while substantially retaining Thomson's system, he has made it a more convenient instrument for arriving at specific determinations, for it is surely much easier to connect in one's mind a certain collection of characters with a definite name like *Holcoeneme*, than with a long string of figures and letters like "Sect. IV, B, aa, bb, cc, m, n, o."

In the following tabulation I have tried to show roughly how far the two classifications agree and differ. I say "roughly," because I am not quite sure as to the identity of a few of Thomson's species, though his diagnoses are generally so clear, that I hope I have not often gone wrong over them. I cannot introduce into this table a comparison of these groups with those adopted by Mr. Cameron in Vol. II of his Monograph, for the latter are founded on quite a different set of characters (the colour of the ♀ ♀ in each species), and naturally lead to results which are wholly out of relation to those of Thomson's structural divisions. I may say, however, that, in dividing the *Nematides* into genera, Mr. Cameron has taken a somewhat intermediate and, so to speak, "eclectic" course. He retains Thomson's

Cladius, but divides *Leptocercus* into *Hemichroa* and *Camponiscus* (= *Leptocercus*, Knw.), and erects three of Thomson's *Nematus* groups into genera, viz., *Dineura*, *Cræsus*, and *Euura* (= *Cryptocampus*, Knw.), while leaving the rest to form a genus *Nematus*, which is nearly (if not quite) as long and as polymorphic as the *Nematus* of Thomson.

Genera according to Thomson. Hym. Scand., vol. i.	Species as numbered in Thomson's work.	Genera according to Konow.	
<i>Cladius</i>	{ sp. 1	<i>Cladius</i> .	
		spp. 2-5	<i>Trichiocampus</i> .
		spp. 6-7	<i>Priophorus</i> .
<i>Leptocercus</i> ...	{ spp. 1-3	<i>Hemichroa</i> .	
		sp. 4	<i>Leptocercus</i> .
<i>Nematus</i>	{ spp. 1, 3, 4	<i>Dineura</i> .	
		spp. 100-102	<i>Cryptocampus</i> .
		spp. 91-99 (also 7, 9, 10)	<i>Pontania</i> .
		spp. 69-89	<i>Pteronus</i> .
		spp. 53-64	<i>Amauronematus</i> .
		spp. 5, 6	<i>Cræsus</i> .
		spp. 48-52 (also 19)	<i>Holcoeceme</i> .
		spp. 65-68	<i>Nematus</i> .
		spp. 39-47 (also 8, 30)	<i>Pachynematus</i> .
		spp. 17, 20-25, 31-57 (except 35).....	<i>Lygaeonematus</i> .
{ spp. 11-16, 18, 26-29, 35	<i>Pristiphora</i> .		
	sp. 38	<i>Micronematus</i> .	

It will often be found that when once we have succeeded in making out for certain to which of Konow's genera a specimen is to be referred, the difficulty of arriving at its specific name is practically at an end. And I hope that the Synoptic Table given in my 4th paper will suffice to carry collectors, who will take the trouble to work through it point by point, thus far at least towards the determination of a large proportion of their unidentified *Nematides*. But I must own that some of the characters, until one becomes familiar with them, require time and patience in their investigation, even under the most favourable circumstances, *i. e.*, even when the specimen is in fair condition, and not so mounted (on card or otherwise) that it is impossible to see the characters at all. I may say here that to determine even the genus of many Nematids one ought to be able to see quite distinctly (1) the outline of the clypeus and labrum, (2) one claw at least [all round], (3) the sculpture of the head, scutellum* and

* A pin thrust through the scutellum of a Nematid or Dolerid may make its specific determination absolutely impossible.

pleuræ, (4) the ventral as well as the dorsal surface of the abdomen, and (5) the saw-sheath [if it be a ♀] in the ventral and lateral aspect as well as in the dorsal, and *in its natural position*, not pulled about or crushed out of shape in the process of "setting."

Although the *Nematides* undoubtedly form a good and distinct group among the saw-flies, so that a collector of any experience would seldom be in doubt whether or no a particular specimen belonged to it, I am not aware that there is any one character peculiar to the group and exhibited by all the members of it. Most of its genera, but not all, have a common and easily recognised type of alar neurotation which combines the following characters: (1) an undivided radial cell; (2) four cubital cells, the first shortest, and the second receiving both the medial nerves; (3) a petiolate humeral area; (4) the basal nerve strikes the subcosta *before* the origin of the cubitus and *after* an intercostal nerve which is regularly present and distinct; (5) the hind-wings show "two discoidal closed cells," and a "complete humeral area" (*i. e.*, the humerus is not obliterated but distinctly visible from its origin till it falls into the brachius). Quite four-fifths of the *Nematides* may be recognised as such by possessing this neurotation. What is *distinctive* in it, however, is not any one of the above characters separately, but their co-existence.

Several characters on the contrary might be mentioned, the absence of any one of which would at once show a specimen *not* to be a Nematid. It cannot *e. g.* be one, if (*a*) the eyes reach up to the mandibles ("genæ nullæ"); or if (*b*) the humeral area is not either petiolate or "longly contracted;" or if (*c*) in the hind-wing there is no discoidal cell, or one only, or if the humerus is obliterated. (Exception must be made of course for "monstrosities," which may upset any rule however general). Again (*d*) all *Nematides* have 9-jointed antennæ, and these are nearly always setiform.

In the next paper I hope to give Tables of Specific Characters for determining British *Nematides*, or rather such British *Nematides* as are actually known to me. These, doubtless, are not all that exist in this country, nor are they even all that have been recorded as British. But I believe they include most species that my readers are likely to meet with in most districts; and I have said all along that these papers are Notes only, and do not profess to be exhaustive like a Monograph.

SOME NOTES ON MANX *COLEOPTERA*.

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

Insular faunas always have a special interest, and one has only to read Wallace's "Island Life" to see their importance in helping to unravel an island's geological history. It is surprising that so little has hitherto been done to work out the *Coleoptera* of the Isle of Man, accessible as it is now, in view of the light they may be expected to throw on the origin of the present fauna. It seems to be generally agreed that the island was completely covered by a vast ice-sheet during the Glacial epoch. Was there land connection with England and Ireland *after* the disappearance of the ice, and if so, was the connection with England or that with Ireland severed first? Or was the island isolated at an earlier epoch, and is its present fauna entirely due to fortuitous arrivals by water and air, and by human agency?

Such are some of the moot points connected with the Isle of Man, and the entomologist can certainly hope eventually to throw his quota of light upon them. The only published list of Manx beetles is one by Rev. Hugh Stowell in the "Zoologist," 1862, p. 7895.

There are besides, of course, scattered but very few scanty records in the Magazines. The subject has, however, been taken up energetically by Dr. J. H. Bailey of Port Erin during the last three years, and it was as his guest that I made a first acquaintance with the Manx *Coleoptera* last September.

Within so moderate an area there is a remarkable diversity of ground in the island, from a collector's point of view. What one most misses is woodland, and so far not a single species of Longicorn has occurred, with the exception of one exotic specimen that had doubtless escaped from a neighbouring greengrocer's shop. Possibly when the woods near Ramsey have been searched this statement may be somewhat modified, but the Longicorns and other xylophagous beetles will always be poorly represented on the Manx list.

For general collecting there is plenty of scope, and the glens, which are so characteristic of the island, afford excellent sweeping, while *Dianoüs* and other beetles of similar tastes are not uncommon where the glen provides a suitable mossy habitat.

In spite of an extensive littoral, the opportunities for shore collecting are few; the only sandhills are to be found in the most inaccessible part of the island towards the Point of Ayre, but a very limited patch of sand at Kentraugh has produced some good beetles.

A considerable tract, lying immediately north of Ballaugh and Sulby, and known as the Curragh, is regular fen land, due to the gradual drying up of one of the large lakes which were formed at the conclusion of the glacial epoch.

Lastly, there is a characteristic alpine fauna on the high hill tops, though our knowledge of it is very incomplete. For instance, *Arpedium* and *Pterostichus vitreus*, Dj., are not uncommon on Snæfell (2034 ft.), and there are about twenty other hills over 1000 ft. high to be explored. Dr. Bailey tells me that *Pt. vitreus* has just turned up on the top of South Barrule (1585 ft.).

I will now give some notes on the results of my collecting in September, 1903. The asterisk denotes that the species to which it is prefixed has not hitherto been recorded for the Isle of Man, though in several cases Dr. Bailey had already taken the species but not recorded it. I must acknowledge his kindly help and co-operation in every way.

I.—KENTRAUGH.

**Corticaria crenulata*, Gyll.; **Cassida nobilis*, L., common under stones on the sand near *Matricaria inodora* and *Honckenya peploides*. Dr. Bailey tells me that it occurs there all the year round.

II.—THE CURRAGH.

**Anchomenus fuliginosus*, Panz.; **Anacæna limbata*, F.; *Chætarthria seminulum*, Pk.; **Aleochara brevipennis*, Gr.; **Tachyporus obtusus*, L., var. *nitidicollis*, Steph.; **Stilicicus orbiculatus*, Pk.; **Homalota nigra*, Kr.; **Oligota punctulata*, Heer, also at Port Erin; **Acidota crenata*, F.; **Homalium exiguum*, Gyll.; *Calypptomerus dubius*, Marsh., of rather general occurrence; *Euconnus hirticollis*, Ill.; **Bythinus curtisi*, Den., also at Colby Glen; *Rybaxis sanguinea*, L.; *Bryaxis fossulata*, Reich., *B. juncorum*, Leach, common generally; *Ptenidium evanescens*, Marsh., of general occurrence; **Atomaria mesomelas*, Herbst.; **Cyphon padi*, L.; **Lema lichenis*, Voet.; **Galerucella sagittariæ*, Gyll.; **G. lineola*, F.; *Longitarsus holsaticus*, L., not uncommon; **Crepidodera helvina*, L., swarms on the shallows; *Apion cruentatum*, Walt., also at Port Erin; **Hypera pollux*, F.; **Anthonomus rubi*, Hbst.; *Hylesinus fraxini*, Pz., abundant in ash.

III.—PORT ERIN.

Harpalus rufibarbis, F.; *Amara acuminata*, Pk.; **Cereyon pygmaeus*, Ill.; **Oxygona exigua*, Er.; **Homalota gregaria*, Er., *H. pilicornis*, Th.?, **H. canescens*, Shp., **H. longicornis*, Gr., **H. sordida*, Marsh., **H. aterrima*, Gr.; *Falagria thoracica*, Curt.; **Hypocyptus ovulum*, Heer; *Ocypus compressus*, Marsh.; **Medon ripicola*, Kr., this rare south coast species occurs very sparingly at Spaldrick Bay in decaying seaweed; **Homalium striatum*, Gr.; *Megarthus depressus*, Pk., *M. denticollis*, Beck; **Sunius angustatus*, Pk.; *Meligethes exilis*, Stm.; **Corticaria pubescens*, Gyll., **C. umbilicata*, Beck, rare, by shaking tufts of grass at Spaldrick,

**C. elongata*, Gyll.; *Ephistemus globosus*, Waltl.; **Aphodius porcus*, F., rare on the Mull Hills, also swept in Colby Glen; *Chrysomela banksi*, F., common throughout the island; **Apion vicie*, Pk., **A. nigrifarse*, Kirby, **A. loti*, Kirby; *Otiorrhynchus blandus*, Gyll., not uncommon about Bradda Head, *O. muscorum*, Bris.; **Barynotus schönherri*, Zett.; *Ceuthorrhynchidius dawsoni*, Bris., common on *Plantago maritima*; *Phytobius A-tuberculatus*, F.; **Hylastinus obscurus*, Marsh.

IV.—COLBY GLEN.

**Bembidium rufescens*, Guér., also at Port Erin; **Homalota soror*, Kr.; *Quedius nigriceps*, Kr.; *Silpha subrotundata*, Steph., the red form is of general occurrence in the island, the black I have only seen near Sulby Glen; **Ptenidium punctatum*, Gyll., **P. nitidum*, Heer; *Bythinus puncticollis*, Den.; **Cercus rufilabris*, Lat.; **Atomaria fuscata*, Sch., **A. fuscipes*, Gyll.; **Cryptophagus scanicus*, L., *C. dentatus*, Hbst.; *Lema melanopa*, L.; **Crepidodera ventralis*, Ill., in the utmost profusion, Dr. Bailey has taken it in other localities, but we have not been able to find out whether it is attached to any special plant; **Apion vorax*, Hbst., scarce; **Longitarsus gracilis*, Knts., **L. ochroleucus*, Marsh., **L. curtus*, All., occurs very sparsely amongst the hordes of *Crepidodera ventralis*, Ill.—it was very kindly identified for me by M. Bedel, and I briefly recorded it in this Magazine in March last. The species was described by Allard in the Ann. Soc. Ent. de France, 1860, p. 137, as *Teinodactyla pratensis*, a pre-occupied specific name, which he altered to *T. curta* on p. 832 of the same volume:—"ovata, curta, lata, nigra; supra erebre punctulata, prothorace seu testaceo, seu piceo: antennarum basi, elytris pedibusque testaceis, femoribus posticis ad apicem piceis, elytris latis, subquadratis apiceque singulatim rotundatis. Long., 1 $\frac{3}{4}$ mm., larg., 1 mm." He remarks on its analogy with *abdominalis*, Duft, but says that it is larger, broader, and has the elytra more strongly and less closely punctured. The elytra are broader at base than the thorax, have the shoulders well marked, and the sides almost parallel for two-thirds of their length, being then rounded rather abruptly and ending in an obtuse sutural angle. The posterior femora vary in colour according to Allard, but are entirely black in Manx specimens. I should be inclined to compare it to *L. nasturtii*, F., but it is broader and squarer, and the elytral margins are not dark. In punctuation it comes nearer to *L. suturalis*, Marsh., but that species is still more oblong than *L. nasturtii*, F. *L. melanocephalus*, All., is much larger and more finely and closely punctured. The localities recorded are Montenegro and Mid Europe (Cat. Col. Eur.), common in Normandy (Bedel), Paris on *Echium vulgare*, Dijon, Bordeaux, Austria, and Algeria (Allard). It will probably prove to be widely spread in Britain; I find I have also taken it at Ballycastle in Co. Antrim.

Chester: July 6th, 1904.

Stelis octomaculata at Wellington (Berks.).—On July 6th, 1904, I took a *Stelis* at Wellington (Berks.), which Mr. Saunders has identified for me as *Stelis octomaculata*; the rarest of the three British species. It associates with *Osmia leucomelana*, which occurs at the same place.—H. H. BANKS, 69, Alexandra Road, Reading, Berks.: July, 1904.

DESCRIPTION OF A NEW VARIETY OF *APLECTA NEBULOSA*,
HUFN., FROM DELAMERE FOREST, CHESHIRE.

BY J. ARKLE.

APLECTA NEBULOSA, Hufn., var. THOMPSONI, var. nov.

The upper wings are black. There is an indistinct, and slightly blacker, median fascia or transverse band. The upper and widest part of this band embraces the discoidal cell, in which the discoidal spots (orbicular and reniform) appear faintly as smoky-black markings, paler than the rest of the wing area. The outer margins are white, and include, in addition to the cilia, the areas of black crescentic spots which appear in the typical form of the insect from Delamere Forest. These white margins are consequently scalloped interiorly. The costal margins have three white spots near the apical angle.

The lower wings are smoky-black, paler towards the base. The nervures are black. The outer margins are white as in the upper wings.

The head and thorax are black. The abdomen smoky-black with darker dorsal crests, and darker posteriorly. The anal tuft is white. The anterior and lateral crests of the thorax are black, pointed behind and well developed. The latter have long, broad, interior white patches.

The front legs are black, the hind legs smoky-black with white spots.

This striking variety is very different from the var. *robsoni*, Tutt, which is without the white markings and decorations. In giving a name to this aberration I prefer a personal to a local one, as the form is pretty sure to turn up, as others have done in other districts than Delamere Forest. For example, I have it on good authority that the variety *robsoni* occurs in at least three districts in Yorkshire. I have, therefore, much pleasure in giving the name *thompsoni* to this remarkable example of melanism, in recognition of the labours on its behalf of my friend Mr. Thompson, of Chester.

2, George Street, Chester :

July 13th, 1904.

The genus Otiorrhynchus, Germ., in the Isle of Man.—The following notes summarize my experience with *Otiorrhynchus* in the Isle of Man during the last two and a half years :—

O. blandus, Gyll. : this species I have taken sparingly each year in several localities ; most of the specimens have occurred from the end of March to the end of May, and a few again in September, chiefly under stones on the hillsides at an elevation of 300 to 400 feet. My note as to its apparent absence from high altitudes in the Island (Ent. Mo. Mag., 1902, p. 219) is corroborated by Mr. B. Tomlin's visit to the summit of Snæfell (2000 feet), on May 27th, 1904, when he met with no signs of its occurrence. From a faunistic point of view its occurrence in Man is of interest, seeing that it is common in Ireland and Scotland, but absent from England and Wales.

O. maurus, Gyll.: Mr. B. Tomlin took two specimens of this mountain species at the summit of Snæfell, May 27th, 1901, and saw the remains of others.

O. scabrosus, Marsh.: I have met with nine examples in Port Erin and district, August and September, 1902, and September, 1903, at roots of grass and plants on the cliffs near the sea. In Johnson and Halbert's Irish List this species is reported as not common in Ulster, Leinster, and Munster, localities in counties Down, Antrim and Dublin being given. In England, Lancashire, and Cheshire appear to be the northern limits for the species. In Ellis's Liverpool List one specimen is recorded from Wallasey, Cheshire, and one from Aigburth, Lanes. I have met with a single example at Southport, Lanes., and its name occurs in Chaster's Southport List.

O. ligneus, Ol.: I have taken six specimens either under stones or at roots of grass on cliffs (Port Erin, 6.9.02, 8.5.03; Perwick, 11.5.03; Mull Hills, 28.5.04). In the Irish List it is recorded as common in all four Provinces. In Ellis's Liverpool List, Cheshire coast localities are given; in Fowler's "British Coleoptera," Lancaster and Scotland, Solway and Clyde districts.

O. picipes, F.: occurs commonly by beating and sweeping; I have also found it in plenty in moss.

O. sulcatus, F.: this has occurred in many localities in the neighbourhood, usually under stones, but occasionally in moss. I have not heard of any reports of damage to vines or strawberries in the Island.

O. ligustici, L.: the only record I know of from "Man" is in Fowler's "British Coleoptera," Vol. v, p. 179, "Isle of Man (Blatch)." The nearest locality from which it has been otherwise recorded is Matlock (Chappell), and more recently by Mr. J. Kidson Taylor (Ent. Mo. Mag., 1902, p. 269). Its food plant, *Anthyllis vulneraria*, occurs in the Isle of Man, sparingly, at Port Erin, where I have searched in vain for *O. ligustici*, L.

O. rugifrons, Gyll.: this, with the exception of *O. picipes*, F., is the most plentiful of the genus here, being common from May to November, at roots of grass and plants on the cliffs; it seems specially fond of hiding at the roots of *Plantago maritima*. The prevalence of this species is rather an Irish characteristic, for it is plentiful on the coast of Ireland, whereas in Lancashire and Cheshire it is not a common insect. It is not included in Ellis's Liverpool list, nor Chaster's Southport list; I have, however, met with single examples at Southport and Lytham, and Mr. W. E. Sharp has taken it at Hilbre Island, off the Cheshire coast, and it is given as from Lancaster in Fowler's "British Coleoptera."

O. muscorum, Bris.: I have taken about a dozen examples under stones or at roots of grass (Port Erin, May, July, September, 1902; May, September, 1903; Sulby, 1.7.02; Ballanahow, 26.4.02).

There is, therefore, a very fair proportion of the genus, nine species out of seventeen, recorded from the Isle of Man, and another species, *O. ovatus*, L., is almost certain to be found, it being common on the Lancashire and Cheshire coast, and occurring on the Irish coast and in the Solway district of Scotland. *O. atroapterus*, De G., may also turn up, as it also is abundant on the Irish coast and has been recorded from Lancashire localities. It is just barely possible that

O. auro-punctatus, Gyll., may be found here, seeing that *O. blandus* occurs, and that we have the Irish *Silpha subrotundata*, Steph.—J. HAROLD BAILEY, Port Erin, Isle of Man: *June 4th*, 1904.

Coleoptera from Berkshire.—In glancing over my list of captures of *Coleoptera* for the first half of this year, I find that it compares favourably with the same period of the previous one, yet I must admit that it has required a good deal of hard work to make up the list, and there has been more than one almost blank day. Certain methods of collecting have been extraordinarily unproductive. There has been almost nothing on the hawthorn blossom, and all ground-haunting beetles, even the commonest *Geodephaga*, have been quite rare. The first collecting done was in March and April, when the following species were taken from flood-rubbish in the Kenuett Valley: *Hydaticus seminiger*, De G., *Henicocerus exsculptus*, Germ., *Calodera riparia*, Ev. (common), fifteen species of *Stenus*, including *S. solutus*, Er., *S. opticus*, Grav., and *S. circularis*, Grav., *Pselaphus dresdensis*, Herbst (2), *Euconus hirticollis*, Ill. (rather common), *Haltica tamaricis*, Schr., and *Bagous frit* (Brit. Coll.?). I was pleased to find one specimen of *Dianous cærulescens*, Gyll., in the flood-rubbish in this (the Pang) Valley. Two or three visits in the spring to some nests of *Lasius fuliginosus* in the Wellington College district, produced 4 *Thiasophila inquilina*, Märk., and more *Notothecta confusa*, Märk. I also came across in the same district *Phlæocharis subtilissima*, Mann., rather commonly under bark; *Haplocnemus impressus*, Marsh., by sweeping, and *Notiophilus rufipes*, Curt. A long day in Aldermaston Park was rather disappointing, but three species were added to the county list, viz.: *Donacia cinerea*, Herbst, *Epuræa angustula*, Er., and *Trypodendron domesticum*, L., the last two being taken from a dead holly tree. As usual something of interest has always turned up on the few visits that I have been able to pay to the Streatley District. *Agathidium rotundatum*, Gyll., was taken commonly in a small powdery fungus; *A. atrum*, Payk., and *Rhizophagus cribratus*, Gyll., from fungus on beech trees; *Clinocara tetratoma*, Thoms., one specimen under bark, and *Phyllobius viridicollis*, F., by sweeping.

In the immediate neighbourhood the only captures worth recording have been *Pediacus dermestoides*, F., 9 specimens from under the bark of Spanish chestnut logs, and *Thalycra sericea*, Sturm., taken by evening sweeping. Two or three short expeditions into Hampshire have been worth the trouble, as *Crepidodera nitidula*, L., was seen in abundance on one occasion, and *Polydrusus sericeus*, Schall., in some numbers on another; single specimens of *Cyrtotriplax bipustulata*, F., and *Ilyobates nigricollis*, Payk., were also taken.—NORMAN H. JOY, Bradfield, near Reading: *July 3rd*, 1904.

Orochares angustatus, Er., at Bradfield, Berks.—On October 13th of last year, a cold drizzling day, when walking up a hill with my bicycle, I noticed a small shining Omaliid crawling on my mackintosh cape. As the insect seemed unfamiliar to me, and as I was naturally unprepared for *Coleoptera* at such a time, I carried it home between my finger and thumb. On sending the specimen to Canon Fowler he kindly identified it for me as *Orochares angustatus*, Er. This is the

second time the species has occurred in the British Isles; the first having been recorded in the Entomologist's Monthly Magazine for December, 1900; this was taken in a clay-pit at Leverstock Green, Herts. Shortly before finding my specimen I had thrown my mackintosh on the ground just inside the door of a patient's cottage, so that the beetle had probably crawled in from the garden. It appears to be a rare species on the Continent—NORMAN H. JOY, Bradfield: *June 17th, 1904.*

Re-occurrence of Cryptocephalus bipunctatus, L., var thomsoni, Weise, at Woking.—On the morning of June 21st, in dull, cold, gloomy weather, eminently unsuggestive of the "longest day," I was greatly pleased to sweep off a small bush of *Salix caprea* a fine ♀ example of this apparently rare dark form of our familiar red-and-black striped *Cryptocephalus*. During a residence of more than twelve years at Woking, Mr. G. C. Champion (Ent. Mo. Mag., vol. xxxviii, 1892, p. 193), has met with only three specimens of *C. bipunctatus*, var. *Thomsoni*, at long intervals apart, and two of these were, I believe, taken within a few yards of where my example was found.—JAMES J. WALKER, "Aorangi," Lonsdale Road, Summer-town, Oxford: *July 8th, 1904.*

Podagrica fuscicornis, L., a garden pest at Oxford.—While strolling through some nursery gardens near here a few evenings ago, my attention was called by the proprietor to the fact that his mallows were "being eaten up by some insect or other." On going to the spot indicated, I found that a bed of two species of cultivated *Malvaceæ*—the North American *Sidalcea candida*, and the white-flowered form of our *Malva moschata*—was entirely ruined by the attacks of *Podagrica fuscicornis, L.* The plants were literally blackened—if one may use the term in connection with a red and green insect—by the beetles, which had devoured the parenchyma of the leaves, nothing but withered brown stalks and ribs remaining; and shaking a couple of *Sidalcea* plants not a foot high produced a table-spoonful of the Halticid. A further inspection showed that other *Malvaceæ* in the garden were attacked in a lesser degree, the seedling hollyhocks (*Althæa rosea*) and *Sidalcea malvaflora* having a few of the beetles on them, while half-grown hollyhocks were apparently untouched. I may add that I have not yet seen either of our two species of *Podagrica* on the luxuriant plants of *Malva sylvestris* that grow in every waste place hereabouts.—JAMES J. WALKER, Oxford: *July 11th, 1904.*

Conopalpus testaceus, Oliv., &c., at Woking.—Amongst a few beetles caught by me on the wing, with my hat, during the past fortnight, while walking about in the evening in this neighbourhood, the following are worth noting: *Triarthron märkeli*, Schmidt (June 21st), *Hallomenus humeralis*, Panz. (June 23rd and again on the 26th), and *Conopalpus testaceus*, Oliv. (June 30th); the last-mentioned under some oak trees, the others on the heath. My boys caught two specimens of *Plusia moneta* in the garden on June 30th.—GEO. C. CHAMPION, Horsell, Woking: *July 2nd, 1904.*

Lochmæa suturalis, Thoms., var. nigrita, Weise.—I cannot find that this form of *Lochmæa suturalis* has ever been specifically recorded as British, so place on

record its occurrence on Cannock Chase the previous month, on heather. It is absolutely jet-black. The prevailing form of *L. suturalis* on the Chase is a remarkably dark one—quite a uniform blackish-brown without darker suture.—J. R. LE B. TOMLIN, Chester: *June 29th*, 1904.

Psallus variabilis, Fall., parasitised.—Upon examining an imago of this Heteropteron, captured here in an apparently healthy condition yesterday, I noticed a yellowish protuberance on the right side just below the base of the wings. At first I thought the insect had been damaged and the epidermis fractured, but closer scrutiny showed the protuberance to be the head of a larva which occupied the whole interior of the abdomen. It is opaque, soft, fleshy, pale flavous, and 3 mm. in length. It is nearly certainly Dipterous, since the corneous cribrary organs, discrete lateral lobes and distinct segmentation of Hymenopterous larvæ are all wanting. Moreover, I am not aware that Hymenopterous parasites have ever been bred from the *Heteroptera*, though *Allotriæ* and *Aphidii* are frequently raised from *Aphides*, and one or two species of Chalcids prey upon *Lecanium*. I have sent the parasite, in spirits, to Mr. Verrall, but can hope for little enlightenment from so obscure an object.—CLAUDE MORLEY, Ipswich: *July 3rd*, 1904.

Review.

A NATURAL HISTORY OF THE BRITISH LEPIDOPTERA: by J. W. TUTT, F.E.S. Vol. IV (with Synopsis of Contents and General Index to Vols. I—IV). 8vo. pp. xvii, 535. London: Swan, Sonnenschein, and Co. 1904.

The fourth volume of Mr. Tutt's great work on the *Lepidoptera* of these islands is now before us, and the exhaustive and thorough treatment of the subject, so evident in its three predecessors, will perhaps be best shown by the fact that only twelve species of "Hawk Moths" are dealt with in nearly 500 closely printed pages. These include the largest, and in many respects the most interesting forms of *Lepidoptera* occurring in our country, and of two of these at least—*Manduca atropos*, the "Death's-Head Moth," and *Agrius convolvuli*—the literature is almost overwhelming in amount, and is scattered through countless publications. As in the previous volumes, Mr. Tutt has collated and arranged his material in a very clear and readily accessible manner; and while in some respects the work may be thought to err a little on the side of redundancy, it will ever remain a monument of patient industry and research on the part of the writer, and an inexhaustible storehouse of facts and suggestions for the serious student of the Order. Certainly we are not aware of any entomological work, except perhaps Scudder's colossal book, "The Butterflies of New England," that at all approaches it in fulness and thoroughness of treatment. Prof. Poulton's classic paper (Trans. Ent. Soc. Lond., 1888, p. 515, *et seq.*) on the earlier stages of *Agrius convolvuli*, is quoted almost *in extenso*, and the discussion of the "squeaking" of the imago of *Manduca atropos* occupies fully nine pages. The enumeration of the occurrences of the rarer species in these islands, gathered as they have been from the entomological publications of many years past, must alone have involved a vast amount of patient research.

But the work is very far from being a mere compilation only; we constantly meet with valuable remarks on the ontogeny, variation, geographical distribution, migration, and other points of interest bearing on the life-history of the species treated of in its pages. As before, the author has been most fortunate in such collaborators as Dr. T. A. Chapman, Messrs. Prout, Kaye, and Bacot—to mention only a few of the Entomologists whose assistance he acknowledges; while his indebtedness to the recent fine work of the Hon. Walter Rothschild and Dr. K. Jordan, "A Revision of the Lepidopterous Family *Sphingidae*," is fully recognised. In this volume we are glad to see two very good half-tone plates, of the variation of *Manduca atropos*, and the earlier stages of *Daphnis nerii* respectively; and an excellent portrait of Mr. Tutt is an appropriate frontispiece. We would suggest that a certain amount of space, as well as expense, might be saved by judicious tabulation of such matters as localities and dates of capture, in the case of the more common and widely distributed species at any rate; and that a few really good woodcut (or other) illustrations of the earlier stages, and structural points of each species, would be a highly desirable addition. But on the whole we have nothing but praise for this great enterprise, and trust that Vol. V—the MS. of which, we understand, is in an advanced state—will not be long in following its predecessor.

The price of the volumes of such a work as this, though very moderate as compared with that of some other Natural History publications, is of necessity such as to place them beyond the reach of many a working Entomologist whose observations would gain greatly in value if he could have access to this book. In order to adequately pursue the cultivation of the vast field which Entomology presents, Science requires the intelligent assistance of all these; and to bring these volumes within their reach, they should find a place on the shelves of every fairly equipped library of reference in the United Kingdom.—J. J. W.

Society.

ENTOMOLOGICAL SOCIETY OF LONDON: *June 1st, 1904.*—Professor E. B. POULTON, M.A., D.Sc., F.R.S., President, in the Chair.

Mr. Arthur F. Bayne, Gereneia, Ferro Carril del Sud, Plaza Constitucion, Buenos Ayres; Dr. Simon Bengtsson, Ph.D., Lecturer at the University of Lund, Sweden; Mr. G. Bertram Kershaw, Ingleside, West Wickham, Kent; Mr. W. A. Nicholson, 36, Promenade, Portobello, N.B.; and the Rev. Thomas John Robert Armine Slipper, M.A., Tivetshall Rectory, Norwich; were elected Fellows of the Society.

After a few sympathetic words from the President, who announced the death of Mr. Robert McLachlan, Treasurer, and one of the oldest Fellows of the Society, it was unanimously resolved to express, on behalf of the Society, sincere sympathy with the family of the deceased in their bereavement. It was then announced that, in accordance with the Bye-Laws of the Society, Mr. Albert Hugh Jones had been elected a Member of the Council, and also elected to act as Treasurer in the place of the late Mr. Robert McLachlan.

Mr. E. B. Green exhibited various insects from Ceylon, including a "Car-

penter Bee" (*Xylocopa fenestrata*, Fab.) and a large Asilid fly (*Hyperechia xylocopiformis*, Wlk.), which very closely mimics the bee; specimens of a Mycetophilid fly and cocoons from which they emerged. The latter were attached to leaves and pieces of wood and showed a beautiful structure, being formed of an open network of white anastomosing threads; and examples of a Tineid moth with remarkable larval cases, consisting of a narrow tube—more than an inch long—with numerous short diverticula at regular intervals along each side. The larva anchors this case to the bark of the tree and exerts its head from either extremity or from any of the lateral diverticula, to feed upon the surrounding lichens and minute algæ. Mr. H. St. J. Donisthorpe, specimens of *Tachys parvulus*, taken in the New Forest in May. Mr. J. E. Collin, specimens of *Mochlonyx velutinus*, Ruthé, a rare British *Culicid* which he, in company with Messrs. Verrall and Wainwright, had found in numbers near Beaulieu in Hampshire on May 22nd. Mr. A. J. Chitty, an Ophiomine ichneumon, the head of which was covered with pollen of some orchid, forming a feathery mass, making the insect look as though it was attacked with fungus. Mr. C. P. Pickett, long series of *Angerona prunaria* and *Lycæna corydon*, showing a remarkable range of variation in both species. The President, specimens of *Paltothyreus tarsatus*, Fabr., an ant belonging to the family *Poneridæ*, recently received from Dr. S. Schönland, Curator of the Albany Museum, Grahamstown, who mentioned that he had noticed, about eight miles west of Palapye Road Station, an awful stench, which, however, passed off after a time. It turned out afterwards that it emanated from some ants living in trees. He also read a Note on the courtship and pairing of the species. The President likewise a cluster of the green eggs of *Vanessa urticæ* fixed to the under-side of a small leaf towards the summit of a nettle-stem. The cryptic resemblance of the eggs to their environment was very remarkable. Dr. T. A. Chapman, two very interesting *Erebias* caught by the President on the Guadarrama (near Madrid, Spain), on July 25th, 1902. These were the only two taken, although others were seen. The elevation at which they were met with was probably about 6000 feet. Though taken together and very much alike, they proved to be of two species, viz., *E. evias* and *E. stygne*, both males. He also exhibited the ova, larval work, pupæ and imagines of *Anthomyia* sp. (?), a Dipteran that lays its eggs on a fungus, *Epichloë typhina*, Berk., common in June on grass stems. Mr. Verrall has identified the species to be the *Anthomyia spreta*, of Giraud. Mr. H. J. Turner, the following species of the Lepidopterous genus *Coleophora*, and contributed notes upon them: *C. laricella*, *C. albitarsella*, *C. bicolorella*, *C. lineolea*, *C. viminetella*, *C. currucipennella*, *C. nigricella*, *C. discordella*, and *C. ochrea*.

Colonel Charles Swinhoe, M.A., F.L.S., read a paper on "Tropical African *Geometridæ* in the National Collection." Mr. W. L. Distant communicated a paper entitled "Additions to a Knowledge of the Family *Cicadidæ*." The President communicated a paper by Mr. G. F. Leigh, entitled, "Synepigonic series of *Papilio cenea* (1902-3) and of *Hypolimnas misippus* (1904), together with Observations on the Life-History of the former," and exhibited specimens to illustrate the same. Mr. Edward Saunders, F.R.S., communicated a paper on "*Hymenoptera Aculeata* from Majorca (1901) and Spain (1901-2)."—H. ROWLAND BROWN,
Hon. Secretary.

SOME NOTES ON THE *LEPIDOPTERA* OF THE "CURTIS"
COLLECTION OF BRITISH INSECTS.

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

In a brief note in this Magazine for March, 1901 (vol. xxxvii, p. 76), I gave an account of the excellent state of preservation in which I found the famous "Curtis" Collection, now for more than forty years deposited in the Victorian National Museum at Melbourne. At the time of my first visit to that city, the conditions for a thorough examination of the Collection were by no means favourable, as, with the other insects belonging to the Museum, it was temporarily stored in the Exhibition building in the grounds of Melbourne University. It could only be then looked at, drawer by drawer, in a very narrow space between two piles of cabinets, lighted by a window sadly in want of cleaning, and it was not possible to make any but a cursory inspection of the insects.

On my second visit to Melbourne in July, 1903, I found that the whole of the Collections had been transferred to the fine Museum buildings in Swanston Street, and were arranged in the basement, in very dry and commodious quarters, but lighted only by incandescent electric light. This, however, I found sufficient to enable me to make a close and critical inspection of the entire series of British insects originally belonging to John Curtis. I must again tender my best thanks to Professor W. Baldwin Spencer, F.R.S., the Director, and to Mr. James A. Kershaw, F.E.S., the Curator, of the Museum, for their kindness in giving me unrestricted access to the Collection, and thus enabling me to carry out this examination in a thorough manner. The second inspection fully confirms the opinion formed by me on my first visit, as to the excellent condition of the whole Collection. In going over the *Lepidoptera* especially, I found so many beautiful and striking varieties, as well as so many specimens of historic interest, from their association with the most beautifully illustrated work on the Entomology of our Islands which has ever appeared, that I am tempted to give a brief account of some of them. A few extracts from Curtis's MS. register, which accompanied the Collections to Melbourne, will also, I hope, be found interesting, as few, if any, Entomologists now living can have had any personal acquaintance with John Curtis or his collections.

Curtis died on the 6th October, 1862, and his Collections were probably shipped to Australia not later than the beginning of 1864, as the records of the Victorian National Museum show that a sum of

money was remitted to Mrs. Curtis in payment for them on July 2nd of that year. These Collections are contained in five mahogany cabinets, four at least of which, containing the British insects of all Orders, are of the celebrated Standish make; the fifth, a tall cabinet of fifty drawers, is appropriated to a general collection of exotic insects. A very fine forty-drawer cabinet contains the *Lepidoptera*, the *Coleoptera* occupy another of twenty drawers, and two others of twenty-four drawers each contain the remaining Orders. These Collections are in precisely the same state as when they were received at Melbourne, nothing having been added to or taken from them since their arrival in the Museum.

All the insects are set in the old style, low down on the pins, the wings of the *Lepidoptera*, and the legs of the beetles, nearly or quite touching the paper of the cabinet drawers. The great majority of the *Coleoptera* are pinned, though as previously stated they are almost entirely free from that worst of cabinet pests, *verdigris*.

Curtis's MS. Register, or Catalogue of the whole of his British collection, is contained in four volumes of quarto size. It is very closely and neatly written in a clear but minute hand on alternate pages, and the writing is unfortunately much faded in parts. It contains notes, in some instances very copious, on nearly every species, embracing localities, dates of collecting, and other items of interest.

In the following notes on the *Lepidoptera*, the names and arrangement are those under which the insects stand in the Collection.

Colias europome, Haw.—This is a very fine specimen of the yellow form of *C. hyale* ♀, and is figured on Plate 242 of the "British Entomology." *C. philodice*, Godt.—Probably a North American specimen from the old collection of Mr. Plastead. It is a ♀ in poor condition.

Pontia daplidice, L.—One very shabby old ♀ example.

Hipparchia semele, L.—A very pale suffused ♀, in good order. *H. janira*, L.—A striking variety of the ♀, the subapical fulvous patch being *darker* than the pale fulvous ground-colour of the wings, and the ocellus dark fulvous-brown with white centre. The specimen is much tattered and mended with paper. *H. tithonus*, L.—A fine ♀, with two supplementary blind ocelli on fore-wing, and two small white-centred black ocelli on hind-wing. *H. hyperanthus*, L.—Two examples of the ab. *arete*, O. *H. hero*, L.—One ♂ in good order. *H. arcanus*, L.—One ♂, also in good condition. This and the preceding are uniform in setting with the rest of the Collection, and have certainly not been re-pinned (See note from Curtis's MS. below). They are figured respectively on plates 205, 205*, Brit. Ent.

Vanessa antiopa, L.—Four good examples, one with very yellow border. *V. urticæ*, L.—A very fine example of the ab. *ichnusoides*, De Selys, but with the blue submarginal spots of hind-wings well marked.

Argynnis aglaia, L.—An exceedingly fine var. of the ♂, almost entirely suffused with brownish-black, leaving only one transverse basal spot, and one small round spot in the cell of the fore-wing, of the usual ground-colour; the black markings on the hind-wings fairly distinct, but quite invisible on the fore-wings. Under-side of hind-wings uniform dark olive-green, with the usual metallic markings represented in rich silvery-green. This beautiful variety is figured on Plate 290, Brit. Ent. *A. adippe*, L.—A very fine suffused ♂; in the fore-wings the black spots are replaced by rich dark brown; the hinder pair being uniform dark brown with marginal fulvous crescents between the nervures. *A. lathonia*, L.—Three fairly good specimens. *A. selene*, F.—A fine variety, the basal black markings of all the wings obsolete, and the submarginal black spots of hind-wings elongated towards the base.

Lycæna phlæas, L.—A very dark, irregularly suffused specimen of the dark form *eleus*, F. *L. chryseis*, F.—A pair, the ♂ not in good condition. *L. hippothoë*, L.—One ♂ example, fairly good, but without antennæ. *L. dispar*, Haw.—A fine series of six ♂ and five ♀ examples, some of which are evidently bred; one particularly fine ♀ is figured on Plate 12, Brit. Ent. *L. virgaureæ*, L.—Three ♂ and one ♀, but only one ♂ specimen is really fine. *L. acis*, W.V.—A nice series of four ♂ and three ♀ specimens.

Polyommatus adonis, F.—A very fine aberration, with all the ocelli of the under-side obsolete, with the exception of the central (well-marked), and faint indications of the marginal ones; labelled "4. Dorylas Hübn.?"

Hesperia alveolus, Hübn.—Four good examples of ab. *taras*, Meig.

Smerinthus ocellatus, L. × *S. populi*, L., hybr.—One.

Egeria asiliformis, F.—A pair, in good order. *E. chrysidiformis*, Hübn.—One only, of date certainly long anterior to the re-discovery of the species at Folkestone.

Deilephila euphorbia, L.—Three specimens (2 ♂, 1 ♀) evidently bred; figured on Plate 3, Brit. Ent. *D. lineata*, F.—A somewhat broken ♂ example. *D. galii*, Hübn.—One worn specimen only.

Chærocampa celerio, L.—Two ♀ in poor condition.

Sphinx pinastri, L.—One rather small ♀, in very good order. *S. quinquemaculatus*, Haw. (*carolina*, L.).—Two somewhat battered specimens, the larger without antennæ; A label in the cabinet drawer next these reads as follows:—"Carolina: taken at West Cowes in the Isle of White (*sic*) 28th August, 1796, by my friend Mr. Thompson;" across the label a nearly illegible name is written in pencil (? in Curtis's handwriting), which I make out to be "Plastead:" the moth is figured on Plate 195, Brit. Ent.

Zeuzera arundinis, Hübn.—Two very good pairs.

Stauropus fagi, L.—Two specimens.

Clostera anachoreta, Fab.—Two on fairly modern gilt pins; figured on Plate 745, Brit. Ent.

Cerura latifascia, Curtis.—A dark suffused ♀ of *C. furcula*, L., stands under this name, and is figured on Plate 193, Brit. Ent.

Psilura monacha, L.—A beautiful ♀, with the dark markings much extended and enlarged; figured on Plate 767, Brit. Ent.

Arcturus sparshalli, Curtis.—This is perhaps the most interesting insect in the Collection. It unquestionably is a light-coloured ♂ of a well-known Australian Eupterotid Moth, described by F. Walker as *Trichetra mesomelas* (Cat. Lep. Het., IV, 1855, p. 845), of which I have examined a long series in the Victorian Museum Collection and in that of Mr. G. Lyell, junr., of Gisborne, Victoria, as well as others at Sydney and elsewhere.* Curtis's specimen is still in excellent condition, and the figure (Plate 336, Brit. Ent.) is very good, except that the conspicuous vitta of the dark scales along the centre of the thorax is scarcely, if at all, indicated. This Plate (with description) is dated Dec. 1st, 1830, thus having priority of twenty-five years over Walker's description. In Curtis's register is the following note:—"Arcturus sparshalli, 7th August, 1829, in a lane at Horning on the trunk of an elm tree, and then in a boat crushed, Wigham." It is a mystery how this South Australian insect could have found its way to the Norfolk Broads, but the data of its capture there seem satisfactory, at any rate to me.

Lælia cænosa, Hübn.—Five bred specimens (2 ♂, 3 ♀); figured on Plate 68, Brit. Ent.

Spilosoma menthastri, Esp.—The type specimen (very good) of ab. *walkeri*, Curt., is figured on Plate 92, Brit. Ent. *S. lubricipeda*, Esp.—Three specimens, not very good, of ab. *zatima*, Cr.

Arctia villica, L.—Two very good ♂ varieties, one with the cream-coloured markings on fore-wings much enlarged and the basal spots confluent into long streaks, the other with the apex of fore-wings entirely cream-colour. *A. caja*, L.—A pair (♂ ♀) exceedingly dark and suffused.

Nemophila plantaginis, L.—One ♂ of ab. *hospita*, Schiff.

Odonestis pini, L.—A rather worn ♀; figured on Plate 92, Brit. Ent.

Penthophora nigricans, Curt.—The type specimen is a much shattered ♂; there are also two ♀, one ♂ and two ♀ pupæ, and two cases; figured on Plate 213, Brit. Ent.

Psyche fusca, Haw.—Two ♂ in poor order, and what seems to be the remains of a ♀, mounted on card. *P. radiella*, Curt.—Five ♂; figured on Plate 332, Brit. Ent. *P. plumella*, Hübn. (*pectinea*, Haw.).—Three ♂, and one ♀; very similar to the preceding, and perhaps identical with it. *P. pectinella*, Hübn. (*plumea*, Haw., *pulla*, Steph.).—A small, narrow-winged grey insect, of which there are two ♂, one ♀, and one case with ♀ pupa. *P. nitidella*, Hübn.—Three ♂ and one ♀ on card; one case with ♂ pupa; and one ♂, one ♀, one larva, one ♂ pupa, and case with ♀ pupa, also on cards.

Agrotis monostigma, Curt.—Apparently a pale ♂ *A. segetum*, Schiff. *A. annexa*, Och. ? (*subterranea*, Haw.).—A ♀, in poor order; a very puzzling moth, somewhat like a dark *A. saucia*, but more shining and with pearly-white hind-wings; its resemblance to the figure of *A. annexa* in Stephens's Illustr. Haust. (Pl. 22, fig. 2) is by no means close. *A. subgothica*, Haw.—A poor specimen, set in a very drooping style. It agrees very well with fig. 3, Pl. 22 of Stephens's Illustr. Haust., and was no doubt derived from the same source as other specimens of this North American insect in old British collections.

* Since the above was written, I have examined Walker's type of *Trichetra mesomelas* (from Tasmania) in the National Collection, and am fully convinced of its identity with Curtis's *Arcturus sparshalli*.

Triphæna subsequa, Hübn. (*consequa*, Hübn. ?)—The figure on Plate 348, Brit. Ent., represents the now well-known var. *curtisii*, Newm., of *T. orbona*, Fab., and the single specimen in the collection, though in very poor order, is evidently of that form.

Xylomyges conspicillaris, L.—One specimen only.

Mamestra plasteadi, Curt.—This is apparently an aberration of *Hadena chenopodii*, F., with the markings of fore-wings nearly obsolete.

Apamea cinereus, Curt., is probably *Dyschorista ypsilon*, Rott.

Valeria oleagina, F.—A ♂ in very good order, except that the right antenna is missing; set with wings rather drooping backwards.

Acronycta salicis, Curt.—Four specimens, all of which appear to me to be only dark *A. rumicis*, L.; figured on Plate 136, Brit. Ent.

Phlogophora empyrea, Hübn.—One, on a modern gilt pin.

Nonagria extrema, Hübn.—One, with abdomen missing; a small bone-white insect without perceptible markings, rather closely resembling *Tapinostola bondii*, Knaggs, of which species there are four specimens, on modern pins, in the Collection.

Plusia illustris, Fab.—A fairly good ♂, with perfect fringes; set in drooping style on a very old pin. *P. festuææ*, L.—A very curious and beautiful variety, the ground-colour of the fore-wings dark rich fuscous, with the usual metallic markings of a singular greyish-bronze tint.

Acontia solaris, Hübn.—One rather worn specimen. *A. caloris*, Hübn.—A ♀, in very good order. *A. catena*, Curt. (*Euphasia elegans*, Steph.).—One example of this beautiful moth, fairly good and bright-looking, but set in very drooping style and impaled on an old-fashioned pin of preposterous size; figured, Plate 276, Brit. Ent.

Micra ostrina, Hübn.—A very good ♂, on an old pin.

"*Acosmetia*" *venustula*, Hübn.—Two, modern pins.

Catocala fraxini, L.—A pair, the ♀ very poor. *C. elocata*, Esp.—A ♀, in very good condition; figured, plate 217, Brit. Ent.

Psodos equestrata, F. (*alpinata*, Hübn.).—Two specimens in good order, apparently ♂, on old pins; figured, plate 424, Brit. Ent.

Cleora viduaria, Borkh.—Three fine examples; two on modern pins.

Boletobia fuliginaria, L.—One ♂, in fair condition, on a very old pin.

Fidonia "*purpuraria*" is a rather worn example of *Acidalia immorata*, Hübn.

Abraxas grossulariata, L.—Two very good varieties, one almost without black markings, the other with ground colour entirely yellow.

Genilia 4-maculata, Hatcher.—A very good specimen of this well known but rare form of *T. maculata*; figured, plate 617, Brit. Ent.

Anaitis præformata, Hübn. (*æviata*, Oeh.).—A fine ♀ example, on an old pin; looks like a very large and well-marked *A. plagiata*, L. "Coombe Wood." *A. clarkeata*, Curt., = *Lithostege griseata*, Schiff.—A poor specimen on an old short pin.

Phibalapteryx polygrammata, Hübn.—Five excellent specimens on modern pins.

Acidalia contiguaria, Hübn.—Represented by three examples of a pale form of *A. promutata*, Guén. *A. degeneraria*, Hübn.—One only, "Portland, 24—6;" figured on plate 384, Brit. Ent. *A. subrufata*, Haw.—Represented by a good example of *Phibalapteryx lapidata*, Hübn.

Madopa salicalis, Schiff. — Two very good specimens.

Pyrallis emortualis, Hübn. ? — One, on an old pin, in fairly good order.

Aglossa dimidiata, Haw. (*streatfeldii*, Curt. MS.). — A shining grey insect with dark base and hind-margin of fore-wings, very suggestive of an extreme variety of *A. cuprealis*, Hübn.; figured on plate 455, Brit. Ent.

Pancalia woodiella, Curt. — The type specimen of this beautiful insect is still in excellent preservation, though mounted on a rather too large pin; still it looks as if it would last, with care, for another century at least; figured on plate 304, Brit. Ent.

EXTRACTS FROM CURTIS'S MS. REGISTER.

"*C. hero* and *arcanius* are both reported from Ashdown Forest."

"*C. chryseis*. Aug., marshy places. Epping, Ashdown and St. Leonard's Forest.

"*C. dispar*, Haw. 14th July, Whittlesea (near Yaxley) Mere in abundance, 5th and 6th July, 1833, abundant. 6th August, upon the reedy fens, Cambridge-shire and Norf. Suffolk, at Benacre, and Wales? Cat. (= caterpillar) upon Water dock (*Rumex Hydrolapathum*), plentiful in Holme fen in June, '41."

"*C. hippothoë*, Linn. Haworth's, Beckwith's, and mine were bought of Capt. Lindigren."

"*C. virgaureæ*. Aug. Marshes, Isle of Ely and Hunts."

"*L. alcon*, Steph., nec Hübn. Clifden, Bucks, in July; Oundle, Northants, 12 taken by Mr. Bond (*Arion* var.)."

"*L. dorylas*, W. V. June, Darent, not British."

"*L. eros*, Och. July, grassy lane, Ripley, Surrey, Steph., not British."

"*Sphinx carolina*. 28th August, 1796. Taken at West Cowes, Isle of Wight, by Mr. Thompson, a friend of Plastead's, and they are in my cabinet, also Honey or Fenton. 1 in Wilkins' Cabt."

"*5-maculatus*, Haw., *Carolina*, Don. Cat. potato, Tobacco. Near the Water Works, Chelsea, 2, and 1 bred by Mr. Wilson of Leeds."

"*Drurwi*, Don. Sept., in a garden on the leaf of a Rhubarb plant in the Borough, B. Standish, and Drury had anor. from a London garden. 1847, in Timber Yd., Bishop's Auckland, Jos. Duff."

"*Pinastris*. June. Colney Hatch wood and nr. Esher on trunks of pines. Rivelstone wood, near Edinboro' sev. times. Mr. Wilson, on a root of a fir tree at Lattrigg, foot of Skiddaw. 1827. T. Marshall."

"*Deilephila euphorbiæ*. 6th June. 1st cat. found. Appledore and Branton Burrows. 1814, abundt. 3rd Oct., 1819, one. 22nd June, 49, Caen Wood, Mr. Michael. Cat. Aug. full fed near Formby, Gregson, on beds of *Euphorbia paralias* and *Portlandica*, L., it is attacked by *Microgaster euphorbiæ*."

"*Deileph. daucus*, Cram. Taken at Sunderland by Backhouse is correct. Cornwall. It is No. American."

"*Paranthrene*, Hubn., *asiliformis*, W. V. In June, about Privet and Umbelliferous plants. Colney Hatch, Bexley, and Birch Wood. Epping, flying over garden path early in morning, H. D. Cat. Alder?, in trunks of birch and Italian poplar."

"*Chrysidiformis*. Francillon, in a thick grove. 1st July, 1836, several about Mallow flowers from the Rope walk to the Shakspeare cliff, young Leplastrier, who gave me mine. Aug., near Haslar, Chas. Barron, Zool., 3289.

"*Phragmatœcia arundinis*, M. June, '41, a ♂ floating in a dyke on ye border of Holme Fen, H. D., '48. A ♀ from the same place, they hatch about 10 at night, *in cop.* Bouchard, b. 1 o'e. June, '50, Whittlesea Mere, abundant. Hatch bet. 4 and 8 p.m., Harding. It lives 8 or 9 days. Larva in stalks of *Phragmitis*. Pupæ very active and ascend to emerge. Eggs deposited, one on each stem."

"*Eutricha pini*. 22nd July, 1809. Norwich, J. Sparshall. My specimen was from Plastead."

"*Leucoma vau-nigra*. M. Aug. Lime trees, near Darn, Bromley, Kent, Samouelle; at Faversham, Kent, Revd. H. Hilton."

"*Arctia caja*. When fed on the flowers of the scarlet Poppy the wings are very pale."

"*Spilosoma walkeri*, c Aug., nr. Edinburgh, in Sir P. Walker's house, Drums-craig."

"*radiata*, Haw., is a var. of *lubricipeda*. Yorkshire. Bred from larvæ found on elder at Saltfleet, Lincolnsh. J. C. D.

"*Eulepia grammica*. Sep., near Manachty, Isle of Anglesea. Oct., near Windsor, 1815."

"*Agrotis annexa*, June, 1817. Hatchett's Cost. Cork and Worcester, Bentley. West Ham, Essex, from Blunt's cab., June, 1826. Aug., New Brighton, near Liverpool, R. S. Edelsten." "Not British, H. D., Georgia" (a pencil note).

"*A. subgothica*, Ang. ?. Devon, near Barnstaple, Raddon, Norf., nr. London."

"*Valeria oleagina*, m July. Hedges near Fishguard, Pembrokesh. Donovan. Scotland. Battersea fields. Trees, Richmond Park, bred by Plastead. Bristol. Cat. on *Prunus spinosa*."

"*Chariclea delphinii*, June, gardens, Windsor. Cat. on *Delphinium consolida*."

"*Plusia illustris*, July. Salisbury plain, Dr. Leach and Mr. Spratt. S. Wales, Donovan. Cat. on *Aconitum lycoctonum* and *Thalictrum aquilegifolium*."

"*Cucullia artemisiæ*, June. Duddington Loch, nr. Edinburgh, Dr. Leach, from a collector there."

"*Acontia solaris*, June. Dover, they fly by day and love the *Eryngium campestre*."

"*A. caloris*. Plastead's cab., taken nr. London."

"*Euphasia catena*, nr. Brixton, Surrey. Plastead."

"*Micra ostrina*, June, 1825, in a dry lane, Bideford. Capt. Blomer."

"*Ophiodes lunaris*, ♀, 21st June, in a stormy night, at the No. Lighthouse, Lowestoft, Suff. Capt. Chawner. Wind So. by West."

"*Catephia alchymista*. Cabs. of Haworth and Duchess of Portland from Francillon."

"*Catocala elocata*. From Blunt's cab., one I gave to J. C. D."

"*Psodos equestrata*, nr. Holwood or Holywell, by Bromley in Kent, and in Abbot's collect."

"*Parascotia fuliginaria*, m. June. Gardens. Haworth's cellar. Blackfriars' Bridge, 1st July, '41; on his house, 176, Fleet Street, Mr. Shepherd.

"*Acidalia immoraria*, Hübn. Lewes, Sussex, Mr. E. Hopley, Jr., Surgeon. Taken on healthy parts of Ashdown Forest.

"*Phibalapteryx polygrammata*, Norfolk, Horning, April, H. D. Cambridgeshire, June, Burwell Fen, 10 o'clock at night, Bond.

"*Acid. degeneraria*, 24th June, 1834, 1 ♀ on a block of stone, back of I. of Portland. 16th, Black G. Chine, I think. 20th June, amongst brambles, I. of Portland, &c., J. C. D.

"*Pancalia woodiella*. In June, 1829, Kersall Moor, near Manchester, R. Wood; and many more were taken there by his man, a drunken fellow, of whom Carter got 2, which are in the Manchester Museum." For the melancholy fate of the remaining specimens of this lovely insect, which has never been found since, see "The Story of *Æophora woodiella*," by Joseph Sidebotham; Entomologist, vol. xvii, 1884, p. 52.

"Aorangi," Lonsdale Road,
Summertown, Oxford:
July 12th, 1904.

LIST OF BRITISH *DOLICHOPODIDÆ*, WITH TABLES AND NOTES.

BY G. H. VERBALL, F.E.S.

(Continued from page 173).

FEMALES.

- 1 (22) Femora black; antennæ always wholly black (femora dusky, conf. 27 *signifer*, 28 *clavipes*, and 44 *rupestris*).
- 2 (17) Lower postocular cilia black.
- 3 (10) Tibiæ black (at the utmost knees pale), or dark ferruginous.
- 4 (5) Wings darkened on outer half, basal joint of hind tarsi unusually bristly...
1. *atratus* Meig.
- 5 (4) Wings not darkened on outer half; basal joint of hind tarsi only moderately bristly.
- 6 (7) Legs entirely black, except absolute knee joints.....3. *melanopus* Meig.
- 7 (6) Legs ferruginous at knees; anterior tarsi palish at extreme base, or tip of tibiæ pale.
- 8 (9) Knees distinctly ferruginous, front tibiæ and intermediate joints of front tarsi light brown2. *Falleni* Lw.
- 9 (8) Anterior tibiæ with only a ferruginous dot at base and tip, front tarsi wholly black4. *picipes* Meig.
- 10 (3) Anterior tibiæ yellow, or pale ferruginous.
- 11 (12) Middle femora with two preapical spines5. *campestris* Meig.
- 12 (11) Middle femora with only one preapical spine.
- 13 (14) Face descending to lowest level of eyes8. *laticola* Verr.*
- 14 (13) Face not descending to lowest level of eyes.
- 15 (16) Third joint of antennæ short, ovate, blunt; arista distinctly dorsal...
7. *lepidus* Stæg.

* As the female of *D. laticola* is unknown, the distinctive character is only conjectured.

- 16 (15) Third joint of antennæ regularly ovate though pointed; arista subapical ..
6. *plautarsis* Fall.
- 17 (2) Lower postocular cilia pale.
- 18 (19) Tibiæ almost wholly black9. *atripes* Meig.
- 19 (18) Anterior tibiæ mainly ferruginous.
- 20 (21) Hind tibiæ blackish10. *phæopus* Hal.
- 21 (20) Hind tibiæ blackish at tip only11. *vitripennis* Meig.
- 22 (1) Femora pale (occasionally dusky, conf. 27 *signifer*, 28 *clavipes*, and 44
rupestris).
- 23 (82) Lower postocular cilia pale.
- 24 (35) Basal joint of middle tarsi with a bristle above.
- 25 (26) Hind femora with more than one preapical bristle...12. *claviger* Stann.
- 26 (25) Hind femora with only one preapical bristle.
- 27 (30) Antennæ nearly all black.
- 28 (29) Front tarsi pale, with only last joint black14. *confusus* Zett.
- 29 (28) Front tarsi black, with only basal joint pale21. *trivialis* Hal.
- 30 (27) Antennæ mainly orange.
- 31 (32) Hind tarsi pale at base.....23. *virgultorum* Walk.
- 32 (31) Hind tarsi wholly black.
- 33 (34) Hind tibiæ wholly yellow21. *arborum* Stann.
- 34 (33) Hind tibiæ darkened at tip.....22. *festivus* Hal.
- 35 (24) Basal joint of middle tarsi without any bristle above.
- 36 (37) Middle tibiæ with two bristles beneath.....13. *discifer* Stann.
- 37 (36) Middle tibiæ with only one bristle beneath.
- 38 (39) Hind femora with more than one preapical bristle (conf. 20 *urbanus*,
which sometimes has two)...18. *popularis* Wied.
- 39 (38) Hind femora with only one preapical bristle (unless occasionally 20 *urlanus*
has two).
- 40 (45) Discal vein bent rectangularly.
- 41 (42) Face descending below eyes; antennæ all black ..*Hygroc. diadema* Hal.
- 42 (41) Face not descending so low as eyes.
- 43 (44) Basal joint of hind tarsi nearly all black, and bearing only one bristle
above26. *griseipennis* Stann.
- 44 (43) Basal joint of hind tarsi black at tip only, and bearing two bristles above...
25. *nitidus* Fall.
- 45 (40) Discal vein bent obtusely.
- 46 (49) Basal joint of hind tarsi with only one bristle above.
- 47 (48) Femora mainly blackish.....28. *clavipes* Hal.
- 48 (47) Femora yellow27. *signifer* Hal.
- 49 (46) Basal joint of hind tarsi with at least two bristles above.
- 50 (51) Hind tibiæ nearly all black20. *urbanus* Meig.
- 51 (50) Hind tibiæ yellow, unless at tip.
- 52 (67) Antennæ with not more than under-side of basal joint, or of that and just
base of under-side of second joint, pale.
- 53 (58) Face with faint but distinct pale pubescence; antennæ practically all black.
- 54 (57) Wings more or less tinged with brown.
- 55 (56) Hind tibiæ at tip, and basal joint of hind tarsi, blackish; hind femora
with an obvious dark spot above near tip.....34. *nubilus* Meig.

- 56 (55) Hind tibiæ at tip slightly blackish ; basal joint of hind tarsi usually all black.....35. *latilimbatus* Macg.
- 57 (54) Wings almost hyaline ; hind tibiæ entirely yellow ; basal joint of hind tarsi usually to some extent pale at base ...36. *andalusiacus* Strobl
- 58 (53) Face without any distinct pubescence ; antennæ with at least tip of under-side of basal joint ochreous.
- 59 (60) Hind coxæ entirely yellow ; hind tibiæ black at tip...
30. *acuticornis* Wied.
- 60 (59) Hind coxæ mainly grey.
- 61 (62) Basal joint of middle tarsi, and even tip of middle tibiæ, black...
37. *medicornis* Verr.*
- 62 (61) Basal joint of middle tarsi pale at base.
- 63 (64) Hind tibiæ conspicuously blackened at tip32. *puncticornis* Zett.
- 64 (63) Hind tibiæ quite pale, or only slightly darkened at tip.
- 65 (66) Hind tibiæ obscured at tip ; middle tibiæ with 5-6 bristles in front...
19. *signatus* Meig.
- 66 (65) Hind tibiæ yellow to absolute tip ; middle tibiæ with 3-4 bristles in front17. *pennatus* Meig.
- 67 (52) Antennæ with more than under-side of basal joint, and base of under-side of second joint, pale.
- 68 (71) Third joint of antennæ all black.
- 69 (70) Hind coxæ pale yellow33. *linearis* Meig.
- 70 (69) Hind coxæ grey.....40. *simplex* Meig.
- 71 (68) Third joint of antennæ partly yellow.
- 72 (73) Squamæ with yellow fringes39. *strigipes* Verr.
- 73 (72) Squamæ with black fringes.
- 74 (77) Basal joint of antennæ all yellow.
- 75 (76) Hind tibiæ black at tip15. *plumipes* Scop.
- 76 (75) Hind tibiæ at tip and base of hind tarsi pale16. *Wahlbergi* Zett.
- 77 (74) Basal joint of antennæ blackened above.
- 78 (79) Hind coxæ mainly pale yellow ; hind tibiæ all yellow...
31. *longicornis* Stann.
- 79 (78) Hind coxæ mainly grey29. *sabinus* Hal.
- 80 (23) Lower postocular cilia black.
- 81 (82) Hind femora with more than one preapical bristle.....41. *ungulatus* L.
(= *æneus* De G.)
- 82 (81) Hind femora with only one preapical bristle.
- 83 (84) Basal joint of middle tarsi with a strong bristle above...
43. *brevipennis* Meig.
- 84 (83) Basal joint of middle tarsi without a strong bristle above.
- 85 (86) Face whitish, frons green42. *longitarsis* Stann.
(= *equestris* Hal.)
- 86 (85) Face and frons greyish44. *rupestris* Hal.
1. *D. atratus* Meig. : common throughout Britain in forest or marshy districts, usually on alders by the side of streams. A closely allied species, *D. maculipennis* Zett., with two pre-apical spines on the posterior femora ought to occur in Scotland.

* *D. lineicornis*, Zett., is omitted, as the female is unknown ; it is probably very much like *D. medicornis*, Verr., but larger, and with stronger bristles on the tibiæ.

2. *D. Falleni* Lw. : the description of *D. nigripes* "from Mr. Dale's collection" in Walker's Ins. Brit. Dipt. must refer to *D. Falleni* or *D. Meigenii*. I have seen Dale's specimen, which was taken at Glanville's Wootton on August 2nd, 1839, and I have a note that it is not *D. Meigenii*. *D. Falleni* may therefore be acknowledged as British, while the closely allied *D. Meigenii* is also very likely to occur.
3. *D. melanopus* Meig. : I have seen only two males of this species, which I took in the New Forest on June 26th, 1872.
4. *D. picipes* Meig. : this is the *D. fastuosus* of Haliday, and occurs in various localities over all parts of Britain.
5. *D. campestris* Meig. : not uncommon from Penzance to Suffolk and Norfolk. It is easily distinguished in both sexes by the two pre-apical spines on the middle femora, while occasionally the hind femora also bear two.
6. *D. planitarsis* Fall. : very rare as far as my experience goes, but that may be because it is probably a spring species. Col. Yerbury gave me a male taken at Lyndhurst on May 1st, 1897, and I have seen it from Aberdeen. I cannot trace Kowarz's distinctive character of the female, based upon more than one bristle beneath the middle tibiæ.
7. *D. lepidus* Stæg. : it is strange that Haliday never recognised this rather common species as British. I have taken it from the south of England to the north of Scotland.
8. *D. LATICOLA* *n. sp.* : ♂. affinis *D. picipedi*, sed facie magis descendente, pedibus anterioribus magis ferrugineis, et costâ ubi vena subcostalis excipit modice sed distincte incrassatâ.

♂. Face almost descending to the level of the bottom of the eyes (and yet the species is apparently a *Dolichopus* rather than a *Hygrocelesthus*), moderately broad as it is hardly more than three times as long as broad, white but hardly silvery; frons shining bluish but dusted; palpi blackish-brown; postocular cilia all black. Antennæ wholly black, not short, third joint pointed and forming an almost equilateral triangle.

Thorax dusty blue-black; prothorax with delicate pale pubescence.

Abdomen, when viewed from behind, greyish-green, and not shining until the blue-green dorsal part of the fifth segment; hind margins of the segments conspicuously blackish. Hypopygium shining black but dusted beneath, long and narrow as it reaches almost to the base of the third ventral segment; lamellæ dull pale yellow with a rather narrow black end; when viewed from beneath these lamellæ have a narrow black margin on the outside and have the fringe curling inwards as well as outwards, on the outer side of the lamellæ there is only a short

sparse pubescence, the black tip is forked, and each fork bears long, strong, curled black hairs, on the disc of the lamellæ there is fine pale down.

Legs black, but orange from the tip of the anterior femora to almost the tip of the basal joint of the anterior tarsi, though the tibiæ are somewhat darkened just after the pale base; hind knees sharply orange and the extreme tip of the hind tibiæ inconspicuously orange; trochanters all obscurely orange. There is no ornamentation to the legs anywhere, but they are comparatively short and thick. Posterior femora with one pre-apical spine. Coxæ greyish-black, front pair with rather dense small black bristles up to the long bristles near the tip, middle pair with a few small bristles on the upper edge, ending in one long strong bristle before the tip, hind pair with one long strong bristle near the tip or with one such bristle about the middle and a smaller one after it. Front femora with a rather small but distinct almost apical bristle behind; front tibiæ with four strong bristles above in a row (none of which are near base or tip), then two or three bristles beneath near the middle in a row, and one bristle in front near the middle and one near the tip. Middle tibiæ with three bristles above towards behind and three others alternating lower down above towards front, also one bristle beneath below the middle, and with four or five spurs. Hind femora with only fine short blackish-brown cilia beneath, in fact hardly enough to call a cilia, though quite as long as, though scarcer than, in *D. picipes*; hind tibiæ with two rows of bristles above consisting of five to seven bristles, one bristle beneath at about three quarters from the base; hind tarsi with about three bristles above the basal joint in one row and two others outside on the apical half besides the terminal bristles, second joint slightly longer than the basal joint.

Wings with a smoky-brownish tinge, which becomes fairly conspicuous on the front part above the radial vein; bend of the discal vein slight; black costal swelling at the tip of the subcostal vein small but obvious. Squamæ yellow, with black fringe. Halteres orange.

This species is very closely allied to *D. picipes* Mg. (= *D. fastuosus* Hal.), but has many minor distinctions beyond those noted in the diagnosis. *D. picipes* has a shorter hypopygium, and especially shorter and broader lamellæ, which have a broader black margin all round; the third antennal joint is shorter; the legs, besides being blacker, with only the knees and the narrow tip of the tibiæ orange, and the front tarsi faintly and the middle tarsi more obviously orange at the base, while the hind legs have only the knees very narrowly orange. *D. laticola* has the anterior tarsi shorter and stouter, the basal joint of the middle tarsi with weaker and less conspicuous bristles beneath, while all the other joints of the anterior tarsi are thicker and more clubbed at their tips; spines on the middle tibiæ fewer and weaker; hind tibiæ less fringed inside; frons strongly bluish, while in *D. picipes* it is greenish; the wings of *D. laticola* have a smoky-brownish tinge, while *D. picipes* has them more blackish.

D. lepidus is at once distinguished by its narrow ochreous face,

black fringed hind femora, shorter broader lamellæ, which have a broader blackish tip and are not so densely though more coarsely hairy, and hind tibiæ dilated, though the black costal swelling is very similar.

Still more closely allied seem to be *D. consimilis* and *D. cruralis* of Wahlberg. These two species were taken by Wahlberg about the middle of July, 1845, in a deep marsh under the mountain Snjerak in Lapland, and Stenhammar took *D. consimilis* about the same date in a large marsh in Ostrogothia.

D. consimilis appears to differ from *D. laticola* in the following characters:—“Pedibus nigris, trochanteribus geniculis summis et summa basi metatarsorum anteriorum testaceis —stigmatibus nullo—lamellis parvis oblique obovatis, fusco-flavescentibus, margine cum ciliis longiusculis, tenuibus saturatius infuscato,” and later on “lamellis fere totis infuscatis ab illo (= *picipes*) tamen diversus.” These characters seem to point to a species with blacker legs and darker lamellæ, while the absence of a black costal swelling is a character not likely to be overlooked by Wahlberg, even though the swelling might be but small.

D. cruralis is said to have “tibiis posticis extus obscure testaceis, apice ad tertiam partem indeterminate nigris —lamellis minoribus, oblique rotundatis, sordide flavescentibus, modice late et indeterminate fusco-marginatis breviter et dense griseo-ciliatis nigroque uncinatis; femoribus posticis subtus breviter nigro-ciliatis,” and later on “femoribus posticis breviter nec longe ciliatis—tibiis posticis obscure testaceis intus nigricantibus “ —lamellis dense et breviter ciliatis.” These characters seem to point to a species with paler hind tibiæ, more margined and more hairy lamellæ, and with hind femora bearing a more obvious cilia.

I am unable to trace any other species with which *D. laticola* requires any comparison.

I took two males at Ormesby Broad in Norfolk on June 28th, 1888. If my memory serves me true they were taken in marshy rushy ground near the north-west corner of the Broad.

9. *D. atripes* Meig.: not uncommon from Penzance to Braemar.
10. *D. phæopus* Hal.: in fair numbers near Poole in Dorset on July 9th, 1871.
11. *D. vitripennis* Meig.: common everywhere in marshy localities.
12. *D. claviger* Stann.: this and the two following species are closely allied, and form a natural group of elegant flies with long legs and with the last joint of the front tarsi formed into a small disc. *D. claviger* is by no means common except locally, but I have caught it from Devonshire to Sunderland.
13. *D. discifer* Stann.: this is the commonest of the three species, and occurs from Ivybridge to Lairg.

(To be continued).

ACULEATE HYMENOPTERA COLLECTED IN TENERIFE
BY THE REV. A. E. EATON, M.A., IN THE SPRING OF 1904,
WITH DESCRIPTIONS OF NEW SPECIES.

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

A list of the species of the above family captured by Mr. Eaton in Tenerife in the spring of 1902 appeared in the Transactions of the Entomological Society of London for 1903, pp. 207 et seq. During last spring Mr. Eaton revisited this Island, and has again kindly placed the specimens he secured at my disposal. In the following pages I have given a list of the species taken, and descriptions of those which appear to me to be new.

The occurrence of the genus *Soleriella* in the island is of interest, as hitherto (see v. Dalla Torre's Catalogue) it has only been recorded from Europe (2 species), the United States (1 species), Chili (4 species). Another interesting capture is the ♂ of *Andrena bipartita*, Brullé, which does not appear to have been previously described or noticed, and whose identity would hardly have been determined had not both sexes occurred in the same locality apart from any allied species.

1. *SCOLIA (DIELIS) ELEGANS*, Brullé. 1 ♀, Güimar, 600-800 ft. alt. "In the vicinity of dwellings or cellars excavated in a light coloured stratum of rock near a tract of slate coloured sand; frequenting some small weed-grown enclosures bordering the road." 22.iii.04. Apparently considerably worn; abdomen showing testaceous colour only near the apices of the 2nd and 3rd segments.

2. *POMPILUS GUIMARENSIS*, *sp. nov.*

Niger, abdominis segmentis tribus basalibus rufis, tertio apice nigro, capite thoraceque nigro-pilosis; ♂. valvula ventrali valde carinata, subcompressa marginibus lateralibus breviter setosis. ♀. pectine metatarsali trispinoso, capitis vertice lato, antice subconvexo.

In general aspect resembling *unguicularis*, Thoms., black, with the 1st, 2nd and base of the 3rd abdominal segments red in both sexes, the 1st and 2nd segments slightly darkened towards the apex.

♂. Head, thorax, and coxæ clothed with grey pruinose pubescence, vertex very hairy, the hairs about as long or a little longer than the scape of the antennæ, clypeus clothed with hairs very similar to those of the vertex, its anterior margin slightly and very widely emarginate, mandibles bifid and clothed with long curved hairs. Antennæ with the 3rd, 4th, and 5th joints subequal and about as long as the scape, 2nd joint about a third the length of any of these, prothoracic emargination angular, but rather obtusely so, disc of pronotum with a few shorter hairs than those of the head, prosternum and anterior coxæ with long hairs, disc of mesonotum

nearly glabrous, scutellum and propodeum more or less hairy, the latter with a very deep central impression. Wings slightly dusky with a darker apical band, 2nd and 3rd submarginal cells subequal, slightly narrowed at the top. Hind-wings with the posterior nerve almost or quite anastomosing with the branch of the median. Legs with the posterior inner calcar about two-thirds as long as the metatarsus, which latter is more than twice as long as the 2nd tarsal joint, claws simple, *i.e.*, with only the ordinary basal dilatation. Abdomen with its apical ventral valve carinated, the carina considerably raised and hairy towards the apex, its lateral margins set with short bristly hairs much as in *spissus*, but the segment, viewed laterally, is longer and much less raised and triangular than in that species.

♀. In this sex the erect hairs are rather more developed than in the ♂, the pruinose pubescence less so, the 3rd antennal joint is distinctly longer than the 4th and much longer than the scape, and four times at least as long as the 2nd. The head, looked at vertically, is wide and very slightly convex in front, in form resembling that of *unguicularis*, the lateral interval between the head and prothorax is also filled up with hairs as in that species, hairs of the propodeum more developed than in the ♂, comb of anterior metatarsus with three well developed spines about as long as the 2nd tarsal joint, the posterior metatarsus about as long as the two following joints, comb of the claw joint well developed, apical segment and ventral segment of the abdomen with a few long hairs. Long., 9—11 mm.

At first sight I thought this might be the *excisus*, Perez [Ann. Soc. Ent. Fr., lxiii, p. 197 (1894)], but he compares his species with *spissus*, with which it has no connection, as it belongs to the section having a well developed comb on the anterior tarsi, and although the apical margins of the segments of the abdomen are certainly very slightly emarginate they are not more so than in some other species of the genus. I should consider it as a very close ally of *unguicularis*, but the greater hairiness and more developed grey pubescence, as well as the very distinct ♂ characters, separate it easily from that species.

1 ♀, Güimar, 21.iii.04.; alt. about 1200. 5 ♂, 22 and 24.iii.04.; locality as for *Scolia elegans*, same date; Forest of La Mina, 1 ♀, 9.iv.04.

3. TACHYPHEX SIMONYI, Kohl. 2 ♂ 2 ♀. Güimar, 22.iii.04.; locality as for *Scolia elegans*, same date. 1 ♀, Forest of La Mina; 2700—2800 alt.; 9.iv.04.

1 ♀, Santa Cruz; 800—1000 alt.; 4.iv.04.

4. SOLERIELLA CANARIENSIS, *sp. nov.*

Niger, mandibulis, tarsi, tibiisque posticis basi testaceis. Mandibulis simplicibus, alarum cellula secunda cubitali parva, subaequilaterali petiolata, petiola cellulae lateribus æqui-longa, nervis recurrentibus ex cellulis prima et secunda cubitalibus emissis.

♂. Entirely black, except the mandibles, tarsi and the base of the posterior tibiae, which are testaceous, head shining on the vertex, where it is somewhat largely and deeply punctured, but not so very closely, dull on the face, which is exceedingly closely punctured, the lower half of the latter clothed with white hairs, eyes diverging anteriorly, face with a fine impressed line above the insertion of the antennæ, clypeus raised and shining in the centre, the apex produced into a

spine-like process, mandibles entire, pointed, antennæ with the scape nearly twice as wide at the apex as the 2nd joint, which is slightly wider and shorter than the 3rd, from the 3rd to the 7th they are subequal in length and much longer than wide, the remainder are shorter, especially the penultimate, and the apical joint is subconical; mesonotum punctured, much as the vertex of the head. Wings nearly hyaline with a dusky apical band, 2nd submarginal very small, petiolated, in the specimen before me nearly equilateral, the sides and petiole subequal in length, 3rd submarginal longer than wide, much narrowed at the top, the recurrent nervures are received in the 1st and 2nd submarginals, mesopleuræ and sternum rather largely and clearly punctured, propodeum clothed with white hairs and transversely wrinkled at the sides, its basal area irregularly and somewhat diagonally rugose, with a slight central impression, in which is a fine narrow keel at the base. Legs very sparingly clothed with a fine whitish pubescence. Abdomen scarcely shining, its basal segment closely and finely punctured, the intervals on the disc about twice as wide as the individual punctures, puncturation of the 2nd closer and finer than the 1st, that of the 3rd and following almost imperceptible. Long., 4 mm.

Very distinct from the other described species by the black postscutellum, and the smaller area of the petiolated submarginal cell, and in the slenderer antennæ, and from *compeditus*, also, in the smaller and more triangular basal area of the propodeum.

1 ♂. Güimar, 22.iii.04.; locality as above for *Scolia elegans* same date.

5. *AMMOPHILA TYDEI*, Guil. Güimar, ♂ ♀, 20.iii.04.; 2 ♀, 22.iii.04. (as *Scolia elegans*).

6. *AMMOPHILA APICALIS*, Brullé. Güimar, ♂ ♀, 22.iii.04.; and ♂ and ♀, 24.iii.04.; same locality as *Scolia elegans*; ♂ ♀, Forest of La Mina, 2700—2800 alt., 9.iv.04.

7. *DIODONTUS GRACILIPES*, *sp. nov.*

Niger, mandibularum basi, palpis, tuberculis, tegulis, tibiis tarsisque flavis, abdominis apice testaceo, capite microscopice ruguloso, opaco, facie densissime, vertice subremote punctato, metatarsis intermediis simplicibus, alarum cellula discoidali secunda angusta.

Black, base of the mandibles, palpi, the tubercles and tegulæ, tibiæ, and tarsi flavous, the former with a large black streak on the side towards the body. Wings nearly hyaline, nervures dark brown, apex of abdomen testaceous. Head dull, microscopically rugulose, very finely punctured, remotely so on the vertex, very densely and closely on the face, an impressed line runs from the central ocellus to between the insertion of the antennæ, face below the antennæ clothed with bright silvery hairs. Antennæ with the joints of the flagellum from the 2nd to the apex subequal, longer than wide, clothed with very fine short greyish pubescence, visible only under a strong lens, the apex of each joint rather prominent on its lower margin, so as to give it almost the effect of being spinosely produced; mesonotum slightly shining, microscopically rugulose, and finely punctured, 2nd submarginal cell very narrowly trapezoidal, its apical margin about half the width of the basal, propodeum very rugose, its brow with a distinct, though irregular, transverse carina;

sides, as also those of the mesothorax, with fine, short, greyish pubescence, intermediate metatarsi long and simple, no sign of dilatation towards the apex, all the tarsi long and slender. Abdomen elongate shining, finely punctured, segments rather convex longitudinally, 7th segment testaceous, its dorsal valve rather strongly punctured.

Long., 5 mm.

1 ♂. Güimar, same locality as *Scolia elegans*, 24.iii.04. 6 ♂, Santa Cruz, where it was abundant locally at the road-side, 28.iii.04.

In the sculpture of the head resembling *D. haudlirschii*, Kohl., but quite different in other respects.

8. OXYBELUS TEGULARIS, E. Saund. ♂, 2 ♀, Güimar, 22.iii.04. (as *Scolia elegans*).

9. ODYNERUS HEMATODES, Brullé. 1 ♀, Güimar, alt. 1200, 20.iii.04; 1 ♀, La Laguna, in the Barranco below the town, alt. 1700, 26.iii.04.

10. ODYNERUS CRUENTATUS, Brullé. 2 ♀, Güimar, 22.iii.04. (as *Scolia elegans*).

11. ODYNERUS EATONI, *sp. nov.*

Niger, pronoto antice, tegulis, abdominis segmento primo (basi extrema excepta) femorum apicibus, tibiisque rufis, abdominis segmenti primi secundique margine postico testaceo margine extremo segmenti secundi submembranaceo, coxis posticis dente trigono postice munitis, pronoto antice truncato, angulis in ♀ subprominentibus.

Black, the pronotum in front, the tegulae, the 1st segment of the abdomen, except at its extreme base, the apical portion of the femora, and the tibiae red, the coloration of the legs varies considerably, the posterior femora and tibiae being sometimes dark almost throughout, 1st and 2nd segments each with a narrow ferruginous apical band of a paler colour than the red of the basal segment, there is sometimes a line of red at the apex of the scutellum, and in the ♂ the reflexed apical joint of the antennae is pale. Head and thorax above closely and rugosely punctured, clothed with short grey, the entire clypeus in the ♂, its sides only in the ♀, and the sides of the propodeum in both sexes with shining silvery hairs, clypeus narrowly notched at the apex in both sexes, more shining in the ♀ than the rest of the head, pronotum truncate in front, its angles slightly produced in the ♀, mesopleurae shining, largely and closely punctured, wings darkened along the costa, postscutellum raised, inferior apical spines of the propodeum rather elongate and blunt, posterior coxae with a strong angular tooth on their posterior side; abdomen strongly punctured, nearly dull, basal segment campanulate, its apical margin raised; 2nd segment in certain lights seen to be clothed with a very fine grey sheeny pubescence, much constricted at the base, its sides much rounded in the ♂, in the ♀ with the sides beyond the basal constriction sub-parallel, apical margin membranous, with a row of punctures at the base of the membranous appendix, beneath rather shining, largely punctured on the 2nd segment, which has a scarious regularly punctured apical margin, much like that of its dorsal one, and which is sometimes reddish, following segments scarcely punctured.

Long., 7—8 mm.

3 ♂, 2 ♀, Güimar, 22 and 24.iii.04 (as *Scolia elegans*).

In colour somewhat resembling *oraniensis*, &c., but very distinct in structure.

(To be continued).

ON SOME JAVANESE COCCIDÆ: WITH DESCRIPTIONS OF NEW SPECIES.

BY E. ERNEST GREEN, F.E.S.,

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The following notes are founded upon an interesting series of *Coccidæ* collected in June by Prof. A. Zimmermann, of the Botanic Gardens, Buitenzorg. Many of the species (and some of the genera) are new to science; others are representative partly of the Indian and partly of the Australian fauna; the remainder are cosmopolitan forms that have followed civilization throughout the world.

LECANIUM TENEBRICOPHILUM, *sp. nov.* (fig. 1).

Adult ♀, bright castaneous to dark brown; strongly convex; irregularly hemispherical, with posterior extremity abruptly depressed (fig. 1 *b*), the anal scales situate in the centre of this depressed area. Stigmatic clefts moderately deep; the spiracle impinging on the cleft (fig. 1 *c*). No stigmatic spines. Limbs small, but

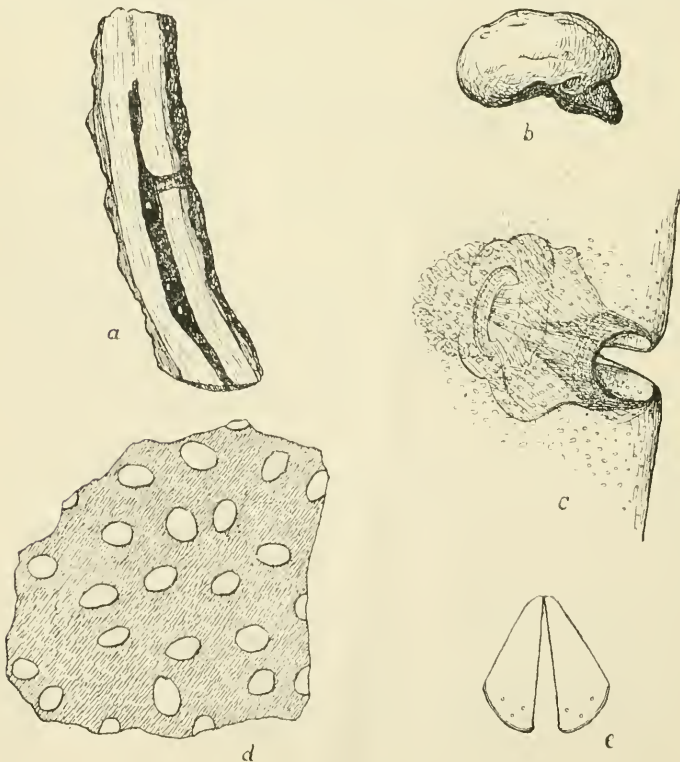


Fig. 1.

fully developed. Antenna with seven or eight joints, the former being probably

the normal number; but there is usually a more or less complete subdivision of either the terminal or the penultimate joint. Some stout hairs at extremity. Formula very variable, no two examples agreeing; 2nd usually longest, sometimes equal to 3rd; 5th and 6th, or 6th and 7th shortest. Legs with a deep constriction near the middle of the tarsus, simulating a joint, a somewhat similar false joint being apparent near the base of the tibia. Foot with four digitules; the unguals spatulate; the tarsals fine knobbed hairs. Plates of anal operculum (fig. 1 e) with inner edge longest; outer edge shortest and rounded; base straight, three-quarters the length of inner edge. (My examples are not in sufficiently good preservation to enable me to determine the number of hairs on the anal ring). Anal cleft rather more than one-quarter total length of insect. Margin with very minute inconspicuous simple hairs at considerable intervals. Derm thickly set with oval translucent pores, separate from each other by a little more than their longest diameter (fig. 1 d).

Length, 4 to 5 mm.; breadth, 3 to 4 mm.; height, averaging 3 mm.

Other stages unknown.

Habitat: Within the tunnels formed in branches of *Erythrina lithosperma* by some boring caterpillar or beetle (fig. 1 a).

The Coccids are entirely concealed, attached to the walls of the tunnel, sometimes at a distance of from 6 to 10 inches from the exit. Prof. Zimmermann informs me that they are always attended by ants. (Coll. Zimm., No. 1).

LECANIUM (SAISSETIA) HEMISPHERICUM, Targ.

On *Coffea arabica* (No. 20).

LECANIUM (EULECANIUM) PSIDII, Green.

On *Jambosa* sp. (No. 28).

A formal description of this species appears in Part III, "Coccidæ of Ceylon."

LECANIUM (PARALECANIUM) EXPANSUM, Green.

On Zingiberaceous plant (No. 25) and *Lepidadenia wightiana* (No. 95).

LECANIUM EXPANSUM, var. METALLICUM, n. var.

Differs from type in having a beautiful iridescent metallic sheen on dorsum of living insect, disappearing after treatment with potash. Margin closely stippled with dark opaque spots. On *Myristica fragrans* (No. 38).

LECANIUM EXPANSUM, var. JAVANICUM, n. var.

Differs from type in having a minute but regular dermal reticulation. On *Anomianthus heterocarpus* (No. 64).

LECANIUM EXPANSUM, *var. ROTUNDUM*, *n. var.*

Smaller than type and circular in outline. Margin stippled as in *metallicum*. On *Rhizophora mucronata* (No. 82).

LECANIUM (SAISSETIA) NIGRUM, Nietner.

On *Hevea brasiliensis* (No. 80).

LECANIUM (EUCALYMNATUS) TESSELLATUM, Sign.

These specimens agree with Signoret's type in having no median dorsal suture. But the median area is densely chitinous and the division may be merely obscured. On *Eriodendron anfractuosum* (No. 83).

LECANIUM (SAISSETIA) OLEÆ, Bern.

On *Erythrina lithosperma* (No. 99).

PULVINARIA MAXIMA, *sp. nov.* (fig. 2).

Dried examples pale fulvous, probably greenish in life. Ovisac profuse, white, flattish; sometimes extending to a length of 20 mm.

Adult ♀ irregularly oval; margins undulating; broadest across posterior half. Margin with a close fringe of stout spines (fig. 2 *a*), which, in all my examples, are irregularly truncate, as if broken,

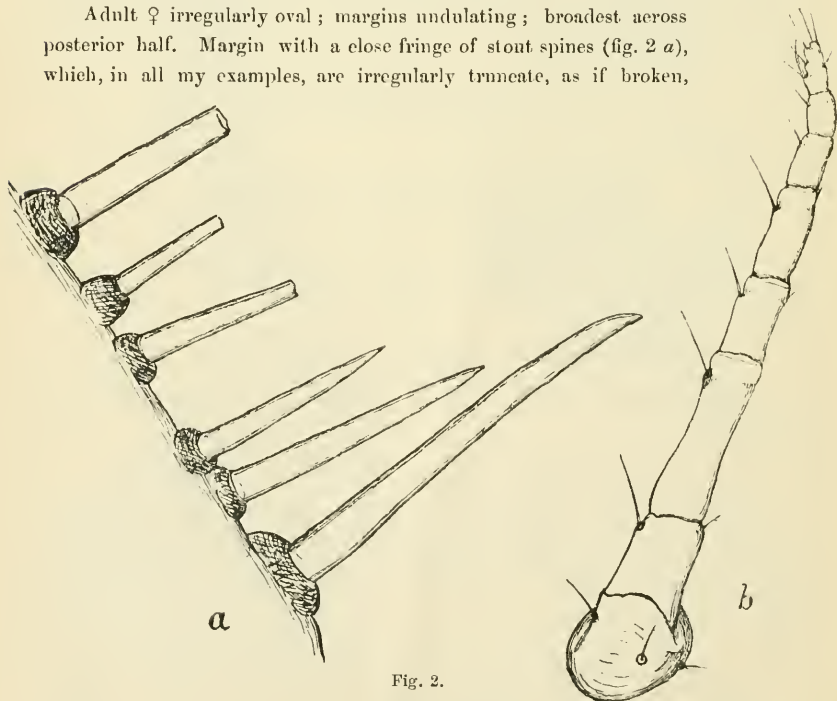


Fig. 2.

except at the stigmatic clefts, where they are longer and sharply pointed. Limbs well developed. Antenna (fig. 2 *b*) eight jointed, 3rd longest, 7th and 8th shortest.

Tarsus scarcely half length of tibia. Plates of anal operculum rather narrow and acuminate; base and outer edge approximately equal; outer angle obtuse. Anal ring with six stout hairs. Derm closely set with large conspicuous oval or sub-circular translucent cells. Length, 6 to 9 mm.; breadth, 4 to 5.75 mm.

Habitat: On stems of *Erythrina lithosperma* (No. 22).

This insect is the giant of its kind, but is closely approached by *P. mammeæ*, Mask., which attains a length of nearly 8 mm. The present species resembles *mammeæ* in other characters, *e. g.*, the structure of the antennæ and legs; but Maskell makes no mention of a marginal fringe of hairs, nor of the cellular character of the derm. Maskell states that in *mammeæ* the tarsal digitules are wanting. In *maxima* they are long, stout and distinctly knobbed.

PULVINARIA PSIDII, Mask.

On *Coffea liberica* (No. 4) and *Ficus* sp. (No. 9).

CEROPLASTES CIRRHIPEDIFORMIS, Comstock.

On *Eugenia aquea* (No. 6).

The specimens to hand are not in very good condition, but all the characters, as far as they can be seen, correspond very closely to those of Comstock's species. The anal operculum is situated on a prominent conical process. There are no marginal hairs, but at each stigmatic cleft is a group of about 25 conical spines, the extremities drawn out into sharp points (fig. 3). Comstock describes these spines as arrow-shaped and constricted at the base.



Fig. 3.

As pointed out in some "Observations on the genus *Ceroplastes*" (Ann. and Mag. Nat. Hist., Ser. 7, Vol. iv, September, 1899, pp. 190, 191), this stalked appearance is unreal, being produced by the sub-cutaneous tube leading inwards from the spines. There is a slight constriction at the base, but nothing that could be interpreted as pedicillate. In most of my specimens the very elongate 3rd joint of the antennæ shows an imperfect division at about one-third its length from the base.

CEROPLASTES VINSONII, Sign.

On *Hiptage laurifolia* (No. 54).

DIASPIS PENTAGONA, Targ.

On young plants of *Erythrina lithosperma* (No. 3) and on *Thea assamica* (No. 69).

DIASPIS ROSÆ, Bouché.

On *Rosa* sp. (No. 44).

ISCHNASPIS LONGIROSTRIS, Sign.

On stems and leaves of *Coffea liberica* (No. 5); on *Myristica fragrans* (No. 39); and on *Zalacca* sp. (No. 40).

PARLATORIA ZIZIPHUS, Lucas.

On *Citrus* sp. (No. 14).

PARLATORIA PROTEUS, Curtis.

On *Hevea brasiliensis* (No. 81).

ASPIDIOTUS (AONIDIELLA) AURANTII, Mask.

On *Citrus* sp. (No. 16); on *Camphora officinalis* (No. 55); and on *Cycas* sp. (No. 43).

ASPIDIOTUS CYANOPHYLLI, Sign.

On *Theobroma cacao* (No. 71).

ASPIDIOTUS DESTRUCTOR, Sign.

On *Bixa orellana* (No. 67); *Theobroma cacao* (No. 71); *Uncaria gambir*, (No. 88); *Vitis* (No. 91); *Cocos nucifera* (No. 102).

ASPIDIOTUS (CHRYSOMPHALUS) DICTYOSPERMI, Morg.

On *Diospyros* (No. 29); *Myristica fragrans* (No. 42); and *Palauquium* sp. (No. 48).

ASPIDIOTUS TRANSPARENS, Green.

On *Anomianthus heterocarpus* (No. 65); *Anona* sp. (No. 89); and *Hevea brasiliensis* (No. 21a).

ASPIDIOTUS (CHRYSOMPHALUS) FICUS, Ashm.

On *Croton* sp. (No. 103).

ASPIDIOTUS (PSEUDAONIDIA) CURCULIGINIS, *sp. nov.* (fig. 4).

Female puparium superficially resembling that of *Asp. rossi*. Elliptical, flat-tish; dark blackish-brown. Pellicles fulvous, slightly raised, with inconspicuous boss and concentric ring, surrounded by a thin whitish line. Inner surface paler brown; ventral scale persisting along the margins.

Length, 2 to 2.50 mm.; breadth, 1.25 to 1.50 mm.

Male puparium similar, but smaller; pellicle nearer the anterior extremity.

Length, 1.50 mm.; breadth, 0.80 mm.

Adult ♀ reddish-fulvous (dried examples). Form resembling *Asp. trilobitiformis* or *A. theæ*, with a deep constriction between the pro- and meso-thoracic

segments; broadest across the meso-thorax; abdominal segments well defined and produced at the margins. Extremity of pygidium (fig. 4) rather truncate, with



Fig. 4.

eight lobes; the median pair large, stout and conspicuous, extremity pointed, edge slightly incised on each side near the point; the second and third pairs narrow and lanceolate, constricted at base; fourth pair short, stout, and with incised edges. Margin cristate beyond the lobes. Narrow fimbriate squames between the lobes. Margin somewhat incrassate, with numerous short thickened paraphyses. Median area of pygidium, from apex to beyond anal aperture, darker and more densely chitinous. Circumgenital glands in four groups, each with about twelve orifices. Anterior spiracles with a small group of parastigmatic glands, containing three or four orifices. Length, 1.25 mm.; breadth, 0.90 mm.

Adult ♂ not known.

Habitat: on both surfaces of leaves of *Curculigo recurvata*. Buitenzorg, Java (Coll. Zimm., No. 33).

Allied to *Asp. theæ* and *A. trilobitiformis*, but with no tessellated patch on pygidium.

LEPIDOSAPHES CORRUGATA, *sp. nov.*

Female puparium dull black, thick and opaque; pellicles reddish-fulvous, exposed. Form normal, widening very gradually behind; outline usually sinuous; somewhat flattened above, with many curved transverse corrugations. Ventral scale stout; persistent along the margin; usually interrupted along the median line. Length, 3 to 4.50 mm.; greatest breadth, 1 mm.

Male puparium not observed.

Adult ♀ of usual form; broadest across abdominal segments, which are moderately produced at the margins. Anterior spiracles with a small group of parastigmatic glands. Median lobes of pygidium conspicuous, bluntly pointed, with irregularly crenulate or dentate edges. First lateral lobes small, duplex, the inner lobule the larger. Other lobes wanting. The usual spiniform squames and marginal pores. Dorsal surface of pygidium with a conspicuous double series of oval pores extending on each side from level of anal aperture almost to margin, and two smaller series outside these. Circumgenital glands in five groups: median group with six to seven orifices; upper laterals, 9 to 10; lower lateral, 8 to 9.

Length, 1 to 1.25 mm.

Adult ♂ not known.

Habitat : on stem of *Coffea arabica*. Java (Coll. Zimm., No. 27). The puparia are usually concealed beneath the superficial corky growth, and probably owe their flattened form to this habit.

This species belongs to the group of which *M. pomorum* and *M. citricola* may be taken as types. The stout flattened and corrugated puparium and the conspicuous double series of dorsal pores on the pygidium of the ♀, will serve to distinguish the present species from its nearer allies.

(To be continued).

Odontæus mobilicornis, F., at Downham, Norfolk.—On July 13th, whilst moth catching, I took a fine male specimen of *Odontæus mobilicornis*, F., flying, just as it was dusk.—ROBERT S. SMITH, JUNR., The Laurels, Downham : Aug. 7th, 1904.

[Many years ago Stephens recorded this species from Norfolk, so this capture is interesting as confirming his record.—W. W. F.]

Plagioderæ versicolora, Laich., in abundance at Oxford.—This beetle is not usually regarded as at all common, and I never saw it alive until July 23rd last, when it occurred in such numbers as to be considered almost as a pest. I met with it on this year's shoots, growing up from the stumps that had been lopped in the previous winter, of a willow hedge bordering the footpath to South Hinksey, only just outside the city of Oxford. Here for about 200 yards it could be seen in profusion, often five or six together on a single leaf, and the ravages of the beetle were conspicuous at quite a long distance off. It was accompanied by *Phyllodecta vitellinæ*, L., and *Crepidodera chloris*, Foud., but both of these were in comparatively scanty numbers; its larvæ were also there, but not plentifully. I may add that I had passed the spot about three weeks previously, but had seen nothing of the *Plagioderæ* in any stage, though I had swept the willows with my net. I shall be glad to distribute unset specimens of the beetle to any Coleopterist who may wish for them.—JAMES J. WALKER, "Aorangi," Lonsdale Rd., Summertown, Oxford : Aug. 8th, 1904.

Triplax ænea, Schall., and *T. russica*, L., at Gibside.—Early in the morning (about 5.30 a.m.) of July 8th, I found *Triplax ænea*, Schall., in some fungi growing on elm in Gibside. Returning with my friend Mr. Wallace on the evening of the 22nd, we shook some more fungi, and besides turning out several *T. ænea*, were lucky enough to come across *T. russica*, L., an insect hitherto unrecorded from the Northumberland and Durham district. On Saturday, the 24th, I examined this part of Gibside more closely, and soon found an elm overgrown with fungi to a height of about 20 feet, and not far from it a holly also overgrown; and made some observations, which may prove interesting.

T. ænea and *T. russica* occurred in almost equal numbers at the foot of the tree, whilst from a height of over four feet *T. ænea* had the advantage in numbers, and at a height of over eight feet there were scarcely three examples of *T. russica* to fifty *T. ænea*! What is the reason?

I found several freshly emerged *T. russica* in the fungus stems, but no pupæ rewarded me, search as I would, though larvæ (I should imagine of *T. russica*) were legion. All the *T. xnea* were fully mature, and I think passed their earlier stages between the fungi and the surface of the tree beneath the bark. I have recorded *T. xnea* as common under holly bark in the Derwent Valley (Ent. Mo. Mag., 1904, p. 108), where it has occurred to me in autumn, winter and spring, but rarely in summer, and never in such numbers as in this instance; so, under these circumstances, I think (though I have not definite proof) that it must hibernate or spend the cooler months under the bark, and in the summer search for "pastures new." Even beetles must have their summer holidays!—RICHARD S. BAGNALL, 11, Railway Terrace, South Hylton, near Sunderland: August 13th, 1904.

Lamia textor, L., in North Wales.—While staying for a few days this year in North Wales, I was fortunate enough to capture, on June 16th, an excellent specimen of *Lamia textor*, L. I found it among some rather long grass on the shore of Llyn Cwmbychan, about five miles east of Harlech. I searched in vain for others. There are no old willows anywhere about, the nearest trees being nearly a mile away, and consisting of small oaks and hazels. *Clythra 4-punctata*, L., was very abundant on the hazel bushes.—PHILIP H. JACKSON, "Dumfries," 112, Balham Park Road, S.W.: August 6th, 1904.

Nola albulalis in Dorset.—I took at light in my house a male specimen of *Nola albulalis* in moderate condition. I am not aware that it has before occurred in Dorset.—NELSON M. RICHARDSON, Montevideo, near Weymouth: Aug. 7th, 1904.

Recent capture of a malformed specimen of *Macaria notata* in Monmouthshire.—In Mr. C. G. Barrett's work on the British *Lepidoptera* a recurrent malformation of *Macaria notata* having three wings only is mentioned as occurring forty years ago at West Wickham Wood in Kent. I thought it might be interesting to record that on the 11th of this month I beat a similar specimen in a wood in this district, where I find this moth rather commonly. Besides having the left hind-wing absent, the fore-wing on that side is slightly malformed, though not crippled, towards the anal angle, as shown in the rough outline sketch, but this in no way alters the marking on that wing.—J. F. BIRD, The Nurtons, Tintern, Mons.: July 25th, 1904.



Birds and fish eating butterflies.—A water wagtail has this year built a nest in the *Ampelopsis reitchii* on my house at Putney. Miss C. A. Dixon was sitting in the garden on July 19th watching the bird go every few minutes to feed its young, and on one occasion noticed that it carried a white butterfly in its beak. On July 25th the same lady saw the same bird snap at a white butterfly but miss it. In September, 1903, in Kirkeudbrightshire, Mr. E. G. Waddilove saw a salmon of some 12 lbs. leap out of the water and catch a white butterfly.—G. B. LONGSTAFF, Twitcheu, Mortehoc, R.S.O., Devon: August, 1904.

Laphria flava in some numbers near Nairn.—If anybody had told me a year ago that the time would come when *Laphria flava* ♂ would be looked on as a drug

in the market I should not have believed him; yet such has happened this year, and I have passed males without attempting to catch them, and have caught and let others go on ascertaining their sex. The fly affects the edges of pine woods and sits on gate posts, posts for wire fencing, and other similar situations; another haunt is the clearings in these woods, where it is found on the stumps of the felled pines. The number of specimens taken near Nairn between July 6th and 18th was eleven males and one female; and to show how abundant the species was at the time, the following extracts from my diary give the numbers seen on the best days:—11th, seven specimens; 14th, six specimens; 16th, six specimens; and 18th, nine specimens; on two or three other days single specimens were seen. On each of the days 11th, 14th and 16th, three specimens were caught, while at first many were missed. These misses, however, taught experience, and one learnt never to attempt to sweep the insect from post or stump, for it is very lethargic and loth to move, but when possible to put the net over it. Should wire netting, side of post, &c., render this method impracticable, then try to pop a glass-bottomed box over it; not so hopeless a proceeding as one might imagine, but one which was successful on more than one occasion. The pine stumps affected by *Laphria flava* are also the haunts of the big Ichneumon (*Rhyssa persuasoria*, Linn.). These stumps are riddled with the borings of Coleopterous larvæ, so probably both insects visit them for much the same purpose—the Asilid larvæ preying on the beetle larvæ, and the Ichneumon larvæ being parasites on them.

Laphria flava occurs too in this neighbourhood, *e. g.*, July 27th, three specimens seen in the Abernethy Forest; 31st, a single ♂ captured in quite a different part of the Forest; but so far their head-quarters here has not been discovered.—J. W. YERBURY, Nethybridge Hotel, Nethybridge, N.B.: August 2nd, 1904.

Notes on some rare Trypetidae.—*Ceratitis capitata*, Wied., = *citriperda*, Mac Leay.—An excellent figure of this species is given by Newman in the *Entomologist*, vol. iv, p. 183. He there states that it is destructive to pears as well as to oranges. I have seen no subsequent account of its occurrence in England.

Anomæa permundus, Harris, = *antiqua*, Wied.—Moses Harris apparently thought that the wings of this species resembled a map of the world, though by an unfortunate printer's error an *u* took the place of the first *e* in the specific name. He gives an admirable figure, and states that it was found on a leaf near Dartford in Kent. Of course that was previous to 1786, the date of publication of his work; the second was taken at Southgate by F. Walker in a lime tree in August, 1834; the third was taken by myself at Glanvilles Wootton on July 18th, 1870; the fourth was taken by Mr. Adams in the New Forest in 1902.

Acinea rotundiventris, Fall.—The first was taken at Weston-on-the-Green by the Rev. A. M. Matthews on June 23rd, 1832; the second was taken by John Curtis (in company with J. C. Dale) in Bordean Hanger on July 18th, 1844; the third was taken by the Rev. T. A. Marshall at Lydford George on July 6th, 1892; the fourth was taken at Glanvilles Wootton by myself on July 4th, 1899.

Platyparea discoidea, Fab.—My specimen was taken at Rachills, in Scotland, by the Rev. W. Little in 1842.

Urellia eluta, Mg.—One was taken in Portland by J. C. Dale on July 16th, 1839; and a second was taken by G. A. Ridley at West Runton in 1902. *Ent. Mo. Mag.*, new ser., vol. xii, p. 9.

Spilographa abrotani, Mg.—One was taken at Glanvilles Wootton by myself in May, 1884; and a second at Hatt, in Cornwall, by the Rev. T. A. Marshall. Ent. Mo. Mag., vol. v, p. 145.

Ictericia westermanni, Mg.—I have a couple taken by my father and me, one in Monk's Wood on August 17th, 1837, and the other at Charmouth on September 28th, 1837.

Myopites inula, v. Roser.—Common on *Inula crithmoides*.

Tephritis plantaginis, Hab.—Common on *Statice limonium*. *T. corniculata*, Flin., and *Mellia cometa*, Lw., hibernate in fir, yew, &c.—C. W. DALE, G lanvilles Wootton: March 23rd, 1904.

Capture of Salticus formicarius in Dorsetshire.—Of this species, which is beautifully figured in Blackwall's British Spiders, I took a specimen at Lyme Regis on October 21st. I have another which was taken by my father at the Lymington Salterns on August 18th, 1865, and which is recorded in the Appendix to "The Spiders of Dorset."—ID.

Society.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: June 9th, 1904.—Mr. A. SICH, F.E.S., President, in the Chair.

Dr. Chapman exhibited ova of *Coleophora laricella*, laid by a ♀ bred from Isle of Purbeck larvæ; he stated that they were upright eggs, with 13 or 14 very bold vertical ribs. He also showed the cocoon of *Thais polyxena*, which consisted of a few strands of silk attached to twigs. Mr. Lucas, a number of grass stems attacked by a fungus, in which the larva of a Dipteron was feeding. Dr. Chapman explained the curious life-history of the latter as far as he knew it. Mr. Lucas also showed the ova of the large ladybird, *Halysia ocellata*, and specimens of parasites (*Mymaridæ*) on the ova of *Orygia antiqua*. Mr. West (Greenwich), the Capsid *Harpocera thoracica*, from Ranmore Common, and called attention to their knotted antennæ. Mr. Carr, ova of *Acidalia remutaria*. Mr. Turner, cases and larvæ of *Coleophora bicolorella*, a very local species, from Chatham, and read notes on its life-history. A discussion took place as to the season, and several members gave notes on spring collecting. It was generally considered that the season was late, and that insects were scarce, although a few species were exceptionally abundant locally.

June 23rd, 1904.—Mr. E. STEP, F.L.S., Vice-President in the Chair.

Mr. Carr exhibited a double-sized cocoon of *Lasiocampa quereûs*; it was of a dirty cream colour instead of a rich brown. Mr. Ashby, examples of *Callidium alni* and *Orsodacna cerasi*, two rare species of *Coleoptera* taken by him at Bookham during the Field Meeting on June 4th. Dr. Chapman, larvæ of *Agdistis bennettii*, sent by Mr. Ovenden from Rochester, together with ova of the same species. Mr. South, living larvæ of *Nyssia lapponaria* feeding on birch; it was noted as being extremely local, but plentiful in its two known localities on heather and bilberry.—HY. J. TURNER, Hon. Sec.

ALGERIAN *MICROLEPIDOPTERA*.

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

It had been my intention to devote the spring of 1903 to increasing my collection of Moorish *Microlepidoptera*, and especially to visit the interior of the country, instead of confining myself to the coast near Tangier as in the preceding year; but on arriving at Gibraltar, a few days after Christmas, 1902, the news of further disturbances due to the insurrection in the neighbourhood of Fez, and the very general impression which prevailed that even Tangier itself was by no means safe, diverted my thoughts towards Algeria.

A strong inducement in this direction arose from the study of an Algerian collection very kindly made for me by the Rev. A. E. Eaton, which was found to contain several undescribed species. Of these the more interesting came from Biskra, a locality where Mr. Meyrick had also found several new genera and species. My anticipations were however by no means equal to the wealth of interest and novelty yielded by this northern projection of the Sahara.

Although in January snow was visible on the high mountains to the east from the windows of the Continental Hôtel in Algiers, I was not a little surprised to be refused a ticket at the station when proposing to start for Biskra on the 3rd of February, and although eventually the train did start, an official note was written on the ticket that the company refused to guarantee conveyance to our destination. The line was said to be blocked by snow in the neighbourhood of Sétif, but we got through, and notwithstanding that during daylight we never lost sight of snow from Algiers to Biskra inclusive, there were no obstructions on the line.

During a stay of about three months on what is usually regarded as a desert it was evident that Biskra at least was no desert to an entomologist, and the somewhat higher ground of El-Kantara, where I spent a month, began to be almost equally productive before leaving it about the end of May. Except in the oases, almost exclusively devoted to date-palms and mud dwellings, there is of course a marked absence of trees, but the plains and low hills on the borders of the Sahara produce low scattered herbage and stunted woody plants or trailing shrubs in sufficient abundance, while along the river beds (generally known as "Oueds") there is a profusion of *Tamarix*. In recording the larvæ found on various forms of tamarisk I have not attempted to distinguish species, their foliage being always extremely similar when the plants are not in flower. Intermixed with these are

found such shrubs as *Atriplex halimus*, *Lycium europæum*, &c., and both here and on the drier plains many succulent plants occur in profusion, *Suæda*, *Salsola*, *Zygophyllum*, *Arthrocnemum*, and others. At Hammam-es-Salahin ("Baths of the Saints" Gallice "Fontaine Chaud") a magnificent hot spring supplies the baths which hold a high reputation among the Arab population for the cure of all complaints, especially those to which they are most subject; here *Arundo phragmites* is undistinguishable, except by its larger size, from the European form with which we are familiar, attaining a height of from ten to fifteen feet where it follows the line of the heated water running from the spring above.

The most conspicuous plant, and one which is found everywhere on the flat, is *Limoniastrum guyonianum*. Its purple flowers are a feature in the landscape in the month of May, and one can scarcely find a fair sized specimen on which the large round terminal galls of *Oecocceis guyonella*, Gn., are not conspicuous. I have seen quite a thousand on one large shrub, the old dry galls remaining after their occupants have left them. Succulent plants, probably from their special adaptation to the storage of moisture, were noticeably much frequented by *Lepidoptera*. It must be extremely interesting to a botanist to study the methods by which almost every desert plant seems to strive for the same result, possessing in each instance some peculiar means of defence against the prevalent drought, either in its manner of collecting or conserving a sufficiency of water. It may be mentioned that in 1903 there was not a single shower at Biskra or at Hammam-es-Salahin during the time I spent there. Perhaps for this reason larvæ seem to recognise the advantage of frequenting the stems of their food-plants; in the interior of the stem any larva must necessarily find more protection from scorching sun rays, as well as being nearer to the limited water supply.

One finds here among the Micros an unusual proportion of gall-makers. This habit is adopted by at least seven distinct genera:—*Phalonia*, *Oecocceis*, *Colcophora*, and four new ones (*Anocceis*, *Cecidophaga*, *Hypoceis*, and *Proactica*).

I am able to record nine gall-making species in these genera, without taking account of *Amblypalpis olivierella*, Rgt., the galls of which I believe I also found on *Tamarix*, and two others not yet bred, one on *Gymnocarpon fruticosum*, possibly an inquiline, and one on *Haloxylon articulatum*.

Another remarkable preference is to be noticed. The leaves of

Limoniastrum are apparently very stiff and dry ; pressing them in the hand one might suppose they contained little or no moisture. The stems are hard and woody, nor does the plant appear to be one that is likely to be nutritive or succulent, yet a small piece shut in a well-ventilated bottle such as I generally use for breeding purposes will quickly give off moisture ; and it is almost impossible, except by taking out the leaves and thoroughly drying the bottle every day, to keep larvæ from being soaked by the water which accumulates on the sides. Consequently, we find a great number of species choosing this as their food. Single species of *Agdistis*, *Aristotelia*, *Hypocecis*, n.g., *Apotistatus*, n.g., *Trifurcula*, and a Phycid recognised and bred ; one *Aponoea*, n.g., one *Gelechia*, one *Aristotelia* taken exclusively on this plant and undoubtedly attached to it, and another larva, at present unrecognised, closely imitating the leaf in its shape and colouring which was found in both seasons but not reared ; moreover, the Pterophorid mentioned by Meyrick under the name of *siceliota*, Z., constantly dislodged from this shrub, must in the absence of any species of *Cistus* be at least strongly suspected to feed upon it.

The genus *Coleophora* is well represented ; up to the present I have succeeded in breeding nineteen species, taking several others on wing, and finding cases of two or three additional species not at the present identified.

Gelechiadæ are very numerous, the *suadella* group predominating ; they swarm at lamp-light and around the crassulaceous plants near Hammam-es-Salahin. The genus *Scythris* and its allies seems to be also largely represented. There is a notable absence of *Tortricidæ*, at least up to the end of May, but perhaps these may prove to be more abundant during the following months.

At El-Kantara, and evidently more so at Batna, Lambessa, El-Guerrah, and Constantine, and from thence to the coast, the fauna and flora present a more European character, but at Biskra almost every species differs in some recognisable degree from its European congeners, and although assuming much the same pattern and colouring as some already known form, seems to be so uniformly distinguishable as to constitute something more than a mere topomorphic variety. Where it is only a question of size, as among plants in *Arundo phragmites*, mentioned above, one cannot regard the variation as of special value ; but when either with or without increase of size one finds persistent and uniform differences, however slight, it seems well to record them by separate names.

El-Kantara is at a higher elevation than Biskra, and more to the north; here, during the first two or three weeks of my visit, collecting was slow and uninteresting work. The desert plants were for the most part absent; there was a rather monotonous abundance of *Artemisia* (*herba-alba* ?), and of *Acanthyllis armata*, but the ground varied much in elevation, and before I left the place at the end of May many species not seen in the field came to light in the garden of the hotel, including several *Phycitidæ* recognised by Sir George Hampson as useful additions to the number of species hitherto represented in the British Museum. *Nemotois constantinella*, Bkr. (n. syn. = *demaisoni*, Rgt.), which does not occur at Biskra, was flying at the end of April and in the beginning of May on the mountain to the north of the El-Kantara gorge with one or more species of *Pleurota*, but of the undescribed species found in this locality it was frequently impossible to secure a representative series; some very distinct forms taken in places not easily accessible are still unfortunately unique (*e. g.*, *Micropteryx cyaneochrysa* and *Scythris marionella*).

In 1903, in something less than four months' work, with the assistance in the field of my indefatigable Italian valet Sola, who would cheerfully spend a day in tracking any desirable *Acarus* through a ton of hay, and is now quite an experienced collector, I managed to accumulate and set over 3000 specimens in good condition, in spite of many other calls upon the attention and interest of a traveller. The greater number of obviously new species were already described before starting again in November, but I was left with a residue of more or less doubtful cases requiring further study and research. Several of these have since been successfully dealt with.

In November, 1903, Morocco being in a still more hopeless condition of lawless anarchy than in the previous winter, I went again to Biskra, rather in the hope of clearing up doubtful points in the life-history of previous captures than of securing additional species. Such work promised to be extremely enjoyable, resembling the leisurely recreation of picking up one's birds after a furiously rapid grouse-drive, as contrasted with the continued strain required to ensure the heaviest bag in the shortest possible time. For this purpose I chose Hammam-es-Salahin as head-quarters, meaning to make excursions into the desert from time to time. Even if the weather of 1903 was exceptionally favourable, that of 1904 was generally acknowledged to be very exceptionally unfavourable. High winds prevailed for at least twenty days out of every thirty, with many blinding sand-storms,

and not unfrequent rain. The first three or four months were eminently disheartening, and long excursions were impossible, but my hostess was an excellent cook, and managed to give a relish to everything that found its way into the kitchen, including Ibis and Hoopoes.

Light, which had been so productive in the previous season, was but a poor attraction, and collecting could be successful only by hard and persistent work among low scattered plants, on which it was often exceedingly difficult to recognise traces of the minute larvæ expected to frequent them. *Gelechia*, of the *suadella*-group, feeding upon many crassulaceous plants, proved to be easily distinguishable in the larval stages, although hopelessly mixed in my series of the previous year. *Salsola tetragona*, *Traganum nudatum*, and *Zygophyllum cornutum* yielded additional material in aid of persistent efforts to clear up the muddle, but there is still more to be done in this direction, several larvæ having failed to feed up to maturity. A successful search for the unknown larva of *Teracolus nouna* [see Ent. Mo. Mag., XL, 99 (1904)] was a rather laborious distraction, involving several long walks with much climbing on high rocks, and an almost too intimate acquaintance with *Cerastes* and other dangerous snakes, some of which were abundant even within a few yards of the little hotel; but fortunately the only victim during my stay was a fine St. Bernard dog belonging to the establishment.

In looking back to these two short seasons spent in trying to find out what *Microlepidoptera* occur at and about Biskra, it no longer surprises me that the casual visits of those collectors who preceded me should have produced so few additions to previous lists. The somewhat rich harvest now to be recorded consists in great measure of species by no means easy to observe, including many to be critically distinguished from their near allies only by a knowledge of their life-histories, and which would almost certainly have otherwise escaped recognition.

There are still some undetermined larvæ of which I know the habits and food-plants.

The months of June, July, and probably up to October, could not fail to produce much additional material. My own too limited opportunities have enabled me to do little more than indicate the probable wealth of the Saharan fauna by so far supplementing the scanty Algerian lists.

In the descriptions which follow are included the species taken by Mr. Eaton, as above mentioned, some of which I failed to meet

with. I am deeply indebted to him for the carefully detailed observations which have accompanied his generous contributions to my collections from these and other localities.

The botanical nomenclature adopted in this paper is that of Professors Battandier and Trabut, joint authors of the "Flore de l'Algérie," to the latter of whom I desire to express my thanks, as also to the botanical staff of the British Museum (Natural History) for valuable assistance rendered in determining specimens.

HYPONOMEUTIDAE.

293.—CEROSTOMA, Ltr.

2456 : 1. — CEROSTOMA INDECORELLA, Rbl.

Cerostoma indecorella, Rbl. Verh. Z.B. Ges. Wien., LIII (1903), 410—11, No. 34 (1903).¹

Antennae white, barred above with brownish grey. *Palpi* projecting more than the length of the head beyond it, clothed with long rough hair-scales forming a somewhat cone-shaped brush, from near the base of which the short terminal joint protrudes obliquely; white, dusted with black scales. *Head* and *Thorax* dull white, the latter very slightly dusted. *Forewings* elongate, with moderately acute apex, not falcate and scarcely depressed; dull white, slightly shaded along the dorsal and terminal areas with very pale brownish grey and much spotted and streaked with sooty black; on the basal third, and a little beyond it near the fold, the black spots are arranged somewhat transversely, some crossing the fold but not reaching the dorsum, thus giving to the base of the wing a strong chequered appearance; from the middle of the fold and along and above the cell are black, longitudinal lines following the venation, but beyond the cell they become somewhat suffused and partially coalescent; a black transverse spot lies at the end of the cell, three or four small spots on the middle of the costa and a somewhat confused series of rather larger spots around the apex and termen, those before the apex running through the cilia, those below the apex followed by some minute black dusting on the cilia which are otherwise white, blending to brownish grey at the torus. *Exp. al.*, 19—23 mm. *Hindwings* shining, very pale pearly grey, with even paler cilia; the termen is very slightly sinuate below the produced apex. *Abdomen* shining, pale brownish grey. *Legs* white, the tarsi with black dusting on their underside.

Hab. : ALGERIA—Biskra, 24.III—21.IV.1903; Hammam-es-Salahin, 18.IV.1903; El-Kantara, 5.V.1903; Ouargla-Ghardaja (Hammada), 12.IV.1893.¹

I took fifteen specimens of this species at Biskra, Hammam-es-Salahin, and El-Kantara, some at light and some beaten from bushes of *Nitraria tridentata*, with which they appear to be associated. It is a variable species, some specimens being devoid of the basal

chequering while the extent and number of the black longitudinal lines also varies, but it is always easily recognisable and quite distinct from anything hitherto described. Some varieties approach *nebulella*, Stgr., while others might almost appear to be white varieties of *satellitella*, Stgr.

GELECHIADAE.

297.—METZNERIA, Z.

2494 : 1.—METZNERIA INCOGNITA, *sp. n.*

Antennae whitish ochreous. *Palpi* whitish ochreous, the median joint suffused externally with dark brownish ochreous. *Head* and *Thorax* whitish ochreous. *Forewings* whitish ochreous, with a straight brownish ochreous streak along the cell, and another parallel to it below the costa, produced beyond the cell and diffused upward to the costa before the apex; a broad dark brownish ochreous line runs along the termen, and the cilia are almost entirely suffused with brownish ochreous in which there is only a faint indication of a median line; underside purplish grey, cilia pale ochreous. *Exp. al.*, 16–18 mm. *Hindwings* shining, dark purplish grey; cilia cupreous. *Abdomen* and *Legs* whitish ochreous.

Type, ♀ (96478); ♂ (89710). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara, 6-20.V; Hammam-es-Salahin, 16.V.1904. Four specimens.

Closely allied to *aspretella*, Ld., but distinguished by the brownish ochreous streaks and terminal line, and by the dark hindwings. It is nearer to *agraphella*, Rgt., but has no grey or fuscous scaling along the wing and the cilia of the hindwings are very much brighter and more ochreous.

300 : 1.—LEOBATUS, Wlsm.

(λεώβυτος, 'η. = a highway).

Type, *Leobatus fagoniae*, Wlsm.

Antennae (♂) subserrate and shortly ciliate beneath; basal joint without pecten. *Maxillary Palpi* short. *Labial Palpi* long, recurved, terminal joint about the same length as the median, pointed; median smooth, closely scaled. *Haustellum* rather roughly scaled towards base. *Head* and *Thorax* smooth. *Forewings* elongate, lanceolate, widest at the middle: *neuration* 12 veins; 7 and 8 stalked, 7 to costa, 6 out of stalk of 7+8; rest separate. *Hindwings* slightly broader than the forewings, with rounded dorsum and termen, tornus evenly obliterated in their curve, apex slightly protruding, sinuate, but not abruptly excised beneath; cilia (1): *neuration* 8 veins; 3 and 4 connate; 5 hardly approximated, almost parallel with 4; 6 and 7 stalked. *Abdomen* rather flattened. *Legs*: hind tibiae profusely clothed.

Intermediate between *Gelechia*, Hb., and *Acompsia*, Hb., differing from the latter in vein 6 of the forewings arising from the stem of 7+8 in which it also differs from Busck's description of *Gelechia*, as also in the smooth median joint of the palpi. The neuration of *Gelechia* as given by Meyrick, "Forewings: 6 seldom out of 7 near base," would include this form, and his description of the palpi, "thickened with more or less rough scales beneath," might be strained so as not to exclude *Leobatus*, but as by his tabulation it would go to *Acompsia*, Hb. (= *Recurvaria*, Hw., Meyr.), the erection of a genus for *fagoniae* seems justified.

2509 : 1.—*LEOBATUS FAGONIAE*, *sp. n.*

Antennae black. *Palpi* pale brownish ochreous, the median joint smoothly clothed, with two blackish spots externally; terminal joint at least as long as the median, with two black annulations. *Head* pale buff. *Thorax* blackish, the tegulae tipped with buff. *Forewings* buff, with a slight rosy tinge, the extreme base and the dorsum to two-thirds suffused with black, the outer half of the cell also strongly suffused with black which is connected with the dorsal shade, except where a spot of the ground-colour remains in the fold, this discal shade is further connected to the costa before and beyond the middle, thus the whole basal two-thirds of the wing are overlaid with black, except a patch on the middle of the costa, another patch toward its base extending to the fold, and a spot in the fold a little before the middle; the outer edge of the black shading is somewhat clearly defined by a band of the pale buff ground-colour, which is again suffused towards the apex with pale bronzy brown, the black reappearing along the termen and in scattered dots through the smoky brownish ochreous cilia. *Exp. al.*, 15 mm. *Hindwings* broader than the forewings, slightly indented below the apex; pale grey, shining; cilia pale brownish cinereous. *Abdomen* ochreous, shaded across the middle with smoky black. *Legs* ochreous, the tarsal joints faintly spotted with blackish.

Type, ♂ (96569); ♀ (96922). Mus. Wlsm.

Hab.: ALGERIA—Biskra and Hammam-es-Salahin, 17.XII—22.III, Larva *Fagonia glutinosa* and *sinaica*, II, excl. 14-20.IV.1903; 7-12.III.1904. Twelve specimens.

I found the larva of this species by no means unfrequent on *Fagonia glutinosa* and *sinaica*, spinning loose webs along the trailing stems and upon the ground beneath or the rocks behind them. It occurs on the plains to the west of Biskra and on the hills behind Hammam-es-Salahin, also abundantly on the smaller hills beyond the Biskra race-course, and near the Freuch cemetery.

303.—*GELECHIA*, Hb.

2510 : 1.—*GELECHIA MONTIVAGA*, *sp. n.*

Antennae fuscous, banded with pale hoary grey. *Palpi* brownish white,

sprinkled externally with fuscous. *Head* brownish white. *Thorax* pale hoary greyish. *Forewings* with straightened costa and lanceolate, slightly depressed apex; pale hoary greyish, profusely sprinkled throughout with pale greyish fuscous scales, among which a few groups of ochreous scales forming obscure discal spots are distinguishable with the lens; there is also a faint ochreous streak from the base, beneath the costa, traceable to about one-third; cilia pale hoary greyish, lightly sprinkled with pale greyish fuscous. *Exp. al.*, 15 mm. *Hindwings* scarcely indented below the apex; pale grey; cilia pale brownish cinereous. *Abdomen* grey. *Legs* pale brownish cinereous, sprinkled and banded with pale fuscous externally.

Type, ♂ (96484); ♀ (89284). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara, 3.V.1903.

Six specimens taken on the higher slopes of the mountain near the railway, but scarce. An inconspicuous species, but differing from any with which I am acquainted.

2538 : L.—GELECHIA LACERTELLA, *sp. n.*

Antennae greyish fuscous, with faint paler annulations. *Palpi* with well-developed coarse brush beneath; cinereous, much sprinkled with greyish fuscous. *Head* and *Thorax* pale greyish ochreous, with a few pale fuscous scales. *Forewings* pale greyish ochreous, profusely sprinkled with greyish fuscous which becomes darker, almost black, in a costal spot near the base, a plical spot a little beyond it, a second more conspicuous plical spot at about two-fifths, a small discal spot above and a little beyond the last, a small spot at the end of the cell, and a dark costal shade preceding a broken transverse band of the pale ground-colour, less sprinkled with darker scales than the remainder of the wing-surface; cilia pale greyish ochreous, profusely sprinkled with fuscous, except at their tips. *Exp. al.*, 18--20 mm. *Hindwings*, costa ciliate throughout, cilia very long towards base; shining, brownish grey; cilia brownish cinereous. *Abdomen* shining, brownish grey. *Legs* brownish cinereous.

Type, ♂ (88984); ♀ (88990); Larva (88992). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara, 4-25.V.1903. Larva *Acanthyllis armata*, 6.V, excl. 25.V—30.VI.1903. Nineteen specimens.

This species is extremely common in the dense tufts of *Acanthyllis armata* on the sides of the low hills. The larva makes a web along the stems and I should strongly recommend a pair of thick leather gloves to any one who desires to collect them upon this most forbidding plant. The larva has a black head and a broad black pronotal plate of even width, the pro- and meso-thoracic legs are black, the metathoracic corresponding to the colouring of the segments; yellowish white with two dorsal and two subdorsal lines of pale brown.

Apparently nearly allied to *pinguinella*, Tr., but it is a smaller insect with wings proportionately shorter. The markings and colouring are also extremely similar but by no means identical.

2584 : 1.—*GELECHIA SINUATELLA*, *sp. n.*

Antennae pale ochreous. *Palpi* whitish ochreous, the divided brush on the under side of the median joint speckled with brownish. *Head* whitish ochreous. *Thorax* pale brownish ochreous. *Forewings* pale ochreous, with a more or less pronounced rosy tinge, finely dusted with brownish scales; a long dark tawny brownish fuscous streak runs from near the base to a point half-way beyond the end of the cell and the apex; near its narrow base it sends out a slight angle across the fold, and following the fold is gradually dilated to a little before the middle, thence narrowing again, with its lower margin somewhat sinuate, it curves downward to the end of the cell throwing out then a narrow projection towards the apex; a few obscure spots around the apex and termen precede the whitish ochreous cilia which are thickly sprinkled with brownish atoms. *Exp. al.*, 18—20 mm. *Hindwings* broad, trapezoidal, emarginate below the apex: brownish grey; cilia shining, pale greyish ochreous. *Abdomen* shining, pale ochreous. *Legs* whitish ochreous.

Type, ♂ (8298); ♀ (96594). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 9.III.1895 (*Eaton*), 3-31.III.1903 (*Wlsm.*), 28.IV.03 (*Eaton*); Hammam-es-Salabin, 18.V.1903 (*Wlsm.*). Eleven specimens.

I took several specimens of this species during my stay at Biskra, but all singly and it was not noticeably attached to any particular plant. It is very closely allied to *Gelechia plutelliformis*, Stgr., but larger, paler, and much more uniform in its colour and markings.

(*To be continued*).

LIST OF BRITISH *DOLICHOPODIDÆ*, WITH TABLES AND NOTES.

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

(*Continued from page 199*).

14. *D. confusus* Zett.: this species is, as far as I know, limited to the sandy district in North Suffolk, where it is not uncommon.
15. *D. plumipes* Scop.: a very common and very beautiful small species. I have taken it in numerous localities, ranging from Bournemouth to Tongue.
16. *D. Wahlbergi* Zett.: very similar to *D. plumipes*, but quite distinct; I have found it only in Hampshire, Sussex, Essex and Herefordshire.
17. *D. pennatus* Mg.: common from Cornwall to Sutherland. The species of this group, though all quite distinct, require considerable care to differentiate.

18. *D. popularis* Wied.: the most beautiful of the species as yet recorded from Britain. I have met with it locally in numerous localities from Dawlish to Tongue.
19. *D. signatus* Meig.: moderately common from Lyndhurst to Lairg.
20. *D. urbanus* Meig.: readily distinguished in both sexes by its black hind tibiae. Moderately common from Lyndhurst to Inveran.
21. *D. trivialis* Hal.: very common from Penzance to Aberlady.
22. *D. festivus* Hal.: also common from Penzance to Dolgelly.
23. *D. virgultorum* Walk.: this and the next species are distinguished by their almost whitish-yellow legs, and by an obvious spine on the basal joint of the middle tarsi; they also seem to me to avoid marshy districts and occur on shrubs growing on the dry banks at the sides of country lanes. Both species are rare, but *D. virgultorum* has occurred to me at various localities in Sussex.
24. *D. arbustorum* Stann.: this species occurs in similar localities to the previous one in Hampshire and Sussex, though in very restricted localities.
25. *D. nitidus* Fall.: this and the next species are well distinguished from all known British species (except *Hygrocoeleuthus diadema*) by the rectangular twist of the discal vein. *D. nitidus* is by far the less common of the two, but I have taken it in the Norfolk Broads, at Sutton in Lincolnshire, and in numbers at Rydal.
26. *D. griseipennis* Stann.: common from Penzance to Aberlady.
27. *D. signifer* Hal.: recorded by Haliday in Walker as from "a sandy islet off the western coast" of Ireland; a reference to Haliday's original description in Ann. Nat. Hist., ii, 184, November, 1838, gives this locality, "on a sandy islet in Roundstone Bay;" I find that Roundstone Bay is a small bay off Connemara. Although the species is well recognised over most of Central Europe, it has never since been recorded as British again until now, when I record two male specimens taken by Mr. C. G. Lamb at Padstow in Cornwall in September, 1903, and in 1904.
28. *D. clavipes* Hal.: Haliday states that this species is "not rare on the sea coast (E. S. I.);" I have met with it only at

Sutton in Lincolnshire, Coniston, and Aberlady, though not uncommon in those localities. Col. Yerbury has recently taken it at Porthcawl and Barmouth. It may readily be considered one of the black-legged section of the genus.

29. *D. sabinus* Hal. : not uncommon on sea coasts from Bournemouth to Aberlady, and also rather inland at Coniston.
30. *D. acuticornis* Wied. : Col. Yerbury has given me several specimens of this species, which he took at Porthcawl in South Wales from early in June up to July 1st, 1903, and also one taken at Barmouth in June, 1902 ; he has also informed me that he has taken it in Ireland.
31. *D. longicornis* Stann. : an uncommon species, though I have taken it in about half a dozen localities, ranging from Lyndhurst to Braemar, while Col. Yerbury took one male at Porthcawl. I once caught a male in a small glass-house in my own garden, the only other species of the genus which I have taken there being the ubiquitous *D. unguatus*.
32. *D. puncticornis* Zett. : a very local species, which is well distinguished from its English allies by the deep ochreous face of the male, though the male of *D. lineaticornis* has the face ochre-yellow. *D. puncticornis* was fairly abundant in a limited portion of Wicken Fen when I collected there in 1875, and Col. Yerbury has taken it at Porthcawl in Glamorgan.
33. *D. linearis* Meig. : I first found this in company with the last species at Wicken Fen in July, 1875, but in very limited numbers ; a special search, however, on June 26th, 1876, produced a good series ; I have also taken it at Thetford, while a specimen occurred on June 12th, 1899, on the glass of the porch of the Métropole Hotel, Brighton. I believe that all the so-called *D. agilis* which have been at various times recorded as British belong to this species, and consequently I still leave that as only a "reputed" British species.
34. *D. nubilis* Meig. : common from Exmouth to Tongue. I cannot understand Kowarz stating that the female of this species has the squamæ yellow fringed as in the male.
35. *D. latilimbatus* Macq. : I have seen this from only Devon, Dorset, and Sussex. I cannot understand Wahlberg and Zetterstedt stating that this species has yellow fringed squamæ.

36. *D. andalusiacus* Strobl: on August 24th, 1885, I caught at Slapton Lea, in extreme South Devon, three males and one female of a *Dolichopus* which I could not identify, and which I consequently included in my "List" of 1888 under the catalogue name of *D. Scotti*, as I was then collecting in the company of the late John Scott. Being convinced that they represented an undescribed species I sought for more specimens in two subsequent seasons, but unsuccessfully, although I went many miles in search of it, but on September 6th, 1889, and on succeeding days I found it in profusion within a few yards of the Sands Hotel near the bridge which divides the Lea. When preparing this paper I went exhaustively through the genus, and found that Strobl had described it as new in 1899 from a single male caught at Algeçiras, near Gibraltar, under the name of *D. andalusiacus*. I do not feel the least doubt about its correct identification, but having taken it in large numbers in both sexes, a few additional notes about it may be of advantage.

It is undoubtedly one of the *D. nubilus* group, the species of which bear a peculiar downy pubescence on the face, while the antennæ are almost wholly black, and usually the femora bear some dusky markings. The other known European species of this group are *D. nubilus*, *latilimbatus*, *excisus* and *albifrons*, all of which ought to occur in Britain; of these all have the front femora entirely yellow, the hind femora with a dusky spot near the tip (faint in *D. latilimbatus*), and the hind tibiæ darkened at the tip. The male of *D. nubilus* is also easily distinguished by the yellow fringed squamæ, and *D. latilimbatus* by the long thin hair at the tip of the front tibiæ. Strobl's description is so good that I would only say that I consider the arista longer than the antennæ, and I would call the dark portion of the front femora light brownish-black rather than black, in fact, in some specimens it is little more than dusky; the bristles on the basal joint of the hind tarsi are two strong ones above and one on the front side.

Female with the face much broader, white with almost conspicuous white pubescence; frons rather dusted with white; thorax more coppery; front femora usually nearly all orange, though sometimes a faint darkening occurs on the upper side; front coxæ less darkened, being sometimes so only at the base, and posterior coxæ with just the tip brownish-orange; base of the hind tarsi obscurely orange, though sometimes very obscurely so; antennæ sometimes obscurely reddish

beneath at the extreme tip of the basal joint, thereby showing the close relationship of the species to the *D. nubilus* group. When the front femora are darkened above the front coxæ are also more darkened. It is very closely allied to *D. latilimbatus*, but that has the flexure of the discal vein less abrupt, the front coxæ paler with whitish shimmering, and the hind femora slightly dusky at the tip ; it is, however, so closely allied that I should usually not like to name any single specimen.

37. *D. medicornis* Verr. : I have nothing to add to my notes on this species as given in this Magazine in July, 1875. It had then occurred in considerable numbers in the New Forest in June, 1871, and it occurred there again in 1875.
38. *D. lineaticornis* Zett. : Mr. F. Jenkinson took two males of a *Dolichopus* at Cambridge on July 15th, 1901, which I cannot satisfactorily identify. They appear to me to be either *D. lineaticornis* Zett. or *D. grandicornis* Whlbg. They agree in size with *D. lineaticornis*, which is distinctly larger than *D. puncticornis* Zett. and *D. medicornis* Verr., and they also seem to me to agree with it in the wholly grey posterior coxæ (which, however, are slightly rufescent about the tip of the hind pair in Mr. Jenkinson's specimens), and in the length of the antennæ, which should be slightly less than the transverse section of the head. On the other hand the face instead of being "*flavido*" as in *D. lineaticornis* is more the "*aureo-ochraceo*" of *D. grandicornis*. The costa has a slight (so slight as to be easily overlooked) swelling about the end of the subcostal vein, while *D. lineaticornis* and *D. grandicornis* are said to have "*stigmat omnino nullo*" and "*stigmat nullo*." My *D. medicornis* is smaller and has the front coxæ more denuded of tiny black bristles and all the tibiæ with weaker bristles, besides having the face "*flavido-alba*." Walker professed to recognise *D. lineaticornis* as British, and described the face as "*flavido*" or "*ochre-yellow*;" I therefore at present accept the name of *D. lineaticornis* for the two specimens caught at Cambridge.
39. *D. strigipes* Verr. : this remarkable species occurred at Fawley in the New Forest on June 21st, 1875, in I think the old salterns which were there. In 1889 Becker re-described it as *D. aratriformis* from salterns between Spalatro and Ragusa in Dalmatia ; he distinguished the female as having rather

darker wings, but gave no other distinctive characters. In his description of the male he says nothing about the darkened stripes on the femora, and he lays rather more stress upon the stigma being somewhat swollen, but his figure of the extraordinary lamellæ of the male absolutely identifies the species.

40. *D. simplex* Meig.: not uncommon from Penzance to Tongue. Mik (Verh. z.-b. Wien, 1880, p. 594) professed to distinguish Haliday's *D. thalassinus* which he considered the same as *D. fallaciosus* of Gerstaecker, but I am unable to follow his distinctions; our British specimens almost always have a pale yellow face and a completely orange basal joint of the antennæ. I cannot understand Loew stating that the male of this species has a long thin bristle at the tip of the front tibiæ as in *D. latilimbatus*. Bezzi includes both *D. thalassinus* and *D. fallaciosus* as synonyms of *D. simplex*.
41. *D. ungulatus* L.: Linné's name is now being almost universally accepted for the well known *D. æneus* of DeGeer. The species is by far the commonest of the whole genus, and may sometimes even stray away from the neighborhood of water; it is universally distributed, and often occurs by thousands.
42. *D. longitarsis* Stann.: this is more commonly known as *D. equestris* of Haliday; I have never met with it myself, but Haliday caught one male on the sea coast near Holywood in Co. Down, Ireland, and Col. Yerbury took one male at Pembridge in Herefordshire on July 15th, 1902, and another in Woolmer Forest, Hampshire.
43. *D. brevipennis* Meig.: local, but occurring in numerous localities from Bournemouth to Aberdeen.
44. *D. rupestris* Hal.: not uncommon on the sides of mountains in the Lake District and at Braemar.

Of these 44 species, 9 have been introduced as British by me, and as I anticipate, at least 20 more will ultimately be found in Britain, I append a List of the European species, arranged for the first time in an attempt at natural alliances.

(To be continued).

CALLICERA YERBURYI, n. sp.: A BRITISH SYRPHID NEW TO SCIENCE.

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

Among many other novelties to Britain, Col. Yerbury has taken this year at Nethy Bridge in Inverness-shire, four females of this exquisitely beautiful new fly.

CALLICERA YERBURYI, n. sp.

♀. *Læte æneus, rufo-hirtus.* *Antennarum articulus secundus primo dimidio brevior.* *Thorax haud striatus.* *Abdomen apice nigro-hirtum, vittis in segmentis 1mo et 2do transversis nigris obscuris.* *Femora in femina tota fulva.*

The nearest ally must be the little known *C. porrii*, Rond., which, however, has a conspicuously striped thorax and black femora. I will shortly give a paper describing it more fully, and dealing with all the known species of the genus.

Sussex Lodge, Newmarket:

September 14th, 1904.

ACULEATE HYMENOPTERA COLLECTED IN TENERIFE
BY THE REV. A. E. EATON, M.A., IN THE SPRING OF 1904,
WITH DESCRIPTIONS OF NEW SPECIES.

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

(Concluded from page 203).

12. *COLLETES MORICEI*, sp. nov.

C. coriandro, *Per. et C. phalerico*, *Mor.*, *affinis, a coriandri corpore minus hirsuto abdominis fasciis majus distinctis, a phalerico genis elongatis facile distinguenda.*

Black, clothed in both sexes with white hairs, the hairs of the mesonotum and vertex in very fresh examples with a very slight fulvous tint, posterior margins of the abdominal segments pale, with narrow equal bands of white pubescence on the 1st six segments in the ♂, on the 1st four in the ♀. ♂. face very short and triangular, wider than long (exclusive of the eyes), cheeks between the eyes and mandibles elongate, longer than their apical width, labrum very shining, without foveæ, antennæ with joints 4 to 13 much longer than wide, nearly twice as long as 3, thorax shining, rather remotely punctured, wings very hyaline, with pale testaceous nervures, sub-costal nerves much darker. Legs clothed with long white hairs, posterior metatarsus not dilated externally, longly pilose, the hairs half the length of the joint; 2nd joint of tarsi longer than wide, sub-triangular; 3rd similar in form, but much smaller; 4th rather shorter and wider, and much smaller again, claw joint testaceous, claws dentate. Abdomen shining, sparingly clothed with erect whitish hairs on the discs of the segments, basal segment clothed with very long hairs,

finely and somewhat remotely punctured, the intervals as wide as two or three of the actual punctures; 2nd segment more finely and closely punctured; puncturation of the following segments less close and vagner; 7th ventral segment and armature resembling those of *phalericus*, Morice (Trans. Ent. Soc. Lond., 1904, pl. vii, figs. 17, 17a), the former having its lobes short and rounded at the apex, the latter having the wing-like appendages of the *sagittæ* produced far beyond the solid part of these organs and terminating in a rather sharp angle at their external apex.

♀. Very like the ♂ only wider, and with the ordinary ♀ characteristics; labrum very shining, with a small central fovea, clypeus very largely punctured, the punctures tending to become confluent, and to form longitudinal striæ towards the apex, which has two well-defined small foveæ near the centre filled with pubescence. Abdomen less hairy than in the ♂, the long hairs of the 1st segment only covering its base, and the erect hairs on the other segments scarcely observable, except on the 4th and 5th; 5th segment without a white pubescent band, but with its apical margin widely pale, like the preceding. Long., 8—9 mm.

5 ♂, 1 ♀. Güimar, 24.iii.04, visiting *Plocama pendulata*.

Closely allied to *phalericus*, Mor., and *coriandri*, Perez., but quite distinct from the first by its elongate checks, and from the second by the much less pilose abdomen, the paler hairs of the thorax, &c.

13. PROSOPIS ATER, E. Saund.

2 ♂. Forest of La Mina, N.E. of La Lagnua, alt. 2700—2800, 9.iv.04, visiting *Echium* and *Sherardia arvensis*, L.

1 ♀. Santa Cruz, alt. 1000—800, 9.iv.04, visiting *Rapistrum rugosum*, L.

14. SPHECODES, sp. ?.

4 ♀. Forest of La Mina, alt. 2700—2800, 7 and 9.iv.04, entering burrows in goat tracks.

This species is so like *S. dimidiatus* that I should prefer to see the ♂ before treating it as distinct.

15. HALICTUS VIRIDIS, Brullé. 5 ♀, Puerto Orotava, in the Barranco Martianez, 11 and 12.iii.04; 4 ♀, Güimar, on annual species of *Euphorbia*, 22 and 24.iii.04; 1 ♂, 1 ♀, Santa Cruz, visiting *Rapistrum rugosum*, 4.iv.04.

The ♂ which Mr. Eaton captured in the same locality and on the same plant as the ♀ at Santa Cruz seems to me to be undoubtedly referable to this species. As it does not appear to be described, I give a short diagnosis of it.

Dark cyanous, apex of the clypeus flavous; antennæ, from the 3rd joint, testaceous beneath; legs entirely black; apical depressions of the abdominal segments bright blue, beneath black; face clothed with white hairs anteriorly, with fulvous-grey on the vertex and above the antennæ. Head and thorax dull, very closely punctured, face much produced in front, with distinct checks between the eyes and mandibles, clypeus pentagonal, nearly as long as wide, its base just above the level of the apices of the eyes. Antennæ with the 4th joint about as long as the 2nd and 3rd together, and not quite so long as the scape, the rest about half as long again as wide, becoming more swollen towards the apex, so that the antennæ are very slightly clavate. Head behind the eyes contracted towards the thorax,

in nearly straight lines. Thorax clothed above with fulvous-grey hairs, beneath with white, wings hyaline, nervures brown-black, propodeal area finely reticulate, its apex raised, and rather shining and rounded; abdomen sparingly clothed with short white hairs, the basal segment more shining and less closely punctured than the rest, beneath nearly naked; stipites of the armature with a long, pointed, beautifully fringed ribbon-like appendage, bent back under the organ.

Long., 7 mm.

I have great doubts as to the distinctness of this ♂ from *alcedo*, Vaehal, but its larger size, black tarsi, rounded propodeum, &c., seem to distinguish it satisfactorily; at the same time there is such a general resemblance in the shape of the face, &c., that one cannot but suspect that they may prove to be forms of the same species.

16. HALICTUS LÆTUS, Brullé. 3 ♀, Güimar, 22.iii.04, on annual species of *Euphorbia*.

17. HALICTUS DUBIUS, *sp. nov.*

Valde elongatus, viridis, nitidus, abdomine, cupreo micante, clypei apice, labro, mandibulis, antennis subtus, tibiis anterioribus antice, tarsisque omnibus pallide testaceis. Cupite opaco, punctatissimo. Thorace nitido remote punctato, area propodeali magna, minute rugulosa, abdomine punctulato subtus glabro.

♂. Shining, sparingly clothed with whitish erect hairs, head and thorax bright bronzy-green, the face more golden, abdomen coppery-bronze colour, apex of clypeus, labrum, mandibles, antennæ beneath, anterior tibiæ in front, and all the tarsi pale testaceous, and all the tibiæ narrowly testaceous at the base.

Head exceedingly densely punctured, dull, face much constricted in front, clothed with short white hairs, in form much like that of *morio*, but with the clypeus rather more exerted. Antennæ black above, very long, reaching to beyond the base of the abdomen; mesonotum and scutellum shining and polished, with a very fine, remote, and irregular puncturation, mesopleuræ less shining, and more largely punctured, propodeum with rather a large basal area, which has its sides converging in nearly straight lines to a subtruncate apex, the angles of which are widely rounded, its surface is finely rugulose, the rugulosity arranged more or less diagonally; the area is bounded posteriorly by a slight very shining elevation, sides and apex more or less dull and punctured. Wings hyaline, nervures dark brown. Abdomen very elongate, clothed with an evidently very deciduous, exceedingly short, white pubescence, which tends to form a basal band on the 2nd segment, finely and rather closely punctured, the basal segment less so, beneath almost glabrous, apices of the segments simple, stipites of armature with a narrow reflexed ribbon-like appendage, as in many of the species of the genus. Long., 7—8 mm.

5 ♂, Güimar, 22.iii.04, on annual species of *Euphorbia*; 4 ♂, Santa Cruz, near La Cuesta, from 800 to 1000 ft. alt., visiting *Rapistrum rugosum*, L.

I have recorded the characters of this ♂ under a name simply so that it might be recognised, as I think it will prove to be the ♂ of *lætus*, Brullé, the females of which occurred with it; the close puncturation of the head resembles that of *lætus*, but the thorax instead of being punctured like the head is polished, and utterly unlike *lætus*, so that I dare not associate the two on the present evidence.

18. *HALICTUS*, n. sp. ? 2 ♀, Forest of La Mina, alt. 2700—2800 ft., 7 and 9.iv.04, visiting *Paronychia*; closely allied to *morio*, but with wider apex to propodeum, and slightly different in puncturation, without seeing a ♂ I refrain from describing it.
19. *HALICTUS ARCTIFRONS*, E. Saund. 1 ♀, Puerto Orotava, 11.iii.04; 1 ♀, Güimar, 22.iii.04, on annual species of *Euphorbia*.
20. *ANDRENA BIPARTITA*, Brullé. 2 ♂, 1 ♀, Santa Cruz, near La Cuester, 800—1000 ft. alt.; 4i.v.04, visiting *Echium*; 1 ♂, Santa Cruz, near a quarry in the precincts of the Coaling Co.'s Works, 28.iii.04.

Mr. Eaton has taken 3 ♂ ♂ with a ♀ of this *Andrena* at Santa Cruz, which evidently belong to the same species, but they show no signs of the testaceous coloration of the 1st and 2nd segments; as I have never seen any description of the ♂, I give here its principal characteristics.

Head and thorax clothed above with ochreous, beneath and at the sides with whitish hairs. Antennæ with the joints pale beneath, from the 3rd inclusive, much swollen on the lower side, each joint about as long as its greatest width; 2nd joint about equal in length to the following, labrum in fresh examples with three distinct patches of pale hairs, that in the centre arising from a fovea, palpi annulated with white. Thorax finely punctured, its surface dull and rugulose. Wings hyaline, nervures pale testaceous, propodeum with fine rugosities at the base centrally. Legs clothed with long white hairs; posterior tarsi entirely, and anterior and intermediate tarsi from the 2nd joint, testaceous. Abdomen finely rugulose, basal segment finely, distinctly, and rather remotely punctured, the rest more finely and closely so, the puncturation becoming indefinite on the 4th and following, 2nd, 3rd, 4th, and 5th segments widely impressed at the apex, and with a band of pale whitish hairs, apical fimbria brown, the basal segment is clothed with long pale hairs, the 2nd with shorter ones, the segments beneath are fimbriated with pale hairs at the apex; 8th abdominal segment viewed laterally with a raised tooth before the apex, which latter bears a tuft of pale hairs, and the whole apical portion of the segment beyond the tooth is clothed with velvety pubescence, armature with very strong teeth at the base of the stipites, the apices testaceous and elongate, sagittæ testaceous, about as long as the stipites.

21. *ANDRENA MINUTULA*, Kirb. ? ♂, 2 ♀, Cruz de Afur, alt. 3100—3230, 5.iv.04; 1 ♀, stylopized.

This is probably a form of *minutula* (*parvula*), with longer black hairs on the head and thorax, and more pronounced rugosities on the abdomen, especially in the ♂.

22. *DIOXYS ATLANTICA*, *sp. nov.*

Nigra, tridentatæ affinis, valde punctata, scutelli dentibus subrectangularibus, abdominis segmentis 1—2, maris, 1—3. feminae, stria laterali albo-pubescente ornatis—valvula dorsali rotundata.

Resembling a small *tridentata* in general appearance; entirely black in both sexes, 1st, 2nd, and 3rd abdominal segments in the ♂, and 1st, 2nd, and 3rd in the

♀, with an apical fringe of white hairs at the sides, those on the 3rd almost meeting. Head and thorax dull, largely and rugosely punctured, clothed with greyish-white hairs. Antennæ stout, joints of the flagellum wider than long, scutellum rounded posteriorly, angularly produced on each side, the angles scarcely acute, wings slightly dusky, postscutellum bearing a short tubercular tooth; propodeum longitudinally rugose at the base. Abdomen rather shining, largely punctured, clothed besides the bands with exceedingly short, almost imperceptible, greyish hairs, these are rather longer on the apical segments, dorsal valve largely rounded in both sexes, beneath punctured. Legs with the calcaria piceous, those of the front legs paler, rather curved, their edges flattened, and more or less membranous, emarginate at the apex.

Long., 6—6½ mm.

1 ♂, 1 ♀, Santa Cruz, 4.iv.04, visiting *Echium*, probably inquiline on *Osmia submicans*, which occurred with it.

23. *MEGACHILE CANARIENSIS*, Perez. ♂ ♀, Güimar, 22.iii.04.

This is the species I recorded in my last paper as *apicalis*, ♂, the velvety spot on the 3rd abdominal segment is variable, as of two males taken in the same spot one has it distinctly, the other has no trace of it.

24. *CHALICODOMA CANESCENS*, Brullé. ♂ ♀, Puerto, Orotava, in the Barranco Martianez, 11.iii.04. "The Mason Bees here plaster their nests here and there against the face of the lava cliffs sparingly." 3 ♂, Güimar, 22.iii.04.

25. *OSMIA SUBMICANS*, Mor. 1 ♀, Güimar, 24.iii.04, "visiting a white-flowered *Heliotropium*;" 2 ♂, Las Mercedes, 29.iii.04; 1 ♀, Santa Cruz, near La Cuesta, 800—1000 ft. alt., 4.iv.04; 2 ♂, Cruz de Afur, 3100—3250 ft., 5.iv.04; 2 ♂, Forest de la Mina, 2700—2800 ft., 7.iv.04.

All the specimens sent, as well as the 2 ♂ from "Laguna, 16.iii.02," quoted in my former paper (Trans. Ent. Soc. Lond., 1903, p. 216), are peculiar in the dark, almost black coloration. In the ♂ there is scarcely any metallic tinge observable, except on the abdomen, which might be described as bronzy-black, or in one case as blue-black, in the ♀ the abdomen is blue-black, and the head and thorax have a very slight bronzy tinge; the puncturation of the mesonotum also appears to me to be slightly closer, but these differences do not appear to indicate more than an insular variety of the species.

26. *OSMIA LATREILLEI*. 1 ♂, Güimar, about 1200 alt., 21.iii.04, on marigold, in the Hotel Garden; 2 ♂, 2 ♀, Güimar, 600—800 ft., 22 and 24.iii.04; 2 ♂, Santa Cruz, 22.iii.04; 1 ♂, 1 ♀, La Mercedes, 29.iii.04, visiting *Genista*.

27. *EUCERA GRACILIPES*, Perez. 2 ♂, Güimar, about 1200 alt., 20.iii.04, in the Barranco nearest to the Hotel Buen Retiro, visiting *Lavandula*; 1 ♂, Güimar, 24.iii.04, "along the shortest track to the sea;" only differs from the description of *gracilipes* in having a pale fringe to all the segments except the basal one.

28. *MELECTA LUCTUOSA*, Scop. 1 ♂, Cruz de Afur, 5.iv.04, alt. 3100—3230 ft.

29. *PODALIRIUS*, sp. ? . 1 ♀, Puerto Orotava, 12.iii.04.

This ♀ belongs to the *quadrifasciatus* group, of which there are many described species; it appears to me distinct from the others by having the face, clypens, and labrum entirely black, the 3rd joint of the antennæ slightly longer than the following three taken together, and the abdominal bands much narrower; still as it has evidently been somewhat exposed to weather, I think it would be unwise from a single example to describe it as new.

30. *PODALIRIUS OROTAVÆ*, sp. nov.

Niger, griseo hirsutus, hirsutie verticis discoque mesothoracis nigroinctis, abdominis segmentis 1—4 apicibus albofimbriatis, mas linea orbitali scapoque antennali antice albidis, flagelli articulo secundo tribus sequentibus in mare æquali in femina majore, tarsis intermediis in utroque sexu simplicibus, scopis albis.

Black, clothed with white hairs, those of the vertex of the head and disc of the thorax above mixed with black; ♂ with a very narrow line bordering the orbit of each eye, and a line on the scape of the antennæ, whitish; basal segment of the abdomen clothed with white hairs intermixed with black, the rest with black; 1st four segments bearing narrow apical bands of white pubescence, that of the basal segment very narrow, and sometimes almost obsolete in the centre, 5th segment densely fringed with black hairs, with a few white hairs laterally, scopæ white. Clypens with a slight central keel, labrum rugose, face wider than long between the eyes. Antennæ with the 2nd joint of the flagellum as long as the next three in the ♂, slightly longer in the ♀, vertex shining in the region of the ocelli, punctured as it approaches the eyes; mesonotum dull, very finely rugulose, and with a very shallow puncturation; scutellum somewhat shining, more strongly punctured, with a slight central keel. Wings slightly dusky, nervures black-brown, intermediate legs simple in the ♂, the metatarsi nearly parallel-sided, all the tibiæ clothed outwardly with white hairs, those of the hind legs of the ♂ and of the intermediate and hind legs of the ♀ clothed inwardly with black, tarsi in the ♂ clothed with black hairs, the apical hairs of the hind metatarsi, some hairs on the front pair, and a few hairs at the base and apex of the intermediate pair, white; in the ♀ the anterior tarsi are entirely clothed with black hairs, the metatarsi of the others with white outwardly and black inwardly; abdomen almost dull above, finely and closely punctured, beneath shining, punctured, segments with broad black apical fringes.

Long., 8—10 mm.

1 ♂, 3 ♀, Puerto Orotava, 12.iii.04, visits *Echium*, and enters burrows which are horizontal at their commencement, in a strata of firm sand.

A distinct little species, with no development of genæ, somewhat resembling the ♂ of *pubescens* in colour and banding; the two sexes are very similar.

31. *PODALIRIUS ALLUAUDI*, Per. 6 ♂, Güimar, 20.iii.04; 1 ♂, Puerto Orotava, 12.iii.04; 2 ♀, Las Mercedes, 29.iii.04.

St. Ann's Woking:

August, 1904.

Oporabia autumnata, Bork., in the Isle of Purbeck.—It affords me great pleasure to be able to record the capture, in the Isle of Purbeck, of a fine male specimen of *Oporabia autumnata*, which species had not been previously met with either in the district, or in the county of Dorset. On November 7th, 1901, while walking through a wood, I caught sight of a moth at rest on the trunk of an old birch tree, and believing from its appearance, and the silky sheen of the wings, that it was *O. autumnata*, I boxed it, with my heart in my mouth, during the difficult operation, at the chance of losing it, owing to the very rough surface of the bark. Last winter Mr. Louis B. Prout, who has made such an exhaustive study of this obscure species in all its known varieties, kindly examined it for me, and was fortunately able to confirm my original belief as to its identity, and allay all fears that it might possibly be only an uncommon form of *O. dilatata*. The species has no doubt for long been established in the wood in which the capture was made: this wood was planted about fifty years ago, but I cannot now ascertain where the birch and alder trees in it originally came from. Since Mr. Prout has drawn my attention to the exceptional interest attaching to the occurrence of *O. autumnata* in this part of the country, I have asked him to supplement this note with one from his own pen.—EUSTACE R. BANKES, Norden, Corfe Castle: August 1st, 1904.

Notes on Oporabia autumnata, Bork.—I was at least as pleased as Mr. Bankes can be when I learned last winter that he had had the satisfaction of furnishing us with the first record of *Oporabia autumnata*, Bork., for Southern Britain; and I am grateful to him for giving me the opportunity to supplement his record with a note of my own, as I have taken such great interest in the natural history and distribution of this troublesome species. I may remark that Mr. Bankes' example is by no means so strongly marked or characteristically typical as, for instance, many of the Enniskillen specimens, to say nothing of those from Rannoch; and it is small wonder that he felt some fear that it might possibly turn out to be only one of the forms of the equally variable *O. dilatata*, e. g., the glossy one which I have named *christyi*. But fortunately it is a male, and so we have, in addition to the wing characters, a structural point to appeal to, in the build of the antennæ, and we are therefore able to pronounce upon its identity with absolute certainty.

The notes which, at great pains and over a considerable period of time, I collected on the distribution of this species in Britain, notes which are published in the "Transactions of the City of London Entomological Society," the "Entomologist," and elsewhere, led me to accept as fully established the fact that it, both in its type forms and as "var." (or sub-species) *fligrammaria*, H.-S., was essentially northern in our islands, with possible exceptions as regards Wales (whence I have seen one example from Swansea taken by Major Robertson) and Ireland. To be sure, I had faint hopes it might ultimately turn up somewhere in Devonshire, which produces so many of our mainly northern and western species; but I had long ago given up any expectation of hearing of it from anywhere nearer home than this in southern Britain.

Summed up, my information on the distribution of *Oporabia autumnata* leads me to regard it as chiefly alpine and boreal, and chiefly attached to birch and alder—to a less extent also to *Conifera*; but its habitat near Enniskillen, where Mr. J. E. R. Allen is studying it so thoroughly, and I believe also some stations in Central

France and in Germany, would seem to show that it does not absolutely need any very high latitude or altitude, and I am very hopeful that Mr. Bankes will find it well established in his district, and that when it is more generally recognised by entomologists, it may prove to have a considerably wider range in our islands than we have hitherto imagined. I may add that I shall always be happy to critically examine any suspicious-looking individuals in the genus which may be met with by my brethren of the net.—LOUIS B. PROUT, 246, Richmond Rd., N.E. : *August, 1904.*

"*A new variety of Aplecta nebulosa, Hufn.*"—I must enter my protest against the naming of the so-called new variety of *Aplecta nebulosa* (Ent. Mo. Mag., ser. 2, vol. xv, p. 180). I received recently specimens of this Delamere Forest form from Mr. W. Mansbridge of Liverpool, and although not exactly like the original specimens of var. *robsoni*, it only differs from it in the presence of a few small inconspicuous whitish marks, and ought I think to be included in it. The name of either a type or a variety includes of course a certain range of variation, and this new variety is certainly well within the limit to be reasonably claimed by var. *robsoni*. If we are to have a distinct name applied to every specimen which differs from the original type by a slight mark or shade of colour, where are we going to end? Moreover, I hold that if personal names are to be applied at all, it should only be of those entomologists who have done long and valuable service in the science. To such it might be a well earned compliment. Mr. Thompson is practically unknown in the entomological world, and consequently I think Mr. Arkle would have done better in not using his name in such a way. We do not want our favourite science brought into ridicule by indiscretions of any kind.—GEO. T. PORRITT, Huddersfield : *August 10th, 1904.*

Nola centonalis in Suffolk.—I captured a single example of this interesting little insect in a moth trap on July 21st. I believe the species has not previously been recorded for this county, and understand that it is not entirely exterminated from, or very rare indeed in its old haunt on the Deal Sandhills. My light trap is set by the side of a low-lying copse bordering a damp meadow near my house.—A. P. WALLER, Hemley Rectory, Woodbridge : *August 19th, 1904.*

Plusia moneta at Forest Hill.—My son-in-law, Mr. J. W. Grier, who resides in Northwood Road, Forest Hill, is good enough to take what insects visit his garden there and send them on to me. Among the many useful things he has sent me from time to time is a specimen of *Plusia moneta*, which I certainly did not expect to receive.—JOHN E. ROBSON, 15, Northgate, Hartlepool : *September, 1904.*

The effect of the late hot and dry weather on certain Lepidoptera.—The heat and drought of July appear to have had an injurious effect upon the development of some *Lepidoptera*. I have specimens of *Leucania pallens*, *Miana furuncula*, *Eupithecia minutata*, *Pterophorus acanthodactylus*, and *Crambus culmellus* less than half the normal size, and other common species, e. g., *Abraxas grossulariata* and *Ypsipetes elutata*, though extremely abundant, are decidedly smaller than the average. Another remarkable fact, which I am inclined to connect with the same cause, is the sporadic occurrence of certain species out of their time; possibly a second brood. For instance, I beat out a specimen of *Demas coryli* on August 15th, *M.*

rivata (very small) on August 19th, *Leucania pallens* commonly at sugar, September 1st—6th, *Ar. patris* September 5th with *N. plecta*, and, stranger still, *Chilo phragmitellus*. The second brood of *Agrotis segetum* has been tolerably common, while late in August I took both this year and last freshly emerged specimens of *Dianthæcia cucubali*.—C. T. CRUTTWELL, Ewelme, Oxon.: September 15th, 1904.

Bledius taurus, Germ., from Norfolk, and *B. femoralis*, Gyll., from Berkshire.—While staying on the north coast of Norfolk for my holidays this August, I took the opportunity of running over for one day to the Wells Marshes with the object of searching for *Bledii*, and especially, if possible, of turning up *B. taurus*, Germ., in its old haunt. On the dry muddy banks of creeks and ponds I soon found the larvæ and pupæ of *B. spectabilis*, Kr., in great profusion; but there were comparatively few imagines, and these nearly all ♀s. With it in places *Dyschirius thoracicus*, Ross., *Cilleus lateralis*, Sam., and *Heterocerus femoralis*, Kies., occurred. Three ♀ examples of *B. tricornis*, Hbst., were taken from the rather drier mud near a footpath. The next species to be found in large numbers was *B. bicornis*, Germ., the dark and light forms being in about equal proportions. These were taken in more sandy situations, and with them occurred *B. fuscipes*, Rye, in some numbers, and one *B. subterraneus*, Er., a species which was common a little way along the coast at Sherringham. In a damp hollow among the sand hills *B. unicornis*, Germ., was common, accompanied by a few *B. arenarius*, Pk., and *Dyschirius salinus*, Schaum. Lastly, on a small flat stretch of rather dry sand close to the sand hills, but just within reach of the highest tides, I came across *B. taurus*, Germ., and spent over an hour in digging up some 40 specimens, mostly in pairs. Among these was one fine ♂ with quite black, and one with dusky elytra.

Shortly before going for my holiday I had taken one specimen of *B. opacus*, Block., as it was sitting on the front of my motor car when I had stopped for a minute to make a slight adjustment to the machinery! After my holiday, and armed with my Wells experience of finding the characteristic casts at the mouths of their burrows, I searched a favourite sand pit of mine near here for *Bledii*, and was eventually rewarded by finding four specimens of *B. opacus*. I had never before suspected the existence of a *Bledius* there. The next day I visited a pond in the Wokingham district, and again especially looked for the casts. This time they were more difficult to find, but eventually nine *Bledii* were taken. Canon Fowler, who was with me at the time, pronounces them to be the very rare *B. femoralis*, Gyll., a species which has not been taken in the British Isles for over 50 years, and for which no locality has ever been recorded. In the burrows of these *Bledii* I took two specimens of a small *Dyschirius*, which I find exactly corresponds to the small form of *D. politus*, Dej., mentioned in Canon Fowler's "British Coleoptera," Vol. I, p. 22, taken by him at Bridlington, a pair of which he has kindly given to me. He tells me he has never felt satisfied that these are really *D. politus*, but thinks possibly they may be an undescribed species related to it. Apart from the size, the shape and sculpture of the elytra are certainly very different.—NORMAN H. JOY, Bradfield, near Reading: September 8th, 1904.

[The *Dyschirius* referred to above was taken by me very sparingly at Bridlington in company with *Bledius dissimilis*, Er., the latter insects being abundant. I have not, however, heard of its having been taken in Britain before or since.—W. W. F.]

Callicerus rigidicornis, Grav., and other insects in Berkshire.—On the day (August 29th) on which Dr. Joy and I captured *Bledius femoralis*, the following beetles also occurred: *Bembidium obliquum*, Sturm, *Anchomenus gracilis*, Gyll., *Aleochara mærens*, Gyll., *Homalota cambrica*, Woll., *Thiasophila inquilina*, Märk., *Dinarda dentata*, Grav., *Myrmedonia funesta*, Grav., *M. cognata*, Märk., and *M. lugens*, Grav., and *Callicerus rigidicornis*, Er., the last named species I have always found very scarce, although it appears to be widely distributed.—W. W. FOWLER, Reading: September 14th, 1904.

Panagæus quadripustulatus, Sturm.—At the end of May I captured a specimen of this insect running across a drive at Rotherfield Peppard, Henley-on-Thames.—ID.: September, 1904.

Lochmæa suturalis, Thoms., var. *nigrita*, Weise.—Referring to Mr. Tomlin's note in this month's Ent. Mo. Mag., p. 183, I have two specimens of the entirely black variety of *Lochmæa suturalis* which I took near Kirknewton at the base of the Pentland Hills in this County on May 3rd, 1901.—WILLIAM EVANS, 38, Morningside Park, Edinburgh: August 17th, 1904.

Further captures of *Odontæus mobilicornis*, F., in Norfolk.—It may be worth while putting on record that on August 5th, 1895, I took a fine female of this rare Coleopteron. It was flying just before dusk about ten miles from King's Lynn. Two other examples, both males, were taken in the same district about three years ago.—EDWARD A. ATMORE, King's Lynn, Norfolk: September 13th, 1904.

Re-appearance of *Cis bilamellatus*, Wood, at West Wickham.—While cycling through West Wickham on the 25th inst. I noticed the stump of a dead tree which was covered with large fungi. It at once occurred to me that these might possibly be tenanted by *Cis bilamellatus*, which I discovered just twenty years ago within half a mile of the same spot; and on pulling off one of the fungi I found the insect in some plenty. Evidently it is well established in the district; yet it seems odd that no one else, apparently, should have met with it.—THEODORE WOOD, The Vicarage, Lyford Road, Wandsworth Common: August 31st, 1904.

Mr. C. W. Dale's rare *Trypetidæ*.—The compositor, the proof-reader, or somebody else, was at fault over this note (*ante* p. 212).

Anomæa permundus, Harris, = *antica*, Wied. (not *antiqua*).—I am afraid that the suggestion that Moses Harris called this species "*permundus*" because the wing markings resembled a map of the world can best be paralleled by the derivation of the genus of pretty plants *Nemophila* from "*nemo*" and "*φίλος*." As a more probable derivation the exceedingly clean appearance of the insect may have suggested the name, but Harris failed to give it in a sufficiently orthographic form for its acceptance. I have a specimen taken by Dr. Capron, probably from near Guildford. It has also been taken by Dr. J. H. Wood at Mordiford.

Acicura (not *Acinea*) *rotundiventris*.—I think "*Lydford George*" should be Lidford Gorge.

Spilographa abrotani was taken by Col. Yerbury at Stoke Wood in Herefordshire on Hemp Agrimony on August 20th, 1895.

Ictericæ westermanni, Meig.—The late Mr. Howard Vaughan gave me three specimens taken by him in 1870 at, I believe, Leigh near Southend. I doubt whether Mr. C. W. Dale took this species himself in 1837!

The only other misprint I can see is *Mellia*, which should be *Urellia cometa*.—G. H. VERRALL, Sussex Lodge, Newmarket: September 15th, 1904.

Ichneumon inquinatus, Wesm., and *Amblyteles microcephalus*, Steph.—During the Meeting of the British Association I had an opportunity of examining the Ichneumoninae collected by the Rev. Leonard Jenyns in Cambridgeshire (1824–1849), and now preserved, with his MS. notes and localities, in the Cambridge Museum. The only specimen of real interest is that of *Amblyteles microcephalus* (recorded from Wisbeach in my Ichn. Brit., p. 203), but a careful examination proved it to be a ♀ of *Ichneumon inquinatus*, Wesm., with no relation to *A. microcephalus*, which is only known in the ♂ sex. Consequently, Stephens' single type in the British Museum still remains unique.—CLAUDE MORLEY, Ipswich: August 26th, 1904.

Obituary.

Señor Pedro Antiga y Sunyer.—It is with sincere regret that I have to report the death at Barcelona on July 22nd last of an entomologist who has done much to increase our knowledge of the interesting Spanish fauna.

Pedro Antiga y Sunyer was born at Barcelona on June 19th, 1854. His father was head of an important school in that city, and he himself graduated in Law, Philosophy and Literature. Later, and up to the time of his death, he was an Assistant Secretary of the Orense-Vigo Railway, a post which left him but little leisure for his favourite studies. Probably for this reason his work was limited entirely to the insects of his own district; and as these before his time were little known, and as he was himself an exceptionally good collector, he achieved within this necessarily narrow sphere a somewhat remarkable success. In many of the principal Monographs that have appeared of late years (especially those dealing with *Hymenoptera*) his name occurs as having communicated to the authors specimens of rare or obscure species, and quite a number of additions to the general list of insects have been made on "types" of his capturing, though, as far as I know, he did not attempt descriptive work himself. He acted as Correspondent in Barcelona for the Madrid Museum, and commenced in co-operation with Señor Bofill y Pichot an exceedingly careful list (with precise localities and dates) of the insects of his own province. Of this work—*Catàlech de Insectes de Catalunya*—several parts have already appeared, dealing with the *Chrysidids*, *Vespidids*, *Mutillids*, etc., and probably others must exist in MS., which, it is to be hoped, will yet be published.—F. D. MORICE.

Society.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: July 14th, 1904.—Mr. E. STRE, F.L.S., Vice-President, in the Chair.

Mr. Stonell exhibited two series of *Triphæna fimbria*, one of light forms and

the other of dark forms, bred in two successive years from New Forest larvæ; and a series of *Lælia cænosa* from various old collections. Mr. Enoek, on behalf of Mr. Newman, living larvæ of hybrid ♂ *Notodonta ziczac* and ♀ *N. dromedarius*, with typical larvæ for comparison. Mr. Priske, examples of the *Coleoptera*, *Apoderus coryli*, *Rhynchites æquatus*, and *Otiorrhynchus sulcatus*, all from High Wycombe.

July 28th, 1904.—Mr. E. STEP, F.L.S., Vice-President, in the Chair.

Mr. Percy Richards, of Kingston Hill, was elected a Member.

Mr. Enoek, for Mr. Newman, a cocoon of *Eutricha quercifolia* in situ. Mr. Edwards, specimens of *Volucella bombylans* and *V. pellucens* from Leatherhead, taken at the Field Meeting on July 9th. Mr. West (Greenwich), a large number of insects collected at Great Yarmouth from June 13th to 25th, comprising 84 species of *Coleoptera*, 18 species of *Hemiptera*, and 3 species of *Tenthredinide*. Among the *Coleoptera* were *Donacia dentipes*, *D. thalassina*, *D. simplex*, *D. vulgaris*, *D. sericea*, *Galeruca calvariensis*, *Polydrusus confluentis*, and *Scirtes hemisphericus*. Among the *Hemiptera* were *Plagiognathus pulicarius*, *P. saltitans*, and the rare *Pætiloscyltus vulneratus*, a species recently added to the British list.

August 11th, 1904.—Mr. E. STEP, Vice-President, in the Chair.

Mr. Ashby exhibited a specimen of one of our rarer weevils, *Liparus germanus*, taken at Folkestone in July. Mr. West reported that from July 10th to 23rd he had paid a very successful visit to the New Forest, obtaining *Strangalia quadri-fasciata*, *Telephorus testaceus*, *Phyllobrotica quadrimaculata*, and *Orchestes iota*, the most notable of the *Coleoptera*; *Picromerus bidens*, *Monanthia dumetorum*, and *M. humuli*, among the *Heteroptera*; and the very rare Homopteron, *Oliarus leporinus*. Mr. Main, pupæ and small larvæ of *Everes argiades*, from ova deposited by a female sent by Dr. Chapman from the south of France. The larvæ were boring the seed pods of *Lotus corniculatus*. Mr. Priske, a specimen of *Cicadetta montana* from the New Forest, and a specimen of *Dicranura bifida*, which had just emerged from a this year's larva. Mr. Carr, a dead larva of *Smerinthus ocellatus*, from which parasites had emerged in 1883, and which retained its normal green coloration. Mr. Adkin and several other Members noted the unusual abundance of *Mania maura* this year. Mr. Edwards, a long series of variations of the polymorphic *Papilio*, *P. memnon*, and called attention to the various forms and their distribution.

August 28th, 1904.—Mr. HUGH MAIN, B.Sc., F.L.S., Vice-President, in the Chair.

Mr. Barnett, a short series of *Strenia clathrata*, showing stages in the darkening of the transverse bands, and also of *Ematurga atomaria*, with considerably suffused markings. He also showed larvæ of *Smerinthus populi*, which were feeding on white poplar, and which assimilated wonderfully to the colour of the food plant. Mr. Main, a curiously spotted Cockroach, obtained from a ship which had brought sugar from Java. Mr. West, two species of *Hemiptera* from Darent: *Corizus capitatus*, obtained by sweeping *Hypericum*, and *Aneurys lævis*, under oak bark. Mr. Tutt and Dr. Chapman made a few remarks upon their continental rambles in July and August.—HY. J. TURNER, Hon. Sec.

LIST OF BRITISH *DOLICHOPODIDÆ*, WITH TABLES AND NOTES.

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

(Continued from page 228).

EUROPEAN SPECIES OF *DOLICHOPOUS*.

- | | | |
|---|--|--|
| <p>A.—FEM. NIGR.</p> <p>B. Ciliis postoc. nigr.</p> <hr style="width: 10%; margin-left: 0;"/> <p>atratus <i>Meig.</i>
 maculipennis <i>Zett.</i>
 atratus <i>Zett.</i> ol.
 Falleni <i>Lw.</i>
 nigripes <i>Fall.</i> pt.
 melanopus <i>Stann.</i>
 Meigenii <i>Lw.</i>
 nigripes <i>Fall.</i> pt.
 melanopus <i>Meig.</i>
 Beckeri <i>Mik</i>
 genicupallidus <i>Beck.</i>
 genupallidus <i>Bezzi</i>
 picipes <i>Meig.</i>
 cyaneus <i>Meig.</i>
 fastuosus <i>Hal.</i>
 plebejus, <i>Zett.</i>
 consimilis <i>Whlbg.</i>
 laticola <i>Verr.</i>
 eruralis <i>Whlbg.</i>
 planitarsis <i>Fall.</i>
 lepidus <i>Stæg.</i>
 geniculatus <i>Zett.</i>
 tibialis <i>Zett.</i>
 picipes <i>Walk.</i>
 campestris <i>Meig.</i>
 fulgidus <i>Walk.</i> (Fall.?)
 Stenhammeri <i>Zett.</i>
 annulipes <i>Zett.</i> ol.
 armillatus <i>Whlbg.</i>
 Stenhammeri var. b. <i>Zett.</i>
 Mannerheimi <i>Zett.</i>
 geniculatus <i>Stann.</i>
 tibialis <i>Zett.</i> pt.
 Ruthei <i>Lw.</i></p> | <p>BB. Ciliis postoc. pall.</p> <hr style="width: 10%; margin-left: 0;"/> <p>atripes <i>Meig.</i>
 perversus <i>Lw.</i>
 vitripennis <i>Meig.</i>
 tibiellus <i>Zett.</i>
 Braueri <i>Now.</i>
 spretus <i>Lw.</i>
 phæopus <i>Hal.</i>
 montanus <i>Lw.</i>
 remipes <i>Whlbg.</i>
 lepidus <i>Zett.</i>
 socer <i>Lw.</i>
 brachyurus <i>Zett.</i>
 clavipes <i>Hal.</i>
 obscuripes <i>Meig.</i>
 rusticus <i>Meig.</i>
 vitripennis <i>Stæg.</i>
 trochanteratus <i>Zett.</i>
 fuscipes <i>Hal.</i>
 tanythrix <i>Lw.</i>
 brachycerus <i>Zett.</i>
 apicalis <i>Zett.</i>
 signifer <i>Hal.</i>
 punctum <i>Walk.</i>
 pictipennis <i>Whlbg.</i>
 punctum <i>Meig.</i></p> <hr style="width: 10%; margin-left: 0;"/> <p>?</p> <p>fraterculus <i>Zett.</i>
 micropygus <i>Whlbg.</i>
 dissimilipes <i>Zett.</i>
 grœnlandicus <i>Zett.</i>
 tibialis var. b. <i>Zett.</i>
 ochripes <i>Zett.</i></p> | <p>AA.—FEM. PALL.</p> <p>C. Ciliis postoc. nigr.</p> <hr style="width: 10%; margin-left: 0;"/> <p>ungulatus <i>L.</i>
 æneus <i>DeG.</i>
 chalybeus <i>Meig.</i>
 ? nigricornis <i>Meig.</i>
 rupestris <i>Hal.</i>
 festinans <i>Zett.</i>
 fuscimanus <i>Zett.</i>
 brevipennis <i>Meig.</i>
 plumitarsis var. b. <i>Fall.</i>
 migrans <i>Zett.</i>
 longitarsis <i>Stann.</i>
 equestris <i>Hal.</i>
 cinctus <i>Stæg.</i>
 Stægeri <i>Zett.</i>
 lonchophorus <i>Lw.</i></p> <p>CC. Ciliis postoc. pall.</p> <hr style="width: 10%; margin-left: 0;"/> <p>D. Ped. (♂) ornatis.</p> <hr style="width: 10%; margin-left: 0;"/> <p>urbanus <i>Meig.</i>
 pennatus <i>Meig.</i>
 signatus <i>Zett.</i>
 popularis var. <i>Fall.</i>
 signatus <i>Meig.</i>
 argentifer <i>Lw.</i>
 argyrotarsis <i>Whlbg.</i>
 ornatipes <i>Lw.</i>
 popularis <i>Wied.</i>
 ungulatus <i>Fall.</i> ol.
 æmulus <i>Lw.</i>
 plumipes <i>Scop.</i>
 pennitarsis <i>Fall.</i>
 planitarsis <i>Meig.</i>
 Wahlbergi <i>Zett.</i>
 plumipes var. <i>Walk.</i></p> |
|---|--|--|

pectinitarsis <i>Stenh.</i>	simplex <i>Meig.</i>	litorellus <i>Zett.</i>
plumitarsis <i>Fall.</i>	vicinus <i>Macq.</i>	aenticornis <i>Fabr.</i>
cinctipes <i>Whlbg.</i>	thalassinus <i>Hal.</i>	ruralis <i>Meig.</i>
galeatus <i>Lw.</i>	fallaciosus <i>Gerst.</i>	longicornis <i>Stann.</i>
sagittarius <i>Lw.</i>	parvicaudatus <i>Zett.</i>	aenticornis <i>Meig.</i>
claviger <i>Stann.</i>	? inconspicuus <i>Zett.</i>	nitidus <i>Fall.</i>
gubernator <i>Mik</i>	sabinus <i>Hal.</i>	caeruleicollis <i>Meig.</i>
discifer <i>Stann.</i>	pictus <i>Stæg.</i>	ornatus <i>Meig.</i>
patellatus <i>Meig.</i>	calinotus <i>Lw.</i>	azureus <i>Macq.</i>
confusus <i>Zett.</i> ol.	atritibialis <i>Zett.</i>	nitens <i>Stann.</i>
tanypus <i>Lw.</i>	agilis <i>Meig.</i>	jucundus <i>Hal.</i>
discimannus <i>Whlbg.</i>	linearis <i>Meig.</i>	griseipennis <i>Stann.</i>
discifer <i>Zett.</i>	parrulus <i>Zett.</i>	nitidus <i>Stæg.</i>
confusus <i>Zett.</i>	agilis <i>Zett.</i>	eurypterus <i>Gerst.</i>
patellatus <i>Stann.</i>	pallidicoxa v. <i>Ros.</i>	subbrutulus <i>Zett.</i>
plumipes <i>Meig.</i>	plebejus <i>Meig.</i>	nubilus <i>Meig.</i>
DD. Ped. (♂) inornatis.	breviusculus <i>Lw.</i>	Actæus <i>Hal.</i>
virgultorum <i>Hal.</i>	? exiguus <i>Zett.</i>	? pallipes <i>Macq.</i>
arbustorum <i>Zett.</i>	basalis <i>Lw.</i>	inquinatus <i>Hal.</i>
arbustorum <i>Stann.</i>		excisus <i>Lw.</i>
salictorum <i>Lw.</i>	puncticornis <i>Zett.</i>	var. siculus <i>Lw.</i>
cilifemoratus <i>Macq.</i>	grandicornis <i>Whlbg.</i>	andalusiacus <i>Beck.</i>
nitidus <i>Stann.</i>	maculicornis <i>Verr.</i>	latilimbatus <i>Macq.</i>
festivus <i>Hal.</i>	consobrinus <i>Zett.</i>	vulgaris <i>Stann.</i>
cilifemoratus <i>Stann.</i>	notabilis <i>Zett.</i>	albifrons <i>Lw.</i>
Macquarti <i>Zett.</i>	notatus <i>Stæg.</i>	latilimbatus <i>Whlbg.</i>
trivialis <i>Hal.</i>	mediicornis <i>Verr.</i>	hilaris <i>Lw.</i>
intermedius <i>Stæg.</i>	lineaticornis <i>Zett.</i>	strigipes <i>Verr.</i>
flavipes <i>Stann.</i>	propinquus <i>Zett.</i>	aratriformis <i>Beck.</i>
modestus <i>Whlbg.</i>	affinis <i>Whlbg.</i>	?
	caligatus <i>Whlbg.</i>	analis <i>Macq.</i>
		angustipennis <i>Kertl.</i>

I find nothing to prevent Meigen's *D. urbanus* being the same as Stannius' species of that name. Meigen's species is certainly not the same as *D. simplex*.

6. TACHYTRECHUS Stann.

- 1 (2) Basal joint of front tarsi darkened, not so long as next four joints together; those four joints hardly dilated1. *notatus* Stann.
- 2 (1) Basal joint of front tarsi long, thin and pale, as long as or longer than next four joints together; those four joints remarkably dilated.
- 3 (4) Front tibiæ bare; face white.....2. *consobrinus* Walk.
- 4 (3) Front tibiæ spinose; face ochreous or yellow.
- 5 (6) Genital lamellæ with moderately long pubescence ...3. *insignis* Stann.
- 6 (5) Genital lamellæ with exceedingly long abundant pubescence...

4. *ripicola* Lw.

1. *T. notatus* Stann.: I have taken this freely at Loch Maree and at Bracmar; while Mr. C. G. Lamb has taken it at Padstow in Cornwall.
2. *T. consobrinus* Walk.: also occurring freely at Braemar and in the New Forest. The specimens from which the species was described came from the "moory uplands of Wicklow."
3. *T. insignis* Stann.: Col. Yerbury took several specimens of this species at Porthcawl in Glamorgan from May 23rd to June 2nd, 1903, and also this (or a very closely allied) species at Culbin Sand Hills in Elgin on August 4th, 1899; these latter specimens seem to have the basal joint of the front tarsi longer, thinner, and whiter, legs paler, abdomen bronze rather than green, genital lamellæ longer and narrower and bearing fewer long hairs, and the antennæ with the basal joint less darkened above; these specimens might very possibly be fresh and bright individuals of a second brood. I have a record of *T. insignis* from Dr. P. B. Mason's collection, probably from Deal, and Mr. C. G. Lamb took a male at Padstow in Cornwall in June, 1901. Col. Yerbury took it commonly near Nairn in July, 1904.
4. *T. ripicola* Lw.: Col. Yerbury took this species at Porthcawl on June 23rd, 1903. It is allied to *T. insignis* but abundantly distinct; the genital lamellæ bear remarkably long curved black hairs, and the basal joint of the front tarsi is only about as long as the next four joints together. It was originally described from the Italian coasts, but I possess specimens from Losouez in Hungary.

7. PÆCILOBOTHRUS Mik

- 1 (2) Wings with a conspicuous darkened space, ending in a snow white tip...
1. *nobilitatus* L.
- 2 (1) Wings without any conspicuous markings.
- 3 (4) Face ochreous; antennæ almost wholly black2. *ducalis* Lw.
- 4 (3) Face whitish; antennæ almost wholly orange3. *principalis* Lw.

Two other species occur in France, *P. regalis*, which is a large species with the basal joint of the hind tarsi spinose, and *P. Bigotii*, a small species with white face and black antennæ.

1. *P. nobilitatus* L.: a very pretty and very common species, which often occurs in hundreds about the edges of puddles on paths in woods. My records extend from Penzance to Worcester, and I have no doubt that it occurs much farther north.

2. *P. ducalis* Lw.: I once found this species in abundance on the edges of a small pond near Seaford on July 31st, 1887. Before I caught it I had recognised that it was new to Britain unless it was *P. principalis*, and then I found both species on the pond.
3. *P. principalis* Lw.: I first caught this near Bournemouth on July 19th, 1871, and afterwards found it common in company with the last species near Seaford on July 31st, 1887.

8. *HERCOSTOMUS* Lw.

Before using the table for this genus, it should be noted that it is very difficult and very uncertain to decide upon the colour of the lower postocular cilia in *H. cretifer* and *H. fulvicaudis*, while even in *H. parvilamellatus* and *H. nanus* the cilia are often only brownish-black. The fringe of the squamæ seems to vary in colour according to the aspect in *H. cretifer*. If, however, these notes are attended to, the rest of the table is easy to work out; many more species may however be expected to occur in Britain.

- 1 (18) Lower postocular cilia pale.
- 2 (13) Antennæ wholly black.
- 3 (10) Femora yellow.
- 4 (5) Squamæ pale fringed; large species1. *gracilis* Stann.
- 5 (4) Squamæ black fringed; small species.
- 6 (7) Front tarsi elongate, third and fourth joints deep black and dilated; wings clear2. *cretifer* Walk.
- 7 (6) Front tarsi simple; wings browned.
- 8 (9) Larger species3. *germanus* Wied.
- 9 (8) Smaller species.....4. *chærophylli* Meig.
- 10 (3) Femora black or blackish.
- 11 (12) Last joint of middle tarsi dilated; large species...5. *nigriplantis* Stann.
- 12 (11) Last joint of middle tarsi normal; small species ...6. *nigripennis* Fall.
- 13 (2) Antennæ mainly yellowish.
- 14 (15) Apical half of hind tibiæ black; front tarsi with black and white rings...7. *chrysozygos*, Wied.
- 15 (14) Hind tibia all pale.
- 16 (17) Abdomen all metallic-green; small species.....8. *plagiatus* Lw.
- 17 (16) Abdomen ferruginous at base; tiny species.....9. *fulvicaudis* Walk.
- 18 (1) Lower postocular cilia black.
- 19 (20) Legs wholly black10. *atrovirens* Lw.
- 20 (19) Legs pale, at least on tibiæ.
- 21 (22) Femora and coxæ wholly blackish-brown ...11. *parvilamellatus* Macq.
- 22 (21) Femora and front coxæ wholly yellow12. *nanus* Macq.

D. prætextatus Hal. is a lost species, which must come near *Hercostomus* according to its description. Haliday described and figured it in Nat. Hist. Rev., ii, Proc., p. 63 (1855) from "A single specimen found among the sea reeds on the sandhills of Rossbegh Point (Kerry) in July," but it has never been recognised since. It has pale postocular cilia, wholly black antennæ, and pale fringed squamæ, but cannot be *H. gracilis*, because it has a silvery-white face, cinereous coxæ, and "Tip of wing with narrow black edge." It cannot be one of our known species of *Gymnopternus*, because it has pale postocular cilia, but it might be a *Pæcilobothrus*.

(To be continued).

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (11).

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

(Continued from page 176).

NEMATIDES (*CLADIUS* TO *DINEURA*).

The first five Nematid genera adopted by Konow differ from all the rest in having the humeral area ("lanceolate cell") not "petiolate" but "contracted." On this ground Thomson excluded them from the great genus *Nematus*, in which he allowed all their allies to remain. And it may simplify matters if, before attempting to tabulate our more normal genera of British *Nematides*, we clear the ground by dealing first with these aberrant members of the Tribe.

As they do not, in all, include a large number of our species, a single Synoptic Table may suffice for the whole of them, as follows:—

BRITISH *NEMATIDES* WITH "CONTRACTED HUMERAL AREA."

1. Both medial *mn.* received in the same cubital cell.....8.
- The two medial *mn.* received in different cells2.
2. Antennæ of ♂ pectinate (*i. e.*, joints 3 to 6 each with a long slightly curved process branching outwards from its apex). Antennæ of ♀ with the post-basal joints, especially 3 and 4, much compressed and dilated (about a third as broad as long), obliquely truncated at the apex, and contrasting strongly with joints 8 and 9, which are quite simple and slender. (The post-basal joints, though so much broader, are but very little longer than the apical ones; hence the antennæ as a whole are short and conspicuously setiform)...
Cladius pectinicornis, Fourcr.
- ♂ antennæ never pectinate, ♀ antennæ with joints near the base never very much dilated (many times longer than broad); broader, naturally, than the apical

- joints, but not phenomenally so ; and very noticeably longer than the latter. (Hence the antennæ as a whole are elongate and only moderately setiform)... 3.
3. Antennæ with joint 3 more or less distinctly curved in both sexes (convex above, concave below), and, in the ♂, with its base projecting like a short tooth, or at least swollen into a definite lump4.
- Antennæ with joint 3 straight, and, in the ♂, neither dentate nor particularly lumpy at the base7.
4. Abdomen and antennæ black5.
- Abdomen and antennæ red or orange *Trichiocampus viminalis*, Fall.
5. Legs (including the whole of the femora) pale reddish-yellow. Antennæ of ♂ fringed beneath with very long hairs. (Their length quite double the breadth of the joints that bear them!). Joint 3 with a strong dentiform production at its base *Trichiocampus ulmi*, L. (= *rufipes*, C.).
- At least part of the femora evidently black or fuscous. Antennæ of ♂ fringed with much shorter hairs than in *ulmi*, and with a somewhat less prominent (more rounded) knob at the base of joint 36.
6. Femora at least partly yellow beneath, elsewhere than at the extreme apex...
Trichiocampus drewseni, Thomson (?)
- Femora quite black above and beneath, except at the extreme apex, which (with the tibiæ and tarsi) is brownish-grey... *Trichiocampus eradiatus*, Hartig (?)
7. Trochanters white. Wings, if clouded, are uniformly so throughout...
Priophorus padi, L.
- Trochanters nearly or quite black. Wings evidently clouded in the middle, with the apical half (and also the extreme base) noticeably clearer. (Antennæ rather shorter, and more shortly haired, than in *padi*. Head, as seen from above, more quadrate behind the eyes; the tempora being more developed)...
Priophorus tristis, Zadd. (= *brullæi*, C.).
8. Larger. Head and thorax mostly red or orange. Radial *a.* divided9.
- Smaller. Head and greater part of thorax black. Radial *a.* undivided ...10.
9. Abdomen black.....*Hemichroa alni*, L.
- Abdomen coloured like head and thorax, *i. e.*, reddish...
Hemichroa crocea, Geoff. (= *rufa*, C.).
10. Pronotum broadly bordered all round with white. Femora with distinct black markings. Stigma in all my ♀ specimens greyish-white. Abdomen obscurely pale at the apex only *Leptocercus duplex*, Lep. (= *apicalis*, C.).
- Pronotum only pale at its extreme edge above. Femora without black. Stigma dusky. Ventral surface of abdomen pretty largely rufescent (not only at apex) *Leptocercus luridiventris*, Fall.

NOTES ON CERTAIN OF THE ABOVE SPECIES.

Trichiocampus eradiatus and *drewseni*.—As to these species there is a puzzle which I cannot thoroughly solve. Comparing the original

descriptions (which is not altogether easy, since Hartig knew the ♂ only of his *eradiatus*, while the *eradiatus* described by Thomson is a ♀) it would seem that the only tangible distinguishing character lies in the colour of the femora. In *eradiatus* these should be black except at the extreme apex, while in *drewseni* they are described as "yellow beneath." If this distinction, which seems rather varietal than specific, is reliable, I have taken ♂ ♂ of *drewseni* in Warwickshire and of *eradiatus* in Surrey and Kent, and have also seen ♀ ♀ of *eradiatus* from various British localities, but no ♀ which I could call *drewseni* as described by Thomson. Herr Konow, however, considers all my ♂ ♂ to be probably *drewseni*; and although in my own collection I keep for the present the two forms apart and distinguish them (as in my tables) as *eradiatus* ? and *drewseni* ?, I do this without any confidence that they are really different species. Structurally they seem quite identical.

Priophorus tristis.—All my British specimens of this are ♀ ♀. I call them on Konow's authority *tristis* rather than *brullæi*, which is the name adopted (with *tristis* as a synonym) in Cameron's Monograph. It is said there that the third antennal joint is "a little longer" than the fourth; but in my specimens (as in all the allied species) it is distinctly a little shorter. Still, taking Cameron's description of *brullæi* as a whole, I cannot doubt that it refers to the present species.

Leptocercus.—The name *Camponiscus*, Newm., denoted a larva only. On this ground Konow rejects it, and adopts the name given by Thomson to the imago.

Lept. duplex, Lep. (= *apicalis*, Brischk.).—This, I suppose, is Mr. Cameron's *Camponiscus apicalis*; only he calls the stigma "brownish-testaceous," while in all my specimens it is practically colourless.

Lept. luridiventris.—There must surely be an error in Mr. Cameron's measurement of this little insect. He calls it "5-6 lines long"—the same length which he gives for *Tenthredo livida*! I make it at most 5 mill. (not lines!) long, and *duplex* ("3¼ lines" according to C.) just a trifle longer.

Passing now to the *Nematides* with petiolate humeral area let us begin with *Dineura*. This genus is distinguished from other *Nematides* by two peculiarities; (a) the basal *n.* in the fore-wings is not received

on the subcosta *after* the intercostal *n.*, but, as a rule, distinctly *before* it, though sometimes it might be called interstitial; (*b*) the radial cell can neither be called normally "divided" or "undivided," *i.e.*, a radial *n.* may or may not be present, either in one wing, or both, of a particular specimen. In some species it is more commonly present, in others more commonly absent, but no positive rule can be laid down about it.

Mr. Cameron enumerates seven British species of *Dineura*, but of these only the first three belong to *Dineura* as defined by Konow. Indeed, the other four are not *Nematodes* at all, according to his system, but *Blennocampides* of the genera *Mesoneura* and *Pseudodineura*. Our three species of *Dineura* (in Konow's sense) are very easily distinguished as follows:—

BRITISH *DINEURA* SPECIES.

1. Ground-colour of head, antennæ, legs, and the whole under-side of the body pale tawny (ochreous). A patch on the vertex, the dorsal surface of the thorax, and that of the abdomen (except at its apex) black...
D. nigricans, Christ. (= *virididorsata*, C.).
- Head and thorax for the most part black, below as well as above2.
2. Abdomen, above and below, yellowish-red*D. stilata*, Klug.
- Abdomen black above, testaceous below.....*D. testaceipes*, Klug.

Stilata is a common species everywhere, I believe; *nigricans* I have not often met with, and *testaceipes* never, though there are a good many specimens at South Kensington, and the "Monograph" calls it a common species.

HYMENOPTERA ACULEATA CAPTURED BY COL. YERBURY, R.A., IN SCOTLAND, 1904.

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

Colonel Yerbury with his usual kindness has collected *Aculeata* assiduously for me during the past summer in Scotland, but like most other collectors he has found the season a disappointing one with regard to this section of the *Hymenoptera*, and I very much regret that I have nothing new to record among his captures; still, there are some interesting species, and his specimens are in such good clean condition that they are always useful. Amongst other places he visited the sand-hills in the neighbourhood of Nairn, from which I quite hoped something new might have resulted, but apparently the fauna of these northern sand-hills is very much more limited than that of one of our rich southern localities of like nature, such as Deal, Lowestoft, &c. I asked especially for attention to be given to the early species

of the genus *Andrena*, in hopes that *A. ruficus* might have been captured; such hopes, however, were not fulfilled, still some nice specimens of *A. lapponica*, ♀, were brought back, and a ♂ and ♀ of *A. similis*, which I think has been previously recorded from Scotland only by Mr. W. Evans, who captured a ♂ near Kinghorn, Fife, May, 1901. Of *Halictus freygessneri*, of which I am giving a description in this number, both sexes occurred; this, as will be seen from my notes on that species, has been taken previously in Great Britain, but has been mixed with *fulvicornis*, K., under the old name of *subfasciatus*.

The following is a list of the more interesting of Colonel Yerbury's captures. The only wasps collected were two ♀ of *Vespa norvegica*; *Bombus* is represented by *smithianus*, *agrorum*, *venustus*, *hortorum*, *pratorem*, *lapponicus*, *lapidarius*, and *terrestris*.

Pompilus approximatus, Smith, several of both sexes, Nairn, July. *P. spissus*, Schiödte, 1 ♀, Brodie, July.

Salix fuscus, L., 1 ♀, Glenmore, 3.vi.04, 1 ♀, Aviemore, 30.v.04.

Tachysphex pectinipes, L., 1 ♀, Nairn, 8.vii.04.

Mimesa bicolor, Fab., 2 ♂, Nairn, 17.vii.04.

Passalæcus monilicornis, Dhlb., 1 ♂, Nairn, 4.vii.04, with very strongly moniliform joints to the antennæ.

Crabro peltarius, Schreb., 1 ♂, Brodie, 1 ♀, Nairn, July, both with unusually small spots on the 1st abdominal segment.

Halictus freygessneri, Alfk., Nethy Bridge and Golspie, June and July.

Andrena rosæ, Pz., r. *trimmerana*, K., ♂, Aviemore, May, one or two specimens with distinct genal spines, but no red on the abdomen. *A. fucata*, Smith, ♀, Golspie and Nairn, June and July. *A. lapponica*, Zett., Aviemore, Golspie, Glenmore, May and June, one specimen noted as taken on blackthorn blossoms. *A. fuscipes*, K., 2 ♂, Nethy Bridge, August. *A. denticulata*, K., ♀, Nairn, July. *A. albicus*, ♂ ♀, Aviemore, June, numerous. *A. coitana*, K., 2 ♂, Nethy Bridge. *A. wilkella*, K., ♂ ♀, Aviemore, June. *A. similis*, Sm., ♂ ♀, Aviemore, May.

Nomada bifida, Thoms., several of both sexes taken with *Andrena albicans*, which seems to be by far the most abundant spring species in the north. *N. flavoguttata*, Kirb., ♂ ♀, Golspie, June. *N. ruficornis*, L., ♀, Golspie, June.

Megachile circumcincta, Lep., ♂ ♀, Nairn, plentifully, with its inquiline, *Cœlioxyys elongata*, Lep., July.

Osmia inermis, Gerst., 1 ♂ of this rarity at Glenmore, 2.vi.04.

Psithyrus vestalis, Fourc., var. *distinctus*, Per., ♂ ♀, Aviemore, Nethy Bridge, ♀ May, ♂ August. *P. quadricolor*, Lep., ♂, Nethy Bridge, August.

Bombus smithianus, White, ♀, Nethy Bridge, August. *B. lapponicus*, Fab., ♂ ♀ ♀, Nethy Bridge and Golspie, June to August.

St. Ann's, Woking :

October 4th, 1904.

HALICTUS FULVICORNIS, KIRB.,
DISTINCT FROM *H. FREYGESSNERI*, = *SUBFASCIATUS*, NYL.

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

Herr J. D. Alfken, in the *Abh. Nat. Ver. Bremen*, 1904, pp. 69 *et seq.*, divides up our well known *H. subfasciatus* into two species, and has pointed out very clearly their characteristic features. They are exceedingly closely allied, but I think there is no doubt that they are distinct. Herr Alfken has for some time past studied this genus specially, and we are indebted to him for many valuable corrections in synonymy, &c., particularly among the many species described by Schenck, whose collection has been under his inspection, so that he has been able to form his opinions from the actual types.

In the case before us at the moment we have unfortunately to introduce two new names into our list, as Alfken finds that the name "*subfasciatus*" was pre-occupied when Nylander used it in 1848 by the *subfasciatus*, Imhoff (1832), which latter proves to be an older name for *vulpinus*, Nyl., so that he has been obliged to reject our familiar name of *subfasciatus*, and has adopted that of *freygessneri*, in honour of the well known Swiss Entomologist.

Our two species, *fulvicornis*, Kirb., = *subfasciatus*, Smith, E. Saund. (partim), and *freygessneri*, Alfk., = *subfasciatus*, Smith, E. Saund. (partim), may be thus distinguished:—

H. FULVICORNIS, Kirb.

♂. Antennæ darker beneath (dark testaceous); face distinctly wider, conspicuous spots of white pubescence at the base of the 2nd and 3rd abdominal segments, posterior tarsi narrower, the 2nd joint decidedly longer than wide; genital armature testaceous-red.

♀. Face shorter, propodeal area with the rugosities more pronounced and more clearly defined, abdominal segments finely but distinctly punctured at the base, lateral pubescent spots of the 2nd and 3rd well defined, posterior margins widely testaceous.

H. FREYGESSNERI, Alfk.

♂. Flagellum of antennæ paler beneath (very pale testaceous from the 2nd joint), the contrast between the 1st and 2nd very strong; face decidedly narrower than in *fulvicornis*, only slight indications of the basal spots on the 2nd and 3rd abdominal segments; posterior tarsi wide, 2nd joint as wide as long; genital armature dark brown.

♀. Face narrower, propodeal area smoother, *i. e.*, with the rugosities less defined; abdominal segments impunctate or nearly so at the base; basal pubescent spots of the 2nd scarcely indicated, apical margins of the segments only very narrowly dark testaceous.

The two species are very similar in dimensions, although *freygessneri* sometimes attains a larger size than *fulvicornis* does. From the specimens that have been through my hands I should say that *freygessneri* is very rare in the south, although I have specimens from Ilfracombe and Tunbridge Wells, and that it is the commoner species of the two in Scotland.

St. Ann's, Woking :

October 10th, 1904.

OCYUSA NIGRATA, FAIRM.,

A SPECIES OF *COLEOPTERA* NEW TO BRITAIN, WITH REMARKS
ON THE OTHER BRITISH SPECIES OF *OCYUSA*.

BY E. A. NEWBERY.

In the autumn of 1900 I received, among some insects sent to me by Mr. Claude Morley for names, a small "Staph." which was unknown to me, but which, from the tarsal joints being 5 5.5. and its general facies, I referred to *Calodera* or *Ocyusa*. The insect was put aside and almost forgotten until the summer of the present year, when an opportunity occurred of sending it to M. Fauvel. He returned it to me as *Ocyusa nigrata*, Fairm., and the insect agrees well with Fairmaire's original description (*Faune Ent. Fr. Col.*, 380).

CALODERA NIGRATA, FAIRM.

Shiny black. Antennæ dark brown, stout, gradually thickened, not passing the base of the thorax; 3rd joint almost half as long as 2nd; the others nearly of equal length; the last joint pyriform, rather acuminate, twice as long as the two preceding. Head, thorax and elytra with the punctuation well visible, close, stronger on the two latter, which makes them appear a little less shiny. Thorax hardly broader than the head, narrower than the elytra, feebly narrowed in front, slightly rounded at the sides, rather convex, having at its base in front of the scutellum a small depression, well visible although of little depth. Elytra large, a little longer than the thorax. Abdomen parallel, with the punctuation more remote, shiny; the first three segments convex, having a transverse impression at the base. Femora brown, knees, tibiæ and tarsi light red.

OBS.—This species resembles *C. picina*, but is easily distinguished, in addition to the colour, by the thorax being narrowed in front and furnished with a depression at base, by the absence of pubescence, the stronger punctuation, and the colour of its legs.

The five British species of *Ocyusa* may be separated thus:—

1. Elytra (with head and thorax) distinctly and roughly alutaceous; thorax broader than long, with shallow central furrow *O. incrassata*, Muls.

II. Elytra not alutaceous ; thorax at most with a basal depression.

A. Hind tarsi shorter than tibiæ, 1st joint subequal to the two following united and not longer than 5th.

a. Thorax as long as broad, distinctly narrowed in front, with a rather deep transverse impression in front of scutellum... *O. nigrata*, Fairm.

aa. Thorax scarcely narrowed in front, without impression.

b. Antennæ more robust, usually entirely red-yellow, as are the legs ; average size larger..... *O. picina*, Aubé.

bb. Antennæ less robust, usually infusate at apex ; femora infusate ; average size smaller *O. maura*, Er.

AA. Hind tarsi subequal to tibiæ, 1st joint very long, subequal to the three following joints united and plainly longer than 5th ; legs entirely testaceous..... *O. hibernica*, Rye.

The species included in the above table have little in common. Rey (Brevipennes, Aléocharaires, p. 419) proposes to separate *O. incrassata* as a subgenus (*Mniusa*), *O. nigrata* as a second subgenus (*Cousya*), and includes *O. maura* and *picina* in a third (*Ocyusa*). The specimen of *O. hibernica* from which the characters in the above table were drawn was kindly lent to me by Mr. Tomlin, who tells me that it has been compared with the original type. Presuming that it is correctly named, it is evident that it cannot properly be included in the genus *Ocyusa* as laid down by Rey (*loc. et p. cit.*), since the generic characters of the posterior tarsi are:—"subelongate, less long than the tibiæ, with the first joint elongate, as long as the two following united, subequal to the last." Rye described it originally as an *Aleochara* in 1876 (*Ent. Mo. Mag.*, xii, 175), but his description is brief and quite inadequate. It is very desirable that the original type should be re-described in detail. M. Charles Brisout appears to have seen the insect, and compares it with *nigrata*, Fairm., but no attention appears to have been given to the proportion of the tarsal joints.

It should be observed that although the antennæ of *O. picina* taken as a whole are much more robust than those of *maura*, the penultimate joints of the latter are shorter and more transverse than those of *picina*. The pale colour of the legs and antennæ will usually separate *picina* from *maura*, but occasional specimens of *picina* occur in which these parts are nearly black ; an example of this form was returned to me by M. Fauvel as *picina*.

The unique British specimen of *O. nigrata* was taken by Mr. Claude Morley on June 2nd, 1900, in an unoccupied martin's hole in the side of a sand pit at Levington, Suffolk, a place about half way

between Ipswich and Felixstowe. *O. nigrata* has a wide European distribution, occurring in France, Germany, Italy, Greece, Bosnia, and Herzegovina.

12, Churchill Road,
Dartmouth Park, N.W. :
September 14th, 1904.

[The type of *O. hibernica*, Rye, has the hind tarsi formed as above described. Compared with *O. picina*, Aubé, it has a much shorter apical joint to the antennæ. Many years ago Mr. J. J. Walker sent me numerous specimens of *O. nigrata*, Fairm., from Malta.—G. C. C.]

Occurrence of a South American moth at Marlborough.—On September 17th I was genuinely astonished to have brought me for identification a living example of a Syntomid of obvious South American aspect, just captured by one of the College boys in the centre of High Street, Marlborough. I concur with Sir George Hampson (who was kind enough to examine the specimen) that it is probably a melanistic example of *Ceramidia butleri*, Möschl., the bright blue-green colour of the basal half of fore-wings being replaced by black, and the crimson spots of the neck being absent. This species is widely distributed in Central and South America; and from enquiries made I consider it almost certain that the specimen must have been introduced (in the pupa stage) with bananas, some crates of which had recently been received by a local fruiterer from Costa Rica, and unpacked in the street. These bananas are conveyed across in refrigerating chambers, and it seems a reasonable conjecture that the melanism of this individual is due to the action of cold on the pupa; so that it forms not only an interesting example of casual distribution, but also an experimental contribution to the theory of melanism.—E. MEYRICK, Thornanger, Marlborough: October 6th, 1904.

Acidalia ochrata, Scop., in South-East Dorset.—I have much pleasure in recording the fact that on July 18th, 1900, my friend, the Rev. E. Hallett Todd, of Bournemouth, disturbed and secured, amongst mixed growth at Branksome, Dorset, a specimen of *Acidalia ochrata*, which he has very kindly added to my collection. The specimen is a female in good condition, and obviously full of ova, which makes one greatly regret that the fortunate captor did not give *her* the opportunity of depositing them, and *himself* the chance of rearing a Dorset brood of this local species in the event of their having proved fertile. Subsequent attempts by Mr. Hallett Todd and myself to meet with the insect again have so far been unsuccessful, but I still hope that we may some day be able to prove that it is established in the locality. Any thought of the individual being an escape seems quite untenable, and the chances of its having been an accidental importation are decidedly remote, while the idea of a female *ochrata*, extremely heavy with ova, and in good condition, having arrived there by migration, has little to recommend it.—EUSTACE R. BANKES, Norden, Corfe Castle: August 1st, 1904.

Habits of Eupithecia pimpinellata, Hb.—The capture of *Eupithecia pimpinellata* in the imago state is not, in my experience, quite so uncommon as Mr. C. G. Barrett's note, in Ent. Mo. Mag., ser. 2, xiv, 200 (1903), would lead one to suppose. The only locality in which the species has favoured me with a sight of itself is the Isle of Portland, but while specially working for other insects, in the course of occasional visits made to that happy hunting-ground in former years, I have taken the moth, either by beating it out of the bushes during the day, or by netting it when on the wing in the evening, on the following dates; July 28th, 1885 (one), August 2nd, 1887 (two at least), July 11th, 1889 (two at least), July 23rd, 1890 (one), August 7th, 1890 (one), July 23rd—24th, 1891 (two at least). Unfortunately, the number of specimens taken by my companions on these expeditions is unknown to me. It will be seen that the imago has only been met with sparingly, two or three specimens being probably my largest catch on any single date, but had particular attention ever been paid to it, others would doubtless have been secured. I have no wish, however, to suggest that it is other than retiring in its habits.—ID.: August 2nd, 1904.

Re-occurrence of Eupæcilia manniana, F. R., in the Isle of Purbeck.—My greatest stroke of luck in the season of 1903, ever memorable for the deplorable dearth of *Lepidoptera*, and the atrociously bad weather, was undoubtedly the capture in the Isle of Purbeck, on July 10th, of a beautiful female specimen of the rare *Eupæcilia manniana*. The evening was exceptionally bright, calm, and hot, and the moth was on the wing (probably of its own accord, though possibly roused into flight by my approach) at 7.45 p.m., amongst the herbage in a small hollow, parts of which are damp enough to grow rushes, at the end of a dry and sandy field. The only other example (a ♂) ever taken in Dorset was netted by myself, flying over a bog in the evening, under equally favourable weather conditions, about one-third of a mile from the spot in question, on June 24th, 1889, and recorded in Ent. Mo. Mag., ser. 2, i, 193 (1890). Both my captures have, therefore, been made in damp places, whereas, curiously enough, Meyrick, in HB. Brit. Lep., 549 (1895), draws special attention to its frequenting "dry grassy banks," and some of the fortunate few, who have met with it in Britain, have certainly come across it in such situations. Needless to say, both localities that have yielded me this treasured species have been repeatedly worked in the hope of meeting with it again, but without any success, nor have I succeeded in obtaining any clue as to its life-history, not a single plant, that seems to me at all likely to support the insect, being common to both spots.—ID.: August 4th, 1904.

Diasemia ramburialis, Dup., in South Devon.—One of the greatest prizes that have fallen to my lot of recent years is a female example, in beautiful condition, of this exceptionally rare species, which I was fortunate enough to secure at sugar, at 9 p.m., on September 14th, 1902, in a remote part of South Devon that I was engaged in exploring. While feeding at the treacle, to which it had been attracted since that same patch was first visited about 7.50 p.m., it held its wings extended, reminding one strongly of a Pterophorid, but although quiet just long enough to allow of a box being quickly slipped over it, it buzzed about very excitedly during

my efforts to adjust the lid. My good fortune in having been present at the capture of two British specimens of *Diaemia ramburialis* is greatly appreciated, even though in the case of the example taken in South Dorset by the Rev. C. R. Digby [*vide* Ent. Mo. Mag., xxv, 381 (1889)], the part I played was only a passive one. I am not aware that *D. ramburialis* has been previously recorded from Devon, although records exist of its occurrence both in Dorset and elsewhere to the east, and in Cornwall to the west of that county.—ID. : August 5th, 1904.

Aerobasis verrucella, Hb., in South Devon and the Isle of Wight.—With reference to Mr. C. G. Barrett's interesting paper [Ent. Mo. Mag., ser. 2, xiv, 164—6 (1903)] on "*Aerobasis verrucella*, Hb., and *rubrotibiella*, F. R., as British Insects," it will help towards a better knowledge of the distribution of these species in Britain if I state that the specimen captured by myself in S. Devon in 1901, and recorded in Ent. Mo. Mag., ser. 2, xiv, 68 (1903), under the name "*Aerobasis tumidana*, Schiff. (*rubrotibiella*, F. R.)," is referable to the species described by Mr. Barrett as *verrucella*, Hb., which is, as he points out, clearly distinct from the one to which he assigns the name *rubrotibiella*, F. R. The only example of the latter that I have ever seen came into my possession, very shortly before the appearance of Mr. Barrett's notes, from a British collection, though unfortunately its history is quite unknown, and the distinctions between it and *verrucella*, Hb., at once showed me that the two forms could not be co-specific, though the works necessary for the solution of the problem were not at hand.

Another south coast locality for *A. verrucella*, Hb., is the Isle of Wight, for although Mr. Barrett states, doubtless with good reason, that the late Mr. Howard Vaughan used to take the species in its old locality near Forest Hill, the four specimens that I have examined out of the series that stood in the Howard Vaughan collection at the time of its dispersal, were all labelled as taken in the Isle of Wight by Mr. H. Bartlett, in 1873, and I fancy that some others therein were from the same source.

It would be interesting if those who have British specimens of either of these species would publish all known details about them. Now that the distinctions between these close allies have received tardy recognition, it is to be hoped that some one who has access to the necessary works will carefully revise afresh the whole synonymy, with the revision of Mons. Ragonot, published in Ent. Mo. Mag., xxii, 27—8 (1885), and adopted in the "Catalog" by Drs. Standinger and Rebel (1901), before him.—ID. : August 6th, 1904.

Aplecta nebulosa ab. *robsoni*, Collins, "Ent. Rec.," ii, p. 264, = var. *thompsoni*, Arkle, "Ent. Mo. Mag.," xl, p. 180.—Absence on the continent at the time of the publication of the August Magazine must have been the reason of my not seeing Mr. Arkle's note (*antea* p. 180); at any rate, that of Mr. Porritt's (p. 236) is the first intimation that I had had that *robsoni* had been renamed. Mr. Porritt complains that *thompsoni* is included in *robsoni*; as I have one of the original *robsoni* (the first, I believe, that was ever noted, Ent. Rec., i, p. 241), I can go a step further than Mr. Porritt, and assert that *thompsoni* is absolutely *robsoni*. The fact is that the form has never been more than roughly diagnosed, and the type specimen in my collection contains all the points that Mr. Arkle relies on for the separation of

thompsoni from *robsoni*, i.e., the type of *robsoni* has the indistinct median transverse band, indistinct orbicular and reniform, white fringes, the three white spots at apical angle, and the greyish scallops. The description of the hind-wings, thorax, abdomen and legs, which Mr. Arkle applies to *thompsoni*, agree absolutely with the type of *robsoni*. The slight fading of thirteen years brings out the rather darker band and paler margin mentioned by Mr. Arkle more distinctly than when the insects were fresh, and, with the exception of the pale fringes, all the other points are noted in *British Noctuae*, &c. The failure to note the fringes as pale in *British Noctuae*, &c., iii, p. 69, can be the only excuse for renaming *robsoni*, which, exhibited and named at the Lancashire and Cheshire Entomological Society on October 12th, 1901, when I believe Mr. Arkle was an active Member of the Society, ought certainly to have been saved from such a fate. It is of course well known that Messrs. Collins and Aeton of Warrington (not Mr. Thompson) worked up the aberration, and made it known to science. I should like to raise a protest too against Mr. Arkle's haphazard statement that he has it "on good authority that the variety *robsoni* occurs in at least three districts of Yorkshire," either the individual who knows should give the information and thus make it authoritative, or it should be left alone. Offhand statements like this may do harm to our knowledge of geographical distribution. "Some one told me that somebody said, &c.," is not exactly what we want in science.—J. W. TUTT, 119, Westcombe Park, S.E.: Oct. 1st, 1904.

Colias in 1904.—On August 8th I saw, from the top of a tram-car, the first *Colias edusa* of the year, flying wildly round a plane tree in St. Giles's, one of the busiest thoroughfares in Oxford. On the 15th I went to Sheerness, and next morning, in a walk on the cliffs, saw six specimens of *C. edusa*, mostly in good condition. These raised hopes of at least a fairly good "edusa year;" but I saw only one more specimen in the three weeks I spent in the Isle of Sheppey, although the weather was fine, and I was out every day. *C. hyale* was not observed either by me or any of the local collectors, up to my departure on September 5th.—J. J. WALKER, "Aorangi," Lonsdale Road, Summertown, Oxford: October, 1904.

Deilephila lineata at Hastings.—A nice fresh specimen of this species was taken on a lamp post in the Bohemia Road, Hastings, on May 20th last. It is now in the possession of Mr. Ruskin Butterfield, who kindly brought it for my inspection. I have just heard that a specimen was taken at Felixstowe on September 1st by Mr. G. R. Hope, Havering Grange, Romford.—E. N. BLOOMFIELD, Guestling Rectory: October 13th, 1904.

Catocala fraxini, L., in Suffolk.—I have just heard that my young nephew, Walter Boyd, took a fine specimen of *C. fraxini* in 1901, at rest on his father's house, Stronsay, Kirkley Cliff, Lowestoft.—W. C. BOYD, The Grange, Waltham Cross: September 19th, 1904.

Bledius femoralis, Gyll., and other species of the genus in Surrey.—The record of the capture of *Bledius femoralis* in Berkshire in the last number of this Magazine has induced me to re-examine the numerous specimens standing in my

collection under *B. fracticornis*, Payk. Amongst them I find I have four *B. femoralis*, one, a ♂, taken on the banks of the Mole at Mickleham in June, 1875, and three caught on the wing in a sandy lane near Woking in June, 1901. In each case these insects were found either in company with *B. fracticornis*, or in a place where that species was known to occur. During the summer of 1901 *B. fracticornis* was not uncommon on the wing towards sunset in a sandy place in this neighbourhood, though I did not succeed in finding its proper habitat. It is curious that all the specimens I have seen from Surrey—Mickleham, Woking, and Witley—belong to the typical dark form. The variety with red elytra has been sent me in plenty from Scarborough, by Mr. Lawson, but amongst these there were none with black elytra. I have taken, too, in Spain, many specimens of this variety, unaccompanied by dark examples. In May, 1902, I found *B. opacus* in abundance on the wing in the evening on a sandy common at Witley, *B. fracticornis* also occurring with it. *B. opacus* also may be found here under similar circumstances. *B. subterraneus* I have taken on the banks of the Wey at Eashing, and *B. longulus* in a sand pit at Guildford. Dr. Joy has been kind enough to send me some of his specimens of *B. femoralis*, the identification of which has now been confirmed by M. Fauvel.—G. C. CHAMPION, Horsell, Woking: October 6th, 1904.

Coleoptera in the Isle of Wight.—I spent the first half of September at Sandown in the Isle of Wight, and as the weather was exceptionally fine, I was able to do a fair amount of collecting; perhaps a note on the more interesting captures may be of value.

Under stones in a sandy field near Sandown occurred *Amara rufocincta*, Dj., and in a steep stony lane also under stones *Amara fulva*, De G.; with these exceptions none but the commonest *Carabidæ* were seen, and the water net was not used at all. Amongst the *Staphylinidæ*, *Quedius picipes*, Man., was found commonly by shaking over paper heaps of cut weeds lying by the roadside, and in similar fashion I secured *Ocytus compressus*, Marsh. (never a common insect in my experience), and *Tachyporus formosus*, Matth. A specimen of *Staphylinus stercorarius*, Ol., running on a road, and *Stenus solutus*, Er., swept off *Equisetum*, complete the better captures in this family.

Close to Sandown I found a fine growth of *Solanum dulcamara* on a waste piece of ground at the junction of two roads, off this came *Pria dulcamaræ*, Scop., and *Psylliodes affinis*, Pk.; *Cercus rufilabris*, Latr., was in extraordinary profusion on flowers in a damp meadow through which the Yar flowed; a solitary *Silpha tristis*, Ill., under a stone, and *Scaphidium 4-maculatum*, Ol., are the only other noteworthy Clavicorns.

Mr. Donisthorpe kindly gave me directions to the spot in Parkhurst Forest where he took *Aphanisticus emarginatus*, F., in August, 1903, and by persistent sweeping I at length captured one specimen; I was evidently too late for this year's brood, but we have thus evidence that it breeds regularly in this locality. Except for this insect and single specimens of *Mycetoporus clavicornis*, Steph., and *Luperus nigrofasciatus*, Goeze, I got little in the forest by my arduous labours with the sweep net. By grubbing at the roots of plants on the Sandown cliffs I obtained a fair number of *Chrysomela banksi*, F., and one or two were also swept up.

My most interesting captures, however, were amongst the *Curculionidæ*. Mr.

Donisthorpe, who was staying at Southsea, joined me for one day at Bembridge; here off *Matricaria* we swept *Apion hookeri*, Kirb., in numbers, and *A. confluens*, Kirb., sparingly, with a few *Ceuthorrhynchus rugulosus*, Hbst., and *Sibinia arenaria*, Steph.; I also found a single *Anthicus instabilis*, Schm., in my net. At Freshwater on the cliffs out of a flower of *Campanula glomerata* I took a single *Miarus graminis*, Gyll.; unfortunately this flower was over, and it was impossible to pick out the dead plants amongst the rest of the dried herbage, so no more specimens were found.

Grubbing at the roots of *Anthyllis vulneraria* on the Culver cliffs produced *Tychius schneideri*, Hbst., in profusion, with *Gymnetron pascuorum*, Gyll., and *Miccotrogus picirostris*, F., in large numbers, while *Tychius tomentosus*, Hbst., *Sibinia primita*, Hbst., *Hypera trilineata*, Marsh., and *Mecinus circulatus*, Marsh., occurred sparingly. At the same place, by pulling up and shaking dead plants (most probably *Lathyrus pratensis*), a nice series of *Apion subulatum*, Kirb., was secured, with many *Bruchus loti*, Pk., *Apion difforme*, Germ., *A. æthiops*, Hbst., *A. seniculum*, Kirb., *A. loti*, Kirb., *Amalus hæmorrhous*, Hbst., and *Otiorrhynchus ligneus*, Ol. On these cliffs the thorny restharrow grew in abundance, but the only *Apion* I could find on it was *ouonis*, Kirb.; on the cliffs near Ventnor, however, I found on this plant the other species which frequents it, *Apion bohemani*, Th.; on the cliffs below the Red Cliff Battery were many plants of hare's-foot trefoil, and *Apion dissimile*, Germ., as usual occurred upon them.

In a field of red clover near Ulverstone I swept up *Apion varipes*, Germ., very sparingly, accompanied by hosts of *A. trifolii*, L., and a few *A. tenue*, Kirb.

One day was spent at Ventnor, and here by pulling up plantains, &c., and shaking them over paper, I secured the capture of the trip, *Cathormiocerus socius*, Boh., I believe this is the first time it has been captured in this part of the Island; at the same time *Trachyphleus squamulatus*, Ol., was taken, and these two insects were a welcome relief from *Mecinus pyrauster*, Hbst., which alone had rewarded my efforts up to that point. *Apion pubescens*, Kirb., was swept off dry grass at the edge of the cliffs in the same locality.

I gathered a large number of seed pods of the yellow flag, *Iris pseudacorus*, in the hope of breeding out *Mononychus pseudacori*, F., but so far nothing has resulted, and I am afraid I have drawn a blank.*

A curious capture was a specimen of *Lissodema quadripustulatum*, Marsh., swept off grass. In the locality where I had previously taken it at Yarmouth I found a fine specimen of *Helops caruleus*, L., which was ruined for the collection by an injury it had received, most probably from a bird. *Rhinoncus bruchoides*, Hbst., was twice swept off plants growing by the side of the river Yar.

While sweeping for *Coleoptera*, many species of *Hemiptera* were of course obtained, but I only took specimens of *Verlusia rhombea*, *Syromastes marginatus*, and *Piezodorus lituratus*.—I. HUDSON BEARE, 10, Regent Terrace, Edinburgh: September 30th, 1904.

Rare Coleoptera at Sherwood.—At the latter end of June of the present year I captured by beating old oaks three examples of *Prionocyphon scrricornis*, all males. The same week, but in a different part of the Forest, three specimens (two males and one female) of *Balaninus betulæ*, Steph. (*cerasorum*, Herbst) also occurred by beating oaks, not birch. Of this latter insect I met with two specimens last

* I have only found it on *I. fatidissima*—G. C. C.

year, but these were taken during the first week in August. On old oaks *Conopalpus testaceus* and var. *rigorsi* were taken in small numbers, the variety being more abundant than the type form.—J. KIDSON TAYLOR, 35, South Avenue, Buxton: October 10th, 1904.

Coleoptera in the Isle of Sheppey, &c.—My trip to Sheerness in August last enabled me to revisit my favourite old collecting haunts in Sheppey, but these are fast being destroyed owing to building operations and other causes. It was also rather too dry for any great success in collecting, and many interesting species, formerly plentiful, were now scarcely to be found at all, or were entirely absent. Perhaps my best "find" was *Quedius ventralis*, Ahr., of which I took half-a-dozen specimens out of a hollow elm trunk, in company with a few of *Q. microps*, Grav. Two other hollow elms, frequented by owls, again produced *Dendrophilus punctatus*, Hbst., in abundance. *Baris scolopacea*, Germ., was apparently over at its headquarters at Shellness, though it had been taken there by Messrs. Beare and Donisthorpe previous to my visit, but a few fine large examples turned up unexpectedly in quite a new locality close to Sheerness. *Apion limonii*, Kirby, too, had apparently vanished from one or two of its best localities, but was found in plenty on its usual food-plant at Burntwiek Island, in the River Medway. *A. malvæ*, Fab., which I had not seen here for quite 25 years, was now fairly common in several places on *Malva sylvestris*. The water net yielded *Berosus spinosus*, Stev., in profusion in a ditch just outside Sheerness, but of the genus *Bagöus*, formerly so plentiful in species and individuals in Sheppey, only a few worn *B. argillaceus*, Gyll., could now be found. Cliff-edge sweeping was productive on one evening only, when I got *Syntomium æneum*, Müll., *Homalium deplanatum*, Gyll., *Anisotoma dubia*, Kug., *Throscus carinifrons*, Bonv., *Xylophilus populneus*, Panz., and *Salpingus æratus*, Muls., among others. Casual examples of *Polystichus vittatus*, Brullé, and *Læmostenus complanatus*, Dej., were picked up in Sheerness.

An afternoon's collecting at Cobham Park resulted in the capture of *Agathidium rotundatum*, Gyll., *Agaricophagus cephalotes*, Schm., *Euthia plicata*, Gyll., *Saprinus virescens*, Payk., *Cerylon fagi*, Bris., *Hylesinus oleiperda*, Fab., &c. At Deal, on August 31st, I found the sand-hills too dry for anything more noteworthy than a single *Panagæus quadripustulatus*, Sturm, to be found; but the adjoining ditches produced good series of *Laccophilus variegatus*, Germ., and *Eubrychius velatus*, Beck.—JAMES J. WALKER, Oxford: October 10th, 1904.

Bembidium stomoides, Dej., and *B. nigricorne*, Gyll., in the Derwent Valley.—This spring I took the above species in our district: *B. stomoides*, Dej. (April 12th), at Lockhaugh, near Rowland's Gill, and *B. nigricorne*, Gyll. (April 4th), from the Blanchland Moors. I quote the following from Canon Fowler's work (Brit. *Coleoptera*, vol. i, pp. 110 and 112-3):—

"*B. nigricorne*, Gyll.—Sandy heaths, at roots of plants, &c.; a rare species; it was first taken by Mr. G. Wailes in the Newcastle districts . . . until discovered in England it was only known to inhabit high European latitudes. *B. stomoides*, Dej.—Rare; first taken by Mr. Bold in Cumberland, and afterwards in other localities in the extreme north of England."

Of *B. stomoides* Mr. Bold says [Nat. Hist. Trans. of Northumberland and Durham, vol. iv, part i, p. 14 (1871)]: "Banks of streams, but very rarely;" and of *B. nigricorne*: "This rare boreal insect was taken in our district by Mr. Geo. Wailes. One of the original specimens by the kindness of Mr. G. R. Waterhouse now ornaments my collection."

The following *Bembidia*, amongst others, also occurred at the same localities this spring, for the most part commonly:—*B. rufescens*, Guér., *B. tibiale*, Duft., *B. atroceruleum*, Steph., *B. decorum*, Pz., *B. concinnum*, Steph., *B. prasinum*, Duft., and *B. punctulatum*, Drap.

I am indebted to Mr. Tomlin for kindly looking over these insects, and to Prof. T. Hudson Beare for confirming the determination of *B. nigricorne*.—RICHARD S. BAGNALL, The Groves, Winlaton-on-Tyne: October 13th, 1904.

Coleoptera in Scotland.—In the course of a short holiday in Scotland during June and July, I met with a few *Coleoptera* which seem worthy of mention.

The first ten days I spent at Kenmore, Loch Tay, where I was very much handicapped by the weather, a cold westerly wind blowing almost incessantly, and frequently increasing to a gale. Beetles, consequently, were far from plentiful. The best thing I got was *Dendrophagus erenatus*, of which a single specimen occurred under the bark of a dead fir, high up on the mountain side. An example of *Telephorus elongatus* was found sitting on a stone by the edge of the loch, and a solitary *Otiorrhynchus septentrionis* turned up under a piece of board. I pulled pine stumps almost without number to pieces, but got nothing better than a quantity of pupæ of *Quedionuchus lævigatus*, which do not look in the least like those of a beetle. An expanse of newly-felled pines, three or four acres in extent, proved absolutely unproductive.

From Kenmore I went on to Rannoch, where the weather was rather more favourable. A pine stump in the Black Wood produced *Astynomus ædilis* (one only), a couple of *Rhagium indagator*, *Ips quadripustulata*, *Elater nigrinus*, and half a dozen *Pissodes pini*, while from a log close by, which had apparently been cut from it, I got a series of *Trypodendron lineatum*, four or five more of the *Ips*, and half a dozen of the rare *Homalium monilicorne*. The *Trypodendron* is very difficult to capture, as it dives down to the bottom of its burrow at the slightest alarm, and I found that the only way to get it out was to drive the blade of one penknife diagonally underneath it, so as to cut off its retreat, and then to dissect it laboriously out with another. The *Homalium*, for some reason or other, looks much more distinct when alive than it does after it is earded; but the length of the terminal joint of the maxillary palpi is a most noticeable characteristic.

A couple of *Carabus glabratus* were found strolling casually about in the same pathway which produced six or seven last year; I could not find it in any other part of the wood. The famous *Cossus* tree, unfortunately, is dead, and *Cetonia ænea* did not put in an appearance. Neither did I again meet with *Trichius fasciatus* either in the pupal or the perfect state. From pine stumps, however, I dug out three very fine examples of *Melanotus castanipes*, while a dead hornbeam produced about a dozen *Abdera quadrifasciata*. A couple of *Corymbites impressus* were sitting under a large stone, and a solitary *Staphylinus fulvipes* was rambling about on the pathway close by. *Quedionuchus* and *Quedius xanthopus* were common under bark, and *Asemum striatum* turned up in some numbers in the Dall woodyard.

From the woodyard in the Struan road, about a mile and a half from the village, I got four *Hylecoëtus dermestoides*, flying in the hot sunshine; and *Aseum* was fairly common. The midges in this yard, so far as my own experience goes, are the most bloodthirsty in all Scotland, and will get through pretty well anything in the way of clothing.

A final week spent at Bout of Garten proved disappointing, as the weather changed again, and we had little else but cold and wet. *Pterostichus lepidus* was fairly plentiful under stones in one particular corner of the moor, and *Aseum* again turned up in the pine woods. —THEODORE WOOD, The Vicarage, Lyford Road, Wandsworth Common: *October 10th, 1904.*

Strangalia auralenta, F., at Looe.—A neighbour of mine, while collecting *Lepidoptera* in August last at Looe, was much bothered by a beetle which persisted in flying round and round his head, till at last he lost patience and bottled it. On his return home he handed it over to me, and I was delighted to recognise in it a very fine female example of the above named rarity. —ID.: *October 10th, 1904.*

Apterygida media, Hagenb. (*albipennis*, Meg.).—I have taken a good many specimens of this earwig in the Huntingfield, Charing and Doddington districts. The greater number were taken in a hop field after the hops had been picked. —A. J. CHITTY, 27, Hereford Square, S.W.: *October, 1904.*

Apis mellifica in the island of Herm.—The following particulars about the occurrence of the Hive Bee (*Apis mellifica*) in Herm may possibly interest some of your readers.

I spent a few weeks in that interesting little island with my wife and my little boy during the spring and summer of this year. Our first visit extended from March 31st to April 7th, and the second from April 20th to 27th. Insects were fairly numerous, considering the small size of the island, and by the latter date we had collected about twenty species of *Aculeata*; but no trace of *Apis mellifica* could we discover.

At the next visit (from May 25th to June 4th) we found the *Aculeata* plentiful enough; and again the entire absence of the Hive Bee struck us as very remarkable. I should mention that we were out every day insect-collecting in all parts of the island—three nets at work—with a special eye for the *Aculeate Hymenoptera*, so that we could not easily have passed over the Hive Bee, which in fact we particularly looked for. But not one single specimen was seen.

Our fourth and last visit to Herm was on August 8th, and we remained there three days. To our great surprise and delight some Hive Bees were observed at flowers during our very first walk, and we immediately captured specimens. Afterwards we found them spread all over the island, that is to say, on the large sandy common, as well as on the cliffs and in the interior; not nearly so numerous as in other places where Hive Bees occur, but we probably saw altogether several scores during the three days.

Now, how is the appearance of this species in August to be accounted for, since no vestige of it occurred in June, or earlier?

The Herm people tell me that, so far as they know, no one has ever kept bees in the island. My belief is that those we saw in August formed part of a swarm which had flown over from Guernsey, the bulk of the swarm having, perhaps, perished in the sea. The shortest distance across the water from Guernsey to Herm would be rather under three miles, but I do not know whether swarms have been known to fly so far.

Supposing that the Queen Bee was lost at sea, would the few workers that reached land keep together, and go on collecting honey for a time? or does the presence of a few score (or hundreds) of workers, all busy collecting honey as usual, prove that the Queen must have landed on Herm, and founded a nest there?

It would be exceedingly interesting to go over to Herm next spring and ascertain whether these visitors have succeeded in establishing themselves; and it might be possible to discover where they have built their nest.—E. D. MARQUAND, Guernsey: *September 12th, 1904.*

A few Irish Ichneumonidæ.—I was inspired by Mr. Morley's book to look up some few specimens of *Ichneumon* flies which I had picked up from time to time. I endeavoured to determine them for myself, but becoming puzzled for want of types, and experience, I thought the safest plan would be to forward them to Mr. Morley, who most kindly determined them for me. The specimens are as follows:

Anomalon? cerinops, Gr., Armagh, emerged 6/5/95; *Banchus pictus*, Fab., ♀, Churchill, Co. Armagh; *Pimpla turionellæ*, L., ♂, Armagh, 19/5/94; *Braticheumon fabricator*, Fab., ♂, Acton Glebe; *Ichneumon extensorius*, L., ♀, Scotstown, Co. Monaghan, in moss, 15/3/94; *I. gradarius*, Wesm., ♀, Scotstown, Co. Monaghan, in moss, 15/3/94; Mr. Morley informs me that this is the second British taken specimen of this species; *Amblyteles palliatorius*, Grav., ♀, Acton Glebe; *A. 4-punctorius*, Müll., var. with black abdomen, Acton Glebe; *Platylabus rufus*, Wesm., ♀, Acton Glebe; *Phaogenes planifrons*, Wesm., ♀, Scotstown, Co. Monaghan, in moss, 15/3/94; *Alomyia debellator*, F., Acton Glebe, 29/8/04, this I determined myself with the aid of a type kindly given me by Mr. Morley.—W. F. JOHNSON, Acton Glebe, Poyntzpass: *October 5th, 1904.*

"*Petrol*" as an agent for removing grease in insects.—The great purity and volatility of this substance, now so well known as a propulsive agent for motor vehicles, suggested to me some time ago its use as a means of freeing insects from "grease;" and having heard from Lieut. Jacobs, R.E., at Sheerness, that a friend of his was using it for that purpose with success, I resolved to give it a trial. As regards *Lepidoptera*, I find the results compare most favourably with those obtained from "Benzine Collas" or the usual qualities of benzine used for the purpose. Some badly "greased" moths—*e. g.*, *Cossus ligniperda*—were thoroughly cleansed by twenty-four hours' immersion in "petrol;" while its very rapid evaporation, especially when assisted by blowing gently on the specimen while drying, frees the body clothing and fringes almost or quite as well as ether does. The beautiful "mane" of silky hairs on the thorax of *Gonepteryx rhamni* comes up again perfectly, while the delicate colours of this insect, *Colias edusa*, *Lycæna bellargus*, and *Iodis vernaria*—the last selected as a crucial test—were not in the least affected by an immersion of 36 hours. In *Coleoptera*, a very greasy *Trichius fasciatus* re-

quired two soakings, but the pile was raised again perfectly when dry, and the colour of some much blackened *Coccinella distincta* was well restored. As "petrol" is sold retail for at most 3d. per pint, its price compares, most favourably with that of any suitable quality of benzine, and enables a large bath of the liquid to be used, of course with due precaution as to its extreme inflammability; and I confidently recommend it as a safe, efficient, and cheap grease solvent.—JAMES J. WALKER, Oxford: October 10th, 1904.

British specimens of Hydrotæa wanted.—I propose to publish as soon as possible an account of the British species of *Hydrotæa* (Diptera—Fam. Anthomyiidae), and would be grateful if readers of this Magazine would send me for examination any specimens belonging to this genus which are in their possession. All help in this way will be fully acknowledged, and the material returned *labelled with specific names* as soon as practicable.—PERCY H. GRIMSHAW, Royal Scottish Museum, Edinburgh: October, 1904.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: September 8th, 1904.—Mr. E. STEP, F.L.S., Vice-President, in the Chair.

Mr. Edwards exhibited a series of the Danaine butterfly, *Tirumala hamata* from Samoa, and pointed out the secondary sexual characters of the ♂. Mr. H. Moore, a specimen of *Stenopteryx hirundinis*, the curious Dipterous parasite of the swallow. Mr. Lucas, a coloured drawing of varieties of *Lepidoptera*, including a ♂ of *Gonepteryx rhamni*, extremely like *G. cleopatra* in having the large bright yellow cloud on the fore-wings. Mr. Fremlin, bred specimens of *Hemaris fuciformis*, some still retaining the deciduous scales, of which he placed a few under the microscope, and pointed out the very weak pedicles of the individual scales. Mr. Manger, on behalf of Mr. Pearson, several species of butterflies from the Swiss Alps, including *Polyommatus hylas*, *P. eros*, *Cænonympha arcania*, *Satyrus cordula*, *Breuthis amathusia*, &c. Mr. West, of Greenwich, developed and undeveloped forms of the *Hemiptera*, *Orthostira parvula* and *Ceratocombus coleoptratus*, from Oxshott. Mr. Turner, on behalf of Mr. Tutt, a few species of butterflies from Cairo, sent by Mr. Groves, including a fine example of *Danaus chrysippus*, *Anthocharis belemia*, var. *glauca*, and *A. belia*. Several members reported taking or seeing *Agrius convolvuli*.

Sept. 22nd, 1904.—Mr. HUGH MAIN, B.Sc., Vice-President, in the Chair.

Mr. Ernest Joy, of Stoke Newington, was elected a Member.

Mr. Moore exhibited a living specimen of the Mole Cricket, found outside his house in Lower Road, Deptford, no doubt attracted by the neighbouring electric light; a number of species taken at Theydon during the Society's Field Meeting on September 10th, including series of the *Diptera*, *Helophilus pendulus* and *Sericomyia borealis*; and from Tasmania a series of the beautiful metallic coloured Coleopteron, *Lamprima aurata*, showing its polymorphism as well as its sexual dimorphism. Mr. Harrison and Mr. Main, series of *Carsia paludata*, taken at Simonswood Moss, July, 1904, and a bred series of *Cirrhædia zeram-*

pelina, from Llangollen larvæ. Mr. Edwards, series of ♂s and ♀s of *Gonepteryx rhamni* and *G. cleopatra*, to illustrate their distinctions; Mr. Tutt said that he felt quite sure, from observation of their habits, that the two were distinct species. Mr. G. T. Porritt, a male specimen of the dragon-fly, *Æschna isosceles*, one of a series taken this year in the Norfolk Broads; also a specimen of *Orthetrum cancellatum* from the same place. Mr. Lucas, ♂ and ♀ specimens of the local grasshopper, *Gomphocerus rufus*, from Bookham Common, and said it was easily recognised by its white tipped elubbed antennæ. Mr. Turner, specimens of the larvæ of *Phorodesma smaragdaria* from the Essex Marshes. Mr. Dodds, an example of *Locusta viridissima* from Felixstowe. Mr. West, three out of the five British species of *Chatocnema* (*Plectroscelis*), viz., *C. subcærulea*, *C. hortensis*, and *C. confusa*, from Wisley. Mr. Brown, an almost black example of *Xylophasia polyodon*, *Phibalapteryx lignata*, and *Hydroecia nictitans*, v. *paludis*, from Deal.—H. J. TURNER, *Hon. Sec.*

ENTOMOLOGICAL SOCIETY OF LONDON: *October 5th*, 1904.—Professor E. B. POULTON, M.A., D.Sc., F.R.S., President, in the Chair.

The Rev. W. Beresford Watson, of St. Martin's Vicarage, Barbados, West Indies, was elected a Fellow of the Society.

Mr. G. H. Verrall exhibited specimens of (a) *Callicera yerburyi*, Verr., a Syrphid new to science, taken this year in Scotland by Col. J. W. Yerbury, and (b) *C. ænea*, F., the other British species of the genus, together with three European species of *Callicera* from the collections of Bigot and Kowarz, *C. macquartii*, Rond., *C. spinolæ*, Rond., and *C. porrii*, Rond. Mr. H. St. J. Donisthorpe, *Tetropium fuscum*, F. (♂ and ♀), and eight specimens of *Abdera 4-fasciata*, Curt., all taken by him at Market Bosworth, Leicestershire, in July, 1904. The Rev. F. D. Morice, the cells of two wasps, *Polistes gallicus* and *Eumenes coarctatus*, found by him in the Balearic Islands. Mr. A. J. Chitty, specimens of the earwig *Apterygida media*, Hagenb., taken at Huntingfield and Charing, Kent, this year. Mr. W. J. Lucas, a living specimen of *Labidura riparia*, ♂, from the shore near Christchurch, Hants, kept alive for more than a month, and fed upon fruit, meat, &c.; he also exhibited a lantern-slide, showing the threatening attitude assumed by this earwig when disturbed. Prof. T. Hudson Beare, on behalf of Mr. C. J. C. Pool, who was present as a visitor, specimens of *Aulonium sulcatum*, Oliv., a species of *Coleoptera* new to the British fauna. Mr. W. Dannatt, a specimen of *Papilio homerus* from the Blue Mountains, Jamaica, a species believed to be confined to that island, together with coloured drawings of the larva painted by Lady Blake, and lent him by Mrs. E. M. Swainson, of Baltimore, U.S.A., who had bred the species. He also exhibited three new butterflies, *Chlorippe godmani*, from Venezuela, *Delias hempeli*, from Gilolo, and *Monethe johnstoni*, from British Guiana. Dr. T. A. Chapman, for Mr. Hugh Main, a unique teratological specimen of *Arctia caja*, bred this year; the insect had a three-fold hind-wing on the left side, immediately below the costa the wing divided into three layers, each of which was apparently a normal wing so far as form, colour and markings went, but which, when the insect was alive were so closely applied to each other as to look like one normal wing, till by blowing between them or in some other way they were separated. Mr. F. Merrifield, some pod-like galls found

on a terebinthine shrub in the limestone region of Auvergne, apparently *Pemphigus cornicularius*, Pass. Mr. Norman H. Joy, the black variety of *Bledius taurus*, Germ., taken at Wells, Norfolk, August, 1904; *B. femoralis*, Gyll., from Wokingham, Berks, a species that had not been recorded from the British Isles for over fifty years; *Polydrusus sericeus*, Schall., from Hampshire; *Neuraphes carinatus*, Muls., from Bradfield, near Reading; a small form of *Dyschirius politus*, Dej., taken by Canon Fowler at Bridlington, and himself at Wokingham, and a *Rhizotrogus* (? species) taken in some numbers flying by day near Streatley, Berks, August, 1904. Dr. F. A. Dixey, some preparations of the scent of male Pierine butterflies, and read a note descriptive of the same. Mr. H. J. Turner, living examples of the larva of *Phorodesma smaragdaria* which he had met with in some numbers on the Essex marshes while searching for Coleophorid larvæ. He also contributed notes on the life histories, and living larvæ and cases of *Coleophora therinella*, *C. alticolella*, *C. fuscocnprella*, *C. artemisiella*, *C. meniacella*, *C. argentula*, *C. laripennella*, *C. cuspiditiella*, *C. laricella*, and *C. vibicella*, the latter species, although generally distributed on the continent, only recorded from a few English localities. Mr. Gilbert J. Arrow read a paper on "Sound Production in the Lamellicorn Beetles." Prof. Christopher Aurivillius, F.M.Z.S., communicated a paper on "New Species of African *Striphnopterygidæ*, *Notodontidæ*, and *Chrysopolomidæ* in the British Museum." Mr. A. H. Swinton communicated a paper on "The Droughts and Weather, and Insect Increase and Migration." Mr. E. Ernest Green communicated a paper on "Some New Mosquitoes from Ceylon," by Frederick V. Theobald, M.A.—H. ROWLAND BROWN, *Hon. Sec.*

ALGERIAN MICROLEPIDOPTERA.

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

(Continued from page 223).

2584 : 2.—GELECHIA ERUBESCENS, *sp. n.*

Antennæ greyish ochreous. *Palpi* strongly clothed, with divided brush beneath; whitish ochreous. *Head* pale ochreous. *Thorax* rosy ochreous; the tegulae pale olive-grey. *Forewings* whitish ochreous, suffused along the costa, as far as two-thirds from the base, with bright rosy red; between these two colours is a band of olive-grey, running as far as the end of the cell, with two rectangular projections thrown downwards into the paler space beneath it, these being darker, more inclining to fuscous, than the upper portion of the streak with which they blend; at the end of this streak is an oblique blackish spot, preceding a space of the whitish ochreous ground-colour, narrowly margined at its lower edge with brownish fuscous; on the flexus is a narrow short black streak, on the pale costal third are two small aggregations of brownish fuscous scales within the basal third, and three larger aggregations on the costa and costal cilia in the outer third, two similar groups of scales occurring in the cilia below the apex; cilia pale ochreous. *Exp. al.*, 17—18 mm. *Hindwings* rather iridescent, grey, with a brownish tinge; cilia shining yellowish grey. *Abdomen* bright yellow-ochreous. *Legs* whitish, the tarsi with pale brownish fuscous bands.

Type, ♂ (96595) ; ♀ (96596). Mus. Wlsm.

Hab. : ALGERIA—Biskra, 11-13.III.1903. Two specimens.

This has very much the appearance of some of the species associated with *Tamarix* but was taken at some distance from any growth of this plant.

2587 : 1.—GELECHIA CEROSTOMATELLA, *sp. n.*

Antennae brownish grey above, pale ochreous beneath. *Palpi* with the median joint coarsely scaled beneath, terminal as long as the median, smooth, acuminate ; whitish ochreous, the median with a dark brown patch near its base, the coarse scales tinged with fawn-brown beneath. *Head* whitish ochreous. *Thorax* pale fawn-ochreous, with a dark smoky brown line down the middle, and a brown spot at the base of the tegulae. *Forewings* long, narrow, with the costa straight, the apex slightly depressed, obtusely rounded, but narrow owing to the wing being constricted outward by gradual elevation of the dorsum, clothed with somewhat unusually broad flattened scales ; in colouring like some varieties of *Cerostoma radiatella*, Dou., a dark smoky brownish fuscous band runs from the middle of the base to the apex and termen, slightly widening outward, its edges clearly defined and without irregularities, below it the dorsum is pale fawn including the whole space beneath the fold, except where a few scales of the dark band above slightly overlap it toward the base ; the costal area narrow at the base and slightly widening outward, is pale pinkish ochreous, except the extreme costa which is nearly white, very narrowly so, but rather more conspicuously, where it includes the costal cilia ; at the apical end of the dark brown band is a slight bronzy patch, shining in some lights ; terminal and apical cilia smoky fuscous ; underside shining pale ochreous, with silvery reflections along the middle. *Exp. al.*, 19 mm. *Hindwings* (2) trapezoidal, with rather rounded costa, produced apex, slightly emarginate termen, straight dorsum, and well-defined tornus and flexus ; pale iridescent rosy grey ; cilia ($\frac{2}{3}$) pale shining brownish grey ; underside shining pale grey, the costa pale ochreous. *Abdomen* and *Legs* pale brownish ochreous.

Type, ♂ (88704). Mus. Wlsm.

Hab. : ALGERIA—Biskra, 13.IV.1903.

This most distinct and interesting species is perhaps most nearly allied to *interruptella*, Hb., but the shape of the forewings is very different. I took a single specimen at light in the town of Biskra on April 13th.

2611 : 1.—GELECHIA NIGROROSEA, *sp. n.*

Antennae cinereous, narrowly barred with black above. *Palpi* pale rosy cinereous, the terminal joint with two black bands, the median touched with black at its base and bright rosy red at its apex, the brush beneath also rosy. *Head* and *Thorax* rosy fawn, speckled with fuscous. *Forewings* rosy fawn, speckled with fuscous, with a fuscous ill-defined spot on the disc, another at the end of the cell ; above and below the latter are two marginal fuscous shades before an indistinct band of the paler ground-colour which is further displayed by a fuscous shade towards the apex, near the base is a slightly oblique series of three black spots

forming an almost connected transverse fascia, another black spot lying on the middle of the costa; cilia rosy fawn, minutely speckled with fuscous. *Exp. al.*, 13—18 mm. *Hindwings* shining, pale grey; cilia yellowish grey. *Abdomen* shining grey. *Legs* yellowish grey.

Type, ♂ (88774); ♀ (88776). Mus. Wlsm.

Hab.: ALGERIA — Biskra, Larva *Rhus dioica*, 20.II, excl. 29.III — 16.IV.1903; El-Kantara, Larva 27.IV., excl. 23.V.1903. Eleven specimens.

I found the larvae feeding between leaves of *Rhus dioica* at Biskra, February 20th, and at El-Kantara in April. The type emerged March 29th; other specimens were also bred but none were taken on the wing although I frequently searched for them. Like many other Biskra things it seems to be double or even perhaps treble brooded. Allied to *diffinis*, Hw.

2740 : 1. — GELECHIA HELIGMATODES, *sp. n.*

Antennae fuscous, with pale annulations. *Palpi* whitish ochreous, the terminal joint broadly banded and shortly tipped with fuscous. *Head* and *Thorax* bright ochreous; tegulae fuscous. *Forewings* greyish fuscous through a profuse sprinkling of hoary cinereous scales upon the dark ground-colour; the dorsum from the base to the tornus is bright ochreous, this colour throwing a slight angular projection across the middle of the fold, where it is clearly defined against the rather intensified dark shade above it, which is thus thrown into two obtuse angles, much after the pattern so well known in *Plutella maculipennis (cruciferarum)*; this bright ochreous colour shows also below the costa near the base, and along the termen, especially toward the apex, and is again noticeable on either side of a black dot about the lower angle of the cell, touching the upper corner of a rather brownish patch above the tornus which blends with the greyish fuscous shading above it in which there are three short whitish ochreous ill-defined costal spots before the apex; cilia mottled with greyish fuscous and whitish ochreous, a slender fuscous line running through them near their tips and a darker line, almost black, along their base. *Exp. al.*, 14—15 mm. *Hindwings* grey, with a brownish tinge; cilia brownish grey. *Abdomen* brownish grey. *Legs* whitish ochreous, with two tibial and five tarsal fuscous bands externally.

Type, ♂ (96465); ♀ (89225). Mus. Wlsm.

Hab.: ALGERIA — Biskra, 20.III — 1.IV.1903; El-Kantara, 25.V.1903. Four specimens.

Closely allied to *tamariciella*, Z., but lacking the pale oblique semifascia which divides the dark costal portion of the wing towards the base in that species.

305 : 1.—ONEBALA, Wkr.

2770 : 1 (2848).—ONEBALA LAMPROSTOMA, Z.

n. syn. = ZULU, Wlsm.

Gelechia lamprostoma, Z., Is., 1847, 851-2, No. 400 (8)⁽¹⁾; *Ana-*

campsis lamprostoma, HS., SB., Schm., Eur. V, 196, No. 529, Pl. 75, 564 (1854)⁽²⁾; Stgr.-Wk., Cat. Lp. Eur., 299, No. 2088 (1871)⁽³⁾. *Gelechia zulu*, Wlsm., Tr. Ent. Soc. Lond., 1881, 261-2, Pl. XII, 30 (1881)⁽⁴⁾. *Anacamptis lamprostoma*, MP. and FT., Nat. Sic., VIII, 182 (1889)⁽⁵⁾; Stgr., Hor. Soc. Ent. Ross., XV, 325 (1879)⁽⁶⁾; Stgr.-Rbl., Cat. Lp. Pal., II, 154, No. 2848 (1901)⁽⁷⁾.

Hab.: ASIATIC TURKEY^(3, 7).—KHUĐAVENDIKIAR—Brussa, VI⁽⁶⁾. SICILY^(3, 7).—Syracuse, 10.V. (1, 2, 5). SPAIN^(3, 7).—MALAGA—Cala Moral, 5.V.1901 (*Wlsm.*). ALGERIA—Bône, 21.IV.1896 (*Eaton*). GAMBIA—Bathurst, XI, 1885 (*Carter*). NATAL—Durban⁽⁴⁾, Spring Vale⁽⁴⁾, VII⁽⁴⁾, XII⁽⁴⁾; Kimbolton (*Estcourt—Hutchinson*, 1885).

Veins 2 and 3 of the forewings are stalked, this character will at once remove *lamprostoma*, Z., from *Aproaerema*.

Onebala, Wkr., will probably eventually have to be sunk as a synonym of *Trichotaphe*, Clms., of which Mr. Busek writes, "Hindwings . . . 3 and 4 connate, with a tendency to become short-stalked." In *Onebala* 3 and 4 are stalked.

322 : 2.--PROACTICA, *gn. n.*

(προακτική = going before).

Type. ♂, *Proactica halimilignella*, Wlsm.

Antennae ($\frac{5}{8}$) simple, basal joint slightly enlarged, clothed with a short expanded shield of scales. *Ocelli* absent. *Haustellum* concealed in dense scaling. *Maxillary Palpi* minute. *Labial Palpi* porrect, extending slightly beyond the face; terminal joint shorter than median, both clothed with rather long, but not expanding scales. *Head* very coarsely scaled above. *Thorax* smooth. *Forewings* short, obtusely lanceolate, coarsely scaled above, smooth and brightly shining beneath (when denuded lanceolate evenly tapering from flexus to apex, tornus obsolete): *Neuration* 12 veins; 7 and 8 stalked, connate with 9, 7 to costa; 2 to 6 remote; 4 from lower angle of cell; 10 midway between 9 and 11; 1 furcate at base. *Hindwings* ($\frac{4}{5}$) abruptly excised below the long narrowly produced apex, termen almost erect from 5, tornus slightly rounded, dorsum straight; cilia (2 $\frac{1}{2}$): *Neuration* 8 veins; 3 and 4 separate, 5 approximated to 4; discoidal subobsolete; 6 subobsolete, separate and parallel with 7 (*without examination of a denuded wing under the microscope the cell would be described as open and 6 absent*). *Abdomen* smooth. *Legs*, hind tibiae clothed with long hairs, tarsi coarsely scaled.

This is an interesting form intermediate between *Chrysopora*, Clms., and *Nealyda*, Dietz, and *Didactylota*, Wlsm.; it is however most nearly allied to ANAPHAULA, Wlsm. (type *Gelechia gaditella*, Stgr.), which lacks the clothing on the basal joint of the antennae and in which the discoidal is subobsolete between 5 and 6 in the forewings and absent between 4 and 6 in the hindwings.

Didactylota and *Nealyda* are derived from forms like *Proactica* and *Anaphaula* by erosion of the erect termen of the hindwings above vein 5; *Chrysoptera* is closely allied, and all are probably derivatives from *Aristotelia*, Hb.

2903 : 2.—PROACTICA HALIMILIGNELLA, *sp. n.*

Antennae cream-white, barred above with black. *Palpi* cream-white. *Head* and *Thorax* cream-white, the latter smeared with fawn-ochreous. *Forewings* cream-white, barred with fawn-ochreous, of which there is a spot at the base of the costa, a straight transverse fascia at one third, a broader one at the middle, and a still broader band covering the apex and termen; on the bands is a slight dusting of black scales along the costa, and a group of the same forms an elongate spot on the outer half of the central fascia about its middle; cilia cream-white, slightly dusted with pale fawn-ochreous. *Exp. al.*, 8–9 mm. *Hindwings* shining, iridescent rosy grey; cilia paler. *Abdomen* whitish. *Legs* white, spotted externally with pale fawn-ochreous.

Type, ♂ (96538). Mus. Wlsm.

Hab. : ALGERIA—Biskra, 30.III—20.IV.1903 (*Wlsm.*); 2—4.V.1894 (*Eaton*). Pupa in stem *Atriplex halimus*, excl. 11.IV.1903 (*Wlsm.*); Hammam-es-Salahin, 17.IV—15.V.1903, 23—30.IV.1904, Larva 20.III. excl. 22.IV.1904 (*Wlsm.*). Thirty-five specimens.

A single specimen was bred in 1903 from a pupa found imbedded in the woody stem of *Atriplex halimus*, where the larva appears to form small lateral galls or swellings not uncommon about Biskra.

In general appearance this species resembles the closely allied *Anaphaula gaditella*, Stgr., but is decidedly larger. The observation as to the habits of the larva has been confirmed by again breeding specimens.

327.—RHINOSIA, Tr.

2926 : 1.—RHINOSIA PALLIDIPULCHRA, *sp. n.*

Antennae whitish ochreous, annulated with black. *Palpi* whitish ochreous, the median joint suffused externally with dark brownish ochreous. *Head* and *Thorax* pale ochreous. *Forewings* whitish ochreous, with numerous longitudinal dark brownish ochreous lines following the neuration, and three short oblique transverse patches on the cell, the outer one produced to the apex by confluence of the neural lines beyond it; a dark brownish ochreous line also marks the termen and is followed by one more slender in the middle of the whitish ochreous cilia which are shaded with ochreous again beyond it; underside shining pearly yellowish. *Exp. al.*, 14—17 mm. *Hindwings* shining, pearly yellowish white; cilia pale yellowish; underside pearly white. *Abdomen* and *Legs* shining greyish white.

Type, ♂ (96479); ♀ (96480). Mus. Wlsm.

Hab. : ALGERIA—Hammam-es-Salahin, 18.IV ; El-Kantara, 24.IV—11.V.1903. Twenty-three specimens.

Always found among stems and root-crowns of a species of *Teucrium*. (*polium*, L. ?) The description is made from a well-marked example, paler forms occur in which some of the lines are obsolete.

Allied to *formosella*, Hb., but larger, the hindwings are much paler, and the markings much less conspicuous.

348 : 1.—EREMICA, *gn. n.*

(ἔρημική = living in a desert).

Type, ♂, *Eremica saharae*, Wlsm.

Antennae ($\frac{3}{5}$) rather stout, simple, subserrate. *Ocelli* absent. *Haustellum* moderate, scaled. *Maxillary Palpi* short, convergent. *Labial Palpi* recurved, terminal joint shorter than median ; median joint with appressed scales. *Head* moderately smooth. *Thorax* smooth. *Forewings* rather narrow, lanceolate, apex rounded : *Neuration* 12 veins ; 7 and 8 stalked, 7 to apex ; 2, 3 and 4 connate from angle of cell (or 2 and 3 stalked, connate with 4 ; or 11 veins, 2 and 3 coincident, connate with 4) ; 5 and 6 straight ; discoidal receding backward above 5 ; media weak. *Hindwings* (1) rather broadly lanceolate, apex rounded ; cilia (2) : *Neuration* 8 veins ; 6 and 7 stalked ; 3 and 4 stalked ; 5 almost straight, slightly approximated to 4 ; discoidal receding backward above 5. *Abdomen* somewhat flattened. *Legs* : hind tibiae hairy.

Allied to *Symmoca*, Hb., but differing in vein 2 of the forewings arising at angle of cell connate with 4. The neuration is described from two denuded specimens, in one (89992) veins 2, 3 and 4 of the forewings are connate in one wing, while 2 and 3 are stalked in the other wing ; this specimen has 6 and 7 stalked in one hindwing, while in the other wing 6 and 7 are joined by a cross-bar, 6 being continued on towards the base for about the same distance as a free vein. In the other specimen (89996) there are only 11 veins in the forewings, veins 2 and 3 being coincident in both wings.

3021 : 1.—EREMICA SAHARAE, *sp. n.*

Antennae dull yellowish white, indistinctly banded with pale grey. *Palpi* dirty whitish. *Head* and *Thorax* dirty whitish, dusted with pale brown. *Forewings* dull yellowish white, minutely dusted (almost suffused) with pale brownish ; a pair of partly connected spots at one-third, placed obliquely on the disc and fold respectively, are followed by a parallel pair at the end of the cell, all these are darker than the brown dusting around them, and are mixed with a few black scales, these occurring also about the base of the dirty whitish cilia. *Exp. al.*, 10—11 mm. *Hindwings* dark brownish grey ; cilia pale brownish grey. *Legs* dirty yellowish white, with faintly spotted hind tarsi.

Type, ♂ (96542). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 23-31.III.1903; Hammam-es-Salahin, 5-7.IV, 14.V.1903, 10-25.IV.1904. Thirty-four specimens.

Another rather obscure species but quite distinct.

3021 : 2.—*EREMICA LITHOCHROMA*, *sp. n.*

Antennae pale stone-ochreous. *Palpi* cinereous. *Head* and *Thorax* pale stone-ochreous. *Forewings* unicolorous pale stone-ochreous, a few scattered brown scales towards the apex and a minute spot of darker brown at the lower angle of the cell; *cilia* pale stone-ochreous. *Exp. al.*, 10-11 mm. *Hindwings* pale grey; *cilia* very pale brownish ochreous. *Abdomen* brownish fuscous. *Legs* pale stone-ochreous.

Type, ♂ (96532). Mus. Wlsm.

Hab.: ALGERIA—Biskra, 21.II.—9.IV.1903; Hammam-es-Salahin, 11.III.—4.IV.1904. Thirty-eight specimens.

This species can be at once distinguished from *saharae* by its pale hindwings.

In the specimens examined of this species 2 and 3 of the forewings are stalked, 2 becoming subobsolete outwardly, vein 4 approximated but not actually connate with 2+3.

348 : 2.—*APOTISTATUS*, *gn. n.*

(ἄποτίστατος = not a drinker).

Type, ♂, *Apotistatus leucostictus*, Wlsm.

Antennae (♂) simple, basal joint without pecten. *Ocelli* and *Maxillary Palpi* absent. *Labial Palpi* short, porrect, median joint rather densely clothed below; terminal joint shorter than the median, smooth, obtuse. *Haustellum* absent. *Head* somewhat densely clothed. *Thorax* smooth. *Forewings* elongate, with parallel margins, apex obtusely rounded: *Neuration* 12 veins; 7 and 8 stalked, 6 out of their stem, 7 to costa; rest separate, about equidistant; 1 furcate at base; media obsolete. *Hindwings* (1) costa straight, dorsum evenly rounded, apex obtuse but not depressed, termen not sinuate; *cilia* (1): *Neuration* 8 veins; 3 and 4 connate; 6 and 7 stalked; 5 somewhat approximate to 4 towards base; media and discoidal above 5 subobsolete; radius not connected to 8. *Abdomen* moderate. *Legs*, hind tibiae hairy, spurs short.

Allied to *Symmoca*, Hb., and *Apatema*, Wlsm.

3021 : 3.—*APOTISTATUS LEUCOSTICTUS*, Wlsm.

Antennae whitish, barred above at the base and suffused beyond it with pale brownish ochreous. *Palpi* white, speckled with pale brownish ochreous. *Head* and *Thorax* pale brownish ochreous, with some white speckling; face white. *Forewings* pale brownish ochreous, spangled with white, the white spangles evenly distributed over the wing, forming a marginal line around the termen and

slightly concentrated across the apical third from costa to dorsum, but failing to form any complete fascia; cilia yellowish white, with brownish ochreous speckling. *Exp. al.*, 10—12 mm. *Hindwings* and cilia silvery white. *Abdomen* white, with a patch of brownish ochreous at the base and some few shining scales of the same behind it. *Legs* white, the tarsi spotted with pale fuscous, the tibiae sprinkled with brownish ochreous externally.

Type, ♂ (96839). Mus. Wlsm.

Hab.: ALGERIA—Biskra and Hammam-es-Salahin, 15—25. IV.1904, Larva mining leaves of *Limoniastrum guyonianum*, III-IV. excl. 1—17.V.1903. Forty-three specimens.

I received a single specimen of this interesting species from the Rev. A. E. Eaton with the note "out of *Limoniastrum guyonianum*, 2.V.1895," and was much pleased to breed a series of specimens in May from larvae found mining in the terminal leaves of that plant in March and April at Biskra and Hammam-es-Salahin. These larvae, of which I have not made a description as I hesitated to disturb them, appear to feed head downwards, but as the leaf becomes slightly swelled when hollowed out they can probably turn easily in the mine. The affected leaves have a brownish appearance, but by no means every brown leaf is tenanted. The presence of the larva may be counted on when a minute speck of pale green can be seen below the brown colouring; this indicates that the parenchyma is in process of absorption by the larva whose body is concealed above.

The species is common and was taken freely on the wing in May by beating bushes of *Limoniastrum*.

348.—SYMMOCA, Hb.

3032 : 1 (= 3021).—SYMMOCA ALBIDELLA, Rbl.

Epidola (?) *albidella*, Rbl. Deutsche Ent. Zts. Iris., XIII, 166, No. 5 (1901)⁽¹⁾; Stgr.-Rbl. Cat. Lp. Pal., II, 162, No. 3021 (1901)⁽²⁾.

Hab.: ALGERIA^(1, 2).—Teniet-el-Hâd⁽¹⁾; Médéa, 24.VII.1893 (*Eaton*).

Dr. Rebel referred this species to *Epidola* with doubt, remarking that among other differences it lacked the pecten on the basal joint of the antenna. The ♂ is still unknown, but it can have no alliance with *Epidola* since 7 and 8 of the forewings and 6 and 7 of the hindwings are both stalked. The neuration of EPIDOLA is as follows:—*Forewings* 11 veins, 7 and 8 coincident, to costa; remaining veins separate: *Hindwings* 8 veins, 6 and 7 separate and parallel, 6 rather weak, 3 and 4 stalked, 5 approximated; cell open between 5 and 6.

Described from denuded wings of *E. barcinonella*, Mill., ♂ (71828, Mus. Wlsm.). So far as can be judged without denuding a specimen, *E. stigma*, Stgr., and *E. barcinonella*, Mill., are identical in neuration.

3032 : 2.—SYMMOCA SERICIELLA, *sp. n.*

Antennae brownish grey, paler at the base. *Palpi* rising above the base of the antennae, the terminal joint one-third of the median; yellowish white. *Head* and *Thorax* yellowish white. *Forewings* elongate, lanceolate; shining, silky, yellowish white, with a faint indication of a group of ochreous scales at the end of the cell, a smaller group in the middle of the fold and one or two on the disc slightly preceding the latter; in some specimens (var. B), which at present I am unable to separate from this species, these spots are absent, while in others (var. C) I find not only the spots, but a tolerably plentiful dusting of single scales of the same colour, evenly distributed, especially over the outer half of the wing and along the costa, the whole insect thus assuming a more distinctly ochreous tinge; cilia yellowish white. *Exp. al.*, 12—14 mm. *Hindwings* pale, shining, rosy grey; cilia pale yellowish. *Abdomen* and *Legs* very pale brownish cinereous.

Type, ♂ (96452); var B ♂ (96453); ♀ (96457); var. C ♂ (96454). Mus. Wlsm.

Hab.: ALGERIA—El-Kantara, 8-23.V.1903; Hammam-es-Salahin, 17.V.1903. Nineteen specimens.

This species is somewhat widely distributed about El-Kantara, flying low in open places in the early morning.

Allied to *albidella*, Rbl., but the hindwings are never white as in that species.

(To be continued).

THE STRIDULATION OF *PASSALIDÆ*.

BY D. SHARP, M.A., M.B., F.R.S., &c.

In Ent. News Philad., vol. xii, p. 271, Mr. Babb has given an account of the stridulation of *Passalus cornutus*. I have no dissected specimens of that species, and I am therefore unable to state whether the details he gives are correct, but I have no doubt he is quite right as to his general interpretation, and that he has discovered an organ that several of us had previously looked for and failed to notice; while Leconte and Ohaus gave an interpretation which, as I always felt assured, is quite fabulous.

My object in this note is not merely to congratulate Mr. Babb, but also to point out that his discovery has solved a riddle that has

puzzled me for many years. In the huge Central American *Passalidæ* of the genus *Proculus*, the elytra are completely soldered, and the insect has no powers of flight whatever, and yet the wings exist in a strangely modified form; they are long strips about an inch and a half in length, and of a shape that is very rarely seen in insects. That an insect should have wings of such a form has seemed to me remarkable ever since I first observed the fact. On reading Mr. Babb's note, it was at once suggested to me that here we have a case in which the wings have entirely lost their function as organs of flight, but have preserved their stridulation purposes; and there can, I think, be no doubt that this is correct. The stridulating area on the dorsum of the abdomen is prominent in *Proculus*, and the wing-remnant is just of the right length to rub the area, and, moreover, presents a special edge at the tip of an effective character. This is a very interesting case of change of function of an organ. Wings are organs of flight. In *Passalidæ* generally they are organs of flight and stridulatory organs; in *Proculus* they are stridulatory organs, but are not at all organs of flight.

Coupling this discovery as to the stridulating organs of the imago with Schiödte's and my own previous demonstration of sound-producing organs in the larva, and with Ohaus's charming discovery as to the parental functions of these beetles, we find a pleasing little entomological family history is disclosed. The creatures live in rotten wood. The parents do not die before the young are hatched, as is generally the case in the insect world, but survive and live a family-life in the logs. The young are from two to seven in number, and the parents tear up the wood for the young, these, according to Ohaus, being unable to live without the parental assistance. The value of stridulating organs under these circumstances is clear. We can translate the *Passalus* proceedings into their human equivalents very easily. A grub is hungry and makes movements of impatience giving rise to sounds; the parent tears up some wood for it, and while doing so stridulates, as if to say, "Coming, grub, but do not be impatient."

The recent revelations made by Fabre and Ohaus as to the natural history of Lamellicorns will, I think, be found to justify our treating these insects as the highest of the *Coleoptera*. Ethology, Æsthetics, and Anatomy, are found to coincide in support of this view.

Cambridge:

November, 1904.

TWO ADDITIONAL SPECIES OF BRITISH *HEMIPTERA*.

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

In August, 1899, I took a few examples of a small *Drymus* under dead leaves and amongst moss in a chalk pit at Abinger Hammer, near Gomshall, Surrey. In everything but size they agreed with the description of *D. pilicornis*, Muls., as given in the British text books, but they were considerably smaller than the size therein indicated. In August of the present year I found a considerable colony of a much larger but otherwise superficially similar insect under *Nepeta glechoma* on a chalk cliff at Worbarrow Bay, Dorsetshire. These agreed in both appearance and size with the *pilicornis* of the text books. A careful comparison of the two forms, however, plainly showed that they represented two species. Mr. Edward Saunders, to whom I sent them, suggested that the smaller insect was the true *pilicornis*, Muls., but that the larger, which had hitherto borne that name in this country, was *confusus*, Horv. I therefore sent a pair of the Dorsetshire specimens to Dr. Horvath, and he has confirmed them as his *confusus*. Apparently, Mulsant had the smaller form chiefly in view in his original description, to judge from the size he gives for it, and from the remark, "Cette espèce diffère du *P. sylvestris*, Linn., par sa taille une fois moindre." We have therefore two species in this country, *D. pilicornis*, Muls., the smaller one, and *D. confusus*, Horv., the larger. Except as regards the size, which is that of *confusus*, the descriptions in Douglas and Scott's "British Hemiptera" (*Rhyparochromus*), and Saunders' "Synopsis" and "Hemiptera-Heteroptera of the British Islands," apply equally to the two forms, which, however, differ in the following as well as in some other less obvious particulars:—

D. PILICORNIS, Muls.*D. CONFUSUS*, Horv.

- | | |
|--|--|
| i. Length, 3—3½ mm. | i. Length, 4½—5½ mm. |
| ii. Anterior tibiæ of ♂ much curved, gradually dilated inwardly at apex. | ii. Anterior tibiæ of ♂ nearly straight, widely and abruptly dilated inwardly at apex. |
| iii. Anterior femora, with one large and 5 or 6 minute teeth. | iii. Anterior femora, with one large and 2 or 3 minute teeth. |
| iv. Membrane often abbreviated. | iv. Membrane fully developed. |
| v. Abdomen beneath shiny and quite smooth. | v. Abdomen beneath shiny, but with fine scattered wrinkles like ripple marks. |

- | | |
|--|--|
| vi. Basal ventral segments of abdomen, with a few scattered but distinct long hairs. | vi. Basal ventral segments of abdomen glabrous. |
| vii. Apical margin of 4th ventral segment of abdomen without fringe of hairs. | vii. Apical margin of 4th ventral segment of abdomen with a narrow fringe of golden hairs. |

The two species are easily distinguished by their size and the structure of the anterior tibiæ in the ♂. Dr. Horvath speaks of *confusus* as "assez rare," but widely distributed; he has it from France, Switzerland, Austria, Hungary, and Bosnia. Mr. Saunders possesses the type example of *D. latus*, D. & S., and another ♀ taken by Mr. Champion at Caterham; Mr. Champion has specimens from Caterham and the Isle of Sheppey, Mr. Jennings one from Brandon, Suffolk, and there is one from Scott's collection in the National collection at S. Kensington. In the latter there are also three small examples which are true *pilicornis*, Muls., one of which is labelled Scott, and the other two Power, Mickleham; and Mr. A. Beaumont has taken it at Boxhill. Apparently, *pilicornis* is rarer with us than *confusus*. The latter has a fairly wide distribution—from Suffolk to Dorsetshire.

The other addition is *Salda setulosa*, Put., of which I took a single ♂ last August amongst flood refuse on the southern side of Poole Harbour. I was apparently rather early for it, as there were several larvæ about which might well have belonged to the same species, but I could find no more than the one imago.

S. setulosa is closely allied to *opacula*, Zett. The chief differences are as follows:—The head, pronotum, and elytra, are densely pilose, being clothed with long upright blackish hairs: the pale markings on the face which are so characteristic of *opacula* are much obscured with black; the second joint of the antennæ is flavous with darkened base and apex, and longer than in *opacula*; and the line of demarcation between the flavous lateral margin of the elytra and the darker ground colour of the corium is not so distinct, especially towards the apex, where the pale colour extends inwards and encloses a white spot. In Puton's "Synopsis" *setulosa* is treated as a var. of *opacula*, but Dr. Reuter regards it as a distinct species, and in this he is undoubtedly right; in fact, it differs from *opacula* pretty much as *pilosella* does from *pallipes*, and these are now reckoned as distinct.

PERISCELIS ANNULATA, FALL., A DROSOPHILID NEW TO
BRITAIN.

BY C. G. LAMB, M.A., B.SC., ZOOLOGICAL MUSEUM, CAMBRIDGE.

Several specimens of what was surmised by me to be a *Periscelis* were seen and taken at sap flowing from a beech tree in the New Forest in June of this year. The insect was identified on returning home as being *P. annulata*, Fall. Other specimens were obtained at the same tree by Dr. D. Sharp, F.R.S., and Miss M. A. Sharp. About the same date it was also taken at sap flowing from an elm near Cambridge by Dr. F. Jenkinson.

Cambridge :

November, 1904.

OCHTHERA MANTISPA, LW., AN EPHYDRID NEW TO BRITAIN.

BY C. G. LAMB, M.A., B.SC., MUSEUM OF ZOOLOGY, CAMBRIDGE.

A single female of this interesting addition to our fauna was taken by me at Porthcothan, near Padstow in North Cornwall, in this September. The locality is where a small stream flows on to the sands, and is a very good one for *Ephydrinidæ*. It had been carefully worked in the previous July, and, as in September, only the single specimen was obtained, it is probable that the insect would be better sought for in August. The insect can be readily recognised; it is smaller than *O. mantis*, Deg., of a grey colour, and has bright red tarsi. It was first described by Loew from specimens obtained in Rhodes, and Becker gives its distribution as Italy, Greece, and Asia Minor. It would appear that *O. mantispa* is a southern form, and it is of interest to note that the flora of Cornwall gives similar indications of connection with the south of Europe.

Cambridge :

November, 1904.

Occurrence of Celerio lineata livornica, Esp. (*Deilephila livornica*, Esp.), at St. Leonards, Sussex.—On May 20th, 1904, a male example of this species was caught by a boy on the post of one of the street lamps in this town and brought to me alive. Dr. Karl Jordan has kindly confirmed the identification. I have followed Messrs. Rothschild and Jordan ("A Revision of the Lepidopterous Family Sphingidæ," p. 732, April, 1903) in using the name *Celerio lineata livornica* for this form.—
W. RUSKIN BUTTERFIELD, 4, Stanhope Place, St. Leonards-on-Sea: Nov. 5th, 1904.

Larva of Doryphora palustrella.—A carefully executed drawing has been most kindly forwarded to me, by Mr. Sydney Webb, of a larva which I believe to be previously unknown, but from specimens of which Mr. William Purdey, of Folkestone, has reared some beautiful examples of *Doryphora palustrella*, allowing me also to examine the specimens.

The larva is somewhat spindle-shaped, the segments plump and well defined; head rather small, rounded. orange-brown: dorsal plate similar in colour, divided in the middle, and there minutely dotted with black; anal plate and prolegs horn-colour; feet brown; body flesh-colour, with the markings dull crimson; dorsal line rather broad, continuous; subdorsal lines also broad and of the same colour, but much broken and arranged in oblique streaks or undulations; on each segment are two orange dots at the edges of the dorsal line; the usual raised dots black.

On common dock (*Rumex*), mining in the stem, eating the pith and leaving its excrement in the hollowed space, but not entering the root. Mr. Purdey tells me that he believes the egg to be laid on the stem, and that the young larva enters it and mines down into the crown of the root, feeding there through the winter and becoming full grown by June, by which time the plant is, in many cases, killed. Then it gnaws a small gallery in the crown of the root and spins its cocoon therein, emerging as a moth in July or early in August.

The occurrence of this scarce species on the coast of Kent is not new, since it has at different times been captured near Deal, but only in very small numbers. Its usual home is in the Fens of Norfolk and Cambridgeshire, where it is taken occasionally flying towards dusk, and more frequently by crawling among the long grass and herbage by day, or else by the aid of a lantern late at night; but I think nothing has been observed there to point to its connection with docks, and that it has been supposed to be attached to reeds, grasses, or sedges. Great credit I think is due to Mr. Purdey for this notable and unexpected discovery.—CHAS. G. BARRETT, Tremont, Peckham Rye: *November 8th*, 1904.

Aplecta nebulosa, Hufn., var. *thompsoni*.—In my description of this new variety (*ante*, p. 180), I refer to the chief features which separate it from *robsoni*, as follows:—

“The outer margins are white, and include, in addition to the cilia, the areas of black crescentic spots which appear in the typical form of the insect from Delamere Forest. These white margins are consequently scalloped interiorly.”

Mr. Porritt protests against the name *thompsoni*, and says (*ante*, p. 236), “I received recently specimens of this Delamere Forest form from Mr. W. Mansbridge, of Liverpool, and although not exactly like the original specimens of var. *robsoni*, it only differs from it in the presence of a few small inconspicuous whitish marks, and ought, I think, to be included in it.”

Mr. Tutt goes further, and asserts (*ante*, p. 255), that “*thompsoni* is absolutely *robsoni*.” And then he continues: “the type of *robsoni* has the indistinct median transverse band, indistinct orbicular and reniform, white fringes, the three white spots at apical angle, and the greyish scallops.”

After comparing these expressions of opinion with my description, I claim that

the insects referred to by Messrs. Porritt and Tutt are certainly not *thompsoni*; and I would ask both to suspend judgment until they have actually seen the new variety.

Mr. Porritt says: "The name of either a type or a variety includes of course a certain range of variation." Of course it does, and I should say the insects described by himself and Mr. Tutt are intermediates between *robsoni* and *thompsoni*. The two varietal names, however, mark culminating points in the variation of *Aplecta nebulosa*. And then he continues, "If we are to have a distinct name applied to every specimen which differs from the original type, by a slight mark or shade of colour, where are we going to end?" Well, he might ask the sponsors of many other insects which have received varietal names.

In closing my remarks upon this beautiful and striking variety, let me say it is a matter of some gratification to recollect that, as far as I know, there are only two dissentients. Everything possible was done so that the name *thompsoni* could be fairly given. Parenthetically, I am not responsible for coupling Mr. Tutt's name with *robsoni* in my description. The error is regrettable, but not mine.* As to the geographical distribution of *robsoni*, my statement is not a "haphazard" one, and I am prepared to give data to prove my conclusions.

I have a great desire to withhold the name of the writer of a letter I received on these matters, dated July 7th, 1904, but a couple of lines from the letter—"I am quite clear that this (*thompsoni*) is not the form that was called *robsoni*," may perhaps be quoted.—J. ARKLE, 2, George Street, Chester: Nov. 4th, 1904.

Further captures of Coleoptera in Berkshire.—Since my note in the August Number of the Ent. Mo. Mag., I find I have taken in this neighbourhood several *Coleoptera* of some rarity, of which I think the following are worth recording: *Homalota scapularis*, Sahlb., *Hydnobius punctatissimus*, Steph., *Colon dentipes*, Sahlb., *Phyllotreta consobrina*, Curt., *Apteropeda globosa*, Ill., and *Apion cruentatum*, Walt., have been taken by general sweeping, mostly towards evening. *Longitarsus flavicornis*, Steph., occurred in numbers on a small patch of *Couvolulus arvensis* in August. *Deinopsis erosa*, Steph., and *Calodera nigrata*, Mann., were taken at the edges of ponds at Aldermaston in September, and *Stenus fornicatus*, Steph., at Wellington College. Fungus has produced little of interest, except a good series of *Nossidium pilosellum*, Marsh. The great find of the season was a large oak branch which had been blown down and broken, thus exposing an old woodpecker's hole which had been lately tenanted by bats. In the *débris* of the nest Mr. Tomlin and I found *Philonthus fuscus*, Grav. (2), *Hister merdarius*, Hoff., *Dendrophilus punctatus*, Herbst, and *Trox scaber*, L. I sifted the same *débris* over on several occasions afterwards and was rewarded by taking one *Choleva colonoides*, Kr., and six *Neuraphes carinatus*, Muls. Sifting a quantity of rotten wood from a hollow beech tree close by was also profitable, as I shook out a good series of the following: *Quedius microps*, Grav., *Hapalarwa pygmaea*, Gyll., *Symbiotes latus*, Redt., *Ptinella angustula*, Gill., and what I take to be *Trichopteryx picicornis*, Mann. *Orthoperus mundus*, Matth., which I have taken on three or four occasions in the district, but only once as many as five at a time, has at last turned up in

* *Meâ culpâ!*—J. J. W.

some numbers; I took nearly thirty specimens from the dry bark of a large beech tree which had probably been blown down last spring.—NORMAN H. JOY, Bradfield, Reading: *Nov. 8th*, 1904.

Aculeate Hymenoptera from Fort William, N.B., and neighbourhood.—The following *Aculeate Hymenoptera* were captured at or near Fort William Lochaber, in 1902, 1903, and 1904, from the third week in June to the third week in July of each year. The ground covered includes Fort William, with Glen Nevis, Banavie, Corpach, Locheil, Glenfinnan, Loch Morar, Arisaig, Fort Augustus, Foyers, Camusna-Gaul, Ardgour, Spean Bridge, Glen Roy, and Ballachulish, with Glencoe.

The vegetation is grand, trees, ferns, and flowers luxuriant, but the *Aculeata* are very poorly represented, both in species and numbers, as the following list too plainly shows. *Aculeates* in the North-West Highlands appear to be re-placed by *Diptera*, which abound everywhere, and are far too numerous and attentive to be welcome.

Bombus agrorum and *Vespa norvegica* are the two commonest and most representative species; as regards the latter I can confirm Mr. Bignell's observation recorded in *Hymenoptera Aculeata*, Saunders, p. 157, on the rapidity the wasp displays in building her nest.

A nest a little larger than a cricket ball was built in a young fir tree in my garden a few feet from the ground; the gardener endeavoured to destroy it by lighting a fire under it, but was not entirely successful, from the amount of rain, about three-fourths was broken away, but from the stalk and cup shaped portion that remained *norvegica* re-built her nest in four days, the gardener having been warned off.

LIST.—*Formica fusca*, Linn., *rufa*, Linn. (one nest at Loch Morar); *Lasius niger*, Linn., *flavus*, De Geer; *Myrmica ruginodis*, Nyl., *scabrinodis*, Nyl.; *Pompilus pectinipes*, V. d. L.; *Vespa rufa*, Linn., *norvegica*, Fab.; *Halictus subfasciatus*, Nyl.; *Sphecodes affinis*, V. Hag.; *Andrena analis*, Panz., *coitana*, Kirb.; *Bombus terrestris*, Linn., *agrorum*, Fab., *jonellus*, Smith (one specimen); *Psithyrus vestalis*, Fourc. Only *B. agrorum*, *B. terrestris*, and *V. norvegica* could be called common. The specimens of *V. rufa* were rather small and dark.—G. A. JAMES ROTHNEY, Pembury, Tudor Road, Upper Norwood: *November 5th*, 1904.

Aculeate Hymenoptera at Milford-on-Sea.—Mr Alfred Beaumont has been staying during the summer at the above locality, and amongst the *Hymenoptera* he has sent to me for identification I think the following three should be recorded, viz., *Prosopis masoni*, Saund., *Andrena cetti*, Schr., and *A. lucens*, Imh., as I do not think they have been noted from that district before. Mr. Beaumont tells me that he found *Anthidium manicatum* abundantly, visiting *Lamium purpureum*.—EDWARD SAUNDERS, St. Ann's, Woking: *November 2nd*, 1904.

Leptopus boopis, Fourc., in *Herm.*—A specimen of this non-British Hemipteron was captured in the Island of Herm during May of this year by Mr. E. D. Marquand. The exact locality was not noted at the time, but it was most likely taken from

under a stone on the sandy common at the north end of the island. Not finding it described or figured in "The Hemiptera-Heteroptera of the British Islands," I sent it to Mr. Edward Saunders, who has kindly named it as above.—W. A. LUFF, Brook Road, Guernsey: *October 18th, 1904.*

[This seems to me to be a very interesting capture, as its recorded distribution in Europe does not reach nearly such a high latitude as that of Jersey.—E. SAUNDERS.]

Hymenoptera-Aculeata and Chrysididæ new to Guernsey.—The following species were taken by Mr. E. D. Marquand on L'Ancrese Common, Guernsey, during August of this year:—*Pompilus plumbeus*, *Ammophila hirsuta*, *Prosopis brevicornis*, new to Guernsey, and *Halictus zonulus*, Smith, new to the Channel Islands. Two Chrysidids, *Hedychridium integrum* and *Elampus auratus* were taken in a sandpit. The Aculeata were determined by Mr. E. Saunders, and the Chrysidids by the Rev. F. D. Morice.—ID.

Note on Tettix kiefferi, Sauley.—This species very closely resembles *T. bipunctatus*, and is probably often confounded with it. The difference, as set forth by Azam (Misc. ent., 1901, vol. ix, p. 60), consists in the longer posterior femora, the somewhat stouter antennæ, and absence of the lateral spots of the pronotum. There is also a variety with fully developed wings and longer pronotum. According to Azam, this *Tettix* prefers flinty soils, and is widely distributed in Brittany, the Hautes Pyrenees, Sologne, and the Vosges. Entomologists would therefore do well to examine carefully all the specimens of *Tettix bipunctatus* in their collections, as it is quite possible that this form occurs in Britain, though it is perhaps doubtful whether it is a good species.—MALCOLM BURR, Royal Societies' Club, St. James's Street, S.W.: *October 31st, 1904.*

Neuronia clathrata, Kol., in Wigtonshire.—Some time ago, amongst a few insects received from Mr. J. G. Gordon, Corsemalzie, Wigtonshire, for determination, I was very pleased to find a female of this pretty Triehopteron, which had been swept from bracken in June of last year by his brother near their own home. Not only does this capture form an addition to the Scottish list, but the occurrence of the species in these Islands has hitherto been so rare that it deserves more than a passing notice.

The first authentic specimens, three in number, were taken by Chappell in Bishop's Wood, Staffordshire, in 1867 (Ent. Mo. Mag., vol. iv, p. 201), old specimens in the British Museum, from Children's collection and without locality, being very doubtfully British. Down to 1888 nothing more was recorded of the insect, the few British examples then known to exist having all come from or about the original Staffordshire locality. In the Ent. Mo. Mag., vol. xxiv, p. 173 (January, 1888), the late Mr. McLachlan wrote that he had seen two very fine examples which had been taken by Mr. Boden, a London collector, in the Tottenham Marshes some three years before. The same collector was fortunate enough to take another specimen on June 2nd of the same year. I know nothing more of the insect as a British species.

On the continent it has a wide northern and south-eastern distribution, having been recorded from Lapland, Finland, Sweden, Prussia, Switzerland, Central Russia, Austria, Carniola, and Bosnia. It is probably not common as a rule, and it occurs somewhat early in the season, about May 21st to 24th being dates on which it has been taken in Switzerland.

Mr. McLachlan, to whom I communicated Mr. Gordon's capture, was extremely interested in the matter, and in writing to me asking for a note on the subject he remarked that "Wigtownshire sounds a great deal more like its native heath than the Essex Marshes!" Mr. Gordon, and his brother Mr. R. Gordon, have been successful in their well known labours on the fauna of their country in finding many interesting insects, but few that surpass *Neuronia clathrata* in this respect, and it is to be hoped that they may yet be able to trace it to a definite locality and to find it in numbers.—KENNETH J. MORTON, 13, Blackford Road, Edinburgh: October, 1904.

Lucina fasciata in Cornwall.—While collecting in September near Padstow in North Cornwall I came across this interesting fly in fair numbers on the sandhills bordering on Harlyn Bay and Constantine Bay. Over a considerable expanse the insect was only sparingly found, but on two small areas (one in each Bay), which apparently differed in no way from the rest of the localities, as many as three at a time were taken, the insect being common at those spots. It has been recorded for Great Britain by Col. Yerbury from Porthcawl, and I have taken two on the golf links at Weston-super-Mare.—C. G. LAMB, Museum of Zoology, Cambridge: November, 1904.

Occurrence of a species of Ripersia (europæa, Newstead) new to Britain at Swanage, Dorset.—In September I sent Mr. Newstead two species of *Ripersia* from nests of *Formica fusca* on the cliffs near Swanage. One of them, *Ripersia tomlini*, Newst., was rare, but the other, *R. europæa*, Newst., was excessively abundant. Mr. Newstead described it a few years ago from specimens which I collected in Guernsey, but it has not hitherto been known from Great Britain.—B. TOMLIN, Chester: November 2nd, 1904.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY:—The opening meeting of the winter session was held in the Royal Institution, Liverpool, on Monday, October 17th, 1904, and took the form of a joint exhibitional meeting with the Manchester Entomological Society. In the unavoidable absence of the President, S. J. CAPPER, Esq., F.E.S., Mr. R. TAIT, jun., Vice-President, presided. On the Chair being taken Mr. RD. WILDING, Vice-President, extended a very cordial welcome to the visiting Society, and expressed the hope that the gathering of the two Societies would become an annual occurrence. Dr. W. E. HOYLE, M.A., D.Sc., President of the Manchester Society, in replying, heartily endorsed Mr. Wilding's suggestion.

The following additions to the Library were announced: "A Natural History of the British *Lepidoptera*," vol. iv. (1904), by J. W. Tutt, F.E.S., presented by Mr. B. H. Crabtree, F.E.S.; "The Report of the Botanist and Entomologist, Department of Agriculture, Dominion of Canada," by Jas. Fletcher, LL.D., F.L.S., presented by the Author; "The Transactions of the City of London Entomological Society, 1903;" and "The Annual Report and Proceedings, Liverpool Science Students' Association, 1903," by exchange.

A communication was read from Mr. Rd. Hancock, Handsworth, suggesting that a cabinet of Entomological Micro slides should be formed. It was unanimously resolved to adopt the suggestion, and to accept with thanks the valuable series of fifty slides accompanying his letter, to serve as a nucleus of the collection.

It was announced that the next meeting would be held in the Grosvenor Museum, Chester, on November 21st.

The following amongst other exhibits were examined: *Agrotis ashworthii*, *A. agathina*, including some beautiful red forms, and *Epunda lichenea*, all bred from Welsh larvæ. *Aplecta advena*, *Mamestra anceps*, *Xylophasia hepatica*, *Thecla pruni*, *Phorodesma bajularia*, &c., from Monkswood, Hunts, by Mr. R. Tait, jun. Bred series of *Agrotis ashworthii*, *A. lucernea*, *Epunda lichenea*, and *Boarmia repandata* from larvæ taken during the spring in North Wales; bred series of *Odontopera bidentata*, ab. *nigra* from Manchester larvæ; variable bred series of *Ypsipetes elutata* (sallow form) from Windermere, &c., by Mr. B. H. Crabtree; *Melanargia galatea* from North Hants and Dartmoor, and *Cidaria testata* from Epping and Dartmoor, &c., arranged to show the unusual size of the Dartmoor insects; the blue form of *Polyommatus ægon* from Paignton, by Mr. H. R. Sweeting, M.A.; *Noctua castanea* and the var. *neglecta* bred from Warrington larvæ; *Agrotis agathina* from Delamere larvæ; *Mamestra abjecta*, and *Cryptoblabes bistrigella*, a Phycid moth which has only been recorded five times from Lancashire and Cheshire, by Mr. J. Collins. Series of *Acidalia contiguaris* and *Larentia casciata* from North Wales; *Taniocampa opima* from Wallasey; *Leucania putrescens*, &c., from South Devon, by Mr. C. F. Johnson; *Agrotis ashworthii*, *Acidalia contiguaris*, *Anthrocera minos*, one black form and also intermediate ones, by Mr. Wm. Buckley. Three specimens of *Chrysophanus dispar*, by the Rev. E. E. Farrar. *Geometra papilionaria*, *Cidaria dotata*, *Pseudolerpna cytisaria*, *Callimorpha dominula*, &c., from Dartmoor, 1904, by Dr. P. Edwards; *Lepidoptera* by Mr. Wm. Mansbridge, F.E.S. A long series of the rare Coleopteron *Anisotoma furva*, from Crosby (1904), by Mr. R. Wilding. A series of the Central and South European earwig, *Apterygida media*, Hagenb. (*albipennis*, Meg.) of which our only former British record is by Westwood, captured near Faversham, and exhibited by Mr. A. J. Chitty, M.A. *Leucophaea surinamensis*, an exotic cockroach which has been found breeding amongst turfs at Fallowfield, Manchester, exhibited by the

Secretary on behalf of Dr. Hoyle and Mr. J. Ray Hardy. *Panchlora virescens* and *Periplaneta americana*, captured at Leyland by, and exhibited on behalf of, Mr. J. R. Charnley, F.Z.S.; *P. australasiae* from Buxton, by Mr. J. Kidson Taylor. *Labidura riparia* from Branksome (Major Robertson), and Boscombe (Mr. J. R. le B. Tomlin, M.A.); *Apterygida arachidis* from Bow, London (Mr. C. E. Bedwell); *Locusta viridissima* from Swanage (Mr. Tomlin) and Ilfracombe (Mr. W. A. Tyerman), and *Xiphidium dorsale* from the Isle of Sheppey (Mr. Tomlin), &c., were exhibited by Mr. Sopp, who also placed on view the series of very beautiful entomological Micro slides executed by Mr. Richard Hancock—E. J. B. SOPP and J. R. le B. TOMLIN, *Hon. Secretaries*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 19th, 1904.*—Professor E. B. POULTON, M.A., D.Sc., F.R.S., President, in the Chair.

Mr. Henry H. Brown, of the Procurator Fiscal's Office, and of Castleford Tower, Cupar, Fife, N.B.; Mr. George Eckford, of 3, Crescent Avenue, Plymouth; and Mr. W. Vaughan, of Denton Dene, Ealing; were elected Fellows of the Society.

Dr. T. A. Chapman exhibited a series of *Lozopera deaurana*, Peyr., bred last spring at Hyères, a species regarded as lost, or mythical, until he re-discovered it three years ago at Ile Ste. Marguerite, Cannes; he also exhibited, on behalf of Mr. Hugh Main, a specimen of *Pieris brassicæ*, symmetrically injured, probably by the girdle when in the pupal stage. Mr. G. C. Champion, specimens of *Nothorrhina muricata*, Dahlm., from Las Navas, Spain, found trapped in the earthenware cups used to collect the exuding resin on the trunks of pines. Mr. H. St. J. Donisthorpe, specimens of the rare beetle *Cis bilamellatus*, Wood, taken at Shirley on October 10th last. Mr. W. J. Lucas, a ♀ specimen of the rare dragon-fly *Agrion armatum*. Mr. W. J. Kaye, five specimens of *Dianthæcia luteago*, var. *ficklini*, from Bude, North Cornwall, taken during the first week in July, 1901, and remarked that while the typical *D. luteago* of the Continent was tolerably constant, wherever it occurred in Britain, it assumed a special local form. Professor E. B. Poulton, F.R.S., a number of specimens of the genus *Sphecodes*, and of their mimetic Tachinid fly, illustrating his remarks on Mr. Edward Saunders' recent paper on "the Aculeate Hymenoptera from the Balearic Islands and Spain." Mr. G. A. J. Rothney sent for exhibition a series of the Indian ant *Myrmecaria fodiens*, Jerdon, from the colony established in the big banyan tree in Barrackpore Park for thirty-two years; and *Monomorium salomonis*, Linn., and *Solenopsis geminata*, Fab., successfully encouraged in Madras godowns as a protection against "white ants"—termites. Mr. E. E. Green, a spider from Ceylon mimetic of some Coccinellid beetle, at present unidentified. Col. J. W. Yerbury, specimens of deer gadflies taken by him this year in Scotland, and read notes upon them.—H. ROWLAND BROWN, *Hon. Sec.*

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EXPLANATION OF PLATE.

Plate I.—See page 84.

E R R A T A.

- Page 14, line 21 from top, for "April 25th, 1902," read "April 25th, 1900."
- „ 20, „ 11 „ „ „ „ *“fucato,”* read *“fucata.”*
- „ 20, „ 14 and 20 from top, for *“medon,”* read *“medea.”*
- „ 22, „ 7 from bottom, for *“Apium,”* read *“Apion.”*
- „ 54, „ 20 „ top, „ *“cynthigerum,”* read *“cyathigerum.”*
- „ 55, „ 2 „ „ after *“than,”* insert *“those.”*
- „ 55, „ 19 „ bottom, for *“sectional,”* read *“sectorial.”*
- „ 56, „ 19 „ top, „ *“flexura,”* read *“flexure.”*
- „ 56, „ 20 „ „ „ *“vain,”* read *“vein.”*
- „ 57, „ 23 „ bottom, for *“2nd,”* read *“3rd.”*
- „ 67, „ 3 „ top, „ *“Antherophagus,”* read *“Anthophagus.”*
- „ 87, „ 15 „ bottom, „ *“quadrinacolata,”* read *“quadrinaculata.”*
- „ 91, „ 7 „ top, „ *“crota,”* read *“erota.”*
- „ 136, „ 5 „ bottom, „ *“confusion,”* read *“profusion.”*
- „ 145, „ 2 „ top, „ *“67th,”* read *“68th.”*
- „ 145, „ 4 „ „ insert after *“Born,”* *“at Smithfield and brought up.”*
- „ 180, „ 20 „ „ for *“robsoni, Tutt,”* read *“robsoni, Collins.”*
- „ 212, „ 18 „ bottom, for *“antiqua,”* read *“antica.”*
- „ 212, „ 10 „ „ „ *“Acinea,”* read *“Aciura.”*
- „ 213, „ 9 „ top „ *“Mellia,”* read *“Urellia.”*
- „ 232, „ 7 „ „ „ *“Cuester,”* read *“Cuesta.”*
- „ 233, „ 18 „ „ omit comma after Puerto.
- „ 233, „ 7 „ bottom, for *“La,”* read *“Las.”*
- „ 234, „ 7 „ „ „ *“strata,”* read *“stratum.”*

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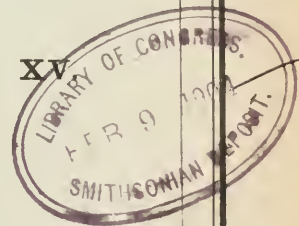
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ENTOMOLOGICAL SOCIETY OF LONDON, WEDNESDAY, FEBRUARY 3RD, 1904, at 8 p.m.

EXHIBITIONS.

Dr. D. Sharp, M.A., F.R.S., on behalf of Captain C. E. Williams, "Living Specimens of *Gonylus gonyloides*, a floral-simulating Mantis."

The Rev. Francis D. Morice, M.A., will show Lantern Slides illustrating the structure of concealed ventral segments in males of the Hymenopterous genus *Colletes*.

PAPERS.

1. "On the habits of some *Mantidæ*:" by Captain C. E. Williams, communicated by Dr. D. Sharp, M.A., F.R.S.

2. "Systematic Observations upon the *Dermatoptera*:" by Malcolm Burr, B.A., F.L.S., F.Z.S.

3. "Descriptions of new species of *Cryptinæ*, from the Khasia Hills, Assam; and a new species of *Bembex*:" by Peter Cameron, communicated by G. A. James Rothney, F.E.S.

4. "On a new species of *Heterogynis*:" by Dr. T. A. Chapman, M.D., F.Z.S.

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2. "A revision of the sub-family *Pelidnotina* of the Coleopterous family *Rutelidae*, with descriptions of New Genera and Species." By the late Frederick Bates, communicated by Gilbert J. Arrow, F.E.S.
3. "On some new species of Eastern Australian and African Moths in the British Museum." By Colonel Charles Swinhoe, M.A., F.L.S.
4. "An Entomological Excursion to Moncayo, Spain." By George Charles Champion, F.Z.S.; with "Some remarks on the habits of *Xyleborus dispar*, Fabr., by Dr. Thomas A. Chapman, M.D."
5. "Further Notes on *Hydrophilidae* belonging to the European Fanna, with descriptions of New Species." By Kenneth J. Morton, F.E.S.

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PAPER.

"Nature's Protection of Insect Life, illustrated by Colour Photography." By Frederick Enock, F.L.S.

DISCUSSION.

"On Specimens of the Dipterous Families *Stratiomyidae* to *Cyrtidae*." By Mr. G. H. Verrall, Colonel Yerbury, R.A., and others.

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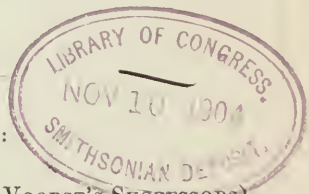
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
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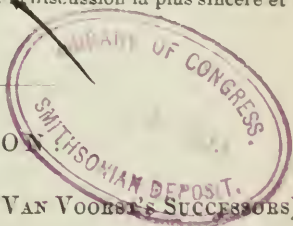
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