BRITISH ENTOMOLOGY;

BEING

ILLUSTRATIONS AND DESCRIPTIONS

OF

THE GENERA OF INSECTS

FOUND IN

GREAT BRITAIN AND IRELAND:

CONTAINING

Coloured Figures from Nature

OF THE MOST RARE AND BEAUTIFUL SPECIES, AND IN MANY INSTANCES OF THE PLANTS UPON WHICH THEY ARE FOUND.

BY

JOHN CURTIS,

FELLOW OF THE LINNEAN SOCIETY, HONORARY MEMBER OF THE ASHMOLEAN SOCIETY OF OXFORD, OF THE IMPERIAL AND ROYAL ACADEMY OF FLORENCE, OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, ETC.

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OF CLAPTON,

THIS VOLUME IS DEDICATED

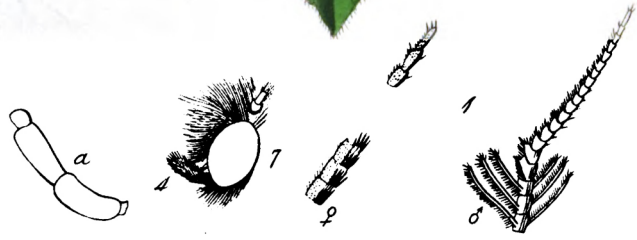
AS A TOKEN

OF THE SINCERE REGARD AND FRIENDSHIP

OF

THE AUTHOR.

London, December 1, 1838.



674.

STAUROPUS FAGI.

The Lobster Moth.

ORDER Lepidoptera. FAM. Bombycidæ.

Type of the Genus, Bombyx Fagi *Linn.*

STAUROPUS *Germ., Curt.*—Cerura *Schr.*—Harpyia *Och.*—Terasion *Hüb.*—Bombyx *Linn., Hüb., Haw., Goda.*

Antennæ inserted on each side of the crown, above the eyes, rather short, setaceous, composed of numerous short joints, clothed with scales above, bipectinated three fourths of their length, in the male (1 ♂), the apical portion ciliated internally; the rays slender and ciliated: simple in the female, bristly externally, pubescent on the inside (1 ♀, the centre and apex).

Maxillæ rudimentary only, forming 2 minute lobes.

Labial palpi porrected obliquely, rather short, slender and hairy (4), triarticulate, 2 basal joints long and stout, 3rd small and suborbicular (*a*).

Head *rather small, with* 2 *elevated rings of scales surrounding the base of the antennæ:* eyes *lateral and ovate* (7). Thorax *moderately stout, not crested.* Abdomen *linear in both sexes, with long thick woolly hairs at the apex and curving over in the female;* 3 *or* 4 *tufts of scales down the back of the basal joints, larger in the male.* Wings *very much deflexed in repose;* superior *narrow, elongate-ovate with a few raised tufts on the disc;* inferior *rather small, triangular-ovate; cilia equally long in all the wings.* Legs *short and very woolly;* tibiæ *with the hairs spreading on the sides,* 4 *posterior with a pair of short spurs at the apex:* tarsi 5-*jointed.*

Larvæ *naked, with* 6 *pectoral,* 8 *abdominal and* 2 *anal appendages, long slender and horny;* 2*nd and* 3*rd pairs of pectoral legs elongated and geniculated; apical portion of the abdomen incrassated and generally elevated in repose, as well as the head.* Pupa *inclosed in a close silken web, often between leaves.*

FAGI *Linn.—Curt. Guide, Gen.* 794. 1.

Male griseous-grey, more or less with an ochreous tint; antennæ ferruginous; 3 or 4 black tufts down the back of the abdomen: superior wings with a sinuated brown striga near the base, ochreous on the inside, another crenated one a little beyond the middle with a suffused brown space between them and 2 or 3 indistinct grey tufts; a line of black spots parallel to and approaching the cilia, slightly raised and grey internally; inferior margin with a large dull red space; inferior wings darker, with a reddish tinge, the outer portion blackish, with 2 or 3 pale ochreous lunules united transversely at the margin, and a space of the same colour near the base. *Female* more uniformly grey, wanting the red in the upper wings, in which the black spots are larger, with a raised lunule on the disc: inferior wings not darker than the superior.

STAUROPUS FAGI is a moth of rather grave colouring, yet there is an agreeable harmony in the grey tints, which are enlivened in the male by the reddish antennæ and patches on the upper wings, as well as by the tasselled black line on the body.

The masculine antennæ, which are not pectinated to the apex, induced me to place this insect next to Zeuzera, and other affinities led me to connect it with the "prominent moths," and it certainly makes a near approach to *Notodonta trepida*; Ochsenheimer however considers it so closely allied to *Cerura Vinula* that he has included them in one genus. If on the other hand we contemplate the Larva, which is one of the most extraordinary anomalies amongst insects, it will be extremely difficult to assign it to any situation, it is so totally different to every other animal of its kind; indeed so monstrous is its form that it has been called the *Lobster* caterpillar.

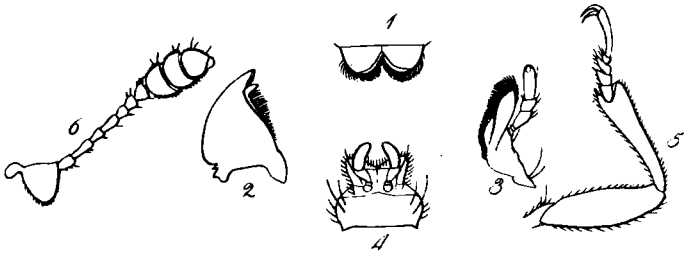
Germar, Leach, and Stephens have described the palpi as biarticulate, and in the "Illustrations" it is added that the "terminal joint is acute;" but they are distinctly *triarticulate*, and the terminal joint is *obtuse*.

A few years back this moth used to fetch as much as £5, but now it may be purchased for as many shillings, a difference arising in a great measure from the number of persons who are now engaged all over England in collecting insects for sale or exchange.

Captain Chawner, who found the Larva last summer, says in a letter to me, "When at rest I observed it assumed somewhat the attitude of the Sphingidæ, its long legs being drawn close up to the head, so as to become, comparatively speaking, scarcely apparent and perfectly free from the beech twig on which it was reposing; the whole Caterpillar was of a fawn-colour, assimilating perfectly with the tints of the half-dead beech leaves. The cocoon is of very peculiar texture, close woven and more resembling silver paper than any other material I can remember, perfectly pliant to the touch, but no doubt impervious to water."

One of the first insects I remember to have taken was a female of this moth; it was fluttering up paling under some lime trees near Norwich, the middle of June; and more than two centuries back Mouffet said the Staphylinus Caterpillar was common in Norfolk. The moth has been found from June the 15th to July the 7th at Epping, Birch and Bexley Woods; Tonbridge Wells; near Cheshunt, Herts; the New Forest; Hermitage, Dorset; near Bideford and High Bickington not uncommon, as well as in Nunnery Wood, Worcester. The males have been taken at Burghfield by the Rev. C. S. Bird, between 12 and 1 o'clock on very dark nights, by means of a lamp; they are generally smaller than the females, but Mr. Dale has one that expands three inches.

The Larva feeds on the oak, hazel, beech, lime, birch, alder, sloe, and sallows; it has been found from the 11th of August to the 18th of September. For the admirable drawing of the Caterpillar I am indebted to Mr. J. Standish, Jun.; it is placed upon a twig of the beech, *Fagus sylvatica*, the moth being named after that tree.



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675.

NITIDULA COLON.

ORDER Coleoptera. FAM. Nitidulidæ *Curt.* Necrophagi *Lat.*

Type of the Genus, Silpha grisea *Linn.*

NITIDULA *Fab., Oliv., Lat., Panz., Gyll., Curt.*—Silpha *Linn.*

Antennæ inserted on each side of the clypeus, a little longer than the head, capitate, pubescent, slightly pilose and 11-jointed, basal joint large, semiovate, being produced internally, 2nd obovate and stouter than the 3rd, which is longer than the 5 following; 4th sometimes shorter than the 5th; 6th and 7th subglobose, 8th stouter, cup-shaped, the remainder forming a stout ovate club; 9th and 10th joints bowl-shaped, 11th orbicular, a little pointed, with a gland or membrane at the apex (6).

Labrum transverse, semiovate, bilobed, being deeply notched in the centre and densely ciltated (1).

Mandibles produced, strong, elongate-trigonate, the apex furnished with 2 strong teeth, ciliated on the inside (2).

Maxillæ terminating in an elongated, ovate, densely ciliated lobe. *Palpi* not much longer, 4-jointed, basal joint minute, 2nd obovate truncate, 3rd shorter, subquadrate, 4th the longest, linear, the apex rounded and furnished with a gland (3).

Mentum transverse-ovate, the base and anterior margin straight, sides pilose. *Lip* broad, forming 2 rounded hairy lobes. *Palpi* inserted at the base, not remote, attached to small scapes, triarticulate, basal joint minute, 2nd elongate-obtrigonate, 3rd the largest, oval and a little curved (4).

Head *rather broad: clypeus narrowed:* eyes *small but often prominent.* Thorax *much broader than the head, transverse, semiorbicular, base nearly straight, the angles acute, sides margined, anterior angles often forming* 2 *trigonate lobes:* scutel *triangular.* E' *slightly convex, semielliptic, the base truncated, the apex rounded nd covering the abdomen.* Wings *ample.* Legs *rather short:* th *stoutish:* tibiæ *compressed, dilated at the apex and furnished with short spurs, the posterior with several spines at the apex:* tarsi 5-*jointed* 4 *basal joints short and hairy beneath,* 3 *first dilated and bilobed in the anterior pair in the males,* 1*st joint attached to the side, nearly concealed,* 2*nd subquadrate,* 3*rd truncated obliquely,* 4*th cup-shaped, more quadrate in the hinder pair,* 5*th very long, clavate:* claws *stout and curved* (5, *a fore leg*).

Larvæ *depressed, spiny, tapering to the apex which is furcate; pectoral feet six.*

COLON *Linn.—Curt. Guide, Gen.* 149. 11.

Thickly and minutely punctured and sparingly clothed with short depressed hairs, dark dull reddish brown; head blackish, mouth and antennæ ferruginous, club brown: thorax with several foveæ on the disc, the margins ferruginous; elytra with the basal half dark, more or less maculated with deep ochre, the apical half ochreous, bearing a dark transverse mark more or less divided. *Obs.* I have a *var.* entirely fulvous, with paler spots on the elytra.

In the Author's and other Cabinets.

NITIDULA was incorporated by Linnæus with Silpha, from which it is readily distinguished; it is nearly related to Strongylus, pl. 339, but the shape of the antennæ and trophi vary considerably, and it differs completely from Thymalus (pl. 39) in all these particulars, and especially in wanting the internal claw to the maxillæ.

There are very remarkable differences in the œconomy of this group, some living upon the pollen of the sweetest flowers, and others delighting in dead carcases, putrid Boleti and old bones. They are distributed over the whole globe, but Europe seems to be their metropolis, and England is rich in species, as will appear by the following list:

1. decemguttata *Fab.* Olivier's fig. referred to in the "Illustrations" does not agree with this species.
2. oblonga *Herb. col. v. 5. pl. 54. f. 4.*
3. pallescens *Step. 5.* 406.
4. Silacea *Herb. 5. pl. 53. f. 3.*
5. æstiva *Linn.—Oliv. v. 2. no. 12. pl. 3. f. 23.*
6. villosa *Thunb.*—depressa *Ill.*—æstiva *Fab.—Panz.* 84. 7.
7. affinis *Mars.—Ste.* 3. 40.
8. melanocephala *Mars.* 136. 22.
9. 4-pustulata *Fab.—Ste. pl.* 16. *f.* 4.—variata *Ste.* 3. 36. 10. *var.*?
10. obsoleta *Gyl.*—unicolor *Oliv. 2. pl. 2. f. 9. var.*
11. variegata *Herb. 5. pl. 54. f. 3?*
12. fuscicollis *Water.—Ste.* 5. 406.
13. impressa *Kirb.—Ste.* 3. 39.
14. pusilla *Ill.—Gyl.* 1. 227. 15.
15. truncata *Kirb.—Ste.* 3. 39.
16. rufipes *Linn.*—obscura *Fab.—Oliv. 2. pl.* 1. *f.* 3.
17. bipustulata *Linn.—Panz.* 3. 10.
18. pygmæa *Gyl.* 1. 225. 13.
19. limbata *Fab.—Oliv. 2. pl.* 3. *f.* 18.
20. rufomarginata *Dav.—Ste.* 3. 41.
21. discoidea *Fab.—Panz.* 83. 5.—*Sam. pl. 2. f. 5.*
22. Colon *Linn.—Curt. B. E. pl.* 675.—hæmorrhoidalis *Fab. var.*
23. depressa *Linn.*—sordida *Fab.*—varia *Oliv. pl. 2. f.* 10.
24. grisea *Linn.—Trans. Linn. Soc. v.* 1. *pl. 5. f.* 6—11. varia *Fab.—Panz.* 105. 2.
25. punctatissima *Panz.* 25. 7.
26. marginata *Fab.*—biloba *Panz.* 35. 10.

The Plant is *Pyrethrum Parthenium*, Common Feverfew.

676.

LEDRA AURITA.

ORDER Homoptera. FAM. Cercopidæ.

Type of the Genus, Cicada aurita *Linn.*

LEDRA *Fab., Lat., Leach, Curt.*—Membracis *Oliv., Lam.*—Cicada *Linn., Geof.*

Antennæ inserted in small cavities before the eyes, but under the projecting forehead (1); short small and 5-jointed, 2 basal joints stout, somewhat ovate, 3rd and 4th small, of similar shape, 5th a long seta (4).

Rostrum very short and rather stout, passing horizontally between the anterior coxæ and then becoming perpendicular (2).

Labrum rather large, elongate-ovate, the apex acuminated (3).

Mandibles and *Maxillæ* short and setiform.

Labium short and stout, biarticulate, basal joint oblong, 2nd shorter more ovate and hairy (2 *).

Head *not broader than the thorax, the crown sublunate, the margin thin, sharp and projecting over the face, which is horizontal, quite flat or concave, broad and lozenge-shaped* (1): eyes *lateral, prominent, sublunate and close to the thorax:* ocelli 2, *placed on the disc of the crown, rather remote.* Thorax *large, subquadrate, convex, the sides producing* 2 *large, nearly erect rounded lobes:* scutel *large, trigonate, the base convex.* Wings *deflexed in repose, superior large, somewhat elliptical, coriaceous and reticulated:* inferior *ample and membranous, with several longitudinal nervures.* Abdomen *short stout and somewhat conical:* ovipositor *long and stout.* Legs *short, hinder formed for leaping:* thighs *short:* tibiæ *short, angulated and pubescent; hinder long, with the outer margin dilated and serrated towards the apex:* tarsi *short and triarticulate, basal joint the shortest in the anterior, 2nd the shortest in the posterior:* claws *dilated at the base, the apex horny and acute* (6, *a fore,* 6 † *a hind leg*).

AURITA *Linn.—Curt. Guide, Gen.* 1063. 1.

Dull olive-green; head covered with small reddish tubercles, having 3 elevated longitudinal lines: thorax with an erect semioval lobe on each side, the margin crenated and ferruginous; apex of scutel and back of abdomen more or less ferruginous: elytra green with numerous punctures forming a crowded reticulation at the base, the apex subhyaline, nervures more or less brown; inferior wings pale fuscous, the nervures brown, and sometimes a portion of the wings next the abdomen; tibiæ, especially the hinder, dotted with black.

In the Author's and other Cabinets.

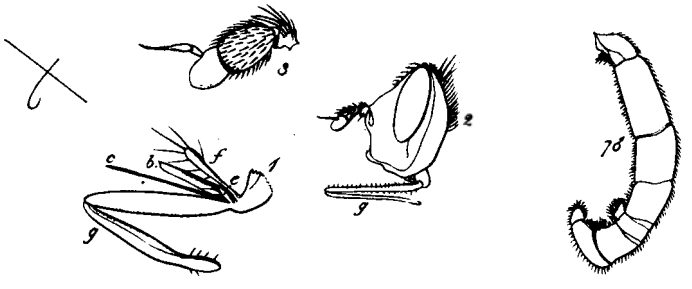
Of all the strange forms we meet with in the Insect world, there are none more singular and grotesque than those which are to be found in the groups allied to the insect before us. Ledra even is remarkable for its shovel-head and two ear-shaped appendages on its back; characters which readily distinguish it from Cercopis (pl. 461), a genus which Latreille placed next to it; and from the Membraces, of which Ceutrotus forms a part, it is separated by its simply truncated thorax, which is elongated into a tail in the Membraces (vide pl. 313.).

Our species is the only one of the genus, I believe, and it is by no means a common insect: Mr. Samouelle states that they "inhabit the oak and various trees in woods." I have generally found them upon oaks in June and July, but only in Darent Wood. Mr. Dale has met with it I believe in Hampshire, and I have a pupa that he gave me which considerably resembles the perfect insect in colour and the form of the head, but the auriculate lobes are not developed, they are merely indicated by 2 raised carinæ; the elytra are short and applied close to the sides; and the abdomen is somewhat depressed, with the margin round the apex dilated, crenated, thin, and horny.

Whether these insects live in their early stages in the frothy secretions that envelop those of kindred genera I am ignorant, being unacquainted with their œconomy.

The perfect insect is represented of its natural size at fig. N with its wings closed, and in Kirby and Spence's Introduction to Entomology there is a coloured figure of it in a similar position.

The Plant is *Centaurea Calcitrapa*, Common Star Thistle.



677.

MYOPA FULVIPES.

ORDER Diptera. FAM. Conopsidæ.

Type of the Genus, Conops buccata *Linn.*

MYOPA *Fab., Meig., Macq., Curt.*—Stomoxys *Fab.*—Asilus *Geoff.*—Conops *Linn.*

Antennæ attached to a prominence at the upper part of the face, short, porrected, approximating at the base, 5-jointed, basal joint short, cup-shaped, and very bristly above, 2nd the largest, obovate and bristly, sometimes more elongated and clavate, 3rd much smaller, subovate or globose, 4th inserted on the back of the 3rd, somewhat elongate-ovate, 5th a short stout seta, indistinctly pubescent (3).

Trophi, excepting the Palpi, concealed in the labium.

Labrum half as long as the 1st joint of the labium, stout, hollow and horny (1 *b*).

Tongue much longer, very slender, and acute (*c*).

Maxillæ? very short, subovate, attached nearer to the base of the labrum than of the palpi (*e*).

Palpi as long as the labrum, clavate, pubescent, with a few very long bristles (*f*).

Labium horny, filiform, geniculated near the base and middle, basal joint long stout and hollow above, 2nd as long and bent close under the 1st in repose, and terminated by 2 long ovate lobes, with a few hairs on the sides (*g*).

Head *rather large, crown subtrigonate, the forehead narrow and declining,* face *orbicular, the cheeks prominent;* clypeus *concave* (2 *the profile*): eyes *oval, placed on each side of the crown, not large but naked:* ocelli 3, *minute, forming a compact triangle on the crown.* Thorax *as broad as the head, subquadrate, the angles gibbose:* scutel *transverse, semiovate.* Abdomen *appearing more or less ovate above, but actually elongated and attenuated, a large portion of the apex being incurved, with a strong process on the underside of the 5th joint in the male* (7 ♂ *the profile*). Wings *ample, incumbent and parallel, the 1st posterior cell open at the apex:* halteres *capitate.* Legs *nearly equal, short and stout:* thighs *thick:* tibiæ *compressed, a little curved:* tarsi *depressed, 5-jointed, basal joint oblong, 3 following more or less bilobed, 5th short, pyriform:* claws *strong, curved:* pulvilli *large, bilobed.*

FULVIPES *Desvoidy.—Curt. Guide, Gen.* 1264. 9.

In the Author's Cabinet.

MYOPA is a pretty genus allied to Conops (pl. 377), from which however it is very distinct: the 1st posterior cell being open in the former and pedicled at the apex in the latter group, the antennæ are much longer and very differently formed in Conops, and the labium is only geniculated near the base.

The Myopæ are fond of flowers, and the following species are natives of our islands.

* *2nd joint of the antennæ stouter and a little longer than the 3rd.*

1. picta *Panz.* 54. 22.
   In Edinburgh botanic-garden, Mr. James Duncan; and in the vicinity of London.
2. buccata *Linn.*
   May and June, hedges, Suffolk, J. C.
3. testacea *Linn.*—buccata *Panz.* 12. 24?
   May, Coomb Wood, on umbelliferæ; Norfolk, Cambridge, Edinburgh, and Holywood near Belfast.
4. dorsalis *Fab.*—ferruginea *Panz.* 22. 24.
   May, July and August, hedges, round London.
5. ferruginea *Linn.*—*Meig. v.* 4. *pl.* 37. *f.* 11. *&* 12.
   End of June Darent, and July near Thetford, J. C.; the North and West of England, Edinburgh and Ireland.
6. fasciata *Meig.*—ephippium *Fab.*
   I took one the end of August on the hills near Ramsdown, Hants, and Mr. Haliday found another near Kenmare.

6[b]. occulata *Wied.* I do not remember on whose authority this has been admitted as British.

** *2nd joint of antennæ not stouter, but twice as long as the 3rd.*

7. atra *Fab.*—*Panz.* 12. 23.—annulata *Fab.*—femorata *Fab.*—cinerascens *Meig.*—maculata *Meig.*—micans *Meig. Klass. vars.*
   August, on flowers near Ventnor in the Isle of Wight; Bourne-mouth, Hants, and Dover, J. C.; sunny banks Ireland, Mr. Haliday, and near Edinburgh, Mr. Duncan.
8. pusilla *Meg.*
   Found near London.
9. fulvipes *Desv.*—*Curt. Brit. Ent. pl.* 677. ♂.
   Ash-colour, sericeous, 2nd joint of antennæ long clavate and ochreous beneath, 3rd ferruginous inside at the base, 4th joint minute; crown of head ferruginous, blackish at the base; face satiny-white with a narrow shining white margin to the eyes: thorax with a black central stripe and 2 lateral triangular ones: abdomen transversely rugose with reflected lights, the apex and scutel shining black: wings very pale fuscous with a yellow tint, brightest and deepest at the costa, nervures brown: halteres yellowish-white: legs dark ochreous, clothed with black hairs: thighs brownish outside: anterior coxæ and tibiæ satiny-white outside, hinder tibiæ brown near the base and at the apex; tarsi black; pulvilli ochreous.
   The specimen figured I found the 9th of August in the Isle of Bute, not far from Loch Fad.

The Plant is *Lepidium campestre*, var. glabra, Mithridate Mustard, communicated last July from Ryde by Dr. Bromfield.

678.

ORCHESTES WALTONI.

ORDER Coleoptera. FAM. Curculionidæ.

Type of the Genus, Curculio Alni *Linn.*

ORCHESTES *Ill., Oliv., Schö., Curt.*—Salius *Schr., Germ.*—Rhynchænus *Fab., Gyl.*—Curculio *Linn., Mars.*

Antennæ generally as long as the rostrum, and inserted in a cavity on each side (7), more or less removed from the eyes, sometimes near the centre, geniculated, capitate, pilose and 11-jointed, basal joint stout, sometimes long and clavate, 2nd half as long, thick and clavate, 3rd rather shorter, slender and clavate, 4th oblong, 3 following obovate, the 7th being stouter and more globose, the remainder forming a pubescent ovate-conic club, composed of 4 joints, 1st cup-shaped, 2nd as large, 3rd short, 4th small and semiovate (6).

Mandibles subtrigonate and tridentate, the upper tooth generally the smallest, the lower one sometimes rounded (2).

Maxillæ short and narrow, densely ciliated internally. *Palpi* very short, slender and triarticulate (3).

Mentum long. *Lip* suborbicular. *Palpi* minute biarticulate (4).

Head *small*; rostrum *inflected, elongated, stout, curved, subcylindric* (7 * *profile*): eyes *large, globose, generally approximating in front* (7). Thorax *ovate, the base bisinuated*: scutel *very minute*. Elytra *often twice as broad as the thorax, elongate-ovate, shoulders prominent*. Wings *ample*. Legs, *anterior approximating, hinder formed for leaping*: thighs *stout, 4 anterior with a minute tooth beneath, hinder greatly incrassated, ovate-conic, the margin beneath from the end to the apex denticulated and bristly*: tibiæ, *anterior clavate, with a minute claw at the apex, intermediate pectinated externally towards the apex, with a claw also* (5 *); *hinder doubly pectinated towards the apex and truncated obliquely* (5 †): tarsi 4-*jointed, hairy beneath, basal joint elongate clavate, 2nd shorter somewhat obtrigonate, 3rd broad and bilobed, 4th as long as the 1st, slender and clavate*: claws *curved, acute, with a tooth near the base.*

WALTONI *Curt.—Guide, Gen.* 351.

Black clothed with short yellowish hairs; head and thorax thickly punctured; rostrum reaching to the anterior coxæ; eyes approximating; antennæ inserted near the base of the rostrum (7 and 7 *) ferruginous, club piceous at the apex, basal joint obovate, stouter but not longer than the 2nd: funiculus 6-jointed; elytra with 8 punctured furrows on each and minute punctures between them; hinder thighs alone angulated beneath and furnished with a few short bristles; tarsi ferruginous, piceous at the apex.

In the Cabinets of Mr. Walton and the Author.

MINUTE as these insects are, they have the power by the combined action of myriads to destroy the verdure of the finest groves, and to give an autumnal tint even in the commencement of summer to the green woods which they assail.

In 1832 Lord Farnham informed me that the Beech trees on his estate in Cavan, Ireland, had for the last 3 or 4 years suffered, not only in appearance, from the leaves being partially blighted by a species of these insects (*O. Fagi*) in June and the beginning of July, when they assumed an autumnal appearance, but the general health of the trees seemed to be considerably impaired. It appeared that on the bud opening it was immediately occupied by the Orchestes, which perforated the leaves, and to so great an extent that scarcely a tree escaped.

On the 10th of June in the previous year, in a ramble through the New Forest, I observed the leaves of the trees looked very brown, and those of the Beech were quite blistered, which I at first attributed to the severe frost we had in the morning of the 6th of May; but on examining them I found a larva was inclosed in each leaf, which in a short time changed to *O. Fagi*; so that at the period Lord Farnham observed it in Ireland, this beetle seemed to have been equally abundant in England.

The Elm is equally subject to the attacks of another species, which is named, but somewhat improperly, *O. Alni.* A lady sent me some specimens from larvæ she detected in the leaves of the Elm the end of May and beginning of June; they blistered the leaves from feeding on the parenchyma in a similar way to the other species, and the beetles hatched in June.

Schönherr has given the following sections in Orchestes, and 21 species are recorded in the Guide.

1. *Posterior femora denticulated.*

1. Alni *Linn.*—*Don. Brit. Ins. v.* 7. *pl.* 249. *f.* 2.

9[b]. Waltoni *Curt. Brit. Ent. pl.* 678. This undescribed species was found near Knaresborough by J. Walton, Esq., whose laborious investigation of the Apions and other Curculionidæ entitle him to the thanks of all entomologists. Several specimens were swept off herbage on the sides of ditches the beginning of last September.

2. *Posterior thighs unarmed.*

11. Salicis *Linn.*—Avellanæ *Don. B. I. v.* 6. *pl.* 205. *f.* 3.

3. Tachyerges Schö. *Funiculus* 7-*jointed: thighs always simple.*

15. Capreæ *Fab.*—*Don.* 4. 121. *f.* 5. 6. 7.—bifasciatus *Fab.*

Schönherr in his characters of this genus does not notice the singular pectination of the tibiæ, and he says the apex is *not* uncinated. It appears from his work that great confusion has been made in the "Illustrations," several species being placed under the wrong divisions; for instance, Mr. Stephens's *Orchestes decoratus* is a *Tachyerges*, and his *T. Salicis* and *Populi* are *not Tachyerges.* Many of the synonyms also are incorrect and consequently mislead.

The Plant is *Veronica montana*, Mountain Speedwell, communicated by Dr. Bromfield.

Published by S. Curtis Feb. 1. 1800.

679.

ACROLEPIA BETULELLA.

The Durham Tinea.

ORDER Lepidoptera. FAM. Tineidæ.

Type of the Genus, Acrolepia autumnitella *Curt.*

ACROLEPIA *Curt.*

Antennæ inserted in front of the head, close to the eyes, remote, rather short and capillary, not so long as the body, composed of numerous joints clothed with scales above (1), basal joint stout and ovate.

Maxillæ nearly as long as the antennæ, very slender and spiral, without tentacula at the apex (3). *Palpi* distinct (7 * *a*), incurved, slightly scaly, rather short, slender and triarticulate, basal joint obovate, 2nd subglobose, 3rd long, slender, subfusiform, the apex producing a pencil of scales (3 *a*).

Labial palpi long, divaricating and recurved, clothed with short scales, tapering and triarticulate, basal joint elongate-clavate, 2nd longer and linear, 3rd very long, slightly curved and tapering to a point (4 and 4 *a*).

Head *small and globose, covered with broad depressed scales with a few coarse hairy ones at the back of the head* (7 *front view*, 7 * *the profile*): eyes *hemispherical, neither large nor prominent.* Thorax *small.* Abdomen *slender, not short, tapering, a little tufted at the apex in the males.* Wings *very much deflexed in repose* (N), *with the apex raised,* superior *elongated, sublinear, the apex rounded;* cilia *short and regular:* inferior *lanceolate, nearly as broad as the superior;* cilia *long.* Thighs *short:* tibiæ, *anterior with a long slender internal spine, the others spurred at the apex, hinder long, clothed only with short scales, with a pair of spurs also above the middle, one of them very long* (8 †): tarsi 5-*jointed, basal joint long:* claws *and* pulvilli *minute.*

Larvæ *and* metamorphoses *unknown.*

BETULELLA *Curt.*—*Gen.* 1031[b].

Ochreous-brown; antennæ white spotted with black; palpi whitish, fuscous outside; head and thorax subferruginous; superior wings slightly clouded, with a few indistinct pale spots on the costa, sparingly freckled with black and whitish dots, interior margin with several minute cream-coloured dots with dark margins, and a large somewhat ovate or trigonate cream-coloured spot at the centre, margined with black and bearing 1 or 2 black lines; cilia ferruginous, with a yellowish spot above the middle; inferior wings grey, the cilia with an ochreous tinge: abdomen and legs fuscous, the latter spotted with yellowish white.

In the Cabinet of Mr. Dale.

Although these little moths are allied to the genuine Tineæ, the form and short cilia of the superior wings give them in repose a considerable resemblance to some few of the Tortricidæ; the shape however of the inferior wings, the slender and recurved labial palpi, and the well-developed maxillary palpi, at once indicate the tribe to which they belong. The natural affinity of this group seems to be the restricted genus Tinea (fol. 511), from which it is readily distinguished by its smooth scaly head, from whence I have given it the generic name of *Acrolepia*. These moths are not included in my Guide*, where they will range either before *Euplocamus* or after *Tinea*.

1. A. autumnitella *Curt.*

Ochreous-brown; antennæ black with white rings; head and thorax with a purplish lustre; superior wings mottled with brown, a large semiovate blackish spot at the middle of the costa, an elongated one towards the posterior margin and numerous black dots over the whole surface as well as scattered white scales; a trigonate cream-coloured spot at the middle of the interior margin, and one or two lines of the same nearer the base, all broken by brown dots: cilia ochreous at the base, with a yellowish spot at the middle: abdomen and inferior wings fuscous, the wings pale at the base, the legs darker with whitish spots.

This moth first attracted my notice on the window of a garden-house at Glanville's Wootton in October, and I have since met with it there in November; Mr. Dale finds it also in his garden, where it has appeared as early as the middle of August.

2. Betulatella *Curt. Brit. Ent. pl.* 679. ♂.

This species Mr. Dale discovered the beginning of last August on Birch trees at Castle Eden Dene.

The Plant is *Orchis tephrosanthos*, Monkey Orchis, from Hartlock Wood, for which I am indebted to the Rev. P. Hansell of Oxford.

* Having stated in a note to the Preface of that Work that my British Collection contained 9500 species, it is necessary to observe that in consequence of some of the largest tribes having been recently described, it was impossible for me to examine and identify my specimens in time to add *s to all those I possess: as these amount to many hundreds, it may appear to some persons that I have overrated my Collection; such however is not the case, for my *British species*, which have been counted, amount at this time very nearly to 10,000. As the genus Crabro is the next subject, I may instance that as an example of the omissions of *s, for I possess 23 species, although 13 only are marked in the Guide, and of Alysia also I find that I have 17 species, yet 4 only have a * attached to them.

680.

CRABRO SUBPUNCTATUS.

ORDER Hymenoptera. FAM. Crabronidæ.

Type of the Genus, Sphex cribraria *Linn.*

CRABRO *Fab., Panz., Van. Lind., Shuck., Curt.*—Pemphredon *Fab.*

Antennæ inserted towards the bottom of the face at the base of the clypeus, approximating, a little longer than the head, geniculated, fusiform and 13-jointed in the male (1 ♂), basal joint stout, elongate obovate, hairy at the back, 2nd small, cup-shaped, 5 following dilated, 3rd semiovate, the following transverse, 8th, 9th and 10th narrower, serrated, the following slender subovate: filiform and 12-jointed in the female (1 ♀), basal joint long, rather stout, sublinear and hairy, 2nd ovate-truncate, 3rd much longer than any of the following which are oblong, a little thickened and truncated obliquely, apical joint longer and subconic.

Labrum attached under the clypeus, transverse, very short, forming a depressed triangle, the centre emarginate, ciliated and fringed with long hairs (2).

Mandibles long, crossing, a little curved, sublinear, the apex cleft, forming 2 broad rounded teeth (3).

Maxillæ short, terminating in a large concavo-convex ciliated lobe. *Palpi* short, pubescent and 6-jointed, basal joint a little longer than the 2nd, which is ovate-truncate, slender and clavate, 3rd, 4th and 5th rather thick and a little cleaver-shaped, 4th the longest, 6th slender, subelliptic and at least as long as the 4th (4).

Mentum obconical. *Lip* very short, fleshy and pilose in the female (5), as long as the palpi and semicylindrical in the male (♂). *Palpi* short pubescent and 4-jointed, basal joint clavate, 2nd and 3rd somewhat obtrigonate, 4th small and ovate (5).

Head *large and broad*; face *transverse-oval*: eyes *large ovate, remote above, approximating below*: ocelli 3 *in triangle on the crown*. Thorax *as broad as the head, obovate*, collar *narrow, the angles acuminated*: scutel *transverse, semiovate*. Abdomen *very narrow at the base, as long as the head and thorax, ovate-lanceolate, 7-jointed in the male, 6-jointed in the female*. Wings *with* 1 *marginal cell, pedicled at the apex, and* 1 *submarginal*. Legs *short and stout*: thighs *stout*: tibiæ *short, spinose outside, with long spurs at the apex*: tarsi *as long as the tibiæ, slender, 5-jointed, externally spinose in the female, basal joint elongated, 3 following obtrigonate, 5th stout, elongate-clavate*: claws *short, acute*: anterior legs *patelliform in the male* (8); coxæ *stout* (*c*); trochanters *oblong* (*d*); thigh *with a minute spine at the base and a large dilated tooth on the outside* (*f*), *trigonate at the apex*; tibia *with a spur at the apex, and a large horny bowl-shaped dilatation on the outside, with transparent dots* (*l*); tarsus *short and thick, basal joint obtrigonate, 5 following saucer-shaped* (*t*); claws *very unequal, one small the other stout, curved and hooked at the base* (*u*).

SUBPUNCTATUS *Rossi.—Curt. Guide, Gen.* 683. 18.—4-maculatus *Fab.* ♂.

In the Author's and other Cabinets.

Crabro is a group of fossorial insects varying so much in structure, that MM. St. Fargeau and Brullé have formed them into 11 genera, the English types of which I shall subjoin, referring to the 3rd vol. of the Ann. de la Soc. Ent. for their characters. Mr. Shuckard has given a very able synoptic table, as well as elaborate descriptions of the species, a list of which will be found in the Guide. I wish to observe that the pellucid spots on the spoon of the masculine fore-legs are covered with a membrane, and it will be seen by the dissections of the trophi that there are ample grounds for establishing the genus *Rhopalum*. These insects are often found upon umbellatæ, and some of them undergo their metamorphoses in decayed trees. Latreille says that *C. cribrarius* provides for its larvæ with a *Pyralis* (Tortrix) that lives upon the oak: other females nourish them with Diptera.

Crabro. 6. cephalotes *Fab.*

12ᵇ. varus *Curt.*—comptus *St. Farg.*? *v.* 3. *p.* 705. 8.

Male black, minutely punctured and hairy: antennæ 13-jointed, with the 3rd and 4th joints dentate, scape yellow beneath, clypeus and inner margin of eyes silvery; crown convex: metathorax rugose: abdomen with 5 yellow spots on each side, the 1st pair, which is the largest, being on the 2nd segment; those on the 6th are united: legs black, anterior thighs with a yellow streak beneath in the anterior, the others with a spot at the apex; tibiæ black, intermediate slender and crooked, the others yellow outside; tarsi yellow, hinder brown, apical joint blackish: length 3 lines.

I took a male at Horning in Norfolk the 24th of June, and Mr. Shuckard has 2 from Scotland. The small size and crooked slender and black intermediate tibiæ, distinguish it from *C. Xylurgus*.

Solenius. 19. vagus *Linn.*—*Panz.* 46. 10. ♀.

Blepharipus. 23. dimidiatus *Fab.*—signatus *Pz.* 43. 15 ♀.

Ceratocolus. 13. striatus *St. Farg.*—Lindenius *Shuck.*?

Thyreopus. 4. cribrarius *Linn.*—*Pz.* 15.19 ♀.—palmatus *Pz.* 46. 3 ♂.

Thyreus. 1. vexillatus *Pz.* 46. 5.—clypeatus *Fab.*

Crossocerus. 2. scutatus *Fab.*—*Pz.* 15. 22. ♂.

18. subpunctatus *Rossi.*—*Curt. B. E. pl.* 680 ♀.

Male black, finely punctured; antennæ ciliated, base and tip of scape ochreous; mandibles castaneous at the centre; clypeus white with hair; metathorax with a shining cordiform space; 2nd and 3rd joints of abdomen with a large yellow spot on each side, 6th with 3 small yellow spots connected at the base: legs ochreous, yellow outside; anterior thighs black on one side, hinder legs black, the tibiæ with a yellow patch at the base, spurs ochreous. *Female* with 2 yellow spots on the collar: 5th segment of abdomen with a large yellow round spot; *var.* with a yellow streak behind the scutel and a sinuated one on the basal joint of abdomen, with broad yellow bands on the 3 following, the 5th joint entirely yellow.

Lindenius. 37. albilabris *Fab.*—leucostoma *Pz.* 15. 24.

Dasyproctus is an African genus, and Corynopus and Physoscelus form the genus *Rhopalum* of Brit. Ent. fol. 656.

Carum verticillatum, Whorled Caraway, from Newby Cross, was communicated by T. C. Heysham, Esq.

681.

HYDRŒSSA PYGMÆA.

ORDER Hemiptera. FAM. Hydrometidæ.

Type of the Genus, Velia pygmæa *Duf.*

HYDRŒSSA *Burm.*—Microvelia *Westw.*—Velia *Dufour.*

Antennæ inserted before and near to the eyes, on each side of the head, as long as the thorax, pubescent and pilose, geniculated and 5-jointed, basal joint long and nearly linear, 2nd rather shorter and clavate, 3rd minute obovate, 4th not longer than the 2nd and much more slender, 5th the longest sublanceolate (4).

Rostrum bent under the head, reaching the anterior coxæ (2).

Mandibles and *Maxillæ* setiform.

Labium stout and attenuated, composed of 3 joints, 1st short and broad, partly concealed under the clypeus, 2nd the longest, attenuated, 3rd very much shorter, slender and conical at the apex (2 *).

Head *ovate, the crown convex* (1, *the profile*): eyes *lateral, globose and prominent.* Thorax *much broader than the head, concave and narrowed before, the sides dilated and angulated, the hinder portion trigonate:* scutel *none?* Abdomen *rather short and linear in the male, the sides reflexed and the apex slightly emarginate, with a small lobe in the centre; ovate in the female, with the apex rounded.* Wings *decumbent in repose, superior elongate-ovate, narrowed at the base, with 6 indistinct cells formed by large nervures not touching the margins; inferior wings shorter, broader, and somewhat ovate, and exceedingly delicate.* Legs *equal:* thighs *simple sublinear:* tibiæ *short, simple and slightly clavate:* tarsi *short, especially the anterior, which are also a little the thickest, biarticulate, basal joint very small in the anterior* (6 *), *2nd elongated, the apex projecting in a lobe over the* claws, *which are slender and curved; in the other feet the basal joint is nearly as long as the 2nd* (†, *a hind leg*).

PYGMÆA *Dufr.—Curt. Gen.* 1081[b].

Velvety olive-brown: margins of eyes and underside shining with white pile: head and thorax with a faint ridge down the back, an ochreous band on the collar, divided in the middle and appearing in some lights whitish: abdomen dead black, excepting 2 shining lines at the base and a few spots down the middle: elytra white at the base, with 5 or 6 ochreous spots on the cells, 2 elongated ones towards the base, a large one on the disc bearing a longitudinal curved brown line, 2 large roundish spots above, one nearly apical, and 2 lines near the inferior margin: wings yellowish white and slightly iridescent, with 2 short brown basal nervures: base of antennæ and of thighs bright ochreous.

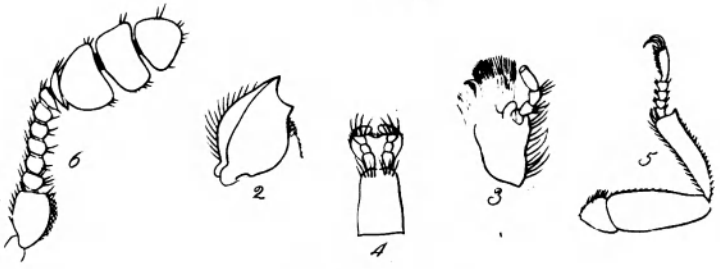
In the Cabinets of Mr. Haliday and the Author.

The family to which this insect belongs is remarkable for the large portion of individuals that appear without wings, which has led to a variety of opinions. The questions hitherto have been whether the apterous specimens of *Velia*, *Hydrometra*, and *Gerris* were perfect insects or pupæ, and if perfect, whether they were distinct species from the winged examples. I shall now add another question, Do they not undergo, like the Ephemeridæ, 4 metamorphoses? in which case the apterous would be the penultimate state of the winged species. That they are not in the imago state I should argue from the great variation in the thorax, which is generally less developed and sometimes very different in form to the winged specimens; and that they are not pupæ may be inferred from their being frequently found paired, and having no rudimentary wings. From a belief that the apterous specimens were not pupæ, I stated on a former occasion that they probably were distinct species (vide folios 2, 32, and 553), but from subsequent considerations I think it probable they may be in that state which I have termed Pseudimago in my memoir on the Ephemeridæ and Phryganidæ.

My friend Mr. Haliday has been the first to detect *Hydræssa pygmæa* in our Islands; he says, "They were taken in a marsh near Belfast in June and September; they move on the water more slowly than *Velia*, mostly among aquatic plants: the females seem more numerous than the males, and the winged specimens are very rare." I may add that these are a little the largest, and the apterous males and females differ materially in size but not in habit; the males are much smaller than our little figure ♀, and the females, the magnified appearance of which is given in outline, are as large as the little figure just referred to: they have a whitish sericeous band on the fore part of the thorax divided at the middle, and 2 spots near the base and the abdominal segments are of the same hue, excepting down the back; the legs are coloured like the winged specimens. In the males the white pile is not so evident.

Mons. Léon Dufour first noticed this pretty little insect on shady stagnant water round Saint Sever in Landes, and described it in the 2nd vol. of the Ann. de la Soc. Ent. de France: he found some hundreds of specimens, but only 2 or 3 with wings.

For specimens of the beautiful Fringed Bogbean, *Menyanthes* (*Villarsia*) *nymphoides*, I am indebted to Albert Kennedy, Esq., who gathered them by Woodford Bridge.



682.

DERMESTES LARDARIUS.

ORDER Coleoptera. FAM. Dermestidæ.

Type of the Genus, Dermestes lardarius *Linn.*

DERMESTES *Linn., Fab., Lat., Gyll., Curt.*

Antennæ inserted before the eyes on each side of the clypeus, a little longer than the head, capitate, pilose, 11-jointed, basal joint rather stout, subpyriform, 5 following slender, subglobose, 7th and 8th somewhat saucer-shaped, the latter the broadest, the remainder forming a broad compressed club, most produced on the inside, 9th joint the largest, semiorbicular, 10th nearly as large and similar in form, 11th smaller and somewhat orbicular-ovate (6).

Labrum projecting from under the clypeus, with a broad short membrane at the base, transverse, emarginate in the centre, pubescent and hairy (1).

Mandibles short and thick, broad and emarginate at the apex, forming 2 short acute teeth, pubescent and membranous inside (2).

Maxillæ terminated by a longish, densely pubescent lobe, with a smaller one inside, furnished with a strong short hook. *Palpi* short filiform and 4-jointed, basal joint short, 2nd and 3rd somewhat obconic-truncate, with a few bristles outside, 4th longer elliptical and truncated (3).

Mentum oblong, rounded and pilose before. *Labium* rather large and cordate, the margin ciliated. *Palpi* triarticulate, attached to large scapes at the base of the lip, basal joint small oval, 2nd stouter, obovate-truncate, the apex bristly, 3rd joint the longest, incurved, ovate (4).

Head *nutant, small and ovate*; clypeus *narrowed*: eyes *small globose and prominent*. Thorax *semiovate, convex, anterior margin concave, posterior convex or slightly bisinuated, sides with a fine margin*: antepectus *not advancing to the mouth*: scutel *rather moderate, trigonate*. Elytra *elliptical, convex, thrice as long as the thorax*. Wings *ample*. Legs *moderate, anterior the shortest*: thighs *thickish*: tibiæ *compressed, with short rigid bristles outside, apex truncated, with a short curved tooth at the interior angle of the anterior, the others with small spurs*: tarsi *slender, 5-jointed, very pubescent beneath, the 4 basal joints short in all the feet, 5th longer and clavate*: claws *strong, curved and forming a tooth at the base* (5, *a fore leg*).

LARDARIUS *Linn.—Curt. Guide, Gen.* 291. 3.

Brownish-black, clothed with short depressed pubescence, thickly and minutely punctured: antennæ castaneous, club ferruginous, hairs on the face ochreous: thorax with ochreous spots formed of hairs, basal half of elytra castaneous, densely clothed with ochreous pubescence, leaving the base and a transverse line of spots naked and castaneous: legs piceous.

In the Author's and other Cabinets.

IN more southern latitudes the larvæ of these insects commit great ravages amongst the dried skins of animals, anatomical

preparations, and even the insects preserved in cabinets, but in this country they are seldom found in houses. Moses Harris relates a remarkable fact of some of these insects having been found by him alive in the body of a living specimen of *Smerinthus ocellatus*.

Dermestes is separated from Megatoma (pl. 244.) by the form of the antennæ and trophi, as well as by the antepectus, which is not produced over the mouth, and the differences are still greater in Attagenus (pl. 247.). The Dermestes when disturbed contract their antennæ and legs and lie as if dead, frequently on their backs. The following species inhabit Britain.

1. tessellatus *Fab.*—murinus *Oliv.* 2. *no.* 9. *tab.* 1. *f.* 3^{b}.
   Black mottled with cinereous, head and thorax variegated with ferruginous hairs; beneath white with black dots; antennæ subferruginous.
   Middle of July, Dover, and on dried sea-weeds on the sea shore, also in August at Shoreham.
2. murinus *Linn.*—*Don. v.* 15. *pl.* 515.—*Sam. pl.* 1. *f.* 4.—Catta *Panz.* 40. 11.—nebulosus *DeG.*
   Black, mottled above with cinereous, scutel fulvescent, underside white.
   June, in dead moles hung upon bushes by the mole-catchers; also in dead rats on rabbit warrens, near Thetford, in abundance: I have also beaten them out of bushes in woods and plantations.
3. lardarius *Linn.*—*Curt. Brit. Ent. pl.* 682.
   Lives upon dead animal substances in kitchens, larders, museums, &c., and is found in April, May, and June.
4. vulpinus *Fab.*—murinus *Panz.* 40. 10.
   Black, cinereous with pubescence; white beneath; sides of thorax densely cinereous with short hairs.
   Supposed to be imported with skins and provisions, on which the larvæ feed. I once found a considerable number dead in a dry bone.
5. laniarius *Ill.*—*Gyll.*—ater *Oliv.* 2. *no.* 9. *pl.* 2. *f.* 12.?
   "Shorter and convex, smooth and black; beneath silky white; antennæ small, rufo-piceous." *Gyll.* 2. 149. 5.
   Gyllenhall states decayed wood to be the habitat of this species.
6. plantaris *Curt.*—nigripes *Panz.* 97. 5.
   Piceous, thickly and minutely punctured, middle of antennæ and tarsi ochreous: length $1\frac{2}{3}$ line.
   I found a specimen in Mr. C. Griesbach's cabinet, with others of *Megatoma serra*, which it very much resembles. As I have great doubts of its being Fabricius's *D. nigripes* I have dropped his name, which was employed in the Guide.

The Plant is *Inula* (Pulicaria Cass.) *dysenterica*, Common Fleabane.

683.

LITHOMIA SOLIDAGINIS.

The Agrotis likeness.

ORDER Lepidoptera. FAM. Noctuidæ.

Type of the Genus, Noctua Solidaginis *Hüb.*

LITHOMIA *Hüb.*—Noctua *Hüb.*, *Goda.*—Xylina *Och.*

Antennæ rather long and setaceous, formed of numerous joints, clothed with scales above, pubescent beneath, with distinct brushes of hair on each side in the males (1 ♂), furnished only with a few bristles in the females (♀).

Maxillæ as long as the antennæ, spiral, forming 2 broad filaments, with short tentacula at the apex (3).

Labial palpi short, obtuse, porrected obliquely, densely scaly (4), triarticulate, basal joint stout and cleaver-shaped, 2nd not twice as long, fusiform, 3rd not very short, rigid, slender and lanceolate (4*a*).

Head *short, obtuse:* eyes *moderate, subovate.* Thorax *subquadrate, densely clothed with scales, not crested, but tufted behind.* Abdomen *linear obtuse and tufted at the apex in the males, the back angular, more conical in the female.* Wings *very closely deflexed in repose,* superior *long and narrow, the posterior margin a little concave towards the apex:* inferior *trigonate-ovate, not large, the margin indented at the centre:* cilia *short.* Legs *rather long and stout:* thighs *very hairy beneath:* tibiæ, *anterior short, with a spine beneath, the others with long scales outside down to the middle, and strong spurs at the apex, the hinder with a pair of spurs also below the middle:* tarsi *long and 5-jointed, bristly beneath:* claws *and pulvilli minute.*

Larvæ *smooth and cylindrical, with 6 pectoral, 8 abdominal and 2 anal feet, the dorsal line a little angulated at its termination.*

SOLIDAGINIS *Hüb. Noct. pl.* 55. *f.* 256.—*Curt., Gen.* 844[b].

Light bright grey variegated with fuscous; a black dot on each side of the face close to the eyes, the anterior and lateral scaly lobes of the thorax margined with black: superior wings with the centre fuscous, margined by 2 transverse dentated and sinuated black lines, with 2 grey spots placed obliquely and an auriculate one on the disc, all margined with black, beyond them is a grey indented line forming 2 or 3 long acute angles at the centre, each producing a black ray inwards; several fine black lines at the base; cilia fuscous with pale spots: abdomen and inferior wings pale yellow freckled with pale fuscous; the latter with a faint fuscous line across the middle, curved at the end and forming a circle on the disc, with a broad fimbria not touching the margin; cilia almost white, with a line of fuscous curves at the base.

In the Author's and other Cabinets.

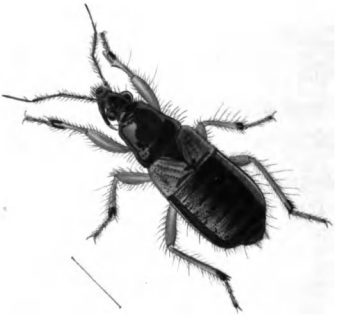
IT would be difficult to assign Hübner's reasons for calling this moth "*Solidaginis,*" unless it be partial to the flowers of

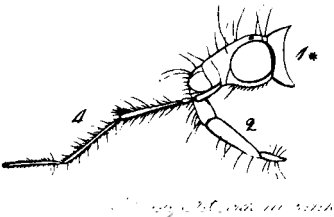
the Solidago, for he states that the food of the Caterpillar is the *Vaccinium Vitis Idæa* (pl. 662.), but it may probably feed on other plants; however this may be, it is undoubtedly confined to northern and mountainous countries, and the discovery of it in England has added a very distinct species to this fine and extensive Order. Mr. F. Walker in his visit to Norway last year, captured several specimens in the middle of September; they had settled on a wall at Happar, near Torneo. This induced me to search the Linnæan cabinet, where I detected an unnamed specimen, apparently confounded with *N. Polyodon.*

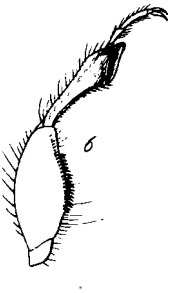
For the male figured I am indebted to Mr. S. Carter, of Manchester, who informs me that "two specimens were taken for the first time nine or ten years since at a place called the Brushes, about two miles beyond Stayley Bridge; they were found on a rugged stone wall on the south side of a brook that runs between two mountains: since that period only four specimens had been taken until this year (1837), when they made their appearance from the 20th of August to the 16th of September; they were principally taken about six o'clock in the morning, and none later than ten o'clock."

The angulated abdomen and the attitude of the wings in repose, induce me to adopt Hübner's generic name, and to separate this moth from *Xylina* (fol. 256.), to which it is otherwise nearly related, and I have the less hesitation in doing so as it has never been described in any English work. I have added a figure of the larva from Hübner, and I take this opportunity of correcting an erroneous opinion that the moth before us is a *Cucullia,* with which name it was forwarded to me, and as such it is also recorded in the Entomological Magazine.

For specimens of the beautiful Purple Saxifrage, *Saxifraga oppositifolia,* I am indebted to the Rev. T. Howson, who forwarded them last May from the Upper Limestone of Penigent, in Yorkshire.







684.

PROSTEMMA GUTTULA.

ORDER Hemiptera. FAM. Reduviidæ.

Type of the Genus, Reduvius Guttula *Fab.*

PROSTEMMA *DeLap.*—Postemma *Dufour.*—Reduvius *Fab.*—Nabis *Lat., Hahn.*

Antennæ attached to little shoulders on each side of the clypeus, before the eyes, not longer than the head and thorax, very slender, hairy, pilose, and 5-jointed, basal joint elongated, linear and naked, 2nd short and somewhat pear-shaped, 3rd very long and clavate, 4th as long but slender, as well as the 5th, which is shorter (4).

Labium scarcely longer than the head, stout, attenuated and triarticulate, basal joint elongated, slightly narrowed at the base, 2nd longer and attenuated, 3rd short and pointed (2).

Rostrum *a little longer than the head, stout, tapering and incurved:* head *small, narrowed at the base behind the eyes, and forming a short collar;* clypeus *narrowed:* eyes *remote, large, prominent and hemispherical:* ocelli 2, *very minute, placed near to the eyes on the crown of the head, but towards the base* (1 *front view of head,* 1* *the profile*). Thorax *trapezate, convex, twice as broad as the head before, much broader behind, with a transverse suture, the base nearly straight:* scutellum *rather large and triangular.* Elytra *often rudimentary with no wings.* Abdomen *much broader than the thorax and nearly thrice as long, ovate, convex, the margins reflexed.* Legs *rather short and stout, anterior the shortest and raptorious, hinder the longest:* thighs *thick, anterior incrassated, with a double series of short thick spines beneath, except at the base and apex:* tibiæ *stout, anterior concave and spiny inside, dilated at the apex, which is truncated obliquely, very fleshy and forming a hollow lobe, on the inside of which are inserted the* tarsi, *which are triarticulate, basal joint the smallest, truncated obliquely: 2nd elongated, 3rd a little the longest:* claws *rather long slender and simple* (6, *a fore leg*), *the intermediate* tibiæ *have an ovate lobe at the apex beneath the tarsi, and the hinder pair is simple.*

GUTTULA *Fab.*—*Panz,* 101. 21.—*Curt. Guide, Gen.* 1095[b].—brachelytrum *Dufour Ann. de la Soc. Ent. de France.*—staphylinus *Gmel.* 4. 2200. 688?

Female bright shining black, with long hairs; 3 basal joints of antennæ pale ferruginous, except at the apex; head and thorax very smooth and greenish, especially the latter; elytra very short, opake red, with a few punctured striæ, hinder edge whitish; a cordiform spot on the suture, an interrupted line close to the hinder margin and the scutel velvety-black: abdomen deep bluish, thickly punctured, especially towards the base: legs bright red, coxæ black, trochanters and anterior tibiæ ochreous, all the tibiæ piceous at the apex, tarsi dull ochreous.

Winged specimens bluish-black, legs red, elytra scarlet to the centre and along the costa to the stigma, where there is a white spot, a black spot behind the scutel and a white one below it.

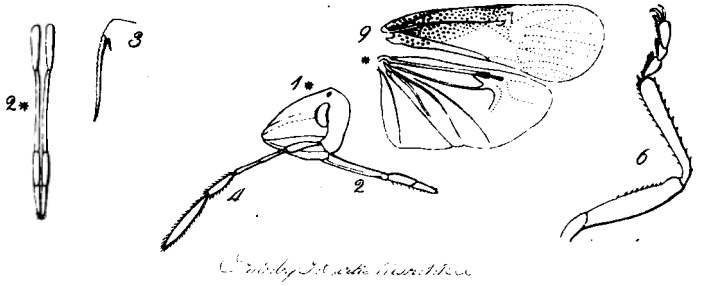
In the Author's Cabinet.

M. De Laporte first distinguished this genus from the other Reduvii by its 5-jointed antennæ, and ocelli placed *before* the eyes at the base of the rostrum; but after a revision of his Essay, he remodelled his synoptic table and gave the following characters: "Anterior thighs dilated in the middle: antennæ with not more than 5 joints: anterior thighs without spines: eyes ordinary: 2nd joint of antennæ not sensibly thicker than the last: transverse channel of thorax placed behind: hemelytra short." As it is evident that the ocelli are placed *between* the eyes, and that the anterior thighs are *spiny*, the above definitions are defective. Not having studied the exotic Reduvii sufficiently, I am unable to give proper essential characters to this group; but Prostemma appears to be distinguished from the other British genera by the length of the basal, and the shortness of the 2nd joints of the antennæ, by the spiny anterior thighs and the peculiar form of the anterior tibiæ, which are furnished with a large fleshy sucker at the apex, adapted to prehension. There may possibly be minute annulets at the base of the 2 terminal joints of the antennæ, but for want of a specimen to dissect I have not been able to determine that point.

This beautiful insect was discovered last September on the sand hills near Sandwich, by my friend Mr. A. Kennedy, who very kindly presented me with his only specimen. Mons. Dufour at first considered this to be an undescribed species, but he now agrees with the Count de Castelnau in thinking it is an apterous example of *R. Guttula*, Fab. Latreille says it is found in the neighbourhood of Paris, sometimes in houses (brought in possibly with the fuel), and that it is rarely found winged. M. Dufour has taken it not uncommonly in the environs of Saint Sever as well as in Spain, under stones or knots of dry plants.

In a recent number we described an insect (Hydroessa pygmæa) found by the same distinguished naturalist in the South of France, which was soon after detected in the north of Ireland by Mr. Haliday, and we now have before us another instance of the insects of the south finding their way in dry seasons to our country; and, on the other hand, in our preceding plate (683.) is an example of a northern insect attracted to the south. *Noctua Solidaginis* is well known as an inhabitant of Lapland and Sweden, but was never detected in England until lately. Such facts are interesting, and ought, I think, to be recorded, intimately connected as they are with the geography of animals.

The Plant is *Lepidium latifolium*, Broad-leaved Dittander, which I found last August near Sandwich, by the road leading to the Sand-hills.



685.

TETYRA FULIGINOSA.

ORDER Hemiptera. FAM. Pentatomidæ.

Type of the Genus, Cimex maurus *Linn.*

TETYRA *Fab., Leach, Curt.*—Scutellera *Lat.*—Cimex *Linn., Fab.* *Antennæ* as long as the head and thorax, inserted under but remote from the eyes and close to the anterior margin of the pectus; clavate and 5-jointed, basal joint elongate and clavate, 3 following scarcely so long, 2nd and 3rd slender, 4th and 5th stout and pubescent, the latter twice as long as the 4th (4). *Labrum* long slender and attenuated, transversely sulcated (3). *Labium* long horny hollow and 4-jointed, basal joint the stoutest, oblong, 2nd twice as long but slenderer, 3rd shorter than the 1st, 4th about the same length, a little attenuated, rounded and hairy at the apex (2*).

Rostrum *long, received into a groove beneath the head, and reaching to the hinder coxæ* (2). Head *large, trigonate-ovate, the sides sharp, immersed to the* Eyes, *which are small, lateral, prominent and subreniform:* ocelli 2, *placed near the base of the head, remote from the eyes* (1* *the head in profile*). Thorax *transverse, subelliptic, being truncated and narrowed before and behind, the sides forming* 2 *rounded angles:* scutellum *very large, as broad as the thorax, semiovate, convex, not covering the margins of the abdomen, but extending to the apex.* Elytra *and* wings *concealed beneath the scutel, the former as long as the body, with a small portion of the base coriaceous, the remainder dilated rounded and membranous, with numerous faint nervures at the apex* (9)*: the latter rather shorter, but ample, with several nervures radiating from the base* (*). Abdomen *nearly orbicular, the margins thin.* Legs *rather short, hinder thighs the longest:* tibiæ *with minute spines, hinder the longest and spiny only inside:* tarsi *equal, short and triarticulate, pubescent beneath, basal joint clavate, 2nd very short somewhat obovate, 3rd as long as the 1st and stouter:* claws *simple,* pulvilli *small* (6, *a fore leg*).

FULIGINOSA *Linn.—Curt. Guide, Gen.* 1134. 4.

Piceous, thickly and minutely punctured, clothed with short coarse hairs; antennæ brown with the basal joint as long as the 5th, 3rd rather the shortest; head with 2 furrows down the front: thorax with a notch on each side towards the base, the hinder half ochreous spotted with brown, with a narrow ochreous line down the centre, an impression across the middle joining a deep channel down each side, disjointed at the centre, where there is a little fovea; scutel ochreous, with brown punctures and irregular marks, leaving a light line down the middle, which divides a triangular piceous spot at the base, and an orbicular dead black one towards the apex, on each side at the base is a black streak and a similar one at the centre; sides of the abdomen black spotted with ochre; coxæ, trochanters and tarsi dull ochreous, the latter inclining to brown.

THE disagreeable appellation which has been given to this tribe of insects, associated as it is with the House-bug, renders them by no means favourites with most of us; nevertheless they

are well deserving the attention of the naturalist; their œconomy is interesting, their structure curious, and their colours in many of the exotic species are not surpassed by the most splendid Butterflies.

In M. De Laporte's Essay, the few insects included by us under Tetyra are divided into many genera, as well as by Hahn, the essential characters of which I shall subjoin.

I. *Legs very spiny.* A. Antennæ inserted under the eyes.

* *2nd joint half as long as the 3rd.*

TETYRA *Fab.* THYREOCORIS *Schr.*

1. Scarabæoides *Linn.*—*Wolff. tab.* 1. *f.* 4.
End of May, Durdledoor, Mr. Dale; June, Barton Cliff.

** *2nd joint of antennæ longer than the third.*

ODONTOSCELIS *DeLap.* URSOCORIS *Hahn.*

3. fulvicornis *Faun. Franç.*—*Steph. Syst. Cat.* Does it belong to this section?

4. fuliginosa *Linn.*—*Curt. Brit. Ent. pl.* 685.
I swept a pair of this rare insect off short grass and Hedypnois on the sand-hills near Sandwich, the 9th August; Mr. Skrimshire took it once on the sand-hills at Burnham in Norfolk, and Mr. Butcher of Lowestoft gave me a specimen which he captured on the sands to the north of that town.

II. *Legs slightly spiny: antennæ with the 2nd and 3rd joints of equal length.*

BELLOCORIS *Hahn.* EURYGASTER *DeLap.*

5. picta *Fab.*—*Hahn. pl.* 45. *f.* 140.
Taken during Aug. off grass at the sides of fields near Dover, J. C. Isle of Portland and Blandford Race Course, Mr. Dale.

6. maura *Linn.*—*Hahn. pl.* 45. *f.* 139.—obliqua *Guide*, var.
Near Bristol, Mr. Millard; June, Monk's Wood, Mr. Babington; October, in a garden at Islington, Mr. A. Cooper.

III. *Legs almost smooth: antennæ inserted not quite under the eyes: 2nd joint a little shorter than the 3rd.*

PODOPS *DeLap.*

2. inuncta *Fab.*—*Panz.* 36. 24.
June, sandy places, Bexley; August, on grass, near Dover.

B. Antennæ inserted before the eyes; 2nd joint twice as long as the 3rd.

GRAPHOSOMA *DeLap.*—Scutellera *Hahn.*

7. lineata *Linn.*—nigrolineata *Fab.*—*Don.* 14. 473.
One, if not more specimens, were found several years since by Dr. Lindley, in a nursery-ground at Catton in Norfolk: as it is a common insect in France, it might have been imported with plants. It is attached to Elder-flowers, but I found it in abundance in June, near Toulouse, on *Heracleum laciniatum.*
The Plant is *Tamarix gallica*, French Tamarisk.

686.

TRACHYS MINUTA.

ORDER Coleoptera. FAM. Buprestidæ.

Type of the Genus, Buprestis minuta *Linn.*

TRACHYS *Fab., Gyl., Soli., Curt.*—Buprestis *Linn., Oliv.*

Antennæ free, inserted in a small cavity on the inside of the eyes, at the base of the clypeus, not remote, 11-jointed, 2 basal joints stout, 1st long but very much bent and curved at the base, 2nd elongate-ovate, 4 following slender, somewhat obovate, the 3rd being a little the longest, the remainder compressed and slightly produced internally, excepting the apical joint which is ovate (6).

Labrum suborbicular, truncated at the base and sharply notched in the middle, with 2 or three short bristles on the sides (1).

Mandibles rather large in proportion, subtrigonate-conic, the outer angle elongated at the base (2).

Maxillæ terminated by a rounded lobe, with a minute one inside, both densely ciliated. *Palpi* clavate and 4-jointed, basal joint subovate, 2nd rather long, pyriform-truncate, 3rd cup-shaped, 4th the largest, barrel-shaped (3).

Mentum large and trigonate, the sides sinuated. *Lip* small. *Palpi* minute, triarticulate, basal joint small, 2nd cup-shaped, 3rd ovate-truncate (4).

Body *depressed.* Head *short and broad, face concave;* eyes *not prominent, lateral and oval.* Thorax *short, broad, narrowed before, anterior margin bisinuated, the base very much sinuated, forming acute angles and a lobe over the* Scutel, *which is exceedingly minute:* antepectus *with a short rounded lobe, fitting into a cavity in the medipectus.* Elytra *broader than the thorax, ovate-trigonate, the shoulders prominent, sides slightly emarginate, apex rounded:* wings *ample.* Legs *compressed, lying in cavities in repose, nearly of equal length, slender:* thighs *not stout:* tibiæ *as long as the thighs, slender:* tarsi *short, all dilated, 5-jointed, 4 basal joints very short, membranous and spongy beneath, 5th elongated, clavate:* claws *small, very much hooked* (5†).

MINUTA *Linn.—Curt. Guide, Gen.* 301. 2.

Violaceous or bluish black; face polished, æneous, concave, channelled in the middle; thorax subcupreous, with scattered shining ochreous hairs, the angles and a line along the base depressed; elytra with various depressions and large shallow punctures forming indistinct striæ; a space at the base formed by shining ochreous hairs, as well as a transverse line before the middle, and 2 undulating ones towards the apex and looped at the suture.

In the Author's and other Cabinets.

THE valuable Essay of Mons. Solier in the Annales de la Soc. Ent. de France has greatly contributed towards the classifi-

cation of this superb tribe of insects, which now amounts to about 600 species: of these 14 only have been found in England, several of which have been most probably imported in timber; and although this is a proof that the Buprestidæ are not attached to northern latitudes, yet it is remarkable that twice as many are actually natives of Sweden, and Gyllenhal has described 46 species in his Insecta Suecica, including those that are supposed to have been introduced by intercourse with foreign countries.

Trachys is a singular little group of this family, readily recognised by its short broad ovate figure, and although so dissimilar to Aphanisticus (pl. 262.) it is evidently closely allied to that genus. M. Solier not having been able to detect the maxillæ and palpi of Trachys, I am happy in the opportunity of adding figures of them.

Three species of this circumscribed genus have been found in the neighbourhood of London.

1. nana *Fab.—Panz.* 95. 9.

"Obscure black, somewhat æneous, smooth; face excavated, elytra triangular, with punctures somewhat in striæ and a lateral elevated line." *Gyll. v.* 1. 464. 3.

May and June, amongst underwood in Coomb Wood.

2. minuta *Linn.—Curt. Brit. Ent. pl.* 686.

May 13th on Sallows, Coomb Wood and Epping Forest, J. C.; end of May, a pair in Parley Copse, Mr. Dale; June, Clapham, Park Wood, Bedfordshire; July and August, Metton and Monk's Woods; on birch and nut trees, Darent, Norwood, &c.

3. pygmæa *Fab.—Don. v.* 8. *pl.* 282.

Head and thorax smooth, cupreous or æneous, elytra blue or green, with lines of strong punctures.

May, in a puddle of water in Coomb Wood, Mr. MacLeay, and the late Mr. Joseph Hooker found one on *Menyanthes trifoliata* (pl. 294.) at St. Faith's in Norfolk. It has also once occurred in Cambridgeshire.

The Plant is *Bryonia dioica* (Red-berried Bryony).

Pub. by J. Curtis, Apr. 1, 1858.

687.

PORRECTARIA ALBICOSTA.

The white-edged Unicorn Moth.

ORDER Lepidoptera. FAM. Tineidæ.

Type of the Genus, Tinea Anatipennella *Hüb.*

PORRECTARIA *Haw., Curt.*—Ornix *Och.*—Tinea *Fab., Hüb.*—Haloptilia *Hüb.*

Antennæ inserted on each side of the crown above the eyes, not so long as the body, capillary, porrected and closely united in repose, basal joint stout and elongated, clothed with long scales (1), forming a pencil at the apex in the males (1 ♂).

Maxillæ twice or thrice as long as the palpi, spiral and tapering, a considerable portion of the base clothed outside with scales (3).

Labial palpi longer than the head, porrected, divaricating, clothed with shortish scales (4), slender and triarticulate, basal joint elongate-ovate, curved, 2nd very long, a little attenuated, 3rd only half as long, sometimes less, very slender and sublanceolate (4 *a*).

Head *small, clothed with broad depressed scales* (7 *front view*, 7* *the profile*): eyes *lateral, suborbicular, not very remote beneath.* Thorax *ovate, scales depressed.* Abdomen *linear, obtuse in the male, conical and acuminated at the apex in the female;* oviduct *horny and exserted.* Wings *very much deflexed in repose,* superior *long, narrow, lanceolate, often falcated and acute, the* cilia *very long, and extending round the apex and towards the base of the interior margin:* inferior *much smaller, narrow, lanceolate and very acute,* cilia *very long and extending along the costa nearly to the base.* Legs *slender, posterior the longest:* tibiæ, *anterior not very short, simple, the others with spurs at the apex, hinder fringed with long hairs outside, with a pair of spurs also above the apex:* tarsi 5-*jointed;* claws *and* pulvilli *minute.* (5†, *hind leg*). Larvæ *with* 6 *pectoral feet, living in a case* (L), *in which they change to* Pupæ *that have the portion covering the wings extending considerably over the apex.*

ALBICOSTA *Haw.—Curt. Guide, Gen.* 1016. 2.

White; antennæ spotted with black; eyes black; anterior wings acute and a little sithe-shaped, ochreous, brownish towards the apex, with a narrow white margin, a white line from the base to the posterior margin, and one above it on the disc not reaching the base; inferior wings pale shining cinereous, cilia darker, pale yellowish fuscous; abdomen dirty-white, legs yellowish-white, inclining to fuscous in some lights.

In the Author's and other Cabinets.

THESE little Moths are similar in their œconomy to *Cochleophasia* (fol. 487.). The Caterpillars form cases, in which they live, and walk about with them, often in a vertical direction, and they afterwards become the cocoons of the pupæ. The larvæ feed upon the parenchyma of leaves. The Moths rest

with their antennæ stretched out and closely united, like many of the Phryganidæ.

There seems to be little to distinguish this group from Damophila (fol. 391.), excepting the metallic hues of the latter. It is true that the antennæ are not thickened in the males, excepting the basal joint, the palpi are less recurved and the maxillæ are somewhat longer in Porrectaria, but these are modified in the various species. I fear Mr. Haworth was not careful in his references to Hübner, which has probably misled Mr. Wood, as his figures do not agree with those of the Schmetterlinge. The following are British species.

1. argentula *Steph. Ill.* 4. 287. 11.
   "June, Coomb and Darent Woods."
2. leucapennella *Hüb. Tin. tab.* 30. *f.* 205. not of Stephens.
3. albicosta *Haw.* 535. 7.—*Curt. Brit. Ent. pl.* 687. ♀.
   Middle of June and beginning of July, on nettles and brambles, Darent Wood and Westerham; Settle, Yorkshire, J. C.
4. lineolea *Haw.* 534. 5.
   June, grassy banks and heaths, Shirly Common; Coomb and Darent Woods.
5. lutarea *Haw.* 537. 20.
6. gryphipennella *Hüb. tab.* 30. *f.* 206. not of Wood.
   Grassy banks.
7. Gallipennella *Hüb. t.* 29. *f.* 202. not of Stephens nor of Wood.
   Grassy banks. Larva on *Erica vulgaris* and *Artemisia campestris.*
8. ochrea *Haw.* 533. 1.—ochrodactylus *Fab.*?
   "June, Darent Wood."
9. ornatipennella *Hüb. t.* 29. *f.* 199.
   June, Darent and Birch Woods.
10. Struthionipennella *Hüb. t.* 30. *f.* 209.
   "June, Darent Wood, near Dover and Lyndhurst:" the larva feeds on *Hieracium pilosella.*
11. Otidipennella *Hüb. t.* 65. *f.* 433. not of Wood.
   June, Darent Wood, and near Lyndhurst.
12. Anseripennella *Hüb. t.* 46. *f.* 319.
   June, in the neighbourhood of London and Lyndhurst.
13. Anatipennella *Hüb. t.* 27. *f.* 186.—porrectella *Linn.*
   June, gardens near London; old shady pales Shooter's Hill; July, birch, Darent and Coomb Woods: the larva feeds on the beech.

The Plant is *Medicago sativa*, Lucerne or Purple Medick.

688.

CYNIPS NERVOSA.

ORDER Hymenoptera. FAM. Diplolepidæ.

Type of the Genus, Cynips Quercus radicis *Fab.*

CYNIPS *Linn., Fab., Curt.*

Antennæ inserted in a cavity in front of the face, longer than the body in the males (1 ♂), subsetaceous, pubescent, and 15-jointed, basal joint the stoutest, short and ovate, 2nd the smallest ovate, 3rd the longest, suddenly bent and slightly emarginate towards the apex, 4th shorter and linear, the remainder decreasing in size to the last joint, which is slightly longer than the penultimate; not longer than the body, slightly clavate and 14-jointed in the females (♀), 3rd joint the longest but simple, 4th and 5th linear, 6th stouter and shorter, the remainder subturbinate, apical joint a little longer, ovate-conic. In some species there are only 13 joints.

Labrum undiscovered.

Mandibles broad, subtrigonate, terminating in a strong tooth, with a trigonate tooth next it, and sometimes a third inside (3).

Maxillæ terminated by a double ovate hairy lobe. *Palpi* rather long, hairy and 5-jointed, basal joint minute, 2nd long slender and clavate, 3rd and 4th oblong, 5th the stoutest, elongate, semiovate, the apex being truncated obliquely (4).

Mentum elongated, narrow, a little dilated anteriorly, forming shoulders for the insertion of the *Palpi*, which are short stout and biarticulate, basal joint the longest, 2nd ovate-conic.

Obs. there is an indistinct suture giving an appearance of a central joint, which is fully developed I believe in some species.

Labium moderate, hollow rounded and pubescent (5).

Head *short transverse; face suborbicular:* eyes *small, lateral and ovate:* ocelli *forming a large depressed triangle on the crown.* Thorax *gibbose, ovate, collar very short:* scutel *semiovate.* Abdomen *smaller than the thorax, especially in the male, ovate compressed and truncated obliquely, attached by a short thick petiole, basal joint large, apical ones very short:* oviduct *slender and curved, attached above near the apex, and emerging through a sheath below and* 2 *large clavate ones above.* Wings, *superior very much longer than the body, with a large subtrigonate marginal cell, discoidal cells incomplete, but occasionally with a triangular areolet, costal nervure none* (9): inferior *rather small, with* 2 *basal nervures.* Legs *strong, hinder the longest:* coxæ, *hinder incrassated:* tibiæ *simple, with minute spurs at the apex:* tarsi *rather long, slender, and* 5*-jointed:* claws *and* pulvilli *small.* Obs. *the antennæ are drawn from* C. megaptera *Panz.*

NERVOSA *Curt. Guide, Gen.* 564. 4.

Female black shining, obscurely punctured and slightly pubescent; antennæ 14-jointed, as long as the body, 2 basal joints brownish: ocelli very large: postscutel rugose with 3 parallel ridges: abdomen very smooth and ochreous, the lower sheath brown: wings pale fuscous, iridescent, nervures brown, edges of marginal cell suffused; anterior legs pale ochreous, intermediate brown, hinder piceous, base of all the thighs darker, apical joint of tarsi fuscous.

In the Author's Cabinet.

This group of insects, called Gall-nut flies, deposits its eggs in the leaves, buds, stalks, and even in the roots of plants, thereby forming the various and curious galls which are commonly found upon the oak and other trees, rose bushes, &c. One of them, *C. Gallæ-tinctoriæ*, is the origin of the Oak-gall in Asia Minor, which is employed in making ink, dyeing, &c., and another, there is little doubt, is the author of the bitter apples alluded to in the Old Testament. Protected as the larvæ are in the heart of a hard ball, they are not secure from the attacks of other Hymenoptera, which by means of their ovipositors are enabled to pierce the galls, and lay their eggs in the tender larvæ, so that instead of the Cynips alone, a tenfold greater number of Callimome (fol. 552.) and Ichneumonidæ often issue with them from the galls.

The abdomen of a female that I dissected was filled with eggs; the oviduct was attached near the superior angle and curved vertically towards the base, and was exserted under or between the laminæ at a short distance from the ventral sheath. Roesel has given figures of the Galls, larvæ, pupæ and imago in pl. 35, 36, 52 and 55 of vol. iii. The following species from my collection seem to be undescribed.

4. nervosa *Curt. Brit. Ent. pl.* 688 ♀.

July, Dover. It is distinguished from *C. Rosæ* by the large ocelli, carinated scutel, dark hind legs, the absence of the brown splash on the costa of the upper wings, and of the areolet.

5. brevicornis *Curt. Guide.* *Fem.* black, shining; abdomen bright ferruginous; legs bright ochreous, tips of tarsi fuscous; mandibles and antennæ ferruginous, the latter brownish towards the apex, not much longer than the head and thorax, 13-jointed, terminal joint the longest: length 1¼ line. Dover.

12. pallidicornis *Curt.* Shining piceous; antennæ mouth and legs ochreous, the former shorter than the body, subclavate, 13-jointed, 3rd joint the longest: ¾ long.

17. Anthracina *Curt.* *Fem.* black, head minutely punctured; abdomen piceous, beneath paler, legs lurid ochre, tips of tarsi brown, antennæ shorter than the body, subclavate, 15-jointed, brown, 2 basal joints ochreous, 3rd the longest, wings long, transverse nervures of wings suffused yellowish-brown: 1¼ long. May, Coomb Wood.

26. crassicornis *Curt.* Head and thorax black and punctured, abdomen shining piceous: antennæ as long as the body, 15-jointed, ochreous, apex brown, 3rd joint the stoutest and longest; legs piceous, anterior ochreous, base of thighs, outside of tibiæ and tips of tarsi piceous; wings with faint nervures: ¾ long.

27. fulviceps *Curt.* Shining black, head and legs bright ochre; antennæ longer than the body, fuscous, base ochreous, 2 basal joints ovate, 3rd slender, scarcely longer than the following, wings very ample: ¾ long. Bred from female Aphides by the late Mr. T. Carpenter.

32. pedestris *Curt.* Shining piceous; head large and black; legs and antennæ ochreous, the latter fuscous beyond the middle, as long as the body, 14-jointed, 2 basal joints stout ovate, 3rd a little longer: thighs brownish at the base, tips of tarsi fuscous; wings rudimentary: ¼ a line long. Southgate, Mr. Walker, and also No. 26.

For Mr. Walker's characters of Sections consult the 3rd vol. of the Ent. Mag.

The Plant is *Conium maculatum*, Common Hemlock.

689.

TRIGONOMETOPUS FRONTALIS.

ORDER Diptera. FAM. Muscidæ.

Type of the Genus, Tetanocera frontalis *Meig.*

TRIGONOMETOPUS *Macq., Curt.*—Tetanocera *Meig.*

Antennæ attached to the apex of the forehead, approximating, porrected, short, 5-jointed, basal joint obconic, 2nd a little larger and cup-shaped, both margined with very strong bristles, 3rd the largest, pubescent, compressed, ovate-conic, the apex acute, 4th a small oval joint, attached near the back, a little before the middle, 5th a long pubescent seta (3).

Labrum broad, the centre produced, forming an elongated spine (1 *b*).

Tongue shorter, slender and acute (*c*).

Maxillæ very short obtuse (*e*). *Palpi* longer than the labrum, stout, linear, curved, bristly outside (*f*).

Lip large in proportion, exserted, inserted in a cavity at the bottom of the face, forming 2 large fleshy lobes closely united and slightly bristly outside (*g*).

Head *elongate-trigonate, truncated before, concave behind; crown flat but grooved; face inclining inward very obliquely* (2 *the profile*), *straight with a few long bristles on the sides:* eyes *very remote, lateral ovate and not prominent:* ocelli *very minute*, 3 *in triangle at the base of the head* (2* *underside of head*). Thorax *oblong:* scutel *trigonate-ovate.* Abdomen *depressed, short, ovate and 6-jointed.* Wings *very ample, costa convex, slightly pubescent with short marginal and 4 longitudinal nervures, 2nd and 3rd united by transverse nervure before, and the 3rd and 4th by one beyond the middle;* halteres *short and capitate.* Legs *moderate:* thighs, *anterior with a series of long bristles beneath:* tibiæ, *intermediate with a few spiny bristles at the apex, hinder with* 1 *outside:* tarsi *as long as the tibiæ, and 5-jointed, basal joint elongated,* 3 *terminal short:* claws *and* pulvilli *small.*

FRONTALIS *Meig.* 6. 44. 20.—*Curt. Gen.* 1326[b].

Ochreous with scattered black bristles and hairs; antennæ ferruginous, seta fuscous; eyes blackish; head with a broad depressed stripe down the middle: thorax with 4 ferruginous stripes, lateral the broadest; margin of scutel whitish: abdomen with 2 large livid spots at the base of each segment: wings pale yellow, darkest at the costa, nervures light brown, partially darker, with fuscous spots on the 2 transverse nervures, and 1 or 2 others towards the apex of the 3rd longitudinal nervure, where there are as many rudimentary nervures.

In the Cabinets of Mr. Dale and the Author.

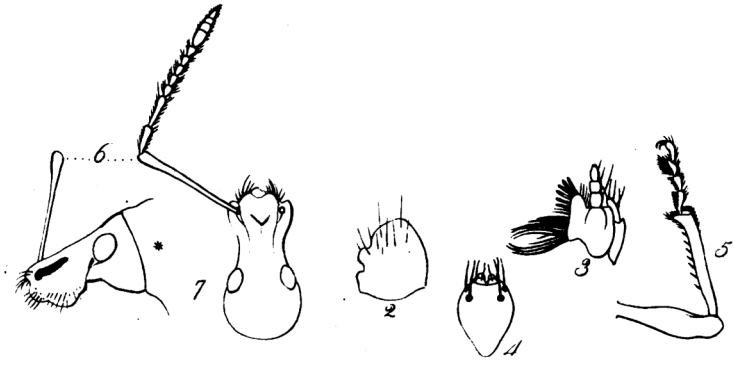
THIS species, which at first sight might be taken for a *Dorycara*, is readily distinguished on a closer examination, by the

different form of the antennæ. Mons. Macquart has separated Trigonometopus from Tetanocera in consequence of considerable difference in the relative proportions of the joints of the antennæ, the 2nd joint being equal to, or greater in length than the 3rd in the latter genus, and shorter than the 3rd in the former.

There is still so great a variety of character in the genus Tetanocera, that most probably Desvoidy's groups will be eventually adopted. Some species have the 2nd joint of the antennæ much shorter than others, sometimes the seta is plumose, at others naked, and the transverse nervure is straight or waved in different species: such characters might certainly be well employed in the formation of sections, which are of great value in the study of Natural History, as they lead to a close examination and philosophical inquiry into the structure and affinities of allied species; but all the advantages thus obtained are too frequently more than counterbalanced by the anxiety to give names to trifling groups, which were never destined by Nature to hold the rank of Genera.

The interesting insect before us was not known to be a native of this country until Mr. Dale met with three specimens in the neighbourhood of Glanville's Wootton; they were taken off some rushes growing in a gravel pit the end of May, and from them he has liberally supplied my cabinet.

The Plant is *Aira* (Deschampsia *Beauv.*) *cæspitosa*, Turfy Hair-grass.



Tab. 69. Curculio fragariae

690.

OTIORHYNCHUS MAURUS.

ORDER Coleoptera. FAM. Curculionidæ—Otiorhynchides, *Schö.*

Type of the Genus, Curculio tenebricosus *Herb.*

OTIORHYNCHUS *Germ., Schö., Curt.*—Brachyrhinus *Lat.*—Pachygaster *Dej.*—Curculio *Linn., Fab., Gyll.*

Antennæ inserted in small cavities on each side of the apex of the rostrum, longer than the head and thorax, often slender, geniculated, 12-jointed, basal joint as long as the head, clavate, the remainder pubescent, 2nd long, 3rd longer and a little slenderer, 5 following obovate, the remainder forming an elongate-ovate club, of which the basal joint is the longest (6).

Mandibles large, concavo-convex, subtrigonate-ovate, outer margin sinuated (2).

Maxillæ terminating in an ovate lobe armed with strong linear spines, beneath which is a long bunch of conniving bristles: outside produced into a horny lobe. *Palpi* comparatively long, triarticulate, basal joint a little the largest, ovate-truncate, 2nd oblong, 3rd the smallest, elongate-ovate (3).

Mentum rather large and obovate, producing 4 large bristles before. *Palpi* very short and stout, scarcely projecting beyond the mentum, biarticulate, basal joint transverse, bristly, 2nd semiorbicular (4).

Rostrum *short and very stout, porrected, dilated at the apex, with a short and broad groove on each side to receive the antennæ* (7 *upper side,* * *the profile*): head *broadest at the base, semiovate:* eyes *rather small, remote, orbicular, slightly convex, not touching the* Thorax, *which is as long as the head and rostrum, and nearly twice as broad in the middle, convex, orbicular or ovate, the anterior and basal margins truncated:* scutel *minute.* Elytra *connate, thrice as long as the thorax and twice as broad, convex and ovate, the apex sometimes conical.* Wings *none.* Legs *nearly equal:* thighs *clavate, simple or dentated:* tibiæ *flexuose, the apex pectinated, dilated and trigonate, except in the anterior, in which they are merely produced internally; a series of short spines on the inside:* tarsi 4-*jointed, very pilose beneath, basal joint the longest, 2nd short, both obtrigonate, 3rd bilobed, 4th slender and clavate:* claws *rather small curved and acute* (5, *a fore leg*).

MAURUS *Gyll.—Curt. Guide, Gen.* 372. 16.

Shining black or piceous, with short scattered whitish depressed bristles; head and rostrum rugose, the centre concave, with a ridge down the middle: thorax coarsely but regularly granulated: elytra slightly wrinkled and punctured, with catenulated striæ, and numerous small faint patches formed of yellowish pubescence: antennæ and legs more or less castaneous.

In the Author's and other Cabinets.

OF all the beetles that are injurious to the gardener, none perhaps are more destructive than some of the Otiorhynchi, and amongst them *O. picipes* is eminently so: the mischief is done

by this species during the night, when they come out to feed, and in the day they secrete themselves in chinks in the walls, under stones, bricks, clods of earth, &c. They are particularly injurious to wall fruit, and also to vines in hot-houses; but it is *O. sulcatus*, Mr. F. Walker informs me, which injures the vines in Lancashire, by eating the bark, and the larvæ feed upon the roots.

Dr. Lindley, I think, recommended some years since that the boughs of infected trees should be brushed or shaken over sieves in the night, and that the beetles thus collected might be immediately killed in hot water, and, if I mistake not, large quantities have been thus obtained in nursery grounds in Norfolk.

O. tenebricosus is another destructive species, as will be seen by the following extract from a note addressed to Mr. Dale by the Rev. J. M. Colson, rector of Puddle Hinton: "I have sent you a few specimens," he says, "of a beetle hitherto unknown to any of my neighbours, that has appeared this summer in myriads in the gardens of Lord Eldon at Encombe, destroying the roots of every vegetable and smaller plant, such as strawberries, raspberries, gooseberries and currants." I presume it was the larvæ that did the mischief, which afterwards produced the beetles.

I well remember finding some grubs in a strawberry bed a few years since which cut through the runners, but at that time I suspected they were dipterous, and now have no means of ascertaining if they belonged to the Otiorhynchi. I have little doubt that it is the larva of *O. picipes* also, which kills the auriculas and polyanthuses, Dr. Maclean informs me, in his garden at Colchester, which they effect by eating through the roots close to the leaves.

Fortunately the Otiorhynchi are destroyed by the Cercerides (fol. 269.), and thus Nature has put a check upon them. In the month of August last, when I was at Boulogne, Mr. Clifton showed me innumerable holes in the gravel walks of his garden formed by *Cerceris læta*? and at that time a considerable number of females were entering them: on digging up one of the nests we found five or six specimens of *O. scabrosus* at the depth of nearly a foot, which had been buried by the Cerceris as food for its larvæ, and nothing but the shells were left. Mr. W. Clifton informed me that he had observed large specimens of the Cerceris at an earlier period, burying a larger species of Curculio. Mr. Dale has also detected them carrying *O. sulcatus* alive between their legs.

There are nineteen species of Otiorhynchi recorded in the Guide, and the one figured I found under stones on mountains, I believe, in the vicinity of Ambleside as well as in Scotland, in June and July.

The Plant is *Fragaria vesca*, Wood Strawberry..

691.

SIONA DEALBATA.

The black-veined Moth.

ORDER Lepidoptera. FAM. Phalænidæ.

Type of the Genus, Phalæna dealbata *Linn.*

SIONA *Goda, Curt.*—Idæa *Och.*—Phalæna *Linn., Haw.*

Antennæ setaceous, a little the stoutest in the male (1), clothed with scales above, with very short pubescence beneath.

Maxillæ as long or a little longer than the antennæ, slender and spiral, with minute tentacula at the apex (3).

Labial palpi short and slender, porrected obliquely beyond the head, the points approximating, clothed with short scales (4), the apical joint distinct; triarticulate, basal joint the longest and stoutest, a little curved at the base, 2nd nearly as long, slightly attenuated, 3rd small and ovate-conic (*a*).

Head *small subglobose:* eyes *lateral large and globose.* Thorax *ovate.* Abdomen *long and slender in the male, stouter in the female, the apex conical with a horny pilose ovipositor.* Wings *subtrigonate and forming a triangle in repose? the margins entire, nervures strong:* cilia *short.* Legs *long and slender:* thighs *moderate:* tibiæ, *anterior not very short, with a long internal spine, intermediate with a pair of long spurs at the apex, hinder with a shorter pair and a longer and unequal pair a little below the middle:* tarsi *long slender and 5-jointed:* claws *and* pulvilli *minute* (5†, *a hind leg*).

Larva *and metamorphoses unknown.*

DEALBATA *Linn.—Curt. Guide, Gen.* 926. 1.

Silky white or pale cream colour: palpi, antennæ and eyes blackish: nervures of wings dusky above, quite black beneath, especially in the superior; a narrow transverse stripe beyond the middle on the under side, but very faint in the inferior wings, and the transverse discoidal nervure blackish. Abdomen beneath with 3 blackish longitudinal lines in the female, which sex is the most strongly marked beneath in the wings also.

In the Author's and other Cabinets.

THIS simple-coloured but elegant moth is what is termed by collectors an uncommon species, yet occasionally it is found in great plenty, the seasons probably at various periods con-

tributing to its numbers. It generally affects chalky and limestone districts in this country, and makes its appearance the beginning of June.

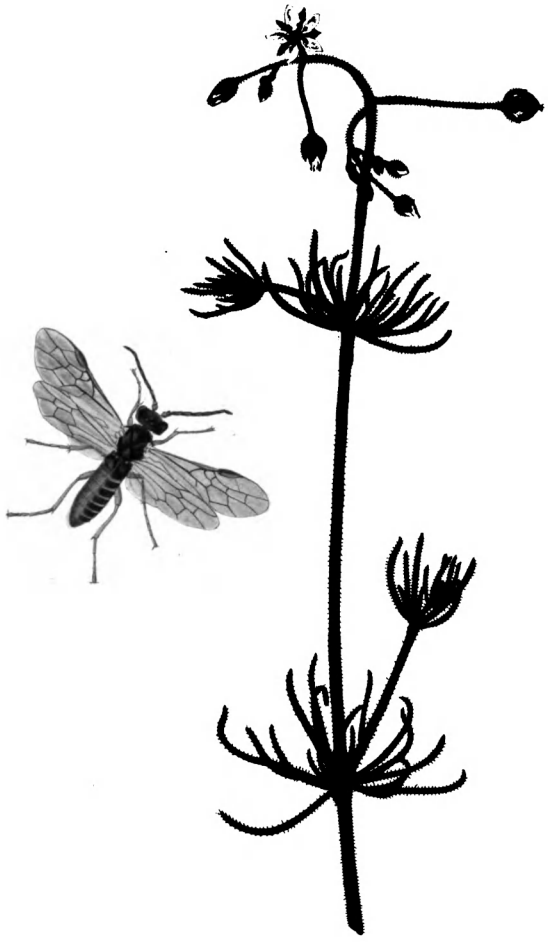
From the large broods that have been observed of late years in the vicinity of Langport in Somersetshire, it is to be hoped that the caterpillar may be shortly met with, and I am the more sanguine in my expectations from Mr. John Quekett, a most zealous naturalist, residing in the neighbourhood. I am indebted to him, as well as to Mr. Dale and Mr. D. Serrell, for my series of specimens; and this gentleman tells me that he took a considerable number last year in some woods, called the Holts, near Stourton Caundle in Dorsetshire, in the month of July; he principally found them in open places, amongst long grass where stunted black-thorn bushes were growing: these woods stand high, but are exceedingly wet in the winter. Mr. Marshall also informed me some years since, that he once took this moth in abundance in Kent, and it has also been found at Darent and Tonbridge Wells.

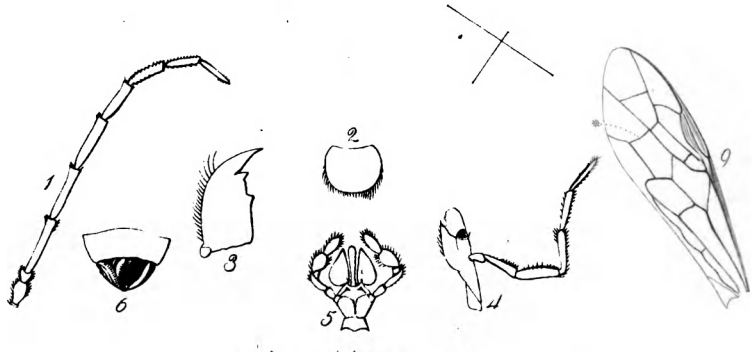
I have never met with it alive in England, but I captured a male in descending the Puy de Dome in Auvergne; and Mons. Duponchel says that in France it principally inhabits mountainous districts, but he once took it plentifully in the woods of Notre Dame, four leagues from Paris, by brushing the heath.

The similarity of *S. dealbata* to some butterflies is very striking: indeed the colour and shape of the wings and abdomen assimilate so well with the Papilionidæ, that it seems only to want the capitate antennæ to complete its resemblance to the Pontiæ.

It has been necessary to abandon the name of Idæa given to this genus by Ochsenheimer, and employed in the 1st edition of the Guide, as it had been previously applied to a group of Papilionidæ; I have therefore adopted the more recent one of Siona proposed by M. Duponchel.

For specimens of the Plant, *Petroselinum* (Sison *Linn.*) *segetum*, Corn Honewort, I am indebted to Dr. Bromfield, who found them last October near Ryde, in the Isle of Wight.





692.

TENTHREDO CINGULATA.

ORDER Hymenoptera. FAM. Tenthredinidæ.

Type of the Genus, Tenthredo dimidiata *Fab.*

TENTHREDO *Linn., Curt.*—Hylotoma *Fab.*—Allantus *Jur.*

Antennæ stoutest in the male, inserted near the middle of the face, approximating, shorter than the body, compressed, slightly pubescent and 9-jointed (1); basal joint the stoutest and obovate, 2nd the smallest, cup-shaped, 3rd as long as the 4th, the remainder decreasing in length, the apical joint short and elliptical in the male.

Labrum inserted under the clypeus, orbicular, slightly truncated at the base, the margin ciliated with longish hairs (2).

Mandibles very similar, elongate, linear, convex and hairy externally, the apex forming a large claw, with a small tooth below and a tubercle at the middle (3).

Maxillæ slender, terminated by an ovate lobe, with an internal one equally large, and very pubescent, the apex acuminated. *Palpi* long pubescent and 6-jointed, basal joint short, 2nd and 3rd the stoutest, the former scarcely so long as the 3rd or 4th; 5th and 6th a little shorter, the last slightly clavate (4).

Mentum corset-shaped. *Palpi* attached to the anterior angles, rather long, hairy and 4-jointed, basal joint obovate, 2nd twice as long, curved and ciliated before, 3rd and 4th much broader, especially the former which is ovate, the latter ovate-conic. *Lip* rather large and cordate, composed of 3 lobes, the outer ones ovate-trigonate, the central one narrow, dilated at the apex (5).

Males *generally smaller than the females.* Head *transverse, base concave; face trigonate:* eyes *lateral prominent and ovate:* ocelli *large,* 3 *in triangle on the crown.* Thorax *not large, subglobose:* scutel *rather large and semiovate.* Abdomen *linear and depressed in the males, rather large and convex in the females, the apex conical:* ovipositor *with the apex projecting.* Wings, *superior with* 2 *marginal and* 4 *submarginal cells.* Legs, *anterior the shortest, hinder the longest:* coxæ, *hinder large:* thighs *short, hinder the stoutest:* tibiæ *all armed at the apex with a pair of spurs:* tarsi 5-*jointed, first* 4 *joints lobed beneath:* claws *bifid:* pulvilli *distinct.*

Larvæ *with* 6 *pectoral,* 14 *abdominal and* 2 *anal feet.*

CINGULATA *Fab.—Curt. Guide, Gen.* 467. 2.

Male black: abdomen and legs bright ochre, excepting the back of the 2 basal segments and the coxa and trochanters: head and scutel strongly punctured: wings yellowish fuscous, scapulars and costa ochreous, nervures and stigma brown, the latter with an ochreous margin. *Female* with 2 basal joints of antennæ bright ochre: abdomen brown, margins of segments ochreous, excepting the basal one; in other respects it is like the male.

In the Author's Cabinet.

The differences between Tenthredo and Allantus are very slight; the 3rd joint of the antennæ is evidently longer than the 4th in the latter genus, which seems to be the essential character. Tenthredo comprises 23 British species, of which I shall notice a few in my own cabinet.

2. cingulata *Fab.—Curt. Brit. Ent. pl.* 692.

The remarkable insect figured is a hermaphrodite, the right-hand half being feminine, that on the left masculine, so that in the specimen the antennæ, abdomen, legs, and wings are not symmetrical: the sexual organs are represented at fig. 6. Since the attention of naturalists has been called to this subject, a large number of insects of this description have been discovered, especially amongst the Papilionidæ. I have on a former occasion alluded to an example of *Smerinthus Populi* in my possession, but the most extraordinary specimen that has come under my observation was a North American Lucanus, which Mr. Raddon showed me. Never having seen any other Hymenopterous insect of this kind, I have been induced to figure the Tenthredo in the annexed plate; and as the sexes vary in the colour and markings of the abdomen, &c., they are rendered conspicuous in the figure. I took this individual with a vast number of females off Fern in the New Forest in June; the males were very rare. I have also found the females in Coomb Wood in May.

13. neglecta *St. Farg. Mon.* 77. 229.—subinterrupta *Steph.*
Middle of June, Yorkshire and Scotland, J. C.

14. ornata *St. Farg. p.* 77. *no.* 228.—*Faun. Fran. pl.* 3. *f.* 5.

16. scutellaris *Fab.? Panz.* 98. 12.
Common in June and July.

17. ambigua *Klug. die Blatt. p.* 202. 146.

18. nassata *Linn.—Panz.* 65. 2. ♂.—Tiliæ *Panz.* 91. 13. ♀.
End of May and June, abundant in hedges.

19. Rubi? *Panz.* 91. 14. ♀.
Beginning of August near Manchester, and at Roundstone in Connemara.

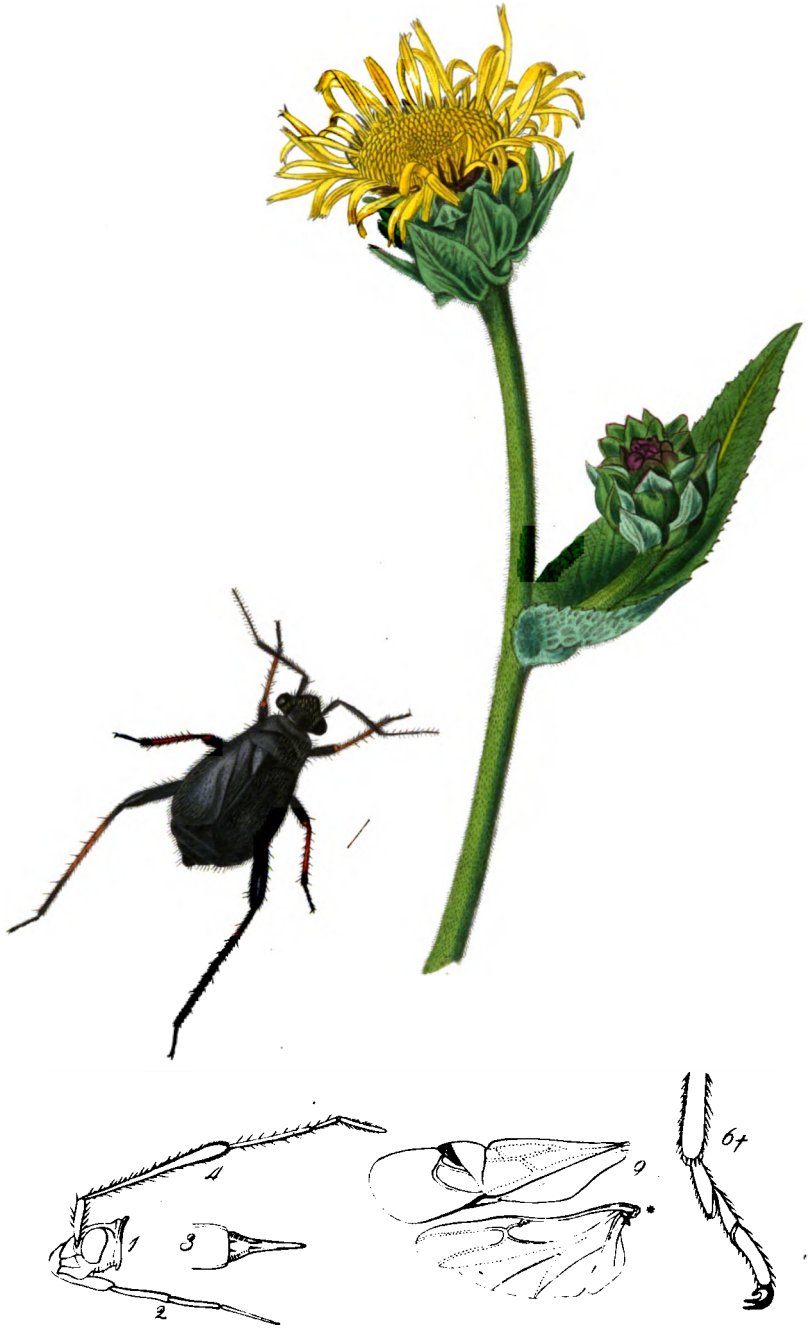
21. antennata *Klug. p.* 129. 98.—duplex *Geoff.*?
Beginning of June, Glanville's Wootton, Mr. Dale.

23. Rapæ *Linn.—Schæf. Icon. pl.* 179. 1.
May and June, common in hedges.

6. dimidiata *Fab.* The lower recurrent nervure in this species, nearly meets the second in the submarginal cell, as in fig. 9*. Klug considers *T. dimidiata*, *scutellaris*, *nassata* and *Tiliæ* of Panzer to be one species, which he has named *instabilis*; but as the neuration of the wings is so different in *T. dimidiata*, I think *that* at least must be distinct.

Mr. Dale possesses a specimen with seven legs.

The Plant is *Spergula arvensis*, Corn Spurry.



693.

CAPSUS HIRTUS.

ORDER Hemiptera. FAM. Coreidæ.

Type of the Genus, Capsus Danicus *Fab.*

CAPSUS *Fab., Lat., Hahn., Curt.*—Lygæus *Wolff.*—Cimex *Linn.*

Antennæ inserted before and close to the eyes, twice as long as the rostrum, pubescent, pilose, geniculated and 4-jointed, basal joint elongate, 2nd very long and clavate, the remainder slender and capillary, articulated at the middle, with one or two other indications of joints or fractures (4).

Labrum about half as long as the basal joint of the labium, broad at the base and attenuated (3).

Mandibles and *Maxillæ* long slender setæ.

Labium incurved and extending to the hinder coxæ; slender, attenuated and 4-jointed, basal joint stout, 2nd a little longer, 3rd scarcely so long, 4th very slender, as long as the 2nd (2).

Head *rhomboidal, the forehead trigonate, neck very short or concealed:* eyes *lateral, very prominent:* ocelli 2, *remote, minute, placed at the base of the head, close to the hinder angles of the eyes* (1 *the head in profile*). Thorax *twice as broad as the head at the base, trigonate, anterior margin truncated, the base convex:* scutel *moderate, triangular.* Elytra *with the costa notched before the stigma, the apex membranous, with* 2 *nervures at the base, united and rounded at the apex* (9). Wings *ample, nearly as long, and broader than the elytra* (*). Abdomen *ovate, very convex beneath, with a long channel in the female, embracing the ovipositor.* Legs *moderate, hinder long:* thighs *simple, hinder the thickest:* tibiæ *slender and linear, hinder the longest:* tarsi *short and triarticulate, terminal joint the longest:* claws *incurved at the base;* pulvilli *minute* (6† *hinder tarsus*).

HIRTUS *Curt.*—*Guide, Gen.* 1109 and 1120.

Slate-black, pilose and sparingly clothed with short depressed yellow hairs: antennæ $\frac{2}{3}$ as long as the body, 2nd joint slightly clavate: head as broad as the base of the thorax; neck none: thorax transverse, a little narrowed before: elytra slightly convex, membrane and wings none: hinder legs very long: tips of thighs, excepting the hinder which are very stout, and the tibiæ, ferruginous, base and apex blackish.

In the Author's Cabinet.

THE type of the genus Capsus is well characterised by the clavate 2nd joint of the antennæ and the slenderness of those that follow: my genus Chlamydatus is distinguished from Capsus by the antennæ, the 2nd joint being scarcely clavate, by the elytra wanting the membranous apex, and by the absence of the wings. The species figured seems to be so intermediate that I doubt whether it will be necessary to retain the genus; this however will be best ascertained by dissection.

For the present, therefore, I shall give sections for the British species contained in my cabinet.

1. Capsus, with a membrane to the elytra and perfect wings.

* *Neck very narrow.*

1. tricolor *Linn.*—*Wolff. pl.* 4. *f.* 35.
   On nettles in the summer.
2. Danicus *Fab.*—*Wolff.* 4. 34.—*Hahn. pl.* 2. *f.* 9.
   Found also on nettles with the former species.

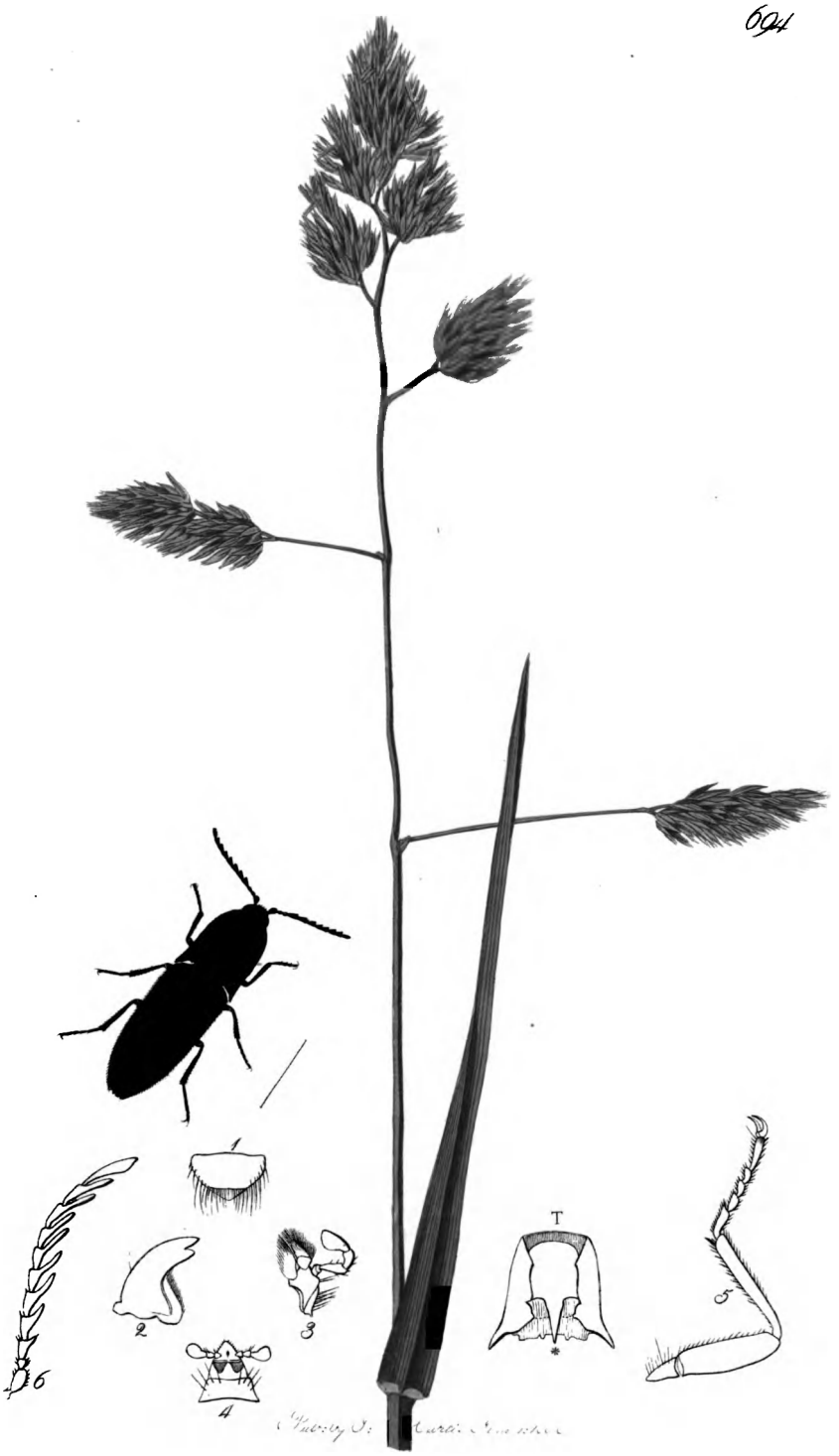
** *Neck broader.*

3. semiflavus *Linn.*—flavicollis *Fab.*—*Wolff.* 4. 32.—ater *Hahn. pl.* 20. *f.* 65.
   June, sandy places, Isle of Portland; m. July, Dover.
4. ater *Linn.*—*Wolff.* 15. 146. *var.*—tyrannus *Fab. var.*—croceus *Geof. var.*
   May, common in grassy places; June, Darent; August, sand hills, Sandwich.
5. unicolor *Hahn.* 59. 179. A.
   Opake black, with scattered short yellowish hairs: membrane fuscous, iridescent: antennæ short, basal joint elongate, pyriform, 2nd stout fusiform: length 1¾ lines.
   Taken near Oxford in July.

2. Chlamydatus, membrane and wings wanting.

6. hirtus *Curt. Brit. Ent. pl.* 693.—saltator *Hahn. pl.* 76. *f.* 236.?
   Whether Hahn's figure be intended for my insect I cannot determine, for he has not indicated the yellow hairs upon it; the hinder thighs are much thicker than in my specimens, the tibiæ are entirely ochreous, and the tarsi are very short.
   I took 3 specimens off grass in dry meadows near Sandwich, the middle of last August.
7. marginatus *Curt.*
   Olive-black, with short ochreous pubescence; head and thorax shining, the former ochreous at the base; elytra with a broad ochreous space at the base and a narrow margin, sometimes all round, of the same colour: abdomen black: hinder legs very long and the thighs very thick; legs ochreous, thighs black, the tips and anterior tibiæ ferruginous: 1 line long.
   Not uncommon on the sand hills at Lowestoft the beginning of June. It resembles the *Cimex grylloides* Linn. in colour, but it is much smaller, and the antennæ are quite different.
8. ochripes *Curt.*—ambulans? *Hahn.* 108. 337. pupa of ♀.
   Shining black, legs pale yellow, tips of tarsi fuscous: 1 line long.
   I took a single specimen during my last visit to the Western Isles of Scotland.

The Plant is *Inula Helenium*, Elecampane, from Ryde in the Isle of Wight, communicated by Dr. Bromfield.



694.

ELATER ATERRIMUS.

ORDER Coleoptera. FAM. Elateridæ.

Type of the Genus, Elater cupreus *Fab.*

ELATER *Linn., Fab., Gyll., Curt.*—Ludius *Lat.*

Antennæ inserted before the eyes, on each side of the clypeus, longer than the head and thorax, 11-jointed, basal joint short stoutish and ovate, 2nd and sometimes the 3rd minute and oval, the remainder compressed oblong, serrated or pectinated internally in the male (6).

Labrum transverse-semiovate, the margins ciliated with long bristles, the apex trigonate, fleshy and pubescent (1).

Mandibles broad at the base, very much curved, the apex broad and bifid, the internal margin membranous and ciliated below the middle (2).

Maxillæ terminating in 2 very pilose lobes. *Palpi* short, stout, clavate and 4-jointed, basal joint small, subglobose, 2nd elongate, pear-shaped, truncated obliquely, 3rd shorter, obovate, 4th the longest, hatchet-shaped (3).

Mentum transverse, narrowed anteriorly with a few long bristles at the angles. *Lip* rather long and trigonate. *Palpi* inserted near the sides towards the apex, short and triarticulate, 2 basal joints small, obovate, 3rd large and hatchet-shaped (4).

Head *subovate:* eyes *small lateral and orbicular.* Thorax *considerably broader than the head, elongate-ovate, truncated before and at the base, which is broadest and sinuated, the angles produced into spines; the* sternum *with a spine beneath (T*), which rests in a cavity between the intermediate coxæ:* scutel *distinct and ovate.* Elytra *a little broader than the thorax, very long, the apex more or less conical, sometimes notched.* Wings *ample.* Legs *moderate and slender:* thighs *short:* tibiæ *simple:* tarsi *slender, sometimes lobed, 5-jointed, basal joint not longer than the terminal one:* claws *long and slender* (5, *a fore leg*).

ATERRIMUS *Linn. F. S. No.* 726.—*Curt. Guide, Gen.* 309. 23.

Opake charcoal-black, clothed with minute depressed black hairs: clypeus trigonate and extending a little over the labrum; the trophi nearly concealed: antennæ not longer than the thorax, punctured, serrated, 2nd and 3rd joints minute: head and thorax thickly punctured and finely shagreened, the latter oval, with the hinder angles a little divaricating, acute with sharp edges, a short channel near the base: scutel and elytra thickly punctured, the latter slightly glossy, somewhat bluish-black, the striæ clean and punctured; apex emarginate, forming 2 small points: legs very slender, knees a little ferruginous; claws ochreous: underside minutely punctured.

In the Author's Cabinet.

THE larvæ of these insects live in decayed trees, under the bark and in the earth, they have horny skins, and one of them,

called the wire-worm, is very destructive in our fields and gardens. The beetles are called Elaters from a singular power they possess of leaping when laid on their backs, by which means they recover their legs; when thus placed they sometimes contract their legs and lie as if dead, but they shortly press their extremities against the surface on which they are placed, and by means of the spine and socket before alluded to, they dexterously leap up several inches. They fly well, and are found on trees, grass, under stones, in flowers, decayed wood, under bark, &c. At least 700 species have been discovered in different parts of the world, which have been divided into genera by Eschscholtz; but I can do no more than give a type of each of those that are British.

Steatoderus *Esch.*

1. ferrugineus *Linn.*—*Don.* 10. 356. 1.—*Panz.* 10. 10.

Ludius *Lat.*—Ctenicera *Lat.*

4. pectinicornis *Linn.*—*Don.* 10. 356. 2.—*Panz.* 77. 1.

Ampedus *Meg.*—Elater *Esch.*

8. sanguineus *Linn.*—*Don.* 15. 508. 2.—*Panz.* 5. 3.

Limonius *Esch.*

16. minutus *Linn.*—angustus *Herb.*

Aplotarsus *Ste.*

21. bipustulatus *Linn.*—*Panz.* 76. 10.

Ectinus *Esch.*?

23. aterrimus *Linn.*—*Curt. Brit. Ent. pl.* 694.

My specimen, the only one I have seen, was taken at Windsor by Mr. C. Griesbach. I do not doubt that it is the true *aterrimus*, but Gyllenhal's seems to be another species.

Lepidotus *Meg.*

25. holosericeus *Fab.*—*Oliv.* 2. 31. *t.* 3. *f.* 33.—undulatus *Herb.*

Agrypnus *Esch.*

26. murinus *Linn.*—*Oliv. v.* 2. *gen.* 31. *t.* 2. *f.* 9.

Melanotus *Esch.*—Cratonychus *Dej.*

27. fulvipes *Herb.*—castanipes *Mars.*

Sericosomus *Serv.*—Sericus *Esch.*

29. brunneus *Linn.*—*Oliv. t.* 3. *f.* 30.

Agriotes *Esch.*

30. sputator *Linn.*—variabilis *Herb.*

Hypolithus *Esch.*—Cryptohypnus *Esch.*

33. agricola *Zet.*—*Don.* 16. 545.

Selatosomus *Ste.*

39. æneus *L.*—impressus, cyaneus, *Don.* 15. 535. 1 and 2.

Drasterius *Esch.*

41. bimaculatus *Fab.*—*Panz.* 76. 9.

Cardiophorus *Esch.*

42. thoracicus *Fab.*—*Panz.* 6. 12.

Ctenonychus *Ste.*

45. cylindrus *Leach.*

Athöus *Esch.*

47. niger *Linn.*—*Ol. t.* 6. *f.* 65.—nigrinus *Mars.*

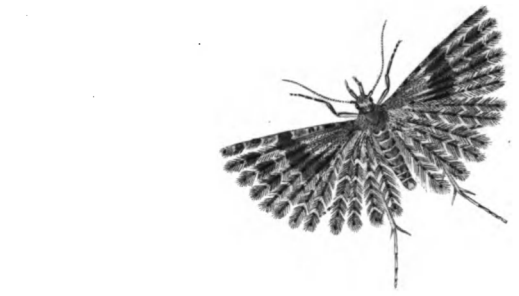
Dolopius *Esch.*

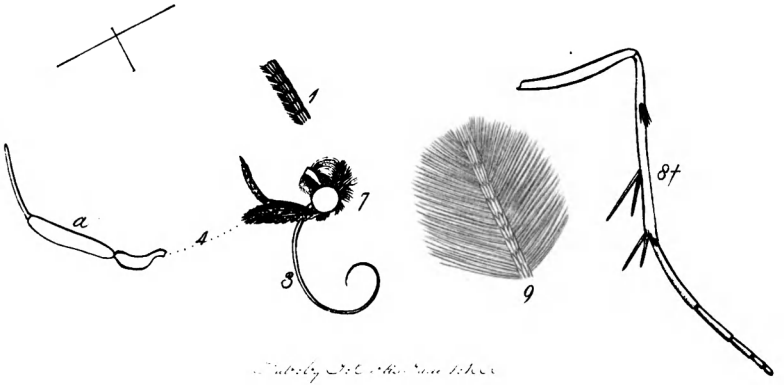
55. marginatus *Linn.*—lateralis *Ol. t.* 8. *f.* 80.—suturalis, fulvus, *Mars.*

Adrastus *Esch.*

56. limbatus *Fab.*—*Ol. t.* 7. *f.* 73.? nitidulus *Mars.*—pusillus *Herb.*

The Plant is *Dactylis glomerata*, Rough Cock's-foot-grass.





695.

ALUCITA HEXADACTYLA.

The twenty-four plume or fan Moth.

ORDER Lepidoptera. FAM. Alucitidæ *Lea.* Pterophorites *Lat.*

Type of the Genus, Alucita hexadactyla *Linn.*

ALUCITA *Linn., Hüb., Curt.*—Pterophorus *Fab.*—Orneodes *Lat., Och.* *Antennæ* inserted in front of the crown, close to the eyes, short, very slender and capillary, composed of numerous scaly joints, pubescent beneath (1).

Mandibles remote, small, elongate-trigonate, ciliated internally. *Maxillæ* spiral, very slender and twice as long as the palpi, but scarcely so long as the antennæ (3).

Labial palpi rather long, porrected considerably beyond the head, triarticulate, basal joint robust, cleaver-shaped, 2nd long, stout, somewhat shuttle-shaped and densely clothed with scales, projecting beyond the apex beneath, 3rd joint recurved, slender, nearly as long as the 2nd, clothed with minute scales (4 and 4 a).

Head *globose, densely clothed with hairy scales* (7, *the profile*) : eyes *globose and prominent* : ocelli 2, *distinct.* Thorax *small and round.* Abdomen *moderately long, linear and a little tufted at the apex in the male, stouter and conical in the female.* Wings *expanded like a fan in repose, each composed of* 6 *rays, beautifully and densely ciliated on both sides* (9 *the apical portion*). Legs *long and slender, especially the hinder* : coxæ, *anterior long and stout* : thighs, *anterior the shortest as well as the* tibiæ, *these have an internal spine ; intermediate with an unequal pair of long spurs at the apex, hinder very long, with a tuft of bristles outside towards the base, a pair of unequal spurs at the apex, and a longer pair a little below the middle* (8†) : tarsi 5-*jointed, basal joint the longest* : claws *and* pulvilli *extremely minute.*

Larvæ *with* 6 *pectoral,* 8 *abdominal and* 2 *anal feet.* Pupæ *inclosed in transparent silken cocoons.* Lat.

HEXADACTYLA *Linn.*—*Curt. Guide, Gen.* 1041. 1.

In the Author's and other Cabinets.

THE moths forming this little group are the most beautiful objects that can be conceived when at rest, with their wings

expanding precisely like a fan: there are six rays in each wing, forming as many perfect feathers, which are beautiful even to the naked eye, but when magnified they become still more interesting objects for our contemplation; there are altogether 24 of these feathers, which are in truth the nervures, and being fringed on both sides, when they are expanded these feathers touch, so as to form wings which enable this little animal to fly with ease.

Three species are recorded as British, but I think it is very doubtful whether they be any more than varieties. The specimen figured is unquestionably *A. hexadactyla*, yet the markings agree well with those of the *A. polydactyla* of Hübner.

1. hexadactyla *Linn.—Curt. Brit. Ent. pl.* 695 ♂.

   Fuscous ochre freckled with brown: abdominal segments with narrow white margins and a line of black dots down each side: superior wings with 5 violaceous-black spots on the costa margined with ochre, the 3rd uniting with a broader fascia across the middle, having pale edges; a similar but narrower fascia beyond it, vanishing towards the posterior angle: inferior wings with 4 narrow denticulated ochreous lines; the rays dotted with black, all ochreous at the apex with a black dot.

This is common in houses, buildings in gardens, &c. from the end of March to October, and sometimes in the winter also. The larva feeds on the honeysuckle, but I know of no figure of it.

2. polydactyla *Hüb. Aluc. tab.* 6. *f.* 28 ♀.

   "Anterior wings yellowish red, with a violaceous fascia edged with white."

3. pœcilodactyla *Ste. Ill.* 4. 379. 3.

   "Wings cinereous-ochre, with 2 irregular fasciæ and fuscous dots."

This and No. 2. have been taken in June near Brockenhurst, in the New Forest.

The Plant is *Medicago maculata*, Heart Medick.

696.

PANORPA GERMANICA var.

The lesser spotted Scorpion-fly.

ORDER Neuroptera. FAM. Panorpidæ.

Type of the Genus, Panorpa communis *Linn.*

PANORPA *Linn., Fab., Lat., Curt.*

Antennæ inserted near the base of the rostrum, approximating, almost as long as the body, slender, filiform, pubescent, composed of numerous oblong joints, 1st the stoutest, 2nd the shortest, 3rd the longest, the remainder decreasing in length to the apex (1, the base).

Trophi attached to the apex of the rostrum (1*).

Labrum oblong, margined, rounded and pubescent (2).

Mandibles elongated, linear, terminated by 2 curved claws, inner one the smallest (3).

Maxillæ terminated by 2 long hairy lobes, a little curved and rounded at the apex. *Palpi* longish, slightly pilose and 5-jointed, 2 basal joints oblong, the following a little stouter, 3rd and 4th elongate obconic, truncated, 5th subconical at the apex (4).

Mentum elongated, sides dilated and convex before the apex. *Labium* oblong, a little narrowed at the base. *Palpi* much shorter than the maxillary, triarticulate? 2 basal joints pubescent internally, 3rd curved a little, the apex ovate (5).

Head *small, transverse-ovate*: rostrum *long stout tapering and vertical*: eyes *lateral prominent and oval*: ocelli 3, *forming a triangle in front of the head* (1* *the face, &c.*). Thorax *oval, a little broader than the head, with a deep suture across the middle*; collar *short*: scutel *and* postscutel *transverse-ovate*. Abdomen *subcylindric at the base, 8-jointed, the apex recurved in the* males (7), *6th and 7th joints subcampanulate, 8th dilated, ovate and armed with lateral forceps* (7*); *tapering in the* female, *the apex ovate-truncate and furnished with 2 divaricating filaments, apparently triarticulate and hairy* (6). Wings *alike, reticulated, long, narrowed at the base, the apex rounded; deflexed in repose, the inferior covered, these are a little shorter than the superior; longitudinal nervures numerous, as well as the transverse ones towards the apex.* Legs *long but slender, hinder the longest*: coxæ *long*: thighs *linear*: tibiæ *slender, with fine long spurs at the apex*: tarsi *a little shorter, 5-jointed, basal joint long*: claws *curved, with long teeth beneath*: pulvilli *spongy* (8, *a fore foot*).

GERMANICA *Linn.—Curt. Guide, Gen.* 737. 3.

In the Author's and other Cabinets.

COMMON and conspicuous as these insects are, nothing is known of their metamorphoses; this is very remarkable, and it leaves one to imagine that their early stages are passed under ground. I cannot think the larvæ are aquatic; it is more pro-

bable that they inhabit the trunks of trees like many other Neuroptera.

The perfect insects are said to live upon Diptera, and the two first species are found in woods, hedges, meadows, and gardens, in May and June.

The rostrum is formed by the union of the elongated bases of the trophi, and the singular structure of the tail in the males has caused them to be called Scorpion flies.

As there are innumerable varieties of these insects, I think it is very probable they may all belong to one species; I shall however give the essential characters of the types found in Britain.

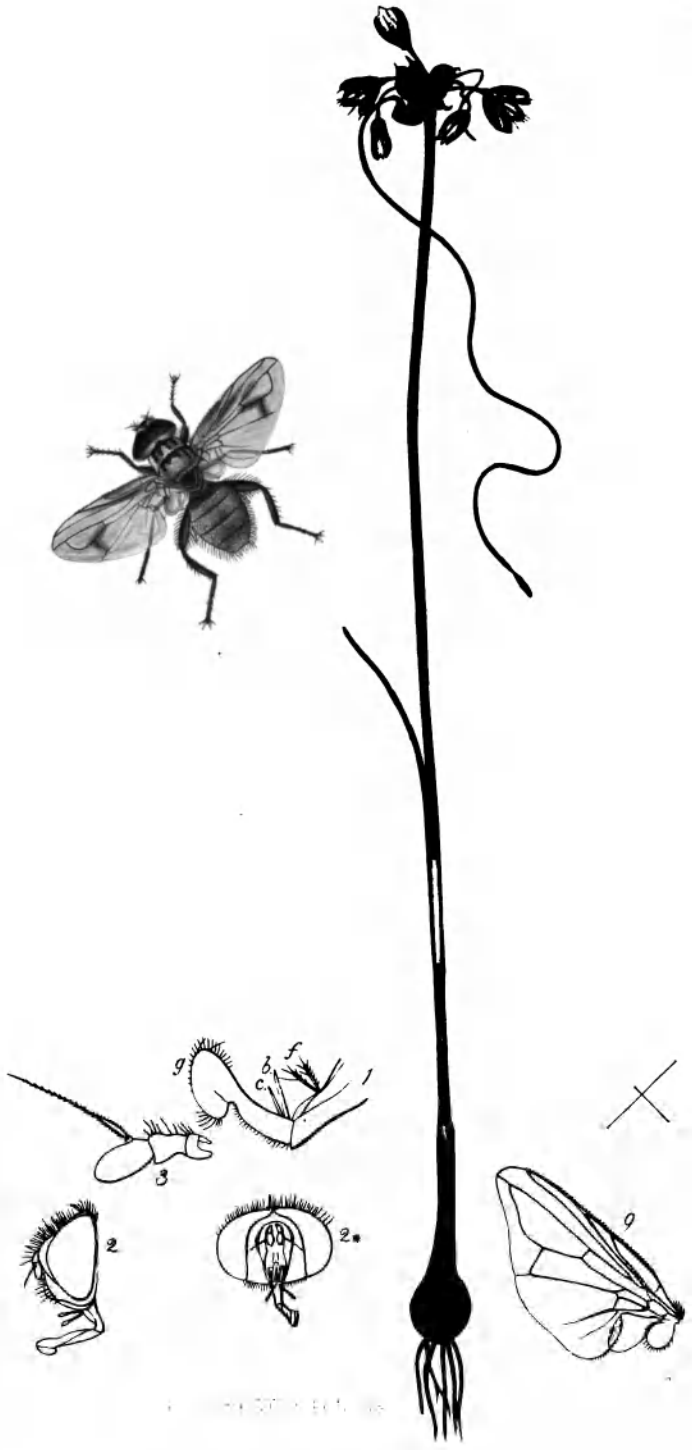
1. communis *Linn.*—*Don.* 6. 201. ♀.—*Zool. Misc.* 2. *t.* 95. *f.* 1.
Blackish; rostrum, crown of head, and 3 terminal joints of abdomen ferruginous, 4 spots down the thorax and legs ochreous; wings with a fascia beyond the middle, the apex and a few spots towards the base brown: expanse 1 inch and upwards.

2. affinis *Lea. Zool. Misc.* 95. 2.—communis *Don.* 6. 201. ♂.
Similar to No. 1.: wings spotted with brown; instead of the fascia there are 3 spots, and the apex is margined and spotted below.

3. apicalis *Ste. Ill.* 6. 52. 3.
Black, wings hyaline, the apex and nervures fuscous, legs piceous: expanse 9 to 10 lines.
June, Darent Wood.

4. borealis *Leach, MSS.*
Black; rostrum, apex of abdomen and legs piceous; wings hyaline, stigma and nervures fuscous.
In the British Museum: it was found by Dr. Leach near Edinburgh.

5. germanica *Linn.*—*Curt. Brit. Ent. pl.* 696. ♂. *var.*
Ochreous, finely pubescent, head ferruginous, face black, excepting the 2 cavities in which the antennæ are inserted: antennæ piceous, basal joint ferruginous: thorax greyish-black with a broad ochreous stripe down the middle, as well as a spot on each side before the wings: abdomen greyish black, 3 terminal joints ferruginous, a line down each side of the others, and the edges of the segments ochreous: wings iridescent, nervures brown, transverse ones pale: stigma yellow, with a quadrate fuscous spot, a small faint fuscous cloud below each, a few smaller ones on the disc of the superior, and a lunulate one at the apex: tips of tarsi piceous.
Obs. The spots are often much stronger than in the variety figured and described.
Beginning of September in damp woods, Glanville's Wootton, Mr. Dale; also in the New Forest and Cumberland in June and July.
The Plant is *Malva rotundifolia*, Dwarf Mallow.



697.

PHASIA SPECIOSA.

ORDER Diptera. FAM. Muscidæ.

Type of the Genus, Syrphus hemipterus *Fab.*

PHASIA *Lat., Meig., Macq., Curt.*—Hyalomyia *Desv.*—Syrphus, Thereva *Fab.*—Conops *Linn.*

Antennæ inserted under a slight protuberance of the forehead, short, drooping, approximating and 5-jointed, basal joint short stout and a little bristly above, 2nd twice as large, somewhat obovate-truncate and bristly above, 3rd the longest and broadest, ovate, 4th a small joint attached near the base of the 3rd; 5th setiform, not very long, pubescent, incrassated at the base (3).

Labrum rather long, horny lanceolate and acuminated (1 *b*).

Tongue shorter and slenderer (*c*).

Mandibles and *Maxillæ* none.

Palpi exserted, attached far behind the labrum, nearly as long as the tongue, slender, clavate, and hairy (*f*).

Labium exserted, long, geniculated and hairy, terminating in 2 large lobes (*g*).

Males *smaller than the females.* Head *short, subtrigonate, crown very deflexed in the female, face nearly vertical, a little concave, with a line of bristles on each side, and pubescent in the male* (2 *the profile,* 2* *the full face*): eyes *very large, ovate-trigonate, nearly contiguous in both sexes:* ocelli 3, *forming a triangle at the base of the head.* Thorax *narrower than the head, suborbicular:* scutel *transverse-trigonate.* Abdomen *depressed, suborbicular and broader than the thorax, pubescent and 5-jointed, the apex armed beneath with a strong claw in the male, inclosed in a sheath.* Wings *divaricating, very broad in the female* (9): Squamulæ *moderately large, concealing the* Halteres, *which are slender and capitate.* Legs *stout:* tibiæ, *hinder curved and rather stout:* tarsi 5-*jointed, basal joint the longest, 4th obtrigonate:* claws *long slender and curved:* pulvilli *bilobed, long and dilated at the apex.*

SPECIOSA *Curt. Guide, Gen.* 1269.

Blackish, pubescent; face silvery or silky-white, yellowish above, bluish below: palpi ochreous, antennæ brownish, with a whitish tinge; eyes castaneous: thorax shining-white, with 4 deep black stripes at the base, all united before, two short ones on the disc and a long one on each side; scutel bluish-black: abdomen bluish-grey, with a rosy tinge on the back, 1st segment black at the base, the others with a narrow black margin and a blackish dorsal line in some lights: wings very broad, bright ochreous at the base, variegated with fuscous on the costa, a spot on the 2nd longitudinal nervure, a short space on the 3rd, and the transverse nervure margined with fuscous, forming an angular mark.

In the Cabinet of Mr. Rudd.

THERE seems to be great difficulty in ascertaining the sexes of this group, which are very dissimilar, and there is a great diversity of opinion upon the subject: never having seen the insects alive, and possessing only old specimens, I am unable

to investigate the subject, and therefore it is possible I may have reversed the sexual distinctions in my generic characters: if it be so, the males are larger than the females, and such is Meigen's opinion.

The Phasiæ are remarkable-looking flies, especially the females, which have the wings very broad towards the base. Robineau Desvoidy has divided Meigen's genus into several others, of which 3 are inhabitants of this country, and are thus characterised:

I. Elomyia Desv. 1*st posterior cell closed but not petiolated.*

1. cana *Hgg.—Meig. v.* 4. *p.* 201. *no.* 30.
"Cinereous; thorax striped with black; wings hyaline. 3 lines."
Taken, I believe, by Mr. Haliday in Ireland.

II. Alophora Desv. 1*st posterior cell uniting obliquely with the 2nd longitudinal, leaving a short petiole* (*fig.* 9.).

2. subcoleoptrata *Linn.—Meig.* 190. 7. *pl.* 39. *f.* 13.
"Thorax cinereous, with black stripes; abdomen fuscous-cinereous; wings with a broad fuscous stripe (♂ ?) or hyaline (♀ ?): 4 and 3 lines."
Taken, I believe, near Darent, in Kent

3. hemiptera *F.—Don.* 12. 429.—*Panz.* 74. 13. and 14. and 16. affinis.
"Abdomen ferruginous with a black stripe; wings dilated, variegated with fuscous and yellow ♂?, 5 to 6 lines; or with the abdomen black, the sides testaceous, wings subhyaline ♀? 4 to 5 lines."
June, Devon, Dr. Leach; and Mr. Simmons took one off flowers of the cow parsnep last September in Melton Wood, near Doncaster.

III. Hyalomyia Desv. 1*st posterior cell forming nearly a right angle with the 2nd longitudinal, leaving a long petiole* (*vide the coloured figure*).

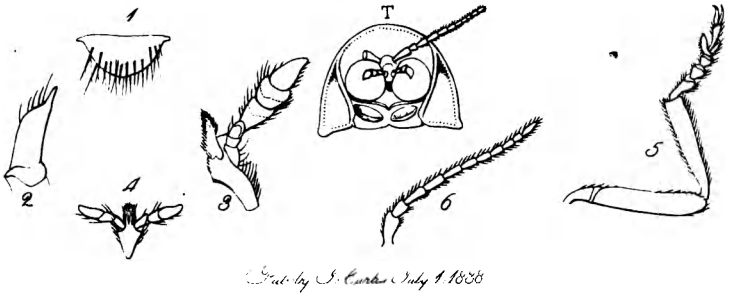
4. speciosa *Curt. Brit. Ent. pl.* 697. ♂?
This is the *P. obesa* Meig.: but as Fabricius says, "thorax black, immaculate; wings obscure," I cannot think that it is his *T. obesa.*
For the loan of the specimen figured I am indebted to the Rev. G. T. Rudd, who took it last August in a clover-field in the Isle of Wight.

5. semicinerea *Meig.* 199. 24. *pl.* 39. *f.* 14.
"Thorax and 2 basal segments of abdomen black, the following hoary; wings hyaline. 1 line."
Taken near London.

6. pusilla *Hgg.—Meig.* 198. 23.
"Thorax black; abdomen hoary, base black; wings hyaline. 2 lines."
I have taken specimens, and Mr. Clifton has also found it. Large swarms sometimes unite, flying in the air.

7. hyalipennis *Fall.—Meig.* 199. 25.?
"Black, shining; wings hyaline; scales blackish. 1½ line."
Mr. Rudd took a specimen last August in the Isle of Wight.

Allium arenarium, Sand Garlic, was found near St. Vincent's Rocks, and communicated by Mr. G. H. K. Thwaites.



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698.

LAMPYRIS NOCTILUCA.

The Glow-worm.

ORDER Coleoptera. FAM. Lampyridæ.

Type of the Genus, Lampyris noctiluca *Linn.*

LAMPYRIS *Linn., Fab., Lat., Curt.*

Antennæ approximating, inserted in front of the head between the eyes, shorter than the thorax, pubescent, filiform, compressed, 11-jointed, basal joint the longest and stoutest, 2nd ovate-truncate, 3rd and 4th longer than the following, which gradually decrease in size, 10th the smallest, 11th longer, ovate-conic, the apex slightly emarginated on the side (6).

Labrum rather membranous at the base, semicircular, the basal angles produced, margin clothed with long stout bristles (1).

Mandibles small, sublinear, rounded and bristly externally towards the apex, which is acuminated (2).

Maxillæ terminating in a narrow, leathery, densely hairy lobe, somewhat pointed. *Palpi* comparatively large, stout, subfusiform, hairy and 4-jointed, basal joint the smallest, 2nd large obconic-truncate, the apex fleshy and white as well as the 3rd, which is more cup-shaped, 4th the longest and conical, the apex compressed (3).

Mentum very small, scutcheon-shaped, the anterior angles excised for the insertion of the *Palpi*, which are much smaller than the maxillary, sublinear, slightly pilose and composed of 3 indistinctly articulated joints, basal joint oblong, 2nd more cup-shaped, 3rd the longest, subovate. *Labium* narrow and hairy (4).

Head *completely concealed under the thorax* (T, *the underside of both*) *and sunk in a cavity:* eyes *very large and globose in the male, and nearly meeting beneath.* Thorax *semi-ovate with a horny margin, the base truncated and sinuated, the angles slightly produced:* scutel *subovate.* Elytra *scarcely broader than the thorax, but 4 times as long, depressed, somewhat coriaceous, linear, the apex rounded.* Wings *ample.* Abdomen *depressed.* Legs *short, nearly alike:* thighs *slender:* tibiæ *compressed, narrowed at the base:* tarsi 5-*jointed, basal joint oblong, 2nd and 3rd somewhat obtrigonate, 4th bilobed, 5th as long as the 1st; slender and clavate:* claws *simple and hooked* (5 *a fore leg*). Female *larger, apterous;* 4 *apical segments of abdomen phosphorescent beneath:* eyes *small.*

Larvæ *and* Pupæ *similar to the female.*

NOCTILUCA *Linn.—Curt. Guide, Gen.* 315. 1.

Male fuscous, thickly and coarsely punctured and clothed with very short ochreous depressed hairs: thorax with a lurid ochreous margin, with two diaphanous lunate lines in front, the disc shining; elytra with 4 obscure elevated somewhat oblique lines on each: eyes black: legs fuscous-ochre, brightest at the base: abdomen with the 2 or 3 terminal segments ochreous beneath. *Female* reddish-brown, no diaphanous lines on the thorax: 2 basal segments of abdomen with ochreous and orange angles, the 3 terminal ones edged with ochre above, broadest in the terminal one, entirely ochreous beneath.

In the Author's and other Cabinets.

Of all the minor works of Creation, none seems to make a stronger impression upon the youthful mind than the Glow-worm. In the warm and calm evenings of the early summer months, this insect emits a mild pale light, which seems like a terrestrial star shining from a bush or bank; sometimes it moves, and varies in its power. Our astonishment is great when we first behold this novel phænomenon; and if we search for the cause, it is increased on finding that it proceeds from a *crawling insect*; for the male, which alone has wings and is able to fly, gives but very little light.

The fire-flies of Italy, which exhibit a much more brilliant light than our glow-worm, belong to the same genus of beetles, and in warmer latitudes there are prodigious quantities and great varieties of this tribe; I believe, however, that it is admitted by travellers that the light of all is inferior to the splendid illumination of the fire-fly of the West Indies, the *Elater noctilucus*, which, through the kindness of my friend J. C. Lees, Esq., of New Providence, I have seen alive in this country.

It is presumed that the phosphoric light of the glow-worm is necessary to enable the males to discover their mates, since it is in the night alone that they are active; for in the day they lie concealed. Sometimes a large number of the males are attracted by the light of a candle; Mr. Dale informs me that he took forty in this way in one night, and that he has found the glow-worm from the end of June to the 14th of November: the larvæ and pupæ appear as early as the end of March or the beginning of April, and I believe they also emit light.

It will be remembered that the head of the glow-worm is perfectly concealed beneath the thorax, which forms a shield over it in both sexes, and that there are frequently in the males two semitransparent spots in front of the thorax, which are doubtless to admit of the light falling upon the eyes, which are very large in that sex, and exceedingly minutely reticulated.

For specimens of the Purple Mountain Milk-vetch, *Astragalus hypoglottis*, I am indebted to E. F. Witts, Esq., who gathered them near Slaughter in Gloucestershire.

699.

TERAS EXCAVANA.

The iron Notchwing.

ORDER Lepidoptera. FAM. Tortricidæ.

Type of the Genus, Pyralis caudana, *Fab.*

TERAS *Treit., Dupch., Curt.*—Pyralis, *Fab.*—Tortrix, *Hüb., Haw.*

Antennæ inserted close to the eyes on the crown of the head, shorter than the body, setaceous, composed of oblong joints, scaly above, pubescent beneath (1).

Maxillæ scarcely so long as the palpi, spiral, rather stout, with short tentacula at the apex (3).

Labial palpi rather long, porrected far beyond the head, parallel, clothed with short scales which make the 2nd joint convex above and leave only a small portion of the apical joint apparent (4); triarticulate, basal joint short, cleaver-shaped, 2nd very long, stout and somewhat clavate, straight beneath, convex above from the middle, the base slender, the apex narrowed; 3rd joint about $\frac{1}{3}$ as long, elliptic-conic (*a*).

Head *short, densely scaly:* eyes *hemispherical.* Thorax *subglobose.* Abdomen *subdepressed; linear in the male, with a tolerable tuft at the apex; trigonate and scaly at the apex in the female.* Wings *very slightly deflexed in repose, forming an elongate triangle;* superior *hooked at the apex, the costa very much arched with a large notch at the middle:* inferior *harp-shaped;* cilia *moderate.* Legs *stoutish:* thighs, *middle pair the longest:* tibiæ, *anterior short, with an internal spine, intermediate with a pair of spurs at the apex, one very long; hinder tibiæ the longest and stoutest, with unequal spurs at the apex, and a pair a little below the middle:* tarsi *rather short and 5-jointed, basal joint very long, 4th and 5th very small:* claws *and* pulvilli *minute* (8†).

Metamorphoses *unknown.*

EXCAVANA *Haw. Lep. Brit.* 408, 44.—*Curt. Guide, Gen.* 965. 2.

In the Author's and other Cabinets.

THE moths forming this natural little genus are usually of the same size, and I think it not improbable that the 2nd and 4th are only varieties of the preceding species. They are all well characterized by the curious excavation of the anterior margin of the superior wings; they are principally found in the early part of autumn, by the sides of pathways in woods.

1. T. emargana *Fab.*—*Wood, pl.* 36. *f.* 1103.

Superior wings ochreous, reticulated with brown, the posterior half brown with ochreous spots towards the apex.

July 31st, by an ozier hedge at Niton in the Isle of Wight, J. C.; also in the New Forest; woods near Dover, Northumberland and Scotland in August.

2. excavana *Haw.*—*Wood, f.* 1104.—emargana *Don. v.* 3. *pl.* 106. *f.* 5.

Ferruginous-orange; superior wings obscurely reticulated with brown, with 2 waved strigæ towards the base, an ash-coloured fascia passing obliquely across the middle, sinuated on both sides and bearing a few minute tufts of scales, the same colour continued along the margin of the notch; base of cilia lead-colour: abdomen subochreous, deepest at the apex: inferior wings greyish-white, somewhat ochreous and reticulated towards the apex.

Obs. Many specimens are much darker than the one figured, but Donovan's drawing is very indifferent, and I know of no figure of it in any Continental work.

August, Caen-wood, Hampstead; Coomb-wood, Surrey; Birch and Darent woods, Kent; beginning of September, by an ozier hedge, Niton, and New Forest, J. C.; Raehills, Dumfriesshire, Rev. W. Little.

3. effractana *Frol.*—*Wood, fig.* 1105.—emargana *Don.* 3. 106. 1.

Superior wings ochreous-grey, clouded, the inferior margin sometimes ferruginous, with a deep notch on the costa.

End of August, Caen, Coomb, and other woods round London; beginning of September, ozier hedge, Niton, and New Forest, J. C.

4. caudana *Fab.*—*Wood, fig.* 1106.—ochracea, *Ste. var.*

Superior wings pale ochreous-grey, clouded, with a shallow notch on the costa.

Found in Yorkshire and other northern counties in August.

I have not referred to Hübner, for if Treitschke's criticisms be correct, the names of the two last species are transposed in the work of the former author.

The plant is *Campanula latifolia*, Giant Bellflower, for which I am indebted to T. C. Heysham, Esq., of Carlisle.

700.

NEPA CINEREA.

The water Scorpion.

ORDER Hemiptera. FAM. Nepidæ.

Type of the Genus, Nepa cinerea, *Linn.*

NEPA *Linn., Fab., Lat., Curt.*

Antennæ inserted below and a little behind the eyes (1*a*); short, linear, curved, bent upward and lying behind the eyes in repose, triarticulate, 2 basal joints stout, subovate, the latter pilose inside, 3rd as long as the others united, slenderer, pilose, a little attenuated and slightly curved at the apex (4).

Labrum lanceolate (3), as long as the basal joint of the labium and inclosing the

Mandibles and *Maxillæ* (*m*) which are capillary, curved and compressed, the latter membranous with the back thickened, the former rather longer, closely united, horny, the apex ciliated with short hairs.

Labium short, nutant, very stout and triarticulate, basal joint excavated above, the rest of the trophi passing over and forming a bridge (1, 3), 2nd joint a little the longest, oblong, truncated obliquely, 3rd joint shorter, much narrower and ovate-conic, pilose at the apex (2).

Head *small and narrow:* eyes *lateral, very prominent and subglobose:* rostrum *vertical.* Thorax *subquadrate, a little broadest at the base which is concave, anterior margin excavated in the middle to receive the head, all the angles rounded:* scutel *large and trigonate.* Abdomen *large, quite flat on the back, elongate-ovate, the apex pointed and furnished with* 2 *capillary filaments, shorter than the body.* Elytra *leathery, lying flat, the extremities crossing and indistinctly reticulated.* Wings *shorter but broader than the elytra, folded, with few nervures.* Legs, *anterior raptorious:* coxæ *stout, trochanters slenderer:* thighs *stout, a little dilated and notched at the base, attenuated at the apex:* tibiæ *short, linear and a little curved:* tarsi *elongate-conic, without articulations, but having a short stout horny claw at the apex* (6)*: the other legs slenderer, hinder the longest:* thighs *linear:* tibiæ *linear and simple, with a short spine at the apex:* tarsi *forming a longish, linear joint with two slender claws at the apex.*

Larva *and* Pupa *similar to the Imago, but without wings.* Roesel, v. 3. tab. XXII.

CINEREA *Linn.—Curt. Guide, Gen.* 1078. 1.

Muddy brown, head with a ridge down the middle; thorax uneven with a transverse suture towards the base, 2 elevated lines on the disc and 2 on each side of the base: scutel with the margins raised at the base: abdomen scarlet, brown at the base, centre of back and apex palé brown, filaments ochreous: wings yellowish-brown with yellow and scarlet nervures: anterior thighs with one or two ochreous spots and a ring of the same colour near the base of the tibiæ.

In the Author's and other Cabinets.

THERE are various species of this singular insect distributed over the old world, but I do not remember to have seen one from any part of America; yet the genera Belostoma and Naucoris are not uncommon there. The only species found in this country, and I believe I may add in Europe, inhabits ditches and ponds: it moves slowly, and when resting amongst the confervæ or mud at the bottom of the water it is easily overlooked, from its obscure dirty colour; yet when the wings are expanded, the fine scarlet tint of the back gives it a handsome appearance. I think there is little doubt that Nepa can fly, yet I never heard of one being detected on the wing. It is found throughout the year in every stage. The eggs are very remarkable, and resemble the seeds of some Syngenesious plants; they are deposited in a string, embracing each other by seven rays surrounding the apex, which close upon the base of the one before it.

These insects, like *Ranatra linearis* (pl. 281.), are carnivorous, and live, I believe, in their different states, upon other insects and small animals, such as tadpoles, whether dead or alive: they are provided with powerful anterior legs, peculiarly adapted for seizing upon the larvæ and pupæ of other aquatic insects, more active than themselves, which are speedily despatched by their strong proboscis. Like other insects inhabiting the water, their antennæ are small, and their situation is similar to that of the flea, lying in cavities immediately behind the eyes. The filaments forming two tails are for the purpose of respiration when the insects are under water.

In the 7th volume of the "Annales Générales des Sciences Physiques" is an elaborate and curious memoir, by Mons. Leon Dufour, detailing the anatomy and organization of *Nepa cinerea* and *Ranatra linearis*, which are said to be very remarkable.

The plant is *Sagittaria sagittifolia*, Common Arrow-head.

701.

MIRIS TRITICI.

ORDER Hemiptera. FAM. Coreidæ.

Type of the Genus, Cimex dolabratus *Linn.*

MIRIS *Fab., Lat., Hahn., Curt.*—Lygæus *Wolff.*—Stenodema *De Lap.*—Lopus *Hahn.*—Cimex *Linn.*

Antennæ as long or longer than the body, inserted before the eyes, towards the base of the clypeus, remote, setaceous, pubescent and 4-jointed, basal joints parallel, stoutest, especially in the female, contracted at the base, longer than the head, 2nd capillary thrice as long, 3rd slender and about half as long as the 2nd, 4th the slenderest, not longer than the 1st (4).

Labrum elongated, tapering, hairy outside (3).

Mandibles and *Maxillæ* very slender.

Labium inflected, reaching to the hinder coxæ, pubescent, 4-jointed, basal joint very stout, not longer than the head, the remainder slender, 2nd as long as the 1st, the others a little shorter, the terminal one tapering at the apex (2).

Head *rhomboidal, small, the front triangular:* eyes *small, lateral, very prominent, ovate:* ocelli *none.* Thorax *elongate-trigonate, being narrowed and truncated before, the base broad with the angles rounded;* scutel *tolerably large and triangular.* Abdomen *flat and margined above, convex beneath with a long suture in the female to receive the ovipositor.* Elytra *not much broader than the base of the thorax, very long and linear, extending beyond the abdomen in the males, sometimes much shorter in the females, nervures few, stigma elongated, a long elliptical cell at the base of the membrane.* Wings *ample in the males, lobed at the base, larger than the elytra, with a large costal cell and 4 simple nervures.* Legs, *hinder very long:* thighs *long, especially the hinder:* tibiæ *as long but slenderer:* tarsi *triarticulate, basal joint the longest and stoutest, 2nd rather shorter than the third:* claws *slender and simple* (6).

TRITICI *Kirby?—Curt. Guide, Gen.* 1099. 8.

Male. Head and thorax sulphureous variegated with slate black, the latter with 2 black stripes divided by a narrow line, with 2 black lines outside inclosing 2 slight tubercles before the middle, scutel slate-colour, with the edges and a line down the middle sulphureous: abdomen slate-black, elytra with the costa sulphureous-green, the interior portion brown, the membrane fuscous: wings iridescent, nervures brown: antennæ ferruginous, fuscous towards the apex, with a blackish stripe outside the basal joint, which is hairy: legs ferruginous-ochre; thighs pale towards the base: tibiæ hairy.

In the Author's and other Cabinets.

MIRIS is distinguished by its long slender setaceous antennæ, with the basal joint elongated, stout and porrected horizontally;

this is stouter in the females, and often very hairy. Miris does not appear to have any ocelli; the Count de Castelnau is therefore mistaken in supposing that *Chorosoma* is allied to it, for the ocelli are very distinct in my genus, and the terminal joint of the antennæ is stouter than the penultimate, so that it cannot belong to his family Astemmites.

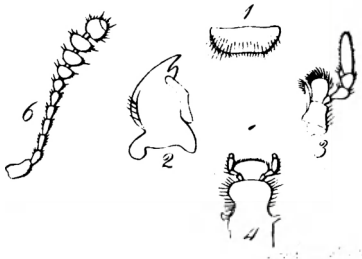
The following are British species.

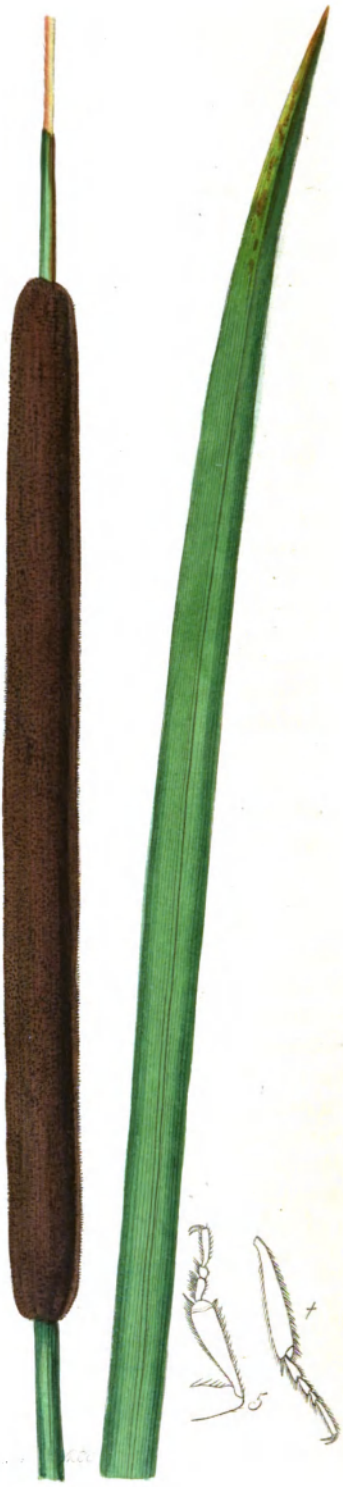
1. pallescens *Don. v.* 3. *pl.* 101. *f.* 5. 6. *and pl.* 102?—Marshami *Turt.*
   June and July, on grass under hedges.
2. holsatus *Fab.*—*Hahn. pl.* 85. *f.* 256.—albidus *Hahn.* 53. 162.
3. ruficornis *Fall.*—pulchellus *Hahn.* 66. 200.
   End of July and August, Tollsbury, Essex.
4. longicornis *Fall.*—*Hahn.* 85. 258.
   August, off grass, Sandwich.

4ᵇ. virens *Linn.*—*Hahn. pl.* 54. *f.* 165.—ruficornis *Hahn.*? *pl.* 71. *f.* 220.

5. hortorum *Wolff. pl.* 16. *f.* 154.
   June, Isle of Wight.
6. lævigatus *Linn.*—*Hahn.* 85. 259. and 53. 161. *var.*?
   Pastures, August and September.
7. erraticus *Linn.*—*Hahn. pl.* 54. *f.* 163. ♂. 164. ♀.
   September, Blackgang Chine; October, in New England, on the Essex shore in abundance.
8. Tritici *Kirby*?—*Curt. Brit. Ent. pl.* 701. ♂. As it has been sent to me by a friend with this name, I have retained it, although I suspect it is only a variety of *M. erraticus.* I have taken it, the end of July, at Tollsbury.
10. ferrugatus *Fab.*—*Hahn.* 86. 263. ♂.—dolabratus *Fab.*
    Beginning of June, grass in meadows, Oxford, &c.
11. dolabratus *Linn.*—Lopus *Hahn.* 261. ♂. 262. ♀. and 53. 160. ♂.—lateralis *Wolff. pl.* 11. *f.* 109. ♂.—abbreviatus *Wolff. pl.* 11. *f.* 110. ♀.
    June, on grass in hay-fields round London in abundance; also in August and September: I have taken the male paired with the female of *M. ferrugatus.*
9. picticeps *Curt.* Having now a series of this insect, I am inclined to believe that it is only a pale purplish variety of *M. dolabratus,* with the yellow stripe on the thorax dilated at the base.
   July, Dover; August, Sandwich, off dried grass.
12. calcaratus *Fall.*—dentata *Hahn. pl.* 2. *f.* 8.

For specimens of *Arabis stricta,* Bristol rock cress, I am indebted to G. H. K. Thwaites, Esq., who found them last April, on St. Vincent's Rocks.





702.

TYPHÆA FUMATA.

ORDER Coleoptera. FAM. Engidæ?

Type of the Genus, Dermestes fumatus *Linn.*

TYPHÆA *Kirb., Curt.*—Silpha *Mars.*—Mycetophagus *Fab.*—Dermestes *Linn.*

Antennæ inserted on each side of the head before the eyes, not so long as the thorax, pilose, clavate and 11-jointed, basal joint stout and ovate, 3 following somewhat slender, oblong, 2nd rather the stoutest, 5th obovate, 6th and 7th subglobose, the remainder forming a distinctly articulated club, 8th and 2 following cup-shaped, the former the smallest, terminal joint orbicular (6).

Labrum transverse-ovate, pilose, anterior margin slightly concave (1).

Mandibles very convex externally, with a deep notch towards the base, apex acute, one with an acute tooth below (2), and a membranous margin.

Maxillæ small, with a linear bristly lobe on the inside, and a semiorbicular one on the outside, very pilose. *Palpi* much longer, rather stout, pubescent and 4-jointed, basal joint minute, 2nd and 3rd somewhat obtrigonate, 4th as long as the others united, elliptical (3).

Mentum subquadrate, anterior angles rounded, sides concave and pilose, the base a little dilated. *Lip* transverse-ovate, ciliated. *Palpi* attached to small scapes at the base, remote, triarticulate, basal joint subpyriform-truncate, 2nd the longest and stoutest, ovate, 3rd small, subglobose (4).

Head *trigonate, apex obtuse:* eyes *remote, small, globose and placed on each side of the base of the head.* Thorax *transverse, convex, narrowed a little anteriorly, the sides and angles rounded:* scutel *rather broad and subtrigonate.* Elytra *long and elliptical, the apex rounded:* wings *ample.* Legs *rather short:* thighs *short, stoutish and compressed:* tibiæ *compressed, dilated towards the apex, spurred, bristly, especially externally:* tarsi *rather long, 4-jointed, anterior pair triarticulate in the males* (5), *very hairy beneath, basal joint longer than the 2nd, which is ovate-truncate in the anterior, 3rd the shortest in the other feet, terminal joint very long and scarcely clavate:* claws *rather long and slender* (†, *hind leg*).

FUMATA *Linn.*?—*Curt. Guide, Gen.* 156. 3.

In the Author's and other Cabinets.

TYPHÆA like Mycetophagus (fol. 156) has 4-jointed tarsi, the anterior being only triarticulate in the males; the club of the antennæ however, composed of 3 or at most of 4 joints, sufficiently distinguishes it; but from Triphyllus I believe it is only separated by the length and form of the terminal joint of the palpi, so that it is doubtful if it be entitled to the rank of a genus.

1. ferruginea *Marsh.* 125. 31.

Club of antennæ triarticulate. Elongate-ovate, ochreous, pubescent and coarsely punctured: thorax convex, with a deepish fovea on each side at the base: scutel transverse-ovate: elytra considerably broader than the thorax, especially across the middle, the shoulders slightly elevated: length 1⅓ line.

The trophi are nearly the same as those of the type, but the antennæ vary, the 4th joint being shorter than the 5th; the 7th and 8th are of equal size, and none of the tarsi are triarticulate in the specimens I have examined.

June, common in Boleti in Norfolk, and under the bark of trees, with varieties of the following species.

2. Sparganii *Leach. Step.*

"Oblong-ovate, ferruginous-ochre, somewhat pubescent, base of elytra, margin and suture fuscous-black: 1¼ line long." *Step. Ill.*

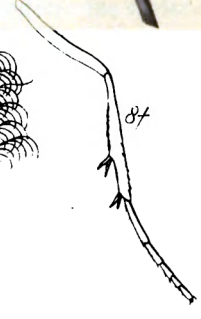
I suspect this is only a variety of the foregoing species, which Dr. Leach found at Cobham on the Sparganium (pl. 436).

3. fumata *Linn.*?—*Curt. B. E. pl.* 702 ♂.—testacea *Step.*—tomentosa *Step. var.*

Shining ferruginous, minutely punctured and clothed with longish depressed ochreous hairs: eyes black: elytra a little scabrous, with indistinctly punctured striæ, the ochreous hairs raised and forming a distinct line down each stria.

Not uncommon, I believe, in houses in Norfolk during the winter months: it is stated also to frequent flowers, rotten wood, and fungi in the neighbourhood of London: the variety was found in Yorkshire. As Linnæus refers to Geoffroy, who says his insect is ½ a line long or even less, I do not feel satisfied of the identity of our insect with the Linnæan species, and yet I am still inclined to believe they are the same.

The Plant is *Typha angustifolia*, Less Reed-mace.



703.

HYBERNIA DEFOLIARIA.

The mottled Umber Moth.

ORDER Lepidoptera. FAM. Phalænidæ.

Type of the Genus, Geometra defoliaria *Linn.*

HYBERNIA *Lat., Goda., Curt.*—Fidonia *Treit.*—Geometra *Linn., Hüb., Haw.*

Antennæ inserted on each side of the crown close to the eyes, rather short, setaceous, clothed with scales, bipectinated in the males, the joints producing 2 teeth on each side, with a series of curled hairs projecting from the apex (1).

Maxillæ very short, not longer than the labial palpi, forming 2 lanceolate lobes, very broad at the middle (3), with a small *Palpus* attached at the base, composed of 3 joints, 1st minute, 2nd much larger, obovate, with some long scales above, 3rd very minute (*a*).

Labial palpi very small, horizontal, clothed with long scales beneath (4); triarticulate, basal joint the longest and largest, curved at the base, 2nd short subturbinate, 3rd a little smaller and subovate (4 *a*).

Trophi of females similar but a little shorter, especially the Palpi.

Male: head *small and short* (7): eyes *lateral and globose.* Thorax *small.* Abdomen *neither long nor stout, slightly tapering, tufted at the apex.* Wings *very ample, forming a triangle in repose:* superior *elongate-trigonate, the apex perfectly rounded:* inferior *trigonate-ovate:* cilia *moderate.* Legs *slender:* thighs *equal:* tibiæ, *anterior the shortest with an internal spine, the others with spurs at the apex, very short in the hinder, with a pair also considerably below the middle* (8†): tarsi 5-*jointed, anterior the longest:* claws *and* pulvilli *minute.* Female *apterous or with rudimentary wings.* Abdomen *elongate-conic:* oviduct *short and pilose.* Legs *stoutish; anterior tibiæ without spines.*

Larvæ *loopers, slightly hairy, with* 6 *pectoral,* 2 *abdominal and* 2 *anal feet.*

DEFOLIARIA *Linn.—Curt. Guide, Gen.* 914. 3.

Ochreous, with large purplish freckles: superior wings with a brown curved fascia near the base, more or less irregular, and another of the same colour beyond the middle, with the edges very much sinuated and often edged with dark brown, a large blackish dot on the disk and a few brown spots on the cilia towards the apex: inferior wings with a pale livid spot on the centre. *Female* yellowish white, spotted with blue-black: thorax with 4 spots, a double line of large spots down the back and the legs blue-black, the thighs and tibiæ annulated with white.

In the Author's and other Cabinets.

The males of this genus are remarkable for their handsome, large delicate wings, whilst the females on the contrary are totally destitute of them, in the typical species.

Fortunately in this country the larvæ are never known to do any mischief, but in France the caterpillars of the species figured sometimes do very extensive injury by destroying the leaves, especially of fruit trees; but M. Duponchel mentions an admirable plan for checking their ravages: it is by washing a space round the base with a glutinous matter, so that the females, as they pass up the trunk in order to lay their eggs upon the leaves, may be entangled by the gluten and perish, and he adds that by the destruction of one female the birth of 300 caterpillars at least is prevented. Shaking the trees smartly is also effective by causing the larvæ to fall, but it is likewise injurious to the fruit.

1. stictaria *Haw.*—capreolaria *Esp. Wood, pl.* 18. *f.* 461.—progemmaria *Hüb.*—connectaria *Haw. var. Wood, f.* 462.

Middle of February to end of March, paling, Regent's Park; Newcastle; Epping; Glanville's Wootton and Enborne, Mr. Dale.—*connectaria* Oct. Nov. and Dec., Epping and round London. The larva feeds on the oak and birch.

2. prosapiaria *Linn. Wood, f.* 463.—aurantiaria *Hüb.*—testacearia *Vill. var.*

In woods the end of October, trunks of trees, Coomb and Darent Woods; Epping; not uncommon at Southgate; from 11th Nov. to 23rd Dec. at Glanville's Wootton, Mr. Dale: also near Edinburgh. Larva on oak, hornbeam, and birch.

3. defoliaria *Linn. Curt. B. E. pl.* 703 ♂. ♀.

The larva, which feeds on the oak, lime, alder, &c., is copied from Hübner: the moth, which is extremely variable in colour, is found on the trunks of trees the end of October; Mr. Heysham has taken it in Cumberland as well as the foregoing. Glanville's Wootton, from 5th Nov. to 15th Dec., Mr. Dale.

ANISOPTERYX *Step.—Female with rudimentary wings.*

4. leucophæaria *Hüb. Wood, f.* 459.—nigricaria *Haw. var.*—luctuaria *Haw.* ♀.

January and February, trunks of trees, and females in April. Capt. Chawner has taken this sex paired with the male of *H. stictaria!*

5. Æscularia *Hüb. Wood, f.* 460. March, on paling.

CHEIMATOBIA *Step.*

6. rupicapraria *Hüb. Wood, pl.* 23. *f.* 641.—primaria *Mars.* Antennæ bipectinated in the male. Jan. and Feb. hedges.

7. brumata *Linn. Wood,* 640.—vulgaris *Ste.* Antennæ with short cilia on both sides. Nov. Dec. and Jan. on paling and hedges.

The Plant is *Alnus glutinosa*, Common Alder.

704.

ÆLIA ACUMINATA.

ORDER Hemiptera. FAM. Pentatomidæ.

Type of the Genus, Cimex acuminatus *Linn.*

ÆLIA *Fab., Lat., De Lap., Hahn., Curt.*—Cimex *Linn.* &c.

Antennæ inserted under the head, on each side of the rostrum and somewhat before the eyes, as long as the head and thorax, slightly clavate, pubescent, and 5-jointed, 2 basal joints elongated, of equal length, 1st stouter than the 2nd which is very slender, 3rd twice as long, slender but clavate, 4th and 5th stouter, slightly compressed, a little longer than the 3rd, at least the latter joint (4).

Labrum very long and slender, linear and pointed (3).

Labium just reaching the hinder coxæ, 4-jointed, basal joint short and stoutish, 2nd twice as long, 3rd a little shorter than the 1st, 4th about the same length (2).

Head *large, conical or elongate-trigonate* (1, *the profile*), *the apex rounded and emarginate, with a winged groove beneath to receive the rostrum* (1* *the underside*) : eyes *small, globose and prominent, placed on each side of the head near to the base :* ocelli 2, *on the crown of the head close to the margin of the thorax, but remote from the eyes, minute.* Thorax *twice as broad as the head towards the base which is convex, somewhat trigonate-truncate, anterior angles prominent, posterior truncated :* antepectus *deeply grooved :* scutel *large, as long as the thorax but not broader than the head, elongate-trigonate, the apex rounded.* Abdomen *as broad as the base of the thorax, ovate.* Elytra *completely covering the body, horny, the apex membranous and transparent, with* 2 *very obscure nervures :* wings *as long and twice as broad* (9), *very delicate, with a horny costal nervure reaching to the middle, and several fine longitudinal nervures,* 2 *of them horny at the base also.* Legs *rather short, hinder the longest as well as the* thighs, *which are slightly curved in that pair :* tibiæ *simple with short spines at the apex :* tarsi *short, bristly beneath, triarticulate, basal joint the longest and stoutest, 2nd small, 3rd shorter than the 1st, ovate :* claws *and* pulvilli *simple.*

ACUMINATA *Linn.*—*Curt. Guide, Gen.* 1129. 1.

Ochreous with a dull greenish tinge, thickly and strongly punctured : antennæ ferruginous, except at the base : eyes black : a brownish line on each side of the head, and a wedge-shaped stripe down the centre punctured with black, continued down the thorax and gradually dilating, brown, excepting an ochreous ridge down the centre ; a brown stripe on each side not touching the lateral margins : scutel with an ochreous line down the middle and a short one on each side : elytra pale ochreous green, excepting the costa : back of abdomen bronzed-black, excepting the margins and an ochreous line at the apex : tarsi with the joints brown at the tips.

It is now fifteen years since I illustrated several genera belonging to this family, and called the attention of naturalists to the structure of the antennæ. At that time, Fallen's little work and Wolff's Icones with Panzer's figures were the principal aids we had to guide us through the various tribes of this intricate order. Since then M. De Laporte has given a valuable Systematic Classification of the Hemiptera, and Hahn has published a considerable portion of his Die Wanzenartigen Insecten. Dr. Burmeister has also an able memoir upon the classification of the Geocorisæ of Latreille in the Revue Entomologique, in which he rejects the antennæ as characters to be employed in the grouping of the Aspidotæ or Pentatomidæ of this work. I am very reluctant to give up the antennæ as generic characters in this order, having found them very useful if not infallible guides in the grouping of our British species: it would however be idle to discuss this subject generally, until the foreign tribes, which are very numerous, are fully investigated, as it is in them that Dr. Burmeister has found the antennæ of allied species to be very inconstant.

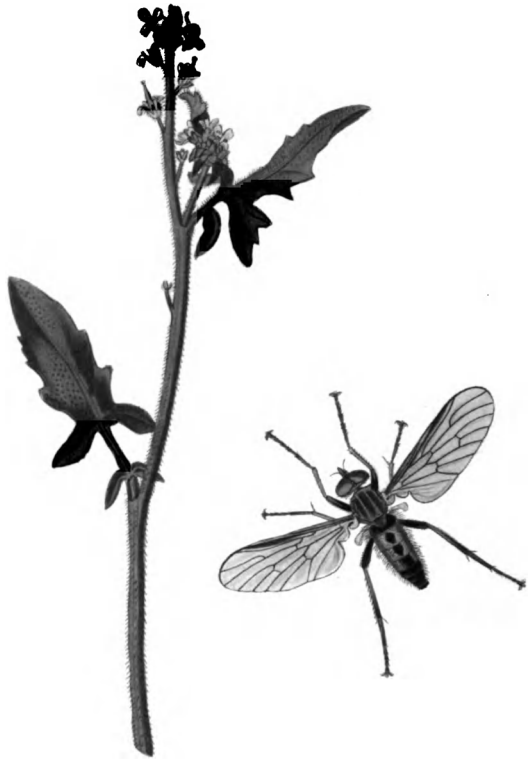
The following table will serve to group the British Pentatomidæ:

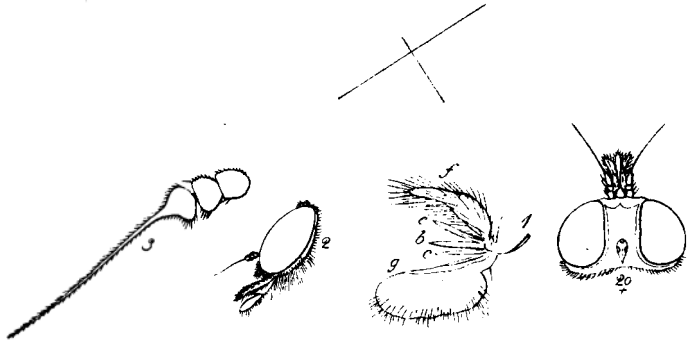
1. Scutellum not covering the abdomen.
   - Tarsi biarticulate .....ACANTHOSOMA pl. 28.
   - Tarsi triarticulate.
     - Legs smooth.
       - Head elongate trigonate .....ÆLIA 704
       - Head oblong .....PENTATOMA 20
     - Legs spiny .....CYDNUS..... 74

2. Scutellum nearly covering the abdomen TETYRA 685

and the characters of the subgenera will be found in the accompanying folio. I may add that Hahn has divided our Pentatomæ into *Tropicoris*, *Ialla*, *Eysarcoris*, and *Strachia*, which are distinguished by the antennæ.

The only species of *Ælia* inhabiting England is *acuminata*, which is not common. I have taken specimens on long grass at Caistor Marrams near Great Yarmouth in June, and in August and September in cornfields near Niton in the Isle of Wight. In May it has been found on Ferns and the Royal Moonwort, *Osmunda regalis*, the plant represented in the plate.

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705.

RHAGIO HEYSHAMI.

ORDER Diptera. FAM. Rhagionidæ or Leptidæ.

Type of the Genus, Musca tringaria *Linn.*

RHAGIO *Fab., Oliv., Lat., Curt.*—Leptis *Meig., Macq.*—Atherix, Sciara *Fab.*—Asilus *Geoff.*—Nemotelus *DeG.*—Musca *Linn.*

Antennæ inserted at the middle of the face, approximating, small, porrected, pubescent, triarticulate, 2 basal joints cup-shaped, 3rd similar in size and form, but the apex is produced and forms a long pubescent filiform seta (3).

Labrum rather short, stout, horny and lanceolate (1 *b*).

Tongue nearly as long, slender and very flexible, almost membranous (*c*).

Maxillæ as long as the labrum, slender and pointed (*e*). *Palpi* much longer, exserted, very large, drooping, curved, subfusiform and very hairy, narrowed beyond the middle and appearing biarticulate (*f*).

Labium short and stout, forming 2 long oval hairy lobes (*g*).

Head *not large, very short, the face orbicular:* eyes *contiguous in front and nearly covering the head in the males* (2 *the profile*) *; remote in the females* (2 ♀, *the upper side*) *:* ocelli 3, *minute, mounted on a tubercle near the base and forming an elongated triangle.* Thorax *globose, the shoulders prominent:* scutel *hemispherical.* Abdomen *long, slender, and tapering in the male with the apex obtuse, conical in the female, the* 3 *apical joints very slender and capable of great elongation.* Wings *divaricating in repose, very ample, with one discoidal and* 5 *marginal cells:* halteres *capitate.* Legs *long, especially the hinder:* tibiæ *spurred, except the anterior:* tarsi *long and* 5*-jointed, basal joint long, attenuated in the hinder, 4th joint the shortest except in the anterior, in which it is as long as the* 5*th, this is obovate:* claws *and* pulvilli *distinct, the latter trilobed.*

Larvæ *fleshy, long and cylindrical, attenuated to the head, which is small with two little antennæ; feet none, but their place is supplied by papillary tubercles; they cast their skins to become* Pupæ. *De Geer.*

HEYSHAMI.—*Curt. Guide, Gen.* 1188. 3.

Pale slate colour: eyes bronzed; face and underside clothed with white hairs, those on the thorax and abdomen black: antennæ fuscous: thorax with 3 pale lines down the back, uniting at the base, the lateral margins of the same colour: abdomen orange-ochre, basal segment, a large spot on the disk of the 2nd and 3rd, and a larger quadrate one on the 4th black, the following segments entirely black: wings yellowish brown, brightest at the costa, nervures and a long stigmatic spot brown: halteres ochreous: legs piceous, tips of anterior thighs, tibiæ and base of tarsi ochreous, the hinder legs with the base only of the tibiæ ochreous.

In the Author's Cabinet.

Meigen has included in Leptis insects which I have long considered as forming two genera, and I find that Macquart holds the same opinion. Meigen has taken an objection to the name of Rhagio because it is similar to Rhagium, a genus of beetles, which I conceive is not a sufficient reason for dropping the original name given to the group by Fabricius, adopted by Latreille and Olivier, and by which they are generally known.

Rhagio is easily distinguished from Leptis (fol. 713) by its smooth body and drooping attenuated palpi; the wings and antennæ offer but trifling differences.

These flies like many other diptera delight in resting on the trunks of trees, generally standing high on their legs, with their wings half expanded and their heads downward. De Geer says the larvæ live in the earth, and that of *R. vermileo* is very remarkable: we learn from him and M. De Romand that this larva forms small pits in the sand like the ant-lion, at the bottom of which it lies, and devours ants and other prey which fall to the bottom. M. De Romand has ascertained that the larva can exist upwards of six months without food, and M. Macquart states that they live at least three years (months?) before they change to pupæ!

1. strigosus *Meig. vol. 2. p.* 88.
2. scolopaceus *Linn. Panz.* 14. 19.—solitarius *Harris Expo. pl.* 31. *f.* 1. 2 and 5 *var.*

May and June, on grass in meadows round London in abundance, and July on trunks of trees, New Forest, &c.

3. Heyshami *Curt. Brit. Ent. pl.* 705 ♂.

The only specimen I have seen is a male, which I think I brushed off a whitethorn near Ambleside; as it differs essentially from every other species, I have great pleasure in dedicating it to my friend T. C. Heysham Esq., of Carlisle, whose valuable contributions of plants and insects have added so greatly to the interest of this work during its progress.

4. tringarius *Linn. De Geer*, 6. *pl.* 9. *f.* 10.—Harris, *pl.* 31. *f.* 4 and 7.

On grass in meadows round London in May, and abundant in June on trunks of trees in the New Forest.

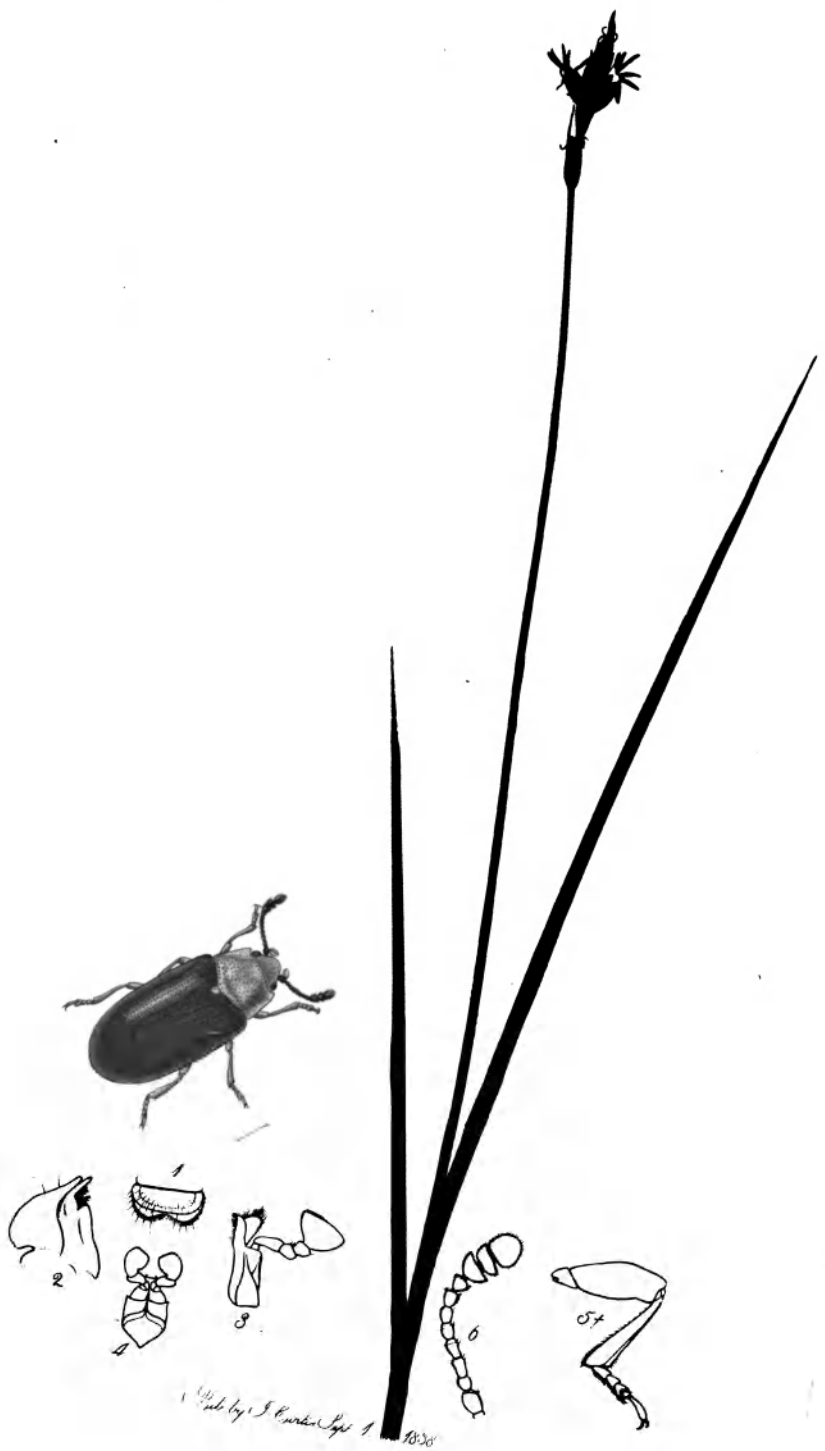
5. annulatus *De Geer, vol.* 6. *p.* 69.
6. immaculatus *Meig. p.* 93. *n.* 7.—vanellus *Fab.*?—reconditus *Harris, pl.* 31. *f.* 3.
7. Lineola *Fab. Meig.*—Monachus *Harris, pl.* 31. f. 9.

End of July, Coombe Wood and Lake of Killarney; 1st August, Roundstone in Connemara.

8. notatus *Gürtl. Meig. p.* 95. *n.* 11.

June, near Cambridge; New Lanark, Mr. H. Walker.

The Plant is *Erysimum officinale*, Common Hedge Mustard.



706.

TRIPLAX ÆNEA.

ORDER Coleoptera. FAM. Tritomidæ.

Type of the Genus, Silpha russica *Linn.*

TRIPLAX *Payk., Fab., Curt.*—Tritoma *Lat.*—Silpha *Linn.*—Ips *Fab.* *Antennæ* inserted before the eyes on each side of the clypeus, as long as the head and thorax, clavate, pubescent, 11-jointed, basal joint oval and stouter than the 7 following, 2nd subglobose, 3rd and 4th longer obovate, 3 following short ovate, 8th a little stouter and more globose, the remainder forming a compressed club, 9th and 10th joints somewhat cup-shaped, the former a little the longest, terminal joint the largest, suborbicular (6).

Labrum transverse, semiovate, membranous and emarginate before, ciliated and hairy (1).

Mandibles short, broad and subtrigonate, very convex outside, bifid at the apex, somewhat notched beneath, with a small tuft of hairs; the margin membranous below (2).

Maxillæ slender, with a narrow hooked lobe inside, and a broader and rounded one outside, both ciliated. *Palpi* rather large, securiform and 4-jointed, basal joint rather long and clavate, 2nd and 3rd short, ovate-truncate, 4th large semiorbicular, attached at the centre, the apex thick (3).

Mentum short. *Labium* short, narrowed anteriorly. *Palpi* short stout, slightly securiform, inserted close together near the apex of the labium, triarticulate, basal joint small, pyriform-truncate, 2nd stout obovate-truncate, 3rd the longest orbicular-truncate (4).

Head *rather broad, subtrigonate, rounded before:* eyes *lateral, placed near the base, globose.* Thorax *transverse, convex, slightly narrowed before, anterior margin concave, the angles acutish, sides with a narrow margin, base bisinuated:* scutel *transverse-ovate.* Elytra *broader than the thorax, convex, long and elliptical.* Wings *larger than the elytra.* Legs *short and compressed:* thighs *short:* tibiæ, *considerably dilated towards the apex, which is truncated obliquely:* tarsi *all 5-jointed, 3 basal joints short 3rd, the broadest and deeply emarginate to receive the 4th which is minute and subglobose, 5th long and clavate:* claws *small and hooked* (5†, *a hind leg*).

ÆNEA *Fab.—Curt. Guide, Gen.* 161. 1.

In the Author's and other Cabinets.

DISSIMILAR as Triplax and Tritoma are in habit, the structure of their trophi, antennæ, and tarsi is so similar, that no doubt can be entertained of their close affinity, and Latreille and Dejean have even united them in one genus; yet Mr. Stephens places Triplax with the Engidæ, stating that the

tarsi are 4-jointed, and Tritoma at a remote station amongst the Anisotomidæ. Triplax like Tritoma has distinctly pentamerous tarsi, although the 4th joint is small; and according to the view I took at fol. 498 of types of form, both genera would associate with the Chrysomelidæ; but until the Engidæ and neighbouring groups are fully investigated, I shall refrain from offering any further remarks as to the location of this difficult tribe.

The following are British species of Triplax.

1. ænea *Fab.—Curt. Brit. Ent., pl.* 706.

Very smooth and shining; orange-ochre; antennæ piceous, eyes black: head and thorax sparingly and irregularly, but strongly punctured, the latter margined at the base; elytra bright deep blue with a slight green tinge, with closely punctured striæ and minute punctures on the interstices.

On the trunk of a Holly tree in the New Forest the beginning of June, J. C.; on decayed willows and in fungi in abundance at Ockbrook, the Rev. L. Hey.

2. rufipes *Fab. Panz.* 13. 17.

Black, head thorax and legs orange-ochre, antennæ ochreous, club piceous, head thorax and elytra rather thickly punctured, the latter with punctured striæ also: length $1\frac{3}{4}$ line.

Coomb-wood, on dead trees, in August.

3. bicolor *Mars. Ahr.* 12. 16.

Oblong, rufous, entirely rufous beneath; elytra black; antennæ piceous, rufous at the base: length 2 lines.

Coomb-wood in June, and Cambridgeshire.

4. ruficollis *Dej.? Step. Ill. pl.* 17. *f.* 6.

"Black, thorax and legs rufous, antennæ rusty-castaneous: $2\frac{1}{4}$ lines."

Taken once near Windsor.

5. russica *Linn.*—nigripennis *Fab. Panz.* 50, 7.—S. castanea *Marsh.*, with a yellow head and thorax and castaneous elytra, is according to Stephens a small immature *var.*

Orange-ochre; eyes black; postpectus blue-black; scutel and elytra inky black, antennæ piceous; head and thorax with strong scattered punctures; elytra with faintly punctured striæ, the interstices minutely punctured: length $2\frac{1}{4}$.

Several in boleti at the foot of an ash-tree at Ditchingham in Norfolk, in April; on the trunk of a tree in the New Forest in June, and under bark in winter.

The plant is *Carex divisa*, Bracteate Marsh Carex, from Ryde, communicated by Dr. Bromfield.

Pub. by J. Curtis, Sept. 1, 1828

707.

EUBOLIA CERVINARIA.

The Mallow Moth.

ORDER Lepidoptera. FAM. Geometridæ.

Type of the Genus, Phalæna Chenopodiata *Linn.*

EUBOLIA *Goda., Curt.*—Larentia *Treit.*—Geometra *Linn., Hüb., Haw.*

Antennæ inserted on the crown of the head close to the eyes, rather short, setaceous, bipectinated in the males, each joint producing a pair of shortish clavate pubescent rays, with a bristle at the apex of each (1): pubescent beneath, with a few bristles in the females (2).

Maxillæ as long as the antennæ, slender and spiral (3).

Labial palpi porrected horizontally, a little beyond the head, the points meeting and forming a beak, densely clothed with scales (4); triarticulate, basal joint the longest and stoutest, curved at the base, 2nd a little shorter, much slenderer and nearly linear (*a*).

Head *small*; eyes *rather large and globose* (7, *the profile*). Thorax *small.* Abdomen *longish, linear, the apex obtuse and tufted in the males, conical in the females.* Wings *forming a triangle in repose, superior semifolliform; inferior ovate-trigonate;* cilia *moderate.* Legs *long and slender:* thighs, *intermediate the longest:* tibiæ, *anterior short, with an internal spine, intermediate slender and clavate, with a pair of short strong spines at the apex; hinder longer and stouter, with a pair of unequal stoutish spurs at the apex, and a pair below the middle longer and slenderer:* tarsi 5-*jointed, basal joint long:* claws *and* pulvilli *minute.* (8†, *the hind leg*).

Larvæ *loopers, naked, with* 6 *pectoral,* 2 *abdominal and* 2 *anal feet.*

CERVINARIA *Hüb.—Curt. Guide, Gen.* 907. 1.

Silky; reddish brown, superior wings with a small space at the base and a narrowish fascia across the middle, a little dilated at the costa, dark brown, the edges of both waved and bordered with a whitish line, posterior margin dark with a serrated white line and a dark streak at the apex: inferior wings pale fuscous, the lower portion lighter, the margin dark reddish brown with an indistinct whitish crenated line.

In the Author's and other Cabinets.

MONS. DUPONCHEL has included in his genus Eubolia many of my Zerynthiæ (fol. 296), which, however artificial our arrangement of the Lepidoptera may be, are readily distinguished by the longer rays of the masculine antennæ, and these are not armed at the apex with a bristle as in Eubolia. *C. propugnata* also forms a part of his group, an insect which belongs to a different section, owing to the simple antennæ of the males; it is a true Cidaria. Great confusion has also been

made with the 2nd species, which has induced me to re-examine the Linnæan Cabinet: there I find three specimens alike, one labelled *Chenopodiata* apparently in the younger Linné's autograph, with another Phalæna by the side unnamed; it is the *P. mæniaria* Fab. which I once took in the forest of Fontainbleau. *P. comitata* has also a label bearing that name in the same hand writing, and there is another specimen labelled *dotata*, which is a species figured by Clerck; but on referring to tab. 5. f. 15, I find his insect is the *P. Spinachiata* Haw. and the *G. marmorata* Hüb. I therefore consider that the English Lepidopterists are right regarding those Phalænidæ, and in order to identify the species I shall add the essential characters of Nos. 2 and 3.

1. cervinaria *Hüb.—Curt. Brit. Ent. pl.* 707 ♂.—clavaria *Haw.*

In perfect specimens the upper wings have a bloom upon them, and the pale band across the middle is obliterated as in the male figured in our plate.

Found on mallows the middle of October, and the larva feeds on those plants: my figure is copied from Hübner.

2. Chenopodiata *Linn.—Wood, pl.* 20. *f.* 545.—mensurata *Hüb. Goda.*

Superior wings tawny or reddish fuscous, with numerous undulating lines; a fascia in the middle bearing a black dot and a dark oblique line at the apex: inferior wings of the male with 2 or 3 darker lines beyond the centre which is of a lighter colour, the margins darker, those of the female paler: 16 to 18 lines in expanse.

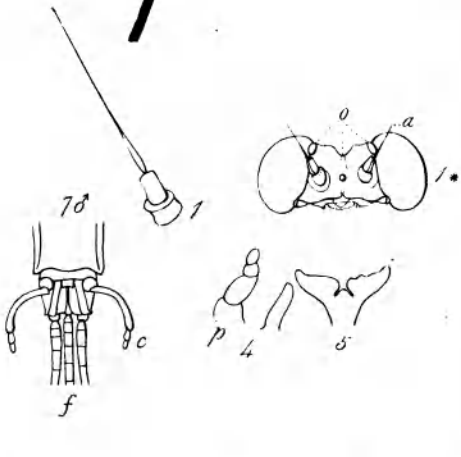
End of June to Sept. in bushy places, in such abundance, that it has obtained the appellation of the Aurelians' plague. The larva feeds on *Bromus arvensis.*

3. bipunctaria *Fab.—Wood, pl.* 21, *f.* 547.

Wings cinereous-white, with numerous waved lines; a fascia across the middle, the margins fuscous and crenated, with a double black dot on the disc: 16 to 17 lines.

Chalky places, middle of July to middle of August abundant amongst coarse grass near Mickleham; the Castle-hill, Dover; and Niton in the Isle of Wight. The larva feeds on *Trifolium pratense* and *Lolium perenne.*

The plant is *Althæa officinalis*, Common Marsh Mallow.



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708.

EPHEMERA COGNATA.

The large May-fly.

ORDER Neuroptera. FAM. Ephemeridæ.

Type of the Genus, Ephemera vulgata, *Linn.*

EPHEMERA *Linn., Fab.*

Antennæ very short, inserted in large cavities in front of the face (1* *a*), triarticulate, basal joint the thickest, 2nd stout and oblong, 3rd a long seta somewhat fusiform at the base, the apex subovate (1).

Trophi imperfect, soft and filled with fluid.

Maxillæ each forming a compressed, elongated, sublinear lobe, rounded at the apex (4). *Palpi* larger, triarticulate? basal joint large, 2nd and 3rd small subglobose (*p*).

Mentum short, dilated anteriorly. *Palpi*? forming 2 large, fin-like lobes (5).

Head *rather broad and short:* eyes *large and remote in both sexes:* ocelli 3, *forming a triangle in front of the head* (1**o*), *remote*, 2 *very large, the lower one smaller* (1* *front view of head*). Thorax *very long and narrow, oval:* scutel *rather small and gibbose.* Abdomen *long and sublinear, the apex furnished with* 3 *very long slender filaments, composed of numerous joints* (7 *f*), *the central one a little the shortest in the male, in which sex there is also a pair of curved triarticulate appendages, the* 2 *apical joints small and subovate* (*c*). Wings *erect in repose, reticulated with nervures;* superior *ample, elongate-trigonate;* inferior *small and oval.* Legs *short, the anterior very long in the males* (8): thighs *short and compressed:* tibiæ *short and attenuated, anterior very long and slender in the males as well as the* tarsi, *which are* 5-*jointed, basal joint very short, 2nd very long, the following slightly decreasing, the* 4 *first joints are very short in the other tarsi:* claws, *anterior forming* 2 *equal lobes, the others with one large lobe and one claw, notched at the apex* (†, *a hind leg*).

Metamorphoses *quadruple.* Larvæ *with* 6 *feet,* 12 *lateral lobes, and* 3 *setaceous ciliated tails.* Pseudimago *similar in form to the perfect insect.*

COGNATA *Step.—Curt. Guide, Gen.* 734. 2.

Head and thorax piceous, with several yellow spots on the latter, formed by membrane; sides of the collar orange, with 2 yellow stripes behind them: abdomen ochreous, with a dark waved line down each side, and 2 long piceous spots on each of the 2 or 3 terminal segments, the edges of all yellowish-white: wings transparent, stained greenish-yellow, with 3 fuscous spots on the disc and 1 near the base; nervures piceous: legs yellowish, all the articulations with piceous spots at the apex.

THE Ephemeræ are the true May-flies of anglers, no less celebrated as a bait for trout, than they are for the shortness of their lives; yet short as the natural term of their existence is, myriads are swept away and devoured by the rising fish before they have escaped from the water which gave them birth. The importance of these insects in the œconomy of nature is manifest by the immense quantities that are produced, and without them many species of fishes would become extinct. The multitudes of eggs that are deposited by the *E. vulgata* must be incalculable, for a very small proportion only of the whole can be hatched; then the larvæ living at the bottom of the water become a ground bait for fishes, and the prey of predaceous insects in all their stages. The pupa, if it be permitted to rise to the surface, must there remain until the fly in its first winged state or Pseud-imago, has time to burst from its shroud, when its soft and heavy wings render its progress to the shore slow and uncertain; there it alights on a blade of grass or some plant, and casts off its skin again, as related in folio 484, and then it becomes the beautiful fly, which notwithstanding the myriads that have been destroyed, we still see in myriads undulating over rivers and their banks, in the mornings and evenings of calm and fine days in the months of May and June, again to contribute to the support of the finny tribes.

I am convinced it would well reward any one living in the Lake districts to study this family and the Phryganidæ, for I have never visited either Scotland or Ireland without finding new and interesting species, especially of the latter order, which swarms even on the steam-boats; and the valuable and talented memoir of Mons. Pictet proves what may be done by steady attention to a subject in a favourable locality. In North America, again, a vast and magnificent field must remain to be explored by some zealous and fortunate lover of these tribes, it is to be hoped at no distant period.

Having obtained living specimens of the Ephemera, I was able to detect some rudimentary trophi, which seem to comprise 2 large palpi with 2 lobes below them and a dilated labium with 2 divaricating lobes. Imperfect as these oral organs are, I think they are an additional proof of the affinity of the perfect Ephemeridæ with the Phryganidæ, nearly related as they are in their larva state to the Libellulidæ.

I found both *E. vulgata* and *cognata* in the greatest profusion on the banks of the river at Oxford the beginning of June, and I am doubtful whether the latter is distinct. Our figure represents the female a little larger than life; the male is much smaller and darker.

The plant is *Callitriche aquatica*, Star-grass.

Pub. by J. Curtis Sept. 1. 1838

709.

HARPOCERA BURMEISTERI.

ORDER Coleoptera. FAM. Coreidæ.

Type of the Genus, Harpocera Burmeisteri.

HARPOCERA *Curt.*

Antennæ inserted before and a little below the eyes, shorter than the body, pubescent, 4-jointed, 2 basal joints long and stout in the male (4 ♂), 1st subcylindric, 2nd hatchet-shaped, being dilated beneath near the apex and densely ciliated, 3rd and 4th linear, the former very long, curved and densely hairy beneath near the centre, the latter not half so long, the apex compressed; shorter in the female (4 ♀), basal joint much shorter than in the male, 2nd longer and simply clavate.

Labrum small, lanceolate and pubescent (3).

Mandibles and *Maxillæ* slender filaments (2 *m*).

Labium rather short, not half so long as the antennæ, attenuated, composed of 4 nearly equal joints (2).

Head *small, transverse-ovate;* neck *none:* eyes *lateral, very prominent and ovate:* ocelli *none.* Thorax *trigonate, very narrow and truncated before; the base broad, concave in the middle, the angles rounded:* scutel *much smaller than the thorax, triangular.* Abdomen *soft, the apex compressed and horny in the male, with a ridge beneath in the female, reaching nearly to the base.* Elytra *ample, with a large portion of the apex membranous, with an oval cell and 2 longitudinal nervures on the basal portion:* wings *as large, with a long oval costal cell and 4 longitudinal nervures* (9). Legs, *hinder the longest:* thighs *compressed, hinder the stoutest:* tibiæ, *anterior long, slender, curved towards the apex in the male* (6), *nearly straight in the female, the others slender, with numerous short spiny bristles, the hinder considerably the longest:* tarsi *short and triarticulate; basal joint the shortest, the others elongated, nearly of equal length:* claws *and* pulvilli *minute.*

BURMEISTERI *Curt. Guide, Gen.* 1105?

In the Author's and other Cabinets.

THIS pretty insect is nearly related to Lygus of Hahn and to my genus Pantilius, from both of which it is distinguished by the shorter 2nd joint, and much longer 3rd joint of the antennæ. The same characters also separate it from Pœcilosoma, which it otherwise very much resembles, which induced

me to locate it close to that genus; and although it seems in that situation to intersect two natural groups, yet it is difficult to find a place where it interferes less with the natural affinities of the allied groups.

It is remarkable that this curious and striking species should never have been figured or described; but it does not appear to be known upon the continent, otherwise Wolff or Panzer would have figured it, and it has not yet been published in any of Hahn's fasciculi in my possession. It is probably the insect called *Azinecera dispar* in Stephens's Catalogue, and as such I marked it in the Guide; but as I have no means of ascertaining that they are identical, I have named it Harpocera, in allusion to the antennæ, which resemble a reaping-hook or sickle, and the specific name is given in honour of Professor Burmeister of Berlin, whose talents are now devoted to the investigation of the Homoptera.

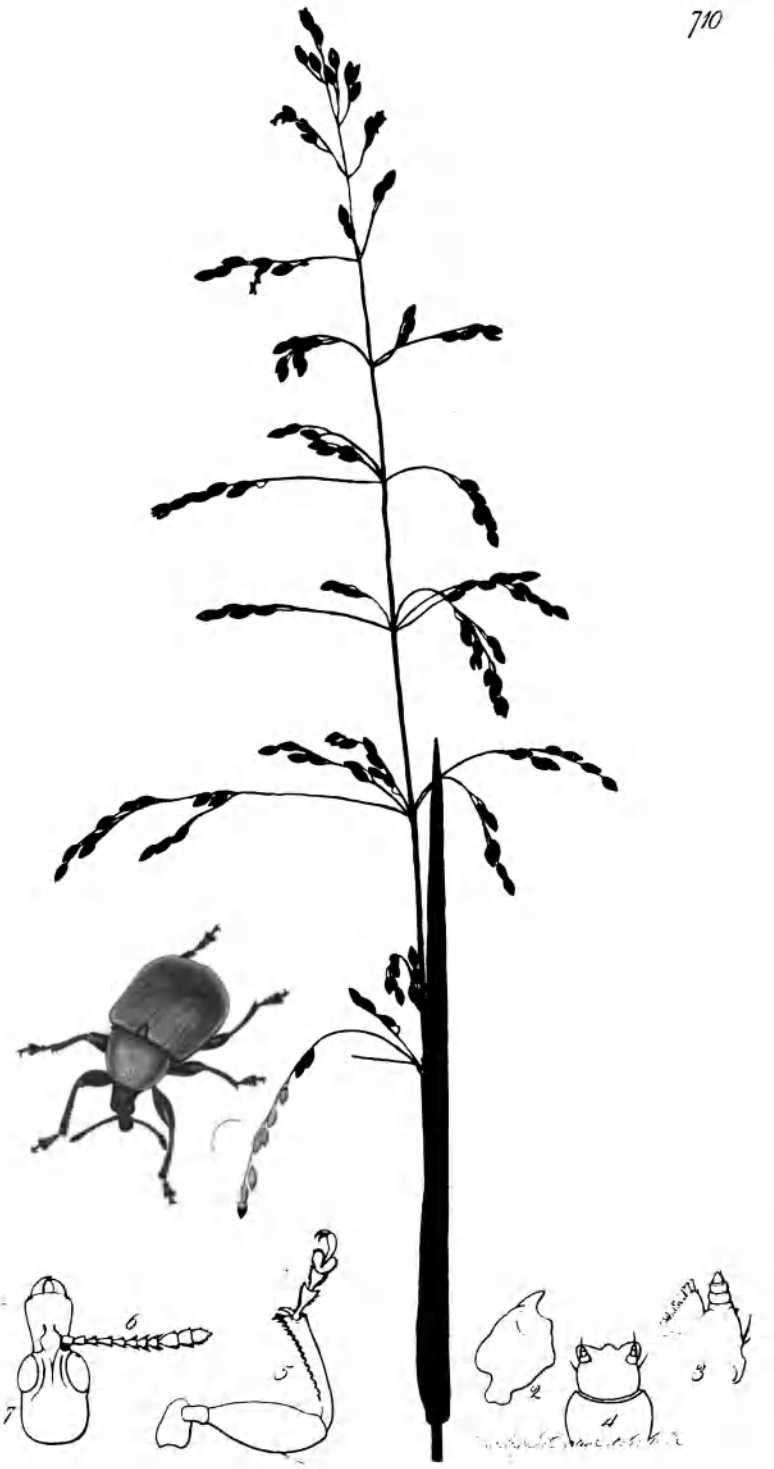
It does not seem to be a rare species, for I have met with it in several localities; in May in Coomb-wood, Surrey, upon grass; on the foliage of oak-trees in the plantations at Arno's Grove, Southgate, in abundance; also in a garden near London, as well as in Bagley-wood or at Shotover near Oxford in July. The following is the description of

H. Burmeisteri *Curt. Brit. Ent.* pl. 709.

Male dark piceous, with short ochreous pubescence; a line down the crown yellow, a broader one on the disc of the thorax not reaching the anterior margin, orange; apex of the scutel orange and yellow, base of abdomen ochreous: antennæ dull pale brown, darkest at the apex: elytra fuscous-ochre a little clouded; stigma piceous, the internal margin whitish; the membrane iridescent and pale fuscous, with a red spot or line at the apex of the cell: thighs orange, hinder piceous, except at the base; tibiæ ochreous, the tips, bristles and tarsi piceous.

Female lighter: head yellow with 2 shining oval black spots on the crown: thorax ochreous, the sides more orange, with 2 transverse oval black rings in front: abdomen entirely ochreous: hinder thighs slightly fuscous only at the apex.

The plant is *Alopecurus pratensis*, Meadow Fox-tail-grass.



710.

ATTELABUS CURCULIONOIDES.

ORDER Coleoptera. FAM. Curculionidæ.

Type of the Genus, Attelabus curculionoides *Linn.*

ATTELABUS *Linn., Fab., Lat., Gyll., Schön., Curt.*—Curculio *DeGeer.* *Antennæ* inserted in cavities on each side of the top of the rostrum and near to the eyes (6), longer than the head, capitate, not geniculated, pilose and 11-jointed, 2 basal joints stout and ovate, 6 following narrower, subpyriform, 3rd shorter than the 4th; 5th like the 3rd; 6th, 7th and 8th shorter and more globose, the remainder forming an elliptical club, 9th joint subpyriform, 10th shorter, 11th lemon-shaped, the apex being a little acuminated.

Mandibles short, but visible at the end of the rostrum, concavo-convex, one bifid at the apex (2), the other with an obscure tooth on each side of the apex.

Maxillæ short, with a long internal lobe rounded at the top and densely margined, with stout obtuse bristles. *Palpi* short, stout and attenuated, attached to scapes, triarticulate, 1st and 2nd joints cup-shaped, 3rd the smallest, ovate (3).

Mentum large, concave before. *Labium* large and suborbicular, the anterior margin slightly concave with a triangular lobe in the middle, the sides dilated and rounded. *Palpi* short, attached on each side of the lip beyond the middle, biarticulate, basal joint cup-shaped, 2nd small, ovate, the apex glandular and producing a seta (4).

Head *and* rostrum *not longer than the thorax, the former oblong, subcylindric, not narrowed at the base* (7), *the latter deflexed, a little curved, stout and dilated at the apex:* eyes *remote from the thorax, rather small and globose.* Thorax *convex, semiovate, truncated before, broadest at the base which is convex:* scutel *rather large, and elongate-ovate.* Elytra *broad, short and convex, ovate, truncated at the base and broader than the thorax, gaping, the apex of each elytron being rounded.* Wings *very ample.* Legs *rather long*: thighs *very stout, narrowed at the base:* tibiæ *slender and compressed, serrated internally, the apex a little dilated, with a double claw inside:* tarsi *longish, 4-jointed, spongy beneath, basal joint long, dilated anteriorly, 2nd short, elongate obtrigonate, 3rd broad and bilobed, 4th as long as the 1st, slender and clavate:* claws *slender and curved* (5, *a fore leg*).

CURCULIONOIDES *Linn.—Curt. Guide, Gen.* 387. 1.—nitens *Payk.*

Smooth, shining, black; rather sparingly punctured: head with 3 ridges between the eyes, base of antennæ sometimes red: thorax sanguineous-orange, the anterior and basal margins blackish, as well as the scutel: elytra sanguineous, with several punctured striæ on each; the interstices punctured.

In the Author's and other Cabinets.

This handsome beetle lives upon nut-bushes and oaks, on the leaves of which it is not uncommonly found, and the coral-red of the thorax and elytra, which is bright in the living insect, contrasted with the green leaves, renders it very conspicuous: that these beetles feed upon the leaves there is little doubt, for I have frequently found numerous small holes where they were standing, and I think I have detected them in the act of eating. The tibiæ are admirably adapted for clinging to anything, being toothed on the inside, with 2 curved claws at the apex, and the tarsi are spongy beneath.

The form of this insect is rather peculiar; it is very short and convex, and when touched contracts its head and legs, and bending its head and thorax close, it becomes very globose and drops from the leaf or plant on which it is standing. It is found in May, June, and July at Coomb, Darent, and Epping; Mr. Paget takes it, but rarely, in Lound wood near Yarmouth. I have frequently met with it in Norfolk, sometimes upon the willow, and Mr. Heysham has taken it near Carlisle.

Donovan, in his British Insects, v. 5, pl. 149, has figured an insect which he calls *Attelabus curculionoides*; but it is evidently the *Apoderus Avellanæ* of Linnæus; and he has not only given a magnified representation of the head, but he expressly alludes to the slender neck of his insect, which at once distinguishes it from *A. curculionoides*; yet Mr. Stephens has referred Donovan's figure to *this* insect in both his works, and I regret to see that Schönherr has done the same, as it proves he has copied Stephens's error without consulting the work referred to.

As entomologists have been misled by these references, it may be as well to observe that *Apoderus Avellanæ* has 12-jointed antennæ; the head is obovate, being narrowed behind and attached by a slender neck; the tibiæ have but one claw at the apex; it is not very glossy; the legs as well as the thorax and elytra are red, with black knees and tarsi.

This insect also feeds on the hazel, and I have several times found it in company with the Attelabus, but it is a much more common species.

The Plant is *Milium effusum*, Soft Millet-grass, communicated by Dr. Bromfield.

711.

ZEIRAPHERA HASTIANA.

ORDER Lepidoptera. FAM. Tortricidæ.

Type of the Genus, Tortrix communana *Linn.*

ZEIRAPHERA *Treit., Curt.*—Ephippiphora *and* Penthina *Goda.*—Tortrix *Hüb., Haw.*

Antennæ inserted close to the eyes, on the crown of the head, short and setaceous, clothed with scales above, pubescent beneath, basal joint stout, ovate and scaly (1).

Maxillæ spiral, rather stout, and not longer than the palpi (3). *Labial palpi* porrected horizontally, parallel, densely clothed with scales (4), triarticulate (*a*), basal joint short and cleaver-shaped, 2nd long, stout, incrassated towards the extremity, densely clothed with scales, which make it thick at the apex, 3rd joint not concealed, clothed with short scales, nearly as long as the 1st, slender and elliptical.

Head *small, the crown and forehead densely clothed with longish nearly erect scales, those on the face depressed* (7, *the profile*): eyes *globose.* Thorax *subglobose.* Abdomen *with the apex slightly tufted in the males, conical in the females.* Wings *perfectly deflexed in repose, longer than the body;* superior *with the costa slightly arched, the extremity truncated and rounded;* inferior *ovate-trigonate, the apex a little narrowed and rounded.* Legs, *anterior very short, hinder the longest:* thighs *short:* tibiæ, *anterior very short with an internal spine; intermediate with a pair of spurs at the apex, one very long, hinder stoutish and hairy inside, with 2 pair of long unequal spurs, one pair at the middle:* tarsi 5-*jointed, basal joint elongated* (8†, *the hind leg*).

Larvæ *with* 6 *pectoral,* 8 *abdominal and* 2 *anal feet?*

HASTIANA *Linn.—Curt. Guide, Gen.* 952. 1.

Dark brown: head somewhat ochreous, face whitish: superior wings rich brown, variegated with blackish spots and streaks, a broad white slightly oblique fascia before the middle, with an indenture on the inside, and sinuous externally; beyond it are several dull purplish or lead-coloured patches, surrounded by scales white in certain lights, and there is a row of dull orange spots at the posterior margin, and 3 pale or whitish costal spots towards the apex, which bears a black dot with a semicircle of white scales: inferior wings orange with a purplish cast, and minutely freckled with fuscous. In the male the white fascia is very narrow, and sometimes broken into spots.

In the Cabinets of Mr. Dale, the Author, &c.

This group so nearly approaches Penthina, Spilonota, &c. on one side, that there is little to distinguish them excepting the style of colouring on the superior wings; and on the other hand Zeiraphera is closely allied to Grapholitha. The scales on the palpi are long, and make them heavy in appearance; the depressed scales on the face give the head a somewhat different character to the other genera, and the upper pair of spurs on the hinder tibiæ are placed at the centre in the type. The following are British species.

1. Hastiana *Linn.*—*Curt. Brit. Ent. pl.* 711 ♀.—ulmana *Hüb.* 45. 278 ♂.—areolana *Hüb.* 279 ♀.

29th May, near Exeter; 28th June, Devon, Mr. Cocks. The figure referred to by Linnæus in Clerck's Icones has pectinated antennæ, and is evidently a different insect, as well as Hübner's *hastana*; yet I have little doubt that ours is the Linnæan insect, the sexes of which Hübner seems to have considered as belonging to two species. Not having a specimen for dissection, I cannot be positive that it belongs to this genus, but it appears to be allied to the following species.

2. perfuscana *Haw.* 467, 231. Wood's *fig.* 1007 does not agree with Haworth's description.

This and the 3 following species, if I mistake not, are found on the flowers of umbelliferæ at Darent, Mickleham, &c.

3. pustulana *Hüb.* 33. 208. is the *T. subsequana*, *Haw.* My specimen may be only a variety of the foregoing species.
4. Lediana *Linn.*—*Wood, pl.* 31. *f.* 934.

June, Norfolk, Darent and the New Forest.

5. nitidana *Fab.*—*Wood*, 31. 935.

Hedges, end of May and June, Darent and New Forest.

6. Strobilella *Linn.*—argyrana *Hüb.*? 8. 46.

Beginning of May, hedges.

7. fraternana *Haw.*—strobilella *Wood*, 31. 917?—Strobilana *Hüb.* 12. 70 ♂.

Amongst fir-trees, 14th July, in Black-wood, Loch Rannoch.

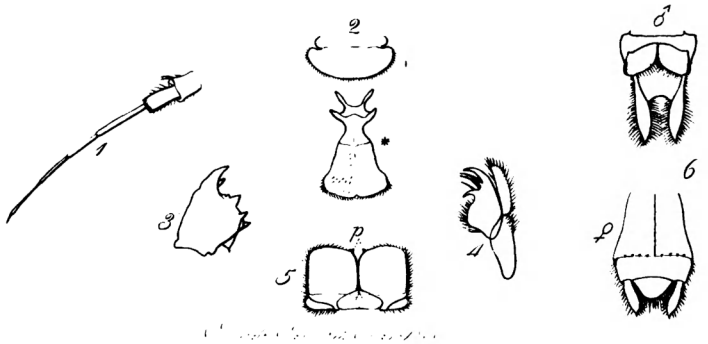
8. atromargana *Haw.* 446. 165. *Wood*, 31. 916.

Trunks of oaks, beginning of June, Kensington gardens, and woods round London.

9. communana *Fab.*—*Wood*, 34, 1029.—corticana *Hüb.*—Lichenana *Treit.*

June, in abundance on trunks of oaks, Kensington gardens, &c.

The plant is *Dipsacus sylvestris*, Wild Teasel.



LIBELLULA RUBICUNDA.

ORDER Neuroptera. FAM. Libellulidæ.

Type of the Genus, Libellula depressa *Linn.*

LIBELLULA *Linn.* &c.—*Curt. Guide, Gen.* 725.

Antennæ inserted on each side of a vesicle before the eyes, short slender setiform and 6-jointed, basal joint the stoutest, short and cylindrical, 2nd not so stout but a little longer and bristly, the remainder slender and setaceous, 3rd joint much the longest, 4th scarcely so long as the 2nd, 5th a little longer, 6th as long as the 3rd, acute at the apex and terminating in a bristle (1).
Labrum large, transverse, convex, semioval, bristly outside (2).
Tongue? subovate, dilated towards the apex and bristly (*).
Mandibles short and stout, deeply bifid at the apex, with a cluster of 4 or 5 short teeth on the inside (3).
Maxillæ with a short stipes, the terminal portion dilated at the base, rounded and bristly internally, the apex claw-shaped, with 2 smaller teeth below and 3 long stout spines on the outside, external lobe long curved and very bristly (4).
Mentum small. *Lip* very large and convex, formed of 2 quadrate orbicular lobes very bristly on the margins (5), with 2 minute teeth at the inner angle, opposite each other (*p*).

Head *large, the base concave;* eyes *very large, meeting on the crown:* ocelli 3, *placed round a vesicle before the eyes.* Thorax *large and oblong.* Abdomen *moderately long, sometimes broad depressed and attenuated at the apex, with* 2 *horny lobes at the base in the* males, *and* 2 *moveable lobes at the apex* (6 ♂); females *with* 2 *shorter lobes at the apex* (♀). Wings *extended horizontally, alike in both sexes, inferior the broadest, especially at the base, very much reticulated, stigma elongated but short in some.* Legs, *anterior the stoutest, hinder a little the longest:* thighs *spiny on the inside:* tibiæ *slender, with* 2 *series of spreading acute slender spines on each side:* tarsi *short triarticulate, hinder the longest, basal joint the shortest, terminal the longest:* claws *cleft towards the apex.*
Larva *and* Pupæ *aquatic, short and broad, both furnished with legs for walking, similar to the imago.* Roesel, v. 2. tab. 6. f. 1. 2.

RUBICUNDA *Linn.*—pectoralis *Charp.*?—dubia *Vand. Lin.*?

Male. Dull black, face and labrum yellowish-white: thorax with 2 deep orange stripes before the wings and several marks under them; the disc, including the scutel, postscutel and scapulæ sanguineous: abdomen with the 1st segment, excepting the base, and the basal ring of the 2nd, sanguineous, this and the 4 following with deep orange spots at or near the base, more or less ovate and increasing in size; underside blueish-grey: wings hyaline, nervures piceous, the costal and transverse costal nervures whitish; stigma oval and brown, a small brown spot at the base of the superior, and a small and larger one at the base of the inferior wings. *Female.* Labrum brown with yellowish spots, the spots on the thorax and abdomen all yellow, the latter with 3 large yellow spots on each side of the base, and one on each side of the 2nd, 3rd and 4th segments, the central one the largest: the basal spots on the wings are more extended.

In the Cabinets of Mr. Dale, the Author, &c.

LIBELLULA is one of the most extensive genera of this magnificent family of insects, which may be divided into 2 sections.

1. *Abdomen dilated and more or less depressed.*

1. depressa *Linn.*—*Don. v.* 3. *pl.* 81 ♂. *v.* 1. *pl.* 24 ♀.
Marshy places and ponds everywhere, from April to Aug.

2. quadrimaculata *Linn.*—*Don.* 12. 407.—*Sam. pl.* 7. *f.* 1.—prænubila *Newm.* var.
Ponds and woods, middle of May to August, Middlemarsh, Parley, New Forest, Oxford, Whittlesea and Meldon Park, Mr. Dale; also at Epping.

3. bimaculata *Charp.*? *Step.* June, Whittlesea Mere.

4. conspurcata *Fab.*—4-fasciata *Don.* 12. 425.
Hedges, lanes, &c., from middle of May to the middle of July, Parley, Glanville's Wootton and Newnham, Bedfordshire, Mr. Dale; Sprowston near Norwich and Deptford.

5. cancellata *Linn.*—*Don.* 14. 472.—*Int. to Ent. pl.* 3. *f.* 5. ♀.
Croydon canal, Peckham, Horning and Fakenham, Norfolk, Whittlesea Mere, Abbey Meadows, Kilburn, end of June to middle of August, J. C.

6. Sparshalli *Dale's Mss.* Taken at Horning in 1823 by the late Mr. J. Sparshall; it is very similar to a Chinese species.

2. *Abdomen triquetrous, sublinear or slightly clavate.*

7. cœrulescens *F.*—Donovani *Lea.*—biguttata *Don.* 13. 449 ♂.
May to September, Charmouth, Portland, Empole, Parley, Enborne, Gamlingay bogs and Isle of Man, Mr. Dale; New Forest and Black-gang-chine, J. C.

8. vulgata *Linn.*—*Don.* 10, 337. 1.
Ponds and ditches from June to 19th Nov. everywhere.

9. Veronensis *Charp.* Taken by Mr. Harrison of Hull.

10. flaveolata *Linn.*—*Schæff. Icon. t.* 4. *f.* 1.
Taken by Mr. Lyell at Kinnordy in Forfarshire, and by Mr. Doubleday last year at Epping in abundance.

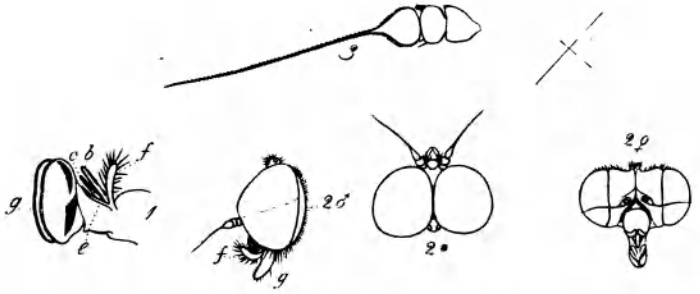
11. angustipennis *Step. Ill.* June, near London.

12. Roeselii *Curt.*—*Roesel,* 2. *pl.* 8, *f.* 4.—basalis *Step.* ♀? rufostigma *New.* var. Whittlesea Mere, Mr. Bentley.

13. Scotica *Don.* 15. 523.—nigra *Van. Lin.*—pallidistigma *Step.* var.
June to Nov. abundant on Parley Heath; Isle of Arran.

14. rubicunda *Linn.*—*Curt. Brit. Ent. pl.* 712. ♂.
This fine insect was discovered last year, about deep pools of water on Thorne moor near Dorchester, by Mr. Beckett; Mr. Dale found it there in abundance the middle of July, but it was less common in August; Mr. Harrison also took it near Glandford Brigg, Lincolnshire. For a fine series I am indebted to the Rev. F. O. Morris and T. C. Heysham, Esq., who took them in the North of England.

The plant is *Carex digitata,* Fingered Carex, from Leigh wood, communicated by Mr. Thwaites.



Pubd by J. Curtis Oct. 1 1838

713.

LEPTIS DIADEMA.

ORDER Diptera. FAM. Rhagionidæ or Leptidæ.

Type of the Genus, Leptis helvola *Meg.*

LEPTIS *Meig., Curt.*—Rhagio *Fab., Lat.*—Chrysopila *Macq.*—Anthrax *Panz.*—Musca *Linn.*

Antennæ inserted near the middle of the face, porrected, approximating, compressed, triarticulate, hairy; basal joint cup-shaped, 2nd transverse-oval, 3rd as large as the 1st, orbicular-conic, the apex acuminated and elongated into a setaceous pubescent seta (3).

Labrum longish, hollow and broad, the apex rounded (1 *b*).

Tongue nearly as long but narrower, the sides thickened or reflexed, the apex obtuse (*c*).

Maxillæ nearly as long as the tongue, lancet-shaped and a little curved (*e*). *Palpi* exserted, longer, stout, recurved, clavate and bristly (*f*).

Lip short and thick, composed of 2 large oval lobes with a few hairs or quite naked (*g*).

Head *broad, transverse-ovate:* eyes *very large and meeting on the crown* (2*), *with the superior portion more coarsely granulated than the inferior half in the males* (2 ♂); *remote and smaller in the females* (2 ♀): ocelli 3, *mounted on a tubercle, near the base of the head.* Thorax *ovate-quadrate:* scutel *semiorbicular.* Abdomen *rather short and slender in the males, stouter and conical in the females, the apex telescopiform.* Wings *divaricating, ample, with* 1 *long discoidal cell, and* 1 *long,* 2 *short and* 3 *other marginal cells:* halteres *long and capitate.* Legs *long and slender, especially the hinder:* thighs *long:* tibiæ *longer and very slender, with* 2 *distinct spurs at the apex of the intermediate, and* 2 *minute ones in the hinder pair:* tarsi *long, slender and* 5*-jointed, basal joint very long,* 4*th small:* claws *small:* pulvilli *trilobed.*

DIADEMA *Linn.—Curt. Guide, Gen.* 1189. 4.

Male. Head slate colour: antennæ and palpi piceous, lip ochreous, eyes purplish black: thorax, scutel and abdomen clothed with aureous hairs, the base of the segments in the latter black: wings iridescent with a yellowish tinge, stigma and nervures pale brown, the former margined with yellow: halteres pale ochreous, the club piceous: legs ochreous, upper edge of hinder thighs, apex of tibiæ and tarsi fuscous. *Female* clothed with shining yellowish or greenish depressed hairs, the segments slightly fuscous: stigmatic spot yellowish.

In the Author's and other Cabinets.

IN illustrating the genus Rhagio, I lately observed that it is principally distinguished from Leptis by the shape and attitude of the palpi, which in the latter are recurved, and the 4th

joint of the anterior tarsi is shorter than the 5th; the abdomen also is clothed with short depressed hairs in Leptis, whilst it is more shining and pilose in Rhagio. Meigen describes the palpi as biarticulate.

The following are the British species, which seem to be attached to damp situations, as the sides of ditches, ponds, &c.

1. aurata *Fab.*—atratus *Fab.* ♂.—tomentosus *Fab.* ♀.—cingulata *Don.* 13, *pl.* 465 ♂.

"Aureous (♂) or pale yellow, tomentose (♀); halteres and costal stripe fuscous: 3 to 4 lines long."

"Taken in July on the hedges near the road-side about Nutfield in Surrey:" *Donovan.*

2. flaveola *Meig. v.* 2. p. 100. *No.* 17.—Genius *Panz.* 54. 4?

"Pale yellow, tomentose; legs yellow; thighs fuscous; wings yellowish, stigma pale; halteres fuscous: 3½ lines."

End of May, Netley Abbey; end of June in woods, Dorset; and the females in marshes at Horning.

3. helvola *Mcg.*—*Meig.* 2. 100. 18.

"Golden tomentose; halteres fuscous; legs rufous; thighs fuscous; wings light fuscous: stigma pale: 3 lines."

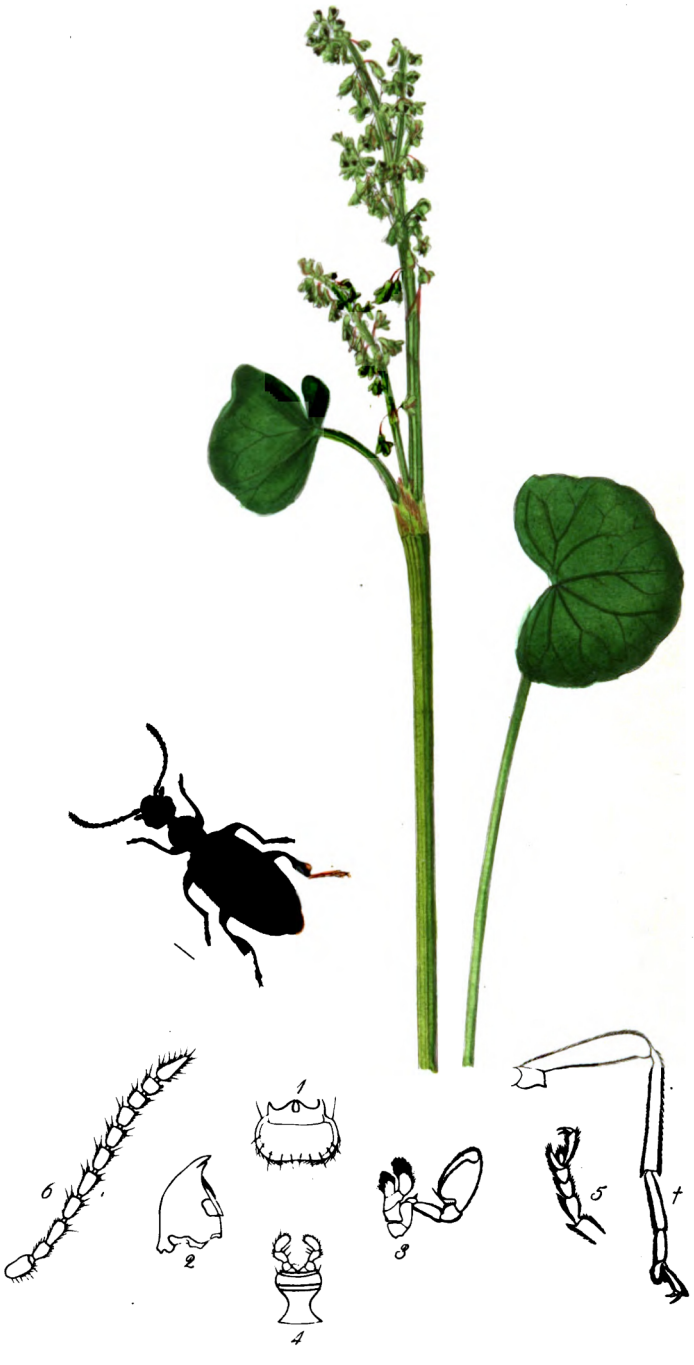
June, Hampstead Heath: males beginning of August, ditches, Sandwich.

4. Diadema *Linn.*—*Curt. Brit. Ent. pl.* 713. ♀.—gracilis *Curt. Guide* ♀.

Male, 13th June, Coomb-wood: Females, beginning of July near Cambridge, and 1st Aug. near Ventnor in the Isle of Wight.

Meigen having stated that the stigmatic spot of the wings was fuscous and that the length of his insect was 3 lines, I considered my specimen, having at that time only the female, to be a new species, which I called "*gracilis*," but having since obtained the male of *Diadema*, I think they are one and the same.

The plant, *Hutchinsia petræa*, Mountain Pepperwort, was communicated by the Rev. J. Howson from Malham Tarn, Yorkshire, and by Mr. Thwaites from St. Vincent's Rocks.



Pub.d by J. Curtis Nov. 1. 1828

ANTHICUS TIBIALIS.

ORDER Coleoptera. FAM. Cantharidæ or Anthicidæ.

Type of the Genus, Meloe Antherinus *Linn.*

ANTHICUS *Fab., Payk., Curt.*—Notoxus *Ill., Lat.*—Lytta *Mars.*—Meloe *Linn.*

Antennæ inserted before the eyes, on each side of the clypeus, as long as the head and thorax, pubescent and pilose, a little thickened towards the apex, 11-jointed, basal joint the stoutest and oval, 2nd the slenderest, short and obovate, 5 following shorter than the 1st; elliptic-truncate, 8th, 9th and 10th more ovate-quadrate, 11th as long as the 1st; apex conical (6).

Labrum transverse-ovate, anterior margin slightly concave and pubescent, surrounded by long hairs (1).

Mandibles trigonate, the apex acute and bifid; a narrow membranous margin on a portion of the inside, with a quadrate notch below the middle (2).

Maxillæ small, terminating in 2 short, densely hairy lobes, outer one the largest and ovate. *Palpi* large and securiform, pubescent and 4-jointed, basal joint small, 2nd long, sublinear, 3rd short and cleaver-shaped with a long bristle on the inside, 4th very large and ax-shaped, the apex thickened (3).

Mentum corset-shaped. *Palpi* short, attached to short scapes, biarticulate, basal joint somewhat obovate, 2nd longer broad and ovate (4).

Head *orbicular-quadrate, attached by a distinct neck, the clypeus narrowed: eyes rather small, prominent and lateral.* Thorax *not broader than the head, obovate-cordate:* scutel *minute.* Elytra *twice as broad as the thorax, and 4 times as long, elongate-ovate, not covering the apex of the abdomen.* Wings *ample.* Legs *rather short:* trochanters, *anterior with a tubercle, hinder with a tooth beneath:* thighs, *anterior short and stout, hinder narrower and compressed:* tibiæ *with minute spurs, hinder the longest, sometimes dilated at the apex:* tarsi 5, 5 *and* 4*-jointed, basal joint short in the anterior* (5), *the* 2*nd and* 3*rd shorter and obcordate,* 4*th bilobed,* 5*th clavate and the longest; basal joint very long in the hinder* (†), 2*nd as long as the terminal, the* 3*rd bilobed:* claws *small and acute.*

TIBIALIS *Curt. Mss.*—*Guide, Gen.* 283.

Shining piceous with a bluish tinge, firmly punctured, base of head and thorax castaneous-red, excepting the fore part of the latter: elytra with ochreous pubescence, the base sometimes castaneous: mouth antennæ and legs fulvous, thighs pitchy-chestnut; hinder tibiæ dilated towards the extremity, which is concave internally and ochreous, as well as the base, the middle being black.

In the Cabinets of Mr. Spence, Mr. Rudd, and the Author.

THE simple form of the thorax distinguishes this group from Notoxus; and the proportions of the labial palpi, the 3rd joint of which is not cup-shaped, as well as the tarsi, are very different to those of Xylophilus, fol. 299.

The Anthici are lively little beetles, that are generally found in warm and sheltered situations; but in the South of France I observed several pretty species much smaller than ours, running up the trunks of trees. The following are native species.

1. Antherinus *Linn.*—*Panz.* 11. 14.

June, on flowers at Hertford; rare at Earsham in Norfolk, May, in great abundance under rejectamenta at Tollsbury, Essex, J. C.: May, June, and July, on mud, Glanville's Wootton and Puddimore, Somerset, and Thorne Moor, Yorkshire, Mr. Dale: very abundant under rejectamenta, Isle of Wight, Rev. G. T. Rudd.

2. quadrinotatus *Gyl.* 2. 498, 8.

"Captured within the metropolitan district in June."

3. ater *Payk.*—*Panz.* 31. 15.

April, Southend; and 13th May several under stones near the Chesil-bank, Portland, J. C.; and in June, Mr. Dale.

4. fuscus *Mars.*—floralis *Panz.* 23. 5.

Very abundant from April to November on dunghills, hotbeds, and under rejectamenta; Mr. Dale generally meets with it flying.

5. floralis *Linn.*—formicarius *Oliv.*

May, flowers in gardens; beginning of August on Trifolium.

6. equestris *Panz.* 74. 8.

"June, near London and in Devon, as well as the next."

7. gracilis *Kug.*—*Panz.* 38. 21.

8. angustatus *Curt.*—humilis of Ahrens is a different species.

Elongated and narrow, the thorax obovate; mouse-coloured, with ochreous pubescence, thickly and rather strongly punctured; back of head and thorax bright rufous when alive, disc of the latter afterwards fuscous; antennæ and legs ochreous-chestnut, underside partaking of the same colour: length 1 line.

I found two in September floating in a rill running down the Cliff, at Blackgang Chine.

9. constrictus *Rudd's Mss.*

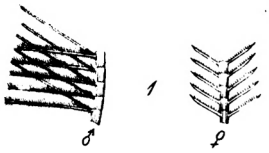
Shining piceous, firmly punctured; thorax compressed behind, with a transverse channel; elytra finely pubescent, with a castaneous line at the apex, sometimes with a bright ferruginous spot divided by the suture; mouth, antennæ and legs fulvous; apex of former sometimes fuscous; middle of thighs and hinder tibiæ piceous; 1⅓ line.

June and August, under rejectamenta near Ryde, Rev. G. T. Rudd.

10. tibialis *Curt. Brit. Ent. pl.* 714.

Mr. R. H. Spence first gave me this very distinct species, which he took under rejectamenta near Netley in October; and Mr. Rudd has taken it near Ryde in June.

I am indebted to T. C. Heysham, Esq., for *Oxyria reniformis* (*Rumex digynus*), Mountain Sorrel, who sent it from Borrowdale.



Pub. by J. Curtis Nov. 1. 1838

715.

CLOSTERA ANACHORETA.

The scarce Chocolate-tip.

ORDER Lepidoptera. FAM. Bombycidæ.

Type of the Genus, Bombyx curtula *Linn.*

CLOSTERA *Hoff., Curt.*—Pygæra *Och.*—Bombyx *Linn., Haw., Goda.*
Antennæ very short, curved, inserted close to the back of the head, bipectinated, the rays long and hairy in the male (1 ♂) but decreasing in length to the apex, the base concealed by a ring of scales; much shorter in the female (♀), slightly pubescent internally, with a bristle at the apex of each.
Maxillæ very short, concealed by the palpi, formed of 2 distorted compressed broad lobes, cuvred and attenuated at the apex (3).
Labial palpi stout, directed obliquely or nearly vertically, densely scaly (4), triarticulate, basal joint cleaver-shaped, 2nd twice as long and nearly linear, 3rd minute oval (4*a*).
Head *very short, bent under the breast in repose:* eyes *large but very much concealed:* (7*a, the profile*). Thorax *quadrate, crested behind.* Abdomen *attenuated, the apex elevated when at rest, tufted and truncated, the tuft elongated and sometimes furcated in the male.* Wings *deflexed in repose, rather short;* superior *subtrigonate, truncated obliquely, the apex rounded;* inferior *trigonate, rounded:* cilia *short.* Legs *short and stout:* tibiæ *densely scaly, the anterior appearing dilated, with a stout internal spine* (8); *the others with small spurs at the apex, the hinder with a pair also a little above the apex:* tarsi 5-*jointed, anterior producing long scales on the outside, the others with the basal joint elongated, the following short:* claws *and* pulvilli *minute.*
Larvæ *hairy and tufted, with* 6 *pectoral,* 8 *abdominal and* 2 *anal feet.* Pupæ *inclosed in a web between the leaves of trees.*

ANACHORETA *Vill.—Curt. Guide, Gen.* 796. 2.
Cinereous lilac: crown of head and a ring round the base of the antennæ deep brown, as well as 3 large spots down the back of the thorax: superior wings with 4 transverse pale strigæ, 2 straight and oblique before the middle, 3rd flexuose and a little raised; apical spot large and brown with a lilac bloom towards the extremity, through which the 4th striga passes and forms a white broken line near the apex, with 3 orange freckled patches: towards the posterior margin is an irregular line of black spots, with 1 or 2 larger approaching the posterior angle: abdomen and inferior wings fuscous.

In the Cabinets of the British Museum.

THIS pretty little group seems to be allied to Cerura (pl. 193), and is supposed to be related to Pygæra (pl. 530). The short antennæ and shortish wings, with the peculiar spot at the apex

of the superior, characterize Clostera, of which the following species are natives of this country.

1. curtula *Linn.*—*Wood, pl. 5. f.* 12.—anachoreta *Esp.*

Reddish gray; head and thorax with the disc intense brown; superior wings with 4 whitish transverse lines and a large chocolate-coloured space at the apex.

Larvæ the end of September on poplars and willows; the moth appears the end of April on the trunks of those trees at Wanstead and in the neighbourhood of London. May, on Durdham Down in abundance, Mr. House; end of May, Clapham Park Wood, Bedfordshire, Mr. Dale, and Lyme Regis and Brightwell Bertis, Dorset.

2. anachoreta *Vill.*—*Curt. Brit. Ent. pl.* 715 ♂.—curtula *Esp.*

The larva, which is copied from Hübner, is found upon the different species of sallows and poplars from June to October. The moth appears in spring and summer near Paris, where it is common, although it is very rare in England; the only specimens I have seen being in the British Museum, one of which I have figured: they were taken near Salisbury by the late Mr. Spratt.

3. reclusa *Esp.*—*Don. v.* 4. *pl.* 124. *& pl.* 129. *f.* 4.—*Wood, f.* 10.

Superior wings cinereous, with 4 pale transverse anastomosing lines, and a white costal spot, with a large ferruginous spot at the apex: inferior wings fuscous.

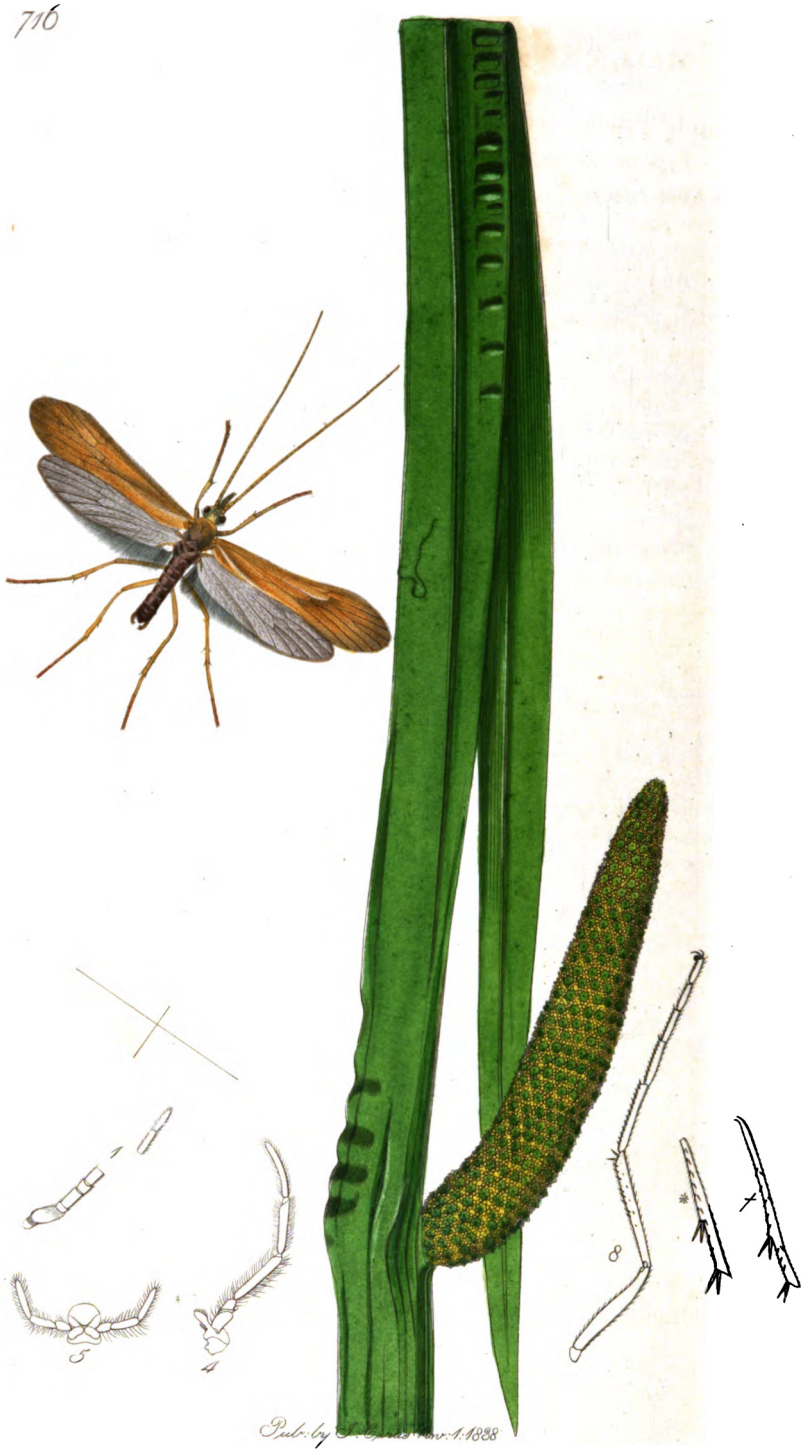
Larvæ on the trembling poplar the end of September, and the moth the end of May on the trunks of that tree at Epping, Darent and Birch-woods, also at Burghfield, Berks, and near Dublin. I took the larvæ full grown on a sallow in the Isle of Arran the beginning of August. Captain Blomer found them on the young shoots of the white poplar in June and July, and bred the moth in May and August; and Mr. Blunt detected the caterpillars under the bark of willows and poplars in Pembroke Hall Garden, Cambridge.

4. suffusa *Step.*—*Ill. pl.* 16. *f.* 1.

Larger: superior wings with the 3rd striga united obliquely with the 4th on the interior margin; inferior wings pale cinereous, with two transverse angulated fuscous strigæ.

It is not stated where this specimen was taken in the Illustrations.

Populus Tremula, the Aspen-tree, is figured with the insects.



716.

MOLANNA ANGUSTATA.

ORDER Trichoptera. FAM. Leptoceridæ.

Type of the Genus, Molanna angustata *Curt.*

MOLANNA *Curt., Step.*

Antennæ porrected in repose but divaricating, a little longer than the wings in the male, shorter in the female, rather stout, a little tapering, pubescent, composed of numerous joints, basal joint the stoutest, 2nd short, 3rd cup-shaped, longer than the 4th, the 6 following increasing in length, the remainder elongated (1 the base and apex).

Maxillæ small, with a minute terminal ovate lobe, a little ciliated. *Palpi* much longer than the head, porrected, alike in both sexes, very hairy, 5-jointed, basal joint short and the stoutest, 2nd the smallest, semiconical, 3 following long, nearly equal in length, a little tapering (4).

Mentum terminated by 2 horny oval scales placed obliquely. *Labium* rather large, subglobose and inflated. *Palpi* considerably shorter than the maxillary, very hairy, triarticulate, basal joint oval, 2nd nearly twice as long and linear, 3rd a little longer, the apex ovate (5).

Males *smaller than the females.* Head *transverse, hairy:* eyes *prominent, globose, coarsely granulated and hairy:* ocelli *none?* Thorax *small and oval.* Abdomen *short linear and clavate, with* 2 *lobes at the apex above and* 2 *horny curved processes beneath in the males; thick and obtuse in the female.* Wings *deflexed in repose, depressed on the back and compressed behind, long, narrow and rounded at the apex,* superior *with a short furcate cell at the apex, a long one below and an oblique nervure above it.* Legs *with short bristles internally, anterior the shortest:* thighs, *anterior the shortest; middle pair a little the longest:* tibiæ, *anterior the shortest, with a pair of spurs at the apex* (8), *the others with the spurs longer, with a pair also below the middle* (*), *especially in the hinder tibiæ, which are the longest and slenderest and a little flexuose* (†): tarsi *long and* 5*-jointed, basal joint long, the remainder gradually decreasing, but the* 4*th is not shorter than the* 5*th:* claws *and* pulvilli *small.*

ANGUSTATA *Curt. in Phil. Mag.—Guide, Gen.* 754[b].

Male ochreous: head, thorax and abdomen dull castaneous, head and shoulders clothed with a few coarse ochreous hairs: eyes black: superior wings silky, nervures brown; inferior pubescent, pale fuscous with darker nervures; cilia black next the abdomen. *Female* with the superior wings fuscous, being sparingly clothed with minute silky aureous hairs.

In the Cabinets of Mr. Dale, the Author, &c.

AN ample series of fine specimens of Chimarra, which I found in vast abundance in Ireland, enabled me to study its affinities;

and it was my intention to place it in the 2nd edition of my Guide next before Molanna, but by some accident it was inserted between Potomaria and Sericostoma, which in all probability belong to one genus. Although I still doubt if it be better located than it was at first, when it was illustrated in this work (fol. 561), I am anxious to correct the palpable error committed in the Guide, before I proceed to discuss the affinities of Molanna.

This type appears to have been unknown to M. Pictet at the time his Memoir was printed; we therefore know nothing of its early œconomy; but from its being found in the neighbourhood of deep water, it is no doubt similar to its allies.

It appears to me that its natural situation is between Leptocerus and Odontocerus. The trophi are considerably like those of the former genus, as well as the wings, and the long stout antennæ and the whole contour assimilate with those of the latter group.

The way in which Molanna rests is peculiar, and bears a striking resemblance at a little distance to the ochreous Crambi: the antennæ, palpi, and breast are pressed close to the surface on which it stands, the wings are elevated and somewhat cylindric, enveloping the abdomen, which is of course concealed, and the legs are spread out: when thus settled they are rather loath to move, especially the females.

M. angustata I find on paling near the water in the Regent's Park: the males first come out the end of May; the females I do not find until the middle of June; and a few males appear again the beginning of August. I have never taken it elsewhere, excepting a single male in a boat whilst I was fishing last August at Henley. With them I find occasionally a specimen with the palpi, head, and abdomen fuscous, which is the *M. nigripalpis* of Stephens.

The plant is *Acorus Calamus*, Sweet Flag, specimens of which were transmitted to me by Laurence Sulivan, Esq., and others from Wimbledon by J. E. Gray, Esq.

Publ. by J. Curtis Nov. 1. 1838

717.

COCCUS ACERIS.

The Sycamore Scale-insect.

ORDER Homoptera. FAM. Coccidæ.

Type of the Genus, Coccus Cacti *Linn.*

Coccus *Linn., Fab., Lat., Curt.*—Calymmata, Diaspis, Diaprosteci *Costa.*

Antennæ of the male inserted in front of the face, before the eyes, approximating, not so long as the body, stout, and linear, composed of 10 joints, 2 basal joints short, 3rd longer obovate, the following scarcely decreasing in length, the apical joint obpyriform and slightly pilose (4): very minute and remote in the female (♀ *a*), tapering, composed of 3 short joints, the apical one ovate, the apex furnished with a bristle.

Proboscis long and slender in the female, composed of 3 setæ, attached to an oval fleshy base placed between the anterior legs (2): wanting in the male.

Male. *Head trigonate* (1): eyes *small, lateral and reticulated:* ocelli ? *smaller and placed below the eyes* (1*c*). Thorax *large suborbicular:* scutel *semiovate.* Abdomen *short, with a short horny process at the apex, and two setæ twice the length of the insect arising from the posterior angles.* Elytra *twice as long as the body, mealy, having only* 2 *nervures:* wings *none.* Legs *short and stout* (6): thighs *and* tibiæ *simple:* tarsi *consisting of an elongated joint, with a short claw and* 1 *or* 2 *bristles at the apex.* Female *oval, fleshy and apterous:* eyes ? *remote, minute.* Thorax *composed of* 3 *or* 4 *fleshy rings closely uniting with the head and body, and forming more than half the animal.* Abdomen *short, composed of* 7 *or* 8 *segments, producing cottony scales at the apex.* Legs *very short and remote* (♀ *l*), *4-jointed, tapering, terminated by a single claw or bristle.* Larvæ *and* females *often living in a cottony substance on the leaves and branches of trees.* Pupæ *of the males inclosed in a cocoon.* L *the larva of* C. Cacti, *the smaller figure showing the natural size: the* antennæ *were 7-jointed:* eyes *black, minute and placed behind the antennæ.*

ACERIS *Fab.*—*Curt. Guide, Gen.* 1042. 2.

Male. Castaneous: antennæ pilose, 9-jointed, 2 basal joints short, 3rd twice, 4th thrice as long, 5th shorter than the 2nd; remainder ovate, decreasing in length (4*): eyes or ocelli ten, 5 on each side (1*). Thorax with a large membranous space before and another behind the scutel, which is transverse-ovate. Abdomen short and truncated, with a long stout spine at the apex and a fine white seta on each side, thrice as long as the animal: elytra long and broad, iridescent, yellowish with the subcostal nervure broad and ochreous, castaneous at the apex where the colour spreads to the costa: legs and telum ochreous, the former more or less brown. *Female* as large as that of *C. Cacti*, but of a duller red colour.

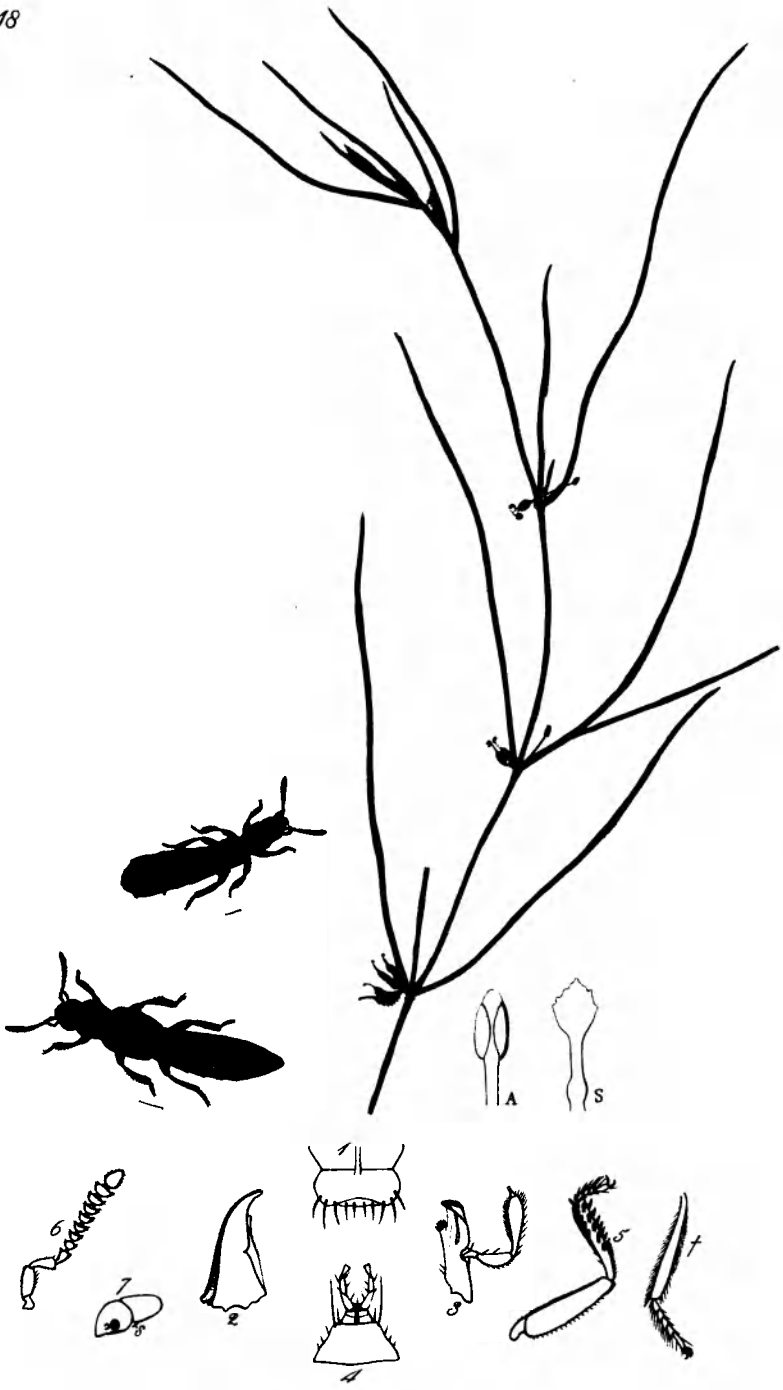
In the Author's and other Cabinets.

The sexes of Coccus are so dissimilar, that nothing but rearing them from the parent would convince any one of their identity. The male is small but winged, sometimes having ten eyes; it is deprived of a proboscis, but is capable of locomotion: the female is often ten times as large, immovable, formed like a scale or fleshy, and clothed with cotton, having a longish proboscis; and so great a variety is there in the structure of the species, that Sig. Costa has proposed 3 genera, and I doubt not many more will be necessary when the group is investigated. The œconomy of the valuable Cochineal insect being well known, I shall prefer giving the history of *C. Aceris*, with which Mr. Westwood has favoured me, together with males of the insect.

"My specimens of this species," he says, "have been obtained from a young plant of *Acer Pseudo-platanus*, growing in a very confined situation at Kensington. The males make their appearance in the winged state in the month of May, when the impregnation of the female takes place in the singular manner described by Reaumur (v. 4). The males on emerging from their singular cocoons escape backwards, the wings being extended flatly over the head. By the end of June the females have attained their full gravid size, and on lifting up their bodies, their whole interior is occupied by white flowery-like matter, in which the minute young are to be observed, of the size of a small dot. In this state they are hexapod and antenniferous, active, and furnished with 2 elongated anal setæ. By the end of July the young quit the body of their parent, and ascend to the extremity of the young branches; there they affix themselves, gradually increasing in size, and losing the anal setæ as well as their former activity. In this state they remain through the winter, without any diversity of appearance indicative of the sexes, and it is not until the following April that this is first perceived by the further increased growth of the females, and by the males assuming the pupa state. The female when full grown has the appearance of a large shining warty excrescence, without any trace of segments. They are much infested by Chalcidideous parasites, several species of which belong to a distinct genus, intermediate between *Encyrtus* and *Eulophus*, which I have described under the name of *Coccophagus*."

As the Cocci generally kill the plants on which they live, those that infest the vine, pine-apple, &c. do great mischief in hot-houses, where congenial heat, and the absence probably of those parasites which in the native countries of those plants keep them in check, contribute to their rapid propagation, if proper care be not taken to destroy them when they first make their appearance.

Turritis glabra, Smooth Tower-Mustard, was communicated by W. W. Saunders, Esq. from Wimbledon.



Publ. by J. Curtis Dec. 1. 1838

718.

PHYTOSUS SPINIFER.

ORDER Coleoptera. FAM. Staphylinidæ.

Type of the Genus, Phytosus spinifer *Rudd.*

PHYTOSUS *Rudd.*

Antennæ inserted before the eyes, close to the base of the mandibles, not much longer than the head and thorax, geniculated, clavate, pubescent, 11-jointed, basal joint the longest, stoutish, cylindric, 2nd nearly as long and stout but attenuated to the base, 3rd much smaller, pyriform, the remainder submoniliform, 4th globose, 5th broader, the following increasing slightly in diameter and somewhat cup-shaped, apical joint larger and ovate (6).

Labrum transverse-oval, anterior margin nearly straight, and ciliated with strong bristles, the centre membranous (1).

Mandibles porrected, elongated, slightly curved at the apex which is obtuse, inner margin with a narrow ciliated membrane (2).

Maxillæ narrow, terminating in 2 lobes, the inner one ciliated, with a bundle of short spines at the base, the outer narrow, a little longer, curved, the apex membranous and pubescent. *Palpi* longish, aciculated and 4-jointed, basal joint slender clavate and curved, 2nd stout, thrice as long and semiovate, 3rd much longer, stout, clavate and hairy, 4th a short slender process (3).

Mentum large, trigonate, truncated before, with a very long bristle at each angle. *Lip* short. *Palpi* attached to 2 elongated scapes, biarticulate, basal joint oblong with 3 or 4 bristles, 2nd a little shorter, clavate-truncate (4).

Male *smaller than the female.* Head *moderate, suborbicular:* eyes *small, lateral and orbicular.* Thorax *not longer than the head, but a little broader, somewhat obovate, with a short curved spine in both sexes, on each side beneath, near to the head* (7,*s*): scutel *small.* Elytra *not broader than the thorax in the male and very short, broader and longer in the female:* wings *ample.* Abdomen *long, dilated in the male towards the apex which is obtuse and rounded, but conical in the female.* Legs *rather small:* thighs *broad and compressed:* tibiæ *short,* 4 *anterior with series of short stout spines on the outside, that on the edge composed of* 7 *rays* (5): *hinder hairy, with a spur at the apex* (†): tarsi *with long hairs beneath,* 4, 4 & 5-*jointed;* 4 *anterior very short,* 3 *basal joints very short,* 4*th elongate-clavate, hinder with the basal joint a little longer than the* 2*nd but shorter than the* 5*th:* claws *curved, acute.* Obs. *The dissections were taken from a female.*

SPINIFER *Rudd's Mss.—Curt. Guide, Gen.* 215*.

In the Cabinets of Mr. Rudd and the Author.

The spiny anterior tibiæ in Phytosus seem to indicate that it burrows, and render it not improbable that the œconomy of this insect is similar to Hesperophilus and Bledius (pl. 143), to which it is undoubtedly allied, the trophi having a great resemblance; the antennæ however readily distinguish them, the 2 basal joints being equal, and the 3rd short. Phytosus is likewise related to the Aleocharæ, as will be evident on referring to the dissections of Homalota (pl. 514); but it is more nearly allied to other groups of this extensive division of the Staphylinidæ, and it is very probable that *Astilbus canaliculatus*, which has the anterior tarsi alone 4-jointed, may prove to be one of the connecting links.

The extraordinary difference in contour, size, and colour in the two insects represented in our plate would lead to a belief that they were not the sexes; but they agree in structure and are found together, so that no doubt is entertained on that head.

The following is the description of

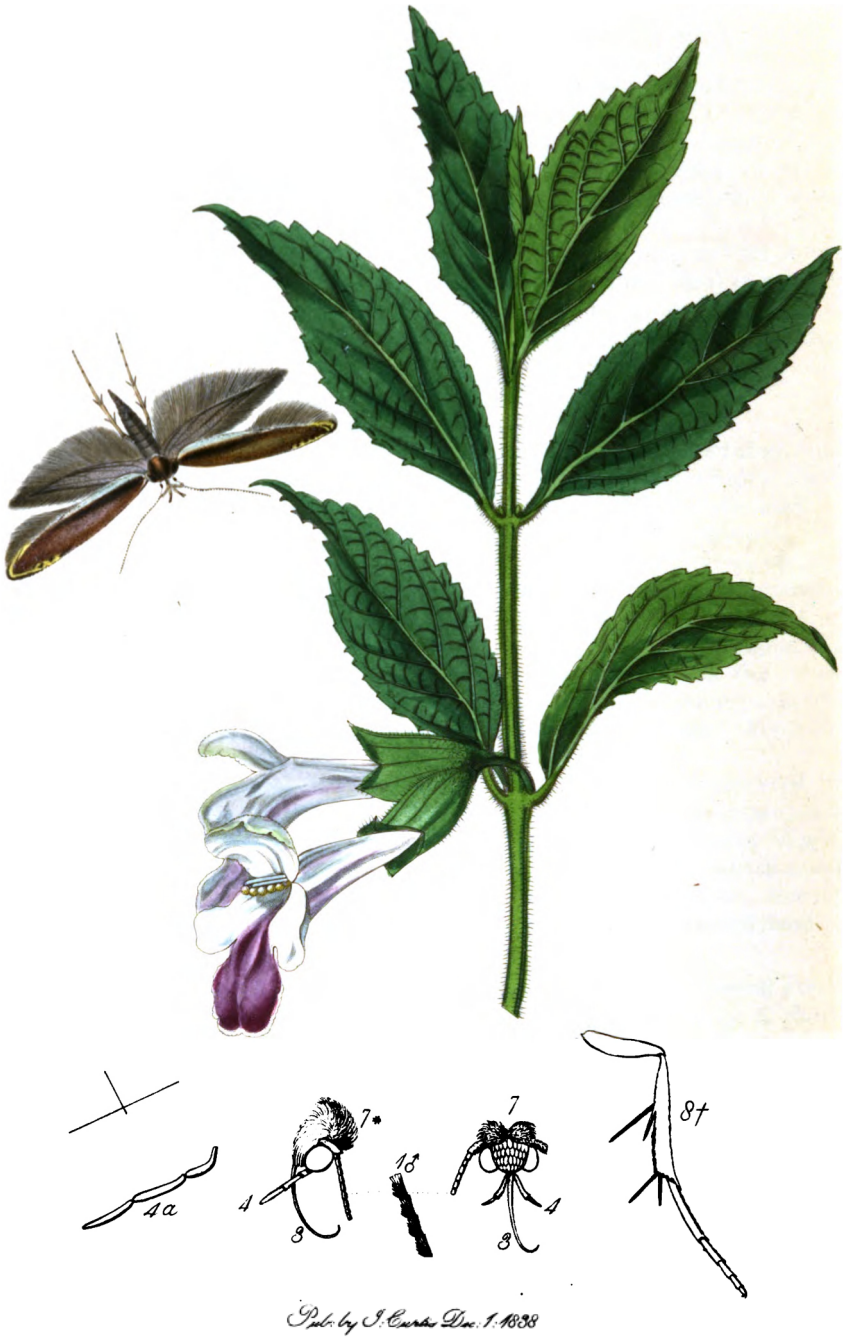
P. spinifer *Rudd.—Curt. Brit. Ent. pl.* 718 ♂ & ♀.

Male pale fulvous, thickly and minutely punctured, and clothed with short depressed shining yellowish hairs; head brownish, eyes black; thorax depressed down the middle; abdomen black, basal and apical segments castaneous.

Female dull black, thickly and minutely punctured, clothed with very short depressed shining yellow pubescence; trophi, antennæ and legs ochreous, the former and the apical joint of the antennæ darker; coxæ and thighs castaneous and black; elytra with a small space at the apex of the suture reddish; abdomen shining black, slightly chestnut at the apex, 6th segment with the margin of the same colour, the edge white.

Specimens of this nondescript species were discovered by the Rev. G. T. Rudd last May, just above high-water mark on the shore between Ryde and Sea-view in the Isle of Wight. It appears to burrow in the moist sand, amongst which it was found by shaking the sand over a green calico net. For my specimens, as well as others for dissection, I am indebted to the captor.

Zannichellia palustris, var. *Z. dentata* Wild. (Horned Pondweed) was communicated by Dr. Bromfield. Fig. A shows an anther, *s* the stigma.



Pub. by J. Curtis Dec. 1. 1838

719.

EDERESA SEMITESTACELLA.

The testaceous White-back.

ORDER Lepidoptera. FAM. Tineidæ.

Type of the Genus, Tinea Pruniella *Linn.*

EDERESA *Curt.*—Erminea *Haw.*—Œcophora *Och.*—Tinea *Linn., Hüb.*

Antennæ inserted on each side of the crown, over the eyes, as long as the body and very slender, composed of numerous elongated joints, attenuated at the base, each clothed above with 2 series of scales and hairy beneath, especially at the base of each joint, the 1st longer stouter curved and scaly (1).

Maxillæ shorter than the antennæ, spiral, very slender and naked at the base (3).

Labial palpi more or less drooping, divaricating, slender, as long or longer than the head, clothed with short scales, triarticulate, basal joint a little clavate and curved, 2nd longer, nearly linear, 3rd nearly as long and stout, rounded at the apex (4 & 4*a*).

Head *small with a large tuft of upright hairs covering the crown;* face *shining, with broad depressed scales* (7 & 7*): eyes *small and orbicular.* Thorax *small.* Abdomen *rather short, apex obtuse in the male, conical in the female.* Wings *long and narrow, very much deflexed, almost cylindric in repose:* superior *elliptic-lanceolate, costa arched;* cilia *very long and extending round the apex where it is short:* inferior *very narrow and perfectly lanceolate;* cilia *very long, extending all round.* Legs, *hinder the longest: thighs short:* tibiæ, *anterior short, the others with long unequal spurs at the apex, hinder long and stoutish, with a long unequal pair also considerably above the middle:* tarsi *long, 5-jointed, basal joint long, apical one short* (8†). *The dissections were drawn from* T. curvella *Linn.*

SEMITESTACELLA *Curt. Guide, Gen.* 1027. 8.

Silky testaceous; palpi, crown of head and antennæ white, the latter spotted with black: superior wings fulvous, slightly mottled, with a delicate violaceous bloom, 3 whitish spots on the costa near the apex, and a flame-shaped stripe of the same colour on the inferior margin, not extending beyond the middle: inferior wings pale plumbeous, cilia yellowish fuscous, yellowish at the apex of the superior wings with two fuscous curved lines; tibiæ and tarsi spotted above with brown.

In the Author's Cabinet.

FROM my genus Argyromiges (pl. 284) this group is separated by its short antennæ and broader wings, as well as by the proportions of the palpi and spurs, which are different; but I

find that Argyrosetia has nothing more than the metallic colour of the superior wings to distinguish it from Ederesa. I expect the larvæ have 16 feet, but whether they are subcutaneous or live in leaves, rolled up by themselves, I am not able to say; if Stewart be correct, the caterpillar of *E. Pruniella* "harbours in the flowers of the cherry, and having destroyed the part of fructification, it connects them with a thread; it is of a whitish-green colour; the head and first segment of the body brown and shining." The following are our species.

1. Clematella *Fab.*—*Wood, pl.* 42. *f.* 1303.—repandella *Hüb. pl.* 37. *f.* 256.

The caterpillar feeds on the Clematis, the moth occurs at Darent the beginning of July.

2. curvella *Linn.*—*Wood, f.* 1302.—curva *Haw. p.* 516. 14.

June and July in osier holts and in gardens near willows.

3. ossea *Haw.*—*Wood, f.* 1304.—*f.* 1306 is another genus.

June and July, woods near Dover.

5. ocellea *Step. Ill.*—4. subocellea *Ste. var.?*

June, Darent Wood.

6. tetrapodella *Linn.?*

June, in gardens near London.

7. Pruniella *Linn.*—*Wood, f.* 1298.—Pruni *Haw.*—Ephippella *Fab.*

Common in gardens and hedges in June and July.

10. albistria *Haw.*—*Wood*, 1299.

June, hedges and woods, Coomb and Darent.

11. mendicella *Hüb. pl.* 26. *f.* 179, not *Wood's f.* 1296.

Hedges, Epping Forest.

12. semifusca *Haw.*—*Wood, f.* 1300.—Pruniella *Don.* 2. 58. 1. & 59. 2.

End of June and July, Highgate, Cambridgeshire, and Wrentham, Suffolk.

8. semitestacella *Curt. B. E. pl.* 719 ♀.—9. semipurpurella *Curt. var.*

These insects I described in the Ent. Mag. several years since; they were taken in the New Forest by Mr. C. Lyell. Wood's fig. 1301 is a totally different species, which appears to belong to another group: his fig. 1300 does not represent my variety, which has the upper wings castaneous and grey, instead of fulvous.

Melittis Melissophyllum, var. *grandiflora*, Purple and white Bastard Balm, from Westwood, near Netley Abbey, was communicated by Dr. Bromfield.

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720.

BETHYLUS FULVICORNIS.

ORDER Hymenoptera. FAM. Proctotrupidæ.

Type of the Genus, Bethylus punctatus *Lat.*

BETHYLUS *Lat., Fab., Nees, Curt.*—Ceraphron *Panz.*—Omalus *Jur.* *Antennæ* straight, slightly tapering, not remote, inserted at the base of the clypeus, shorter than the thorax, pubescent and a little pilose, 12-jointed, basal joint very stout, elongate-ovate, 2nd oblong, slenderer than the following which are compressed, a little thickened to the middle and tapering again to the apex (1).

Labrum a semicircular membrane, inserted under the clypeus, with a long horny lobe in the middle and a seta at the apex (2). *Mandibles* exserted, meeting, rather large and curved, the apex semicylindric and truncated, with 3 or 4 small teeth (3).

Maxillæ short and broad, terminated by an oblique oval ciliated lobe. *Palpi* not long, filiform and 5-jointed, basal joint somewhat cup-shaped, 2nd the stoutest, oblong, 3rd and 4th same length, a little clavate, 5th a trifle longer, elliptic-conic (4).

Mentum corset-shaped, the basal angles produced, the centre convex, the anterior angles excised to receive the *Palpi*, which are short and biarticulate, basal joint cup-shaped, 2nd large clavate and pilose at the apex. *Lip* almost as large as the mentum, hollow and fleshy, the sides conniving (5).

Head *ovate or orbicular-quadrate, depressed but convex:* eyes *lateral, ovate:* ocelli 3, *placed in triangle at the base of the head.* Thorax *rather long and narrow:* prothorax *short, narrowed before:* scutel *conical trigonate:* metathorax *ovate, rugose at the base.* Abdomen *not longer than the thorax but broader, ovate-conic, the base with a short broad petiole, 2nd segment the largest, the apex furnished with a fleshy oviduct.* Wings, superior *with a costal nervure divided at the middle and forming a short narrow cell, closed by a small stigma, which emits a curved nervure not touching the costa, 2 long basal cells, lower one the shortest, with a pale line running to the extremity and an oblique indented one at its base:* inferior *with only 2 short basal nervures.* Legs, *hinder a little the longest:* thighs *stoutish, compressed:* tibiæ *narrowed at the base, with 1 spine at the apex:* tarsi *as long as the tibiæ, 5-jointed, basal joint long, 3 following very short in the anterior, 5th short and stout;* claws *short, stout and hooked at the base:* pulvilli *large.*

FULVICORNIS *Curt. Guide, Gen.* 579.

In the Author's Cabinet.

I MUST confess that after great pains I am unable to satisfy myself as to the affinities of Bethylus, but I believe it to be most nearly allied to Ceraphron, fol. 249. Latreille places it amongst his Proctotrupii in the Gen. Crust., and says the antennæ are 13-jointed in both sexes, that the maxillary palpi are 6-jointed, and the labial 3- or 4-jointed; in his Fam. Nat.

he includes it in his tribe Oxyuri, under the same section as Dryinus. Nees ab Essenbeck says the antennæ are 14-jointed in the males, that the maxillary palpi are 6- and the labial 4-jointed. Jurine considers the antennæ to be 13-jointed in one sex and 12-jointed in the other. Now it is very remarkable that none of my specimens agree with any of the above characters, the antennæ being all 12-jointed, and the palpi 5- and 2-jointed; how these incongruities are to be reconciled I know not. There are as great differences of opinion respecting the species; for whilst some describe several, others view them as mere varieties: from the different situations in which I have found them, and from the variety of colour in their antennæ and legs, I shall distinguish them as species. Mr. Haliday has ascertained that the Bethyli secrete the larvæ of Lepidoptera in broken reeds which occur on sand-hills, for the purpose, it is presumed, of supporting their larvæ. The perfect insects are much attached to Syngenesious flowers, sallows, roses, grasses, &c. I must not omit to observe, that *Epyris* cannot be included with the *Bethyli*.

1. cenopterus *Panz.* 81. 14. "Base of antennæ and legs fuscous-testaceous: wings opake, somewhat nerveless: 1 line."
2. punctatus *Lat. Hist. Nat.* 13. 229. "Second and a few following joints of antennæ, and apex of tibiæ and tarsi fulvous: superior wings obscure, with a fine white nervure trifid at its extremity."

April, off rushes on the beach at Covehithe, Suffolk; June, off a hedge near Windsor, and in Yorkshire.

3. fuscicornis *Jur. tab.* 13, *Gen.* 43. "Black, flagellum of antennæ, tibiæ, and tarsi testaceous: $1\frac{3}{4}$ to 2 lines."

Off bushes Coomb Wood and Shooter's Hill in June.

4. fulvicornis *Curt. B. E. pl.* 720. Black, shining: very minutely shagreened, with a few scattered punctures, excepting the abdomen, which is very glossy, with a slight chalybeous tinge: head with an elevated longitudinal ridge between the antennæ, which are bright ochreous, as well as the mandibles: superior wings yellowish, with a large yellowish-brown space beyond the middle, through which runs a white line, nervures and stigma brown, 2 basal cells perfect: inferior wings iridescent: legs ochreous, anterior thighs with a brown patch above, the others piceous as well as their tibiæ, excepting the base and apex; tips of tarsi and claws brown.

August, on sand-hills, Sandwich, on the coarse grass, and in pits not uncommon.

5. formicarius *Panz.* 97. 16. "Black, middle of antennæ, tibiæ, and tarsi pale, stigma obsolete: $1\frac{1}{2}$ line."

August, Scotland.

6. Syngenesiæ *Hal.* Wings short.

The plant is *Anthriscus sylvestris*, Wild Chervil.

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721.

HETERONEURA ALBIMANA.

ORDER Diptera. FAM. Muscidæ.

Type of the Genus, Heteroneura albimana *Meig.*

HETERONEURA *Fall., Meig., Macq., Curt.*

Antennæ inserted in a cavity in the middle of the face, porrected, short, 5-jointed, basal joint small subglobose, 2nd very much longer, cup-shaped, with numerous strong bristles in front, 2 of them very long, 3rd joint the largest, suborbicular, compressed, densely pubescent, 4th a minute joint seated on the back of the 3rd, but remote from the base, 5th a moderate pubescent seta, thickened at the base (3).

Trophi small. *Labrum* very short, elongate-trigonate (1 *b*).

Tongue not longer, linear, the apex rounded (*c*).

Maxillæ none. *Palpi* exserted, very large, as long as the lip, clavate, pubescent and bristly (*f*). *Lip* short and stout, the apex bilobed and hairy (*g*).

Head *rather small, transverse, crown broad and bristly*; face *transverse-ovate, slightly concave, rather narrow, inclining*, hypost *flat, with* 2 *long bristles at the extremity*: eyes *moderate, sub* , *remote in both sexes*: ocelli 3 *in a compact triangle* [illegible] (2. *the profile*, * *the face*). Thorax *elongate-ovate,* [illegible]*out any transverse suture, bristly*: scutel *semiovate, the apex el* [illegible]*nated and armed with* 2 *bristles*. Abdomen *slender and linear*, 6-*jointed, the apex obtuse in the male, acute in the female, with the oviduct often exserted. Wings long and decumbent*, 1 *very short subcostal nervure not extending a fourth of the wing*; 3 *longitudinal and one oblique marginal nervures*, 2 *short transverse ones approaching each other, before the middle, forming a short narrow discoidal cell*: halteres *small, capitate and uncovered*. Legs *moderate, anterior a little the shortest*: thighs *not stout*, 4 *anterior with long bristles beneath*: tibiæ *slender and simple, pubescent with* 2 *short bristles at the apex*: tarsi *as long, slender and* 5-*jointed, basal joint elongated, compressed and the stoutest in the anterior*, 5*th and* 6*th short*: claws *and* pulvilli *small.*

ALBIMANA *Meig.—Curt. Guide, Gen.* 1340. 2.

Ferruginous-ochre, clothed with very short pubescence and a few black bristles. Eyes brassy green when alive: seta of the antennæ and a spot at its insertion piceous, back of head and 3 short united stripes at the fore part of the thorax piceous, a whitish streak on each side before the wings, and 2 pale brown stripes down the back: abdomen shining piceous: wings iridescent and slightly tinged with fuscous, a large portion of the apex brown, dark at the costa and vanishing below, a spot of the same colour on the transverse nervures; halteres whitish: legs ochreous, tips of anterior thighs piceous outside, their tibiæ, excepting the base and the 1st joint of the tarsi black, the 4 following joints whitish, hinder tibiæ with a fuscous spot near the base.

In the Author's and other Cabinets.

THERE are several characters which distinguish Heteroneura from Agromyza and congenerous groups, as the slender linear abdomen, the large second joint of the antennæ, the situation of the seta and the neuration of the wings. They are said to affect grassy situations: the species are rare in Germany, and one only has been detected in France. The only one which is known to inhabit this country is the species figured; and having taken the first specimen in Scotland in July 1825, I named it at that time *Scotica*; but Meigen having since described it, my name must fall. On the 5th of July, 1836, after a most awful thunder-storm at Ingleton in Yorkshire, I took a female Heteroneura on the inside of the window of the inn. Mr. Haliday has sent it to me from Belfast, and he informs me that his *H. spurca* seems to be the *Heteromyza flava* of Meigen.

The plant is *Phalaris arundinacea*, Reed Canary-grass, communicated by W. W. Saunders, Esq.

ALPHABETICAL INDEX OF INSECTS TO VOL XV.

ALPHABETICAL INDEX OF PLANTS.

ERRATA AND ADDENDA.

Folio.

712[b], line 41, *for* Dorchester *read* Doncaster.

569[b], line 37, *for* it is *read* it has.

417, *for* CERATOPHYLLUS *read* CERATOPSYLLUS. This name, which was compounded to express the peculiar structure of the horned Fleas, was misprinted when the genus was established in this work, and it was not corrected, as the Author intended, in the Guide.

Plate 553. The Gerris is magnified; the length is 3¼ lines, the expanse 4⅔.

The letter [b], following the number of the folio, indicates a reference to the second page of the leaf.
