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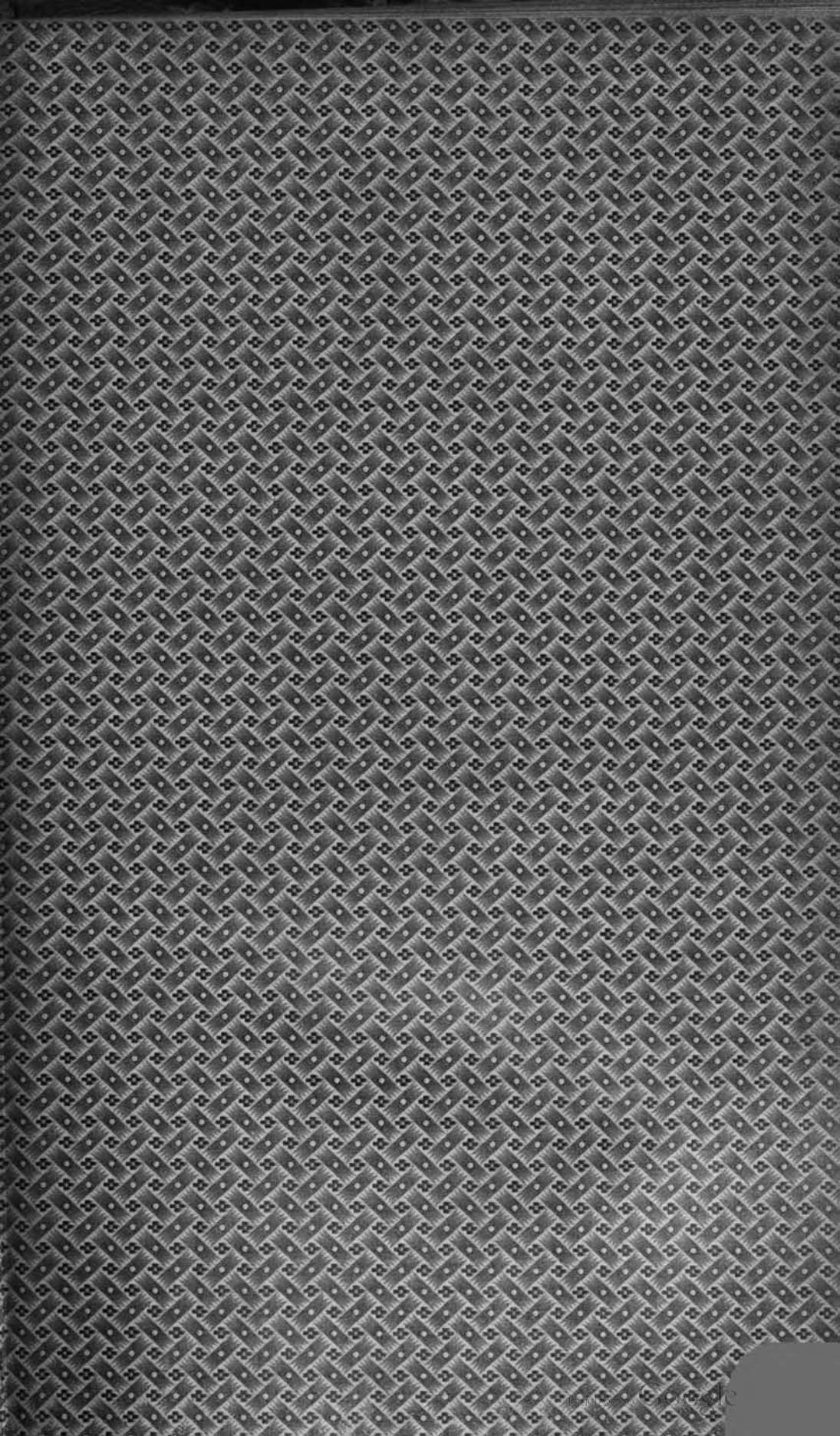
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BRITISH ENTOMOLOGY;
BEING
ILLUSTRATIONS AND DESCRIPTIONS
OF
THE GENERA OF INSECTS

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, AND HONORARY MEMBER OF THE
ASHMOLEAN AND NAT. HIST. SOCIETIES OF OXFORD.

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TO
CHARLES G. B. DAUBENY, M.D., F.R. L. & G.S.,
PROFESSOR OF CHEMISTRY AT OXFORD,
THIS VOLUME
IS DEDICATED,
AS A GRATEFUL REMEMBRANCE OF HIS
KINDNESS AND FRIENDSHIP,
AND AS A TESTIMONY OF THE SINCERE ESTEEM OF
THE AUTHOR.

London, Dec. 1, 1893.



Publ. by J. C. Smith, London, Nov. 1. 1823

ENDROMIS VERSICOLOR.

The Glory of Kent.

ORDER Lepidoptera. FAM. Bombycidae.

Type of the Genus, Bombyx Versicolor Linn.

ENDROMIS Ock., Germ., Curt.—Dimorpha Hub.—Bombyx, Linn., Fab., Haw., Goda.

Antennæ inserted close to the eyes, rather short and bipectinated, composed of numerous short joints, hairy on the outside, each joint producing 2 rays longer and more pubescent in the male (1), than female (2, a portion towards the base).

Maxilla none.

Labial Palpi attached to the lower part of the head, approximating, very inconspicuous, forming a spreading brush of stiff bristles (4), composed of two very horny joints, basal one long and stout, curved upward and a little narrowed at the apex, 2nd joint irregularly ovate (4 a).

Males much smaller than the females. Head small and short, clothed with downy scales. Eyes small and globose (7, head in profile). Thorax not very large, woolly and not crested. Abdomen short and woolly, obtuse in the male, ovate-conic in the female. Wings entire, subdiaphanous, forming a triangle in repose; superior subtrigonal in the male, more lanceolate in the female; inferior rather small and rounded: cilia very short. Legs very much alike in size and form. Thighs clothed with fine long hair beneath. Tibiæ, anterior not short, with a long slender spine on the inside extending beyond the apex (8), posterior with 2 minute spurs only at the apex. Tarsi longer than the tibiæ and 5-jointed, basal joint the longest. Claws strong and acute. Pulvilli formed of 2 lobes with a ciliated process between them.

Larvæ attenuated before, with 6 pectoral 8 abdominal and 2 anal feet, having a pyramidal horn at the apex of the last joint.

Pupæ loosely inclosed between leaves on the ground.

VERSICOLOR Linn. Faun. Suec. 294. 1111.—Curt. Guide, Gen. 805. 1.

Male orange brown: antennæ, eyes and outside of tibiæ and tarsi, black: anterior margin of thorax and sides and tips of lateral lobes white: abdomen blackish at the base, orange at the apex: superior wings with a black striga before the middle, internally whitish, another beyond it angulated at the bottom, whitish externally, a black curved or < shaped mark on the disc, a very waved and interrupted line towards the posterior margin producing 3 subovate white spots at the apex, one near the middle and an elongated one near the posterior angle, the nervures on the margin yellowish: inferior wings dark orange, with a waved striga across the centre and some patches of brown below.

Female duller and paler, the inferior wings whitish, similarly marked to the male, but the margin is brown.

In the Author's and other Cabinets.

ABOUT forty years back British specimens of this beautiful moth were so rare, that only one was well authenticated; and now there is scarcely a cabinet in which the male, at least, is not to be found.

A very excellent history of this insect is given by Mr. J. P. Neale in the Entomological Transactions, where he says, "The larva was beat off the Birch in Darent Wood, near Dartford in Kent, June 6, 1805. This larva was placed in a cage, and continued to feed until July the 8th; it then began to spin amongst the dead leaves, mixing the earth and leaves in a web, like *Noctua Sponsa* and *N. Nupta*. The perfect insect appeared the 20th of March following." Several have been bred in February, and a female as early as January 19th; and one of this sex was taken the 15th of April, on an Alder stump in Coomb Wood. Males have remained in pupæ two years, one of which was bred by Mr. Standish in November.

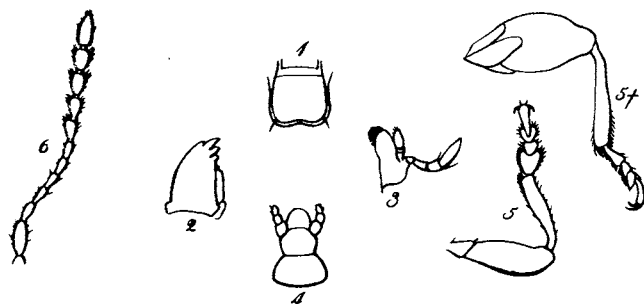
Godart says the caterpillars live in societies, containing from twelve to fifteen individuals, during the first six weeks, and always raise the anterior portion of the body in repose, like those of the Sphingidæ, which they also resemble in having a sort of tail and oblique pale stripes on the sides. They feed on the Birch, Alder, Nut, Beech, and Lime, and are full-grown the beginning of July.

This insect is widely dispersed, having been observed at Darent and Coomb Woods; Ashdown Forest, Sussex; near Plymouth, and in Dorsetshire, I believe; near Ipswich in Suffolk, and in Shropshire.

The males fly with great rapidity from about eleven to two o'clock in the day in woods, and are very difficult to capture. Mr. Haworth is of opinion that "The males fly by day in the manner of *B.* (*Lasiocampa*, *pl.* 181.) *Quercus*, hunting the sluggish females, which are incapable of easy flight, on account of their heavy bodies, and their wanting the spiral spring and socket of the males at the base of the upper wings. There is no doubt but the males 'assemble' in the manner of the Eggar and Vapourer Moths, &c., in the vicinity of female pupæ about to hatch."

Endromis is nearly allied to *Ptilophora* (*pl.* 328.) on the one hand, and to *Saturnia* (Genus 806 of Guide) on the other. I should observe, that the palpi are so thickly clothed (except at the base) with rigid hairs, which it was impossible to remove, that some portion of the joints may not be quite correct in the outline.

I am indebted to a friend for the drawing of the larva, which is represented feeding on the Birch-tree (*Betula alba*).



Pub. by J. Curtis Scm. 1. 1856

CARDIAPUS MATHEWSII.

ORDER Coleoptera. FAM. Chrysomelidæ—Galerucitæ Lat.

Type of the Genus, Cardiapus Mathewsii Curt.

CARDIAPUS Curt.

Antennæ inserted between the eyes near the base of the clypeus, as long as the thorax, slender but slightly clavate, sparingly pilose, 11-jointed, basal joint a little the longest, oval and stout, 2nd joint much shorter and more slender elongate-ovate, 4 following of the same size but less ovate, the remainder incrassated and pubescent, 7th subobtrigonal, the 3 next ovate-truncate, the terminal joint nearly as long as the 1st and conical (6).

Labrum exserted orbicular-quadrate, the margin semitransparent and slightly emarginate, with a single bristle on each side (1).

Mandibles subtrigonal, circular outside, with 3 teeth at the apex, the apical tooth being the longest with a shoulder outside, furnished with a membranous margin on the inside (2).

Maxillæ with a large internal lobe, somewhat ovate pubescent and ciliated, the external one small and distinctly articulated, the terminal joint ovate, membranous and ciliated at the apex.

Palpi rather short naked and 4-jointed, basal joint indistinct, 2nd and 3rd somewhat rhomboidal, the latter the stoutest, 4th twice as long, cylindric and conical at the apex (3).

Mentum transverse. *Lip* subovate, base horny, apex membranous. *Palpi* attached to the sides of the lip, about the middle, short stout and triarticulate, 1st and 2nd joints subquadrate, the former twice as large as the latter, apical joint the size of the 2nd, subovate (4).

Head rather small and trigonal. Eyes prominent and remote. Thorax very convex, rounded before and projecting over the head, sides finely margined, posterior margin bisinuated, the angles obtuse, with 2 foveæ, forming a curved elevated line on each side. Scutellum concealed. Elytra linear-ovate, a little broader than the thorax. Wings ample. Legs short, 4 anterior very similar, hinder pair longer and formed for leaping. Thighs incrassated, hinder pair very large and grooved beneath. Tibiæ slightly curved, ciliated towards the apex and furnished with a small spur. Tarsi rather short and 4-jointed, very pubescent beneath, basal joint large and cordate, except in the posterior pair, 2nd joint small, 3rd broader and bilobed, 4th longer and clavate. Claws small (5, a fore leg; 5†, the hind leg).

MATHEWSII *Curtis's Guide, Gen.* 428^e. 1.*In the Cabinets of Mr. Hey and the Author.*

THIS singular insect, which I at first thought belonged to the Genus *Dibolia* of Latreille, and to which I still imagine it is related, has trophi that considerably resemble those of *Cassida* (pl. 127.), which is one proof, amongst many others, of a more intimate connexion between the *Cassididæ* and the *Galerucidæ*, than is admitted, I believe, by some naturalists; and although M. Latreille has given an outline of these affinities in his *Considerations générales*, he has returned to the arrangement of his *Genera Crustaceorum* in the '*Familles Naturelles*.' Taking into consideration foreign forms, it appears to me that the *Cassidæ* and *Halticæ* are beautifully connected by the *Galerucæ*; and for this reason I adopted the arrangement of the Baron Dejean in my Guide.

Cardiapus seems to form the connecting link of the *Halticæ* and *Cryptocephali*, having the thick posterior thighs of the former group with the cylindrical outline of the latter, the thorax projecting over the head, and the antennæ rather long and slender. On consulting Gyllenhal's '*Insecta Suecica*,' I learn that the *Haltica occultans* (which is the type of *Dibolia*, I believe,) has appendages to the posterior tibiæ; and it seems to want the two basal channels on the thorax, which are evident in our genus, and so characteristic of a great portion of the *Halticæ*.

The following is a description of our species.

C. Mathewsii, *Curt. Brit. Ent. pl.* 435.

Black, shining, deep blue above; head sparingly punctured: eyes and antennæ black, the latter with the tip of the basal joint, and the whole of the 2nd, 3rd, and 4th, ochreous: thorax with a faint green tint firmly and thickly punctured on the sides, nearly free from punctures before: elytra with 10 strongly punctured striæ on each, the sutural one furcate at the base: legs bright ochre, thighs black, tips of tarsi fuscous. Sometimes the upper side of the insect is brassy green.

The first specimens I saw of this little beetle, were taken by Mr. A. Mathews on a Beech-tree in Kent, in June, and others were last year captured by the Rev. Samuel Hey at Monsall Dale in Derbyshire; they were found in the thick moss that grows on the sides of the rocks. To the former gentleman (who is now at Lima) I am indebted for the specimen figured, to the latter for the one dissected.

The Plant is *Hesperis inodora* (Scentless Damewort), which I found at Bonchurch in the Isle of Wight, the locality pointed out, I believe, by Dawson Turner, Esq.



EMPHYTUS FASCIATUS.

ORDER Hymenoptera. FAM. Tenthredinidæ.

*Type of the Genus, Tenthredo cincta Linn.*EMPHYTUS *Leach, Curt.*—*Dolerus Jur., Le Pel. St. Farg.*—*Tenthredo Linn., Fab., Klug.*

Antennæ inserted in front of the face, approximating, half the length of the body, filiform, clothed with short pile and 9-jointed, basal joint cup-shaped, 2nd small, 3rd, 4th and 5th nearly of equal length, the remainder decreasing in length, the apical joint oval (1).

Labrum semiorbicular, pilose and ciliated with long hairs (2).

Mandibles, one forming a long acute tooth at the apex with an obtuse point below, the interior margin sinuated (3); the other elongate-trigonal, less acute at the apex, with 2 obtuse teeth below the centre on the inside (3*).

Maxillæ broad, terminated by a rounded, slightly pubescent lobe with a long internal one, pilose, curved and acuminate at the apex. *Palpi* long pilose and 6-jointed, basal joint small, 2nd subclavate, scarcely so long as the 3rd which is linear, 4th the same length and clavate, 5th and 6th shorter, of equal length, the former subovate, the latter slender, linear, and slightly curved (4).

Mentum subrhombiform, truncated before and behind. *Palpi* rather long and pubescent, attached on each side towards the apex, 4-jointed, basal joint the shortest, 2nd nearly twice as long, curved and clavate, 3rd dilated, obtrigonal, 4th as long as the 2nd subovate. *Lip* suborbicular, emarginate on each side at the base, trilobed, centre lobe narrow strap-shaped (5).

Head *transverse*: eyes *prominent*: ocelli 3. Thorax *not broader than the head, globose*. Abdomen *sessile, rather long slender subcylindric, the back slightly angulated*. Oviduct *slightly exerted*. Superior wings with 2 marginal and 3 submarginal cells, the central one being the shortest. Legs *slender*. Tibiæ *simple, anterior short, furnished with 2 spurs at the apex, one dilated and bifid*. Tarsi, *anterior much longer than the tibiæ, 5-jointed, each joint excepting the last, with a membranous appendage beneath at the apex, basal joint long*. Claws *bifid near the apex*. Pulvilli *distinct* (8, a fore leg).

FASCIATUS *Le Pel. Mon. Tent. p. 118. n. 346.*—*Curt. Guide, Gen. 470. 5^a.*

Black shining: 2 white spots at the base of the scutellum: abdomen with the 4th, 5th and 6th segments (excepting the hinder margin of the last) orange: nervures and stigma pale brown: tips of posterior coxæ and trochanters white: upper side of anterior thighs towards the apex and tips of middle pair dirty white: all the tibiæ and tarsi bright ochre, tips of the latter and the greater portion of the posterior pair fuscous.

In the Author's Cabinet.

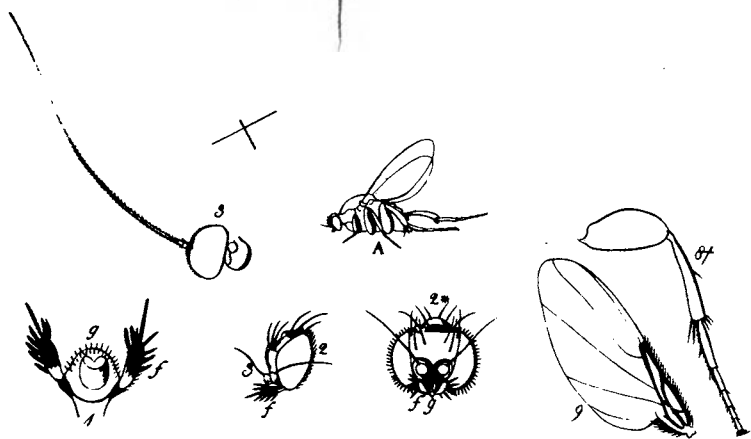
EMPHYTUS is placed between *Dolerus* and *Cræsus* (pl. 17.); from the former it is at once distinguished by the great length of the first submarginal cell, and from the latter and the *Nemati* also, by its having 2 marginal and only 3, instead of 4 submarginal cells.

The following are recorded as British species.

1. *E. succinctus* *Klug.*—*togatus* *Panz.* 82. 12.—June, July, and August; hedges and woods round London, Mr. Samouelle; and Parley, Dorset, Mr. Dale.
2. *E. cinctus* *Linn.*—*Jurine*, *Pl.* 6.—Middle of May, Coomb Wood, and gardens near London, J. C.—Glanville's Wootton, Mr. Dale; hedges and woods round London in June, July, and August.
3. *E. togatus* *Fab.* 4. *E. melanarius* *Klug.*
5. *E. vicinus* *Le Pel.* 118. 347.—Middle of August, Dover, and on leaves of Bur-reeds in ditches, Battersea, J. C.
- 5^a. *E. fasciatus* *Le P.*—*Curt. Brit. Ent. pl.* 436 ♀.—The only specimen I have seen of this pretty insect, which has never before been figured, I took the middle of June at Glanville's Wootton.
6. *E. rufocinctus* *Klug.* 7. *E. calceatus* *Klug.*
8. *E. nigricans* *Klug.*—*varipes* *Le P.*?
9. *E. varipes* *Klug.*—Beginning of May bred a male out of the stem of a Dog-rose (pl. 374.); the larva, which was found by Mr. E. T. Bennett, appeared to be feeding on the pith.
10. *E. coronatus* *Klug.*
11. *E. luctuosus* *Le P.* 119. 352.—14th May, Isle of Portland, J. C.
12. *E. gilvipes* *Klug.* 13. *E. testaceipes* *Le P.* 119. 351.
14. *E. serotinus* *Klug.*
15. *E. abdominalis* *Le P.* 118. 345.—Middle of October on a window, Glanville's Wootton.
16. *E. cereus* *Klug.*—June, July, and August, hedges and woods, Mr. Samouelle.
17. *E. filiformis* *Klug.*
18. *E. tibialis* *Jur.*—*Panz.* 62. 11.?—*braccata* *Gmel.*—June, July, and August, Parley, Dorset, Mr. Dale.
19. *E. patellatus* *Klug.*
20. *E. immersus* *Klug.*—*pallimacula* *Le Pel.*—Glanville's Wootton, Mr. Dale.
21. *E. impressus* *Klug.* 22. *E. ochroleucus* *Ste.*

Mr. Dale has a species of this genus with seven legs, and I have a fly (*Chrysogaster*) with the same number: in the second volume of Germar's Magazine there is a figure of *Elater variabilis* of similar structure; but the most remarkable perhaps is the *Chrysomela hæmoptera*, fig. 5*, pl. 111. of British Entomology.

The Plant is *Sparganium simplex* (Less Bur-reed).



Pub. by J. Currier, Jun. 4. 1855

PHORA ABDOMINALIS.

ORDER Diptera. FAM. Phoridae Curt., Trineuræ Meig.

Type of the Genus, Phora incrassata Meig.

PHORA Lat., Meig., Curt.—Trineura Meig.—Noda Schel.—Tephritis Fab.—Musca Geoff.

Antennæ inserted in cavities close to the margin of the clypeus, rather remote and recurved, 6-jointed, basal joint short stout and cylindrical, 2nd large pubescent, more or less hemispherical, 3rd inserted near the apex, minute as well as the 4th and 5th, the 6th forming a long seta, clothed with very short pubescence (3).

Trophi concealed in a cavity beneath the head.

Labrum very short and broad. *Tongue* shorter and stout. *Palpi* exerted, each forming a very large lobe, producing a few very strong spines (*f*). *Lip* short pilose, and slightly divided (*g*. fig. 1, front view of trophi).

Head *small transverse, hemispherical, producing a few strong bristles. Eyes subovate, with a fringe of bristles at the hinder margin. Ocelli 3, sometimes only 2 placed on each side a saddle-shaped elevation on the crown of the head (2, the head in profile; 2*, front view of the same). Thorax subglobose. Scutellum semicircular. Abdomen short, subconical, 7-jointed, terminated in the females by a biarticulate oviduct. Wings incumbent, the costa ciliated as far as it is thickened at the base, with 2 strong oblique subcostal nervures and 4 or 5 very delicate longitudinal ones (9). Halteres rather large and capitate. Legs, first pair very short, hinder pair very long. Thighs broad and compressed, hinder pair very large and ovate. Tibiæ sometimes grooved outside, with a bristle near the middle, 4 posterior subclavate, slightly curved and furnished with several strong spines at the apex. Tarsi 5-jointed, basal joint the largest, especially in the hind pair (8†). Claws and Pulvilli rather small.*

ABDOMINALIS Fall.—Meig. 6. 225. 40.—Curt. Guide, Gen. 1351, 40.

Black, slightly glossy: head very coarsely and irregularly punctured; palpi orange, 2nd joint of antennæ subferruginous: thorax minutely punctured and pubescent: abdomen rufous excepting the basal segment which is greyish-black; sides and apex striated: wings yellowish, especially towards the costa, nervures brown: anterior tibiæ, the posterior slightly at the base and all the tarsi subochreous, dusky with short black hairs.

In the Cabinets of Mr. Waller Clifton and the Author.

I HAVE not adopted Meigen's name of Trineuræ for the family, which at present contains only two genera, because I consider

the title of a tribe should be taken from the typical genus, or that most generally known; and moreover, the term *Trineuræ* is inapplicable to insects having five or six nervures in each wing.

Besides the following British species, Mr. F. Walker has about sixteen undescribed.

Div. a. Wings like fig. 9.

1. *P. incrassata* Meig. tab. 63. f. 5.—In the spring under dead crows, &c., Mr. Clifton.

b. Wings similar to fig. 9, with the 2nd subcostal nervure furcate at the apex.

7. *P. maculata* Meig. 8. *P. thoracica* Lat. Gen. Crust. tab. 15. f. 12.
 9. *P. dimidiata* Meig. 10. *P. fuliginosa* M. 11. *P. urbana* M.
 13. *P. gracilipes* Meig. 14. *P. annulata* Meig.
 15. *P. rufipes* F.—Meig. Klas. tab. 15. f. 23.—pallipes Lat.
 17. *P. lugubris* Meig. 18. *P. nigra* Meig.
 20. *P. pumila* Meig. 25. *P. lutea* Meig.
 25^a. *P. atricapilla* Curt.—Ochreous, head and eyes black; abdomen with the 3rd and 4th segments in the male, and the 4th only in the female fuscous.

The late Mr. T. Carpenter found some pale-coloured maggots hanging to the pupæ of *Coccinellæ*, which soon became brown pupæ themselves; they remained attached by one end, and in about a fortnight produced some of these flies. I have taken them on windows in May and September, in Dorset and the Isle of Wight.

c. Submarginal nervure straight at the base.

26. *P. crassicornis* M.—Windows in November.

d. Submarginal nervure curved at the apex.

30. *P. funebris* M. 31. *P. florea* Fab. 32. *P. hyalinata* M.

e. Submarginal nervure semiovate.

33. *P. arcuata* M.—*rufipes* Fall.

g. Three marginal nervures only.

37. *P. aterrima* Fab. Coq. tab. 24. f. 3.—*atra* Meig. Klas. tab. 15. f. 22.
 38. *P. velutina* Meig. vol. 6. tab. 63. f. 11.
 39. *P. stictica* Meig. 39^a. *P. anthracina* Curt.

h. Submarginal nervure nearly straight.

40. *P. abdominalis* Fall.—Curt. Brit. Ent. pl. 437.

This species has never before been figured, and the neurulation of the wings was unknown to Meigen. It was taken the 7th of May, off a hedge outside Coomb Wood, by Waller Clifton, Esq., and my specimen I purchased from Mr. Lee's collection.

i. Head and thorax very narrow and elongated.

42. *P. galeata* Hal. MSS.—“In the spring, and not later than the summer, at Belfast, on the wild Carrot. It is more agile than the other *Phoræ*.”

The Plant is *Myosurus minimus* (Little Mouse-tail).



TASGIUS RUFIPES.

ORDER Coleoptera. FAM. Staphylinidæ.

*Type of the Genus, Astrapæus rufipes, Lat.*TASGIUS *Lea., Ste.*—Astrapæus *Lat.*—Goërius *Curt.*—Ocybus & Goërius *Ste.*

Antennæ inserted before the eyes on the margin of the clypeus, remote, as long as the head and thorax, filiform, pilose, slightly geniculated, 11-jointed, basal joint long, a little narrowed at the base, 2nd half the length, 3rd a little longer, elongate obconic, the remainder moniliform subquadrate, 9th and 10th sub-turbinate, 11th subovate, one side of the apex acuminate (6).

Labrum semiorbicular, deeply notched in front, and ciliated with fine long hairs, with a row of strong bristles above (1).

Mandibles alike, long and arched, acute, with a tooth at the middle on the inside, below which is a membranous pubescent lobe (1).

Maxilla with a large internal lobe, terminated by a falcate one, both densely pubescent and ciliated. *Palpi* rather short, 4-jointed, slightly bristly, basal joint small, 2nd the longest, 3rd and 4th of equal length, 2nd and 3rd pear-shaped, 4th ovate-truncate terminated by a gland or vesicle (3).

Mentum subtrigonal, truncated before. *Lip* subcordate, each lobe notched and ciliated. *Palpi* attached to 2 remote scapes near the centre, short, triarticulate, 1st and 2nd joints short, the latter slightly notched on the inside and armed with a curved spine and 2 or 3 bristles, 3rd equal in length to the others, elongate-ovate, terminated by a gland (4).

Head suborbicular, nearly or quite as broad as the thorax; neck short: eyes not prominent. Thorax subovate, convex and truncated before: scutellum triangular. Elytra a little broader than the thorax, quadrate, the angles rounded. Wings ample. Abdomen as long as the rest of the insect, 6-jointed, the sides margined and raised, terminal joint semiorbicular, furnished with 2 small pubescent lobes. Legs strong: coxæ, anterior very large: thighs, anterior short and stout: tibiæ, anterior very short and dilated anteriorly, the others spurred and bristly, especially the middle pair: tarsi 5-jointed, anterior short, dilated, and cushioned beneath, the joints subcordate, the terminal one clavate: claws slender and curved (5, a fore leg).

RUFIPES *Lat. Gen. Crus. v. 1. p. 285.*—*Curt. Guide, Gen. 190^a. 4.*

In the Cabinets of the British Museum and the Author.

In this genus we find the somewhat uncinated apical joint of the antennæ, which is characteristic of the typical Staphyli-

nidæ; the anterior tarsi are dilated, but whether equally in both sexes I am unable to determine, from the scarcity of the species; the mandibles are furnished with a ciliated membrane on the inside, called the *protheca* by Mr. Kirby, when it forms a distinct lobe; but the most curious part of the structure is the curved spine on the inside of the 2nd joint of the labial palpi.

T. rufipes, in habit as well as in the form of the trophi, differs materially from *Astrapæus Ulmi*, which first induced Dr. Leach to separate it from that genus in which it was included by M. Latreille. Having had occasion to examine them formerly, I found the *T. rufipes* agree so much better with the group called Goerius, that I placed it in that genus, immediately following an unnamed specimen which appeared to be closely allied to it, and which Mr. Waterhouse informs me is the *G. confinis*, Kirby; and as he had formed the same opinion as myself, I have again investigated the subject; and thinking it ought to be included in the genus Tasgius, I shall describe both species.

1. *T. rufipes* Lat.—Curt. Brit. Ent. pl. 438.

Piceous black, shining, with long scattered hairs: head and thorax sometimes with a slight bluish cast, and thickly punctured; mandibles castaneous, palpi and antennæ ferruginous, the latter dusky at the middle: head with 4 small transverse punctures behind: thorax with a slightly raised line down the middle; scutellum, elytra, and abdomen, very thickly and minutely punctured, and clothed with short depressed pubescence, the two former dull cyaneous: coxæ castaneous; legs bright ferruginous.

My specimen of this rare insect, which has never before been figured, I took at Dover in 1831; those in the British Museum are from Spitchwick, Devon.

2. *T. confinis* Kirby?

Length $6\frac{1}{2}$ to 7 lines. Black, palpi and internal margin of mandibles castaneous, articulations of antennæ of the same colour; head and thorax shining, slightly pilose, the former thickly punctured except on the crown, with a minute puncture behind each eye, the latter sparingly punctured: scutellum, elytra, and abdomen, minutely and thickly punctured, dull with depressed hairs: tarsi castaneous, rather dull at the base.

This specimen I purchased in the collection of the late Mr. E. Blunt; it was taken probably in Essex, where it has been found under the bark of trees.

The Plant is *Vicia sepium* (Bush Vetch).

ACRYDIUM SUBULATUM.

ORDER Orthoptera. FAM. Gryllidæ or Locustidæ.

Type of the Genus, Gryllus bipunctatus Linn.

ACRYDIUM Geoff., Fab., Curt.—Tetrix Lat.—Gryllus (Bulla) Linn.

Antennæ inserted close to and between the eyes, approximating, short, subfusiform and 15-jointed: basal joint stout and ovate, 2nd globose, 3rd longer than the two following, the 4th being the smallest joint, 6th and 7th shorter than the remainder which are rather broader, 14th joint minute, 15th pear-shaped (1).

Labrum orbicular (2).

Mandibles short and subtrigonal, one with 4 teeth at the apex and a large broad striated one near the middle (3); the other with 3 apical teeth and a smaller obtuse one at the middle.

Maxillæ long, horny, narrow, curved and trifid at the apex, with an equally long external lobe, attenuated, with 2 or 3 articulations or transverse sutures and terminated by a minute fleshy apex. *Palpi* longer than the lobes, filiform, 5-jointed, slightly pilose, basal joint scarcely longer than the 2nd which is the smallest, 3rd and 4th nearly of equal length, 5th a little the longest and slightly thickened and truncated at the apex (4).

Mentum subtrapezate, truncated before, very concave behind.

Lip large, forming a cup on the inside, composed of 2 conniving lobes above, united at their base, with 2 small lobes between them towards the apex. *Palpi* attached to 2 scapes at the anterior angles of the mentum, triarticulate, 1st and 2nd joints short, 3rd as long as the other 2, stouter clavate and pilose, terminated by a vesicle (5).

Mouth received into the anterior margin of the antepectus. Head with the crown short bounded by a sharp semicircular margin: face very long and ovate, with a grooved keel down the centre (1*): eyes subglobose, slightly prominent. Ocelli 3, two above and one below the antennæ. Thorax forming a narrow band, with a keel down the centre; scutellum sometimes much longer than the body, trigonal-lanceolate, keeled down the back and acute at the apex. Abdomen with 2 horny conical lobes at the apex in the males, terminated by 4 serrated acute lobes in the females (7). Wings, superior minute, appearing as if turned round, somewhat reticulated, with 2 elevated lines crossing each obliquely (9). Inferior varying in size, sometimes very ample, folded like a fan and concealed under the scutellum (which affords them the protection the elytra cannot), supported by numerous radiating nervures connected by short transverse ones, the edges crenated. Legs, posterior very long: thighs dilated, ovate, attenuated to the apex: tibiae with a double series of teeth on the upper edge and armed with strong spines at the apex: tarsi triarticulate, basal joint long with 2 notches beneath, 2nd joint minute, 3rd long, clavate (8†): claws acute with a tooth beneath near the base: the other legs are short and simple, with the 1st and 2nd joints of the tarsi small. Pulvilli none.

SUBULATUM Linn. Faun. Suec. 236. 865.—Curt. Guide, Gen. 451. 1.

In the Author's and other Cabinets.

LINNÆUS calls this division of his genus *Gryllus*, *Bulla* (the name of a group of shells), at the same time referring to Geoffroy's work, where it had received the name of *Acrydium*.

This variable genus is distinguished from the other *Locustidæ* by its very long scutellum and small elytra or superior wings, which, when at rest, lie close to the sides of the abdomen. They live in fields, on hot and sandy banks, and among short grass and plants on the tops of walls even in cities.

1. *A. subulatum* Linn.—*Curt. B. E. pl.* 439. ♀.—*Sow. Brit. Mus.* 74. 1.—*Don* 15. 521.—*bipunctatum* Pz. 5. 18.—*Sam. pl.* 4. f. 18.—*Schæf. pl.* 154. 9. & 10. ? and 161. f. 2. & 3.

Pale reddish brown, granulated; antennæ ochreous, tipped with piceous, head and sides of thorax brown; scutellum twice as long as the abdomen, slightly recurved at the apex, with a reddish or brown triangular spot on each side towards the base; abdomen pitchy; wings iridescent, costa yellowish brown, nervures pitchy; legs mottled, hinder thighs with a pale stripe outside, and sometimes an oblique white fascia; 1st and 2nd pair of tibiæ annulated with ochre.

Philippi characterizes 12 varieties of this, and 18 of the following species. I have 1 male and 5 females with the scutellum projecting only a little beyond the abdomen, which appear to me to belong to the above-described insect. Mr. Dale has taken very strong varieties at Whittlesea Mere; also at Glanville's Wootton, from March 15th to July 9th.

2. *A. bipunctatum* Linn.—*subulatum* Roemer, *tab.* 8. f. 7. *var.* —*bifasciatum* Fues. *Arch. pl.* 52. f. 3.

Scutellum not longer than the abdomen, and slightly curved downward.

Philippi says the antennæ are only 12-jointed, but my specimens have the same number of joints as the former species. From March 27th to October 13th, Hants and Dorset, Mr. Dale; Battersea, Mr. Samouelle.

3. *A. nigricans* Sow. 74. 3.—*undulatum* Sow. 74. 2. ?—*opacum* Fues. *pl.* 52. f. 2. ?—*nutans* Hagen?.

From $2\frac{1}{4}$ to $3\frac{1}{4}$ lines long. Black or brown, frequently variegated; wings small, back arched and sometimes very sharply keeled; scutellum projecting a little beyond the abdomen, the keel occasionally spotted with ochre, and a black triangular spot on each side towards the base, sometimes with an ochreous stripe down the back from the forehead to the tip of the scutellum. Some varieties have pale ochre spots on the sides of the thorax, and 2 fasciæ outside the posterior thighs, and the legs are annulated with pale brown or dirty ochre.

End of August, heaths and sandy places, Ramsdown, Hants, J. C.; from April 8th to October 1st, Dorset, Mr. Dale.

4. *A. Pinnula* Curt. *Guide* 451. 4.

I suspect it is only a variety of *A. bipunctatum*, for like that species the under wings are very small.

The Plant is *Bidens tripartita* (Trifid Double-tooth).



Publ. by J. Curtis Feb. 1. 1832.

LEPTOGRAMMA IRRORANA. The Sprinkled Rough-wing.

ORDER Lepidoptera. FAM. Tortricidæ.

Type of the Genus, *Tortrix litterana* Linn.

LEPTOGRAMMA Curt., Ste.—*Paramesia* Ste.—*Tortrix* Hüb., Haw.—*Pyralis* Fab.—*Phalæna* *Tortrix* Linn.

Antennæ inserted close to the eyes on the crown of the head, rather short, setaceous, clothed with scales above, pubescent beneath, composed of numerous short joints rather longer and oblong towards the apex, basal joint robust and long, 2nd larger than the following (1, portions of the base and apex).

Maxillæ as long as the labial Palpi, spiral, rather stout, ciliated at the base, with series of tentaculi at the apex (3). *Palpi* minute attached to a scape, biarticulate, basal joint producing a few hairs on the inside (3, base of maxilla, a the Palpus).

Labial Palpi porrected horizontally, rather divaricating, clavate, thickly clothed with short scales, the apical joint being visible (4), triarticulate, basal joint not short, curved and clavate, 2nd long robust and ventricose, 3rd shorter than the first, slender elongate-conic (4 a).

Head rather small, the scales on the crown erect: eyes lateral and globose (7). Thorax globose, trigonate behind. Abdomen rather short and narrow, depressed and tufted at the apex in the males. Superior wings oblong-trigonate, costa produced at the base, densely clothed with scales forming a shoulder at the middle, posterior margin truncated, the apex slightly acute, posterior angle rounded, the surface more or less clothed with small tufts of scales; inferior wings ample, the margin slightly undulated, the apex a little pointed; cilia long at the anal angle. Legs, anterior small; tibiæ, anterior very short, with a small spine on the inside, middle pair spurred at the apex; posterior long with unequal spurs at the middle and apex: tarsi 5-jointed, basal joint long: claws and pulvilli small (8, a fore leg, 8† the hinder leg).

Caterpillars with 6 pectoral, 8 abdominal, and 2 anal feet?

IRRORANA Hüb. Tort. pl. 15. f. 96.—Curt. Guide, Gen. 966. 4.

Pale dull green; eyes blackish, antennæ dull gray; abdomen ochreous gray, base of the segments fuscous: superior wings with numerous black spots, 5 or 6 in a line towards the posterior margin, with a line of black lunules between the nervures at the base of the cilia and a black dot at the apex of each: inferior wings ochreous gray, mottled: cilia pale ochreous, fuscous at the base.

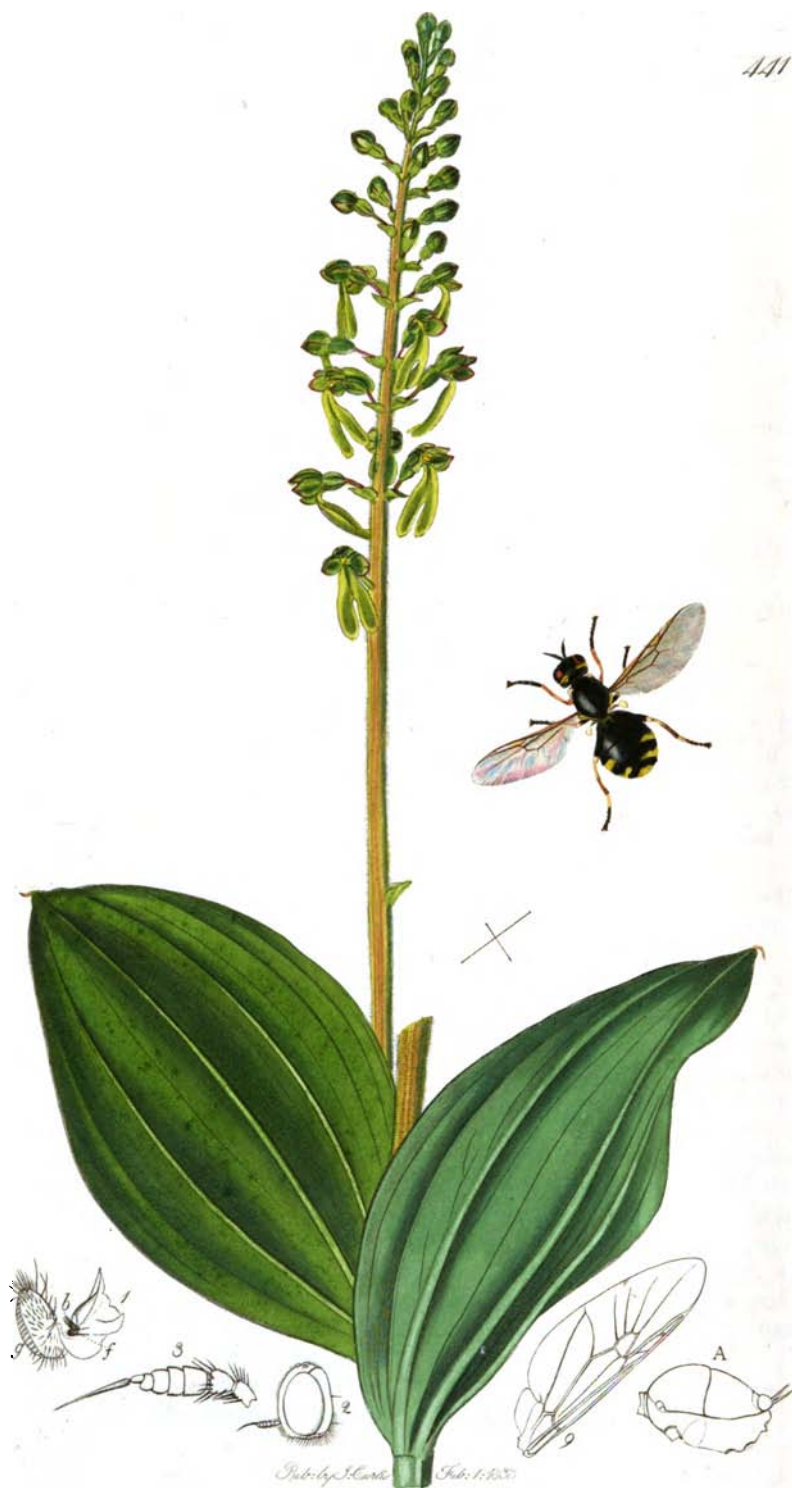
In the Author's and other Cabinets.

THIS pretty genus is most nearly allied to *Peronea*, but in the typical species the superior wings are not hooked at the apex; they are studded with tufts of scales, and the apical joint of the palpi is not concealed. In dissecting I discovered *maxillary*

palpi, which I believe were not known to exist in the family to which our genus belongs; but I have not had an opportunity of ascertaining if they be equally developed in neighbouring groups.

The following are British species.

1. *L. literana* L.—*Don. v. 10. pl. 355. f. 2.*—*Hüb. Tort. pl. 15. f. 89. & 90.—f. 91. var.?*—April, end of Aug., September, and beginning of October; Oaks, New Forest, and Glanville's Wootton, Mr. Dale.
 2. *L. squamana* F.—*Don. 5. 157. 7.*—*squamulana* *Hüb. 15. 94.—92. & 93. vars.?*—End of August, beginning of September, in Orchards and on Oaks covered with Lichen, J. C.—End of September, beginning of October, White-thorns, Mr. Dale.
 3. *L. tricolorana* *Haw.*—*irrorana* *Hüb. 15. 95.*—September, Oaks and trees covered with Lichen, J. C.—Beginning of October, Apple-trees, Dorset and North Devon, Mr. Cocks.
 4. *L. irrorana* *Hüb.*—*Curt. Brit. Ent. pl. 440.*—Glanville's Wootton and Devon, Capt. Blomer.
 5. *L. fulvomixtana* *Ste.*—New Forest and Glanville's Wootton, Mr. Dale.
 6. *L. scabrana* F.—*irrorana* *Hüb. 15. 97.*—In woods.
- Genus *PARAMESIA* *Ste.*
7. *L. cerusana* *Hüb. 11. 63.*—I have never seen but two specimens of Hübner's insect, which were taken in the New Forest; the one generally seen under that name is a larger insect, exceedingly like *L. scabrana*, only the upper wings are cream-colour: it is found the end of July amongst Elms.
 8. *L. tripunctana* *Hüb. 20. 129.*—*tripunctulana* *Haw.*—End of July, Glanville's Wootton, Mr. Dale; September, pathways in woods.
 - 8^a. *L. aspersana* *Hüb. 41. 259.?*—Middle of August, New Forest, and amongst grass, South Foreland, Dover, J. C.—July and August, on Juniper and coarse grass, Winandermere; Gryme's Dyke, Oxon; Portland, about the *Rosa spinosissima*, Mr. Dale. I doubt if it be Hübner's insect.
 9. *L. bifidana* *Haw. 418. 77.*—Sept., hedges and open places in woods; middle of October, Dorset, Mr. Dale.
 10. *L. Gnomana* L.—*notana* *Don. 11. 369. 3. var.*—*Steineriana* *Hüb. 27. 170.* I believe to be another species. March, amongst dried leaves; middle of June, end of July, Sept., and October, open places in woods at Coombe, Darent, Glanville's Wootton, and Wittenham, Berks, Mr. Dale.
 11. *L. subtripunctulana* *Ste.*—North Devon, Mr. Cocks.
The Plant is *Anagallis tenella* (Bog Pimpernel).



OXYCERA MORRISII.

ORDER Diptera. FAM. Stratiomydæ.

Type of the Genus, Stratiomys trilineata Fab.

OXYCERA Meig., *Lat., Curt.*—Stratiomys *Fab., Panz.*—Odontomyia *Lat.*—Musca *Linn.*

Antennæ inserted below the middle of the face, contiguous, approximating, porrected, shorter than the head, 8-jointed, 1st and 2nd joints pilose, the former cylindric, the latter larger and cup-shaped, 4 following forming an elongate-conic mass, 3rd joint the largest, 7th inserted beneath the upper margin of the 6th, small ovate, 8th a short stout bristle (3).

Labrum short, broad, hollow and emarginate at the apex (1b).

Tongue, Maxillæ and Mandibles none.

Palpi short, linear, membranous and compressed, thickened opaque and pubescent at the apex (f).

Labium fleshy, terminated by 2 ovate hairy lobes, transversely striated beneath (g).

Trophi received into a groove at the bottom of the face. Head short semiglobose. Eyes lateral and oval. Ocelli 3 in triangle, placed round a slight protuberance on the crown of the head (2, the head in profile). Thorax not broader than the head, subovate. Scutellum transverse, producing a curved spine on each side (A, the thorax and scutellum in profile). Abdomen considerably broader than the thorax short and suborbicular. Wings horizontal and decumbent in repose, iridescent, with a subovate cell in the disc, from which issue 4 nervures, in rays, sometimes very faint (9). Halteres short with a large club. Legs equal in size. Thighs simple. Tibiæ a little thickened at the middle forming an obscure notch on the inside. Tarsi 5-jointed, basal joint the longest, 4th the smallest, 5th with some bristles at the apex. Claws acute. Pulvilli small.

MORRISII Dale's MSS.—*Curt. Guide, Gen.* 1217.

Black, shining, thickly and minutely punctured and clothed with very short gray pubescence: labium ochreous: eyes reddish brown with a whitish ring, interrupted at the top: a whitish line on each side of the thorax forming a minute spot at the anterior angle, a larger one before and another behind the base of the wing; apex of scutellum and the spines ochreous: abdomen with an oblique spot on each side the 3rd and 4th segments, smaller on the latter and a triangular spot at the apex of the same pale ochreous colour: wings transparent, the stigma yellowish brown, the costal and basal nervures only coloured with brown; halteres white: Legs ochreous; thighs black, except at the base and tips, posterior tibiæ black, except at the base: Tarsi black, excepting the basal joints of the 4 posterior which are whitish.

In the Cabinets of Mr. Dale, Mr. Morris, and the Author.

In the structure of the antennæ this genus approaches *Beris* (*pl.* 337.); and it is remarkable that Meigen, Leach, and Samouelle, have described them as triarticulate, for, including the seta, they are composed of 8 joints. Within the last 3 years the British species of this pretty group have been more than trebled.

1. *O. pulchella* Meig. 3. *pl.* 25. *f.* 29.—hypoleon Don. 5. 146. 2.

From May to August flowers in meadows; gardens near London; Elder bushes, and amongst rushes, Battersea, J. C.; Glanville's Wootton, Puddletown and Lyme Regis, Dorset, and Teignmouth, Devon, J. C. Dale, Esq.

2. *O. trilineata* Fab.—Don. 5. 151. 5.—Panz. 1. 13.—pantherina Linn.

Middle of June and July, Teignmouth and Barum, Devon; Puddimore Milton, Somerset; Glanville's Wootton, and near Lyme Regis, Dorset, Mr. Dale; amongst Elder leaves, Battersea meadows, Mr. Donovan.

3. *O. formosa* Wied.—muscaria Meig.—Panz. 108. 15. & 16. ♂ & ♀.

Middle of June, beginning of July, Glanville's Wootton, and near Lyme Regis, Mr. Dale; on Sallows in hedges, J. C.

4. *O. pardalina*? Meig. *pl.* 25. *f.* 30. & 31.

July; Pinny near Lyme Regis, Dorset.

5. *O. Morrisii* Dale's MSS.—Curt. Brit. Ent. *pl.* 441.

This beautiful species has been named by Mr. Dale in honour of F. O. Morris, Esq., who first discovered the former species: this was also taken near Lyme Regis.

6. *O. muscaria* Fab.—pygmæa Fall.

End of May, Isle of Portland; July, Charmouth, Lyme Regis, and at Seaton, Devon, in great plenty, Mr. Dale.

7. *O. affinis* Dale's MSS.

Found in company with the last, of which it may be only a variety; it has the scutellum partly or entirely black; Mr. Dale.

8. *O. leonina* Panz. 58. 21.

A female taken at Pinny by Mr. Morris.

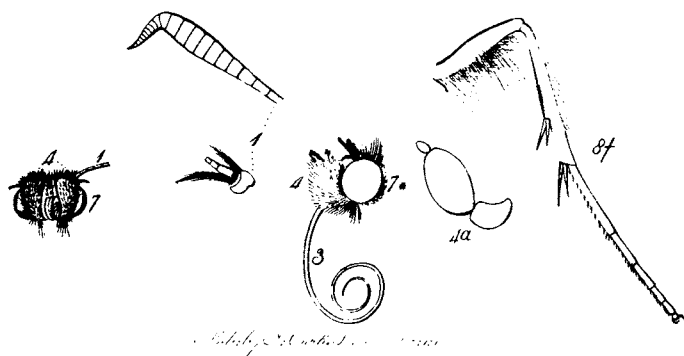
9. *O. analis* Meg., Meig.

From June 18th to July 1st, Glanville's Wootton, Mr. Dale; on small Oaks in a copse, J. C.

10. *O. terminata* Meg., Meig.

June and July, at Pinny, Mr. Morris; in a hedge with *O. pardalina*, J. C.

The Plant is *Epipactis ovata* (Common Twayblade).



Heliothis virescens (L.)

HESPERIA ACTÆON.

The Lulworth Skipper.

ORDER Lepidoptera. FAM. Papilionidæ.

Type of the Genus, Papilio Comma Linn.

HESPERIA *Fab., Lat., Curt.*—*Pamphila & Thymele Fab., Ste.*—*Papilio Linn., Haw., &c.*

Antennæ inserted on the crown of the head close to the eyes, rather short and clavate, basal joint cup-shaped, furnished with 2 brushes of hair, one curving over the eyes; club more or less fusiform, the apex generally bent and forming an acute hook (1 the base and apex).

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

Labial Palpi stout, parallel, not meeting, ascending nearly perpendicularly, densely clothed with scales, triarticulate, basal joint stout, somewhat ovate, 2nd very robust subovate and a little curved, 3rd minute ovate, porrected obliquely and clothed with bristly and shorter scales (4 and 4 a).

Head broad and rather flat. Eyes remote, orbicular (7 and 7*). Thorax ovate. Abdomen short and stout. Wings, superior more elevated than the inferior when at rest, the former subtrigonal, the latter rounded. Legs alike in both sexes, rather long. Tibiæ, anterior short, the others spurred at the apex, the hinder pair with spurs also below the middle (8†). Tarsi long and 5-jointed. Claws and Pulvilli small.

Larvæ elongate, head large, 6 pectoral, 8 abdominal and 2 anal feet.

Pupæ inclosed in a web or in a leaf that is held together by threads.

Obs. *H. Sylvanus* was the species dissected.

ACTÆON *Esp., Hüb., Och., Goda.*—*Curt. Guide, Gen. 780, 6^a.*

Male fuscous, with an orange lustre upon the wings, the rest of the insect clothed with hairs of the same colour: antennæ ochreous beneath, ferruginous at the tips: palpi pale blue at the base: superior wings with a longitudinal curved black line on the disc, inferior slightly produced at the anal angle. Underside more uniformly orange than the reverse.

Female a little larger, with a flame-shaped orange spot towards the base, terminated by a lunular line of a paler colour, turned upward and extending to the costa and divided by the dark nervures into 6 or 7 spots. Underside with a pearly ochre lustre, a large orange flame-shaped mark on the upper wings extending to the spots which shine through; the underwings with an oblique portion of the internal margin yellowish orange.

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

THESE singular insects approach the Sphingidæ in the extreme length of the maxillæ, and the Noctuidæ and Phalaenidæ in their metamorphoses and doubly spurred posterior tibiæ. The palpi are so densely clothed with scales and so very tender, that although the relative proportions in fig. 4 a are correct, the outline may vary a little. It is rather remarkable that old specimens when alive have frequently lost one or both

of their palpi, an accident I have never observed in any other Lepidoptera, excepting a few of the Pyralidæ.

From the vast number of species the genus *Hesperia* contained, Fabricius proposed to divide it, but whether sufficiently good characters can be found I am not prepared to say; I can therefore only state that he gave the name of *THYMELE* to the 4 first species, and *PAMPHILA* to the remainder.

1. *H. Alveolus* *Hüb.*—*Malvæ* *Haw.*—*Cardui* *Goda.*—End of May, b. June, meadows, commons, woods, &c.
2. *H. Malvæ* *Linn.* I have found at Toulon, and believe it is not British, although Donovan's figures (vol. 16. pl. 567.) appear to be this species.
3. *H. Tages* *Linn.*—Beginning of May, June, and middle of July, meadows, dry heaths, banks, and road-sides in various parts of England and Scotland.
4. *H. Oileus* *Gmel.*?—Said to have been taken by Dr. Abbot in Bedfordshire, and specimens from Leman's ancient English cabinet are preserved in the Manchester Museum, but they all agree with the North American species.
5. *H. Paniscus* *Fab.*—*Don.* 8. 254. 1.—Rare; the caterpillar feeds upon *Cynosurus cristatus* (Brit. Ent. pl. 135.) and the Great Plantain: the imago has been found the end of May at Caistor Hanglands Wood, near Peterborough; Clapham Park Wood, Bedfordshire; Whitewood Gamlingay, Cambridgeshire, Oxfordshire, and near Dartmoor.
6. *H. Linea* *Fab.*—*Don.* 7. 236. 2.—Beginning of July, middle of August, about bushes, skirts of woods, &c.
- 6^a. *H. Actæon* *Esp.*—*Curt. B. E. pl.* 442.—The insect at the top of the plate is the male, the other flying the female; the male at rest is represented of the natural size. We cannot often hope to record the addition of a Butterfly to our British Fauna, but this species was discovered at Lulworth Cove in Dorsetshire, last August, by J. C. Dale, Esq. through whose liberality it now ornaments most of our cabinets: it was found upon Thistles, and was very local.
7. *H. Sylvanus* *Fab.*—*Don.* 8. 254. 2 ♂.—End of May to August, borders of lanes and woods.
8. *H. Comma* *Linn.*—*Don.* 9. 295. ♀.—July, end of Aug., chalky places, Old Sarum, Devil's Dyke, Cambridgeshire, Wiltshire, Dover, Sussex, &c.
9. *H. Bucephalus* *Ste. pl.* 10. f. 1. & 2.—Taken near Barnstaple by Mr. Raddon; and a male at Godalming, Surrey, by Mr. Newman.
10. *H. Vitellius* *Fab.*—Said to have been taken in Bedfordshire by Dr. Abbot; and I believe Mr. Hatchett has a pair which he purchased.

The plant is *Salsola Kali* (Prickly Glasswort).



Int. by J. Curtis Mar. 1. 1822

CALLICERUS SPENCII.

ORDER Coleoptera. FAM. Staphylinidæ.

Type of the Genus, Callicerus obscurus Grav.

CALLICERUS Grav.—*Aleochara Curt.*

Antennæ inserted before the eyes, more than half the length of the insect, stout clavate pubescent, 11-jointed, basal joint ovate, 2nd as long subclavate, 3rd a little shorter, obovate-truncate, 4th subglobose, the remainder remotely articulated, the 5 following becoming more transverse, 10th large oblong, 11th very large, elliptic-ovate (6).

Labrum exserted, coriaceous, pocket-shaped, furnished with a few bristles (1).

Mandibles small narrow and curved, the apex forming a long tooth or claw, with a broad membranous margin on the inside (2).

Maxille small, forming two narrow lobes above, rounded and pubescent at the apex, the external one extending considerably beyond the other. *Palpi* capitate, 4-jointed, basal joint minute, 2nd stout, subclavate, 3rd very large, ovate and pilose, 4th joint small conical and transparent (3).

Mentum large, subtrigonal, truncate. *Lip* transverse, rounded, with 2 small lobes in the centre. *Palpi* arising from the anterior angles of the lip, small, attenuated and composed of 3 oblong joints, basal one the stoutest, apical joint slender and rounded at the tip (4).

Head orbicular, narrowed before: eyes small lateral. Thorax larger and somewhat orbicular. Scutellum triangular. Elytra considerably broader than the thorax, subquadrate, the shoulders rounded, the posterior angles slightly uncinated. Wings ample. Abdomen half the length of the insect, narrower than the elytra, the sides margined. Legs slender. Coxæ, anterior large, ovate. Thighs broad, attenuated to the apex. Tibiæ slender and simple. Tarsi very slender, anterior rather the shortest, 5-jointed, terminal joint a little the longest. Claws long and slender (5).

Obs. *Callicerus Spencii* was the species dissected.

SPENCII Kirby.—*Curt. Guide, Gen.* 221, 49.

Dull black, excessively thickly and minutely punctured, and clothed with grey pubescence; mouth ochreous brown, antennæ lurid, excepting at the base, head slightly hollowed down the crown, with a small fovea between the eyes: thorax with a faint channel: elytra dull brown inclining to castaneous: abdomen shining, sparingly and obscurely punctured: legs ochreous, thighs piceous at the base.

In the Cabinets of Mr. Haliday, Mr. Walker, and the Author.

IN the 1st volume of the Mémoires presented to the Imperial Academy of Sciences at St. Petersburg, is an admirable paper upon the Brachelytres by Count Mannerheim, in which the Aleocharæ are divided into several genera and other groups, but I do not observe amongst them the subject before us, owing probably to its extreme rarity abroad. It is to be regretted that the memoir above alluded to has been published in a work that from its size and expense is not likely to find its way into the hands of many of our British Entomologists: I hope, therefore, to see it transcribed into some of our periodicals, so that it may be more easily consulted.

For specimens of the curious genus *Callicerus* I am indebted to my friend A. H. Haliday, Esq. who accompanied them with the following remarks, &c. between inverted commas.

1. *C. Spencii* Kirby.—*Curt. Brit. Ent. pl.* 443.

“Taken at Holywood, near Belfast; before the vernal equinox it occurs occasionally in the shelter of furze bushes; in the first burst of spring I have found it abundant on the fresh grass of sunny banks, not associating with the coprophagous Aleocharæ: as summer advances it disappears entirely. While it is in motion the antennæ and especially the thick joints of the tip are continually quivering in an extraordinary degree: the membranous suspension of the basal joints seems adapted to give those organs a high degree of versatility.”

Mr. F. Walker has swept it off grass at Southgate in May.

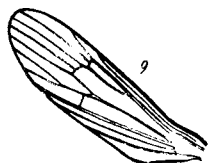
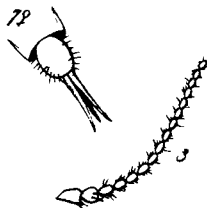
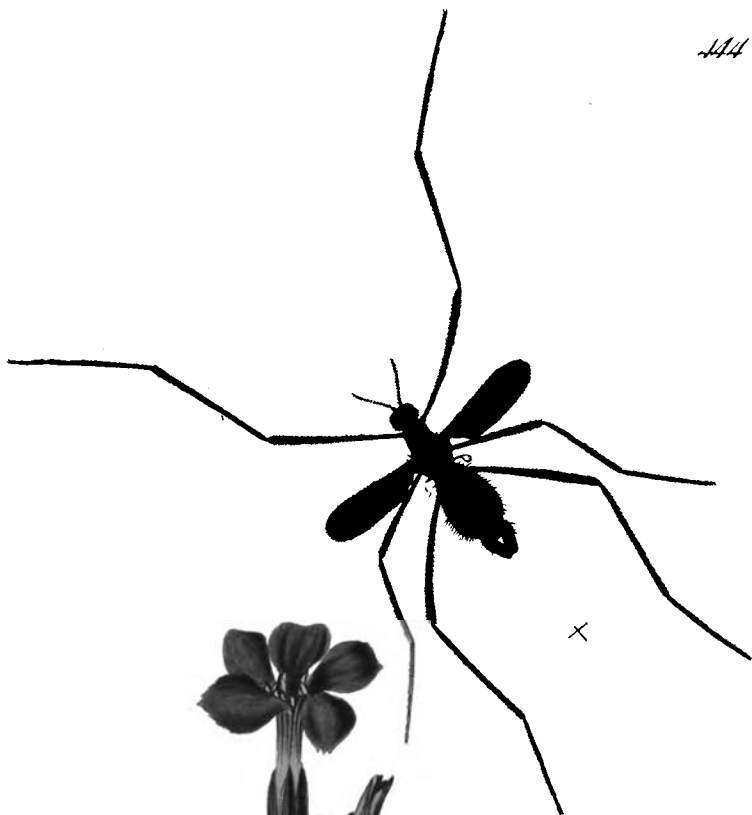
2. *C. hybridus* Hal. MSS.

“Size and figure of *C. Spencii*; thorax somewhat broader, 4th to 9th joints of antennæ not so short, gradually increasing, 10th scarcely one half longer than the 9th, the rest as in *C. Spencii*, and the palpi similar. Head and thorax opaque dusky black; elytra rufescent, disk suffused with brown; abdomen black, margins of segments rufescent; legs ferruginous, antennæ and palpi darker.

A single specimen taken at Holywood with the preceding species,” by Mr. Haliday.

I have not sufficiently studied the Aleocharæ to ascertain the exact situation of *Callicerus*, but for the present it may very well be placed I think between *Drusilla* and *A. longitarsis*.

The plant is *Tamus communis* (Black Briony).



... ably J. L. ...

MOLOPHILUS BREVIPENNIS.

ORDER Diptera. FAM. Tipulidæ.

Type of the Genus, M. brevipennis Curt.

MOLOPHILUS Curt.

Antennæ inserted close to the eyes at the base of the clypeus, not longer than the thorax, moniliform, pubescent and hairy; 16-jointed, 1st and 2nd joints stout, the former the longest, the latter somewhat obcordate, the remainder gradually decreasing in size to the apex, the 3rd ovate, penultimate joint globose (3). *Palpi* rather short pilose and 5-jointed, 1st and 2nd joints minute, 3rd ovate, a little longer than the 4th which is subtrigonal, 5th about the same size as the 3rd and ovate (2* f). *Lip* very short and bilobed (g).

Head globose: eyes lateral and globose. Ocelli none. Prothorax elongated, cylindric: Mesothorax trilobed; scutellum somewhat lunate, and slightly notched. Abdomen somewhat ovate 9-jointed, terminal joint semiorbicular and producing 2 large lobes in the male; the terminal joint ovate in the females and furnished with an exerted ovipositor, formed of 3 horny acute spines (7 ♀). Wings small (9) the margin and nervures hairy. Halteres conspicuous, capitate. Legs very long and rather stout, anterior the longest; tarsi 5-jointed, basal joint long: claws minute.

BREVIPENNIS *Curtis's Guide, Genus 1152, 1.*

Greyish fuscous, wings pale brown, straw-coloured at the base, nervures darker brown: halteres nearly white: abdomen pilose, the lobes at the extremity in the males blackish; the ovipositor in the females ferruginous: legs very pubescent.

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

THIS minute and singular insect was swept off heath, the 7th June 1827, in some abundance by Mr. Dale and myself at the top of a mountain between Ambleside and Ullswater, called Red skrees, on the sides of which we took the *Hipparchia Cassiope*.

It is undoubtedly allied to Erioptera of Meigen, which it resembles in having hairy wings, and the males have the abdo-

men somewhat similarly terminated, but not with the distinct lobes that form so prominent a feature in our genus. In its lengthened prothorax, and the shape of the abdomen, it widely differs from Erioptera, and I can discover no difference in the antennæ of the sexes, which I fortunately secured. The venation of the wings is very different to any of the Tipulidæ that I remember, and I think they must be too small for flight. Probably many insects that inhabit very elevated situations do not often use their wings, and I suspect mountain species of many of the orders are not generally long-lived, in consequence of the frequent wet, cold and high winds that assail them. I remember in ascending Schichallion, that towards the summit we found considerable numbers of the *Orthotænia* (*Tortrix*) *Bentleyana* in the greatest perfection, but on the following day I did not see a specimen that was not worn and faded as if it had been several weeks old. To the same cause probably may be attributed the variation in the localities of winged insects in different years; for as we know that elevated and exposed places are seldom free from the effects of the wind, some Lepidoptera may move from one side to another of a mountain to seek shelter, for if they were to conceal themselves for any very long time, their lives would be too short to fulfill the objects of nature; the males of others take wing at favourable opportunities, and in this way we saw numbers of the *H. Cassiope* caught in the wind and carried to mountains quite out of our reach, and where the valleys are wide they are no doubt transported to a great distance. Providence has guarded however against a too great decrease by casualties, for the females seldom taking wing, the eggs are more likely to be deposited where the parents were produced, and where the food that the caterpillars live upon is to be found.

For the beautiful plant figured, *Gentiana verna* (Spring Gentian), I am indebted to George Wailes, Esq. who gathered it at Teesdale widdy-bank, Northumberland, the middle of April.



Publ. by J. Currier Mar. 1. 1853

ASIRACA PULCHELLA.

ORDER Homoptera. FAM. Cicadidae.

Type of the Genus, Delphax clavicornis Fab.

ASIRACA Lat., Curt.—Delphax Fab., Panz.

Antennæ inserted in a notch beneath the eyes, longer than the thorax, robust, and 4-jointed, basal joint very long, stout and linear, compressed with a keel outside, scabrous on the inside, the inferior margin serrated with bristles, 2nd joint ovate-conic, tuberculated, producing spiny bristles, 3rd joint minute, globose, 4th a long slender seta (4).

Labrum short elongate-trigonate, acute (3, side view).

Mandibles and *maxillæ* setiform.

Labium scarcely longer than the clypeus, pilose, triarticulate, basal joint the shortest, 2nd the longest and stoutest, swelled a little beneath, 3rd joint longer than the 1st and slightly curved (2* side view).

Head narrower than the thorax, long and vertical, crown somewhat lunulate, face elongate-trigonate: clypeus elongate-conic. Ocelli none. Eyes lateral and ovate, with a deep notch beneath. Thorax transverse short, somewhat lunulate: scutellum rather large and trigonate. Wings deflexed when at rest: superior ample coriaceous with numerous longitudinal nervures, a few transverse ones on the costa and an oblique one towards the apex (9); inferior wings membranous and minute. Legs, anterior very much dilated (6): thighs linear: tibiae, posterior long with 3 spines on the outside, the apex surrounded with spines and a longer spur (6†): tarsi triarticulate, terminal joint the longest, except in the posterior pair, in which the basal joint is considerably the longest, and that as well as the 2nd is surrounded with spines at the apex. Claws and Pulvilli minute.

PULCHELLA Curt. Guide, Gen. 1067, 3.

Smooth pale ochreous, face darker; eyes black: antennæ with the joints brown at the apex: thorax with a brown line on each side: abdomen blackish, except at the base, the segments margined and variegated with ochre: superior wings faintly stained with yellow, a brown irregular stripe along the centre, broken in the middle and forming a fimbria at the posterior margin, sometimes with pale spots between the nervures, and an oblique brown nervure towards the apex on the costa: inferior wings ample, iridescent, with a few of the nervures towards the costa brown: tarsi brown, excepting the 2 first joints in the hinder pair.

In the Cabinets of Mr. Dale and the Author.

I fear it will be necessary to divide these neighbouring groups considerably, for if we take the *D. clavicornis* and *minuta* Fab. as types of *Asiraca* and *Delphax*, the former distinguished by

the length of the basal joint of the antennæ, the latter by its shortness, we shall find a great number of species that differ very materially from them; the insect figured for instance has the antennæ and head of *Asiraca*, but the neuration of the wings and the form of the legs agree better with *Delphax*, as do those also of *A. dubia*: it will therefore form a very good subgenus, being distinguished from the type *A. clavicornis* by its simple anterior legs, and a great dissimilarity in the superior and the ample size of the inferior wings; the 2 first joints of the antennæ are also of nearly equal length: another group I have lately characterized in the Entomological Magazine under the name of *Criomorphus*.

In dissecting these insects I discovered on each side the labrum, or rather perhaps the clypeus, an acuminate horn-like lobe; they covered apparently the base of the mandibles or maxillæ, and are common to the insects of this division.

The following species have been taken in Britain.

1. *A. clavicornis* *Fab.* — *Coquebert's Icon. pl. 8. f. 7.*

Length nearly 2 lines. Piceous, antennæ, head and anterior portion of thorax ochreous; superior wings variegated with brown at the tips, the nervures slightly tuberculated and having series of short bristles: inferior wings minute; legs variegated with brown, anterior dilated, brown with a few ochreous spots, the tip of the tibia of the same colour.

Grassy places, end of April, in a clover field at Henstead, Suffolk, J. C.

2. *A. dubia* *Creut.* — *Panz. 35. 20.* — *grisea Lat.*

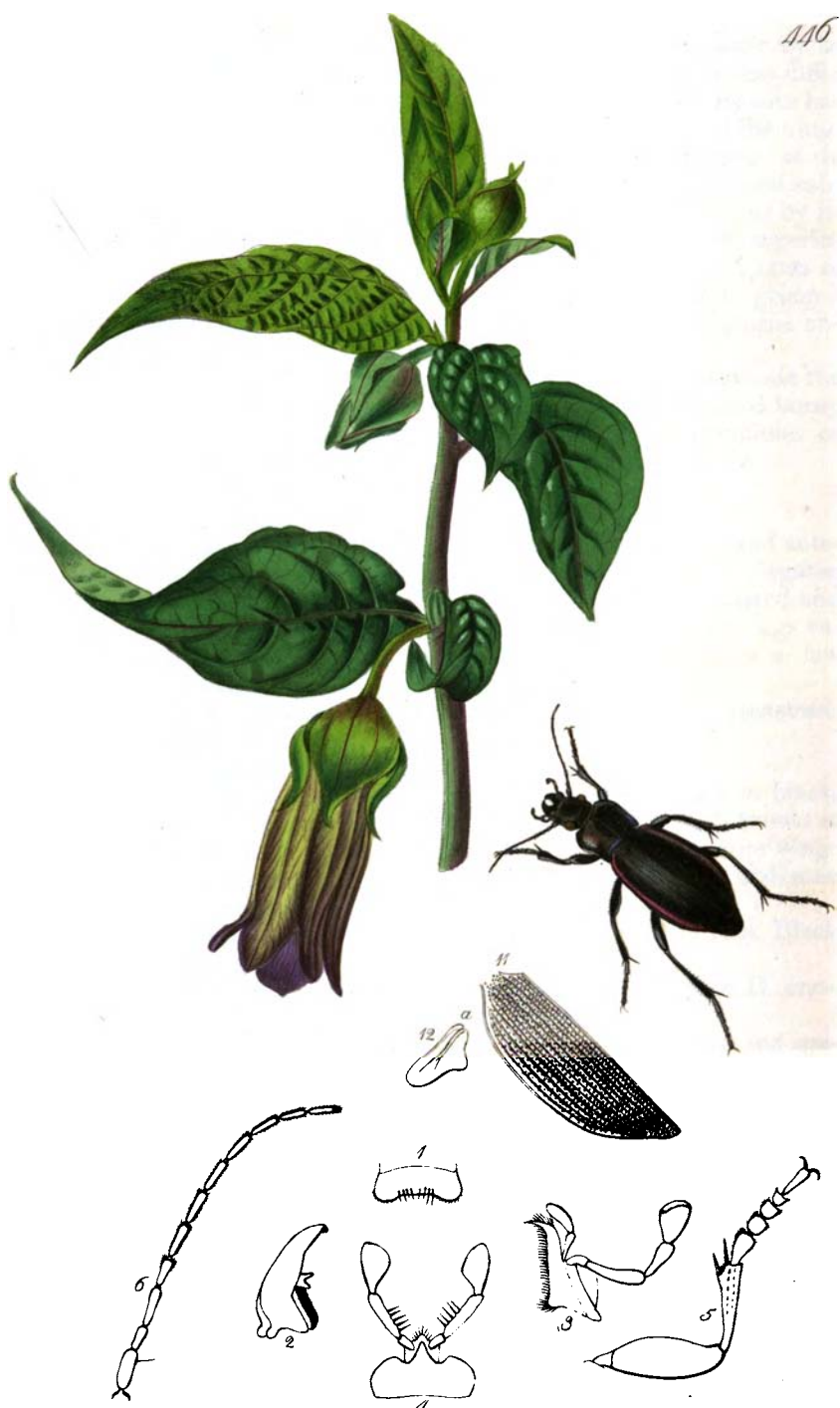
2½ lines long. Smooth, pale ochreous, robust; eyes black, 2nd joint of antennæ nearly as long as the 1st, both brown at the tips, a brown line on each side the thorax: superior wings shorter than the body, immaculate; inferior none; abdomen variegated with brown.

30th July and beginning of Sept., on rushes near Black Gang Chine.

3. *A. pulchella* *Curt. Brit. Ent. pl. 445.* — Allied to *D. crassicornis Fab.* and *Panz. 35. 19.*

I first discovered this pretty insect with the foregoing species, and Mr. Dale having taken them in company, imagined that *A. dubia* might be the pupa, but I think it may be the female of *A. pulchella*, for I have never seen a male of it, whilst of this species I cannot find a female. It has also been found by Mr. Dale in a damp situation near the sea at Charmouth, as well as another pretty species on reeds at the Peat Pits, Weston on the Green, near Oxford, together with a 5th having a very faint mark on the wings.

The beautiful Plant is *Lathyrus Nissolia* (Crimson Grass-vetch), gathered at Puckaster Cove in the Isle of Wight, and communicated by Charles Vine, Esq.



Anthrenus fuscicornis

CARABUS EXASPERATUS.

ORDER Coleoptera. FAM. Carabidæ.

*Type of the Genus, Carabus violaceus Linn.***CARABUS Linn., &c.**—Tachypus Weber.

Antennæ inserted before the eyes close to the base of the mandibles, as long as the head and thorax, 11-jointed, slightly tapering, and pubescent, 3 basal joints naked, the 1st long robust and elliptical, 2nd and 4th the shortest, 3rd a little longer than the basal joint, 5th and remainder shorter than the 3rd, slightly decreasing in length and stoutness to the apex (6).

Labrum short transverse, the ends rounded and ciliated, slightly concave at the centre and producing a few bristles (1).

Mandibles porrected, rather long curved and attenuated to the apex, which is obtuse and slightly bent; a broad notched tooth on the inside with a membranous margin below densely ciliated (2).

Maxillæ narrow, terminated by an acute claw, pubescent above, ciliated with spiny bristles inside, external lobe palpiform, extending to the tip of the maxillæ, biarticulate, basal joint clavate, 2nd stout ovate. *Palpi* long naked and 4-jointed, basal joint short, 2nd long clavate, 3rd and 4th of equal length, the former clavate the latter large and hatchet-shaped (3).

Mentum transverse, sides rounded, anterior margin but slightly concave, the centre produced forming a trigonate lobe. *Lip* small, subquadrate, the centre slightly produced, rounded and ciliated with bristles. *Palpi* as large as the maxillary but shorter, attached to the disc of the lip, triarticulate, basal joint rather short, 2nd long linear and furnished with 5 spiny bristles on the inside, 3rd joint large and hatchet-shaped (4).

Head narrow and ovate. Eyes prominent and globose. Thorax subquadrate, sides a little convex and margined, posterior angles lobed: scutellum minute trigonate. Elytra elliptical ovate. Wings minute leathery appendages (12; a, the base). Legs strong: thighs stout: tibiæ spurred, anterior the shortest and stoutest, with a short notch at the apex and 2 spines, hinder pair the longest: tarsi 5-jointed, anterior dilated in the males, the 3 basal joints cushioned beneath: claws bent, acute (5).

EXASPERATUS Duft., Meg., Dej.—Curt. Guide, Gen. 12. 9*.

Black, shining, head and thorax finely wrinkled, the latter broad and subquadrate reticulated, distinctly and thickly punctured on the sides which are blue and violaceous with a channel down the centre: elytra with numerous fine longitudinal elevated lines with punctures between them, scabrous towards the apex (*fig. 11*); the margin reflexed and violet colour: pubescence of antennæ ferruginous: claws, spurs and mandibles partially castaneous.

In the Author's Cabinet.

THE true Carabi possess a very remarkable power, for when pursued and alarmed they are able to spirt from the apex of the abdomen an excessively acrid and I suspect a gaseous fluid, which occasions a very severe pricking sensation when it falls on the skin, but the pain is of short duration.

There are now considerably above 2000 species known of this family alone, from different parts of the globe, and Dejean enumerates 163 species of the genus *Carabus*: in this island the following only have been discovered.

1. *C. intricatus* L.—*Don*. 15. 526. 1.—*cyaneus* Fab.—Ashburton, and end of May under a stone in a wood opposite the Virtuous Lady's Mine on the river Tavy, below Tavistock, Devon.
2. *C. catenulatus* Fab.—*Panz*. 4. 6.—*intricatus* Fab.—June, middle of October. Heaths, Norfolk and Isle of Wight; mountains, Cumberland, Wales, Scotland, and Ireland.
3. *C. Lippii* Dahl.—*Dej. Icon. pl.* 37. f. 4.—Mr. Samouelle informs me this is not the *C. agrestis*, the insect described by Mr. Stephens. It is said to have been taken in Lincolnshire.
4. *C. monilis* F.—*catenulatus* Marsh.—Common everywhere.
5. *C. consitus* *Pans*. 108. 3.—Near London, and middle of July, Dover, J. C.
6. *C. cancellatus* Ill.—*granulatus* Steph. 1. 51. 7.—Spring, in a chalk-pit near Gravesend, Mr. Ingpen.
7. *C. granulatus* Linn.—*Don*. 7. 222. 3.—*cancellatus* Fab., Steph.—May, gardens and pathways everywhere; December, under bark of willows.
8. *C. arvensis* Fab.—*Panz*. 74. 3; & 81. 3.—June, beginning of July, heaths and roots of trees Epping and New Forests, Wimbledon Common, Devon, mountains Ambleside, Isle of Arran and Ireland.
9. *C. violaceus* L.—*Don*. 7. 222. 1.—*Panz*. 4. 4.—June, July, September, October, roots of trees, under stones, gravel-pits, &c. everywhere in England, but rare in Ireland.
- 9*. *C. exasperatus* Duft.—*Curt. B. E. pl.* 446.—I took a female of this rare insect the 24th of June 1831, under a block of stone near a quarry in the Isle of Portland, but no one has been able to find another since.
10. *C. glabratus* F.—*Don*. 15. 506.—June, mountains Ambleside, amongst long grass. July, Scotland and Ireland.
11. *C. convexus* F.—*Steph. pl.* 4. f. 2.—Said to have been taken in Longmont Forest, Shropshire, by the Rev. F. W. Hope.
12. *C. nemoralis* Ill.—*hortensis* F.—*gemmatus* Don. 7. 222. 2.—June, in gardens, Norfolk; under stones and dead leaves near London; also in Scotland and Ireland.
13. *C. clathratus* L.—*Don*. 15. 526. 2.—April, in drills, Halvergate marshes, Norfolk, in Scotland and on the coast of Ireland.
14. *C. auratus* L.—*Ste. pl.* 3. f. 6.—Exmouth Devon, Canterbury and near Dover, Mr. H. Griesbach: this specimen is stated by Mr. Stephens to be the *C. auronitens* of Fab., a species that has never been found in England.
15. *C. nitens* L.—*Don*. 9. 313.—This splendid insect has been taken in May in the New Forest, on Hurn and Pool Heaths, Dorset; Yorkshire, Durham, Northumberland, near Carlisle; end of July, very moist places on mountains, Ambleside; Kinnordy Forfarshire, where some are nearly black from age; also near Belfast.

The Plant is *Atropa Belladonna* (Deadly Nightshade).



Chrysothrix subspicata Sw.

EPHYRA PICTARIA.

The Kent Mocha or Grey Carpet.

ORDER Lepidoptera. FAM. Phalænidæ.

*Type of the Genus, Geometra punctaria Linn.***EPHYRA** *Goda, Curt.*—*Cyclophora* & *Cleora Steph.*—*Cabera Treit.*—*Geometra Linn., Haw.**Antennæ* inserted on the crown of the head, short, bipectinated in the males, the rays pubescent, a considerable portion of the apex simple and only pubescent beneath (1); without rays in the female (7 ♀).*Maxillæ* spiral and slender, considerably shorter than the antennæ (3).*Labial Palpi* slender, porrected obliquely and sparingly clothed with scales (4); triarticulate, basal joint a little the longest and stoutest, curved, 2nd nearly as long and stout, 3rd shorter and slender (4 a).

Sexes alike in size. Head small: eyes globose. Thorax small. Abdomen short and slender, obtuse in the males. Wings spread when at rest; superior elongate-trigonal, apex slightly falcated; inferior triangular but rounded. Legs slender: tibiæ, anterior short, with an internal spine; posterior long slender and terminated by a pair of short obtuse spurs in the male (♂8); slightly inflated in the female, the apical spurs longer and unequal, with another pair a little above them (8 ♀): tarsi 5-jointed.

Caterpillars loopers, attenuated towards the head, with 6 pectoral, 2 abdominal, and 2 anal feet.—Fues.

Pupæ either attached by the tail and the middle (Hüb.); or inclosed in a thin web.—Fues.

PICTARIA *Thunb.?*—*Curt. Guide, Gen. 910. 9.*

Female, grey with a slight reddish tint, freckled and glossy; the tufts down the back of the abdomen white: superior wings slightly scabrous, with an indistinct dark line before and another beyond the middle, waved and crenated, forming a fascia considerably broader at the costa than below, with a spot of the same tint near the disc, on the posterior margin is a line of undefined pale spots on each of which is a black dot; inferior wings dirty white, the abdominal and posterior margins freckled with brown and tinted with cinereous, a crenated line across the middle, darkest on the anal margin and a line of dark brown spots on the external margin: cilia cinereous, freckled with brown.

In the Author's Cabinet.

THIS pretty genus varies from all the family I have hitherto illustrated in having a long terminal joint to the palpi; and no

one that I am aware of has noticed the difference in the hinder tibiæ, which have only one pair of spurs in the males, but two pair in the females.

Hübner represents the larvæ of *G. pendularia* as perfect loopers, and the pupæ with truncated heads and attached by the tail, with a thread round the body like *Pontia*, (the common White Butterfly,) but Fuessley in illustrating the transformations of *G. Ononaria* delineates the larvæ as imperfect loopers, and the chrysalis inclosed in a fine web.

1. *E. trilinearis* Bork.—*Goda*, pl. 171. f. 6. & 7.—*linearis* Hüb. & Haw.—Woods, Kent; beginning June near Lyndhurst, J. C.
2. *E. punctaria* L., *Haw.*—*subangularis* Haw. var.—*communifasciata* Don. 13. 456.—End of May and Aug., open places in woods.—The Larva feeds on the Oak.
3. *E. poraria* L., *Goda*, 172. 1.—*punctaria* Hüb.—*ocellaria* Haw. & Steph.—End of May, woods; beginning of June, Coomb-wood, J. C., also end of August.—Obs. The *G. ocellaria* Hüb., recorded by Mr. Stephens as a British insect, has never been found in this country that I am aware of.
5. *E. omicronaria* Hüb., *Haw.*, *Goda*, 172. 7.—*annularis* Fab. End of May, June and August, Darent-wood, J. C.—The Caterpillar feeds on the Maple (pl. 328).
6. *E. pendularia* L.—Hüb., *Haw.*, *Goda*, 172. 5.—*circularis* Fab.—End of May, Birch-trees, Coomb and Birch woods, J. C.; also end of August.—The Larva feeds on Birch (pl. 434), and Alder.
7. *E. albicincta* Haw. 344. 86.—A specimen was taken near Peckham many years back, and is in Mr. Hatchett's Cabinet.
8. *E. orbicularis* Hüb., *Haw.*, *Goda*, 172. 6.—Middle of June, Coomb-wood; in a garden at Lambeth, Mr. Samouelle, near Brockenhurst, New Forest.
9. *E. pictaria* Thunb.?—*Curt. B. E.* pl. 447.—Although the male of this rare insect is unknown, and it has been placed in my Genus *Cleora*, I have little doubt of this being its natural situation. Mr. Jos. Standish took 3 off some paling on Dartford Heath, Kent; the finest on the 17th of April 1820, and the other two, which were rather wasted, on the 1st of May 1826; a very fine specimen was found at the same place the middle of April, and another near Charing, in the same county, by Thomas Marshall, Esq.

The Plant is *Poterium Sanguisorba* (Upland Burnet).

LASIOGLOSSUM TRICINGULUM.

ORDER Hymenoptera. FAM. Andrenidæ.

Type of the Genus, Lasioglossum tricingulum Curt.

LASIOGLOSSUM *Curt. Guide, Gen. 704^a.*

Antennæ of the male inserted near the centre of the face, longer than the head and thorax, slightly fusiform, composed of 13 joints very similar to *Halictus*.

Labrum transverse-ovate, sides straight, angles rounded and slightly emarginate, anterior margin convex and ciliated with long hairs, broadest at the base (2).

Mandibles not so much dilated at the base as in *Halictus*.

Maxillæ very slender, lobe as long as the *Paraglossæ*, lanceolate, not notched towards the apex. *Palpi* one third longer than the lobe, 6-jointed (4).

Mentum long and very slender. *Labium* rather long lanceolate and very pubescent on the sides and at the back (3 c): *Paraglossæ* half the length of the lip, lanceolate and slightly ciliated (d). *Palpi* longer than the *paraglossæ*, but shorter than the lip, 4-jointed (b).

Head *ovate, depressed and porrected nearly horizontally: eyes long narrow and lateral: ocelli 3. Thorax globose, a little larger than the head. Abdomen ovate and convex, considerably broader than the thorax. Wings ample, the cells similar to Halictus, as well as the legs.*

TRICINGULUM *Curt. MSS.*

Male black, shining and pubescent, exceedingly minutely and thickly punctured and clothed with soft ochreous hairs: abdomen with a whitish fascia, narrowest at the middle, at the base of the 2nd 3rd and 4th segments, the 5th segment slightly grey with pubescence, the apex ochreous: wings iridescent, the posterior margin slightly fuscous; stigma ochreous, nervures pale brown: posterior tibiæ ochreous, and tarsi, excepting the 1st pair, whitish ochre, tipped with ferruginous.

In the Author's Cabinet.

THIS singular and I believe nondescript species appears to form a beautiful connexion between the Andrenidæ and Apidæ; but unfortunately the female is unknown. I took 3 males at Ventnor in the Isle of Wight, flying about flowers near the sea-shore, the 12th September 1826, and one of them was Stylopsed; they look very long on the wing, in consequence of the head, antennæ, and bodies being carried horizontally. Those parts that I have not described or but slightly, are similar to *Halictus*, which I shall now illustrate.

HALICTUS.

Type of the Genus, Melitta rubicunda Kirby.

HALICTUS Lat., Curt. Guide, Gen. 704.—Andrena Pans.—Hylæus, Megilla, & Anthophora Fab.—Melitta Kirby.

Antennæ inserted near the middle of the face, long filiform and 13-jointed in the *males* (1 ♂); basal joint the longest and clothed with long feathery hairs, 2nd cup-shaped, 3rd semioval, 4th stouter and oblong, the remainder slightly decreasing in length and becoming very oval or convex on the underside, terminal joint rounded at the apex: shorter and geniculated in the *females* (1 ♀), pubescent and 12-jointed, basal joint very long, clavate and pilose externally towards the base, 2nd small oval, 3rd a little broader, the remainder stouter and subquadrate, terminal joint suboval.

Labrum short, transverse and convex in the *males* (2), the sides rounded, ciliated before with long flat hairs: producing a sublanceolate lobe in front, ciliated with long hairs dilated at the base in the *females* (2).

Mandibles rather slender in the *males* (3), sublanceolate, curved and crossing, produced inside at the base, externally pilose: sublinear in the *females* (3), hollowed inside, truncated obliquely at the apex and notched, externally pilose.

Maxillæ alike in both sexes (4), very long, terminated by a small bent lobe, suboval with a notch on the inside and ciliated with longish hairs. *Palpi* (b) twice as long as the lobe, slender and slightly attenuated, 6-jointed, the 3 basal joints shorter than the following.

Mentum alike in both sexes, long and linear (5). *Lip* short oval-conic, being pointed and pubescent at the apex (c). *Paraglossæ* as long as the lip, subelliptical, rounded at the apex and ciliated (d). *Palpi* nearly twice as long as the lip, slender, attenuated and 4-jointed, basal joint the longest and stoutest, 3 following short and of equal length (b).

Males smaller and slenderer than the females. Head orbicular, depressed: eyes long and oval: ocelli 3. Thorax globose. Abdomen elliptical in the *males* (6 ♂); oval conic in the *females*, with a groove on the back at the apex (6 ♀). Wings; superior with one marginal and 3 submarginal cells, the central cell the smallest. Tibiæ, with long spines or spurs, posterior robust in the female: tarsi 5-jointed, basal joint long and stout in the females, the others minute. Claws bifid in both sexes.

THE remarkable elliptical impression on the back of the penultimate segment of the abdomen distinguishes the female Halicti from all other Bees, and the head of the male is narrower and more elongated than in Andrena, and the 3rd joint of the antennæ is not much larger than the 2nd. The Paraglossæ were entire at the apex in the Halicti that I dissected, but Mr. Kirby has represented them as lacerated at the apex.

This genus contains 29 British species, for the names of which the student is referred to the 'Guide'. It is singular that not one of them appears to have been described by Linnæus.

The Plant is *Plantago lanceolata* (Ribwort Plantain).



Fig. by J. C. Curd. Apr. 1. 1853

ISSUS COLEOPTRATUS.

ORDER Homoptera. FAM. Cicadiidæ.

Type of the Genus, Issus coleoptratus Fab.

Issus Fab., Curt.—Cercopis Fab., Panz.—Cicada Geoff., Don.

Antennæ short, inserted under the eyes (4), composed of 4 joints, 1st and 2nd robust, the former somewhat cup-shaped, the latter ovate-truncate and pubescent, 3rd minute, 4th a long seta (4 *a*).
Labrum short slender and acute (3).

Mandibles and *Maxillæ* dilated at the base, and terminated by very long setæ, especially the latter (2, with the labium removed).

Labium shorter than the head, linear, triarticulate, 1st and 3rd joints nearly of equal length, 2nd a little longer.

Head vertical, the crown short and truncated; face long and triangular, bent under the breast: eyes lateral globose and prominent, not notched beneath: ocelli none? Thorax, anterior portion short broad and subtrigonal; scutellum large and triangular. Abdomen very large and trigonal, being dilated at the base. Wings deflexed when at rest; superior coriaceous, as long as the body, subovate, the external margin produced and having an angular appearance near the base, with several longitudinal elevated nervures, connected by numerous transverse ones; inferior wings smaller and membranous coarsely reticulated. Legs moderately long. Tibiæ simple, excepting the posterior pair which are considerably the longest and have a spine outside at the middle, and another nearer the apex, which is serrated: tarsi short and triarticulate, basal joint the longest and serrated at the apex in the posterior pair, 2nd joint minute: claws acute: pulvilli distinct (6† hind leg).

COLEOPTRATUS *Fab. Ent. Syst. v. 4. p. 53. n. 26.—Panz. 2. 6.—*

Curt. Guide, Gen. 1069. 1.—dilatatus Don. Brit. Ins. v. 4. pl. 138, f. 5. & 6.

In the Author's and other Cabinets.

THIS insect varies so much in colour and markings, being sometimes nearly of an uniform clay colour, at others the elytra are dark with a paler band, that any one would at first

imagine there were many species of the genus; I believe, however, that one only has been found in this country.

The following is a description of the beautiful variety represented in the Plate which is in the collection of my friend Mr. A. H. Davis.

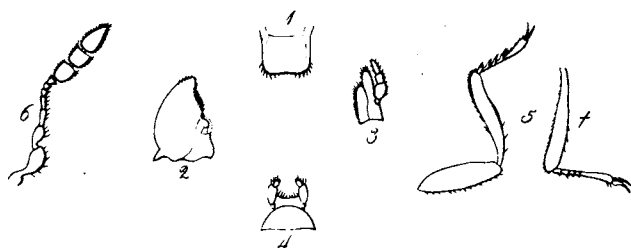
1. *I. coleoptratus* Fab.—Curt. Brit. Ent. pl. 449.

Pale ochreous, head, thorax and scutellum darker, variegated with brown; eyes piceous; abdomen ochreous, the base ferruginous, a broad space on each side black, greenish at the base; elytra with a band next the thorax brown, a large lanceolate spot on the costa towards the apex formed by the brown reticulated nervures and spots between, an oblique paler line near the posterior margin, and a >-shaped one a little beyond the middle; inferior wings dark fuscous, the nervures darker, paler at the base, with a faint rosy tinge: 1st and 2nd pair of legs with the tips of the thighs and tibiæ and a ring near the middle piceous, posterior thighs and base of tibiæ fuscous, tarsi tipped with piceous.

Obs.—The form of the insect with its wings closed of the natural size is shown towards the foot of the Plate.

Issus coleoptratus is found in hedges and woods round London, in May, June, and July; I have taken it in Norfolk, and Mr. F. Walker informs me that he often finds it in October on the flowers of the Ivy at Southgate.

The Plant is *Rhinanthus Crista-galli* (Yellow Rattle).



Anthrenus fuscicornis Mely. *br.*

ASPIDIPHORUS ORBICULATUS.

ORDER Coleoptera. FAM. Dermestidæ ?

Type of the Genus, Nitidula orbiculata Gyl.

ASPIDIPHORUS Zieg., Meg., Sturm., Lat.—Arpidiphorus Gyl., Dej., Curt.—Nitidula Gyl.

Antennæ inserted before the eyes, as long as the head and thorax, clavate, 10-jointed, basal joint large, curved and subclavate, 2nd stout subovate, narrowed at the base, as long as the 3rd which is slender, 4th shorter, 3 following small and cup-shaped, the remainder forming a stout pubescent elongated club, conical at the apex (6).

Labrum subquadrate, the angles rounded, the anterior margin slightly concave and sparingly ciliated (1).

Mandibles trigonate, rounded externally, the internal margin sinuated, slightly pubescent towards the apex (2).

Maxilla composed of two rounded pubescent lobes, the internal one the shortest. *Palpi* short 4-jointed, basal joint minute, 2nd the largest subglobose, 3rd subquadrate, 4th as long as the 2nd but slender (3).

Mentum hemispherical. *Palpi* triarticulate, basal joint very minute, 2nd stout subovate, 3rd small ovate, terminated by a vesicle and a few hairs; they are inserted at the base of the *Lip* which is transverse and fringed with a few hairs (4).

Head rather large and transverse: eyes lateral small and prominent.

Thorax transverse, broadest at the base, the posterior margin lobed at the centre. Scutellum distinct and semiorbicular. Elytra very convex, suborbicular, quadrate, nearly twice as broad as the thorax. Wings ample. Abdomen extending beyond the elytra. Legs rather short. Tibiæ simple compressed and dilated except at the base. Tarsi 5-jointed, the joints very short excepting the 5th which is as long as the others united and clavate. Claws acute (5, a fore leg; † hinder leg).

ORBICULATUS Gyll.—Curt. Guide, Gen. 296. 1. Viennensis Meg.

Subovate, piceous brown, head and thorax blackish, thickly and minutely punctured: elytra slightly pubescent with nine punctured striæ on each. Antennæ, mouth and legs pale ferruginous, the club of the former black.

In the Author's and other Cabinets.

THIS curious little insect has never hitherto been figured. I have included it with the Dermestidæ because the trophi and antennæ seem to agree best with that family. There can be little doubt that it is nearly allied to Trinodes, although it has a good deal the habit of a Hister, yet I should say it is not so nearly related to Byrrhus as to justify its being placed in the same family; until however Dorcatoma, Trinodes and Limnichus are well investigated, it will be difficult to assign to Aspidiphorus its natural situation.

Sturm placed it between Trinodes and Byrrhus, and in the Guide I adopted the affinities of Dejean and arranged it between Trinodes and Nosodendron (pl. 246).

Aspidiphorus orbiculatus was first discovered in England, I believe, by Mr. Spence near Hull in Yorkshire: it has since been captured the beginning of July in a larch plantation at Marton near Stockton on Tees by the Rev. G. T. Rudd; and near Sherburn in the same county, on a felled tree in a fir plantation in company with *Scaphidium 4-maculatum* (pl. 379), by A. Mathews, Esq., who informed me that they appeared to be covered with mud.

For my specimens I am indebted to F. Walker, Esq., who took them near Southgate. Mr. E. Doubleday also found a pair in moss the middle of November on the borders of Epping Forest.

The Plant is *Cynoglossum officinale* (Common Hound's-tongue).



Pub. by S. Curtis May 1848

CERAPTERYX HIBERNICUS.

The Irish Antler Moth.

ORDER Lepidoptera. FAM. Noctuidæ.

Type of the Genus, Phalæna Graminis Linn.

CERAPTERYX Curt.—Charæas Ste., Curt.—Episema Och.—Noctua Hüb., Haw., Goda.—Phalæna Bombyx Linn.

Antennæ comparatively longer in the male than female, bipectinated in the former, the rays ciliated and becoming shorter towards the apex, with 7 or 8 of the terminal joints simple (1 ♂): slightly pubescent only on the inside in the female.

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

Labial Palpi porrected obliquely (4), clothed with scales, the apical joint apparent; triarticulate, basal joint subovate, 2nd longer subconic, 3rd as long as the 1st but slender, elliptic-conical (4 a).

Males smaller than the females. Head short and obtuse: eyes not very prominent. Thorax subglobose, not crested. Abdomen linear and tufted at the apex in the males, conical in the females. Wings slightly deflexed when at rest, margins entire, superior somewhat elongate-trigonal, the apex obtuse: inferior not large and rounded: cilia rather short and even. Tibiæ, anterior short with a long internal spine (8); the others with a pair of long spurs at the apex, the posterior with a pair below the middle: tarsi 5-jointed. Claws with a small tooth on the inside.

Caterpillars naked, with 6 pectoral 8 abdominal and 2 anal feet.

HIBERNICUS Curt. MSS.—Curt. Guide, Gen. 832.

In Mr. Walker's Cabinet.

As there is no described British moth that can be naturally associated with *N. Graminis* if it be separated from *Agrotis*, I have been compelled to give it a new generic name, especially as it does not seem to belong to the genus *Charæas*. From the true *Agrotis* it is distinguished by the masculine antennæ being pectinated much nearer to the apex, the wings are not horizontal and crossed I believe when at rest, neither are the superior so long and narrow, nor the inferior so ample, independent of the singular mark on the former resembling the antlers of a stag, from whence is derived the generic name I have proposed.

1. *C. Graminis* Linn.—Don. 13. pl. 458.—Hüb. pl. 102. f. 480 & 481.—tricuspis, Esper var.—Hüb. pl. 30. f. 143.

Reddish or fuscous brown, superior wings with the nervures pale, the central one ochreous, an oblong spot at the base of

the same colour, an oblong-conic spot towards the middle, and an oval or ovate one above it duller; beyond the middle is an ear-shaped or rhomboidal spot resting on a trifid character, both ochreous, these are relieved by a dark brown or black, with a line of spots of the same colour between the nervures near the posterior margin; inferior wings and abdomen blackish or fuscous, sometimes palest at the base, with a dark spot in the centre, the apex of the abdomen in the males ochreous, with a fuscous line along the middle in the upper wings.

This moth is a northern species, and occasionally the caterpillars commit sad ravages in pasture lands by devouring the roots of grass, as related by Linnæus, who states that they will not touch the *Alopecurus pratensis* nor the *Trifolium pratense* (pl. 181). Mr. Wailes has lately made some interesting remarks upon its habits, in the 2nd Part of the Entomological Magazine. I well remember when Mr. Dale and myself visited Keswick in 1827, that the grass on a large portion on one side of Skiddaw appeared dead, and I found numbers of the larvæ of *C. Graminis* crawling about. I used to find the moths flying close to the ground towards sunset in the neighbourhood of Norwich, also in meadows near Covehithe Suffolk, and in the flowers of the Ragwort at Inverary and Kinnordy, Scotland. Mr. Dale has sent me the following localities; July Aroquhar and Loch Long; Aug. near Carlisle canal, Ambleside and Skiddaw; near Manchester; Whittlesea Mere; Comb-wood; Devon; and Knowle Hill Dorset.

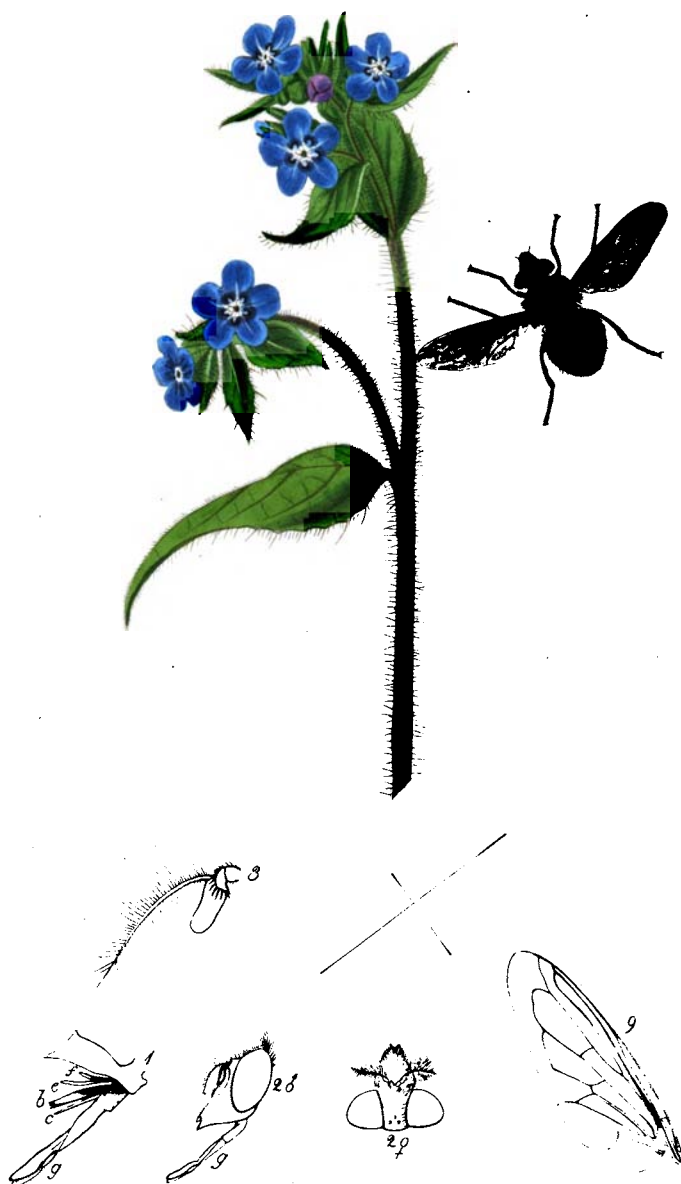
Rooks and pigs are very fond of the caterpillars and very useful in the destruction of them.

2. *C. Hibernicus* Curt. Brit. Ent. pl. 451. female.

Dull yellowish brown; superior wings with an elongated pale ochreous spot at the base above the central nervure, and another subelliptical one more towards the middle, with a lemon-shaped one above it, beyond the middle is a trapezoid spot resting on a trifid character, all of the same pale colour, some of them being partially relieved by a dark brown; between the nervures at the posterior margin are obscure, elongate-trigonal brown marks: abdomen and inferior wings fuscous; cilia pale ochreous.

I am fully aware that the *C. Graminis* is a most variable species, but as I have never seen one similar to the specimen figured I consider it may be a distinct species. It was captured last September in the county of Mayo, Ireland, by Henry Walker, Esq.

The Plant is *Pedicularis sylvatica* (Common Lousewort).



Subsp. S. lutea (Mey.) 1877

VOLUCELLA INFLATA.

ORDER Diptera. FAM. Syrphidæ.

Type of the Genus, Musca pellucens, Linn.

VOLUCELLA Geoff., Meig., Lat., Curt.—Syrphus Fab., Panz.—Pterocera Meig.—Musca Linn.

Antennæ nutant, inserted in a cavity on the forehead, contiguous at the base, plumose, 4-jointed, basal joint slightly cup-shaped, 2nd broader, but short, truncated somewhat obliquely, fringed with strong bristles, 3rd large fleshy, reniform, compressed, 4th a long seta, attached close to the base of the 3rd on the upper margin, ciliated on both sides with fine hairs, very long on the upper side (3).

Labrum hollow, externally convex and notched at the apex (1 b.) *Tongue* nearly as long as the labrum, narrow, acute (c).

Maxillæ shorter than the tongue, slightly curved, narrowed and rounded at the apex (e).

Palpi short narrow and rounded, membranous at the apex, with a few hairs on the side (f).

Labium twice as long as the labrum, membranous at the base, horny at the middle, terminated by 2 elongated lobes, slightly hairy and striated transversely (g).

Trophi elongated and exerted. Head *trigonal* in front, the lower portion sometimes forming a conical beak notched at the apex (2, the head in profile). Eyes contiguous in the males and pubescent, sometimes naked in the females in which sex they are remote (2 ♀). Ocelli 3 in triangle. Thorax subquadrate: scutellum large transverse semi-ovate. Abdomen, broad, convex and subovate. Wings (9) divaricating, the 4th longitudinal nervure not lobed. Halteres small and capitate. Tibiæ, posterior slightly crooked at the middle. Tarsi 5-jointed, basal joint the longest and sometimes thickened in the posterior pair, 4th joint crescent-shaped, 5th small. Claws small. Pulvilli bilobed.

INFLATA Fab.—Meig.—Curt. Guide, Gen. 1247. 4.

Piceous shining and pubescent: head beaked and ochreous, antennæ pale ferruginous: sides of thorax and sometimes a spot behind, as well as the scutellum pale ferruginous: abdomen black, with the 2nd segment ochreous, excepting a narrow space at the base which is continued down the back, and very narrow in the female: wings transparent, yellow at the base and costa; nervures brown, a sinuated spot at the middle and the nervures of the apex suffused with the same colour: halteres ochreous: tips of thighs, base of tibiæ and tarsi ferruginous.

In the Author's and other Cabinets.

THIS beautiful genus is distinguished from a considerable portion of the Syrphidæ by the longitudinal nervure that extends

to the apex, not being lobed as in *Eristalis*, *Helophilus*, &c. Our British species are,

1. *V. bombylans* Linn.—Panz. 8. 21.—Don. 5. 151. 4.

June and July woods round London, Dover, Dorset, Devon, &c.

2. *V. plumata* De G.—mystaceus Fab.—Panz. 8. 22.—Don. 14. 471. 1.

June, m. July, woods round London, Dover, &c.

3. *V. pellucens* Linn.—Panz. 1. 17.

Beginning of June and July shady places in woods, New Forest, Glanville's Wootton.

4. *V. inflata* Fab.—Curt. Brit. Ent. pl. 452 mas.—dryophila Schr.

June, e. July, Darent-wood, New Forest and Glanville's Wootton, Mr. Dale.

5. *V. inanis* Linn.—Panz. 2. 6.—Don. 14. 490. 1.—Sam. pl. 9. f. 3.—Reaumur, v. 4. pl. 33. f. 15—19.—apivora De G.—trifasciata Schr.

June to end of Aug. skirts of woods, New Forest, J. C. Dale, Esq. Bradley wood Devon, Capt. Blomer. The larvæ inhabit the nests of Humble-bees, devouring their larvæ and pupæ, and in the Introduction to Entomology we find the following interesting observations on the subject. "Some singular larvæ, with a radiated anus (Pl. xix. f. 11), live in the nests of humble-bees, and are the offspring of a particular genus of flies, many of the species of which strikingly resemble those bees in shape, clothing and colour. Thus has the Author of nature provided that they may enter these nests and deposit their eggs undiscovered. Did these intruders venture themselves amongst the humble-bees in a less kindred form, their lives would probably pay the forfeit of their presumption. Mr. Sheppard once found one of these larvæ in the nest of *Apis Ratiella*, K. but we could not ascertain what the fly was. Perhaps it might be *V. bombylans* Meig. which resembles those humble-bees that have a red anus." I may add that Mr. J. Cocks of High Bickington Devon showed me a similar larva (wanting the anal rays) that he detected in the cells of a wasp's nest Sept. 25th, 1822. It assisted itself in walking with the head, and could turn itself with great facility when laid upon its back.

The Plant is *Anchusa sempervirens* (Evergreen Alkanet).



Collected by S. C. Parker May 1, 1903

CORANUS SUBAPTERUS.

ORDER Hemiptera. FAM. Reduviidæ.

Type of the Genus, Reduvius pedestris, Wolff.

CORANUS Curt.—Reduvius Wolff., Curt.

Antennæ inserted in cavities before the eyes, towards the base of the clypeus, remote, filiform, flagellate, pubescent, pilose towards the base, as long as the head and thorax, 8-jointed, basal joint minute, 2nd a little the longest and stoutest, 3rd 5th and 7th minute, 4th and 6th of equal length, not longer united than the apical one, which is shorter than the 2nd (4).

Labrum ovate-conic, pilose, articulated at the middle and terminating in a trigonate lobe (3).

Rostrum as long as the head, and received into a groove beneath it, curved, attenuated, very horny and naked, triarticulate, 2nd joint a little longer than the 1st, 3rd only half the length and elongate-conic (2).

Mandibles and *Maxillæ* setiform.

Head subovate: eyes small globose and remote: ocelli 2, minute, remote and placed behind the eyes. *Thorax subtrigonate truncate*, the angles rounded, with a transverse suture at the middle, the anterior portion being gibbose: *scutellum small subtrigonate*. *Abdomen considerably broader than the thorax elongate ovate*, concave above, the sides being elevated, very convex beneath. *Elytra very small*, the apex and internal margin membranous, with a few nervures (9); wings smaller and membranous (*). *Legs, posterior the longest*: thighs, four anterior robust: *tibiæ simple*: *tarsi triarticulate*, basal joint the smallest sometimes concealed by the apex of the tibiæ, 3rd joint the longest in the hinder pair. *Claws and Pulvilli small and simple* (6, a fore leg).

SUBAPTERUS De Geer?—Curt. Guide, Gen. 1096, 1.—pedestris Wolff.

Black with a rosy tinge, clothed with minute depressed yellowish pubescence: eyes black: antennæ and legs pilose, the former pale castaneous variegated with fuscous: head with a transverse semicircular impression between the eyes, the margins of which and a line down the hinder part are dull pink: thorax with several black spots on the anterior portion, with a blackish streak on each side behind: *scutellum* elevated at the apex, with a pale ridge down the centre: *elytra* with the tips glossy and bronzed: *abdomen* with a line of black spots down each side of the back, the margin spotted with ochre: legs dull ferruginous spotted or banded with fuscous or black, especially the thighs.

In the Author's and other Cabinets.

I FOUND several specimens of *C. subapterus* on the sand hills at Pegwell Bay the middle of October; they had a peculiar scent resembling that of mellow apples, I think; some were running about, others lying quite still watching (like a cat for a mouse) apparently for flies on which the larvæ feed, and

many of them were paired. Mr. Dale has taken it near Sir George Rose's plantations at Mudeford, Hants, and Mr. Streatfield at Almer.

I believe this insect to be the *C. subapterus* of De Geer, but there has been so much confusion between this and the *R. apterus* of Fab. which is probably a Nabis, that I am somewhat doubtful about it: from Wolff's description I am pretty certain that it is the same as his *R. pedestris*, but his figure is not a good one. The number of joints in the antennæ and their form, together with the situation of the eyes and the size of the ocelli, and lastly the imperfect elytra and wings, are so very different to those of *Reduvius* that I have been obliged to form a new genus for our insect, but as I shall not illustrate the type of the family it will be as well to give the characters of

REDUVIUS Fab., Lat., Curt.

Antennæ twice as long as the head and thorax, setaceous, 4-jointed, basal joint short, 2nd long subclavate, 3rd twice as long as the 2nd and slender, 4th as long as the others united and very slender. *Rostrum* short stout and curved beneath the *Head* which is small; neck distinct. *Eyes* large ovate and not remote either above or beneath. *Ocelli* 2, large and prominent, close to the hinder margin of the eyes. *Thorax* trapezoid, anterior portion gibbose with a transverse suture. *Scutellum* rather large, trigonate and very acute. *Abdomen* very long, somewhat elliptic-oval. *Elytra* ample subcoriaceous. *Wings* ample, both having nervures. *Legs* similar to those of *Coranus*.

Personatus Linn.—Schæf. Icon. tab. 13. f. 6. 7.—*anulata* Har. Ex. t. 26. f. 5.

Length 8 lines: pale piceous brown, inclining to castaneous, hirsute, head and anterior portion of thorax blackish, antennæ rostrum and ocelli dark and dull ochreous: thorax with a deep channel down the middle, and one on each side the posterior portion, which is rugose-punctate; scutellum of similar texture, with an elevated line parallel to the sides, uniting and extending to the apex: elytra yellowish brown at the costa, with a short oblique white line at the middle: wings transparent and iridescent: abdomen ochreous at the disc: legs slightly clouded, base of tibiæ dull yellow.

It is said to be very fond of and to live upon the Housebug; it is also found on paling in May, in houses at Gravesend the end of June, and Mr. C. J. Paget informs me that they are attracted by a candle in summer evenings, when they are on the wing.

The Plant is *Atriplex portulacoides* (Shrubby Orache or Sea Purslane).



in: by J. K. Smith, Jan. 1915

DRYPTA EMARGINATA.

ORDER Coleoptera. FAM. Carabidæ.

Type of the Genus, Drypta emarginata Fab.

DRYPTA Lat., Fab., Clair., Curt.—Cicindela Oliv.—Carabus Rossi, Mars.—Sowerby.

Antennæ inserted before the eyes, rather longer than the head and thorax, filiform, pubescent, and 11-jointed, basal joint as long as the head and clavate, 2nd short, 3rd longer and slenderer than the following which are oblong, the terminal joint having a short and a long obtuse compound spine at the apex (6 a, the terminal joint more magnified).

Labrum transverse, pocket-shaped, with a small semicircular lobe and 2 bristles at the centre of the anterior margin, which is furnished also with a few short bristles and 2 long ones at each angle (1).

Mandibles porrected, narrow, curved and acute at the apex, with a small bifid tooth inside towards the base and a notch beneath it (2).

Maxille slender, terminated by a long narrow lobe, very much hooked and acute at the apex, the internal margin ciliated with short and strong spines. *Palpi*, *internal* shorter than the lobe, very slender and composed of 2 joints of equal length, *external* long and 4-jointed, basal joint small, 2nd long subclavate, following much shorter, 3rd clavate and a little longer than the 4th which is much broader, being somewhat securiform (3).

Mentum suborbicular, being very narrow and concave at the base, anterior margin deeply excised, forming two obtuse lobes. *Palpi* triarticulate, rather long and attached to 2 slender scapes, basal joint short, 2nd long and clavate, 3rd nearly as long and hatchet-shaped. *Lip* small and trilobed, central lobe the longest, linear and producing 3 strong bristles (4).

Head subtrigonal slightly elongated before : eyes small but prominent.

Thorax not broader than the head, cylindric, obovate, truncated at the base, with the angles a little prominent : scutellum triangular. Elytra thrice as broad as the thorax, oblong-ovate, the apex slightly emarginate. Wings ample. Thighs incrassated. Tibiæ, anterior notched on the inside. Tarsi 5-jointed, very pubescent beneath, anterior slightly dilated in the male, basal joint oblong, 2nd and 3rd somewhat cup-shaped in the fore feet, 4th bilobed, 5th clavate. Claws bent and acute, (5, a fore leg).

EMARGINATA Fab.—Curt. Guide, Gen. 21. 1.—dentatus Rossi.—chrysostomus Sowerby.

In the Cabinets of the British Museum and Mr. Vigors.

ALTHOUGH *Drypta* is related to *Odacantha* (Plate 227.) it is easily distinguished from it by very important differences in the trophi, as well as by the bilobed penultimate joints of the tarsi, and the great length of the basal joint of the antennæ is a character not to be met with in any of our *Carabidæ*. A considerable similarity is observable in the labrum and maxillæ of our genus and *Cicindela*, but the mentum and labium as well as the apical joint of the antennæ, are totally different to any which have come under my observation, and the singular structure of the latter has never been noticed by any other author; it seems to be formed for fastening itself by its horns to an object, but whether it be sexual or not I am unable to determine.

There are only 8 or 10 species of this pretty genus known, and it is remarkable that they should be distributed to the remotest parts of the Old World, from Europe to Africa and the East Indies, and even New Holland. The only species inhabiting Great Britain is

D. emarginata Fab.—*Curt. Brit. Ent. pl.* 454.

Bright greenish blue, trophi and antennæ rufous, the latter with the apex of the 1st and 3rd joints, sometimes the middle only of the latter, black; eyes blackish: head and thorax covered with large and deep punctures, the latter with a strong channel down the back; elytra pubescent and minutely punctured, with 10 firmly punctured striæ on each, that next the scutellum abbreviated, but longer than usual; abdomen black above; legs ferruginous-ochre, tarsi slightly fuscous.

Specimens of this rare and handsome Insect have been taken in May and June near Hastings, and at Feversham in Kent; it is stated also by Mr. Hope to have been taken under marine rejectamenta on Leith sands near Edinburgh. It is found in moist woods and marshy places at the roots of Sallows and under stones; it is very rare in the neighbourhood of Paris, but abundant near Bordeaux and Castelnau-dary in the South of France.

The Plant is *Hippophae rhamnoides* (Sea Buckthorn), communicated by James Paget, Esq., of Yarmouth, Norfolk.



Sub: by J. Currier June 1. 1855

AGLOSSA STREATFIELDII.

The Mendip Tabby Moth.

ORDER Lepidoptera. FAM. Pyralidæ.

Type of the Genus, Pyralis pinguinalis Linn.

AGLOSSA Lat., Curt., Goda.—Crambus Fab., Haw.—Pyralis Linn., Hub., Och.

Antennæ inserted on the crown of the head, close to the eyes, rather long and setaceous, clothed with scales above, pectinated in the male (1), each joint producing 4 short hairy rays, decreasing in length to the apex where the joints are only pubescent: simple in the female and pubescent beneath (1 ♀).

Maxillæ very small membranous, attenuated, curved, slightly pubescent at the base, with a few short scattered hairs (3); *Palpi* larger, porrected a little obliquely, clothed with scales and triarticulate, basal joint somewhat pear-shaped, 2nd oblong, 3rd the stoutest, subovate (3 a).

Labial Palpi projecting considerably beyond the head, nearly horizontal, the apex raised, clothed with short scales above and long beneath (4 a), triarticulate, 1st and 3rd joints of equal length, the latter slender, 2nd long and subfusiform (4 a).

Head rather small, with depressed scales: thorax not large, clothed with long hairy scales: abdomen linear in the male, tufted at the apex in both sexes, conical in the female and furnished with a retractile tube at the apex. Wings entire and obtuse, forming a triangle when at rest. Thighs, anterior short. Tibiæ, anterior very short, with a strong internal spine; middle pair spurred at the apex, as well as the posterior, which are long and have a pair of spurs at the middle: tarsi 5-jointed, basal joint long: claws minute.

Caterpillars with 6 pectoral, 8 abdominal and 2 anal feet.

Pupa inclosed in a silky cocoon covered with surrounding fragments. Dup.

STREATFIELDII Curt. MSS.—Curt. Guide, Gen. 983, 2^a.

Male, Lurid ochre, speckled with fuscous and rather glossy: antennæ ciliated beneath: palpi with a dusky spot on the inside of the 3rd joint at the base: eyes blackish: superior wings with an angulated brown bar at the base, a dot on the disc towards the costa, a fimbria of the same colour at the posterior margin, having the internal edge sinuated, with a row of black dots at the base of the cilia, where there is an ochreous line extending along the margin, nervures pale: inferior wings rather palest at the base.

In the Author's Cabinet.

It is due to M. Duponchel to observe, that in his characters of this genus, he says "Proboscis none or *only rudimentary*," for with this exception the existence of maxillæ has been universally denied by authors in the genus *Aglossa*, a name that unfortunately implies the absence of a proboscis or tongue, for it will be seen by referring to our *fig. 3.* that there are maxillæ although very small and imperfect.

The following species have been found in Britain:

1. *A. dimidiata* *Haw. Lep. Brit.* 372. 19.

Beginning of August in the warehouses of the East India Company in London, and the larvæ are stated to feed on the tea in the chests;—of course it is not a native insect.

2. *A. cuprealis* *Hüb. tab. 23. f. 153. ♀.*—*Goda. pl. 213. f. 5. ♀.*
—*capreolatus* *Haw.*

End of July and August in houses, Wimborne Dorset and Hampton Wick Middlesex, Mr. Dale. Snaresbrook Essex, Mr. Davis. Stables Coombe-wood, J. C.

- 2^a. *A. Streatfieldii* *Curt. Brit. Ent. pl. 455.*

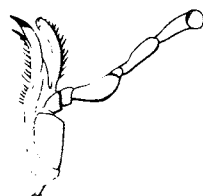
This remarkably distinct species was taken at Compton Bishop at the foot of the Mendip Hills Somerset, by the Rev. John Streatfield of Christ's College Cambridge, who most liberally presented it to me for the illustration of the genus *Aglossa*.

3. *A. pinguinalis* *Linn.*—*Hüb. tab. 4. f. 24. ♂.*—*Goda. pl. 213. f. 6. ♀.*—*pinguiculatus* *Haw. var.*

Middle of July, under stones, sides of Cliff Dover, J. C.; end of July to middle of August, houses, stables and offices.

The larva of this moth unlike most others feeds upon animal substances, such as butter and bacon, and is stated by Linnæus to inhabit even the human stomach, where it is one of the most dangerous of worms, possibly from its capability of perforating the intestines;—he adds that it may be expelled by an infusion of the *Lichen cumatilis*. Although it is many years since Linnæus made this remark, no one has either confirmed or contradicted it; we go on copying the statement, and know perhaps less on the subject than he did at that time: this surely must arise from the ignorance or negligence of those who have opportunities of observing the various living animals that inhabit the human body.

The Plant is *Vicia sylvatica* (Wood Vetch), from the Isle of Wight, communicated by James Vine, Esq.



Publ. by J. Curtis, June 1811.

GRYLLOTALPA VULGARIS.

The Mole-cricket, Jarr-worm, Eve Churr, or Earth Crab.

ORDER Orthoptera. FAM. Achetidae.

Type of the Genus, Gryllus Gryllotalpa Linn.

GRYLLOTALPA Ray, *Lat., Curt.*—Acheta Fab.—Gryllus (Acheta) Linn.

Antennæ inserted before the eyes, shorter than the thorax, slightly setaceous, pubescent and composed of from 60 to 110 joints; basal joint the stoutest, somewhat ovate, 2nd oblong, and larger than the following, which form very narrow rings at first, varying a little in their length, but towards the apex they are longer and somewhat globose (1, the basal joints).

Labrum exerted, flexible at the base, nearly orbicular and convex, the margin fringed with bristles (2).

Mandibles not large, elongate-trigonal, a little curved at the apex, with a triangular tooth below on the inside, and another at the centre, with a third behind it, smaller in one mandible than in the other; a longitudinal line of hairs down the outside and a few on the inside towards the base (3).

Maxillæ elongated, terminated by a curved acute horny lobe with a very slender and acute tooth beneath, and a long curved palpi-form lobe outside, fleshy at the apex. *Palpi* long and 5-jointed, 2 basal joints transverse, the others long and equal, 3rd the stoutest, compressed, very convex outside, 4th and 5th subclavate, the latter terminated by a globose fleshy membrane (4).

Mentum suborbicular. *Lip* elongated, terminated by a cordate fleshy lobe, from the base of which arise 2 stiff parallel lobes, and on each side 2 stout rigid and pilose ones, all of the same length, (these appear to be additional Palpi). *Palpi* inserted below them stout rigid and triarticulate, basal joint subglobose, 2nd and 3rd long of equal length, the former very pilose, the latter ovate and fleshy at the apex (5).

Head conical: eyes small, nearly lateral: ocelli 2, minute, placed between the eyes. *Thorax* ovate, concave before. *Elytra* partially lying one over the other, the cells at the base more irregular in the male (9♂), than in the female. *Wings* ample, reticulated, longer than the body, folded longitudinally and lying upon the back when at rest. *Abdomen* large nearly alike in both sexes, with a setaceous pubescent and hairy process on each side the penultimate joint, as long as the antennæ; the apex divided into 3 short lobes in the female: ovipositor none. *Legs*, anterior very strong and dilated, posterior formed for leaping. *Coxæ* large, especially the anterior (8 b). *Thighs*, anterior short and broad, with a sharp compressed tooth at the base (c); hinder pair long and incrassated. *Tibiæ* of fore legs trigonal palmate, the apex divided into 4 strong teeth (d); posterior long, furnished with strong spines outside towards the apex. *Tarsi* triarticulate, anterior compressed and trigonal, inserted on the side of the tibia, 2 first joints produced on the inside and acute, the 1st large, 3rd small ovate (e); 1st and 3rd joints long and the 2nd globose in the other feet. *Claws* simple and small, straight and unequal in the fore feet.

G. vulgaris Lat.—Curt. Guide, Gen. 446. 1.—*Gryllotalpa* Linn.

Velvety brown above, dark ochreous beneath; margins of thorax tawny: elytra dull yellowish white, brown towards the base and costa, nervures dark brown: wings dirty white, with the costa, a longitudinal stripe below it; and many of the nervures brown: anterior tibiae and tarsi subcastaneous, piceous at the apex.

The Mole-cricket is one of the largest Insects inhabiting Britain; its structure is wonderful and its œconomy most interesting. In its perfect state it is capable of flight, and I suspect, from the resistance the thorax and elytra offer to water, that it is able to swim. Its fore paws are beautifully adapted for burrowing in the ground, and their power is prodigious; according to Roesel it commonly employs a force equal to the counterpoise of 2 or 3 pounds: there is a large tooth at the base of the anterior thighs which meets the interior margin of the tibia when bent back, and this receiving and protecting the tarsus when in the act of digging or burrowing, altogether form a large toothed sort of hoe or shovel: they are able to run backward as well as forward with great facility in their burrows; and to warn them of approaching danger in retrograding, as Professor Kidd has justly observed, they are furnished behind with 2 appendages similar to their antennae, but not jointed*.

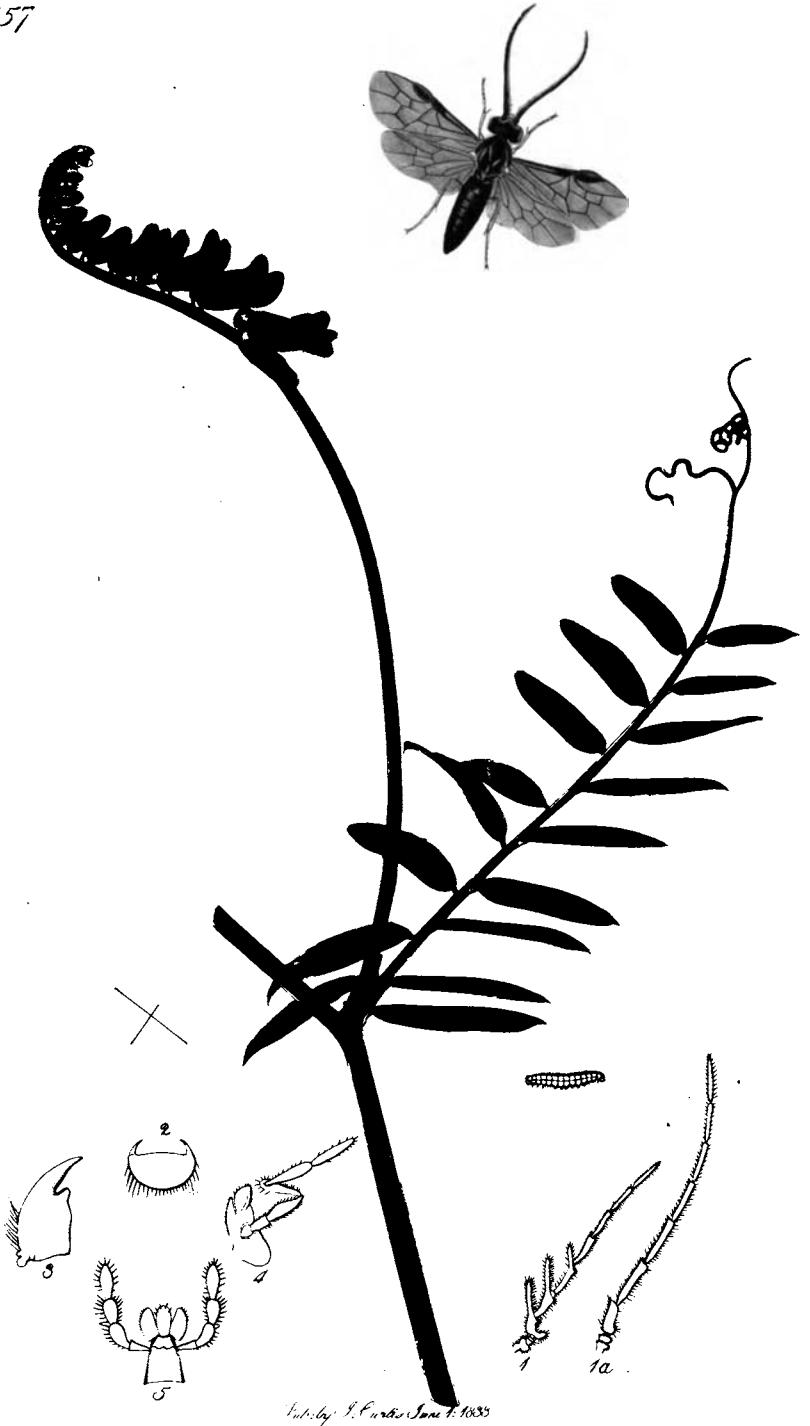
They live probably the year round, and are found in gardens, meadows, peat bogs, by the sides of ponds and streams, in dung-hills, pea and barley fields, &c., in most parts of England, particularly towards the south; they feed on potatoes, and the roots of grass and corn, sometimes causing great mischief, it is said, to the crops in Germany. Dr. Kidd says they prefer raw meat, and will attack each other, when the victor devours the flesh of the vanquished, but that they can live 9 or 10 months without food. I have kept a mole-cricket in a cage, but it has always managed to escape; and so interesting are its habits and history, that I should recommend those who amuse themselves by keeping mice and other animals to obtain some of the crickets, and they may be rewarded by some important and curious discoveries; for this insect is supposed to be the "Will o' the wisp," the "*ignis fatuus*," about which so much has been said and so little proved, the phantom that has eluded the vigilance of the naturalist and the curious for ages! They can emit a sound more shrill but softer than that of the frog, and Dr. Leach says the male sings in the evening by rubbing the elytra together.

I am not aware that any one has been able to detect an external sexual character; I am therefore happy in observing that after ascertaining the sexes by dissection, I discovered that the *elytra* are different. It is a female that I have represented flying, and on comparison it will be seen that the elytron (fig. 9 ♂), which is the right-hand one of a male, has nervures very different to the other sex: the same peculiar structure is visible in this as in *Acrydium* (pl. 439.), the inner edge having more the appearance of a costa than the outer one. The males seem to be uncommon; I have seen but 2, and in them the right-hand elytron lapped over the other, but in all the females it was the reverse.

The Plant is *Montia fontana* (Water Blinks).

* The reader will find an admirable paper on the Mole-Cricket in the Philosophical Transactions, by J. Kidd, M.D., F.R.S., &c.

457



Painted by J. Purdie June 1. 1885

CLADIUS PILICORNIS.

ORDER Hymenoptera. FAM. Tenthredinidæ.

Type of the Genus, Tenthredo difformis Panz.

CLADIUS Lat., Leach, Le Pel., Curt.—Pteronus Jur.—Lophyrus Klug.—Tenthredo Panz.

Antennæ inserted near the middle of the face, shorter than the body, tapering, pilose and 9-jointed, generally branched in the males; 1st and 2nd joints small, especially the latter, 3rd the stoutest and rather shorter than the following, curved and hooked at the base beneath, producing a branch above, the remainder nearly of equal length, the 4th and 5th being branched above (1): simple in the females.

Labrum semiorbicular hairy and ciliated (2).

Mandibles rather small curved and acute, notched on the inside, forming an obtuse tooth above the middle, pilose externally towards the base (3).

Maxillæ small, terminated by a suborbicular lobe, with an acute and ciliated one on the inside. *Palpi* long pilose and 6-jointed, basal joint subglobose, 2nd twice as long, 3rd much longer, attenuated from the middle, the remainder equally long but membranous and clavate, the terminal joint more strap-shaped (4).

Mentum small trapezate, sinuated before. *Labium* trilobed, centre lobe a little the narrowest and rounded. *Palpi* rather long, pubescent and hairy, 4-jointed, basal joint the slenderest, subclavate, two following subovate, 4th a little the longest, ovate-conic (5).

Head transverse: eyes lateral and prominent: ocelli 3. Thorax suborbicular. Abdomen cylindrical, conical at the apex. Wings ample, iridescent, superior having a large stigma; one marginal and 4 submarginal cells, the basal one small and nearly obliterated, 3rd short and receiving a recurrent nervure in the middle, discoidal cell triangular. Legs rather small: thighs short: tibiæ simple, spurred only at the apex: tarsi 5-jointed, basal joint the longest. Claws and pulvilli distinct.

Larva hairy with 6 pectoral, 12 abdominal and 2 anal feet.

Pupa inclosed in a strong glossy cocoon.

PILICORNIS Curt. Guide, Gen. 473. 5.

Male black, shining slightly pubescent, minutely punctured: antennæ nearly as long as the body, tapering, thickly clothed with fine short hairs on the under side (fig. 1, a), 2nd joint nearly as large as the 1st, cup-shaped, 3rd joint stout, curved at the base and acute on the upper side at the apex, 4th joint nearly twice as long, slightly clavate, the upper side forming an acute angle at the apex as well as 2 or 3 of the following: mandibles ferruginous at the apex: wings pale yellowish-fuscous, the costa and stigma fuscous brown; nervures piceous: tips of thighs and tibiæ whitish ochre, hinder pair with a fuscous line down the inside: tarsi brownish-ochre.

In the Author's Cabinet.

ALTHOUGH most of the males of *Cladius* may easily be recognised, the females are not readily distinguished from some of the *Nemati*, *N. pallipes* St. Farg. for example, in which the 3rd submarginal cell receives a recurrent discoidal nervure in the centre; this submarginal cell, however, is the longest in *Nematus*, and the 1st discoidal cell forms a less perfect triangle than in *Cladius*; and although the 1st submarginal cell is indistinct in *Cladius*, it is altogether wanting in *N. pallipes*, notwithstanding many of the *Nemati* have 4 submarginal cells.

Cladius was established by Latreille, in his "Considérations Générales", in 1810, and contains the following British species:

1. *C. difformis* Panz. 62. 10 mas.

Found from the end of May to the middle of August in Copenhagen Fields, Coombe-wood, on Blackheath, in Darent Lane; near Bristol; Glanville's Wootton and Stafford Dorset, J. C. Dale, Esq.; Tynemouth Northumberland, G. Wailes, Esq.

Two or three years since my friend Mr. C. J. Thompson gave me some larvæ* that he found at Fulham on the under side of the leaves of the China rose, eating small holes through them: they were thickly clothed with short upright hairs, the head was ochreous, with two minute black eyes: the body green with a deeper line down each side and a darker one along the back; the anal feet did not assist them in walking. They were full fed about the 28th of July, when they spun cocoons amongst the leaves, and hatched the 11th and 12th of August: one that was stung by an *Ichneumon* produced a *Tryphon* the 20th of August.

2. *C. rufipes* St. Farg. Mon. 58. 167.—*Faun. Fran. pl.* 12. f. 5.

3. *C. Morio* St. Farg. 58. 168.

Females beginning of July, Dover, J. C.

4. *C. pallipes* St. Farg. 59. 169.—*Faun. Fran. pl.* 12. f. 6.

5. *C. pilicornis* Curt. Brit. Ent. pl. 457 ♂.

This insect, which I at first thought had only been the female of *C. difformis*, I found near London in June; the specimens which I consider to be the females of this species have simple antennæ, but longer than in *C. difformis*.

6. *C. immunis*, and 7. *C. luteicornis* Ste. are undescribed.

The Plant is *Vicia Cracca* (Tufted Vetch).

* See the outline figure in the Plate, and pl. 11. tom. 1. of the *Annales de la Société Entomologique de France*.



Poppy by J. S. Smith July 1881.

HARPALUS RUFICEPS.

ORDER Coleoptera. FAM. Carabidæ.

Type of the Genus, Carabus ruficornis Linn.

HARPALUS Lat., Sturm, Dej., Curt.—Carabus Linn., &c.

Antennæ inserted before the eyes at the base of the mandibles, remote, as long as the head and thorax, filiform, pubescent, pilose and 11-jointed, 1st and 2nd joints naked, the former the stoutest, the latter the shortest, 3rd nearly as long as the 1st and a little longer than the following, which are oblong-ovate, the terminal joint subelliptic (6).

Labrum subquadrate, the angles rounded, the anterior margin ciliated, furnished with 6 bristles and slightly concave at the centre (1).

Mandibles subtrigonal, curved externally and acute at the apex, one having a small tooth above, the other below the centre of the internal margin, and near the base is a small ciliated membrane (2).

Maxillæ slender, terminated by a bent acute hook, the internal margin ciliated with strong bristles. *Palpi*, *internal* as long as the lobe, slender and biarticulate, the joints of equal length, the 2nd a little curved: *external* long and 4-jointed, basal joint minute, 2nd and 3rd nearly of equal length, the former curved and stout, the latter clavate, 4th a little shorter, subfusiform-truncate, with a vesicle at the apex (3).

Mentum transverse, short, deeply notched before with an obtuse tooth in the centre, the lateral lobes subtrigonal and pubescent.

Labium long and narrow, the apex trifid, the central lobe horny quadrate and producing two bristles, the lateral ones rounded and membranous. *Palpi* rather slender, attached to 2 long and stout scapes, pilose and triarticulate, basal joint minute, 2nd and 3rd long, the latter rather the shortest and subfusiform (4).

Head *suborbicular-quadrate*: eyes *small, lateral and prominent*. Thorax *broadest at the middle or base, the posterior angles not rounded*: scutellum *minute*. Elytra *elliptical or ovate, more or less emarginate at the apex*. Wings *ample*. Thighs *short and stout*. Tibiæ *spurred at the apex, 4 posterior often spiny, the 1st pair emarginate on the inside*. Tarsi *5-jointed, dilated in the 1st and 2nd pair in the males, basal joint as large as the 2nd, 4th bilobed, 5th long and clavate*. Claws *simple and acute* (5, a fore leg of male).

RUFICEPS Oeskey.—Curt. Guide, Gen. 44.—Hottentotta var. Dej.

Smooth, shining, ochreous, with a castaneous tinge: head castaneous with 2 remote impressions between the eyes; labrum and tips of mandibles blackish; antennæ and palpi ochreous: thorax transverse-quadrate and piceous, the sides and angles pale castaneous; anterior margin concave, the angles rounded, posterior angles rectangular but rather obtuse, a channel down the back, the base thickly punctured, with a shallow fovea on each side: elytra piceous, the margin castaneous; with 8 striæ on each, the 1st furcate at the base, the 8th bearing some impressions largest towards the apex, which is scarcely emarginate: abdomen piceous above at the tip: legs ochreous, the tarsi slightly ferruginous.

In the Cabinet of Mr. D. Serrell.

THE Harpali are generally found under stones, and in gravel and sand pits, where they live upon other insects, and not unfrequently on each other.

Harpalus approaches very near to Ophonus; and the latter group is considered only as a division of the former by Dejean: the typical trophi, however, are different, as will be seen by referring to our plate 191. Restricted as Harpalus is at present, there is considerable variety in their figure: they are convex or depressed; the antennæ are much shorter in some than in others; the head is smaller; the thorax sometimes narrowed before, at others behind, the elytra are either comparatively short or long; and they have ample or imperfect wings. The genus is thus divided, and I must refer to the Guide for a list of the species.

A. ANYSODACTYLUS Dej.

First joint of the tarsus in the 4 anterior feet of the males smaller than the second joint.

10. *H. pœciloides* Ste.—*virens* Dej.

2. *H. binotatus* Fab.—Sometimes seen flying in the sunshine.

B. HARPALUS Lat.

First joint of 4 anterior feet in the males as large as the 2nd.

1. *H. ruficornis* Fab.—The *C. griseus* of Panzer is a very distinct insect, of which I have never seen a British specimen. We took several at Fontainebleau, which flew into our chambers at night, attracted by the light of candles.

3^a. *H. tenebrosus* Dej.—I took a specimen in the Isle of Wight the beginning of September 1826.

27^a. *H. ruficeps* Oeskey.—*Curt. Brit. Ent. pl.* 458. ♂.—Dejean supposes this to be an immature variety of *C. Hot-tentotta* Duft. The only specimen I have seen was taken last August by my friend Dalton Serrell, Esq. at Barule in the Isle of Man; and as it has no appearance of immaturity, I have given it as a distinct species.

35^a. *H. Melampus* Duft.—*Sturm, pl.* 80. D.—I first discovered this fine insect under stones at the back of the Isle of Portland, the 14th of May. Dejean considers it to be the same as *H. depressus* of Sturm; but I have never seen any Harpalus so broad as my specimens.

44. *H. rufimanus* Mars. is only a variety, I believe, of *H. tardus*.

45. *H. stygius* Wilk. is the female probably of *H. serripes*.

C. PANGUS Zieg.

Terminal joint of palpi cylindrical or slightly oval. Dej.

9. *H. scaritides* Zieg.—*Sturm, tab.* 91. C.

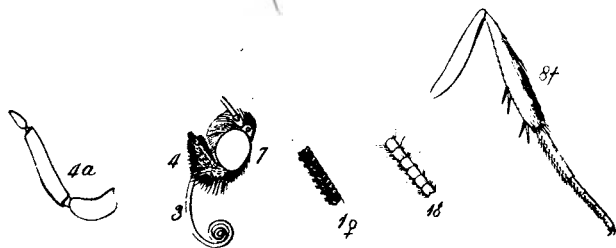
D. ACTEPHILUS Ste. MSS.

Thorax transverse, posterior angles rounded; anterior legs stout; antennæ rather short.

8. *H. picipennis* Sturm, *tab.* 90. A.—May and June, under stones, sandy places Chesil-bank, Isle of Portland.

7. *H. pumilus* Sturm, *tab.* 90. B.—Found with the last.

The Plant is *Papaver Argemone* (Long rough-headed Poppy).



Tab. by J. Currier July 1. 1855

NONAGRIA VECTIS.

The Isle of Wight Wainscot Moth.

ORDER Lepidoptera. FAM. Noctuidæ.

Type of the Genus, Noctua Typhæ Hüb.

NONAGRIA Och., Goda, Curt.—Noctua Hüb., Haw., &c.

Antennæ inserted on the crown of the head close to the eyes, rather long in the male, each joint producing beneath a transverse line of hairs (1 ♂): simply pubescent beneath in the females (1 ♀).

Maxilla spiral, not very long (3).

Labial Palpi projecting a little beyond the head, thickly clothed with scales, very short on the apical joint (4); triarticulate, basal joint the stoutest and curved, 2nd twice as long and slightly attenuated, 3rd small elongate-ovate (4 a).

Males smaller than the females. Head subtrigonal thickly clothed with short scales: eyes rather prominent and orbicular: ocelli 2. Thorax scarcely crested, trilobed behind. Abdomen long, cylindric and slightly tufted at the apex in the male. Wings deflexed when at rest; superior not longer than the body, somewhat elongate-trigonal, the apex acute, the inferior angle rounded; inferior wings much shorter than the body, the margin slightly sinuated and dentated. Legs stout, anterior very short: tibiæ, anterior with an internal spine, the others compressed, thickly clothed with scales and terminated by very unequal spurs, the posterior pair having similar spurs above the apex: tarsi longer than the tibiæ, 5-jointed, basal joint long: claws minute (8 †, hind leg).

Obs. The dissections are taken from *Noctua crassicornis* Haw.

Larvæ with 6 pectoral, 8 abdominal and 2 anal feet, long slender and fleshy.

Pupæ fusiform, inclosed in a slight web in the stalks of Reeds. Och.

VECTIS Curt. Guide, Gen. 869. 6.

Pale ochreous: underside of antennæ ferruginous: eyes fuscous: abdomen freckled with black, the down at the base white: superior wings alternately marked with numerous longitudinal ochreous and cream-coloured lines, the nervures being pale; the central nervure suffused with reddish ochre, as well as the one next the interior margin which is slightly freckled with black; at the disc is a fuscous dot and an imperfect curved line of similar dots between it and the posterior margin, which bears 7 black dots, the posterior angle emarginate: inferior wings white, slightly tinted with ochre and freckled with brown below the centre, where there is a pale spot shining through from beneath, the obscure line of fuscous dots is continued across these wings, they are somewhat oval, and there are a few dark dots on the margin; the underside of the tarsi and the spines are ferruginous. Beneath cream colour, partially freckled with fuscous and having a dark dot, near the centre of each wing.

In the Cabinets of Mr. Dale and the Author.

OCHSENHEIMER's genus *Nonagria* is so nearly related to *Leucania*, that, excepting the strongly ciliated antennæ of the males, there is no character in the former that is not approached too nearly by the latter to justify their being distinguished as genera.

The following are British species of this rare genus, two of them having been first recorded in my Guide:—

1. *N. Typhæ* Hüb. 88. 415.—*Goda*, pl. 106. 8.—*Arundinis* Fab.

The larva lives in the stems of bulrushes, and closes the hole, by which probably in most cases it entered, with a silk web. It has been ascertained by M. Duponchel, that although the caterpillars live in an ascending attitude, viz. with their heads uppermost, the chrysalis is always placed the reverse, with the head downwards, the hole for its exit being below it! The moth appears the middle of August.

2. *N. Cannæ* Och.—*Goda*, 106. 3.—*Algæ* Esp.—*Arundinis* Hüb. 83. 386 and 387.

The caterpillar lives also in *Typha latifolia* and *Carex riparia*. The moth appears the beginning of August.

As the antennæ are said to be filiform in both sexes, it is doubtful if this moth does not belong to the genus *Leucania*.

3. *N. pilicornis* Haw.—*Ste.* pl. 29. f. 1.

Taken near Croydon in September.

4. *N. crassicornis* Haw. 173. 36.

A male was taken by Mr. J. Hooker many years since in Norfolk; and the female in my possession was captured by the late Mr. T. Mack, in a marsh at Hellesdon in the same county.

5. *N. lutosa?* Hüb. 48. 232.

I have a specimen agreeing pretty well with the above figure, that was taken in Derbyshire.

6. *N. Vectis* Curt. *Brit. Ent.* pl. 459.

I took a female amongst reeds and rushes near Black-gang Chine, in the Isle of Wight, the end of July; and another was captured by Mr. B. Standish at Whittlesea Mere, the middle of the same month.

The Plant is *Peplis Portula* (Water Purslane).



ORYSSUS CORONATUS.

ORDER Hymenoptera. FAM. Siricidæ Curt., Uroceridæ Lat.

*Type of the Genus, Oryssus coronatus Fab.*ORYSSUS Lat., Fab., Jur., Leach, Curt.—*Sphex Scopoli*.—*Sirex Panz.*

Antennæ inserted beneath the clypeus, at the base of the mandibles, shorter than the head and thorax, curved, compressed and 11-jointed in the males, "2nd and 3rd joints obconic, the former very short, the latter longer than the following, the 4th and remainder nearly equal in length, terminal joint with the apex acuminate." Lat.—10-jointed in the female, and slightly increasing in breadth to the apical joint; basal the stoutest, subglobose, 2nd small ovate, 3rd much longer spatulate, 4th and 5th short, subquadrate, 6th the longest, 7th and 8th shorter, 9th longer than the 8th, somewhat sabre-shaped, 10th small and slender, pubescent and truncated (1 ♀).

Labrum exserted, coriaceous, small suborbicular, flat, ciliated before with soft hairs. Lat.—Lobe membranous, subovate, the apex elongated, strap-shaped (2).

Mandibles somewhat wedge-shaped, rounded at the apex and pubescent, clothed externally with longer hairs (3).

Maxillæ terminated by a horny curved process, pilose externally, with a large suborbicular membranous lobe on the inside. *Palpi* long, pubescent and 5-jointed, basal joint long, subclavate, 2nd short obconic, 3rd longer and stouter than the 1st, 4th the longest linear, 5th the slenderest and as long as the 1st (4).

Mentum small, cylindric, slightly narrowed at the middle. *Lip* as large as the mentum, compressed, subconic and slightly concave above. *Palpi* much smaller than the maxillary, rough with short hairs, triarticulate, basal joint clavate, 2nd minute, 3rd a little longer and broader than the 1st, truncated obliquely (5).

Head orbicular, with a crown of tubercles on the top: eyes ovate, more remote before than behind: ocelli 3 in triangle. Thorax not larger than the head. Abdomen sessile, subcylindric, slightly clavate and conical at the apex. Ovipositor concealed in a groove beneath. Wings rather short, superior with one long marginal, and 3 imperfect submarginal cells, the 1st and 2nd being united, the 3rd very long. Legs rather small: thighs short. Tibiæ all furnished with 2 spurs at the apex in the male, and the tarsi more elongated and 5-jointed. Tibiæ of the female, anterior very short and attenuated at the base, with a notched spine on the inside of the apex, and an oblique suture above the middle, appearing like a joint; the others angulated and acute at the apex on the outside, the posterior slightly serrated. Tarsi triarticulate in the fore feet, basal joint long and rounded, 2nd the shortest, inserted on the side before the apex of the 1st, pear-shaped but truncated obliquely, 3rd longer and clavate, the others 5-jointed and spined beneath at the apex, basal joint long, 4th minute. Claws and pulvilli small (8, fore leg of female).

CORONATUS Fab., Curt. Guide, Gen. 480. 1.—*Vespertilio Klug.*, Panz.*In the Cabinet of the British Museum.*

THIS curious insect bears a considerable resemblance to the Tenthredinidæ, but is nearest allied to *Sirex*, as is evident by the triarticulate labial palpi: it may therefore be viewed as the connecting link of *Xiphydria* and *Sirex*. The mouth affords some further peculiarities; and I regret that I did not discover the external part of the labrum, having found only a membranous lobe inserted beneath the clypeus: neither could I procure a male for examination. The mandibles are rounded and spoon-shaped, the external lobe of the maxillæ is rigid, and the 2nd joint of their palpi the smallest, and the labium is not divided, but hollow and similar to the *Ichneumonidæ*.

Oryssus is very peculiar in its structure: the sexes vary considerably; the antennæ, which are inserted under the clypeus, are 11-jointed in the male, and 10-jointed in the female; the oviduct is capillary and rolled up spirally in the abdomen, as it is, I think, in some of the *Cynipidæ* and *Diplolepidæ*; the submarginal cells are only 2, but 3 are indicated; the anterior tibiæ are so singularly formed towards the apex in the females as to appear like a basal joint to the tarsi, which are only triarticulate in the fore feet of this sex.

The only species of the genus is

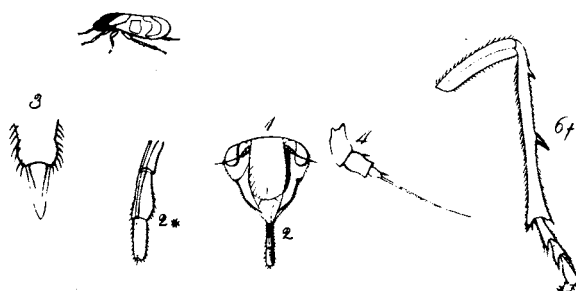
O. coronatus *Fab.*—*Curt. Brit. Ent. pl.* 460. ♀.—*Coq. tab.* 5. 7. ♂ et ♀.

Black shagreened: eyes fuscous, a white stripe on each side the face; antennæ with the 3rd joint except at the base, the 4th, 5th, and a spot at the base of the 6th white; abdomen smooth and rufous, excepting the 2 basal joints: wings, superior with the apical portion fuscous, excepting the tip which is transparent as well as a band beyond the stigma, this as well as the nervures is piceous; a spot at the apex of the thighs and an abbreviated stripe outside the tibiæ white; tarsi and inside of the posterior tibiæ subferruginous.

Two specimens of this rare insect, taken by Dr. Leach, are in the British Museum: the male is smaller than the female: the former was captured in Devon, the latter in Darent Wood, in July. It is said to inhabit sandy situations: and the discovery of these insects in England is very remarkable; for I believe they have never been found to the North of Brives in the South of France.

Latreille says these insects are lively and restless: they repose in preference upon old trees, exposed to the sun. They run over a portion of their height with rapidity in a straight line, taking, when they are alarmed, a lateral or retrograde direction. Scopoli found them upon fir-trees, and Latreille upon old hornbeams in the spring.

The Plant is *Phalaris canariensis* (Manured Canary-grass).



Illustrated by J. S. G. in the July 1862

CERCOPIS VULNERATA.

ORDER Homoptera. FAM. Cicadidæ.

Type of the Genus, Cicada sanguinolenta Linn.

CERCOPIS Fab., Lat., Curt.—Cicada Linn., &c.

Antennæ inserted in a cavity on each side the face, near the inner margin of the eyes, minute, 4-jointed, basal and 2nd joints short and stout, the 1st a little the largest, truncated obliquely, the latter subovate-truncate, 3rd small ovate-conic, producing a moderately long compressed naked seta, and a nearly parallel transparent spine also at its base (4).

Labrum minute, elongate-trigonal, the sides thin and transparent (3).

Mandibles and *Maxillæ* stout and setiform.

Labium not so long as the head, pilose and triarticulate, basal joint the smallest, 2nd the longest, clavate, 3rd a little longer than the 1st, oblong and rounded at the apex (2*).

Head trigonal, angulated on the forehead; clypeus rounded and transversely striated (1, the face): eyes small, globose and lateral: ocelli 2, at the hinder part of the head. Thorax much broader than the head, the sides angulated slightly emarginate at the base: scutellum trigonal-acuminate. Abdomen short, trigonal-conic. Wings rounded, deflexed, especially towards the apex; superior coriaceous; inferior more or less transparent with several longitudinal nervures, united by a transverse one before reaching the margin. Legs, anterior short, hinder pair formed for leaping. Thighs short. Tibiæ, posterior the longest, with a tooth outside near the base, another at the middle and several at the apex. Tarsi short and triarticulate, basal joint nearly concealed in the anterior, a little the longest in the posterior pair, terminal joint clavate. Claws and Pulvilli distinct (6†, hind leg).

Obs. The dissections are taken from the species figured.

VULNERATA Rossi F. E. 2. 350.—Curt. Guide, Gen. 1061. 2.—sanguinolenta Panz. 33. 10.—Don. 2. pl. 54. 1.—dorsata Ahr. 1. 21. var.?

Black, head, thorax and elytra thickly punctured, the edges of the segments of the body and the apex partially red: elytra with an oblong scarlet spot on each side the scutellum, another somewhat rounded one on the disc of each, and a 3rd large lunulate one towards the apex, meeting on the back: wings fuscous, except towards the upper margin, where 3 or 4 of the nervures are scarlet as well as the base.

In the Author's and other Cabinets.

THE species just described is the only one that inhabits Britain; yet the *C. sanguinolenta* has always been recorded as

such; and to prevent further confusion I shall here characterize it.

1. *C. sanguinolenta* Linn. S. N. 2. 708. 22. — *Ahr. fas.* 4. t. 20.

Scarcely so large as No. 2, black, elytra with a long scarlet spot at the base of each, a round one on the disc and a narrow lunulate one towards the apex: abdomen red, banded beneath with black, and a row of red spots on each side of the same colour; apex of thighs and base of tibiæ red.

I took specimens of this insect, which is not found in the North of Europe, at Nismes and Montpellier.

Linnaeus's description of *C. sanguinolenta* is so characteristic, that it is surprising how the two species could have been confounded; but Fabricius having once made the error, it has been echoed by every compiler since, from Dr. Turton to Mr. Stephens. The species were separated by Rossi, and were first recorded as distinct in my Guide.*

2. *C. vulnerata* Rossi. — *Curt. Brit. Ent. pl.* 461.

Taken in various parts of England in June and July, generally upon the Fern; but it also frequents grass, the Alder and Sallow. It is not uncommon in open places in the New Forest and Darent Wood. Mr. Dale takes it at Glanville's Wootton; and Mr. Denny has captured a variety near Cambridge, I understand.

The Plant is *Lycopus europæus* (Water Horehound).

* As there is space for an observation or two, I wish in justice to myself to state, that I am preparing a second edition of my Guide, which cannot fail to resemble Mr. Stephens's Nomenclature, for this palpable reason,—that he has not contented himself with correcting it from my Guide, and copying column after column from it, but he has actually adopted the style and plan of my work: so that his book now bears the exact resemblance of mine, and is rather a second edition of *my* Guide than of *his* Nomenclature;—a very modest act for one who has brought an action against another for the same trespass!

I may add, that when I began my Guide, Mr. Stephens, I believe, had no idea of printing a Nomenclature; I therefore could have no intention of interfering with his undertaking; and in truth my little Guide could not affect the sale of his ponderous Catalogue, and that was not published when the first sheet of the Guide appeared.

From the assistance promised me by some of our ablest entomologists, I hope to make the second edition of my Guide much better than that parasite which has been grafted upon it, and to render it by far the most useful and complete Catalogue of British Insects that has ever appeared.



Ant. by J. C. Smith. Aug. 1. 1855.

FALAGRIA THORACICA.

ORDER Coleoptera. FAM. Staphylinidæ.

*Type of the Genus, Staphylinus sulcatus Oliv.*FALAGRIA *Leach, Manner., Curt.*—*Aleochara Grav., Gyl.*—*Staphylinus Oliv.*

Antennæ inserted before the eyes, rather remote, long, clavate, pubescent and 11-jointed, basal joint stout and ovate, 2nd the longest, clavate, 3rd nearly as long as the 1st clavate-truncate, the following somewhat turbinate, increasing in diameter to the apical joint, which is ovate-conic and stouter than the 1st (6).

Labrum transverse, the sides rounded and producing a few bristles, anterior margin nearly straight, a small portion of the middle transparent and ciliated (1).

Mandibles similar, subtrigonal, curved and acute at the apex, the internal margin very thin towards the base (2).

Mazilla formed of two lobes, one terminated by a rigid and pubescent process, the other broad flat and rounded. *Palpi* 4-jointed, basal joint small, 2nd and 3rd pilose, the former long and clavate, the latter the longest and stoutest, narrowed at the base, 4th shorter than the 2nd and slender (3).

Mentum rather large trigonal, truncated before. *Lip* very short. *Palpi* remote and small, attached to stout scapes at the external angles of the lip, pilose, triarticulate, basal joint obovate, 2nd twice as long, slender and clavate, 3rd a short bristle (4).

Head suborbicular: eyes small and lateral. Thorax scarcely larger than the head, somewhat obovate: scutellum minute. Elytra subquadrate, considerably broader than the thorax, the base not plicated, the angles acuminate. Wings ample. Abdomen half the length of the insect, narrower than the elytra, slightly dilated before the apex, the sides elevated. Legs simple, compressed: tibiae slender: tarsi 4-jointed, basal joint long in the posterior pair, 2nd and 3rd minute, 4th long, clavate: claws slender and curved (5, a fore leg).

THORACICA *Kirby's MSS.*—*Curt. Guide, Gen. 230.*

Black, glossy, clothed with very short pubescence and minutely punctured; head very smooth and shining, with a short channel on the crown: palpi and base of antennæ ochreous: thorax rufous, with a deep channel down the back, terminating in a fovea at the base: elytra thickly and minutely punctured, inclining to castaneous, the hinder margin pale: abdomen rather pilose towards the apex, the edges and sides of the segments sometimes castaneous, especially towards the base. Legs dark ochreous.

In the Author's and other Cabinets.

THE Falagriæ are more allied to the Aleocharæ and less to the Pselaphidæ than might be supposed from their habit and contour: they are distinguished from Autalia, to which they are

most nearly allied, by the form of the thorax, which is somewhat globose-obovate or obcordate, being broadest before; whereas in *Autalia* it is reverse top-shaped, being broad at the base and pointed at the top: in this genus, also, there are, at the base of the elytra, longitudinal channels, which are wanting in our genus.

Although the tarsi appear to be only 4-jointed, I think there may be a suture dividing the long terminal joint.

These little beetles are sometimes met with on the wing in fine weather: and the following are British species:—

1. *F. thoracica* Kirby.—*Curt. Brit. Ent. pl.* 462.

This pretty species was first discovered by Mr. Kirby on the sea shore of Norfolk in August; Mr. Rudd has since taken it under stones on the sea coast at the opening of Castle Eden Dene, Durham; and Mr. Davis captured specimens the 7th of last August, in a sand-pit near Birch Wood, Kent.

2. *F. floralis* Spence, *Ste.*, and 3. *F. nitens* Kirby, *Ste.*, I do not know: the latter is said to have been taken in Norfolk by Mr. J. Hooker.

4. *F. polita* Rudd's MSS.—Smaller and narrower than No. 1: black and very shining, sparingly clothed with short yellowish hairs: palpi lurid; base of antennæ ochreous; thorax with a very deep channel down the back and a transverse row of punctures at the base: scutellum elongated, with a broad channel down the middle; elytra inclining to castaneous behind: legs ferruginous ochre.

Taken by Mr. Rudd.

5. *F. flavipes* Linn.?

Occurring in Suffolk and near Bristol.

6. *F. picea* Grav. *Micr. p.* 75. n. 11.

Found near Bristol and in Devonshire.

7. *F. nigra* Grav. *Micr.* 75. 12.

From Suffolk and near Bristol.

8. *F. obscura* Grav. *Micr.* 74. 10.—*Obs.* There is a fovea at the back part of the head not noticed by authors.

Found under stones in sunny places, early in the spring, in Battersea Fields, Norfolk, Suffolk, &c.

9. *F. confinis* Kirby, *Ste.*

Taken in Norfolk and Suffolk.

10. *F. sulcata* Grav. *Mon. p.* 151. 7.

At the roots of grass, on banks, in meadows, in April and May, Battersea Fields.

11. *F. sulcata* Payk. *Oliv.* 3. No. 42. pl. 6. f. 52.—*Grav. Micr.* 73. 9.

Taken near London, in Norfolk, Suffolk, and Devonshire.

The Plant is *Galanthus nivalis* (The Snowdrop), communicated by J. C. Dale, Esq.



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ADELA FRISCHELLA.

Frisch's Japan or Long-horn Moth.

ORDER Lepidoptera. FAM. Tineidæ.

Type of the Genus, Tinea viridella Fab.

ADELA Lat., Curt.—Nemophron Hoff.—Nemapogon Schr.—Capillaria Haw.—Alucita Fab.—Tinea Linn., Hub.

Antennæ inserted in front of the face, contiguous, porrected, very long, especially in the males, setaceous, composed of innumerable joints, clothed with scales, a few of the basal joints stout and hairy (1).*Maxillæ* spiral, twice or thrice as long as the labial palpi, clothed externally with long hairs nearly from the base to the middle (3).*Palpi* minute and biarticulate (a).*Labial Palpi* slender, sparingly clothed beneath with long hairs and curved upward: triarticulate, 1st and 2nd joints nearly of equal length and thickness, 3rd half as long, very slender and subfusiform (4 and 4*).*Head transverse and hairy: eyes lateral, sometimes much larger in the male than female, and approximating on the crown* (7). *Thorax subovate, sometimes hairy. Abdomen short in the males, longer and attenuated to the apex in the females. Wings, superior lanceolate, inferior ovate-lanceolate, cilia rather long. Legs slender. Thighs small. Tibiæ, anterior short, with an internal spine, the others long, especially the posterior, which are furnished with two pair of spurs* (8†). *Tarsi long and 5-jointed. Claws minute.**Obs. The head (figures 7 and 7*) are from A. fasciella.*

FRISCHELLA Linn.—Curt. Guide, Gen. 1002. 4.

Shining golden-ochre: antennæ rather longer in the male than female, silvery or white, the basal portion fuscous, rosy at the base, with some short black pile on the inside in the male; head clothed with ochreous hairs: thorax metallic: superior wings with a crimson tinge on the costa and cilia, and an ovate paler spot, dotted with black, towards the apex: inferior yellowish crimson; cilia metallic at the base, fuscous at the apex.

In the Author's and other Cabinets.

SOME of these charming little Moths are most splendid in their colours: they delight to sport about in the sun in woods, where they fly in small swarms like gnats.

The long setaceous antennæ, hairy heads and palpi, and colour of the wings in some, as well as the manner in which they rest, give the Adelæ an aspect very similar to *Leptocerus* (pl. 57), and they may be considered one amongst the many approaches that the Lepidoptera make to the Trichoptera.

The maxillæ are remarkable for the long hairs with which they are clothed, and the labial palpi were never before detected.

The following are British species of the genus *Adela* :—

1. *Robertella* Linn.—*pilella* Hüb. *Tin. pl.* 34. f. 235.
Chalky places near Cottingham, Yorkshire, b. June.
2. *Panzerella* Fab.—Hüb. 61. 412.—*Swammerdamella* Hüb. 19. 127. ?
End of May to middle of June, chalky places, Kent, Colingborne Wood, Wilts, and near Teignmouth, Mr. Dale.
3. *Swammerdamella* Linn.—Hüb. 62. 410 & 411.
Beginning of May, amongst furze-bushes, Coomb Wood, Mr. C. J. Thompson, and female on birch-trees, J. C.; Glanville's Wootton, Mr. Dale.
4. *Frischella* Linn.—Curt. *Brit. Ent. pl.* 463. ♀.—Hüb. 63. 425 & 426.—These are much smaller than our British specimens, the natural size of which is given in the outline figure represented walking.
On flowers in Kent: male, May 9th, Glanville's Wootton; and female, end of July, Grymes Dyke, Mr. Dale.
5. *viridella* Fab.—*sphingiella* Hüb. 19. 129.—*Reaumurella* Linn.?—He says "*Frons alba*," which makes it doubtful whether this be his insect; yet I am disposed to believe that it is, as the female of *A. viridella* has a pale crown to the head.
6. *Scabiosella* Scop.—*viridella* Hüb. 19. 128.—*cuprella* Haw.
On flowers of the Scabious, Darent Wood and near Exeter.
- 6*. *cuprella* Fab.—Hüb. 27. 185.
A species new to Britain, and taken by Mr. Dale at Glanville's Wootton the end of May, will, I think, prove to be this insect.
7. *fasciella* Fab.—*Schiffermyllerella* Hüb. 19. 132.
Beginning and end of June, Darent Lane and Gravesend about nettles, J. C.; Axbridge, Somerset; Clapham-park Wood, Bedfordshire; b. July near Weymouth; b. August, Knowle Hill; and Middle-marsh Woods, Dorset, Mr. Dale.
8. *DeGeerella* Linn.—Don. 8. 267. 1 & 2.—*striatella* Fab. var.?—*Geerella* Hüb. 19. 130. & 67. 446.
B. June and b. July borders of woods; near Southampton, J. C.; Bagley Wood, Berks; New Forest, and Monk's Wood, Mr. Dale.
9. *Sulzella* Linn.—Hüb. 18. 121.—*Podælla* Linn. is the female probably.—Don. 8. 267. 3.
June, hedges, moist lanes, and flying round an oak at Wrentham, Suffolk, J. C.; end of May, Glanville's Wootton.
10. *Latreillella* Hüb. 52. 355 & 356.
Taken by Mr. Weaver.

The Plant is *Scirpus* (*Isoleptis*) *setaceus* (Least Club-rush), communicated by J. J. Bennett, Esq.



Pub. by J. Currier (Aug. 4, 1912)

MESOCHORUS SERICANS.

ORDER Hymenoptera. FAM. Ichneumonidæ.

*Type of the Genus, Mesochorus splendidulus Grav.***MESOCHORUS** Grav., Curt.

Antennæ as long as the insect, slender, filiform and pubescent, inserted in a cavity towards the middle of the face, composed of about 40 joints, basal joint the stoutest, 2nd ovate, 3rd minute, 4th long, the remainder rapidly decreasing in length, the apical joints small and ovate (1*a).

Labrum small, semicircular and ciliated with bristles, with a fleshy pubescent, triangular lobe somewhat acuminate at the apex (2).

Mandibles small, curved, bifid at the apex (3).

Maxillæ terminated by two rounded lobes, the superior very pilose. *Palpi* very long, pilose and 5-jointed, basal joint clavate, a little the shortest, 2nd dilated internally, the remainder slender and linear, the 3rd being the longest (4).

Mentum somewhat obovate. *Lip* small, semicylindric, slightly emarginate and pubescent. *Palpi* rather long, pilose and 4-jointed, 1st and 2nd joints nearly of equal length, the latter dilated internally, 3rd and 4th longer and clavate, the latter the slenderest (5).

Head short and transverse, face orbicular (1*) : eyes elliptical : ocelli 3. Thorax not broader than the head, gibbose, ovate : scutellum subtriangular or semiovate. Abdomen attached by rather a long petiole, fusiform slightly convex clavate in profile, scarcely so broad as the thorax, furnished at the apex in the male with 2 rigid and attenuated spines (7) : ovipositor exerted rather stout and longer than the style in the male (6). Wings, superior, with the stigma rather small, the marginal cell not large and conical, areolet large and rhomboidal with a short pedicle : inferior sometimes with the lower nervure furcate towards the anal angle. Legs not short. Thighs, posterior the stoutest. Tibiæ spurred at the apex. Tarsi 5-jointed, basal joint the longest. Claws and Pulvilli small.

SERICANS Haliday's MSS.—Curt. Guide, Gen. 508.

In the Cabinet of Mr. Haliday.

THE large rhomboidal areolet, connected with the lower nervure of the marginal cell by a short pedicel, and the large curved internal cubital cell, are good characters to identify the Mesochori; and the males of this pretty genus are distinguished by two slender spines at the apex of the abdomen.

Mr. Haliday has observed to me, in a letter, that this genus affords two strongly-marked divisions,—

I. With the interior brachial cell of the lower wings emitting a single nervure from its inner angle.

1. *M. Tipularius Grav.* 2. 964. 332.—*Curt. Guide*, 508. 332.

In larch plantations, Galway, Mr. Haliday.

2. *M. splendidulus Grav.*—Very rare at Belfast, but common in Galway.

3. *M. olerum Hal.*—Length $1\frac{1}{4}$ line. Black, lower part of face, orbit of eyes, posterior margin of 2nd segment of the abdomen, a spot at the base of the 3rd, and the legs, ochreous : tips of posterior tibiæ and tarsi fuscous.

Found on turnips by Mr. Haliday.

4. *M. fulgurans Hal.*—Length $3\frac{1}{4}$ lines. Ochreous, tips of antennæ and eyes dark : abdomen ferruginous-ochre : stigma pallid.

Taken in shady ravines in Ireland.

5. *M. basalis Curt.*—Length 3 lines. Ochreous ; eyes, crown of head, 3 spots on the thorax, postscutellum, base of abdomen (excepting the posterior margin of the 2nd segment), and a spot on each side the 3rd segment, black : base and tips of posterior tibiæ black.

New Forest, on stumps of trees in shady groves, beginning of June.

6. *M. Sylvarum Hal.*—Length 3 lines. Black, orbit of eyes and mouth pale yellow, mesothorax and scutellum ferruginous, the former with 3 black spots, and a brownish spot sometimes on the back of the abdomen. Legs ochreous, tips of tarsi fuscous.

Abundant on trees in hedge-rows, particularly ash and oak, Mr. Haliday.

II. Interior brachial cell of the lower wings emitting 2 nervures from its inner angle.

7. *M. sericans Hal.*—*Curt. Brit. Ent. pl.* 464. ♂.

Black, with a dull blueish bloom, and clothed with pale pubescence ; face and mouth yellow, underside of antennæ ochreous-brown, an ochreous dot at the angles of the basal joint of the body, and a scutiform spot on the margin of the 2nd, and the base of the 3rd of the same colour ; the posterior margin of the latter and the tip of the abdomen ochreous : wings stained yellow, the nervures and stigma pale brown : legs ochreous, thighs reddish, tips of the posterior and of their tibiæ blackish ; posterior tarsi brown, the others brown only at their tips.

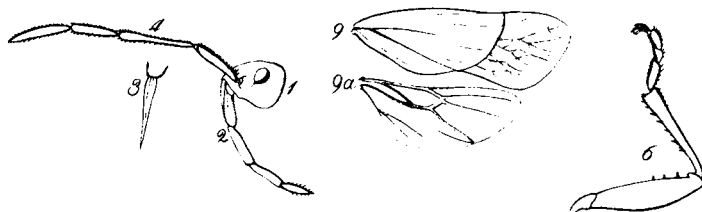
Taken by Mr. Haliday, I believe, near Belfast.

8. *M. Splenium Curt.*—Length $2\frac{2}{3}$ lines. *Male* pale ochreous ; head black, face yellowish-white, antennæ fuscous, except at the base ; alitrunk black, scutellum bright ochre ; abdomen with the base of the 1st joint and sides of 2nd black, sides of the remainder, and a considerable portion of the apex and the styles, brown : centre of stigma pale ochre ; nervures, tips of posterior tibiæ, pulvilli and claws brown.

This pretty species I took in the New Forest.

Mr. Haliday has at least twenty-six very distinct species of this genus.

The Plant is *Cuscuta Epithymum* (Less Dodder).



Pub. by J. C. Smith, Aug. 1. 1858

PYRRHOCERIS APTERUS.

ORDER Hemiptera. FAM. Coreidæ.

Type of the Genus, Cimex apterus Linn.

PYRRHOCERIS Dal., Fall., Curt.—Platynotus Halm.—Lygæus Fab., Wolff.—Cimex Linn.

Antennæ more than half the length of the insect, inserted in a shoulder on each side the head before the eyes, slightly clavate, pubescent and 4-jointed, 1st and 4th joints of equal length and a little the stoutest, the former clavate, the latter subfusiform-ovate, 2nd the longest and slenderest, 3rd the shortest, both slightly clavate (4).

Labrum nearly as long as the basal joint of the rostrum, and subulate (3).

Mandibles and *Maxillæ* setiform.

Labium bent under the breast; shorter than the antennæ, rather stout and filiform, 4-jointed, the joints gradually decreasing in length, the terminal one slightly pubescent (2).

Head subtrigonal narrower than the thorax. Eyes remote, globose and very prominent. Ocelli 2, very remote? Thorax transverse, trapezoid, the base straight, truncated and concave before. Scutellum not large, triangular. Abdomen oval. Elytra considerably shorter than the body (9), generally wanting the membranous apex. Wings smaller than the elytra with several nervures (9a), but oftener none. Legs simple, posterior the longest: thighs and tibiæ of equal length, the former having 3 minute teeth on the underside, towards the apex in the posterior pair, the latter hairy and bristly on the inside: tarsi triarticulate, basal joint considerably the longest in the hinder pair, 2nd joint minute, 3rd a little longer: claws and pulvilli distinct (6, a fore leg).

APTERUS Linn.—Curt. Guide, Gen. 1119. 1.

Elongate-ovate, black, minutely and thickly punctured: antennæ pubescent: thorax sparingly and coarsely punctured, the disc and a band beneath black, leaving a broad scarlet margin: abdomen reddish above, except towards the apex, which is black or fuscous, margined beneath with scarlet, the penultimate joint more so in the male than female: elytra thickly punctured, scarlet, with a broad stripe on each side the scutellum, a small spot near the base of each and a large round one on the disc, black; membrane yellowish brown, blackish at the base; wings brown: coxæ scarlet.

In the Author's and other Cabinets.

THE males are narrower than the females; and it is remarkable, that both sexes are occasionally found with perfect wings: but it seems that climate has a great influence in perfecting them;

for out of a considerable number taken in this country, I have never found one with wings; whilst of those I took at Montpellier and the Pont du Gard in the South of France, several were winged. The apterous specimens do not differ in colour or size from those that are winged; and many of the former were found in pairs by Mr. Dashwood, jun., of Beccles in Suffolk, on sandy banks in that neighbourhood, the middle of May.

There is another extraordinary incident in the history of this handsome and conspicuous insect: some years these plant-bugs appear in myriads, whilst at other times not one can be found. Many years back it was observed in excessive abundance on some little islands at Torquay in Devonshire, on which, I understood, the Tree Mallow (*Lavatera arborea*) grew; a plant our insect is much attached to, probably from a particular Aphis or larva that infests it. Mr. Abraham, of Exeter, informed Mr. Dale, that the *Pyrrhocerus apterus* was in such profusion on a rock in the sea off Teignmouth, in Devon, that it looked quite red with them; at the same time he observed there was not any vegetation for them to inhabit: and the insects being apterous, it seemed strange how they could have attained such a spot.

The transportation of these insects to an insulated rock in the sea may be easily accounted for, if we suppose a few, or even one pair of winged specimens to have flown there, probably from France; and this would at once show the use of some individuals being furnished with wings, as well as the wisdom of Providence in supplying so few with the means of flight; since, from their astonishing increase, the country might be overrun by them if they were able to disperse rapidly: the means, however, are always adapted to the end; and as the *Pyrrhocerus* no doubt lives by sucking other insects, it may only be propagated in extraordinary numbers when some Caterpillar or Aphis threatens, by its superabundance, the total annihilation of a local species of plant; and this provision is of such common occurrence, that it is unnecessary to adduce evidence in support of the observation.

In the vegetable kingdom, a scarcity of fruit following a year of abundance, arises from exhaustion; but of course we must look to very different causes amongst animals; and with regard to the *Pyrrhocerus*, its sudden disappearance may arise from its conspicuous colouring, which could not fail to attract the notice of birds in an exposed situation, especially when they covered a spot so completely as to give even a red tint to the rock.

The Plant is *Malva sylvestris* (Common Mallow).



Sub: by J. Curtis Sept. 1. 1838

ELOPHORUS FENNICUS.

ORDER Coleoptera. FAM. Helophoridæ Leach.

*Type of the Genus, Silpha aquatica Linn.*ELOPHORUS *Fab., Lat., Gyl., Curt.*—*Helophorus Leach.*—*Hydrophilus De Geer, Marsh.*—*Dermestes Geoff.*—*Silpha Linn.*

Antennæ remote, inserted before the eyes at the base of the mandibles, small capitate and 9-jointed, basal joint the longest, stout and clavate, 2nd elongate-ovate, 3 following slender and oblong, the 5th being a little dilated at the apex, the remainder forming a compressed pubescent club, 6th joint semi-ovate, 2 following large and cup-shaped, 9th suborbicular (6).

Labrum transverse, the sides sloped, forming an angle towards the base, the anterior margin truncated and irregularly ciliated (1).

Mandibles alike, subtrigonal, rounded and hairy externally, pointed at the apex, slightly emarginate below, with a sharp notch beneath, the internal margin ciliated with stout bristles, submembranous towards the base (2).

Maxillæ oblong, terminated by an oval transverse lobe, very hairy externally with an internal lobe ciliated on the inside, with 3 or 4 spines at the apex. *Palpi* not longer than the antennæ, rather stout naked and 4-jointed, basal joint minute, 2nd long subclavate, 3rd considerably shorter but stouter, 4th the largest, elongate-ovate, or subfusiform (3).

Mentum large, subquadrate, anterior angles oblique, slightly dilated at the base. *Mentum* forming a very hairy lobe on each side. *Palpi* remote, not small, triarticulate, basal joint minute, 2nd long and subclavate, 3rd the largest, very hairy, elongate-ovate (4).

Head *subtrigonal obtuse; clypeus entire: eyes small sessile lateral and remote. Thorax transverse broader than the head. Scutellum concealed. Elytra broader than the thorax, elliptical. Wings ample. Legs compressed, anterior the shortest: thighs rather broad: tibiæ, anterior the broadest, with 2 short spines at the apex and 2 outside, and somewhat serrated (5): tarsi as long as the tibiæ in the 4 anterior feet, 5-jointed, basal joint minute and concealed, 3 following short, the 2nd being a little the longest, especially in the hinder feet, 5th as long as the others united in the 4 anterior: claws rather long and acute.*

FENNICUS *Payk.*—*Curt. Guide, Gen. 106.6.*—*cinereus Marsh. 410. 26.**In the Author's and other Cabinets.*

THE insects of this genus inhabit ditches and ponds, they are to be found basking in the sun upon aquatic plants, walking by the water's edge, frequently upon the surface, and sometimes floating on their backs: they are also met with flying, both in the heat of the day and in the evening. The transverse thorax and shorter anterior legs will at once distinguish our genus from *Hydrochus*, and the large terminal joint of the palpi will readily separate it from *Ochthebius*. The following are British species:

1. *E. aquaticus* L.—*Panz.* 26. 6.—*grandis* Ill.—*stagnalis* Mars. 409. 23.

Found everywhere, the year round, in stagnant ponds and ditches.

2. *E. granularis* L.—*aquaticus* F.—*flavipes* Oliv. 3. No. 38. pl. 1. f. 3. var.

In stagnant water everywhere.

- 2^a. *E. griseus* Ill.—*minutus* Oliv. 3. No. 38. pl. 1. f. 6.—*affinis* Mars. 409. 24.

Near London and Hertford, in Surrey, Devon and Norfolk.

3. *E. dorsalis* Mars. 410. 25.—*Ste. pl.* 14. f. 1.

Taken with the last and is probably only a variety.

4. *E. viridicollis* Kirb.—*Ste.* 2. 112.

In Suffolk and near London.

5. *E. tuberculatus* Gyl. 1. 129. 4.

In the spring, near Southend, Essex.

6. *E. fennicus* Payk.—*Curt. Brit. Ent. pl.* 466.

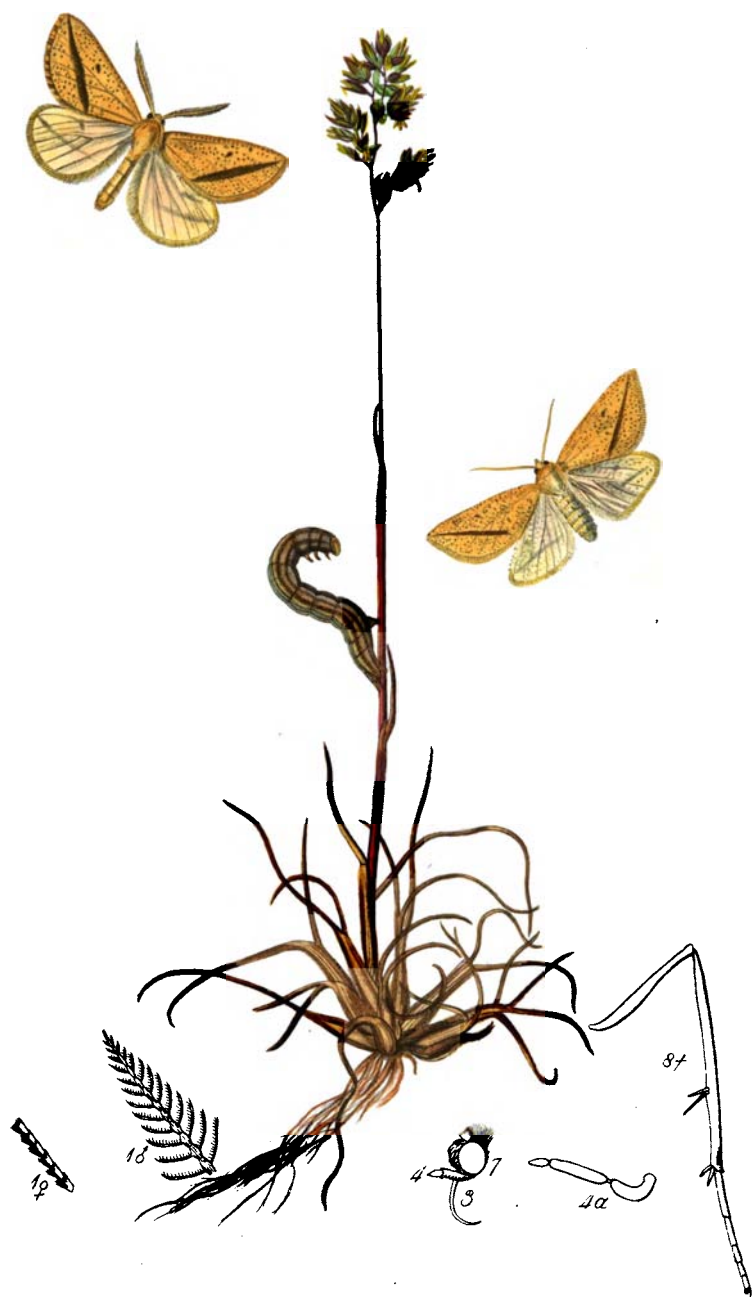
Ochreous, head and thorax coarsely punctured, the former with a V shaped impression on the crown, and a castaneous spot before each eye, the latter castaneous, with a broad margin, a deep channel down the centre and one on each side, leaving several rounded protuberances: elytra ovate, with 4 elevated longitudinal lines on each, and an abbreviated one on each side of the scutellum, with double rows of strong punctures between them; the base is clouded with brown, as well as an indistinct band before the middle and a transverse oval mark towards the apex; there are also a few black spots across the centre.

This, which is not a common species, has never been figured in any work. It occurs in July in Battersea Fields, on damp banks and hedges, also at Leith-hill, Ealing, Dover, in Norfolk, &c.

7. *E. nubilus* Oliv. 3. 38. pl. 1. f. 2.

April, under stones, on banks, and damp sandy places everywhere.

The Plant is *Ruppia maritima* (Tassel Pond-weed).



Pub. by J. Curtis Sep. 1. 1855

ASPILATES GILVARIA.

The Straw or Dover Belle.

ORDER Lepidoptera. FAM. Phalænidae.

Type of the Genus, *Phalæna purpuraria* Linn.

ASPILATES Treit., Goda., Curt.—Cabera Och.—Geometra Hüb., Haw.
—*Phalæna* Linn.

Antennæ inserted on the crown of the head close to the eyes, setaceous, clothed with scales, bipectinated in the males nearly to the apex, each joint producing 2 ciliated branches (1♂): simple in the females, the scales giving them a serrated appearance beneath (1♀).

Maxillæ spiral, slender and not half so long as the antennæ (3).

Labial Palpi porrected nearly horizontally and clothed with short scales (4); triarticulate, basal joint the stoutest and curved, 2nd the longest, slender and nearly linear, 3rd small elongate-ovate (4a).

Males generally larger than the females. Head short and rounded. Thorax globose and clothed with depressed hairy scales. Abdomen long, slender and slightly tufted in the male, stouter and conical at the apex in the female. Wings forming a triangle when at rest, entire; superior elongate-trigonate, less pointed in the male than female; inferior trigonate-orbicular, narrower in the female and less rounded. Legs long and slender. Tibiæ, anterior the shortest, with a very long slender spine on the inside, intermediate spurred at the apex, posterior very long with a pair of short spurs at the apex, and an unequal and longer pair below the middle (8†). Tarsi long and 5-jointed. Claws and Pulvilli minute.

Obs. *A. gilvaria* was the species dissected.

Caterpillar naked, with 6 pectoral, 2 abdominal and 2 anal feet, the apex apparently forked.

Pupa enclosed in a loose web upon the earth.

GILVARIA Hüb.—Curt. Guide, Gen. 895. 3.

Pale ochre or straw colour; rays of the antennæ and eyes black: abdomen whitish ochre: superior wings freckled with brown, having a dot towards the disc and an oblique bar extending from the interior margin to the apex, of the same colour; inferior wings whitish ochre, with a spot and a transverse line more or less apparent; the cilia ochreous. Underside with the brown spots and stripes more apparent, but the superior are not freckled and there is a dusky patch at the base of the costa; the inferior wings are strongly freckled: inside of legs dusky.

In the Author's and other Cabinets.

I HAVE repeatedly expressed an opinion that the genera in Lepidoptera are so perfectly artificial, that Entomologists will never probably agree in the extent and formation of them.

The present genus does not appear to me to be sufficiently distinct from *Bupalus* on the one hand, nor from *Cabera* on the other, to warrant their being separated; I shall therefore add the species belonging to the latter group. The males fly during the day and are much more abundant in some of the species than the other sex.

1. *A. purpuraria* L.—*Hüb. Geo. pl.* 38. f. 198 & 199.—*Goda. pl.* 179. f. 1. 2. & 3.

The Caterpillar feeds on the *Polygonum aviculare* (pl. 5). Specimens of the Moth are in Mr. Swainson's Cabinet, but I do not know where they were captured; I found it not uncommon in France near Montpellier, the middle of June.

2. *A. citraria* *Hüb. pl.* 40. f. 212. & *pl.* 103. f. 536 & 537.—*Goda. pl.* 178. f. 4 & 5.

June, July and August, flying in clover fields at the back of the Isle of Wight, and amongst the *Eryngium maritimum* (pl. 53), beyond the Castle, Portsmouth; Studland heath, near the Agglestone, Isle of Purbeck, and Lulworth Cove, Mr. Dale.

3. *A. gilvaria* *Hüb.—Curt. Brit. Ent. pl.* 467 ♂ & ♀.

From the middle of July to the end of August, behind the Castle at Dover in abundance. The larva which is copied from Hübner, feeds on the *Achillea millefolium* (pl. 19).

4. *A. plumbaria* F.—*Goda. pl.* 181. 1.—*plumbaria* *Hüb.* 42. 221.

End of May and June, on heaths and grassy places in woods everywhere; a fine variety near Edinburgh, Mr. Dale. Although this forms part of the genus *Phasiane* of Godart, I think it would arrange better with Gen. 907 of my Guide, the *Eubolia* of the same Author.

5. *A. respersaria* *Hüb.* 23. 125.—*strigillaria* *Esp.—Hüb.* 104. 540 & 541. *var.—Goda. pl.* 171. 1.—*inæquaria* *Haw.* 288. 44. *var.*

June and beginning of July, Kent, open parts in Coombe Wood, the New Forest, Parley Heath, and Glanville's Wootton, Mr. Dale.

Gen. 896. CABERA Treit.

1. *C. exanthemaria* *Esp.—Goda. pl.* 171. 3.—*striaria* *Hüb.* 17. 88.—*arenosaria* *Haw.* 289. 48. *var.—approximaria* *Haw.* 289. 49. *var.*

May to the end of June, in moist woods.

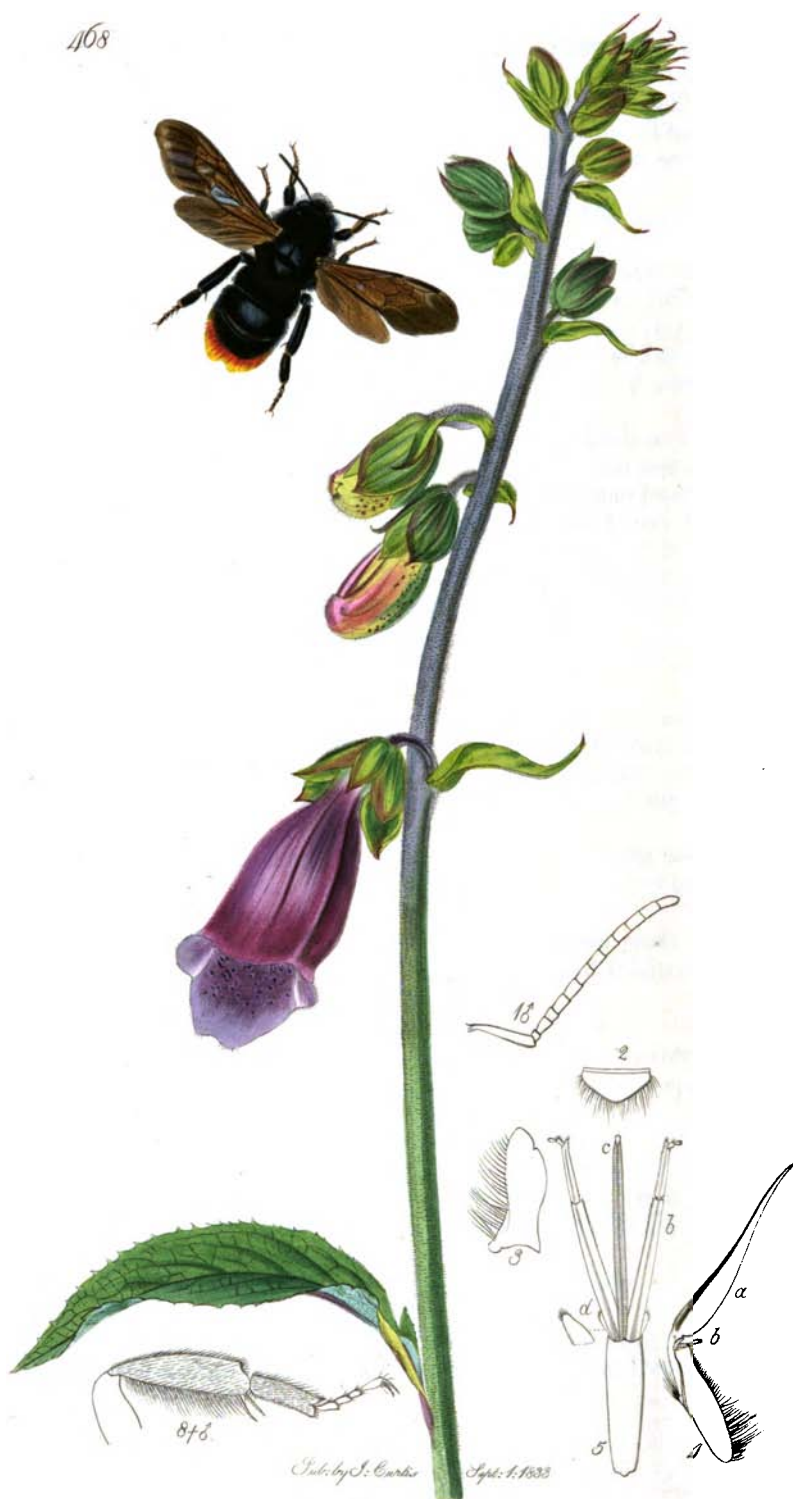
2. *C. pusaria* L.—*Hüb.* 17. 87.—*Goda.* 171. 2.

Middle of May, hedges: the larva, which is different to that of the former species, feeds upon Birch, Sallow, Beech, and particularly Alder.

3. *C. rotundaria* *Haw. Lep. Brit. p.* 289. 50.

May, moist woods.

The Plant is *Poa bulbosa* (Bulbous Meadow-grass), communicated by C. J. Paget, Esq., from Yarmouth Denes, Norfolk.



PSITHYRUS RUPESTRIS.

The black-winged Humble-bee.

ORDER Hymenoptera. FAM. Apidæ.

*Type of the Genus, Apis rupestris Fab.*PSITHYRUS *Le P.*—*Bombus Lat., Curt.*—*Bremus Jur.*—*Apis Linn., Kirby.*

Antennæ inserted at the middle of the face, longer than the head, geniculated, filiform, 13-jointed in the male, basal joint long clavate, 2nd minute, 3rd obovate, nearly as long as the 5th, 4th subquadrate, only half the length of the following which are oblong, the terminal joint compressed and rounded at the apex (1 ♂); similar but shorter in the female, and only 12-jointed.

Labrum transverse, subovate-trigonal, very hairy (2).

Mandibles crossing, alike, long narrow and slightly curved, ovate at the apex, or rounded obliquely, hairy externally (3).

Maxillæ as long as the mentum, very hairy externally, with a brush of hairs on the inside (4), terminated by a horny lobe as long as the tongue, broad at the base and attenuated to the apex (a). *Palpi* minute, formed of one oblong joint attached to a scape at the external apex of the stipula (b).

Mentum long and rather stout, linear, slightly attenuated towards the base, the anterior margin sinuated (5). *Tongue* nearly as long as the palpi, tubular, slightly attenuated at the apex and terminated by a little mouth, the outside thickly clothed with depressed hairs (c). *Paraglossæ* short, broad rounded, and ciliated at the apex (d, with one detached and more magnified). *Pulpi* long, rather broad and slightly attenuated, the internal margin hairy towards the apex, 4-jointed, basal joint more than twice the length of the 2nd; the 3rd and 4th very minute obovate (b).

Neuters none. Head vertical ovate: eyes long and narrow: ocelli 3, placed transversely in a curved line. Thorax large and globose; scutellum large semiorbicular. Abdomen ovate or oblong, incurved at the apex. Wings, superior with one marginal, 3 nearly equal submarginal and 3 discoidal cells. Legs, anterior small. Tibiæ spurred at the apex, posterior convex and very hairy externally, especially in the female (8 †), smaller, straight and slightly clavate in the male. Tarsi 5-jointed, basal joint long and dilated, posterior not producing a tooth at the base. Claws with a tooth on the inside: pulvilli very pubescent.

Obs. Fig. 1. is the antenna of *B. Barbutellus* Don.

RUPESTRIS Fab.—*Curt. Guide, Gen. 723. 1.*

Female black, shining, punctured, clothed with black hairs: abdomen with the 4th and following segments clothed with deep orange hairs: wings long, dark brown and iridescent: tarsi rusty brown, the basal joint black, clothed inside with ferruginous pile. *Male* not identified.

In the Author's and other Cabinets.

FOUR of the Bombi were formed into a subdivision by Mr. Kirby in his Monograph, and they have been lately designated as the genus *Psithyrus*, which I think might as well have been called *Bremus*, a name given to the Bombi by Jurine.

The males are distinguished from the Bombi by the nearly equal breadth of the posterior tibiae, which are externally convex and thickly clothed with hairs, whereas in *Bombus* they increase from the base to the apex, are slightly concave externally at the centre, and have only scattered hairs; the females are still more strongly marked, having in addition to the above characters, a trigonate labrum and mandibles not toothed.

The following are our British species :

1. *P. rupestris* *Fab.*—*Curt. Brit. Ent. pl.* 468. represents the female a little larger than life.—*arenaria* *Pz.* 74. 12. *var.* The male is unknown unless it be the *P. frutetorum*.

End of June, several on a thistle, near Drayton Norfolk, and Wrentham Suffolk, also by the road-side, and flying about a hay-stack in Cambridgeshire; middle of August, on a common near Coombe, Mr. R. Lewis; beginning of September and middle of October, Isle of Wight, J. C.; near Axbridge and Glanville's Wootton, Mr. Dale.

2. *P. frutetorum* *Pz.* 75. 20.—*Albinellus* *Kir.* v. 2. p. 361.

Beginning and middle of August, on thistles, Richmond Park, once with *P. rupestris*, Mr. R. Lewis: at Barham, in the autumn, Mr. Kirby.

3. *P. Rossiellus* *K. tab.* 18. f. 1 ♂.—*Schæf. Icon. t.* 241. f. 7 & 8.

The male only of this Insect is known, but probably *P. campestris* may be the female.

Barham, in flowers: middle of July, Dover, J. C.; middle of August, Coombe Wood, on thistles, Mr. Lewis.

4. *P. campestris* *Pz.* 74. 11.—*Kir. t.* 18. f. 2 ♀.

Barham, in spring and summer; June and July, near Brixton Hill and Coombe, Mr. Lewis; Shanklin Chine, Mr. Dale.

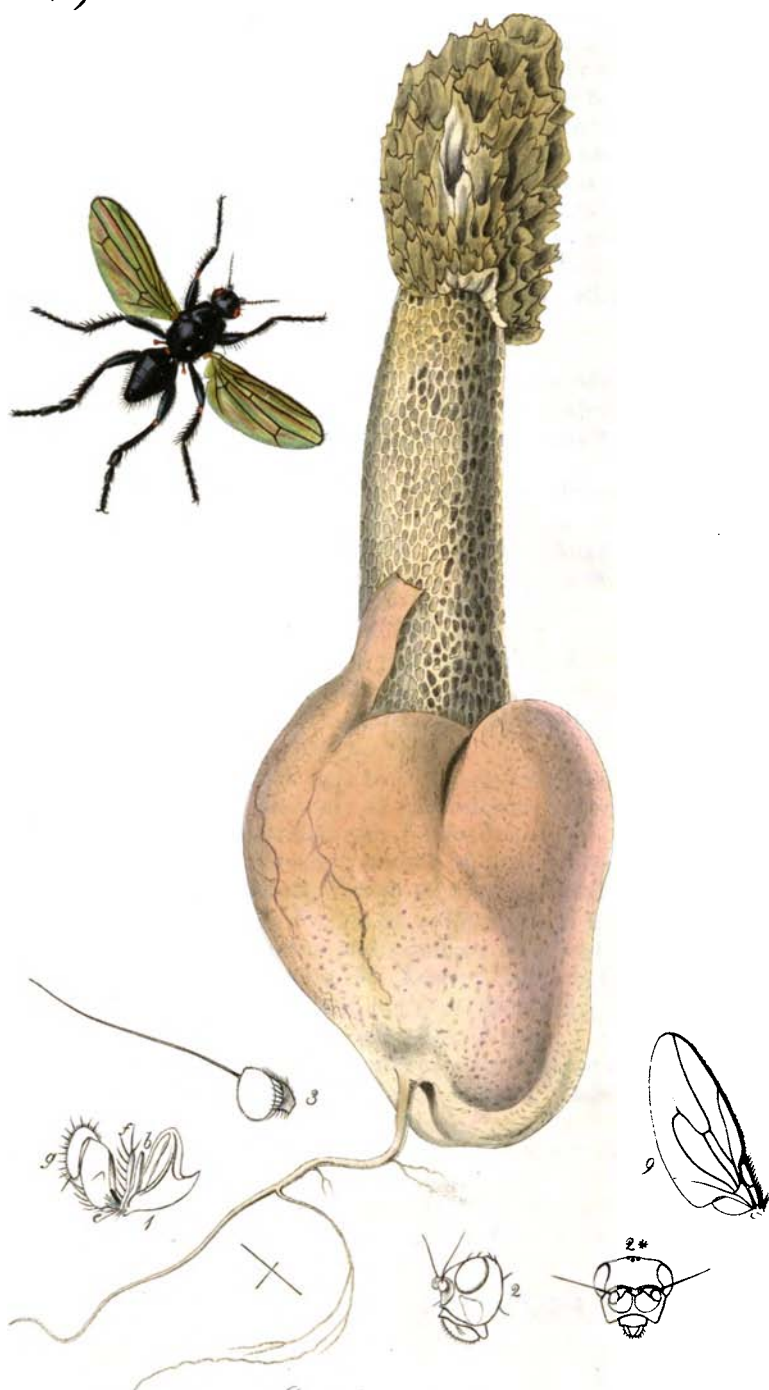
5. *P. Barbutellus* *Don.* v. 11. pl. 385. f. 3.—*saltuum* *Pz.* 75. 21 ♂?—*autumnalis* *Fab.* ♂ *var.*

Barham, flowers in summer; male frequent on thistles: middle of May, Hampstead; end of June, Darent; common in Battersea Fields.

6. *P. vestalis* *Four.*—*Kir. t.* 18. f. 3 & 4 ♀ & ♂.—*Don.* 13. pl. 464—*æstivalis* *Pz.* 89. 16.

Barham, flowers of *Tussilago Farfara* (pl. 367), often flying close to the ground. Mr. Lewis finds it in Coombe Wood lane about May.

The Plant is *Digitalis purpurea* (Purple Foxglove),



Pub. by J. Currier Sept. 1. 1833

BORBORUS HAMATUS.

ORDER Diptera. FAM. Muscidae.

Type of the Genus, Musca subsultans Linn.

BORBORUS Meig., Curt.—Sphærocera Lat.—Copromyza Fall.—Calobata Fab.—Musca Linn., Fab.

Antennæ porrected, rather remote and attached to a small protuberance in front of the face, arising from a cavity, with a sharp margin covering the upper portion (2 and 2*); 4-jointed, basal joint cup-shaped very pilose, 2nd large ovate and velvety, 3rd minute, inserted towards the upper part of the 2nd, 4th a long seta sometimes sparingly pubescent (3).

Trophi received into a large cavity beneath the face (2 and 2*). *Labrum* broad hollow and attenuated to the apex (1 b). *Maxillæ* very small and linear (e): *Palpi* as long or longer than the labrum, clavate and bristly on the under side (f). *Lip* short and robust, terminated by 2 fleshy lobes, pubescent and bristly (g).

Head *subglobose slightly depressed*; face *concave*: eyes *remote in both sexes, orbicular and rather small*: ocelli 3 in triangle. Thorax *subquadrate-orbicular*: scutellum *semiorbicular or subtrigonal*. Abdomen *rather short and depressed, obtuse in the males, pointed in the females*; 5-jointed, the 2nd frequently very large. Wings *incumbent, generally longer than the body, nervures varying (9), sometimes short or none*. Legs *stout, posterior often long*. Thighs *stout, the middle pair sometimes excepted, posterior in some large and long*: tibiæ *simple, posterior long stout and a little curved*: tarsi *long and 5-jointed, the basal joint in the posterior always, and sometimes the 2nd also, short and dilated*: claws and pulvilli *distinct*.

Obs. The wing represented is from *B. silvaticus* ♂.

HAMATUS Hal. MSS.—Curt. Guide, Gen. 1350. 8*.

Black, shining, sparingly clothed with hairy bristles: antennæ with the seta slightly feathered; lip ochreous; eyes reddish brown; scutellum subtrigonal; abdomen with the basal joint not much larger than the following: wings ample, yellowish fuscous, darkest at the costa, iridescent; the 5th longitudinal nervure not reaching the margin, nervures brown: halteres ferruginous-ochre: all the thighs thick in the male, the anterior only in the female; tibiæ sometimes slightly ochreous at their base; tarsi with the basal joint ovate and truncated obliquely in the hinder pair, and dilated, especially in the male, in which sex the 2nd also is stouter than the following: pulvilli ochreous.

In the Cabinets of Mr. Haliday and the Author.

THIS genus is distinguished from neighbouring groups by the short and dilated basal joints of the posterior tarsi, and several divisions are formed by differences in the neurulation of the wings, and one species is apterous. These little flies are found

on windows in houses, in marshy places, and on putrid substances, as dunghoops, &c. Mr. F. Walker informs me that he has 50 species, many of which he captured by sweeping grass, and others were flying about cucumber-frames. I am indebted to Mr. Haliday for the species figured, as well as for two very distinct ones which I shall describe. The following I am able to record as native species :

A. Winged. a. Wings as in *Meig. t. 62. f. 16.*

1. *B. grossipes* L.?

b. Wings as in *Meig. t. 62. f. 17.*

2. *B. subsultans* L.—*curvipes* Lat. Belfast Mr. Haliday, and Southgate Mr. Walker.

3. *B. denticulatus* Meig. May, meadows, Southgate, Manchester, Scotland and Belfast.

c. Wings similar to the species figured.

4. *B. nitidus* M.—5. *equinus* Fall.—6. *niger* M. Southgate, and 5th at Belfast.—8. *finetarius* M.

8^a. *B. hamatus* Hal.—*Curt. B. E. pl. 469* ♂.

11. *B. ater* M. Southgate, and middle of October, Lowestoft Denes.

17. *B. rufipes*? M. April, paling near a dunghill; middle of October, Isle of Wight.

e. Wings as in *Meig. t. 62. f. 20.*

23. *B. limosus* Fall. Belfast and Southgate.

24. *B. silvaticus* M. The male of this insect has very curious intermediate legs; there is a brush of hair on the thighs beneath, a pencil of bristles inside the tibiae, and others at the apex; the 2 first joints of the tarsi are elongated, and the basal one is emarginate beneath; the penultimate joint of the abdomen is furnished with a curved process at each angle. Beginning of May, Suffolk, Belfast and Southgate.

25. *B. fenestralis* Fall. Southgate.—26. *clunipes* M. May, Suffolk, Dorset and Southgate.

27. *B. pumilio* M. Southgate.—29. *ochripes* M. Southgate and Belfast.

f. Wings shorter than the body; 4th and 5th nervures not united.

29^a. *B. nivalis* Hal. Scarcely 1 line long: rather dull piceous; hypostoma ochreous; wings brownish; legs ochreous brown; intermediate tibiae with 2 pairs of bristles on the outside.

Common about roots of trees in the winter, Belfast.

g. Wings with the 2nd longitudinal nervure not reaching the apex, and forming a large oval cell, the transverse nervures close together at the centre.

29^b. *B. nigerrimus* Hal. Length one third of a line. Velvety black; seta of antennae pubescent; wings transparent; anterior tarsi a little dilated. Taken near Belfast.

B. Apterous. *Meig. t. 62. f. 21.*

30. *B. pedestris* M. Banks of the Wandle above Wandsworth, Mr. Haliday; and end of March, amongst moss, Glanville's Wootton, Mr. Dale.

The Plant figured had a scent somewhat like violets at a distance, when growing, but was very offensive when dried: it seems to differ materially from the *Phallus foetidus* Lam. (*P. impudicus* Linn.); I found it in some abundance on the sand-hills near Lowestoft, Suffolk, in the middle of October. Flies of all descriptions were much attached to this Fungus, and, as well as bees and beetles, seemed very fond of the shining matter which dropped from the pileus.



HISTER QUADRIMACULATUS.

The lunar-spotted Mimic-beetle.

ORDER Coleoptera. FAM. Histeridæ.

*Type of the Genus, Hister unicolor Linn.*HISTER Linn., *Fab.*, *Curt.*, &c.—*Attelabus Geof.*

Antennæ inserted close to the base of the mandibles, often contracted and concealed in a groove beneath the head, short, geniculate and capitate; 11-jointed, basal joint long stout and clavate, 2nd a little longer than the following, somewhat cup-shaped, the 5 following more or less so and increasing in diameter, 8th broader, saucer-shaped, the remainder forming a subglobose velvety club divided irregularly by sutures into three joints, the basal being the largest, the apical the smallest (6).

Labrum somewhat semiorbicular-quadrate, ciliated, frequently not symmetrical (1).

Mandibles porrected, slightly curved, sometimes sinuated on the inside or slightly denticulate, one being densely pubescent on the margin of the inside (2).

Maxillæ terminated by a long lobe, with an internal one below it, both densely pubescent. *Palpi* 4-jointed, basal joint the slenderest, 2nd subobconic, 3rd oblong, 4th the longest, somewhat conical at the apex (3).

Mentum small, semicircular, notched at the middle. *Palpi* rather long, attached to 2 scapes, triarticulate, basal joint minute, 2nd a little longer than the scape, 3rd the longest subconical at the apex. *Labium* rather large and pilose producing a slender spreading lobe on each side thickly ciliated internally (4).

Head small immersed to the eyes. Thorax transverse, convex, semi-ovate, concave before. Scutellum minute. Elytra shorter than the body, subquadrate, rounded or truncated at the apex. Wings ample. Abdomen subtrigonal at the apex. Legs contractile, short flat and broad, the anterior pair approximating at their base, the others remote. Thighs with a groove beneath to receive the Tibiæ which are elongate-trigonal, spined externally and spurred at the apex. Tarsi short compressed and received into a groove on the inside of the tibiæ, 5-jointed, 4 first joints short, 5th longer and clavate. Claws small (5†, hind leg).

Larva and Pupa figured in *Paykull's Mon. Hist.*

QUADRIMACULATUS Linn.—*Curt. Guide, Gen.* 141. 1.—*lunatus Fab.*

Oblong, black, shining: mandibles rather large and bidentate; tips of antennæ ferruginous: thorax not much narrowed before, with a stria on each side continued round the anterior margin, with another very short one outside, at the anterior angle: elytra with 3 curved striæ on each side and a marginal one deficient at the base, also a longitudinal sanguineous lunule on each side: abdomen thickly punctured at the apex: tibiæ dilated, anterior trigonal with 1 small and 2 large teeth outside, the others spined externally. *Obs.* Sometimes the lunule on the elytra is divided and at others it entirely vanishes.

In the Author's and other Cabinets.

As I cannot see the least resemblance between the Byrrhidæ and the Histeridæ, except that the legs are contractile, I consider there is no affinity between them, and have placed the latter between the Lucanidæ and the Nitidulæ. Some of the Histeridæ seem to approach the Lucanidæ, not only in economy but in figure and the form of the antennæ, and in some the mandibles are strongly developed and very powerful.

The true Histers live principally in dung and dead animals, but as they fly in fine weather, they are found basking in the sun on walls and foot-paths in fields, &c.

The following are recorded as British species.

1. *H. 4-maculatus* L.—*Curt. Brit. Ent. pl.* 470.

I purchased an entirely black variety in the Cabinet of the late Mr. E. Blunt, who took it near Southend, where Mr. C. Parsons has also found it, and I am indebted to Mr. W. Clifton for some fine varieties that he took at Pegwell Bay and on the ramparts at Gosport in July and August, in great abundance.

2. *unicolor* L.—*Pk. Mon. tab.* 2. *f.* 7.—*inæqualis* Mar.
3. *cadaverinus* *Pk. t.* 2. *f.* 8.—*unicolor* *Oliv.*
4. *merdarius* *Pk. t.* 3. *f.* 1. & *tab.* 1. the trophi, larva and pupa.
- 4^a. *Marshami* *Ste.* 3. *pl.* 18. *f.* 5.
5. *4-notatus* *Ill.*—*Pk. t.* 12. *f.* 3.—*4-maculatus* *F.*
6. *sinuatus* *Pk. t.* 12. *f.* 2.—*4-maculatus* *Mar.*
7. *12-striatus* *Pk. t.* 3. *f.* 5.—*bissexstriatus* *Duf.*
8. *bimaculatus* L.—*Pk. t.* 3. *f.* 6.—*erythropterus* *F.*
9. *parvus* *Mar.*
- 9^a. *corvinus* *Germ.*—*12-striatus* *Duft.*
- 9^b. *Nigrita* *Ste.*
10. *stercorarius* *Pk. t.* 4. *f.* 3.
11. *neglectus* *Meg.*—11^a. *Leachii* *Ste.*
12. *carbonarius* *Pk. t.* 3. *f.* 8.—*12-striatus* *F.*—*impressus* *F.?*
- 12^a. *quisquilius* *Ste.*—12^b. *Kirbii* *Ste.*
13. *purpurascens* *F.*—*Pk. t.* 3. *f.* 7.—*bipustulatus* & *brunneus* *Mars. var.*
- 13^a. *castanipes* *Kirby.*—13^b. *caliginosus* *Ste.*
14. *virescens* *Pk. t.* 6. *f.* 7.—14^a. *violaceus* *Mar.* 96.
15. *metallicus* *F.*—*Pk. t.* 6. *f.* 3.—*smaragdinus* *Curt.*
- 15^a. *semistriatus* *Ste.*—16. *æneus* *F.*—*Pk. t.* 6. *f.* 6.
17. *4-striatus* *Pk. t.* 6. *f.* 5.
18. *pulcherrimus* *Web.*—*speculifer* *Lat.*—*Pk. t.* 6. *f.* 4.
19. *conjungens* *Pk. t.* 6. *f.* 1.
20. *nitidulus* *F.*—*Pk. t.* 5. *f.* 3.—*semipunctatus* *Pk. t.* 4. *f.* 8.

The Plant is *Ornithogalum umbellatum* (Common Bethlehem Star), communicated by W. W. Saunders, Esq., from a meadow near Wimbledon.



Publ. by J. E. Carter Oct. 1. 1893

ADACTYLUS BENNETII.

The sea-side Plume.

ORDER Lepidoptera. FAM. Tineidæ.

*Type of the Genus, Alucita adactyla Hüb.*ADACTYLUS Curt.—*Alucita Hüb., Treit.*

Antennæ inserted on the crown of the head close to the eyes, rather short and slender, composed of numerous joints clothed with scales above, and very pubescent beneath in the male (1 ♂); less so in the female.

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

Labial Palpi curved, densely clothed with scales and truncated, giving them a triangular form towards the apex, with the 3rd joint just visible (4); triarticulate, basal joint long and broad, 2nd short and broad subunulate, 3rd minute, ovate and truncated obliquely (4 a).

Head small, subglobose, with a conical tubercle on the forehead thickly clothed with short scales (7). Eyes small lateral and orbicular. Thorax small, globose and trilobed. Abdomen very long, linear in the male with the apex thickened and lobed; stouter in the female and subfusiform, being narrowed at the base and somewhat conical at the apex. Wings plaited together and erected when at rest, lanceolate, inferior the smallest. Legs slender. Coxæ long. Thighs short. Tibiæ, anterior the shortest, clavate, with a short spine and brush of scales on the inside near the apex, the others spurred at the apex, posterior very long, with a minute pair of unequal spurs below the middle. Tarsi very long, 5-jointed, basal joint very long, 5th not very short. Claws minute but distinct (8†, hind leg).

BENNETII Curt. Guide, Gen. 1039^b.*In the Author's Cabinet.*

THE *Alucita adactyla* Hüb. having undivided wings, as the latter name implies, I was led to a careful examination of an Insect closely allied to it, when I found its structure so widely different from that of *Pterophorus* (pl. 161.) that I was under the necessity of establishing a genus to comprise them. I have therefore adopted the specific name of Hübner's Insect for the genus, and propose substituting that of the excellent Lepidopterist who first made it known, to designate his species.

Adactylus is distinguished from *Pterophorus* by its undivided wings, the form of the palpi, which are obtuse and

densely clothed with short scales, the very minute spurs to the hinder tibiæ, and several other minor differences.

Hübner many years back figured the *Alucita adactyla* before alluded to, in his *Europaischer Schmetterlinge* (*Alucitæ Integræ*, pl. 7. f. 32-34), which I shall here describe as the

Adactylus Hubneri Curt.

4½ lines long; ♂ 10 lines, ♀ nearly 1 inch broad. Lead colour, wings darkest towards the apex, superior with a darker spot towards the apex, and 2 on the inferior margin; the male with a dark spot on the cilia at the anal angle.

This insect has not been taken in England, but I had the good fortune to discover a new species amongst the grass and sea-shore plants that grow on the Salterns at Tollsbury, the end of last July, in an excursion to the coast of Essex with Edward Bennet, Esq., of Rougham Old Hall. When at rest the Moths assumed a most singular attitude, as well as I can remember like the male figured of the natural size at the bottom of the plate; the body hung down, the wings were folded and nearly erect, but divaricating with the legs placed obliquely, resembling so much the dead pieces of grass, that the eye did not readily catch them until they took flight, for which this position was admirably adapted. This interesting Moth I have the pleasure of naming after the friend through whose kindness I had an opportunity of adding this and many other Insects to my Cabinets.

A. Bennetii Curt. *Brit. Ent. pl.* 471 ♂ & ♀.

Length 6½ to 7½ lines, breadth 1 inch. Reddish cinereous, sometimes with an ochreous tint: eyes black, superior wings with 4 dark spots upon each, 1 towards the base, another nearer the middle, and 2 beyond it approaching the posterior angle: abdomen of female with 5 or 6 pair of black dots down the back.

The Plant is *Carex limosa* (Green-and-gold Carex), communicated by C. J. Paget, Esq., from a bog at Belton, Suffolk.



Pub. by J. E. Currier Oct. 27. 1888

SMIERA MACLEANII.

ORDER Hymenoptera. FAM. Cynipidæ or Chalcididæ.

*Type of the Genus, Sphex sispes Linn.*SMIERA *Spin., Curt.*—Chalcis *Fab., Dal., Lat., Jur., Panz.*—*Sphex Linn.*

Antennæ inserted at the middle of the face, as long as the head and thorax, geniculated, 13-jointed, basal joint long and stout, 2nd and 3rd small, the former cup-shaped, the latter transverse, 4th longer than the following which decrease in length, the 3 terminal joints forming a subconical mass (1 ♂); the basal joint longer in the female and the apical mass more ovate (1 ♀).

Labrum exerted, small, transverse, the sides rounded, anterior margin ciliated with longish hairs (2).

Mandibles short, one trifid (3), the other bifid at the apex.

Maxillæ terminated by an oblique oval and ciliated lobe. *Palpi* rather long slender pilose and 4-jointed, basal and 3rd joints rather short, 2nd longer, 4th very long and subfusiform (4).

Mentum elliptic, truncate before and notched to receive the *Palpi* which are not short; triarticulate, 2nd joint a little shorter than the 1st, 3rd a little longer and pilose, subovate at the apex (5).

Head broad and short, emarginate before, with a tooth in the middle: eyes lateral prominent and globose: ocelli 3 in triangle. Thorax ovate-truncated before; collar distinct; scutellum bidentate. Abdomen small, trigonate-ovate, compressed, attached by a long stout petiole, 7-jointed in the male (7 ♂), 8-jointed in the female: oviduct concealed beneath. Wings, superior with a few indistinct longitudinal nervures, a subcostal nervure, united with the costa at the middle and forming a small peduncled cordate stigma a little beyond it; inferior wings small. Hind legs very large, the Coxæ as long as the Thighs which are lentiform and serrated beneath; the Tibiæ scythe-shaped, pointed and acute at the apex. Tarsi 5-jointed. Claws and pulvilli small. (8, hind leg, the first joint being the Coxæ.)

MACLEANII *Curt. Guide, Gen. 653. 3.**In the Author's Cabinet.*

SMIERA is distinguished from Eucharis by its curved posterior tibiæ, and from Chalcis by the length of the petiole. I suspected from the manner in which the *S. sispes* hovers about and settles upon the rushes, that the female laid her eggs in larvæ either upon or inside the stalks, but we learn from Latreille that these insects "deposit their eggs in the nymphæ of the Stratiomydæ or of some other diptera, the larvæ of which live in the water."

I shall now describe the British species.

1. *S. sispes* Linn. *F.S. n.* 1657.—*clavipes* Fab.—*Panz.* 78. 15.
—*Sam. pl.* 8. f. 6.—*Don.* 11. 379.

Black, thickly and coarsely punctured, abdomen smooth and shining : wings pale fuscous : posterior coxæ very long and a little stouter than the peduncle : 4 anterior thighs ferruginous at the apex, the intermediate pair incrassated at the apex, hinder pair large, lenticular and rufous, black at the apex, serrated beneath, the basal tooth the largest : tarsi ferruginous, black at the tips.

As this is the Linnæan species, I have retained its original name. I am sorry to find continental naturalists superseding old established names, for the right of priority will always be respected by the true friend of science. This insect is found from June to the end of July on rushes at the back of the Red House, Battersea ; Kensington Gardens ; near Faversham, Kent ; on umbellate flowers, Whittlesea Mere, Mr. Dale ; sides of ditches, Tollsbery, Essex, J. C.

In the two following species the antennæ of the females seem to be only 12-jointed.

2. *S. Macleanii* Curt. *Brit. Ent. pl.* 472 ♀.

Black, thickly and coarsely punctured, clothed with fine pale hairs ; antennæ clavate ; scutellum emarginate, peduncle half the length of the abdomen, which is smooth and shining : wings stained brown, costal nervures piceous ; scapulars and tips of 4 anterior thighs pale yellow, posterior minutely punctured, serrated beneath, with 2 larger teeth at the base, the external one pale yellow, as well as a sublunulate one towards the apex and a round one opposite on the inside ; base of anterior tibiæ ochreous, the tips ferruginous as well as the tarsi which are brown at the apex. *Male* undiscovered.

I have named this fine insect after Dr. Maclean, of Colchester, whose zeal for science and ardour in the pursuit of knowledge have led to many discoveries that entitle him to the thanks of all lovers of Natural History. It appears to be very similar to the *C. biguttata* of Spinola and the *C. melanaris* Dalm., from which it is at once distinguished, by the 3rd spot towards the apex on the *inside* of the hinder thighs, as well as by other differences of colour. I first discovered *S. Macleanii* the end of June, settling on the rush figured, in a ditch at Tollsbery ; Mr. Bennet soon after took another in company with the *S. sispes*, and Dr. Maclean captured a third.

3. *S. petiolatus* Curt.—*sispes* Fab.—*Panz.* 77. 11.

Black, thickly and coarsely punctured, scutellum slightly emarginate, petiole long, slender and yellow ; body smooth and shining ; a yellow spot on each side the face, scapulars of the same colour : thighs yellow, black at the base, posterior with a saddle-shaped black mark above at the base, and a brown one at the apex : tibiæ yellow, 4 anterior brown at the middle, posterior piceous except at the tip : tarsi ochreous : antennæ of male rather long stout and subfusiform, the basal joint the slenderest ; short slender and clavate, I believe, in the female.

Said to have been captured in the neighbourhood of London.

This being the *C. sispes* of Fab., who very carelessly transposed the names, it is become necessary to give the species another appellation to prevent further confusion.

The Plant is *Scirpus maritimus* (Salt-marsh Club-grass).



Dec: by J. Curtis . . . 1:10 1/2

DROSOPHILA CAMERARIA.

ORDER Diptera. FAM. Muscidae.

Type of the Genus, Musca cellaris Linn.

DROSOPHILA Fall., Meig., Curt.—Mosillus Lat., Sam.—Musca Linn.

Antennæ attached to small scapes, inserted in two cavities near the centre of the face, nutant, plumose and 4-jointed, basal joint somewhat cup-shaped, bristly, 2nd large subovate and pubescent, 3rd small oblong, inserted on the upper side of the 2nd towards the base, 4th a stoutish seta with two rows of long, and one of short bristles (3).

Trophi received into a cavity at the bottom of the face.

Labium short, hollow subelongate-trigonal (1 b).

Maxilla short and slender (e). *Palpi* as long as the lip, robust, clavate pubescent and bristly (f). *Lip* short and stout, terminated by 2 somewhat fleshy and pilose lobes (1 g and 2 * g).

Head *hemispherical*; face *keeled down the middle at the lower part, and whiskered on each side*: eyes large ovate: ocelli 3 on the crown of the head (2 and 2*). Thorax globose: scutellum trigonal-ovate with a bristle on each side and 2 at the apex. Abdomen short depressed 6-jointed and ovate, pointed at the apex in the females. Wings incumbent, long and ample, iridescent, with a very short marginal cell, and 4 longitudinal nervures, the 2nd and 3rd united towards the base, and the 3rd and 4th towards the margin. Legs nearly of equal length and size, clothed with short hairs. Tibiæ, intermediate with 2 or 3 short bristles at the apex, the posterior a little curved. Tarsi as long as the tibiæ, 5-jointed and serrated with short bristles beneath, especially the basal joint, which is the longest, 4th and 5th small. Claws small also.

CAMERARIA Hal. MSS.—Curt. Guide, Gen. 1334. 2b.

Ochreous and pubescent, with a few long black bristles, 2nd joint of antennæ fuscous, seta black, head and thorax dark ochre, with a fuscous stripe down the back, terminating in a spot at the scutellum, and an obscure ferruginous stripe on each side: abdomen brown, the segments edged with ochre, broadest on the sides, with an obscure pale line down the back: wings stained pale fuscous, the nervures piceous: tips of tarsi fuscous.

In the Cabinets of Mr. Haliday and the Author.

As the type of Latreille's genus *Mosillus* seems to be different to our group, I have retained Fallen's name.

For several of my species I am indebted to Mr. Haliday and Mr. Walker, who have detected 10 unrecorded as natives since the Guide was published; those taken at Clifden, near Belfast, are from the former gentleman, as well as the observations on some of them, and those from Southgate are from Mr. Walker.

1^a. *D. nigrita* Hal. The size of *D. cellaris*, shining ochreous fuscous; head, thorax and scutellum piceous; eyes castaneous: segments of abdomen with the margins

whitish : halteres whitish-ochre : tarsi tipped with black, anterior with the 2 basal joints in the first pair. a little dilated, with a black spot on the back of each.

On Larches, e. Sept. & Oct., sometimes in windows, Clifden.

2. *cellaris* *Lin.*? Taken with the former one at Clifden.

Mr. Walker has frequently observed it struggling in ale, but not drowned; and Mr. R. Brown showed me vast quantities of the pupæ in the tubs of vinegar that contained the buds and flowers of the *Rafflesia Arnoldi*. It is found all the year round in cellars and on windows.

2^a. *funebria* *Fab.*—*erythrophthalma* *Panz.* 17. 24. Mr. Haliday bred the fly from Boleti, the middle of October; and one of the pupæ is figured in the plate (*vide* fig. P, the upper extremity being the head).

2^b. *cameraria* *Hal.*—*Curt. Brit. Ent. pl.* 473. Clifden. Mr. Haliday says this differs from *D. fenestrarum* in having longer antennæ: the thorax is opaque and unusually hairy: it is also larger: the dusky blotch of the thorax is constant in this. I found great numbers in windows early in October, probably out of the same Boleti from which *D. funebris* came.

3. *phalerata* *Meig. tab.* 59. f. 3. In Boleti, Clifden.

4. *fenestrarum* *Fall.*—*Meig. v.* 6. p. 83. 4.

5. *transversa*? *Fall.*—*Meig.* 84. 5. Clifden and Southgate.

Mr. Haliday says, "It agrees with the characters except in size, being smaller than *D. phalerata*."

6. *virginea* *Meig.* 84. 6. Southgate and Clifden.

9. *melanogaster* *Meig.* 85. 9. "Belly pale with an interrupted black band down the middle." Clifden and Southgate.

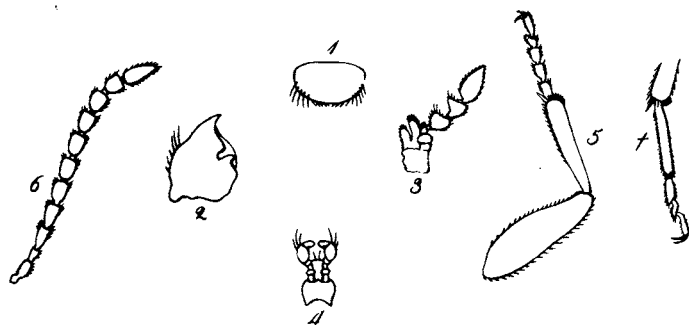
12. *tristis* *Fall.*—*Meig.* 86. 12. Southgate.

13. *graminum* *Fall.*—*Meig.* 86. 13. Clifden, in meadows throughout the summer, and Southgate; Isle of Wight, beginning of October, J. C.

16. *littoralis*? *Meig.* 87. 16. Southgate.

20. *flava* *Fall.*—*Meig.* 88. 20. Rare, near Belfast, in meadows, in the summer; the thorax has faint ferruginous lines placed as in *D. graminum*. These two are rather dissimilar from the rest.

The Plant is *Drosera anglica* (Great Sundew or English Fly-trap). Insects settling upon the inside of the leaves are caught and retained as shown on the leaf under the insect represented flying. I have always imagined that the glands at the apex of the hairs emitted a glutinous secretion which first held the insect, and as it struggled, more hairs were attached, until the end of the leaf was bent down. Withering gives a long account of this peculiar power in the *Drosera*, and there are many observations upon it in Loudon's Magazine of Nat. Hist. Those who wish to see the flower expanded should gather plants with buds that promise to open the following day, and by putting the roots in water and placing the plant in the sun they will accomplish their object.



Pub. by J. Curds Nov. 1. 1835

HALLOMENUS FLEXUOSUS.

ORDER Coleoptera. FAM. Melandryidæ or Helopii.

*Type of the Genus, Dircæa humeralis Fab.*HALLOMENUS *Helw., Payk., Gyll., Lat., Curt.*—*Dircæa Fab.*—*Serropalpus* and *Dinophorus Ill.*

Antennæ inserted in a cavity close to the inner margin of the eyes, longer than the thorax, slender at the base, pubescent and 11-jointed; basal joint rather small and ovate, 2nd the smallest, subovate, 3rd larger than the 1st elongate-obtrigonal, the remainder rather stouter but decreasing in length, more or less cup-shaped, terminal joint a little the longest and elongate-ovate (6).

Labrum transverse ovate, ciliated (1).

Mandibles subtrigonal, externally pilose, acute at the apex, with a square notch on the inside, forming a tooth below in one mandible, and an internal membranous lobe (2).

Maxillæ small terminated by 2 small pubescent lobes. *Palpi* rather large, pilose, and 4-jointed, basal joint small, 2nd and 3rd large obtrigonal, 4th the largest ovate-conic (3).

Mentum subcordate, concave at the base, sinuated before, leaving a triangular point in the middle. *Palpi* attached to 2 scapes, triarticulate, basal joint small, 2nd large subobovate, 3rd small and subovate. *Lip* oblong, with 2 bristles at the centre (4).

Head small subtrigonal, nearly concealed under the thorax: eyes rather small and lateral. Thorax semiorbicular-trigonal, somewhat depressed, the angles obtuse: scutellum semiorbicular. Elytra elliptical, slightly depressed, scarcely broader than the thorax. Wings ample. Legs compressed, hinder pair a little the largest: thighs short: tibiæ simple, furnished with minute spurs at the apex. Tarsi 5-jointed (5), posterior pair 4-jointed (†); anterior with the terminal joint the longest, but slender and clavate, 4th slightly cordate; posterior with the basal joint very long, the 2nd as long as the 4th, 3rd the smallest, subcordate. Claws slender acute.

Obs. The dissections and description are taken from the insect figured.

FLEXUOSUS *Payk.*—*Curt. Guide, Gen. 270. 2.*

Sericeous, minutely punctured; ferruginous-ochre: head black, lower part of face and palpi ochreous: antennæ black, excepting at the base and apex: thorax with a transverse black band not reaching the sides, a faint channel down the middle, and an impression on each side at the base; scutellum, a flexuose band before the middle, and a broader one beyond it, black: beneath black, excepting the thorax.

In the Cabinets of Mr. C. J. Thompson and the Author.

ALTHOUGH *H. flexuosus* is included by Paykull, Gyllenhal, Dejean and Sturm in the genus *Hallomenus*, it does not agree exactly with the type, which has the apical joint of the maxillary palpi subovate and truncated obliquely, the 3rd joint of the antennæ longer than the following, and the inner margin of the eye is distinctly notched. In their form they agree, being broader, flatter and shorter than *Hypulus*, to which they are most nearly allied, and to the second division of which *H. flexuosus* makes a near approach in structure.

1. *H. fuscus*? *Gyll. Ins. Suec.* 2. 528. 2.—*bipunctatus* Payk. var. β .

Length 2 to $2\frac{1}{2}$ lines. Sericeous, thickly and minutely punctured, brown above, ferruginous ochre beneath, antennæ palpi and legs ochreous, the latter bright and pale; eyes reniform, black; head with a faint channel on the crown: thorax with the sides ochreous, a shallow channel down the middle, and a distinct fovea on each side at the base: scutellum subquadrate: elytra with 7 or 8 indistinct impressed lines on each, the base except at the suture, ochreous.

From the size I have some doubt if it be not a variety of the *H. humeralis* Fab.; but my specimens want the 2 black spots on the thorax.

This insect is common in Sweden in the fungi of trees; in England no one but myself has ever taken it, and I have been so fortunate as to capture two; the first I took many years since on the wing in the New Road, and the second flying in Montague Square, a little before sunset, the end of May 1832.

2. *H. flexuosus* Payk.—*Curt. Brit. Ent. pl.* 474.—*undatus* Panz. 68. 23.

For specimens of this pretty insect, which is quite a new discovery in Britain, I am indebted to my friend Mr. C. J. Thompson; they were presented to him by Mr. Frederick Kenrick, who took them the beginning of last July under the bark of a dead Willow-tree, by the side of a river near Peterborough. It is found also in Sweden in the fungi of trees, especially the Alder; and Mons. Foudras kindly added specimens to my cabinet, which he captured near Lyons.

The Plant is *Sisymbrium sylvestre* (Creeping Water-cress), from the banks of the river near Bottisham, Cambridgeshire.



OPHIUSA LUSORIA.

The Black-neck Moth.

ORDER Lepidoptera. FAM. Noctuidæ.

Type of the Genus, Noctua lusoria Linn.

OPHIUSA Och., Treit., Curt.—Bombyx Linn.—Noctua Fab., Hub., Haw., Goda.

Antennæ inserted on each side the crown of the head, setaceous, clothed with scales above, pubescent beneath, with a series of bristles on each side (1).*Maxillæ* as long as the antennæ, slender and spiral (3).*Labial palpi* sometimes curved upward and projecting beyond the head, robust, being densely clothed with scales, the apical joint apparent (4); triarticulate, basal joint not short, 2nd twice as long, stouter and incrassated towards the apex, 3rd joint only half as long as the 1st and slender (4 a).*Head* short, transverse with a tuft of hair on the crown: eyes large and globose: ocelli 2. *Thorax* subquadrate, trilobed. *Abdomen* rather long cylindrical and slender, tufted at the apex in the males, conical in the females. *Wings* forming a triangle when at rest and scarcely deflexed, ample and entire, superior elongate-trigonate, the apex acute, being a little hooked, the inferior angle rounded: inferior wings rounded. *Legs* rather long. *Tibiæ*, anterior short and stout with an internal spine, the others with long but unequal spurs at the apex, the posterior being elongated and having a pair also below the middle (8 †). *Tarsi* 5-jointed, basal joint the longest. *Claws* and *pulvilli* minute.*Caterpillars* naked, attenuated to both ends; with 6 pectoral, 8 abdominal and 2 anal feet.*Pupæ* folliculated, changing upon or in the earth. Och.

LUSORIA Linn.—Curt. Guide, Gen. 882. 1.

Cinereous lilac: antennæ and palpi ochreous, outside of the latter, crown of head and anterior scales of thorax, forming a ruff or collar, rich brown: anterior wings transversely freckled, forming short irregular lines; the costa and an undefined band towards the posterior margin fuscous or reddish brown; a sub-lunulate chocolate coloured spot on the disc, with 2 dots outside the lower cusp, and another between it and the base: abdomen and posterior wings ochreous, the latter indistinctly freckled in transverse lines, and fuscous towards the margin.

Obs. This moth varies much in the tone of its colours.*In the Author's and other Cabinets.*THE differences between the genera *Ophiusa* and *Catephia* being principally in the colour, I included them in the same

genus in my Guide, and shall do so here. The larvæ of *Ophiusa*, like those of *Catocala*, have 16 feet; but I suppose they are half loopers, as Hübner places them amongst his *Semigeometræ*.

All the species, except the first, are very rare in England; and several of them probably are not native insects: they occasionally fly by day.

1. *O. lusoria* Linn. S. N. 831. 74.—Curt. Brit. Ent. pl. 475. ♂.

I have taken it in a meadow at Eccles, in Suffolk, as early as the 10th of July; but it is generally found about the middle of August, in moist woods, Yorkshire. I have observed it at Coombe, Birch, and Darent Woods. The caterpillar feeds upon the *Astragalus glycyphyllos* (pl. 208.), and is copied from Hübner.

2. *ludicra* Hüb. 65. 319.—Goda, pl. 56. 2.

This and the next species are in Mr. Swainson's Cabinet.

3. *crassiuscula* Haw. Lep. Brit. 259. 13.

Very rare in the North of England.

4. *grandirena* Haw. 264. 27.

A North American insect, a specimen of which was reported to have been caught at Bristol, and is in the British Museum.

5. *scopulepes* Haw. 260. 14.—inops Ste.

I included this with the *Acosmetiæ*, but it seems to be more allied to *Ophiusa*.

Specimens are in Mr. Haworth's Cabinet and the British Museum, from the Duchess of Portland's Collection.

Gen. 882*. *CATEPHIA* Och., Treit.—*OPHIUSA* Curt.

“Wings, superior dark coloured, with sombre markings: inferior at the base, light coloured, with a broad dark margin. Antennæ setaceous, slightly pectinated. Abdomen dark coloured, with tufts of hairs on the posterior segments*.”

5. *Alchymista* Hüb. 62. 303.—Goda, pl. 53. f. 1.—*leucomelas* Linn.?—*convergens* Fab.

Formerly in the Collections of the Duchess of Portland and Mr. Haworth.

The caterpillar feeds on the Oak and Elm, and is found in forests in France; the moth appears in June.

6. *O. trifasciata* Ste.

Reported to have been taken by the Rev. W. Kirby at Barham.

The Plant is *Bupleurum rotundifolium* (Common Thorough-wax), communicated by the Rev. Dr. Jermyn.

* The above characters are transcribed from Mr. Children's valuable abstract of Ochsenheimer's Genera, which we trust he will now resume, as the work is completed.



x



Sw. by J. L. and A. March, 1855

LEIOPHRON APICALIS.

ORDER Hymenoptera. FAM. Ichneumonidæ.

Type of the Genus, Leiophron pallipes Curt.

LEIOPHRON Nees, Curt., Hal.—Cryptus Fab.

Antennæ inserted in front of the face, as long as the wings in the male, and composed of from 26 to 17 joints; shorter in the female, and composed of from 21 to 16 joints, filiform and pubescent, basal joint the stoutest, 2nd globose, 3rd slender, longer than any of the following, which decrease in length until they become nearly cup-shaped, the apical joint ovate-conic (1).

Labrum transverse-oval, with a membranous ciliated margin and an elongate-trigonal pubescent lobe in the middle (2).

Mandibles curved, slender, cleft at the apex, slightly pilose externally (3).

Maxillæ terminated by a rounded hairy lobe with a minute one on the inside. *Palpi* long pilose and 5-jointed, 1st 3rd and 5th joints the longest, 2nd the broadest, very pilose, 4th the shortest, 5th slender subfusiform (4).

Mentum oblong, rounded at the base, truncated before. *Lip* short pubescent subcordate. *Palpi* as long as the mentum, pilose, triarticulate; basal joint slightly clavate, 2nd subovate, 3rd a little longer subfusiform (5).

Head subglobose, transverse. Eyes large and lateral. Ocelli 3, large and prominent on the crown of the head. Thorax elongate-ovate; neck narrowed: scutellum semiorbicular. Abdomen ovate-conic, not larger than the thorax; attached by a broad sulcated peduncle, narrowed at the base, the sides sometimes slightly sinuated; 2nd joint large campanulate: ovipositor concealed. Wings, superior with a large trigonal stigma, the marginal cell short, semilunate; 2 large discoidal and no submarginal cells (9). Legs moderately long stout and simple: tibiæ with small spurs at the apex: tarsi 5-jointed, basal joint the longest, 4th the shortest, 5th a little broader: claws and pulvilli distinct.

APICALIS Curt. Guide, Gen. 549. 7.

In the Cabinets of Mr. Walker, Mr. Haliday and the Author.

THIS genus was established by Nees von Esenbeck, who placed it between Perilitus (which follows Aphidius) and Bracon; and Mr. Haliday, in his learned Essay on the Parasitic Hymenoptera, locates it between the same groups. Our Leiophrons are easily distinguished from the other *Ichneumones minuti*, by the extremely short and sublunar marginal cell, although they are undoubtedly closely allied to the Braconidæ.

I shall describe the few species recorded in my Guide, as well as two others, and regret that space will not allow me to add some that Mr. F. Walker has obligingly transmitted to me. Mr. Haliday calls his division A. PYGOSTOLUS, of which *Crypus sticticus* Fab. is the type; it is characterized by "the radial areolet just touching the apex of the wing." The next is B. Radial areolet very short, semilunate.

a. Abdomen sessile.

Type L. mitis Haliday's MSS.

b. Abdomen petiolated. * Petiole striated.

- 1^a. L. *Orchesia* Curt.—1½ line. Antennæ 26-jointed in the male? Black, shining: antennæ (excepting the last 10 joints), head and legs ochreous; eyes and crown of head black, leaving a bright ochre orbit: postscutellum thickly punctured: posterior coxæ piceous; wings very transparent, the stigma piceous, excepting the interior angle.

This fine species was bred, I believe, by Mr. Walker, from pupæ of *Orchesia micans* (folio 197^a).

1. L. *pallipes* Curt.—1½ line. Antennæ of male 24-jointed, of female 21. Black shining, head and thorax punctured, postscutellum rugose: antennæ pale castaneous or ochreous at the base: legs deep ochre; stigma pale piceous.
2. L. *picipes* Curt.—1 line. Antennæ 16-jointed. Black shining, postscutellum dull and rugose; abdomen antennæ and legs piceous, the latter gradually growing paler from the thighs, the tips of which, as well as the tibiæ and tarsi of the anterior pair, are more or less ochreous; stigma pale piceous.
3. L. *nitidus* Curt.—Similar to No. 2, but narrower; the antennæ are rather stout, castaneous brown, ochreous at the base, legs ochreous, posterior thighs and tibiæ, excepting the base of the latter, brown.
4. L. *similis* Curt.—Like No. 2, but the antennæ are longer, with the 4 basal joints ochreous as well as the legs, the posterior being a little the darkest.

** Petiole punctured and indistinctly striated.

5. L. *fulvipes* Curt.—¾ line. Piceous shining: antennæ 16-jointed, brown, the base ochreous; postscutellum punctured; wings pale fuscous; legs ochreous.
6. L. *pallidistigma* Curt.—¾ line: piceous shining: antennæ 16-jointed, longer than in the foregoing and ochreous, as well as the legs; postscutellum shining, sparingly punctured: stigma pale ochreous.
- 6^a. L. *basalis* Curt.—Similar to No. 6, but the base of the abdomen is ferruginous-ochre, and the scutellum dull and thickly punctured, or reticulated. I took a specimen b. of June, in the New Forest.
7. L. *apicalis* Curt. B. E. pl. 476. ♂. Antennæ 17-jointed in the male, 16 in the female; shining ochreous; tips of antennæ and pulvilli brown: eyes green: ocelli piceous; postscutellum punctured, piceous in the female; petiole long and nearly linear, slightly angulated at the middle; posterior portion of abdomen piceous: stigma pale, with a brown patch at the extremity.

This pretty species, as well as Nos. 1, 2, 4, 5, and 6, Mr. Walker took at Southgate.

The Plant is *Lysimachia Nummularia* (Money-wort).



Publ. by J. Curtis. Nov. 1. 1825

TACHYDROMIA ARROGANS.

ORDER Diptera. FAM. Tachydromidæ.

Type of the Genus, Musca arrogans Linn.

TACHYDROMIA Meig., Fab., Macq., Curt.—Sicus Lat.—Calobata Fab.—Empis Panz.—Musca Linn.

Antennæ inserted between the eyes at the middle of the face, contiguous, as long as the head, 3-jointed, basal joint subglobose, 2nd ovate and hairy beneath, 3rd a long naked seta inserted a little above the apex of the 2nd joint (3).*Labrum* and *Tongue* undiscovered.*Mandibles* and *Maxillæ* none?*Palpi* large and drooping, oval cylindric, densely clothed with long hairs, and furnished with a bristle at the apex (f).*Labium* short, horny and attenuated, hollow and slightly cleft at the apex (g).

Proboscis exerted (2 g). Head ovate: eyes large and lateral, covering a great portion of the head: ocelli 3 in triangle on the crown of the head (2*). Thorax broader than the head, elongate-ovate: scutellum short and transverse. Abdomen short, obtuse in the males, attenuated at the apex in the females. Wings much longer than the body, incumbent and parallel when at rest; costal cell short, 4 longitudinal nervures, 2nd and 3rd united by a straight nervure nearer to the base than that uniting the 3rd and 4th, forming 2 discoidal cells, the superior being shorter and broader than the inferior; anal nervure rudimentary (9). Halteres large, the peduncle short and stout, the club elongate-ovate. Legs rather long. Thighs; the 1st and sometimes the 2nd pair incrassated with a double row of minute spines beneath, the posterior long and slender: tibiæ, anterior clavate with a series of spines on the inside, posterior the longest. Tarsi longer than the tibiæ, 5-jointed, basal joint very long, 4th the shortest. Claws and Pulvilli distinct (8, a fore leg).

ARROGANS Linn. Faun. Suec. 1857.—Curt. Guide, Gen. 1210, 1.

Black, shining: eyes castaneous, not meeting in front; antennæ with the 1st and 2nd joints subferruginous. Thorax with a cupreous tint. Wings very iridescent, with 2 broad fuscous bands, leaving transparent spaces at the base and tip, and a narrow curved fascia near the middle: halteres yellowish white, the peduncle dusky. Legs ferruginous ochre, posterior thighs black, and anterior tibiæ dusky, except at their bases, the posterior tibiæ blackish the base and apex whitish: tarsi ochreous, anterior black at the tips, the posterior with the tips of the 1st and 2nd joints dusky, the others entirely black.

In the Author's and other Cabinets.

MONS. J. MACQUART has added several new genera to the Tachydromidæ, and he has restricted the typical genus, which

now contains only 6 British species. The principal distinction of this group is the incrassated anterior thighs, which in the remainder, named by him *Platypalpus*, are more slender than the middle pair: I find that they are serrated beneath in the *Tachydromiæ*, and the tibiæ spined on the inside, which he has overlooked: the intermediate tibiæ are simple: the transverse nervures also in *Tachydromia* are straight, whereas they are oblique in the other group; the palpi and antennæ are likewise different; but the latter vary very much also in *Platypalpus*. These insects, like the *Empidæ*, seize and live upon other *Diptera*, for I have myself several times detected them feeding upon small flies.

The *Tachydromiæ* run with great swiftness, with their wings lying on their backs; and being prettily marked, they have the appearance of some of the small *Cimicidæ* (Gen. 1100. *Phytocoris*, &c.). I shall translate the specific characters from Meigen.

1. *T. arrogans* Linn.—Curt. Brit. Ent. pl. 477. ♀.—*cimicoides* Fab.

Found near London; b. June, on a wall and felled timber in abundance, in the New Forest; end of July and middle of October, Isle of Wight. J. C.

I have drawn this pretty insect, because nothing can be more interesting to the naturalist than to identify the Linnæan species; and it is remarkable that no figure of it should have been hitherto given.

2. *T. annulimana* Meig. 3. 69. 2. "Black shining; anterior thighs rufous, with 2 black rings; base of the tarsi rufous; wings with 2 fuscous fasciæ. $1\frac{1}{4}$ line."

Taken with the former.

3. *T. connexa* Meig. 3. 70. 3. tab. 23. f. 24. Black shining; anterior thighs entirely, and posterior with the base, rufous; wings with 2 broad fuscous fasciæ, united at the costa. 1 line."

Taken by Mr. Walker at Southgate.

4. *T. fuscipennis* Fall.—Meig. 3. 71. 5. "Black; antennæ and legs ochreous; wings fuscous, apex white. $1\frac{1}{4}$ line."

- 4^a. *T. nubila* Meig. 3. 71. 7. "Black, wings cinereous; legs variegated with black and yellow. $1\frac{1}{2}$ line."

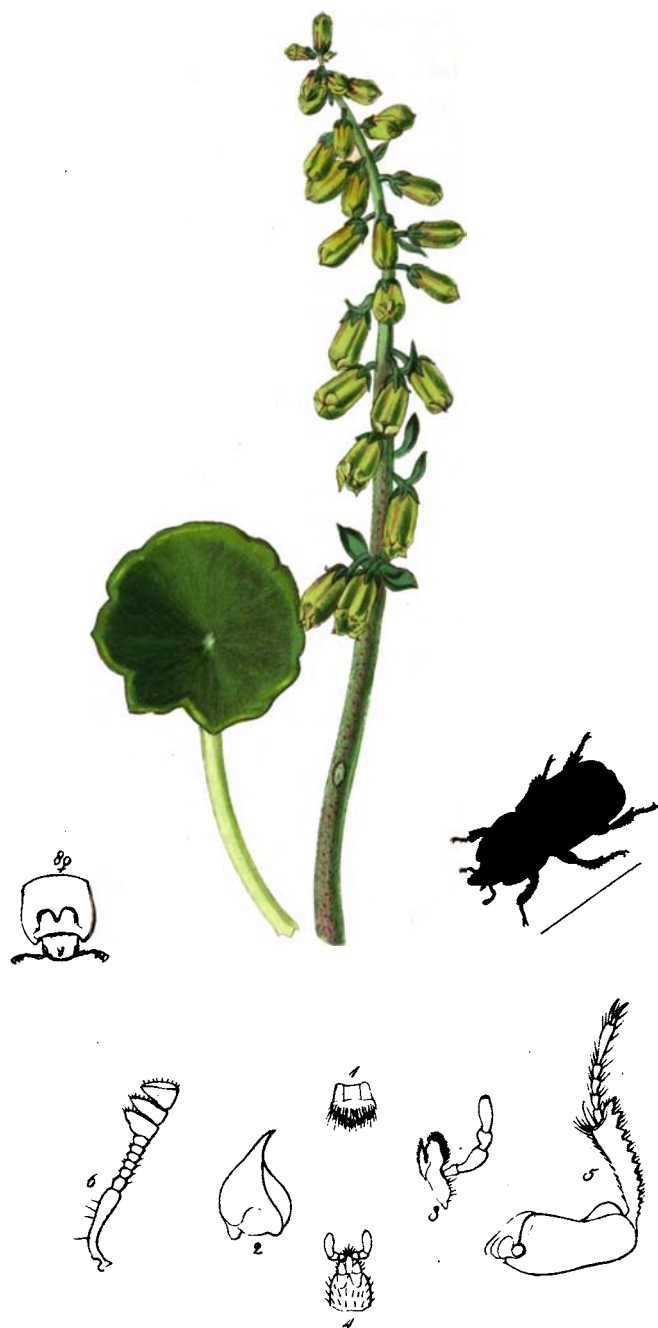
My specimen was, I believe, from Hampshire.

5. *T. nervosa* Meig. 3. 72. 8. "Black, wings hyaline, nervures fuscous; legs variegated with yellow and fuscous. 1 line."

I observe the eyes are contiguous in front in the female.

Near London; end of May, Netley Abbey; beginning of June, New Forest; middle of October, Isle of Wight.

The Plant is *Senecio squalidus* (Inelegant Ragwort), from walls in Oxford.



Publ. by J. C. Currier Dec. 1. 1865

SYNODENDRON CYLINDRICUM.

ORDER Coleoptera. FAM. Lucanidæ.

*Type of the Genus, Scarabæus cylindricus Linn.*SYNODENDRON *Fab.*—Sinodendron *Lat., McLeay, Curt.*—Scarabæus *Linn.*

Antennæ inserted under the edge of the clypeus, before the eyes and close to the base of the mandibles, short, slightly geniculated and clavate, 10-jointed, basal joint very long and clavate, curved at the base, 2nd globose, larger than the 5 following, which are somewhat cup-shaped and slightly increasing in diameter, the remainder forming a serrated club of wedge-shaped joints, the 9th joint being a little the shortest, the terminal one truncated obliquely and coriaceous at the apex (6).

Labrum small, subtrigonal and very pilose at the anterior margin (1).

Mandibles alike, small trigonate, slightly arcuated, acute and hollowed at the apex (2).

Maxillæ terminated by an ovate hairy lobe with a smaller lanceolate one on the inside. *Palpi* 4-jointed, basal joint as long, but a little slenderer than the 3rd, 2nd nearly twice as long, the stoutest, clavate-truncate, 3rd slightly cup-shaped, 4th as long as the 2nd elongate-ovate (3).

Mentum suborbicular, truncated before and hairy. *Lip* semi-ovate rigid and pilose, with the *Palpi* attached near the apex, approximating at their insertion, small and triarticulate, 1st and 2nd joints nearly of a size and cup-shaped, 3rd twice as long and subovate (4).

Head with a horn on the clypeus of the male, more or less curved and erected, pubescent above on the sides; the female having only a tubercle (8♀). Eyes small and lateral. Thorax large semicylindric, anterior angles lobed, abruptly truncated in the male, forming a crescent-shaped nearly vertical front, the superior margin projecting and sinuated, producing a tooth at the centre and a smaller one on each side; but slightly excavated in the female (8♀, front view of head and thorax): scutellum obtuse, nearly concealed. Elytra convex, oblong, rounded at the apex, and completely covering the abdomen. Wings ample. Legs rather short and stout: thighs short and broad: tibiæ curved and broad, narrowed at the base, spurred at the apex, strongly spined outside, the anterior pair very deeply serrated externally: tarsi rather shorter than the tibiæ, slender and 5-jointed, 4 basal joints very short, 5th long and clavate: claws long and curved (5, a fore leg).

CYLINDRICUM *Linn.*—Curtis's Guide, Gen. 136. 1.*In the Author's and other Cabinets.*

SYNODENDRON has so much the appearance of a *Bostrichus* that at first any one would suppose it belonged to that group; but its pentamerous tarsi remove it from them, and its geniculated antennæ show that it is allied to the *Lucanidæ*. Without a careful examination of the tarsi we may often be misled where the œconomy of families of different tribes is the same; and this is one of the errors most difficult to be avoided by those who search for a natural arrangement. As both *Synodendron* and the *Bostrichidæ* live in timber, a cylindrical form is the most convenient for their habits; and the truncated thorax of the one, and the sloped-off elytra of the other, may serve the same purpose, and probably, by fitting the orifice of the holes they make in the trees, they conceal their burrows and effectually prevent any intruder from entering into their habitations. The legs are compact and the tibiæ armed with spines, to enable them to force their way in a tree; and the dilated and toothed fore legs of the *Synodendron* are well adapted for throwing behind it the dust and chips which it disengages in its labours.

The larvæ also feed in timber, and are destructive to the Ash, Maple, Apple, Pear and Cherry tree.

S. cylindricum Linn. *Faun. Suec.* 133. 380.—*Curt. Brit. Ent.* 478. ♂

Black shining; head punctured, excepting the crown, hairs on the horn ferruginous; club of antennæ castaneous: front of thorax dull and punctured, excepting a small space towards the top, the rest of the thorax strongly and irregularly punctured, the disc being quite smooth: elytra with 9 or 10 striæ on each, the spaces between rugose with irregular and confluent punctures; tarsi subcastaneous, underside pubescent.

Obs. The horn on the head of the male is sometimes very small, and some females are more strongly punctured on the head and thorax than the males.

This species is confined, I believe, to the North of Europe, and no other one of the genus is known. I have met with it in abundance on old trees in Norfolk, and near Bexley and Darent in June: it has been found at Cheltenham and Plymouth, also in the half-rotten timber of an old Ash tree near Swansea by Mr. Dillwyn. Mr. Dale has found it in old rotten Apple trees at Glanville's Wootton, and he received a very small specimen from Captain Blomer when at Clifton, near Bristol. Mr. Wailes has found it at Newcastle, and the Rev. G. T. Rudd near Kimpton.

The Plant is *Cotyledon Umbilicus* (Common Navelwort).



Pub: by J. Curtis Dec: 1: 1833

GRACILLARIA ANASTOMOSIS.

The Lilac slender Moth.

ORDER Lepidoptera. FAM. Tineidæ.

Type of the Genus, Gracillaria anastomosis Haw.

GRACILLARIA Haw., Curt.—Ornix Och., Treit.—Tinea Hüb.

Antennæ inserted close to the eyes, capillary, nearly as long as the wings, and bent back beneath them when in repose, composed of numerous minute joints, the basal one rather stout.

Maxillæ spiral, slender and twice as long as the labial palpi (7*, 3). *Palpi* distinct (7a), slender and clothed with short scales forming a tuft at the apex, triarticulate, basal joint short ovate, 2nd twice as long, 3rd a little longer and curved (3a, the Palpus and a portion of the maxilla).

Labial Palpi projecting far beyond the head, recurved, slender, tapering and acute, clothed with short scales (4); triarticulate, basal joint the shortest, clavate, 2nd twice as long, curved and subclavate, 3rd longer and subulate (4a).

Head *small subglobose, clothed with depressed shining scales combed over the crown from each side: eyes globose and lateral. Thorax small. Abdomen short and slender, terminated by a lobe in the males, with a tuft of hair on each side. Wings, superior twice as long as the abdomen, elliptical, with very long cilia at the posterior angle; inferior wings shorter and lanceolate, furnished with very long cilia. Legs; anterior the shortest, posterior the longest: thighs short, especially the posterior: tibiæ; anterior with an internal spine, intermediate spurred at the apex and densely clothed with long broad scales; posterior with a pair of spurs towards the base, and another pair at the apex, one of them very long: tarsi 5-jointed: claws very minute (8†, hind leg).*

Larvæ with 6 pectoral, 6 abdominal and 2 anal feet; clothed with a few long hairs.

Pupæ subfusiform.

ANASTOMOSIS Haw. *Lep. Brit.* 530. 13.—Curt. *Guide, Gen.* 1038. 3.

Fuscous: antennæ dotted with white: head ochreous, palpi annulated with the same colour: thorax ochreous freckled with brown: abdomen cinereous, apex ochreous; superior wings orange, sometimes with a purple cupreous tinge, freckled with brown, 5 cream-coloured subtrigonal spots on the costa and about the same number on the interior margin with which some of them are occasionally united, the apical one forming a ring, sometimes with a blackish pupil: inferior wings cinereous as well as the fringe, which in the superior wings is variegated a little with white. Legs whitish, the thighs and tibiæ variegated with black, and the tips of the joints in the tarsi of the same colour.

In the Author's and other Cabinets.

GRACILLARIA is distinguished by the singularly tufted intermediate tibiæ, and the attitude in which the moth rests is very striking; this is represented in the outline figure of the natural

size: the larvæ also have only 6 abdominal feet, as shown in the plate, the figure above exhibiting the pupa, and I am not aware that any one has described the maxillary palpi, which are very distinct.

The following observations upon the species figured were communicated to me by the late Mr. E. W. Lewis of Chelsea, whose promising talents and devotion to Entomology render his premature death a loss to science.

"This Moth is double brooded, the first appearing in May from the larvæ of the preceding autumn, the second in July. The eggs are laid in rows consisting of from three to a dozen, and are placed along the nervures on the underside of the Lilac and Privet. In five or six days the eggs are hatched, and the larvæ eat into the leaf, mining to the upper surface, where they eat the parenchyma, leaving the epidermis untouched: about a fortnight after, they leave their mines, and commence rolling the leaves: the roll is fastened on the outside with a few threads, and the ends are drawn close. Here they remain until full grown, eating only half the substance of the leaf, when they drop from the leaves and retire under ground, where they spin a strong case, and in a few days change into pupæ.

"It is principally on trees in shaded situations, and on the ground-shoots and under-branches of others that the mother moth lays her eggs. This insect is very abundant in our neighbourhood; one small tree in our garden they attacked in such numbers that long before they were full grown there was not a green spot remaining."—E. W. Lewis.

Mr. R. Lewis having supplied me with the larvæ whilst feeding on the Lilac, I was able to make the following observations: at first they mine between the plates of the leaves, forming as it were brown blisters upon them; they afterwards roll up the end of the leaf on the underside, fastening it with fine silken threads, as represented in the plate: on opening this roll I have found 6 or 7 larvæ of different sizes, the young ones were dirty flesh-coloured, those nearly matured pale green and darker in the middle; they consume, at this period of their lives, the inferior cuticle of the leaf, and the space is filled with minute black pellets of dung.

Like most other Lepidoptera, these have their parasite. The *Pimpla stercorator* F. and its larvæ feed upon the caterpillars of *G. anastomosis*, as lately related in a very amusing manner by Mr. Lewis in Loudon's Mag. of Nat. Hist.

A list of the genus *Gracillaria* will be found in the Guide; I have only to observe that the *T. Upupæpenella* Hüb. is the type of Treitschke's genus *Ornix*, that *T. Mayrella* is the female of his *T. signipennella*, and that my No. 18. *G. leucapennella* and 14. *rufispennella* belong to other genera.

For the beautiful Plant figured, *Glaucium violaceum* (Violet horned Poppy), I am indebted to the Rev. Dr. Jermyn of Swaffham Prior, Cambridgeshire.



Pub. by J. Curtis Dec. 1. 1833

OXYBELUS ARGENTATUS.

ORDER Hymenoptera. FAM. Larridæ.

Type of the Genus, Vespa uniglumis Linn.

OXYBELUS Lat., Fab., Panz., Jur., Curt.—*Vespa* Linn.—Crabro Fab.

Antennæ inserted at the base of the clypeus, short, curved, clavate, geniculated and pubescent, 13-jointed in the males and 12-jointed in the females (1); basal joint rather long and very stout, 2nd much smaller and cup-shaped, 3rd longer than the 2nd, 4th shorter, the remainder cup-shaped or subquadrate, terminal joint ovate.

Labrum small lunulate, ciliated, producing a few long hairs (2). *Mandibles* long slender curved and acute with a triangular notch on the inside towards the base; externally hairy and ciliated internally (3).

Maxilla terminated by an incurved ovate lobe, the apical margin ciliated, and a small lobe on the inside. *Palpi* rather short, slender, pubescent, pilose and 6-jointed, basal joint small, the remainder nearly equal, the 5th a little shorter than the terminal one which is elongate-ovate (4).

Mentum quadrate at the top, the anterior margin sinuated, with a spine in the middle, base obovate, forming an angle on each side. *Palpi* rather long slender and pubescent, attached to small scapes, 4-jointed, basal joint the longest, clavate, the remainder nearly of equal size, the terminal joint ovate. *Lip* subquadrate and slightly emarginate (5).

Head *transverse*, face *orbicular*: clypeus with a deep keel in the centre in the males: eyes lateral long and narrow: ocelli 3 in triangle on the fore part of the head. Thorax *globose*, rather broader than the head: collar short: (T, the thorax in profile): scutellum *trispinose*, the lateral spines *squamose* (a), the central one the longest acuminate curved and grooved above (b). Abdomen not larger than the thorax, ovate-conic and 6-jointed. Wings; superior with 1 long marginal cell having the nervure continued from the apex, and 2 submarginal cells, the 1st of these being separated from one of the discoidal cells by a faint nervure: inferior wings with one transverse nervure very close to the base. Legs stout: thighs thick, short and ventricose: tibiæ short clavate and spurred at the apex and spined outside: tarsi longer than the tibiæ, the anterior with spiny bristles outside and serrated with smaller ones internally; 5-jointed, basal joint the longest, 4th minute, 5th thick and ovate. Claws curved and acute: pulvilli large and ovate (8, a fore leg).

ARGENTATUS Matt. MSS.—Curt. Guide, Gen. 681. 6.

Black, completely clothed with depressed silvery hairs and thickly punctured; scutellum with the lateral lobes and the apex of the curved spine yellow. Abdomen ovate-conic, with a yellow spot on each side of the first 4 segments, the 1st pair transverse oval, the 2nd and 3rd linear, the 4th united. Nervures of wings and legs ferruginous; anterior thighs black, yellow at the apex, the others black only at the base; anterior tibiæ yellow outside, the others only of that colour at the base: Pulvilli blackish.

In the Cabinets of the British Museum and Mr. Matthews.

LATREILLE distinguishes *Oxybelus* from *Astata* (pl. 261) and Nysson by a difference in the number of the cubital or sub-marginal cells, and the remarkable trimucronated scutellum is a striking character.

The males are smaller than the females, their bodies are narrower, the antennæ have a greater number of joints, and the clypeus, at least in the Type, has a projecting ridge, like a nose. Of their œconomy I am ignorant, but Latreille says they bury dead flies and lay their eggs close by them.

The following species have been detected in Britain.

1. *O. uniglumis* Linn. *F. S.* 1681.—*Panz.* 64. 14?—10-maculatus Don. 11. 376. 1. 1. var.

“Thorax immaculate: scutellum mucronate: abdomen with 8 white spots, the 2 basal ones ovate, the others linear: thighs black, tibiæ ferruginous.” The male has sometimes 10 spots on the abdomen, it is said.

On umbellate flowers in Kent. June and middle of August on sandy cliffs and footpaths in pairs, at the back of the Isle of Wight, also on sunny banks Pool Harbour: J. C. At Appledore, Dawlish, Bristol, Portland, Lulworth, Parley and Monkswood? J. C. Dale, Esq., from July to September.

2. *O. mucronatus* Fab. *Ent. Syst.* 2. 300. 25.

“Scutellum bidentate and mucronate, black spotted with yellow: all the abdominal segments with transverse yellow spots on each side: legs black, thighs yellow.”

Mr. Dale thinks he took this on Parley Heath, July 5, 1823.

3. *O. concinnus* Step.—mucronatus *Panz.*? 101. 19.

4. *O. tridens*? Fab. *E. S. Supp.* 270. 24.—*Nomada punctata*, Fab. *E. S.*

“Scutellum black immaculate; all the abdominal segments with transverse yellow spots on each side: legs rufous, thighs black.”

I have taken a pair, I believe, of this species.

5. *O. trispinosus* Fab. *E. S.* 2. 301. 26.—*Lat. Gen., &c., tab.* 13. f. 13.

“Scutellum black, abdomen with 2 yellow spots on each side: legs black, apex ferruginous.”

End of June, Wrentham, Suffolk.

6. *O. argentatus* Matt.—*Curt. Brit. Ent. pl.* 480. ♀.

The beautiful specimen figured was taken on the sand-hills near Liverpool in July 1831 by A. Matthews, Esq., of Lincoln College, Oxford, to whom I am indebted for the loan of it.

The Plant is *Hedynois* (*Apargia*) *hispida* (Rough *Apargia*).



LYGÆUS EQUESTRIS.

ORDER Hemiptera. FAM. Coreidæ.

Type of the Genus, Cimex Equestris Linn.

LYGÆUS Fab., LaP.—Corizus Fall. ? Curt.—Coreus Fall.—Cimex Linn.

Antennæ inserted in a notch considerably before the eyes, half as long as the insect, scarcely clavate, pubescent and 6-jointed, basal joint stout and oblong, 2nd the longest clavate, 3rd and 5th minute cup-shaped, 4th and 6th shorter than the 2nd, the latter subfusiform (4).

Labrum longer than the basal joint of the labium, very slender and setaceous (3).

Mandibles and *Maxillæ* long and slender.

Labium bent under the breast, as long as the antennæ, composed of 4 joints of nearly equal length, slightly attenuated to the apex (2).

Head trigonate immersed to the Eyes which are lateral small and prominent. Ocelli 2, remote, and close to the eyes (1). Thorax trapeziform: scutellum triangular, not large. Abdomen subelliptical, concave above, convex beneath. Elytra ample membranous and crossing at the apex when at rest, with several longitudinal but very few transverse nervures (9). Wings ample with strong nervures. Leg simple and very similar: thighs rather stouter than the tibiæ, which are a little incrassated at the apex: tarsi triarticulate, basal joint the longest, 2nd the shortest. Claws curved: 1 minute (6, a fore leg).

EQUESTRIS Linn.—Curt. Guide, Gen. 1124^a. 2.

Scarlet: head and thorax black, excepting a lozenge-shaped scarlet spot on the crown of the former, and a band across the latter of the same colour, leaving a bilobed spot before and the base as well as the scutellum black. Elytra when at rest with 2 black spots close to the apex of the scutellum and an irregular fascia of the same colour across the middle; membrane brown, the edges whitish, with a white triangular spot at the middle, a large round one in the centre, and a triangular one on each side. Wings fuscous iridescent. Abdomen with 5 black spots on each lateral margin, 3 on each side the belly, and the apex antennæ and legs black also.

In the Cabinets of the British Museum and Mr. Johnson.

For the loan of this beautiful insect I am indebted to Mr. E. A. Johnson: it was taken amongst some cabbages in a garden at Camden Town last summer: those in the Museum I believe were from the neighbourhood of Bristol, and I understand that Mr. Hope has a British specimen. It is much attached to the *Asclepias Vincetoxicum*, which is not a native plant.

CORIZUS HYOSCYAMI.

CORIZUS Fall.? Dall., Curt.—Coreus Fall.—Lygæus Fab.—Cimex Linn.

Antennæ inserted in a notch considerably before the eyes, half the length of the insect, slightly clavate, pubescent, 6-jointed, basal joint short stout and somewhat obovate, 2nd and 4th twice as long, slender and slightly clavate, 6th a little longer stouter and subfusiform, the 3rd and 5th minute cup-shaped.

Labrum longer than the basal joint of the labium, very slender and setaceous.

Mandibles and *Maxillæ* long and slender.

Labium bent under the breast as long as the antennæ, 4-jointed, 1st 2nd and 4th joints of equal length, 3rd short and a little stouter than the adjoining ones.

Head rhomboidal, narrowed behind: eyes lateral, small and prominent: ocelli 2 on the crown of the head, remote. Thorax trapeziform: scutellum trigonate. Abdomen ovate. Elytra ample, the membranous apex closely striated longitudinally and crossed when at rest. Wings similar to *Lygæus* and the legs also, but the posterior are visibly the longest.

HYOSCYAMI Linn. Faun. Suec.—Curt. Guide, Gen. 1124. 1.—Panz. 79. 21.—Sam. pl. 5. f. 8.

Scarlet, pubescent and slightly rugose: antennæ black, tips of the 4th and apical joints ochreous: proboscis and eyes black as well as a space round them; anterior margin of thorax and 2 lunulate spots on the base black: scutellum black at the base and also a stripe on each side and a dot or 2 on the elytra, and a large spot on the centre of each; membrane bronzed brown; wings fuscous. Abdomen with a large spot above at the apex and 3 rows of spots beneath black: Legs of the same colour.

It is obvious that this genus differs from *Lygæus Equestris* in having a rhomboidal head, narrowed behind, and the membranes of the hemi-elytra are furrowed and not furnished with nervures. As they approach very near to each other, I have given the characters of both, and shall not further illustrate them in this work.

Lygæus Equestris and its congeners having been selected as the types of the Fabrician genus by continental authors, the name of my genus 1121 may be altered to *Heterogaster*.

Corizus Hyoscyami has been found by Capt. Blomer, Mr. Dale and Mr. Morris at Charmouth, Teignmouth, Dawlish warren and Ravenglass on Thistles and Restharrow, from May 20th to July 1st. I have taken it upon the *Ononis* (pl. 332), near Ventnor, the 1st of August, and on sand-hills, Braunton Burrows, beginning of September.

The Plant is *Ornithogalum nutans* (Drooping Star of Bethlehem), communicated by W. Wilson Saunders, Esq.

ALPHABETICAL INDEX OF INSECTS TO VOL. X.

	Plate.		Plate.
<i>ACRYDIUM</i> subulatum, <i>Ample-winged</i>		<i>Hallomenus flexuosus</i> , <i>Banded Hallo-</i>	
<i>Acrydium</i>	439	<i>menus</i>	474
<i>Adactylus</i> Bennetii, <i>Sea-side Plume</i> ...	471	<i>Harpalus ruficeps</i> , <i>Red-headed Harpa-</i>	
<i>Adela</i> Frischella, <i>Frisch's Japan Moth</i>	463	<i>lus</i>	458
<i>Aglossa</i> Streatfieldii, <i>Mendip Tabby</i> ..	455	<i>Hesperia Actæon</i> , <i>Lulworth Skipper</i> ...	442
<i>Asiraca</i> pulchella, <i>Pretty Asiraca</i>	445	<i>Hister 4-maculatus</i> , <i>Lunar-spotted Mi-</i>	
<i>Aspidiphorus</i> orbiculatus, <i>Orbicular</i>		<i>mic-beetle</i>	470
<i>Dermestes</i>	450	<i>Issus coleoptratus</i> , <i>Variegated Issus</i> ...	449
<i>Aspilates</i> gilvaria, <i>Dover Belle</i>	467	<i>Lasioglossum tricingulum</i> , <i>Long-</i>	
<i>Borborus</i> hamatus, <i>Toothed Borborus</i> .	469	<i>tongued Melitta</i>	448
<i>Callicerus</i> Spencii, <i>Spencean Staphylit-</i>		<i>Leiophron apicalis</i> , <i>Black-tailed Lei-</i>	
<i>mus</i>	443	<i>phron</i>	476
<i>Carabus exasperatus</i> , <i>Portland Carabus</i>	446	<i>Leptogramma irrorana</i> , <i>Sprinkled</i>	
<i>Cardiapus Mathewsi</i> , <i>Mathew's Hal-</i>		<i>Rough-wing</i>	440
<i>tica</i>	435	<i>Lygæus Equestris</i> , <i>Black and Red Bug</i>	481
<i>Cerapteryx</i> Hibernicus, <i>Irish Antler</i>		<i>Mesochorus sericans</i> , <i>Silky Ichneumon</i>	464
<i>Moth</i>	451	<i>Molophilus brevipennis</i> , <i>Short-winged</i>	
<i>Cercopis</i> vulnerata, <i>Black-legged Cer-</i>		<i>Mountain Gnat</i>	444
<i>copsis</i>	461	<i>Nonagria Vectis</i> , <i>Isle of Wight Wainscot</i>	459
<i>Cladius pilicornis</i> , <i>Simple hairy horned</i>		<i>Ophiura lusoria</i> , <i>Black-neck Moth</i>	475
<i>Cladius</i>	457	<i>Orysus coronatus</i> , <i>Coroneted Orysus</i>	460
<i>Coranus subapterus</i> , <i>Sea-side Reduvius</i>	453	<i>Oxybelus argentatus</i> , <i>Silvery Oxybelus</i>	480
<i>Corizus Hyosciami</i>	481 ^a	<i>Oxycera Morrisii</i> , <i>Lyme Regis Oxycera</i>	441
<i>Drosophila</i> Cameraria, <i>Hairy thoraxed</i>		<i>Phora abdominalis</i> , <i>Red-bodied Phora</i> .	437
<i>Cellar-fly</i>	473	<i>Psithyrus rupestris</i> , <i>Black-winged Hum-</i>	
<i>Drypta emarginata</i> , <i>Blue Drypta</i>	454	<i>ble Bee</i>	468
<i>Elophorus fennicus</i> , <i>Broad Elophorus</i> .	466	<i>Pyrrhocerus apterus</i> , <i>Masked Bug</i>	465
<i>Emphytus fasciatus</i> , <i>Banded Tentredo</i>	496	<i>Reduvius Personatus</i> , <i>Bug destroyer</i> .	453 ^a
<i>Endromis Versicolor</i> , <i>Glory of Kent</i> .	494	<i>Smiera Macleanii</i> , <i>Essex Chalcis</i>	472
<i>Ephyra pictaria</i> , <i>Kent Mocha</i>	447	<i>Synodendron cylindricum</i> , <i>Cylindrical</i>	
<i>Falagria thoracica</i> , <i>Red-thoraxed Sta-</i>		<i>Lucanus</i>	478
<i>phylinus</i>	462	<i>Tachydromia arrogans</i> , <i>Black-banded</i>	
<i>Gracillaria anastomosis</i> , <i>Lilac Tinea</i> ...	479	<i>Tachydromia</i>	477
<i>Gryllotalpa vulgaris</i> , <i>Mole-cricket</i>	456	<i>Tasgius rufipes</i> , <i>Red-legged Staphylinus</i>	438
<i>Halictus rubicundus</i>	448 ^a	<i>Volucella inflata</i> , <i>Inflated Syrphus</i> ...	452

ALPHABETICAL INDEX OF PLANTS.

	Plate.		Plate.
<i>ANAGALLIS</i> tenella, <i>Bog Pimpernel</i> ...	440	<i>Digitalis purpurea</i> , <i>Purple Foxglove</i> .	468
<i>Anchusa sempervirens</i> , <i>Evergreen Al-</i>		<i>Drosera Anglica</i> , <i>English Fly-trap</i> ...	479
<i>kanet</i>	452	<i>Epipactis ovata</i> , <i>Common Twayblade</i> .	441
<i>Apargia hispida</i> , <i>Rough Apargia</i>	480	<i>Galanthus nivalis</i> , <i>The Snowdrop</i>	462
<i>Atriplex portulacoides</i> , <i>Shrubby Orache</i>	453	<i>Gentiana verna</i> , <i>Spring Gentian</i>	444
<i>Atropa Belladonna</i> , <i>Deadly Nightshade</i>	446	<i>Glaucium violaceum</i> , <i>Violet-horned</i>	
<i>Betula alba</i> , <i>Birch-tree</i>	434	<i>Poppy</i>	479
<i>Bidens tripartita</i> , <i>Trifid double-tooth</i> ...	439	<i>Hedypnois hispida</i>	480
<i>Bupleurum rotundifolium</i> , <i>Common</i>		<i>Hesperis inodora</i> , <i>Scentless Damewort</i>	435
<i>Thoroughwax</i>	475	<i>Hippophae rhamnoides</i> , <i>Sea Buckthorn</i>	454
<i>Carex limosa</i> , <i>Green and gold Carex</i> ...	471	<i>Lathyrus Nissolia</i> , <i>Crimson Grasswetch</i>	445
<i>Cotyledon Umbilicus</i> , <i>Common Navel-</i>		<i>Lycopus europæus</i> , <i>Water Horehound</i> .	461
<i>wort</i>	478	<i>Lysimachia Nummularia</i> , <i>Money-wort</i>	476
<i>Cuscuta Epithymum</i> , <i>Less Dodder</i> ...	464	<i>Malva sylvestris</i> , <i>Common Mallow</i> ...	465
<i>Cynoglossum officinale</i> , <i>Common</i>		<i>Montia fontana</i> , <i>Water Blinks</i>	456
<i>Hound's tongue</i>	450	<i>Myosurus minimus</i> , <i>Little Mouse-tail</i> .	437

INDEX.

	Plate.		Plate.
<i>Ornithogalum nutans</i> , <i>Drooping Star of Bethlehem</i>	481	<i>Rhinanthus Cristagalli</i> , <i>Yellow Rattle</i> ..	449
<i>umbellatum</i> , <i>Common Star of Bethlehem</i>	470	<i>Ruppia maritima</i> , <i>Tassel Pondweed</i> ...	466
<i>Papaver Argemone</i> , <i>Long rough-headed Poppy</i>	458	<i>Salsola Kali</i> , <i>Prickly Glasswort</i>	442
<i>Pedicularis sylvatica</i> , <i>Common Lousewort</i>	451	<i>Scirpus maritimus</i> , <i>Salt-marsh Club-grass</i>	472
<i>Peplis Portula</i> , <i>Water Purslane</i>	459	<i>(Isoplepis)</i> <i>setaceus</i> , <i>Least Club-rush</i>	463
<i>Phalaris canariensis</i> , <i>Manured Canary-grass</i>	460	<i>Senecio squalidus</i> , <i>Inelegant Rag-wort</i>	477
<i>Phallus foetidus</i> , <i>or impudicus</i>	469	<i>Sisymbrium sylvestre</i> , <i>Creeping Watercress</i>	474
<i>Plantago lanceolata</i> , <i>Ribwort Plantain</i> ..	448	<i>Sparganium simplex</i> , <i>Less Bur-reed</i> ...	436
<i>Poa bulbosa</i> , <i>Bulbous Meadow-grass</i> ...	467	<i>Tamus communis</i> , <i>Black Briony</i>	443
<i>Poterium Sanguisorba</i> , <i>Upland Burnet</i> ..	447	<i>Vicia Cracca</i> , <i>Tufted Vetch</i>	457
		<i>sepium</i> , <i>Bush Vetch</i>	438
		<i>sylvatica</i> , <i>Wood Vetch</i>	455

ERRATA AND ADDENDA.

Folio. Line.		Folio. Line.	
439 34	<i>after centre add and produced behind like a scutellum which is sometimes</i>	469	<i>Borborus hamatus</i> , <i>add to the specific description, hinder thighs of the male armed at the base with a hooked tooth.</i>
445	<i>Asiraca pulchella</i> . Mr. Dale has two females which are larger than the males.	472a 25	<i>for sublunulate one read sublunulate spot.</i>
446	I have lately seen a specimen of <i>C. purpurascens</i> F. taken by Mr. Saunders near Weymouth.	477	<i>Tachydromia</i> . The three following species have been discovered by Mr. Haliday.
448	<i>Lasioglossum tricingulum</i> . I find that I possess the female of this curious insect.		3 ^a <i>umbrarum Hal.</i> , Hollywood, County Down.
*453a 12	<i>dele that. Mr. Dale has a male with elytra covering the whole body.</i>		5 ^a <i>arenaria Hal.</i> Ditto.
			5 ^b <i>Graminum Hal.</i> Taken in England.

* The letter (a) following the number of the Folio indicates a reference to the second page of that leaf.

For an explanation of the terms used in this Work, the reader is referred to Kirby and Spence's Introduction to Entomology, Samouelle's Useful Compendium, and Stewart's Elements of Natural History.

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