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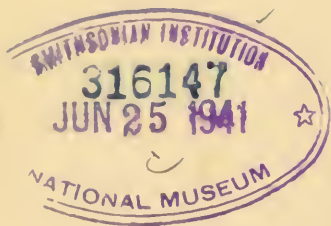
BRITISH ENTOMOLOGY;
—
BEING
ILLUSTRATIONS AND DESCRIPTIONS
OF
THE GENERA OF INSECTS
FOUND IN
GREAT BRITAIN AND IRELAND:
CONTAINING
COLOURED FIGURES FROM NATURE
OF THE MOST RARE AND BEAUTIFUL SPECIES,
AND IN MANY INSTANCES
OF THE PLANTS UPON WHICH THEY ARE FOUND.

BY JOHN CURTIS, F.L.S.
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OF THE IMPERIAL AND ROYAL ACADEMY OF FLORENCE,
OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, ETC.

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TO
HENRY WALKER, Esq.,
OF LANARK,
AND
FRANCIS WALKER, Esq., F.L.S., F.G.S., &c.,
OF SOUTHGATE,
TO WHOM THIS WORK HAS BEEN GREATLY INDEBTED
DURING ITS PROGRESS FOR THEIR NUMEROUS
AND VALUABLE CONTRIBUTIONS,
THE PRESENT VOLUME
IS DEDICATED,
IN TESTIMONY OF THE
ESTEEM AND FRIENDSHIP OF
THE AUTHOR.

London, December 1, 1836.



TO

ALEXANDER HENRY HALIDAY, Esq., M.A., &c.,

OF BELFAST,

WHOSE EXTENSIVE KNOWLEDGE

AND MUNIFICENT CONTRIBUTIONS

HAVE SO GREATLY ENRICHED THIS WORK,

AND WHOSE KINDNESS AND FRIENDSHIP IN ITS PROGRESS

HAVE BEEN AN UNINTERRUPTED SOURCE

OF GRATIFICATION

TO THE AUTHOR,

THIS VOLUME

IS DEDICATED AS A TOKEN OF SINCERE REGARD.

London, December 1, 1837.



Chrysopa

COCCUS ACERIS.

The Sycamore Scale-insect.

ORDER Homoptera.

FAM. Coccidæ.

Type of the Genus, Coccus Cacti Linn.

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

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

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

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

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

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

In the Author's and other Cabinets.

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

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

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

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



APHIS TILIÆ.
The Lime-tree Aphis.

ORDER Homoptera.

FAM. Aphidæ.

Type of the Genus, Aphis Tiliæ Linn.

APHIS Linn., Fab., Lat., Curt.

Antennæ considerably longer than the body, often as long as the wings, setaceous and naked, inserted close to the inner margin of the eyes in front of the face, composed of 7 joints, two basal stout and oblong, 1st the stoutest, remainder slender, 3rd very long, 4th only half as long, 5th and 6th about the same length, 7th considerably shorter and more slender, with a few hairs at the apex (4).

Trophi arising at the lower part of the face between the anterior coxæ (F).

Labrum short broad and subconic (3).

Mandibles and *Maxillæ* slender.

Labium bent under the breast, and united to the antepectus, not longer than the head and rather stout in the males (2 the profile), composed of 4? short oblong joints, 2nd the stoutest and curved, 4th the smallest ovate-conic and pilose: longer and slender in the female (F).

Head *immovable, transverse-convex* (1 *front view*): face *transverse-ovate and very much deflexed beneath* (1, *u, underside of head*): eyes *globose, remote, lateral, not very prominent*: ocelli *remote, 2 placed near to the inner margin of the eyes, the 3rd close to the anterior margin of the forehead*. Thorax *oblong, the collar very long in the male*: scutellum *semiorbicular*. Abdomen *elongate-conic with 2 tubercles or tubes on the 5th? segment in the males, always elongated in the females with a horny process beneath the apex* (F). Wings *membranous, deflexed in repose*; superior *twice as long as the body, ample, the marginal furcate cells short*; inferior *much smaller, with 2 slightly oblique nervures, remote at the costa*: Females generally *apterous* (F). Legs *slender and long, especially the hinder pair*: thighs *elongated in the females as well as the tibiæ, especially in the hinder pair, which are not curved*: tarsi *short, biarticulate, basal joint minute, 2nd long and clavate*: claws *curved and acute* (6, *fore leg*).

TILIÆ Linn.—Curt. Guide, Gen. 1047. 29.

Yellow-ochreous; antennæ not so long as the wings, black, 3rd joint sometimes with a yellow ring at the middle, the base of the 4th, 5th and 6th annulated with the same colour; orbits of eyes, sides of collar and 2 spots on the metathorax, fuscous: abdomen with 2 very short tubercles, a double row of black spots down the back and smaller ones on each side: superior wings with the costa, a broad margin to the stigma, which is yellow, and all the nervures at the apex, fuscous, the latter forming 6 elongate-trigonate spots on the margin of the superior, and 2 on the inferior wings: Legs rather short, hinder thighs black, except at the base, their tibiæ black only at the base, all of them fuscous at the apex, as well as the tarsi.

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

I CONSIDER this group more nearly allied to *Psylla* (fol. 565.) in the formation of the head and rostrum than the *Cinaræ* are; and whatever may be the affinities of *Thrips*, it certainly must not separate these two groups, which it does in my *Guide*, where I adopted the views and arrangement of *Latreille*.

I must observe that I have described the winged specimens as males, and the apterous as females; but as I have detected the horny process beneath the apex in both, and in the same species, I am not confident that my fig. F is a female, neither have I been able to identify the species.

The following insects belong, I believe, to this genus; they inhabit the plants after which they are named, and I have referred, as far as I am able, to figures and descriptions of them.

1. *Pruni Fab.*—*DeGeer*, vol. 3. pl. 2. f. 1—13.
2. *Pomi DeG.* pl. 3. f. 18—23.—*Mali Fab.*
3. *Juniperi Fab.*—*DeG.* pl. 4. f. 7—9.
4. *Craccæ Linn.*—*DeG.* pl. 2. f. 14—19.—*Viciæ Fab.*
5. *Millefolii Fab.*—*DeG.* pl. 4. f. 1—6.
6. *Rosæ Linn.*—*DeG.* pl. 3. f. 1—13.—*Reau.* v. 3. t. 21. f. 1—4.—*Harris Expo.* pl. 18. f. 1—3.
7. *Salicis Linn.* *Trans.* 6. p. 94. tab. 5. f. 1. and 2.—*Reau.* pl. 22. f. 1 and 2.—*DeG.* t. 4. f. 10—13.
8. *Ribis Linn.*—*Reau.* pl. 24. f. 4.
9. *Cardui Linn.* *Faun. Succ.* n. 988.
10. *Absinthii L.* *F. S.* 990.
11. *Euonymi Fab.* *Ent. Syst.* 4. 214. 21.
12. *Avenæ Fab.* 214. 22.
13. *granaria Kirb.* *Linn. Trans.* 4. 238.
14. *Viburni Scop.*—*Fab. E. S.* 4. 216. 28.
15. *Tanaceti Linn.* *F. S.* n. 989.
16. *Papaveris Fab.* *E. S.* 4. 218. 38.
17. *Sonchi Linn.*—*Reau.* t. 22. f. 3—5.
18. *Brassicæ Linn.*—*Harris Ex.* pl. 18. f. 4—6.
19. *Althæa Harris*, pl. 18. f. 7—9.
20. *Tiliæ Linn.*—*Curt. Brit. Ent.* pl. 577.

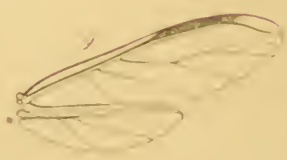
Found on long grass in a field at Blandford, the beginning of June, by Mr. Dale and Mr. F. Walker, at Southgate.

The following is apparently a new species of *Cinara*, which is appended here for want of space in the preceding folio.

Symphiti Curt.—Piceous pubescent; abdomen with 2 short tubercles; superior wings with the short furcate nervure wanting, a pale stripe on the costa at the apex, with a lunate transparent spot next the stigma, which is long and brown, and another brown spot at the centre of the interior margin; antennæ and legs ochreous and woolly, the 2 basal joints and apex of the former, and the tips of the other joints, fuscous; thighs, especially the posterior, annulated with brown, tarsi and tips of tibiæ piceous: expanse 5 lines.

24th June, Isle of Portland, J. C.; and on Comfrey at Glanville's Wootton, the middle of June, Mr. Dale.

The Plant is *Accr Pseudo-platanus* (Sycamore or Great Maple).



Chrysothrix

CINARA ROBORIS.

The clouded-winged Oak-louse.

ORDER Homoptera.

FAM. Aphidæ.

*Type of the Genus, Aphis Pini Linn. ?*CINARA Curt.—*Aphis Linn., Fab., Lat.*

Antennæ considerably shorter than the body, inserted in the face near to the eyes, filiform, pilose and 7-jointed, two basal joints robust and oblong, the remainder slender, 3rd the longest, 4th and 5th shorter, 6th considerably shorter, 7th abbreviated, apparently triarticulate and conical at the apex (4).

Trophi arising from the anterior margin on the underside of the head (F).

Labrum long, narrow and lanceolate (3).

Mandibles and *Maxillæ* very long and exceedingly slender.

Labium inflected, as long or longer than the antennæ, especially in the male (2); pilose, membranous at the base, 5-jointed, basal joint the broadest, elongated, 2nd twice as long, 3rd a little broader and nearly as long as the 1st, 4th shorter, slenderer and attenuated, 5th the shortest and very slender.

Head *obtuse, broad and transverse*: face *trigonal* (1). Ocelli 3, *forming a very large triangle, one being at the base of the clypeus, the others close to the internal margin of the Eyes, which are globose, lateral and very prominent.* Thorax *globose*; collar *very short in the male*: scutellum *semiorbicular.* Abdomen *short, thick and rounded at the apex, with 2 tubercles on the back of the 5th? segment.* Males *generally with wings, all membranous, deflexed when at rest, superior ample, twice as long as the body, the marginal furcate cells elongated* (9); *inferior wings much smaller, with 2 oblique nervures approximating at the costa* (*). Females *for the most part apterous* (F). Legs *slender, hinder pair the longest*: thighs *rather short*: tibiæ *longer, hinder pair very long and curved*: tarsi *short, biarticulate, 2nd joint twice as long as the 1st and clavate*: claws *bent, acute* (6, a fore leg). Obs. *The outline figure of the female, being drawn from a dried specimen, does not give the character of that sex so well as could be wished.*

ROBORIS Linn.—*Curt. Guide, Gen. 1047^a. 30.*

Shining black, wings iridescent, superior with the apical portion and a fascia across the middle dark brown; stigma ferruginous, margined by a lunate transparent spot divided in the centre by a brown line; antennæ and legs ferruginous, 2 basal and 2 apical joints of the former fuscous, apex of the tibiæ, of the posterior thighs, the hinder tibiæ, excepting the base, and all the tarsi piceous. *Female* similar, but apterous.

THERE is no insect that does more mischief in this country, and causes a greater loss of property, than the Aphides, or plant-lice, for not only is the beauty of our gardens defaced and the loveliest flowers destroyed, but the most promising crops are rendered unproductive through the agency of one of these little animals, the Hop-fly.

The Aphides are very remarkable in their œconomy, and their increase is almost marvellous: the female is sometimes

oviparous, but more generally viviparous, and frequently produces young without associating with the male, and in this way, according to Bonnet, they have multiplied for nine generations in the space of three months: it is also said by one observer in the Ent. Mag., that female Hop-flies sometimes produce *winged* individuals. By this rapid succession we may frequently see at the same period, on a single leaf, larvæ of every size, the pupæ, winged males and apterous females, their exuviae, and the shells of those that are pierced by parasites, which together render the sweetest plants offensive both to the touch and sight.

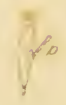
The greatest mischief, however, arises from their exhausting the plant. I once observed some Aphides upon a *Sonchus*; they were all sucking it: the females were of various sizes, and the winged males had their proboscis thrust its whole length into the stalk and calyx, and the punctures they had made were indicated by the sap exuding and becoming dark as it hardened over the wounds after the insects had left the spot. Fortunately for man, no insect has more enemies than the Aphides: the most conspicuous amongst them are the larvæ of the *Chrysopa* (pl. 520), the Lady-bird (*Coccinella*, pl. 438), and of a beautiful fly (*Scæva Pyrastris*, fol. 509.), which revel amongst their helpless victims until they are transformed into pupæ; but besides these, there are minute parasites which are not less useful in keeping the Aphides within bounds, amongst them are *Ceraphron Carpenteri* (fol. 249.), *Cyrtogaster vulgaris* (Guide, Gen. 624.), *Cynips erythrocephalus*, and the *Aphidii* (pl. 383). These Hymenoptera (the last of which have been investigated and described by Mr. Haliday in the Ent. Mag.,) generally deposit their eggs in the larvæ or pupæ of the Aphides, which then assume an opaque and horny appearance; and when the imago escapes, a hole is visible on the side, sometimes with the operculum attached, and open like a door.

The Aphides have also the singular property of producing the saccharine matter called Honey-dew, that exudes in globules from the tubes attached to the bodies of many species, and it is this deposit which the Ants are so fond of.

From a careful investigation of these insects, I find they may be very easily, and, I may add, usefully formed into two genera, the *CINARÆ*, with antennæ shorter than the body: proboscis as long as the body, at least in the males, and projecting immediately from the clypeus; with the collar short in the males. Nos. 20 to 30 enumerated in the Guide, with the exception of No. 29, belong to this genus. Both sexes of the species figured I have found in Darent Wood and the New Forest, the beginning of June, on Oaks.

The others, which may be considered the typical Aphides, I shall illustrate in the following plate; they are characterized by antennæ longer than the body: proboscis much shorter, especially in the winged males, and arising between the anterior coxæ: the collar long in the males.

The Plant is *Trifolium arvense* (Hare's-foot Trefoil).



THRIPS DISPAR.

ORDER Thysanoptera Hal. Homoptera Leach.

FAM. Terebrantia.

Type of the Genus, Thrips physapus Linn.

THRIPS Linn., DeGeer, Fab., Lat., Hal., Curt.

Antennæ approximating, inserted before the eyes, often as long as the thorax, sparingly bristly, 9-jointed; 2 basal joints the stoutest, oblong, 3rd and 4th rather larger, obovate with a gland at the apex appearing like a small joint, 5th obovate, 6th elongate-ovate, truncated, the remainder tapering, 7th oblong, 8th minute, 9th twice as long, very slender, the apex pilose (4).

Labrum broad at the base, attenuated before (3).

Mandibles 2 long setæ, thickened at the base (5).

Maxillæ broad, attenuated to the apex, which is narrowed abruptly (m). *Palpi* placed near the middle on the outside, conspicuous, triarticulate, joints oblong, 3rd rounded and pilose (p).

Labium short and stout, the base dilated, elongate-conic (2), with a short *Palpus* on each side near the apex, which is rounded and pilose (p).

Males smaller than the females. Head depressed (1 profile), subovate or oblong; face inclining obliquely beneath, terminated by the trophi, which unite and form a short beak, close to the anterior coxæ: eyes large, remote, coarsely granulated: ocelli 3, distinct, forming a large triangle on the crown. Thorax suborbicular or semiovate: scutellum short sublunate. Abdomen long narrow and smooth, apex ovate or conical, acuminate in the females, composed of 9 segments: ovipositor incurved, compressed, received into the underside of the 8th and 9th segments. Wings narrow, horizontal, incumbent and parallel, but not meeting in repose; generally 4, sometimes as long as the body: superior sometimes coriaceous, with 3 longitudinal nervures: inferior shorter, membranous, both with long hairy cilia. Legs remote, anterior (6) very short and stout, hinder the longest: thighs, anterior incrassated but compressed: tibiæ, anterior with a protuberance inside, and a curved claw at the apex, the others simple: tarsi very short, biarticulate, basal joint oblong, 2nd short, vesiculose: claws none.

Larvæ and Pupæ similar to the Imago; the former softer, without wings; the latter less active, with rudiments only.

DISPAR Hal. Ent. Mag. 3. 449.—Curt. Guide, Gen. 1048. 24.

Male black, shining: antennæ 8-jointed? apex indistinctly articulated: head ovate, truncated behind: thorax suborbicular, sides foveolated: wings small ovate, whitish: antennæ and legs pale ochre, basal and 2 apical joints of former, thighs and 2nd tarsal joint brownish. Female, 3rd joint of antennæ yellowish, 4th darker: wings long narrow and dirty white, superior with a brown fascia across the middle, and an equal portion of the apex of the same colour: legs yellowish, thighs and apex of tarsi piceous, base of tibiæ brownish.

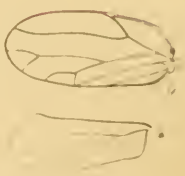
THE genus Thrips of Linné has given rise to as great a variety of opinions regarding its affinities, as Stylops; but after all that has been adduced respecting its alliance to the Orthoptera, Neuroptera, &c., I have not the least hesitation in adopting the opinion of Mr. Haliday, who has established it as a distinct order. The setiform mandibles show that Thrips belongs to the Haustellata, and its rostriform trophi undoubtedly indicate a near relationship to the Homoptera, in which order Psylla (pl. 565) seems to make the nearest approach to it. The trophi are similarly situated at the extremity of the face, close to the anterior coxæ: it has a borer composed of four pieces, and the tarsi are biarticulate. One of the maxillary palpi was bent back in the specimen I dissected, which might be an accidental position, for I could not discover the other. Fig. g. represents a piece which projected from beneath the labrum, which seems to have its analogue in the Tettigonidæ (pl. 633. g.).

These insects live upon the juices of plants, and probably on the pollen, for every flower sometimes swarms with them. It is the Thrips which causes an intolerable irritation of the face, when it runs and leaps with its bladder-shaped feet over the skin, throwing up its head and twisting about its tail to open or close its wings. Minute as they are they do very great injury to various crops. *T. physapus* of Kirby, *L. cerealium*, Hal. is the insect which, by attacking the wheat stems above the knot occasions abortive ears. "In the year 1805," observes Mr. Haliday, "one third of the wheat crop in the richest plains of Piedmont is said to have been destroyed by this seemingly insignificant little insect." We also learn from Professor Passerini, that the olives of Italy are greatly injured by a species of Thrips, which fixes itself under the leaves. The rye-spikes also in Scotland, infested by some of these insects, are stated to become unprolific.

I must refer to Mr. Haliday's invaluable memoir for characters of the families, genera, and species, a list of which will be found in the Guide, and I can only avail myself of that portion of his synoptic table which comprises the genus Thrips as restricted by him.

- A No ocelliSubg. III. APTINOTHRIPS.
- AA Three ocelli.
- B Prothorax in front produced, narrowed..... I. CHIOTHRIPS.
- BB Prothorax of equal breadth.
- C Last segment armed with two dorsal spines in the ♀ II. LIMOTHRIPS.
- CC Last abdominal segment unarmed.
- D Style of antennæ longer than the 6th joint V. BELOTHRIPS.
- DD Style shorter than the 6th joint IV. THRIPS.

T. dispar was found by Mr. Haliday "on *Festuca fluitans* and other grasses in autumn." *Knappia agrostidea*, Early Knappia, was communicated by S. H. Haslam, Esq., from Guernsey.



LIVIA JUNCORUM.

ORDER Homoptera. FAM. Psyllidæ.

Type of the Genus, Livia Juncorum Lat.

LIVIA Lat., Curt.—Psylla Lat.—Diraphia Ill.

Antennæ porrected, as long as the head and inserted on each side, on a shoulder before the eyes, 10-jointed, 2 basal joints robust, the others slender and filiform, 1st joint cup-shaped, 2nd very large, elongate-ovate, truncated at the apex, 3rd small cup-shaped, the remainder more or less quadrate or ovate, the apical joint slightly notched and furnished at the apex with 2 unequal short divaricating bristles (4).

Rostrum a small thick conical lobe (1*2).

Head large and flat, deeply notched in front: eyes remote oval and situated on each side near to the base. Ocelli 2 placed behind the eyes (1, the head and base of antennæ in profile; 1*, underside of the same). Thorax not broader than the head; prothorax forming a transverse linear band; scutellum small. Abdomen short, conical and furnished with an Ovipositor in the female. Wings deflexed when at rest, superior coriaceous, broad and ovate with 2 marginal cells, a branched nervure near the middle, each branch furcate at the margin, and 2 oblique nervures below (9); inferior smaller, very transparent with a few very fine nervures (9*). Legs similar and small, with a spine at the base of each of the posterior coxæ? thighs compressed: tibiæ subclavate, the hinder pair with a ring of short spines at the apex: tarsi triarticulate, 1st joint scarcely to be detected except in the hinder feet, 2nd joint short nearly as long as the 3rd in the same pair: Claws minute (6†, hind leg with a portion of the postpectus attached to show the spine).

Larvæ very flat and elliptical, with antennæ and 6 feet.

Pupæ similar to the larvæ, with rudimentary elytra.—Lat. Hist. Nat. des Four. pl. 12. f. 3. B.

JUNCORUM Lat.—Curt. Guide, Gen. 1049. 1.

Lurid ochre, finely rugose, 3 basal joints of antennæ red the remainder whitish, excepting the 2 apical joints which are black, head red excepting a stripe down the crown, central part beneath black, leaving the apex of the clypeus and the base of the Labrum ochreous: thorax red, the segments margined with greenish ochre: postscutellum black, sides scarlet: superior wings palest towards the costa; inferior colourless.

In the Author's and other Cabinets.

THIS singular little insect is nearest related to Psylla; but the form of the head, the prothorax, and antennæ, will show that it was necessary to separate it from that group.

Not having living specimens, I was unable to discover the mandibles and maxillæ, but Latreille says they (*les soies*) appeared to him very long; neither could I ascertain whether the curious spine shown at fig. 6†. was attached to the postpectus or the coxæ; but I am inclined to think to the latter. I discovered, however, that the tarsi consisted of 3 joints, and not of 2, as hitherto stated.

In our excursion last July to Bottisham Fen, Prof. Henslow pointed out to me the singular appearance of the *Juncus*, as represented in our plate, and informed me that it was occasioned by the *Livia Juncorum*; and on opening the tuft we found the larvæ and pupæ in some abundance. As Latreille was the first historian of our insect, and gave a very excellent memoir upon it, I shall give some of his remarks upon its œconomy. He informs us, that “the females deposit their eggs in the flowers of the *Juncus articulatus* (pl. 2.), or at least in their shoots. The sap of the plant repairing to these parts in greater abundance, it forms there a monstrosity, which has the appearance of a bundle of grass. The divisions of the calyx are elongated into a sort of barb or awn. The eggs are few in number, tolerably large, oval, yellowish, shining, marked with a red dot at one end, and attached to the leaves by a pedicel. The Larvæ, as well as the Pupæ, move slowly. They live constantly inclosed in the interior of these false galls, supporting themselves on the juice of the plant, and voiding a farinaceous matter very white, in the midst of which they seem to delight in living. The perfect insect also remains there very quietly, and, like the other *Psyllidæ*, it jumps more than it walks.”

The coloured Plant is *Lathyrus palustris* (Marsh Vetchling).



LIVILLA ULICIS.

ORDER Homoptera.

FAM. Psyllidæ.

Type of the Genus Livilla Ulicis Curt.

LIVILLA Curt.

Antennæ inserted on each side of the head, before the eyes, as long as the head and thorax, capillary, scabrous and 10-jointed, 2 basal joints stout, obovate-truncate, the remainder slender, 3rd very long, the following shorter, 9th and 10th the shortest, the apex furnished with 2 little unequal bristles (4).

Mandibles and *Maxillæ* setiform.

Labium small, attached to the hinder part of the face, and projecting between the anterior coxæ, biarticulate, 1st joint elongated, 2nd horny and conical, with a small tuft of hair on each side (2).

Head large, with the front produced and deeply cleft, forming 2 large cylindrical somewhat conical lobes: eyes remote, lateral, prominent and globose: ocelli, one placed on each side close to the eyes and a 3rd probably at the base of the cleft. Thorax suborbicular, with a broad narrow collar: scutellum small, semiorbicular. Abdomen short, broad, and subovate. Elytra deflexed in repose, large, coriaceous, convex and ovate, the nervures raised, one simple and 2 furcated: wings small, membranaceous, oval, with short costal cells, one simple and 2 furcate nervures. Legs short: hinder coxæ with a large spine: thighs very short, especially the anterior: tibiæ simply clavate, the hinder with a few minute spines at the apex: tarsi biarticulate, the joints nearly of equal length: claws 6-jointed (6, †, a hind leg, including the trochanter).

ULICIS Curt.—*Guide, Gen.* 1049^b. 1.

Black, shining; lobes of the head hairy; antennæ ochreous at the base: elytra pitchy-brown, slightly rugose; wings pale fuscous, costal nervures pitchy, the others brown: legs pubescent, ochreous, hinder thighs brown, except at their tips; spines of tibiæ and claws blackish.

In the Cabinets of Mr. Dale and the Author.

OF this family we have already figured the other two genera, Livia (pl. 492) and Psylla (pl. 565), which Livilla connects, its coriaceous elytra and stoutish legs agreeing with the former, but making a nearer approach to the latter in the form of the head and proportions of the antennæ.

For specimens of this new and curious little insect I am indebted to Mr. Dale, by whom they were discovered upon Furze-bushes and grass the 28th June in Mr. Webb's plantation, Annis, West Camel, Somerset, and the following day in plenty on Higham Hill, near Breach Wood, Langport, in the same county. This insect has the power of jumping like the rest of the family, and I have observed that the Psyllæ expand their wings on such occasions.

The Plant is *Avena* (*Trisetum* Pers.) *pubescens*, Downy Oat.



PSYLLA FRAXINI.

Chermes of the Ash.

ORDER Homoptera.

FAM. Psyllidæ.

Type of the Genus, Chermes Betulæ Alni Linn.

PSYLLA Geof., Lat., Curt.—Chermes Linn., DeG., Fab., Gmel.

Antennæ inserted before the eyes, sometimes as long as the body, filiform, 10-jointed, basal joint stout subquadrate, with a few bristles, 2nd small and oblong, remainder very slender, 3rd joint longer than the 4th, the following slightly increasing in length to the 9th joint, which is not longer than the 4th; 10th joint considerably shorter and terminated by 2 unequal bristles (4).

Labrum ? elongate-ovate.

Mandibles and *Maxillæ* long slender setæ, curved at the base (1).

Labium conducted from the head under the antepectus and appearing between the coxæ of the anterior legs (T 2); short stout and triarticulate; basal joint elongated, 2nd much shorter and slenderer, 3rd suborbicular (2).

Head short but broad, deeply notched before (1, the upper side): eyes lateral, small globose and prominent: ocelli 3, on the crown very remote.

Thorax subglobose. Abdomen short, that of the male furnished towards the apex with a long erect hairy lobe, 2 others forming an arch at the apex, with a short oblique process between them (A ♂): ovipositor exerted, rather large and a little curved, composed of an oviduct inclosed by an upper and under valve, and 2 lateral ones united at the base (♀). Wings deflexed in repose, superior very ample, elongate ovate, with 3 furcate nervures; inferior smaller, with very indistinct nervures. Legs short, hinder pair a little longer and formed for leaping; coxæ, posterior with a strong spine beneath: tibiæ with minute spines at the apex, hinder pair the longest, with a hook outside at the base: tarsi short and biarticulate: claws hooked; pulvilli small (8†, hind leg, including the coxa).

Pupæ suborbicular and depressed.

FRAXINI Linn.—Curt. Guide, Gen. 1050. n. 15.

Yellow, variegated with orange and black: tips of the clypeus, a triangular spot on the crown of the head, an interrupted circle on the thorax and the scutellum (excepting 2 yellow spots), black: abdomen banded with the same colour: superior wings with the nervures ochreous except at the apex, which is margined with brown, forming 3 or 4 irregular spots, basal angle brown with a short black line at its insertion: inferior wings with a brown stripe on the anal angle: centre of the thighs and tips of tarsi and antennæ black.

In the Author's and other Cabinets.

PSYLLA is a very numerous genus, which has been but little attended to. Linnæus only gives their names, which, like the Aphides, are for the most part derived from the plants that they inhabit. Many species in their larvæ and pupæ states are clothed with a white fleecy and cottony substance, and their excrement forms threads or masses of a glutinous and

sweet nature. The perfect insects jump when disturbed, in which the authors of the *Int. to Ent.* think they are assisted by the short spines attached to the hinder coxæ. One of the most remarkable appearances in this group is the singular situation of the rostrum or promuscis as it is called, which seems to spring from the breast, in consequence of the face being oblique, and the head so closely united to the antepectus as to render their separation difficult.

Latreille says that some species in piercing vegetables in order to suck the sap, cause in parts, especially on the leaves and buds, monstrosities like galls in appearance. Both Reaumur and DeGeer have illustrated this group, and the list in my *Guide* will be found in Gmelin's *Syst. Nat.*

5. *P. Pyri* *Linn.*—*DeG.* v. 3. *pl.* 9. *f.* 1—16.

The following accurate observations in a letter I received from T. A. Knight, Esq., of Downton, seem to apply to this species. "The insect first appears in April and May, solitarily on the lower surfaces of the leaves in the Pear, inclosed in a globule of honey, and subsequently retires to the bases of the leaves and deposits much honey upon the buds. The gardener is first made acquainted with its presence by the number of Humble-bees which are attracted by its honey, but in a short time the diminished growth of the fruit and the sickly appearance of the foliage point out to him the injurious operation of his minute enemy."

15. *Fraxini* *Linn.*—*Curt. Brit. Ent.* *pl.* 565 ♂.

Beginning of July, plantations near Dover and Killarney; end of August on Ash-trees in Skye.

5^a. *Visci* *Curt.*—Breadth $3\frac{2}{3}$ lines: pale green, becoming ochreous after death: antennæ as long as the body, black at the apex, each joint, excepting the two basal ones, tipped with the same colour: superior wings slightly tinged with brown, with a darker undefined spot on the inferior margin.

This I bred the middle of May from pupæ found on the Misseltoe at Rougham by Mr. Ralph Bennet.

22^a. *Ulicis* *Curt.*—Breadth 3 lines: green, sometimes spotted with red and black, forming dots and lines on the head and thorax: superior wings with a brown line along the centre and dots on the posterior margin, alternating with the nervures. The male is generally more rufous.

Abundant the middle of August on Furze-bushes in Brodick-bay, Isle of Arran.

25. *Ericæ* *Curt.*—Breadth 1 line: very short and broad; green or tawny; antennæ shorter than the thorax: ocelli ruby-colour: superior wings greenish or tawny, nervures not darker.

This diminutive species is found on heath, generally in plantations. I have taken it in the Isle of Bute and near Killarney in July, and Mr. F. Walker has met with it.

The Plant is *Fraxinus excelsior* (Common Ash).



IASSUS RETICULATUS.

ORDER Homoptera.

FAM. Tettigonidæ.

*Type of the Genus, Cicada Lanio Linn.*IASSUS *Fab., Curt.*—Bythoscopus *Germ.*—Macropsis *Lewis.*—Cicada *Linn., Fab.*

Antennæ inserted in a large cavity on each side the base of the clypeus, not longer than the rostrum, small, divaricating, 2 basal joints stout, the 1st subpyriform truncate, 2nd ovate, the remainder forming a setaceous naked seta, thickened and curved at the base, apparently composed of numerous articulations, with a few bristles on the back of the basal joints (4).

Labrum forming a lanceolate lobe (3).

Mandibles and *Maxillæ* very slender setæ.

Labium shorter than the face, rather thick, formed of three indistinct joints, basal joint short, 2nd the longest, 3rd short, rounded and pubescent (2).

Head *very broad and short, the base concave* (1 *front view, 1* the profile*); *face much broader than long; clypeus small and oblong: cheeks dilated: eyes lateral, semiovate: ocelli 2 placed on the forehead between the eyes, but remote from them and from each other.* Thorax *transverse-ovate, the base straight, the anterior margin very convex, the sides angulated: scutellum large, trigonate-cuspidate.* Abdomen *moderately long, subconic, the apex cleft above in the males, compressed, with a long ovipositor beneath in the females: (5, the underside).* Elytra *deflexed in repose, longer than the body, subelliptic, reticulated at the disc and apex, round which there is a narrow margin: wings subtrigonal, elongated with 2 or 3 cells at the apex and 1 or 2 furcate nervures below them, all united to a transverse nervure running parallel to the margin (9*).* Legs, *anterior the shortest, posterior the longest: thighs, hinder the longest with a few spines at the apex: tibiæ, 4 anterior simple, 1st pair a little bristly internally (6); hinder pair long, serrated, and spined externally: tarsi short and triarticulate, basal joint the longest in the hinder pair: claws and pulvilli rather short and stout.*

RETICULATUS *Curt. Guide, Gen. 1051. 12.**In the Author's Cabinet.*

THE exceedingly broad and short heads and equally broad thorax distinguish the group enumerated in the Guide under the name of *Iassus*, which seems to be synonymous with *Bythoscopus* of Germar. Mr. Lewis has established two genera from them, *Macropsis* and *Idiocerus*, one of which I shall notice shortly in describing our British species.

A. Face broader than long: clypeus oblong:
ovipositor recurved.

1. *lanio* *Linn.*—*viridis* *Don.* v. 2. pl. 54. f. 3. Green, head, thorax and scutel ferruginous: 3 to 3½ lines long in repose.
July and August, grassy places, everywhere.

B. *MACROPSIS* *Levw.*—Face not broader than long; clypeus broad ovate, narrowed at the apex: ovipositor nearly straight.

2. *ferrugineus* *Curt.* ♀. Ferruginous, variegated with yellow beneath: 4 dots on the head and 2 on the scutel black, hinder part of thorax and a patch on the costa greenish, nervures brown, yellow at the base: 2½ lines.
3. *flavicollis* *Linn.*—*frontalis* *Curt.* ♀. Ferruginous, crown, thorax, scutel and base of elytra greenish-yellow, with the costa and 2 spots on the latter hyaline; these are sometimes absent: 2½ lines.

July and August, birch trees, Isle of Bute and Killarney; alders, Parley Common.

4. *pulchellus* *Curt.* ♀. Ferruginous, base of elytra yellow, a hyaline spot on the disc and a larger lunate one towards the apex: 2½ lines.
Beginning of July, birch trees near Killarney.

5. *fenestratus* *Curt.* Piceous, face yellow, with 2 oblique black spots, and 4 dots on the crown; thorax grey with a ferruginous spot behind the eyes, and one or two black dots; scutel subferruginous and green: elytra hyaline, the nervures, a spot on the disc, and another on the inner margin brown: legs ochreous striped with black: 2½ lines.

Birch-trees, June, Coomb Wood, New Forest and Clifton; July, Scotland, all males; August, Bute and Arran, all females.

6. *reticulatus* *Curt.* *B. E.* pl. 636. ♂. Piceous, face yellow with 2 longitudinal black stripes and 4 dots on the crown, which is grey as well as the thorax; this has three black spots on the anterior margin and a black dot on each side: scutel black with 4 yellow spots, base of abdomen with 2 orange spots, the apex black, with 2 yellow rings: elytra hyaline; the nervures, a spot on the disc and another on the inferior margin brown: legs ochreous striped with black, tips of tarsi black; 2½ lines. Sometimes the face and legs are much blacker and the spots on the crown united.

I took a pair in Perthshire in July.

7. *personatus* *Curt.* Greenish-ochre, face ochreous, ocelli placed at the middle; head and thorax trigonate in front, the former a little raised; pectus and upper side of abdomen spotted with black: 2½ lines.
8. *virescens* *Levw.*—*Fab.*? “Yellowish-green; superior wings semi-coriaceous, subhyaline, the nervures towards the apex whitish-green; inferior wings hyaline with white nervures; apex of the outer sheaths of the ovipositor orange; the ovipositor castaneous: 2½ lines.” *Trans. Ent. Soc.* 1. 50.

Willows, Battersea, and Coombe, July and August.

For the beautiful Plant, *Polemonium caruleum*, Jacob's Ladder, I am indebted to Mr. Walton, who gathered them at Arncliffe in Yorkshire.



Amelanus
 6
 15

IDIOCERUS MACULIPENNIS.

ORDER Homoptera.

FAM. Tettigonidæ.

Type of the Genus, Idiocerus stigmatalis, Lew.

IDIOCERUS *Lewis, Curt.*

Antennæ inserted on each side of the face towards the lower part of the eyes, shorter than the head, setaceous, triarticulate, 2 basal joints stout and subovate, 3rd long and setaceous, with 2 bristles at the base, terminated by an ovate compressed club in the male (4), with a bristle or spine at the apex: seta simple in the female (4 ♀).

Labrum slender sublanceolate (3).

Mandibles long bristles (*). *Maxillæ* half as long again (m), uniting in the rostrum.

Labium short triarticulate, basal joint concealed, the shortest and broadest, 2nd the longest, 3rd oblong, the apex ciliated.

Head broad, crown short, sublunate, the forehead convex (1); face trigonate, convex (1 ♂): eyes very remote and prominent, large and hemispherical: ocelli 2, very minute, moderately remote and placed above the antennæ. Thorax transverse, ovate-lunate, narrower than the head: scutel trigonate. Abdomen short and subtrigonate, apex of the male furnished with a curved process inclosed between 2 others, with 2 long membranous lobes outside, ciliated at the apex: female with 2 broad lobes and a scimitar-shaped oviduct, the upper margin serrated (5 ♀). Elytra deflexed or semicylindric, longer than the body, curved-elliptic, reticulated, with oblong or elliptical cells, the costa sometimes thickened and subserrated, the posterior margin producing a broadish membrane, one lapping over the other in repose: wings ovate-trigonate, with about 6 longitudinal nervures, united to a transverse one running parallel to the hinder margin, 3 of them furcated. Legs short, hinder long: thighs simple: tibiæ, anterior bristly or hairy internally (6); hinder longish, slightly curved, spiny outside, with a coronet of spines at the apex: tarsi short and triarticulate, 2 basal joints short and 3rd the longest in the anterior, basal the longest in the hinder: claws short stout and semilunate: pulvilli bilobed. Obs. the dissections are from a male of *I. effulgens*.

MACULIPENNIS *Curt. Guide, Gen. 1051^b, 3.*

MR. LEWIS established this group under the name it now bears in the *Trans. of the Ent. Soc.* The males are well characterized by their remarkable clubbed antennæ, and both sexes differ from all allied genera by the broad and long membranous margins of the elytra, which lap over each other when they are closed. One species is very remarkable for the incrassated and somewhat serrated costa, which is peculiar to the male; the small seta at the apex of the club of the antennæ also varies considerably, being short and elongate-trigonate in some, whilst in others it is a fine and longer bristle.

The following species are contained in my own Cabinet, and the 3 Fabrician names included in this genus in my Guide, must, I expect, be removed from thence.

1. *stigmatalis* Lewis in *Trans. Ent. Soc. v. 1. p. 28. pl. 7. f. 2.*

Seta at apex of antennæ short and thick in the male, and the costa serrated.

August, willows, Battersea and Norfolk: 14th October, female off Alders or Birch in a meadow at Parley, Hants.

2. *maculicollis* Curt. Length $2\frac{3}{4}$ lines.

Male ochreous, face with a fuscous cordate spot surrounded by black dots and trigonate spots: thorax lurid with black dots in front: scutellum with 3 large black trigonate spots at the base, and one on the disc: elytra subhyaline, costa and nervures brown spotted with yellow: underside black, with bright yellow spots and lines: thighs and hinder tibiæ with black streaks.

3. *maculipennis* Curt. *Brit. Ent. pl. 733* ♂.

Pale ochreous: seta quite as long as the club of the antennæ, which is black: a fuscous cordate spot on the face, with a black dot and an orange patch on each side of the crown: clypeus orange: thorax brown, indistinctly dotted with yellow, 2 oblique yellow streaks in front, with a few black dots; scutellum with 2 or 3 black triangular spots on the base, and 2 incurved lines on the disc: abdomen black, base variegated with yellow, edges of segments finely edged with white: underside sulphureous with a black streak at the base: elytra yellowish-brown, costa ochreous spotted brown, nervures dark brown and tuberculated, especially at the base and apex, disc and inner margin brown, with 2 subdiaphanous spots and a larger one beyond them, on which the nervures are smooth and of the same tint; posterior membrane pale brown: inferior wings iridescent, nervures piceous: hinder thighs and all the tibiæ with a streak of black outside.

I took a male off Alders, I believe, at the base of Goatfield in the Isle of Arran the 14th August.

4. *sulphureus* Curt. $2\frac{1}{2}$ lines long.

Greenish yellow: eyes and claws brown: club of antennæ and an irregular line down the back black, apical seta very short.

A male in July at Battersea, a female in a Cove at the Isle of Skye, 23rd August.

5. *effulgens* Curt. $2\frac{1}{2}$ lines long.

Yellowish or ochreous white, spotted with ferruginous or fuscous, elytra when closed reflecting splendid coppery tints with a whitish spot on the back, and a band of the same more or less defined beyond the middle.

September, off Alders on the banks of the Avon, near Salisbury.

6. *unifasciatus* Curt. Length $2\frac{1}{4}$ lines.

Grayish-white: thorax with 2 brown rays in front, and a patch on each side; scutellum with 3 black spots at the base: elytra pearly-white, with a bright brown fascia across the middle, the base and apex fuscous.

I think I took this beautiful species in Norfolk.

7. *æneus* Curt. Length $2\frac{1}{4}$ lines.

Yellowish with small brown and black spots, excepting a space down the thorax: elytra of a bright brassy tint, back pale brown, leaving a pearly spot on the centre, nervures piceous with white spaces: pectus black.

August, Parley Heath.

Setaria viridis, Green Panick Grass, from Wandsworth, was communicated by W. W. Saunders, Esq.



EUPTERYX ORNATIPENNIS.

ORDER Homoptera.

FAM. Tettigonidæ.

Type of the Genus, Cicada picta Fab.

EUPTERYX Curt.—Typhlocyba Germ.—Cicada Fab.

Antennæ inserted in cavities under the forehead, near the eyes, almost as long as the head and thorax, very slender, triarticulate, 2 basal joints stout, 1st cup-shaped, 2nd oval, 3rd a very long seta thickened at the base (4).

Labrum elongate-ovate, truncated at the base, with a narrow lanceolate lobe at the apex (3).

Mandibles and *Maxillæ* like bristles.

Labium short, stout, triarticulate, basal joint rather the longest, 2nd subquadrate, 3rd longer, pubescent and ovate at the apex (2.)

Head scarcely so broad as the thorax, crown lunate, face very long somewhat ovate (1, 1* the profile): eyes small, prominent and forming the posterior angles of the head: ocelli none. Thorax somewhat lunate, the sides rounded: scutel trigonate-cuspidate. Abdomen slender elongate-trigonate: ovipositor long and stout, the sheaths ciliated with hairs. Elytra twice as long as the body, narrow, elliptical, with a few longitudinal nervures, 4 cells at the apex (9): wings nearly as long as the elytra and broader, with 3 apical cells, formed by nervures which unite with the external one (*). Legs very slender, anterior short, hinder very long: thighs short and slender: tibiæ, anterior armed with spines on the inside only and not to the apex (6); hinder long, with a double series of spiny bristles on the outside: tarsi moderately long and triarticulate, basal joint short, 2nd the longest in the anterior, first the longest in the posterior: claws and pulvilli small (6, a fore leg).

ORNATIPENNIS Curt. *Guide, Gen.* 1053. 11.

Very pale yellow; base of head and thorax brown, the latter with 3 large yellow spots; scutel brown, with a yellow spot at each angle: abdomen banded and spotted with black, the apex pale brown: elytra reddish down the middle, brown at the base, 2 large hyaline spots on the costa, separated by a dark brown one; the transverse nervure dark and a dot near the apex black: wings iridescent. *Obs.* There is a yellow variety with the apex of the elytra only brown, and no markings, except 2 dark transverse nervures on the costa, and the apical dot.

In the Author's Cabinet.

I DEFINED the group before us and named it *Eupteryx* in the 1st Vol. of the Ent. Mag., and about the same time I understand Germar gave it another name. Having paid considerable attention to this order I am able to give the following species as British.

* *Face elongated : ocelli none or very minute.*

1. *notata* Curt. 1 line long. Yellow, thorax black with 4 minute dots ; scutel and elytra brown, the latter with 2 large semiovate spots united on the costa, a large yellow one on the back, and 4 small hyaline ones on the membrane.

I took a pair in Scotland in August : it seems to be allied to *C. vittata* Linn.

2. *flammigera* Curt. $1\frac{1}{2}$ line. Pale yellow, with 2 bright red stripes on the head and thorax, and a long undulating one along the elytra.

Off Oaks at Heron Court, Hants, 14th October.

3. *fasciata* Curt. 2 lines. Delicate yellow, a stripe down the thorax and scutel chocolate colour : elytra with 2 scarlet stripes from the base, an interrupted brown band across the middle, the costa bright yellow.

4. *ornatipennis* Curt. *Brit. Ent. pl.* 640 ♀.

Aug., Isle of Arran, and off Oaks at Cartland Craigs in Sept.

5. *hortensis* Curt. Similar to *E. tarsalis*, but there are 3 large yellow costal spots and 9 others between the nervures, which are also distinctly yellow.

Middle of Oct., off a species of Balm in a garden at Niton.

6. *tarsalis* Curt. $1\frac{1}{2}$ line. Pale yellow, face with 2 black stripes and 2 dots with 2 larger ones on the crown, thorax with a double black stripe and 2 dots : scutel with 2 black spots : elytra fuscous with 4 yellow spots and a large macula on the costa : hinder tibiae black.

7. *Melissæ* Curt. $1\frac{1}{2}$ line. Yellowish-white : 5 black spots on the head and 2 long lines on the cheeks, 2 black dots on the thorax as well as several small ones on the sides and scutel : elytra delicate sea-green, with 6 pale brown spots between the nervures and several on the membrane.

August and October, upon Balm in a garden at Niton.

8. *ocellata* Curt. 2 lines. Ochreous, 2 black dots between the eyes and one on the anterior margin of the thorax : elytra greenish, except at the apex, with a fuscous fascia towards the extremity.

** *Face shorter : ocelli distinct.*

9. *viridipes* Curt. 2 lines. Golden-green, tips of elytra fuscous, sides of face, legs, and oviduct bright blue-green.

July, Dover, Isle of Arran, and Blarney : it is allied to *C. Ulmi* L.

10. *6-notata* Curt. $1\frac{1}{2}$ line. Greenish-fuscous, face ribbed with black, crown with 2 large spots, 2 stripes and 2 dots black : scutel with 2 black dots at the base, nervures often invisible : tarsi spotted.

October, Ramsgate and Bourne-mouth, Hants.

11. *maculipennis* Curt. $1\frac{1}{3}$ line. Ochreous ; head and thorax ribbed and spotted with black, as well as the legs : abdomen black above : elytra fuscous with 7 yellowish spots, 3 at the base 2 at the middle and 2 near the membrane which is hyaline.

I took a single specimen in the Isle of Bute.

12. *clypeata* Curt. $1\frac{1}{3}$ line. Greyish-ochre ; face slightly ribbed with brown, crown with 3 orange spots and others on the thorax, also a brown stripe and 2 spots : elytra with a scutellate spot on the back, margined with brown, a few spots across the back and a line of dots at the base of the membrane, both in an oblique direction.

The Plant is *Bromus diandrus* Smith, Upright Annual Brome-grass.



AMBLYCEPHALUS GERMARI.

ORDER Homoptera.

FAM. Tettigonidæ.

Type of the Genus, Amblycephalus Germari Curt.

AMBLYCEPHALUS Curt.—Cicada Linn. Fab.—Tettigonia Lat.

Antennæ inserted in a cavity between the eyes and near to the internal margin, as long as the head, but very slender; basal joint the largest, irregularly chalice-shaped, 2nd oblong, the remainder forming a very long and slender seta of numerous joints (4 and 4 a).

Labrum short, slender and lanceolate (3).

Mandibles and *Maxillæ* rather short, slender, acute and serrated at the apex.

Labium short and triarticulate, 2nd joint short, 3rd rounded (2).

Head as broad as the thorax, semiovate-trigonate above; face convex, elongate, trigonate-ovate: eyes rather small, placed near the base: ocelli 2, situated near the base of the triangular ridge towards the centre of the crown. Thorax shorter than the head, transverse-ovate: scutellum trigonate and a little acuminated. Abdomen furnished with 2 elongated horny lobes under the apex in the male; rather long and conical in the female, with a long ovipositor beneath. Wings deflexed and somewhat convex, when at rest, superior scarcely so long as the body in the female, elliptic, interior margin nearly straight, with a few reticulations; inferior wings shorter and rounded, with numerous distinct nervures. Thighs with 2 spiny bristles at the apex, which is lobed externally, especially in the hinder pair: tibiæ, posterior very long, slender and slightly curved, the apex armed with teeth, the sides, especially externally, clothed with series of slender spines (6 †): tarsi short and triarticulate, hinder with the basal joint elongated: claws short and thick: pulvilli large (6 * middle leg).

GERMARI Curt. Ent. Mag. 1. 192.—Curt. Guide, Gen. 1054. n. 3.

Pale ochreous: seta of antennæ and eyes black: head with 3 elevated lines on the crown, which is brown, forming an anchor, with 2 black spots at the base and a black line on each side of the clypeus; face with a double row of transverse blackish lines. Thorax with a mark down the back and a large space on each side piceous; scutellum of same colour; postscutel with 4 black spots. Abdomen with the base, a line of spots down the back and of narrow bands on the sides piceous. Superior wings with a spot at the base and apex, a bar at the middle of the interior angle brown, with the pale ochreous nervures crossing them: inferior wings fuscous, with the base and nervures white: claws and pulvilli piceous.—Obs. the male often has the crown of the head, the face, the thorax, excepting two lines down the back, the scutellum and the abdomen, excepting the base and apex, black: the superior wings also are darker, leaving a large ochreous spot on the costa at the base, and another beyond the middle.

In the Author's Cabinet.

THE genus *Amblycephalus*, which I described three years since in the Entomological Magazine, belongs to that division

of Tettigonidæ which has long bristly hind legs, and is separated from neighbouring groups by its subtrigonate but rounded head: from Eupteryx it is at once distinguished by its ocelli, which are absent in that genus, and generally it differs also in its more robust form and shorter wings, which do not cover the apex of the abdomen in the typical species, and these are further marked by the elevated anchor-shaped lines on the fore part of the head. Although the following species vary considerably in their form, yet they all agree in having two ocelli *behind* the anterior margin of the head, but they are more remote and placed further behind in some than in others.

a. Ocelli remote, placed on each side of the crown of the head.

1. *A. viridis* Linn.—Panz. 32. 9.—Length 5 lines.

Elytra green or bluish, head yellow spotted with black.

May to August, grassy places and aquatic plants, England; beginning of August, marshy places by the side of Loch Fad, &c., Isle of Bute.

b. Ocelli less remote and placed more forward.

2. *interruptus* Linn.—DeGeer 3. tab. 12. f. 6—10.—Panz. 32. 8.

Length $2\frac{3}{4}$ lines: elytra yellow with a black longitudinal stripe on each, divided obliquely.

May, grassy places; end of July, Niton, Isle of Wight, and Dover; middle of August, Isle of Arran, Scotland.

3. *Germari* Curt. Brit. Ent. pl. 572 ♀.

Found on the Burdock the end of June at Clifton by Bristol, and previously near London.

c. Ocelli approaching the margin of the eyes and near to that of the head.

5. *maculipes* Curt. Guide.—Length $2\frac{1}{2}$ lines.

Dull greenish ochre, shining: head lunate, trigonate before, two black marks on the crown, and numerous black lines across the face, a line of black dots near the anterior margin of the thorax: scutellum orange with a black cross and several spots: thighs piceous, tips ochreous, posterior tibiæ with the inner margin piceous, the outer one dotted with the same and their tarsi piceous, excepting the base and apex.—Obs. some specimens are almost destitute of black markings, excepting the tibiæ.

Beginning of May, not uncommon in Coomb-wood.

7. *nervosus* Curt. Guide.—Length $2\frac{1}{4}$ lines.

Slender, ochreous; head lunate, slightly trigonate, with 2 yellow stripes, thorax with 5: elytra longer than the body, sublanceolate, nervures whitish, with the apical cell dark brown and forming a stripe.

Further removed from the type in habit than the following species, but the head is less different. I have found it the middle of October in the Islands near Wakering, Essex.

d. Anterior margin of the head thin and projecting over the face, which is concave above. Ocelli further removed from the eyes and front.

6. *irroratus* Curt. Guide.—Length $2\frac{1}{2}$ lines.

Shining dusky ochre, minutely and thickly freckled with brown: legs, especially the 4 anterior, banded and spotted with the same colour.

A single specimen taken by myself.

The Plant is *Arctium Lappa* (Burdock).



APHRODES SABULICOLA.

ORDER Homoptera.

FAM. Tettigonidæ.

*Type of the Genus, Aphrodes maculipes Curt.*APHRODES *Curt.*

Antennæ inserted in cavities under the forehead and close to the eyes, as long as the head and very slender, triarticulate, 2 basal joints stout, 1st cup-shaped, 2nd oblong, 3rd a long seta, incrasated, composed apparently of several small joints at the base (4).

Labrum short, lanceolate, inserted under the clypeus (3).

Mandibles and *Maxillæ* 4 strong bristles.

Labium very short, not so long as the clypeus (2), linear, triarticulate, basal joint transverse, 2nd quadrate, 3rd elliptical, rounded and pilose at the apex (2*).

Head short and lunate, obtuse in profile (1*); face orbicular, convex but inclining; clypeus oblong, not emarginate, the angles rounded (3c); with two plates on each side (1g) united by a membrane (A) and terminating in front in an acute lobe (p) which is fitted under the labrum (1 front view of face, 1* head and thorax in profile): eyes small oval lateral, touching the thorax and scarcely projecting beyond its sides: ocelli 2, very minute, remote and placed upon the margin of the forehead. Thorax transverse, ovate-lunate: scutellum trigonate cuspidate. Abdomen elongate-trigonate: ovipositor rather short stout a little curved and obtuse, the sheaths very bristly outside. Superior wings or elytra convex, deflexed, considerably longer than the body, with several longitudinal nervures and a few cells at the apex (9): inferior ample, with 3 cells at the apex, and a large furcate one near the anal angle. Thighs, posterior spined at the apex: tibiæ, anterior with a few spines outside and pectinated inside (6); posterior long, compressed, slightly curved, with series of long spines externally and ciliated internally, except at the base: tarsi rather short, triarticulate, basal joint the longest in the hinder pair.

SABULICOLA *Curt.*—*Guide, Gen.* 1059. 9.

In the Author's Cabinet.

My genus *Aphrodes* comprised two groups, one of which had been previously established under the name of *Acucephalus* by Germar, which was lately illustrated in pl. 620. The form of the head, which in our typical species is obtuse, is more or less pointed and hollow above in Germar's genus; the thorax is often longer and narrower, as well as the elytra in *Aphrodes*, the cheeks are not dilated, the clypeus is not emarginate, the rostrum is shorter; there are trifling differences in the neuration of the wings, and the anterior tibiæ are spined on the outside as well as internally. The following species are described from my Cabinet.

1. *concinna Curt.* Ochreous, elytra with 2 bands and a lunate mark at the apex whitish, all margined with brown, 1st band interrupted at the middle, leaving a spot on the costa, 2nd interrupted; tips of tibiæ, hinder thighs and tarsi brown, inside of hinder tibiæ pitchy: 2 lines.
2. *Testudo Curt.* Similar to the last but with 2 brown bands, one across the middle of the elytra, the other near the apex.

3. *rivularis Germ.?* Head, thorax and scutel black, the 1st variegated with yellow, the 2nd with the anterior edge and a band at the base yellow; elytra ochreous with 5 or 6 oblique piceous lines and a brown spot near the apex: 1 $\frac{3}{4}$.
4. *puella Curt.* Greenish or brownish white, head with an oval ring of black dots, face and legs spotted with black, base of thighs piceous; elytra with 9 or 10 brown spots, with the apex of the same colour, the nervures and the spaces between 2 brown spots on the costa towards the apex, pearly white: 1 $\frac{3}{4}$.
5. *insularis Curt.* Ochreous, head with 2 triangular and 2 round dots at the apex; elytra with the spaces between the nervures margined with brown, costa brown towards the apex with 2 pale spots; abdomen blackish with a white band at the apex: 1 $\frac{3}{4}$.
6. *costata Curt.* Similar to the last, but the face above is ribbed with black; thighs banded, legs spotted with piceous; elytra indistinctly clouded, apex of abdomen ochreous.
7. *pallidipennis Curt.* Ochreous with a greenish tinge; elytra slightly reticulated with brown at the apex; face with several brown ribs: 1 $\frac{3}{4}$.
8. *maculipennis Curt.* Ochreous, clypeus with a brown spot and a curved line on the cheeks, face brown with 7 curved ochreous ribs on each side; crown with 2 small and 2 large brown spots; thorax with 4 brown stripes: abdomen black above except at the apex; elytra variegated with brown, except on the costa: 1 $\frac{3}{4}$.
9. *sabulicola Curt. B. E. pl. 633.* Pale ochreous, upper part of face and crown variegated with ferruginous brown: abdomen black, sides and apex ochreous; elytra glaucous when closed, with 5 brown spots and smaller ones near the apex; nervures pearly white: wings with a fuscous spot at the apex.

4th June, not uncommon on the sand-hills near Lowestoft.

10. *sulphurea Curt.* Greenish yellow, very glossy, 4 pale dots on the forehead and 2 on the scutel; elytra pale, tips and wings pale fuscous, pectus and dots on hinder tibiæ piceous: 2 $\frac{1}{4}$.
11. *tæniola Curt.* Ochreous, clypeus and cheeks with 5 vertical stripes, face with a double row of black ribs, crown with a black band; thorax dotted with black; elytra duller, legs spotted piceous, hinder tibiæ with a stripe down the inside: 2.
12. *Craticula Curt.* Similar to the last, clypeus with narrow marks, face with very fine ribs, crown with 6 dots in triangle; thorax, scutel and inner margin of elytra dotted; legs striped and spotted: 2 $\frac{1}{4}$.

End of July, on rushes: it is infested in the different stages with a large black parasite attached to the sides of the thorax.

13. *maculipes Curt.* Dark ochreous, cheeks, 3 dots and many ribs on the face black; crown, anterior margin of thorax and scutel with black dots, the latter with a cross; apex and inner margin of elytra with fuscous spots; wings fuscous; base of anterior thighs black, hinder legs striped and dotted: *female* less marked: 2 $\frac{1}{4}$.
14. *nitida Curt.* Face ribbed with black, head and scutel dotted; thorax with 4 fuscous indistinct stripes; elytra freckled, except at the costa; legs spotted, hinder tibiæ striped: 1 $\frac{3}{4}$.
15. *unimaculata Curt.* Dull ochreous, face with imperfect ribs, head with fuscous dots, scutel with one black dot at the base, elytra partially freckled; abdomen black at the base, with black dots down to the apex; legs faintly spotted, hinder tibiæ striped: 2.
16. *lata Curt.* Broad, shining ochreous, base of abdomen freckled with black, a line of dots down the back and oviduct piceous: 2 $\frac{1}{4}$.
17. *pulverulenta Curt.* Ochreous, dull with a whitish bloom, forehead trigonate; legs dotted, hinder tibiæ with a dark line inside: 2 $\frac{1}{4}$.

Middle of October in New England on the shores of Essex.

The Plant is *Buplecurum tenuissimum*, Least Thorough-wax.



ACUCEPHALUS TRICINCTUS.

ORDER Homoptera. FAM. Tettigonidæ.

*Type of the Genus, Aphrodes bicincta Curt.*ACUCEPHALUS *Germ.*—Aphrodes *Curt.*—Jassus *Germ.*—Cercopis and Cicada *Fab.*

Antennæ very slender, inserted in cavities under the forehead and between the eyes (4), 8- or 9-jointed, 2 basal joints stout, 1st chalice-shaped, 2nd oval, the remainder slender, forming a seta, 3rd joint narrowed at the base, longer than any of the following which are oblong or ovate, the terminal one forming a long naked bristle (4 a).

Labrum very short, attached under the clypeus, lanceolate (3).
Mandibles and *Maxillæ* slender filaments.

Labium not longer than the clypeus, beneath which it is inserted (2), slender, slightly pubescent, triarticulate, basal joint short, 2nd the stoutest, oblong, 3rd slenderer, but scarcely longer (2 *).

Head *depressed or hollowed above, subtrigonal-lunate, wedge-shaped in profile; face inclined, suborbicular, the upper and lower points slightly angulated, clypeus oblong, emarginate, the cheeks inflated (1 front view of the face): eyes small, ovate, lateral, touching the thorax and scarcely projecting beyond its sides: ocelli 2, very minute, remote and placed upon the margin of the forehead. Thorax transverse, ovate-lunate: scutellum trigonal, cuspidate. Abdomen trigonal: ovipositor rather short, stout, a little curved and obtuse. Superior wings convex, deflexed, not longer than the body, with several longitudinal nervures, and a few cells at the apex: inferior ample, with 3 cells at the apex and 2 furcate nervures towards the anal angle (9*).* Thighs, posterior spined at the apex. Tibiæ, anterior spined internally, posterior very long, compressed and curved, with series of long spines on the outside and internally towards the apex: tarsi rather short and triarticulate, basal joint the longest in the hinder pair: claws and pulvilli short (6 † hind leg).

TRICINCTUS *Curt.*—*Guide, Gen.* 1059.

Piceous; some dots in front of the head and a line at the base ochreous, face and breast of the same colour, with a piceous spot on the parapleuræ: thorax with a yellow band at the base; elytra with 2 yellow bands, one before, the other beyond the middle, the former broken, forming a large spot on the costa and a lunate one on the suture, the latter sinuated, with a spot nearer the apex; anterior legs spotted with ochre, base of the other thighs and centre of intermediate tibiæ ochreous.

In the Cabinets of Mr. Dale and the Author.

THIS group, which formed the 2nd division of my genus Aphrodes, appears to be synonymous with Germar's *Acucephalus*. It is at once distinguished from *Tettigonia*, which it very much resembles, by the long spined hinder tibiæ, from

Amblycephalus by the shape of the clypeus, and from other neighbouring groups by the form of the head, which is like that of Eupelix, but much less developed.

The following descriptions will serve to characterize some of our species.

1. *Cardui Curt.* ♀ $3\frac{1}{4}$ lines long: dull ochreous, inclining to ferruginous or olive, more or less freckled with brown nervures, irregularly marked with brown; a black spot on each side the parapleuræ; the abdomen beneath thickly freckled with black.

End of August on Thistles, in the Isle of Wight.

2. *obscurus Curt.* ♀ $3\frac{1}{2}$ lines: dull ochreous or reddish, obscurely variegated with brown, leaving 2 or 3 pale spots on the suture: this may be a variety of No. 1, but it is narrower and the thorax is rather longer.
3. *sparsus Curt.* $2\frac{2}{3}$ lines: head and thorax narrow: pale ochreous, shining, very thickly freckled with brown; hinder tibiæ and underside piceous, pectus bluish.

Female end of July, Tollsburly marshes, Essex.

4. *rugosus Curt.* ♀ $2\frac{1}{2}$ lines: rather broad, dull ochreous clouded and freckled with brown, with a few broken yellowish lines on the nervures and some spots on the costa, 3 black dots at the base of the head, centre of the face densely freckled; a spot on the parapleuræ, extremity of hinder tibiæ and all the tarsi piceous.
5. *unicolor Curt.* $2\frac{2}{3}$ lines: rather narrow and ochreous: eyes, cavity of the antennæ and a spot on each side the parapleuræ black; base of abdomen dusky.

End of August, Isle of Skye.

6. *fasciatus Curt.* ♀ $2\frac{1}{4}$ lines: pale yellow, 2 black dots at the base of the head and several on the edge of the crown: thorax dirty ochre with a yellow band across the middle; large black spots on the pectus, base of the abdomen blackish, a spot inside the apex of the hinder thighs, a long line inside their tibiæ, and tips of all the tarsi piceous.

End of June, under stones, Isle of Portland, with the following.

7. *pallidus Curt.* $2\frac{1}{4}$ lines: pale ochreous, head and thorax with a pale band on each, interrupted in the centre; dots on the forehead, spots on the parapleuræ and base of the abdomen black; oblique stripe on the face and legs, excepting the hinder thighs, deep ochre.
8. *bicinctus Curt.* $2\frac{1}{2}$ to 3 lines: pale reddish brown with an ochreous band on the head and another across the centre of the thorax; nervures on the elytra pale yellowish as well as the anterior coxæ and hinder thighs.

Beginning of May, Coomb Wood; end of July, Dover.

9. *bifasciatus Don. Brit. Ins. v. 11. pl. 387.* 2 lines long: piceous, thorax and 2 bands on the elytra ochreous; the apical band is sometimes white.

End of June, Lord Breadalbane's Park, Taymouth; beginning of June, Coomb and near Faversham, Kent.

10. *trifasciatus Fab.—Coq. Icon. pl. 8. f. 10.*

11. *tricinctus Curt. Brit. Ent. pl. 620. ♂.*

End of June, Weston on the Green, and July, Whittlesea Mere, J. C. Dale, Esq.

The Plant is *Aira præcox* (Early Hair-grass).





CERCOPIS VULNERATA.

ORDER Homoptera. FAM. Cicadiidæ.

*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 tibiae red.

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

Linnæus'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.



LEDRA AURITA.

ORDER Homoptera.

FAM. Cercopidæ.

Type of the Genus, Cicada aurita Linn.

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

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

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

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

Mandibles and *Maxillæ* short and setiform.

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

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

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

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

In the Author's and other Cabinets.

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

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

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

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

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



20



CENTROTUS GENISTÆ.

ORDER Homoptera *Leach.* FAM. Cercopidæ *Leach.*

Type of the Genus, Cicada cornuta Linn.

CENTROTUS *Fab., Coq., Panz.*—Membracis *Fab., Lat.*—Cicada *Linn.*

Antennæ inserted in cavities beneath the margins of the head, near the base of the clypeus (4); triarticulate, basal joint oblong, 2nd oval, 3rd subsetiform (4a).

Labrum membranous, as long as the basal joint of the labium, attenuated to the apex and acute (3).

Mandibles inclosed in the labium, slender and dilated at the base (2*c).

Maxillæ undiscovered.

Tongue long and very slender.

Labium as long as the head, not very stout (2); triarticulate, basal and 2nd joints of equal length, 3rd scarcely shorter oval and pilose (2*).

Head *vertical, transverse, subtrigonate, frequently concealed beneath the thorax.* Clypeus *forming a lobe.* Eyes *lateral, very prominent and globose.* Ocelli 2 *on the crown of the head (1, front view of head).* Thorax *large gibbous variously formed, produced over and concealing the Scutellum which is bidentate at the apex.* Abdomen *short, cylindric and conical.* Ovipositor *contained in a sheath beneath, half the length of the body.* Elytra and Wings *deflexed when at rest, the former subcoriaceous with strong nervures, longer than the body, the latter shorter and membranous with fine nervures.* Legs *short, excepting the hinder pair which are formed for leaping.* Thighs *not very robust.* Tibiæ, *posterior very long and serrated on both sides.* Tarsi *triarticulate, 2nd joint the shortest in the posterior pair, 3rd a little the longest.* Claws *strong, short and emarginate at the apex (6, a hind leg).*

GENISTÆ *Fab. Ent. Syst. v. 4. p. 15. n. 31.*—*Panz. 50. 20.*

Dull black, covered with ochreous pubescence, especially the head and thorax, which are excessively thickly punctured, the latter produced in a long spine over the body which is punctured. Elytra shining, pale ochreous, the nervures brown and pubescent, the base piceous and punctured, a brownish spot mid-way the costa where the nervures are very dark, and a narrow fimbria pale brown also. Wings iridescent, the nervures brown. Legs piceous, the posterior tibiæ and the apex of the others ferruginous: tarsi of the same colour.

Obs. This insect is sometimes of a ferruginous brown.

In the Author's and other Cabinets.

OF all Nature's works, amongst the insect tribes, this family is the most remarkable for the grotesque and extraordinary forms the species exhibit; the thorax being produced in the shape of horns of the most whimsical figures and in various directions; sometimes projecting over the head like a helmet, at others forming a tail, which looks quite artificial, and again assuming the characters of ears or the horns of animals. Some of these prodigies are represented in the 18th Plate of Coquebert's Illustrations, in the 4th vol. of Germar's Magazine, and I think in the Magazine of Natural History.

In essential characters *Centrotus* nearly resembles the true *Cicadæ*; and for what reason the only two species that inhabit Britain should have been lately placed in two distinct genera, it is difficult to discover, since the differences between them are such as are entirely specific. Indeed we have none of the true *Membraces* of Fabricius in Britain: they are at once characterized by their compressed form, some of them being so much flattened that they appear as if they had been pressed by some accident; and it is even difficult to pass a pin through them vertically.

Latreille formerly united *Centrotus* with *Membracis*, but he has since separated them. Fabricius in the *Systema Rhynogotorum* has included both our British species in his genus *Centrotus*; and to render this subject more complete, I shall proceed to describe the type.

1. *C. cornuta* *Linn. Faun. Suec.* 879.—*Fab. Ent. Syst.* v. 4. p. 14. n. 22.—*Panz.* 50. 19.—*Don* 3. pl. 83.—Four times as large as *C. Genistæ*. Black, clothed with ochreous pubescence, particularly the head and thorax; the latter with a triangular horn on each side, and the posterior part forming a long keeled tail hanging over the body. Superior wings shining ochreous, brownish at the base with a macula at the posterior angle, the nervures pale ferruginous. Inferior wings iridescent, nervures brown, legs ferruginous, thighs piceous black.

Common in woods, gardens and hedges; on thistles, willows, nut-bushes, white-thorns, laurels, box-trees, heath, the underside of dock-leaves, &c. in May and June.

2. *C. Genistæ* *Fab.*—*Curtis Brit. Ent. pl.* 313.

Found in August on commons upon *Genista tinctoria* (Dyer's Green-weed), the plant that accompanies the insect.



DELPHAX LONGIPENNIS.

ORDER Homoptera. FAM. Cicadiidæ or Fulgoridæ.

*Type of the Genus, Delphax minuta Fab.*DELPHAX *Fab., Lat., Germ., Curt.*

Antennæ inserted on each side of the head, on the inferior margin of the eyes, not longer than the head, stout and 4-jointed, basal joint cup-shaped, 2nd large elongate-ovate, pubescent, scabrous at the apex, 3rd joint minute, globose, 4th a long naked seta (4).

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

Mandibles and *Maxillæ* setiform.

Labium not longer than the clypeus, inflected, linear, triarticulate, basal joint elongated, 2nd the longest and stoutest, 3rd short, pilose, subovate (2* side view).

Head conical in profile, the crown trigonal, the forehead being produced; face very oblique, elongate-trigonal (1): eyes lateral and reniform, notched at the insertion of the antennæ: ocelli two, close to the anterior margin of the eyes. Thorax broader than the head, but very short and somewhat lunate: scutell rather large and trigonal. Abdomen short; ovipositor long, slightly exerted. Wings deflexed in repose; superior very long, narrow and coriaceous, with numerous longitudinal nervures and a line of transverse ones towards the apex (9); inferior ample and membranous, with many longitudinal nervures (*). Legs rather short, hinder longer, stouter, and formed for leaping; thighs linear: tibiæ not longer, slender, excepting the posterior, which are stouter, with a minute tooth outside at the base, and another at the centre, the apex incrassated toothed and furnished with a large compressed pectinated spur (6 †): tarsi short, triarticulate, 2 basal joints stout and toothed at the apex in the hinder pair, the 1st elongated: claws minute.

LONGIPENNIS *Curt. Guide, Gen. 1065.*

Ochreous, head and thorax with a dorsal yellow line; metathorax spotted with black: abdomen black with a variegated orange space at the base, the sides orange dotted with black: superior wings blackish, excepting the costa, which is pale and terminates in a white stigma, and the inferior margin which is ochreous, broadest at the base: inferior wings fuscous at the apex: 4 anterior legs black, apex of thighs, base of tibiæ and tarsi, except the tips, whitish; hinder legs pale ochreous, thighs above and apex of tarsi black.

In Mr. Dale's Cabinet.

DELPHAX is distinguished from *Asiraca* (pl. 445) by the short basal joint of the antennæ, and from my genus *Criomorphus* by its ample wings. A species figured and described by Mr. Westwood in the 6th vol. of Loudon's Mag. Nat. Hist. under the

name of *D. saccharivora* is very destructive to the sugar-cane in the West Indies. The following are British examples of the genus, and most of them frequent the borders of rivers and brooks.

1. *longipennis* Curt. *Brit. Ent. pl.* 657 ♂.

This fine species was discovered by Mr. Dale amongst sedges and bushes in a copse at Glanville's Wootton, called Broad-Alders, the 15th Sept. 1836; it was nimble and leaped well.

2. *minuta* Fab.—*lineola* Germ.—*Ahr.* 17. 19.

September, upon reeds on the cliff by Black-gang-chine, J. C.; on sedges, Glanville's Wootton and Weston-on-the-green, Mr. Dale.

3. *marginata* Fab.—*minuta* Coq. *pl.* 21. *f.* 4.

Middle of June, Coomb Wood, and on rushes by the side of a river near Slaughter, Oxfordshire, J. C.

4. *striata* Fab. *Ent. Syst.* 4. 7. 24.

5. *suturalis* Curt. Ochreous, face with 3 yellow ridges, central one furcate on the crown, wings hyaline, superior with the inner margin fuscous, apical nervures brown: expanse $3\frac{1}{4}$ lines.

I took a female at Dover in July 1826.

6. *limbata* Fab. *Ent. Syst.* 4. 6. 21.

Mr. Dale took a specimen near Barnstaple, Devon.

7. *pictipennis* Curt.—*anceps* Germ.?

Ochreous, variegated with brown, especially the scutel and abdomen; elytra pale yellowish with a large brown lunule at the apex, a yellowish-brown suffused fascia across the disc terminating on the inner margin in a brown stripe; apical nervures brown, the others dotted with black; legs variegated with brown: $3\frac{3}{4}$ lines.

Glanville's Wootton and Middlemarsh Woods, Dorset, Mr. Dale.

8. *flavescens* Fab.? *Ent. Syst.* 4. 7. 23.

9. *pellucida* Fab. 21st of May on Marrams, Tollsbury.

10. *guttula* Germ. *Mag. v.* 3. *p.* 216. *n.* 7. Ochreous, with a large black spot on each side of the face, crown of head, thorax and scutel yellow, sides of the latter brown: wings sublanceolate, hyaline, with a brown longitudinal stripe at the apex: $2\frac{2}{5}$ lines.

Beginning of August, near Loch Fad in the Isle of Bute, and off sedges, Gl. Wootton, Mr. Dale.

11. *stigmatalis* Lewis. Ochreous, sides of thorax, scutel and abdomen brown: wings hyaline, nervures brown, the apical one forming a piceous edge terminating on the stigma, which is yellowish: 4 lines.

August, Isle of Arran, J. C.; and Gl. Wootton, Mr. Dale.

The Plant is *Colchicum autumnale*, Meadow Saffron.





ASIRACA PULCHELLA.

ORDER Homoptera. FAM. Cicadiidæ.

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-trigonal, 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-trigonal: clypeus elongate-conic. Ocelli none. Eyes lateral and ovate, with a deep notch beneath. Thorax transverse short, somewhat lunulate: scutellum rather large and trigonal. 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: tibiæ, 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.*

$2\frac{2}{3}$ 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. crasnicornis* *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.



CIXIUS DIONYSII.

ORDER Homoptera.

FAM. Fulgoridæ.

Type of the Genus, Cicada nervosa Linn.

CIXIUS Lat., Curt.—Flata Fab., Germ.—Cicada Linn., Fab.

Antennæ inserted in cavities below the eyes on each side of the face (4), short and 4-jointed, 2 basal joints stout, 1st transverse, 2nd ovate, the apex depressed, 3rd small globose, but elongated and acuminate on one side, 4th a long naked seta (4 a).

Rostrum as long as the face, bent under the breast and reaching to the hinder coxæ.

Labrum short, elongate-trigonal, acuminate (3).

Mandibles and *Maxillæ* long, setiform and very slender.

Labium scarcely so long as the face, slender and triarticulate, basal joint concealed under the clypeus, 2nd very long, 3rd rather shorter (2).

Head *lunate*, the crown hollow, short, and obtuse; face nearly vertical, very long and subovate, with 3 longitudinal ridges (1, 1 a the profile); clypeus narrow, elongate-ovate: eyes placed in a cavity on the sides of the crown, globose: ocelli 2, situated on each side of the face, between the eyes and antennæ (1 *). Thorax subcordate, rounded before, with a broad short collar, triangular behind. Abdomen very short and semiorbicular, often with a tuft of white cotton at the apex, especially in the females, with a strong Ovipositor composed of a horny oviduct, and 2 large sheaths extending beyond the apex, and meeting an incurved strong lobe projecting above. Wings ovate-trigonal in repose, slightly deflexed; superior subelliptic, coriaceous with numerous strong, often hispid nervures, reticulated at the apex, costa arched but depressed, inferior margin straight: inferior wings membranous, shorter and broader, with several smooth longitudinal nervures, 2 or 3 transverse ones and as many furcate at the apex. Legs, 4 anterior short and simple (6, a fore leg): tibiæ, posterior long and clavate, with a few short teeth outside and some longer spines at the apex: tarsi triarticulate, anterior short and slender, with the basal joint very short, and truncated obliquely, in the hinder pair they are elongated (†), with the 3rd joint slender and clavate: claws small.

DIONYSII Panz.—Curt. Guide, Gen. 1068. 2°.

Black; head ochreous, 2 spots on the crown and the spaces between the 3 elevated ridges on the face blackish, excepting the clypeus; collar and margins of thorax and scutel ochreous; a line on the sides of the abdomen scarlet: superior wings yellowish brown, costa dotted with black, with an interrupted colourless line reaching to the stigma, which is brown, the inner margin slightly white; nervures black dotted with ochre: inferior wings iridescent, nervures piceous, centre of the cells fuscous: legs ochreous, tips of thighs and apical joint of tarsi brown. The outline figure in repose shows the natural size.

In the Author's Cabinet.

CIXIUS is related to *Asiraca* (pl. 445) on the one hand and to *Issus* (pl. 449) on the other. It is well known that in some of the cognate genera there are curious appendages to the an-

tennæ, as in *Otiocerus* of Kirby, but I believe no one has before observed the elongation of the 3rd joint in *Cixius*. I am not aware that the œconomy of this group is known, yet the perfect insects are not uncommon, frequenting trees and shrubs; they rest with their wings closed, which they open to make short flights, and are assisted in rising by their hind legs.

These pretty insects seem to vary so much, and each often bears so considerable a resemblance in markings to the other, that it is difficult to say which are genuine species. The following however are recorded as such, and I have several others which I shall not venture to name until more attention has been paid to them. I may here observe that the *Flata serratula* of Fab. probably belongs to this genus, and I have been wrong in admitting the *F. musiva* of Germar into my list.

1. *Cynosbatis* Fab. *Ent. Syst.* 4. 41. 61.

2. *nervosus* Linn.—*Panz.* 103. 6.

3. *cunicularius* Linn. *Syst. Nat.* 2. 711.—*nervoso-punctata* De Geer, v. 3. pl. 12. f. 1. & 2.

Glanville's Wootton, J. C. Dale, Esq.; June, on Holly-bushes, by the side of a rivulet, near Lyndhurst; Bagley Wood near Oxford; Clifton near Bristol; 9th Aug. on the side of the cliff at Bonchurch in the Isle of Wight; and 23rd Aug. in the Cove at Isleonsay in the Isle of Skye, J. C.

4. *Dionysii* Panz. 34. 24. and *cunicularia* 34. 21.

As this cannot be the *C. canicularia* of Linn. nor the *C. Cynosbatis* of Fab. I have restored Panzer's original name. It seems to be rare with us; the specimen figured I captured near Dover the middle of last August, and I believe Mr. Dale has taken another near Langport.

5. *stigmaticus* Germ.—*Ahr.* 11. 20.? If this figure represents Germar's insect, I think it may be identical with *C. Cynosbatis*.

End of May, Southampton; July, Dover; Aug. Isle of Bute on the Birch, J. C.; and at Glanville's Wootton, Mr. Dale.

6. *pilosus* Oliv.—*Lat. Hist. Nat.* 12. 311. 4.

June near Knaresborough, Yorkshire.

7. *albicinctus* Germ. *Mag.* 3. 199. 9.

Glanville's Wootton and New Forest, Mr. Dale; June, Bagley Wood, J. C.

8. *contaminatus* Germ. *Mag.* 3. 196. 7.

7th May, Coomb Wood and Dorsetshire; June, Bagley Wood and Hants.

9. *leporinus* Linn.—*Panz.* 61. 19.

Near Marley Wood, Lulworth, Mr. Dale; end of June Clifton, in abundance on coarse grass by the side of the Avon, J. C.

Having found several specimens of this insect last August at Sandwich upon the Thorn Apple, *Datura Stramonium*, that plant is represented in the plate.



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 subirigonate; scutellum large and triangular. Abdomen very large and trigonate, 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.

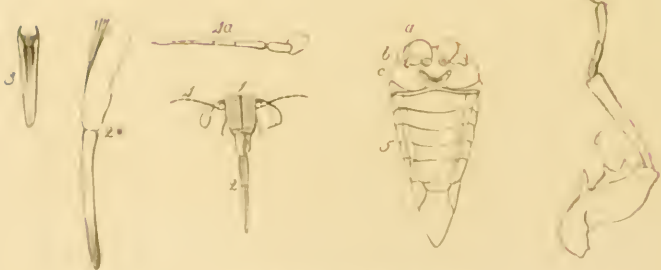
1. *I. coleoptratus* Fab.—*Curt. Brit. Ent. pl.* 449.

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).



CICADA ANGLICA.

ORDER Homoptera.

FAM. Cicadiidæ.

Type of the Genus, Cicada plebeia Linn.

CICADA Linn., Geoff., Lat., Sam., Curt.—Tettigonia Fab., Panz.

Antennæ inserted beneath the head, in a cavity between the nasus and the eyes, short, setaceous, composed of 7 joints; 1st and 2nd of equal length cylindric, the former the most robust and nearly concealed in a cavity of the head, 3rd the longest, the remainder of equal length, not longer than the 2nd; the apical joint being the shortest, sublanceolate and terminated by a minute bristle (4 and 4 a).

Labrum rather short and tongue-shaped, thickened in the centre and horny at the base, membranous towards the apex (3).

Mandibles and *Maxillæ* inclosed in the labium.

Labium as long as the head, biarticulate, a considerable portion of the basal joint concealed beneath the clypeus, more robust and scarcely so long as the 2nd. (2, and 2*; the latter in profile, showing the mandibles and maxillæ detached at the base.)

Head *very broad and trigonate, the face convex in the centre and striated transversely* (1). Eyes *sometimes very prominent*. Ocelli 3 in triangle. Mesothorax *transverse separated from the Scutellum, which is very large and convex, by a transverse suture*. Postscutellum *sometimes cruciform*. Abdomen *robust and conical, composed of 6 or 7 segments, with 2 plates beneath at the base in the males* (5 c), the apex *cleft horizontally in the male; with an ovipositor concealed beneath in the female*. Wings *deflexed when at rest, meeting on the back, membranaceous, furnished with numerous nervures, united before reaching the posterior margin, superior much the largest, frequently twice as long as the body, elongate oval*. Legs *short*. Thighs; anterior *short, incrassated and toothed beneath* (6). Tibiæ *simple, posterior with a few strong spines below the middle, and several at the apex*. Tarsi *short and triarticulate, basal joint minute, 2nd a little longer, 3rd twice as long*. Claws *strong and curved* (5 a posterior coxæ, b pessellum.)

Obs. Figures 2, 5 and 6 are the head, body and fore leg of *C. Anglica*.

ANGLICA Sam. Comp. pl. 5. f. 2.—Curt. Guide, Gen. 1072. 2.

Male rather smaller than the female. Dull black, slightly clothed with soft hair and partially with fine golden hairs. Abdomen of the male with a cavity covered with a membrane on each side the basal joint above; margins of the abdominal segments, excepting the 2 first, ferruginous, the penultimate with a broad ochreous band, the lower apical lobe entirely ochreous. Wings slightly yellow, nervures brown, costa ochreous, base scarlet; inferior wings slightly brown at the anal notch. Legs ochreous; anterior coxæ and thighs variegated with black on the inside, the others with a brown stripe not reaching the apex; base of tibiæ and tips of tarsi piceous.—*Obs.* I have a variety with 2 triangular ochreous spots on the scutellum.

In the Author's and other Cabinets.

THE Cicadae are exceedingly interesting from their having attracted the notice of the most celebrated ancient poets and writers; and it is remarkable enough that whilst the Greeks loved and extolled them for their song, Virgil execrated them for their noise as well as more modern authors.

The males only are furnished with the curious apparatus for singing: a pleasing account of these insects will be found in the 2nd vol. of Kirby and Spence (p. 402); and in Latreille's Hist. Nat. tome 2. p. 293, their habits and œconomy are detailed.

The species of Cicadae are very numerous and are distributed over a vast portion of the globe, from Europe to Brazil, the Cape of Good Hope, New Holland, China, and the intermediate countries. There are none much smaller than our British species, but I have a Herculean one from Penang, presented to me by my friend James Thompson, Esq., which measures 7 inches across, when the wings are expanded; in another from Java the plates are very remarkable, and form a lobe on each side nearly $\frac{3}{4}$ of an inch long.

No species has been found so far to the north I believe as *C. Anglica*. I have adopted this name, as I am not confident that it is the *C. hæmatodes* of Linn.; the *C. sanguinea* of Fabricius (*C. hæmatodes* Scop.) is a larger and different insect, which has never been found in England: we met with it in the vineyards in the South of France, where we also took *C. plebeia* on the almond trees, *C. Orni* on fir trees, as well as another the size of *C. Anglica*, and somewhat like it. Their songs were very different, but none of them very agreeable, and when the sun was unclouded the whole air vibrated with their singing.

C. Anglica was first discovered in the New Forest about 20 years since, and although Mr. Dale and myself have been unceasing in our endeavours to find it, we never succeeded until last year. The first I took on the 2nd of June, and on the 7th two more; the males fly about like humble-bees; the females I beat out of white-thorns, and some of them then flew into furze bushes, and when entangled in them, they made a buzzing like a Libellula similarly situated; they are found also on the stems of the Fern, and I suspect the larvæ live on the roots. I do not think our Cicada sings; the abdominal plates are very small and appear to me to be united. Mr. Dale kept a male alive 2 or 3 days, but it was perfectly mute. This, however, is by no means conclusive, because it may require heat and sunshine to call its powers of song into action.

Mr. Samouelle having represented the female, I have figured the male, which is by far the rarer sex. The Plant is *Aquilegia vulgaris* (Common Columbine).



Phytolacca americana L.

NOTONECTA MACULATA.

Spotted Boatfly.

ORDER Hemiptera. FAM. Notonectidæ.

Type of the Genus, Notonecta glauca Linn.

NOTONECTA Linn., Geoff., Fab., Lat., Curt. &c.

Antennæ concealed in a cavity behind the eyes, minute, 4-jointed; basal joint very small globose; 2nd large somewhat cylindrical; 3rd as long as the 2nd, but much more slender; 4th very small, conical (4). *Labrum* exserted, large, triangular, convex; narrowed towards the apex (3).

Mandibles and *Maxillæ* passing through the rostrum like setæ, acute, the latter the shortest.

Labium as long as the head, inflected, arcuated, conical, 4-jointed, basal joint conical truncated, 2nd subovate-truncate, with a tuft of hair on each side beneath, 3rd twice as long, 4th small and bifid at the apex (2).

Head vertical, transverse and rounded. Eyes large oblong, converging above, posterior margin sinuated (1). Thorax somewhat hexagonal, cylindrical, narrowed before, the anterior margin sinuated. Scutellum large triangular, metathorax subquadrate. Abdomen oval, thick, flat beneath, terminated on each side by a small ciliated appendage. Elytra notched at the apex. Wings ample and transparent, with several nervures. Feet, 4 anterior with strong claws. Tarsi biarticulate, 1st joint the longest, hind pair elongate, strongly ciliated, with very minute claws (6).

Larvæ and Pupæ somewhat resembling the Imago, but less perfect. Roesel, v. 3. tab. 27.

MACULATA Fab. Ent. Syst. v. 4. p. 58. n. 3.—Curt. Guide, Gen. 1076. 3.

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

THESE insects are to be found in ponds and ditches all the year, together with the larvæ and pupæ (which are smaller than the imago); the former are without, and the latter have only rudiments of elytra: they are said to feed upon animalcula. The perfect insect being capable of inflicting a considerable wound with its rostrum when taken, must be a formidable enemy amongst the weaker inhabitants of the water.

The wings, which are exquisitely delicate, and the elytra that protect them, are of little use to the insect in its natural element; but they are necessary to its preservation, by enabling it to seek a more congenial situation, when the place of its habitation is dried up by the heat of the sun, or other casualties. Upon approaching a pond these insects may be seen lying upon their backs, with their tails touching the surface of the water, and their heads inclined

downward, watching probably for their prey; and upon the least alarm they row off and dive with the greatest celerity, their hinder legs (which are most beautifully fringed with long silky hair) serving them like oars, from whence the appellation of Boatfly.

The genus *Notonecta* contains 3 species, differing only in colour and markings.

1. *N. furcata* *Fab. Ent. Syst.* 4. 58. 2.—*Don.* 16. 560. 2.—*Sam. pl.* 5. f. 3.
Length $7\frac{1}{2}$ lines. Ochreous, eyes piceous; head and thorax shining: scutellum metathorax and abdomen black, the latter with the margins ochreous-yellow: elytra brown with 2 broad pale ochre streaks at the base; a spot at the middle ochreous brown, edge of costa and apex pale fuscous variegated with brown: wings opalescent, with a slight yellowish tint, nervures piceous.

This species is less abundant than the next, but may be found plentifully round London and other parts of the kingdom, from April to October. Mr. Dale has observed it at Glanville's Wootton; Isle of Portland; and New Forest.

2. *N. glauca* *Linn. Faun. Suec.* 244. 903.—*Don.* 3. 75.
Length $6\frac{1}{2}$ lines. Ochreous, eyes piceous; head and thorax shining, the basal half of the former more or less lead-coloured: scutellum metathorax and abdomen black, the apex and sides of the latter ochreous: elytra with the costa ferruginous, bearing several blackish spots, and frequently a brown spot on the inferior margin; posterior margin semitransparent, the tip brownish: wings opalescent, with a slight yellowish tint, nervures ochreous. Sometimes the elytra are slightly sprinkled with brown spots on the inferior margin.

Found in almost every pond from the middle of March to the end of October.

3. *N. maculata* *Fab.—Curt. Brit. Ent. pl.* 10.—*Don.* 16. 560. 1.
Ochreous: eyes piceous; head and thorax shining, the latter inclining to cinereous behind; metathorax bright orange, black at the base as well as the scutellum: abdomen orange, with a semiorbicular velvety black patch at the base, lateral margin of the penultimate joint green: elytra orange-ochre, irregularly clouded and spotted with brown, posterior margin pale brown: wings opalescent, with a yellowish tint, orange at the base, the nervures brownish: legs sometimes greenish-ochre.

This beautiful insect is rarely found near London, but it has occurred at Turnham Green; in the West of England it is more abundant, and is found from the end of July to the beginning of October. Mr. Dale first met with it at Glanville's Wootton; afterwards in the New Forest; Isle of Portland; on Chedder Cliffs in a pond free from weeds, and in Scotland; at Charmouth; near Bath; also near Bristol, and in the neighbourhood of Exeter and Plymouth, by Dr. Leach.

A *Notonecta* allied to *maculata*, and discovered by the late Mr. R. Scales, is mentioned in the Entomological Transactions, which Mr. Dale says may be only a variety of *N. glauca*, which he has found to vary considerably, especially at Whittlesea Mere.

Cerastium aquaticum (Marsh Mouse-ear) is figured in the plate.



NEPA CINEREA.

The water Scorpion.

ORDER Hemiptera.

FAM. Nepidae.

Type of the Genus, Nepa cinerea, Linn.

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

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

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

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

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

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

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

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

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

In the Author's and other Cabinets.

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

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

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

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



RANATRA LINEARIS.

The linear Water-scorpion.

ORDER Hemiptera. FAM. Nepidæ *Lat., Leach.*

Type of the Genus, Nepa linearis Linn.

RANATRA *Lat., Fab.*—*Nepa Linn.*—*Hepa Geoff.*

Antennæ inserted beneath the head, close to the margin of the eyes (1, a), and lying in a groove, short and triarticulate, basal joint subcylindric, 2nd large, produced and spinous on the inside, 3rd slightly curved, elongate-conic (4).

Labrum rather long and slender (3).

Tongue? attached to the head beneath the labrum, membranous, the edges coriaceous (3*).

Mandibles and *Maxillæ*, long and slender, passing through the labium.

Labium as long as the head, cylindric, triarticulate, 1st and 2nd joints most robust, the latter rather the longest, the centre lobed above, 3rd joint conical and pilose (2).

Head *small, subovate. Eyes lateral very prominent and globose.*

Rostrum porrected (1). *Clypeus elongated* (the upper part of fig. 3). *Thorax elongated, slightly dilated anteriorly and more at the base which is emarginate. Scutellum turbinate. Abdomen long, linear, margined and slightly attenuated, divided at the apex and furnished with 2 long setæ. Elytra pergameneous, linear, an oblique portion of the apex membranous and reticulated. Wings rather shorter but much broader, folded, with a few nervures. Legs; anterior raptorius, scythe-shaped; Coxa very long and slender. Femur and Tibiæ united, very long and compressed, with a strong tooth on the inside at their union, the internal edge of the tibia being serrated. Tarsus forming a long curved, biarticulate claw, the terminal joint being minute* (6). *Thighs and tibiæ of the 4 posterior legs very long and slender. Tarsi slender, formed of 1 joint, terminated by long slender and but slightly curved Claws.*

LINEARIS *Linn. Faun. Suec. 245. n. 908.*

Fuscous ochre, sometimes with a reddish tinge. Eyes black. Abdomen red above, the margins ochreous, the apex brownish. Inferior wings opalescent, the nervures pale brown.

In the Author's and other Cabinets.

THESE singular animals inhabit the water in every stage of their existence, and it is said they prefer the deepest parts. The female forces her eggs into the stem of a *Scirpus*, or some other aquatic plant, so that they are concealed; and it is only the two bristles which are attached to one end of them that are visible. The plants containing the eggs are figured by Geoffroy; they are easily preserved in water, and may be kept till the young hatch.

The perfect insects leave the ponds and ditches they inhabit in the evening, and may be found, I have heard, on their borders amongst the mud, which they so much resemble in colour, that unless they move it is almost impossible to detect them. Like most other winged water insects they fly in the night, and sometimes it is said to a considerable distance, in search of places better suited to their habits in dry seasons, when many ponds and small pieces of water are dried up; as their eggs in such instances would be destroyed.

The *Ranatra linearis*, which is the only European species, lives upon other water insects, which it holds between its fore feet, whilst it pierces and sucks them with its beak or rostrum. They are found from January to July, and also in September, and most probably all the year: they seem to be generally distributed, and may be taken in most parts of the neighbourhood of London. Mr. Samouelle mentions Epping Forest, Copenhagen Fields, and Hammersmith; Mr. Donovan, Ilford, Essex; Dr. Stephenson has captured them on Wandsworth Common; and Mr. Henry Atkinson near Primrose-hill. They have been taken also in Norfolk and Suffolk; and I am indebted to Charles C. Babington, Esq. of St. John's College, for very fine specimens taken near Cambridge last spring.

The plant is *Gentiana Pneumonanthe* (Calathian Violet).



Stylus 3. C. ... 1866

GERRIS APICALIS.

ORDER Hemiptera.

FAM. Hydrometidæ.

*Type of the Genus, Cimex lacustris Linn.*GERRIS *Lat., Guild., Curt.*—Hydrometra *Fab.*—Aquarius *Schel.*—*Cimex Linn., DeG.*

Antennæ inserted before the eyes on each side the nasus, as long as the head and thorax, filiform, 5-jointed, basal joint the longest and a little curved, 2nd and 4th shorter of equal length, 3rd minute, 5th longer than the 2nd (4).

Labrum short, dilated and ciliated at the base, terminating in an elongated attenuated and pointed lobe, transversely striated (3).

Mandibles and *Maxillæ* long slender and capillary, inclosed in the *Labium* which is longer than the head, rather stout pubescent and 4-jointed, basal joint somewhat cup-shaped, 2nd rather smaller, 3rd long and attenuated, 4th short slender and pointed (2).

Head *porrected, oblong, rather narrow and elongated, the apex produced and rounded, leaving shoulders for the attachment of the antennæ: eyes globose and very prominent (1, the head in profile).* Thorax *oblong, truncated before, ovate behind; scutellum invisible: Abdomen linear in the male, slightly ventricose in the female, the sides reflexed, the antepenultimate joint spined on each side, the 2 following joints narrowed, the apical one conical, especially in the female.* Elytra and wings *incumbent, the former coriaceous and covering the back with 5 strong longitudinal nervures; the latter membranous with very few nervures.* Legs *attached laterally, anterior raptorious, the shortest and stoutest, the others long and slender, intermediate the longest: thighs simple, longer than the tibiæ except in the anterior pair: tarsi biarticulate, the basal joint long, except in the anterior: claws curved inserted beneath the apex of the tarsi which projects over them (6, a fore leg).*

APICALIS.—*Curtis's Guide, Gen. 1080. n. 6.*

Black, silvery beneath; a long spot on the fore part of the thorax and a line on each side ochreous; margins of abdomen and apex beneath of the same colour; the lateral spines very short; underside of legs dull ochreous, tips of thighs and tibiæ and the tarsi brown, anterior with a spot at the base and apex only of the thighs ochreous: a line on the interior margin at the base of the elytra and the wings pearly white, apical portion of the latter brown.

In the Cabinets of Mr. Dale and the Author.

THESE insects by rowing with their posterior feet glide over the water with great swiftness, and their undersides are rendered impervious by the beautiful silvery hairs with which they are densely covered. *Gerris* is most nearly allied to *Velia* (pl. 2), but is distinguished by its horizontal head, the great length of the 4 posterior legs, which are very remote from the anterior, and the tarsi are biarticulate. Like *Velia* and *Hydrometra*, some adult specimens are apterous, as in *G. Pausarius* which is very like *G. paludum*, but I cannot

think they are one species, the females of the former being so much larger.

A. Lateral spines of abdomen, conical elongated and acute.

1. *G. paludum* Fab.—*Stoll. Cim. tab. 9. f. 63.*—*lacustris* Don. v. 4. pl. 118. f. 1.

Length $6\frac{1}{2}$ lines. Obscure black, antennæ and legs of same colour, anus, margins of thorax, and abdomen ochreous.

April, May, June, and August, ponds and ditches.

2. *Pausarius* Curt.

♂ 6 lines, ♀ 8. Apterous, dull black, silvery-yellow beneath; basal joint of antennæ equal to all the others in length; a gray line down the back of the abdomen formed of long dots; the scapes to which the legs are attached ochreous beneath, the space between the 4 posterior and an interrupted line down the belly ferruginous.

Although both sexes are apterous it is the largest of our species, and when the abdomen of the female is distended with eggs an ochreous line is very visible down each side of the back, formed by the membrane connecting the coriaceous covering. These insects were abundant in June and the beginning of July in a rapid little stream near Lyndhurst, and many of them were paired. Mr. Dale has seen them from April to October.

B. Lateral processes short, flat, and subtrigonal.

3. *rufoscutellata* Lat.—*Stoll. t. 15. f. 108.*

$4\frac{1}{2}$ to $5\frac{1}{2}$ lines. Obscure black; antennæ, excepting the apex, sides and lobe of thorax, margin of abdomen, anus and legs, ochreous.

March and April, ponds and ditches, Glanville's Wotton; September, Paddington.

4. *variabilis* Curt.

$4\frac{2}{3}$ lines: similar to No. 3, but the antennæ are black, excepting the base of the 2nd joint, the thorax has only a long spot before, with the margins rufous; the abdomen is ochreous beneath, excepting a black line on each side, whereas in No. 3 the margins and apex only are ochreous.

Taken on salt-water ditches I believe on the coast of Suffolk in August.

5. *lacustris* Linn.—*DeGeer v. 3. pl. 16. f. 12.*

Length $4\frac{1}{4}$ lines. Obscure black, margins of thorax, abdomen, anus, 4 posterior and base of anterior legs ochreous.

On stagnant waters: it is common in Norfolk.

6. *apicalis* Curt. *Brit. Ent. pl. 553.*

This pretty species was first communicated to me by my friend J. C. Dale, Esq., who discovered it by the Moore's river at West Hurne, Hants, also by Manaton or Bear Wood, Dorset, and afterwards in the New Forest: it appears from June to the end of September.

The Plant is *Veronica scutellata* (Narrow-leaved Speedwell).



VELIA RIVULORUM.

ORDER Hemiptera. FAM. Hydrometidæ *Leach*. Cimicides *Lat.*

Type of the Genus *Gerris currens* *Fab.*

VELIA *Lat., Leach.* Hydrometra *Fab.*—*Gerris* *Fab., Coq.*—*Cimex* *Rossi.*
Antennæ porrected, filiform, subgeniculate, inserted considerably before the eyes in a cavity on each side the nasus, as long as the thorax, 4-jointed, basal joint rather the longest and stoutest, remainder o. nearly equal length, the last conical at the apex (fig. 4).
Labrum short, dilated at the base, somewhat tongue-shaped, the sides membranous transversely striated (3).

Tongue none?

Mandibles and *Maxillæ* very long and slender, capillary, received into the labium or rostrum (2* c).

Labium^a long, horny, inflected, attenuated (2), 3-jointed, 1st joint short, globose at the base (2* a) 2nd very long, attenuated (b), 3rd short and slender.

Head *small, somewhat vertical.* Eyes *globose, very prominent* (1). Thorax *much broader than the head.* Scutellum *none?* Abdomen *flat above, convex beneath; sides very much elevated and terminating in a spine on each side the anal joints, which are more produced in the males than in the females.* Elytra and Wings *sometimes wanting.* Legs *very remote at their insertion except the anterior pair which are the shortest, and raptorious; middle pair rather longer than the posterior.* Thighs; *posterior robust and serrated beneath in the males.* Tibiæ *simple, the middle pair ciliated.* Tarsi; *anterior very short, middle pair the longest; 3-jointed, basal joint very minute, 2nd the longest except in the anterior pair, in which the 3rd is the longest.* Claws *very slender, inserted laterally in a fissure* (6, a fore leg).

RIVULORUM *Fab. Ent. Syst. v. 4. p. 189. n. 5.*

Dark brown, velvety. Thorax projecting like a scutellum over the abdomen, deeply punctured, with two gray spots in front, and an orange mark between them; sides of the thorax and abdomen deep orange, the latter black at the base and apex, a black spot on the elevated edge of each segment, and a line of contiguous black spots down each side. Elytra with a long white spot at the base and 3 round ones down the middle of each. Wings fuscous with darker nervures.

In the Author's and other Cabinets.

^a This is called the Rostrum; it is the analogue of the labium, and is similar to that part in the Diptera, being hollow and open above to receive the other trophi. The greatest difference seems to be in the absence of a tongue; the 4 setæ united probably form a tube which would supersede the necessity of such an organ. In figure 2* the part distinguished at a, may be analogous to the mentum, and b to the bilobed fleshy lip of the Diptera, which in this order is horny.

VELIA is nearly related to Gerris and Hydrometra (Pl. 32), and like those genera is remarkable for occasionally wanting wings; and although 4 years since I was induced to offer an opinion which inclined to a belief that the apterous specimens might be the pupæ only, I am now almost convinced that they are a distinct species; for it is no uncommon circumstance in the New Forest to find the largest apterous species of Gerris united, the abdomen of the female being greatly distended: it is therefore still to be hoped that some assiduous entomologist who resides in a convenient situation, will endeavour to decide this doubtful and interesting question, by confining a sufficient number of *V. currens* (the common and apterous species) in a frame covered with coarse gauze, and letting it float where they have been observed to congregate.

In the winged specimens the thorax projects over the abdomen as in Gerris, and the scutellum seems to be wanting; the ciliated middle tibiæ common to both sexes, and the spined posterior thighs of the male, are not common characters, although they are observable in Gerris, from which Velia is distinguished by its shorter legs and 3-jointed anterior tarsi, the terminal joint of which projecting in a lobe over the claws is very remarkable and is less distinct in the other feet. The short and thick pile with which the undersides of these insects are clothed, repels the water so that they are not injured by its action.

1. *V. currens*. *Fab. Ent. Syst. v. 4. p. 193. n. 22.*—*Coquebert Icon. tab. 19. f. 11.*
Apterous, dark brown, velvety. Thorax truncated behind, with a reddish spot near the anterior margin and a gray spot on each side. Abdomen with 2 rows of gray spots down the back, the elevated sides orange and black, the under side orange also.

Very common from the earliest period of spring to the autumn, by the sides of rivers and on running brooks.

2. *V. rivulorum* *Fab.*—*Curtis Brit. Ent. pl. 2.*

This pretty insect has never been figured, and was unknown as an inhabitant of this country until specimens were taken by the Rev. W. Kirby, the Rev. John Burrell, and Dr. Leach: it has since been observed in considerable abundance by J. C. Dale, Esq. upon a stream of water running through his estate at Glanville's Wootton, Dorset; and Mr. Samouelle has met with it near Kew Bridge. It is found from the middle of March to the middle of July, and probably longer. I took several specimens in Scotland, 2 or 3 of them at a very considerable elevation upon the Ochil Hills near Stirling, in a very small but clear spring surrounded with rushes.

The insect in the plate represented flying is the male, that at rest the female, and the lines drawn near each denote their natural size. The plant is *Juncus articulatus* (Shining-fruited jointed Rush).



HYDRÆSSA PYGMÆA.

ORDER Hemiptera.

FAM. Hydrometidæ.

*Type of the Genus, Velia pygmæa Duf.*HYDRÆSSA *Burm.*—*Microvelia Westw.*—*Velia Dufour.*

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

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

Mandibles and *Maxillæ* setiform.

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

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

PYGMÆA *Dufr.*—*Curt. Gen.* 1081^b.

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

In the Cabinets of Mr. Haliday and the Author.

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

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

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

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



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Stenobothrus (Lep.)

HYDROMETRA STAGNORUM.

ORDER Hemiptera.

FAM. Hydrometidae.

*Type of the Genus, Cimex stagnorum Linn.*HYDROMETRA *Lat., Fab., Curt.*—Gerris *Fab.*—Aquarius *Schel.*—*Cimex Linn.*

Antennæ porrected, very slender and setaceous, inserted on shoulders at the base of the clypeus, as long as the head and thorax, remote, pubescent and 4-jointed, basal joint the shortest and stoutest, 2nd a little longer, 3rd thrice as long, 4th half as long as the 3rd (4).

Rostrum inflected, shorter than the head, very slender (2).

Labrum linear, slender and acute (3 the profile, 3 *a* the under-side).

Mandibles and *maxillæ* setiform.

Labium transversely striated, thickened towards the apex, indistinctly triarticulate, basal joint short, 2nd very long, 3rd not longer than the 1st; conical at the apex (2*).

Males *smaller than the females*. Head *twice as long as the thorax, and much narrower, cylindric, dilated at the apex; the clypeus narrowed: eyes lateral globose and very prominent, inserted before the middle (1, the profile)*. Thorax *elongated, slightly constricted at the middle, invisibly united beneath to the abdomen: scutel none, or semicircular and concealed*. Abdomen *depressed, long and linear, the sides broadly margined and slightly convex in the females, with the apex acute and furnished with an incurved hook; apical joint oblong, narrowed, and with a minute tubercle in the males*. Elytra *coriaceous, either as short as the thorax and narrow, or thrice as long and elliptical, with an interrupted subcostal nervure, another parallel to the interior margin, and 2 transverse ones towards the apex: wings either none or nearly as long as the elytra, submembranous, with 2 longitudinal nervures and a transverse one near the apex*. Legs *long and very slender, attached to the sides, anterior the shortest, posterior the longest: coxæ, hinder remote: thighs cylindric, slender; tibiæ very slender: tarsi short, very slender, indistinctly triarticulate, basal joint very minute, 2nd and 3rd elongated, clavate, of equal length: claws 2, equal and very slender (6, a fore leg)*.

STAGNORUM *Linn.*—*Curt. Guide, Gen. 1082. 1.**In the Author's and other Cabinets.*

THESE curious insects are common in almost every brook and pond during the spring, where they may be seen with *Velia*, pl. 2, and *Gerris*, pl. 553, gliding along the surface of the water. Most of them are either apterous, or have only short parallel elytra, whilst a few have ample elytra, decumbent and horizontal when the insects are at rest, and also perfect wings, as exhibited in the specimen represented flying in the plate.

Like *Velia* and *Gerris*, it is at present impossible to determine whether the apterous specimens constitute a distinct species: that they are not pupæ I am convinced, because I have found them in that state when they are smaller with rudimentary elytra; and as I now possess males and females of both, it is evident that the wings do not indicate a sexual distinction. These insects must therefore either be distinct species, or else they sometimes have and sometimes have not wings: this may well be a very difficult question, for if we were to find a well-known species of bird in its adult state at times with and at others without wings, no doubt it would very much embarrass the ornithologist. Entomology, however, presents so many anomalies, that it will not be judicious to consider such as a parallel case. I confess that I am inclined to believe the *Hydrometræ* are two distinct species; at the same time I freely admit that there are so many instances of Hemipterous insects being found sometimes winged and at others apterous or semiapterous in their perfect state, that such variations may only arise from temperature or casualties with which we are unacquainted, unless indeed it be a pseudimago state, as I have already promulgated at folio 681.

1. *stagnorum* Linn.—Curt. B. E. apterous figure ♂.

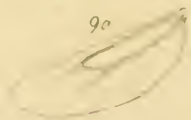
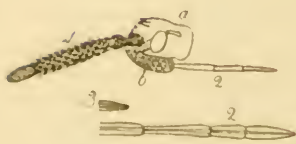
Velvety brownish-black: elytra narrow and shorter than the thorax, sometimes with a longitudinal testaceous line at the base of the head and a double one on the thorax; margins sometimes ochreous: base of first two joints of antennæ and legs, excepting the extremities of the joints, ochreous.

2. *alatus* Curt. Brit. Ent. winged specimen ♀.

Velvety brownish-black: elytra ample, brown, variegated with ochre; wings semitransparent brown, nervures dark: hinder portion of thorax and abdomen often testaceous, centre of the latter shining: antennæ and legs ochreous and fuscous as in *H. stagnorum*.

For a fine winged pair I am indebted to the Hon. C. A. Harris, who took 4 males and females the middle of August, with an abundance of apterous specimens and several pupæ on a branch of the Stour, which runs through the grounds of the Earl of Malmesbury at Heron Court. Mr. Dale has taken them at Rydal water, Cumberland, the end of August, and Mr. Marshall at Hornsey. Mr. W. Clifton found both winged and apterous specimens on pulling up grass in the middle of a swampy field in June, on Barnes Common, in great abundance; also at Wandsworth, at the roots of trees on removing the grass; and I may add that I have taken them winged in June in the New Forest, but I have generally observed *H. stagnorum* on the sides of rivers and running brooks in April and May, but I found the larvæ and imago under stones on the shores of Loch Fad in August.

The plant is *Scrophularia aquatica*, Water Figwort.



Chrysomelidae (Cicadellidae)

DICTYONOTA CRASSICORNIS.

ORDER Hemiptera. FAM. Cimicidæ *Lat., Leach.*

Type of the genus Tingis Eryngii Lat.

DICTYONOTA *Nob.*—*Tingis Fab., Lat., Panz., Fall., Leach.*—*Cimex Linn., Geoff., DeGeer.*

Antennæ inserted before the eyes, on each side of the head, long, robust, scabrous, 4-jointed, 1st and 2nd joints subglobose, 3rd the thickest, very long, covered with small tubercles producing hairs, 4th ovate pilose (fig. 4).

Rostrum inflected, extending the whole length of the thorax when at rest (2): confined at the base by two reticulated membranous plates, more dilated and less produced on the pectus (2 b): 4-jointed, basal joint robust, 2nd long slender, 3rd rather shorter than the 4th which is lanceolate and as long as the first (2).

Labrum short, tongue-shaped, grooved (3).

Mandibles and *Maxillæ* like setæ passing through the rostrum or labium.

Head small, trigonate 4-spined. Eyes lateral. Ocelli none. Thorax transverse, reticulated, margins dilated, transparent, inflated in the centre of the anterior margin, having 3 carinæ down the back and produced posteriorly in the form of a scutellum. Body depressed. Elytra transparent, reticulated, having two strong nervures in the middle of each forming an ellipsis. Wings ample, having 2 longitudinal nervures united near the middle by an oblique one (9 a). Legs not long simple. Tarsi 3-jointed (6, a fore leg).

CRASSICORNIS *Fallen Mon. Cim. Succ. p. 38. n. 8.*

Antennæ black, rough, the 3rd and 4th joints producing rather long spreading hairs, the terminal joint being half the length of the 3rd. Head and eyes black thickly punctured, the spines before the eyes inclining outward, those in the centre contiguous. Thorax slightly ochraceous, nervures brown, transverse, quadrate-ovate, black and deeply punctured in the middle, carinæ very much produced reticulated. Elytra of the same colour, fuscous in the middle, the reticulations being nearly of equal size and strength throughout. Legs ferruginous, thighs blackish in the middle, last joint of tarsi fuscous. Beneath black. Abdomen castaneous.

In the Cabinet of the Author.

THE *Tingidæ* are a pretty group, varying considerably in outline and in the form of the antennæ, and will most probably eventually constitute several genera. The 2 species included in our genus *Dictyonota* (in allusion to the reticulated back), possess a strong generic character in the 3rd joint of the antennæ being the thickest, whereas in all the others the terminal one is the most robust, making them more or less clavate: the inflated hood over the head distinguishes it also from many others, but not from *T. spinifrons* of Fallen, figured by Panzer *fasc.* 99. *n.* 19. under the name of *T. cristata*.

That our insect is the *T. crassicornis* of Fallen there is little doubt, although from his not being acquainted with the other species, his description will in a great measure apply to both. I have only seen one specimen, which I found under a stone in a meadow near Bognor, Sussex, the beginning of August; from which the annexed figure was taken.

The other species appears to be the *T. Eryngii* of Latreille. It was taken in some abundance in July upon furze bushes (*Ulex*), by Mr. Carpenter; and although with the assistance of a glass many characters present themselves, yet as there is a strong resemblance, we cannot perhaps employ ourselves more usefully than by subjoining the characters.

Dictyonota Eryngii Lat. *Hist. Nat.* v. 12. p. 253. n. 6.

Antennæ black, scabrous, 2nd and 3rd joints producing short hairs, terminal joint small ovate (*f.* 4.) Head and eyes black punctured, 2 short, elevated ochraceous lines behind the eyes (a), lateral spines parallel; central spines distant, pale at the apex (2.) Thorax narrowed anteriorly, slightly ochraceous, nervures fuscous, indistinct upon the posterior process; centre brown and ochraceous, minutely punctured, 3 carinæ down the back, not reticulated. Elytra slightly ochraceous, reticulations much smaller and less distinct towards the middle, the space formed by the union of the 2 nervures in the middle, not extending more than half their length. Legs black, tibiæ and apex of thighs ferruginous. Beneath black.

The plant is *Samolus Valerandi* (Brookweed).





Urtica dioica L.

TINGIS OXYACANTHÆ.

ORDER Hemiptera.

FAM. Cimicidæ.

*Type of the Genus, Cimex Cardui Linn.*TINGIS *Fab., Fall., Lap., Curt.*—*Acanthia Fab., Wolff.*—*Catoplatus Spin.*—*Monanthia Lepel. et Serv., Hahn.*—*Cimex Linn.*

Antennæ inserted in front of the head, before the eyes, not remote, generally shorter than the thorax, clavate, pubescent and 4-jointed, basal joint short, pear-shaped, 2nd shorter, obovate, 3rd very long, linear or a little clavate, 4th much shorter, stouter, elliptic-ovate (4).

Labrum short and concealed.

Mandibles and *Maxillæ* setiform.

Labium about the length of the antennæ, almost reaching the hinder coxæ, inserted in a deep channel under the head (2), rather slender and 4-jointed, basal joint the stoutest, elongated, 2nd the longest, 3rd the shortest, 4th as long as the 1st, the apex slightly conical (2*).

Body depressed, surrounded by a membranous margin. Head small, subtrigonal, with 2 vertical plates beneath, forming a large channel for the rostrum (1 the profile): eyes prominent, lateral, subovate, granulated; ocelli none. Thorax trigonal-ovate, narrowed and slightly hood-shaped before, the sides with dilated margins, 3 ridges down the back; the hinder portion scutiform and triangular concealing the scutel. Elytra entirely coriaceous, reticulated, subelliptic with an elevated nervure forming an ovate-lanceolate space on the disc, margins inflected: wings ample, with a few longitudinal and one oblique nervure (9 a). Abdomen entirely concealed. Legs simple and rather short: thighs long, slender at the base: tibiæ slender, hinder waved (6†): tarsi short, biarticulate, basal joint very small, 2nd long and clavate: claws bent.

OXYACANTHÆ *Curt. Guide, Gen. 1087, 8.*

Ochreous with darker clouds: antennæ fulvous, 4th joint black, excepting the base: head black with a cleft spine in front and 3 short ridges on the crown, ochreous: thorax punctured, with a narrow hood before to receive the head, with a small black space behind, the centre much dilated and gibbose; hinder portion very much elongated and triangular; 3 parallel carinæ down the back, central one the longest, with a black spot on the disc: sides rounded, incrassated, forming a broad margin, with large nearly circular reticulations or pits: elytra dilated at the middle, pitted, becoming reticulated at the apex, which is brownish, as well as a band across the centre, the oblique lines dividing the membrane elevated and united to 2 others parallel to the margin, which has large reticulations and is diaphanous, excepting where the brown bar crosses: legs ferruginous, tips of tarsi black: underside variegated with black.

In the Cabinets of Mr. Dale and the Author.

FABRICIUS established the genus *Tingis* in the *Systema Rhynogotorum*, where he describes *Cardui* as the type, for which reason I gave the name of *Galeatus* to the group with a large hood and lobes to the thorax; it therefore appears to me that the name *Monanthia*, imposed by Lepeltier and adopted by Hahn, must fall.

Some of these insects are found upon thistles and flowers in abundance, and they always seem stiff and sluggish when disturbed.

* *Hinder portion of scutel subtrigonal but not elongated.*

1. *pusilla* Fall.—Hahn, pl. 118. f. 373. & pl. 129 F.

I found several in September under a clod of earth in a field near Wallpan Chine in the Isle of Wight.

2. *carinata* Panz. fasc. 99. pl. 20?

Recorded as British.

3. *cervina* Hahn, 118. 375?

Mr. Lyell gave me a specimen from Kinnordy.

4. *cassidea* Fall. Mon. p. 37. No. 6.

Taken by Mr. Dale.

5. *parvula* Fall. 37. 5.

Said to have been taken near London as well as the following.

6. *nigrina* Fall. ?—Hahn, pl. 125. G.—Panz. 118. 6.

** *Hinder portion of scutel triangular and elongated.*

7. *ampliata* Hahn, pl. 127. f. 397 a.

Taken by Mr. W. W. Saunders under bark in Wimbledon Park.

8. *Cardui* Linn.—Panz. 3. 24. De Geer, v. 3. pl. 16. f. 1.

June to September, abundant on thistles in Scotland and England.

9. *Humuli* Fab.—*convergens* Hahn, pl. 114. f. 361?

On grass in fields, and on other plants near Hastings.

10. *costata* Fab. ?—Hahn, pl. 123. f. 390.

Recorded as British.

11. *Oxyacanthæ* Curt. B. E. pl. 741.

The only specimens I have seen were taken by myself off Whitethorn bushes near Glanville's Wootton the middle of May. Hahn's *M. dumetorum* may prove to be a variety of my insect, but it is very much darker than any of my specimens.

12. *quadrimaculata* Wolff, pl. 13. f. 127.—*corticea* Pz. 118. 22.

Upon apple trees, Glanville's Wootton, the middle of October.—J. C.

The plant is *Onopordum Acanthium*, Cotton Thistle.



del. by C. Conradt 1898

ARADUS CORTICALIS.

ORDER Hemiptera. FAM. Cimicidæ *Lat., Leach.*

Type of the Genus Cimex Betulæ Linn.

ARADUS *Fab., Panz., Lat.*—*Acanthia Fab., Wolff.*—*Coreus Schell.*—*Cimex Linn., DeG., Geoff., Stew.*

Antennæ inserted considerably before the eyes, at the acuminate angles of the head, porrected, 4-jointed, basal joint minute, 2nd the longest, 4th oval, slightly pilose (4).

Rostrum inflected, longer than the head (2); 4-jointed, basal joint small, 2nd and 3rd long, of equal length, 4th much shorter (2*).

Mandibles and *Maxillæ* very long and slender, like setæ.

Head *elongate subtrigonal, produced in the centre, the anterior angles acuminate. Eyes small and very prominent. Neck generally concealed (1, the head in profile). Thorax transverse, emarginate at the base. Scutellum elongate trigonal, obtuse. Abdomen very much depressed, hollow above, ovate, the margin broad and thin. Elytra when at rest covering only the centre of the abdomen, coriaceous, membranous at the apex, nervures very strong. Wings small. Legs very short. Thighs and Tibiæ simple. Tarsi short, biarticulate, basal joint minute. Claws simple (6, a fore leg).*

Obs. *The dissections are from A. depressus Fab.*

CORTICALIS *Linn. Faun. Suec. p. 247. n. 917?*

Scabrous, brown variegated with ochre. *Antennæ* with the terminal half of the 3rd joint ochraceous, the apex of the 4th white. Head trilobed, the central one long and obtuse, the lateral short and acuminate. Thorax subcordate-truncate, the sides serrated, 4 ridges on the back and an elevation on each side dull ochraceous. Scutellum slightly concave. Abdomen dark brown, the margins of the segments pale and dull castaneous, elytra ochreous at the base, variegated with brown and fuscous at the apex. Legs ochraceous, clouded with fuscous. Beneath dull castaneous.

In the Cabinet of Mr. Dale.

ARADUS may be at once separated from the Tingidæ by the greater length of the second joint of the antennæ, by the elytra not covering the abdomen, by the tarsi of two joints, &c. ; and from Aneurus (fol. 86), by the shortness of the terminal joint of the antennæ, the strong nervures, slender rostrum, &c.

From their depressed form it is most likely that, like Aneurus, they reside under the bark of trees ; and from their variegated and plain colours they are not easily detected : but as they never occur I believe in any abundance in this country, their economy is not well known.

The genus has never before been recorded as British, although Stewart in his "Elements" mentions some of the species. The following are inhabitants of this Island.

1. *A. depressus* *Fab. Wolff. tab. 13. f. 123.*

This is the most common of the species ; I have found it twice at Darent Wood, Kent : it is a very sluggish insect.

2. *A. corticalis?* *Linn.—Curtis Brit. Ent. pl. 230.*

Mr. Dale thinks he took the female figured at Hurne, in Hampshire.

Although Linnæus does not notice the pale termination of the third and fourth joints of the antennæ, nor has Wolff represented them, I am disposed to think that they are subject to vary in this respect, or it may be a sexual mark ; and whether Schellenberg's *Coreus spiniger* be allied to this or to *A. depressus*, I cannot ascertain, not having the work.

3. *A. Betulæ* *Linn.—DeG. 3. t. 15. f. 16, 17.*

Found on the Birch.

The plant is *Orchis mascula* (Early Orchis).



Illustration of the insect and its parts.

ANEURUS LÆVIS.

ORDER Hemiptera. FAM. Cimicidæ *Lat., Leach.*

Type of the Genus Aradus lævis Fab.

ANEURUS *Nob.* Acanthia *Fab.* Aradus *Fab., Lat.*

Antennæ inserted before the eyes, near the anterior angles of the head, pubescent towards the apex, 4-jointed, 1st joint short oval, 2nd of same length but less robust, 3rd joint rather longer, 4th long, clavate (f. 4).

Rostrum robust, inflected, shorter than the head, 4-jointed, 1st joint broad, short, 2nd pear-shaped, 3rd somewhat obovate, 4th very minute (2).

Mandibles and *Maxillæ* very long, like setæ passing through the rostrum.

Head trigonate, angles acute, anterior margin produced in the centre, acuminate. Eyes not very prominent. Neck distinct. Thorax narrowed before. Scutellum semiorbicular. Abdomen very depressed, margined, entire, apex more produced in the males than in the females (9). Elytra when at rest covering only the centre of the abdomen, without nerves, scarcely coriaceous, margins membranaceous. Wings very small. Legs very short. Thighs and Tibiæ simple. Tarsi short, 2-jointed? basal joint minute (6, a fore leg).

LÆVIS *Fab. Ent. Syst. v. 4. p. 73. n. 25.*

Ferruginous, granulated. Head, thorax, and scutellum black, excepting the acuminate lobe of the former and the posterior angles of the thorax, which are ferruginous. Abdomen granulated, with a row of spots down the margins, a line down the centre and one down each side of the body shining. Elytra fuscous, rather rough, shining, ferruginous at the base. Superior margin dull white. Wings dirty white.

In the Author's and other Cabinets.

UPON an examination of our insect, it was found to be so very different in structure to *Aradus*, that it was impossible to include it in that genus, which has the 2nd joint of the antennæ the longest, a rostrum longer than the head, an elongated

triangular scutellum, and elytra with very strong nerves. These characters will be found, upon a comparison with our description and drawing, to be totally different from those which *Aneuris* exhibits; this name implies the absence of nerves in the elytra and wings.

Aneuris lævis is a Fabrician species, described by that author as British, from the cabinet of the late Sir Joseph Banks. I am not aware that it has been before figured; and from Latreille never having seen it, we may presume that it is very rare upon the Continent. In economy it resembles the *Aradi*, living under bark, for which its form is peculiarly adapted, the flatness of its body and the shortness of its legs enabling it to lie very close; and this will account for the remarkably short rostrum, which is no less well adapted for its particular habits of life,—the extraction of nutrition from the internal covering of trees. From the number I met with the end of August 1822, they appear to be gregarious; they were concealed beneath the loose bark of a fir-pole that was laid across a brook, near Parley Heath, Hampshire. The males are smaller than the females.

The plant is *Erysimum Barbarea* (Winter Cresses, or Rocket).



Chalcidius

ACANTHIA PULCHELLA.

ORDER Hemiptera.

FAM. Acanthiidae.

Type of the Genus, Cimex littoralis Linn.

ACANTHIA Schr., Lat., Fab., DeLap., Curt.—Salda Fab.—Lygæus Wolff.—Cimex Linn., DeGeer.

Antennæ inserted on each side the nose before the eyes, half the length of the body, cylindric, pubescent, pilose and 7-jointed, basal joint elongated and a little the stoutest, 2nd ring-shaped, 3rd very long, 4th and 6th minute globose, 5th and 7th longer than the 1st, the latter a little the shortest (4).

Rostrum inserted beneath the clypeus.

Labrum subtrigonal and very pubescent (3).

Mandibles and *Maxillæ* capillary, received into and passing through the

Labium, which is as long as the antennæ, inflected beneath the breast, straight, slender, attenuated and 3-jointed, basal joint very short, 2nd very long and stout at the base, 3rd very much shorter, slender and pointed (2).

Head *subtrigonal, narrowed before forming an oblong clypeus*: eyes large, lateral and very prominent: ocelli 2, approximating on the crown of the head. Thorax short, trapezate divided by a transverse line, emarginate at the base, the angles being slightly lobed: scutellum large and triangular with a transverse impression. Elytra very ample and generally a little convex, completely concealing the abdomen, the apex submembranous with a few longitudinal nervures. Wings small, elongate trigonal with a few nervures (9 $\bar{\imath}$). Abdomen ovate terminated by 3 lobes and 2 valves in the female? Legs short, hinder pair longer, adapted for leaping: tibiæ spiny, posterior very long: tarsi slender, short and triarticulate, basal joint small, 2nd and 3rd elongated, the latter a little shorter in the hinder pair: claws long, slender and acute (6, a fore leg).

PULCHELLA.—Curt. MSS. Guide, Gen. 1094.

In the Cabinets of Mr. Dale and the Author.

THESE insects, together with their larvæ and pupæ, are very abundant on the borders of rivers, lakes, and ponds, as well as on the sea-shore, where they inhabit the *Zostera* and rejectamenta. In fine weather they are extremely active, running with great speed, and jumping with astonishing agility; but in dull days they lie concealed in the cracks of the mud, under stones, &c.

The little attention that has been paid to this genus renders it impossible to determine the species with accuracy, but to those that appear to be undescribed I shall add short descriptions.

6. *A. pilosa* Fall.—Ahr. 10. 15. June 30th running over the muddy shores at Broughton, Lancashire, J. C.; Burnham, Norfolk; and Sandwich, Kent.

9. *bicolor* Curt. Length 2 lines: pale ochreous, antennæ brown, excepting 3 basal joints; rostrum and tips of tarsi piceous; head, excepting the clypeus, disc of thorax and scutellum, excepting 2 spots near the apex, black; abdomen beneath black; thighs with 2 dark lines on the inside towards the apex.

July near Portland Castle, J. C. Dale, Esq.; and end of October near Poole, J. C.

11. *pulchella* *Curt. Brit. Ent. pl.* 548. Whitish-ochre, similar to No. 9, but the scutellum is entirely black; each elytron has an oblique piceous stripe, interrupted and forming 4 irregular spots, with a sub-luminate one across the suture at the base of the membrane, the nervures of which are brown.

Isthmus of Portland, Mr. Dale.

1. *littoralis* *Linm.—DeG. 3. pl.* 14. *f.* 17. 18.—*Zosteræ* *Fab.—flavipes* *Fab.* var.

10th June under rejectamenta on the sands of Wareham harbour; 11th July under *Fuci*, sea-shore, Holywood, A. H. Haldiday, Esq.; August, salt marshes, Pool Harbour, and Whittlesea Mere.

12. *Scotica* *Curt.* Length $2\frac{1}{2}$ to $2\frac{2}{3}$ lines: black, labrum, 2 spots on clypeus and inside of basal joint of antennæ yellow in the male: elytra with 8 ochreous spots on each, 3 being at the base of the membrane which is ochreous, black at the base with brown nervures and indistinct spots between them: thighs beneath and at the apex ochreous as well as a ring near the apex of the tibiæ and the basal joint of the tarsi.

August and September, Isle of Bute and Cartland Craigs.

13. *dimidiata* *Curt.* $2\frac{1}{2}$ lines: black; inside of basal joint of antennæ and apex of 3rd ochreous, nasus and labrum spotted with same colour: elytra ochreous mottled with brown, the base, a stripe on each side scutellum, and 3 spots along the costa black, membrane whitish margined and spotted with fuscous, legs ochreous, thighs striped beneath with black, base and tips of tibiæ and apex of tarsi black.

10th June, muddy places, Wareham.

14. *stellata* *Curt.* $1\frac{3}{4}$ line: black, margin of clypeus, nasus, labrum and inside of basal joint of antennæ yellow: elytra with 7 or 8 transparent dots and a large yellow spot towards the middle of the costa bearing a dark dot; membrane brown with one black spot and a line of transparent ones round the margin: legs ochreous, thighs with a broad black stripe beneath: tibiæ black with a yellow ring near the apex, joints of tarsi tipped with black.

10th June, Wareham; 12th August and middle of September, base and face of cliff where it was wet, at Black-gang Chine.

4. *saltatoria* *Linm.—Wolff. pl.* 8. *f.* 74.—*maculata* *Lat.* Under flower-pots in Mr. Dale's garden, &c.

3. *pallipes* *Fab.?*—5. *striata* *Fab.?*—7. *lateralis* *Fall.*—8. *elephantula* *Fall.*

17. *marginalis* *Fall.* Thighs black except at the base and apex.

July to October, wet sandy and boggy places on the heath by Lewell plantation, Dorset, Mr. Dale.

10. *Cocksii* *Curt.—marginalis* *Ahr.* 10. 16. Is distinguished by its more elongate form, the first 2 joints of antennæ are ochreous, except at the base, the 2 terminal ones are broader and the legs ochreous.

Mr. Cocks of High Bickington first sent me a specimen of this pretty insect, which I have named after him; Mr. Dale has captured it in June on Parley Heath and on the shores of Wareham harbour, where I also met with it as well as on the banks of the river at Vacluse in July.

The Plant is *Glaux maritima* (Black Salt-wort).



CIMEX LECTULARIUS.

The House- or Bed-bug.

ORDER Hemiptera.

FAM. Cimicidæ.

Type of the Genus, Cimex lectularius Linn.

CIMEX Linn., DeGeer, Curt.—Acanthia Fab., Wolff.

Antennæ inserted before the eyes, as long as the thorax, hairy and 4-jointed, two basal joints stout, 1st oblong, 2nd very long, 3rd and 4th slender, the former linear and longer than the 2nd, 4th not so long, a little thickened and conical at the apex (4).

Rostrum inflected beneath the breast, and extending to the anterior coxæ.

Labrum broad, short, subovate, trigonate and ciliated (3).

Mandibles and *Maxillæ* inclosed in the labium, the former compressed at the base.

Labium rather stout, hairy and triarticulate, basal joint long, broadest at the base, contracted before the middle, 2nd the shortest, somewhat oblong, 3rd a little longer but more slender (2).

Female larger and more elongated than the male. Head subquadrate: clypeus narrowed, porrected and subovate: eyes small, lateral, prominent and granulated, slightly raised from the head and remote from the base: ocelli none. Thorax transverse, sublunate, the anterior angles being large, produced, rounded and ciliated, the base nearly straight: scutellum large transverse and pointed. Elytra transverse, meeting at the centre, small, hairy and shaped like the valve of some shells (9). Wings none. Abdomen depressed, nearly orbicular in the male, more ovate and convex in the female, the apex slightly pointed. Legs with the coxæ approximating: thighs stouter than the tibiæ, which are simple and nearly linear, posterior the longest, all having a short spine at the apex: tarsi triarticulate, basal joint small, 2nd longer, 3rd the longest: claws strong and acute (6, a fore leg).

LECTULARIUS Linn.—Curt. Guide, Gen. 1093. 1.

Punctured, pubescent, ferruginous-ochre: eyes black: thorax with the sides reflexed: abdomen more ferruginous, the apex black, as well as a spot coloured by the intestines; tips of tarsi sometimes fuscous.

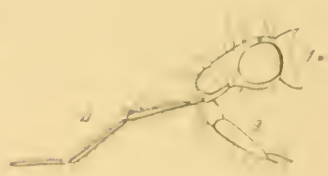
STEWART says, "The bed-bug is unhappily but too well known, and was an inhabitant of Europe prior to the Christian æra; at least it is mentioned by Aristophanes and other Greek writers. Southall says it was hardly known in London before 1670, but there is good authority for asserting, that it was common enough there before the great fire in 1666."

No insect in England causes more uneasiness to the house-keeper than this loathsome insect, yet there are few dwellings

in London that are entirely free from them, and they are gradually finding their way, by the constant traffic going on, into every city and town in England. To prevent their emigration is impossible, for although they are fortunately destitute of the organs of flight, a trunk or great-coat remaining one night in an infested room may harbour enough to stock a whole house; and they have even been observed in vast numbers coming out of the cracks of Canada timber employed in the structure of new houses. As every one may be subject to this annoyance, nothing would be more acceptable than a remedy, and perhaps the easiest and most effectual is extreme cleanliness and constant vigilance: if a bed-room, for instance, be infected, all chinks in the wall should be carefully stopped with plaster of Paris, the ceiling washed with lime, and the floor scrubbed with hot water and soap; every nail-hole and crack in the bedstead must be filled with putty, and after being taken to pieces and well scrubbed, it ought to be washed, when dry, with spirits of turpentine, or a solution of corrosive sublimate, which has not so unpleasant a scent as the turpentine, and is, I think, even more efficacious; and the skirting-boards and even the walls may be washed with this solution without detriment, except where there are metallic mouldings. In travelling, particularly abroad, I have freed myself from these persecuting animals and obtained a good night's rest, by sprinkling the sheets with spirits of turpentine before going to bed.

The House-bug makes its appearance with the first warm days of spring, and is found during the summer months. As soon as it is hatched from the egg it can run about, and is then so transparent that the blood can be distinctly seen through the abdomen; after becoming pupæ there is little difference in their appearance except in size and colour, and in their perfect state they very much resemble the pupæ. I have some idea that in the last state, the males do not suck the blood of man, and if I am not very much mistaken the Bug frequently turns his rostrum over his head as represented at fig. 1. p, when he feeds, in which case he cannot well pierce the object he stands upon. It is also a remarkable quality that many of the Cimicidæ possess, of communicating an offensive odour when touched. Bugs are very active at night, but they secrete themselves during the day; they can live a very long period without nourishment, and DeGeer observed that they occasionally fed upon each other: we learn also from Latreille that they torment the young of pigeons, swallows, &c., but that which lives on the latter birds forms a distinct species.

The Plant is *Erysimum Alliaria* or *Alliaria officinalis* (Sauce-alone, or Jack by the Hedge).



PROSTEMMA GUTTULA.

ORDER Hemiptera.

FAM. Reduviidæ.

Type of the Genus, Reduvius Guttula Fab.

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

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

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

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

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

Female bright shining black, with long hairs; 3 basal joints of antennæ pale ferruginous, except at the apex; head and thorax very smooth and greenish, especially the latter; elytra very short, opaque red, with a few punctured striæ, hinder edge whitish; a cordiform spot on the suture, an interrupted line close to the hinder margin and the scutel velvety-black: abdomen deep bluish, thickly punctured, especially towards the base: legs bright red, coxæ black, trochanters and anterior tibiæ ochreous, all the tibiæ piceous at the apex, tarsi dull ochreous. *Winged specimens* bluish-black, legs red, elytra scarlet to the centre and along the costa to the stigma, where there is a white spot, a black spot behind the scutel and a white one below it.

In the Author's Cabinet.

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

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

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

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



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 *trarticulate, 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.—*Schaf. 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).



Illustration of anatomical parts, possibly related to the insect above.

NEIDES ELEGANS.

ORDER Hemiptera. FAM. Coreidæ *Leach.* Corisiæ *Lat.*

Type of the Genus Cimex tipularius Linn.

NEIDES *Lat.* Berytus *Fab., Wolff., Leach.* Gerris *Fab.* Cimex *Linn.*
Antennæ inserted laterally, considerably before the eyes, long, geniculated, 4-jointed, slightly pubescent, basal joint long capitate, 2nd short, slender, 3rd long capillary, 4th elongate-ovate, pilose (fig. 4).

Rostrum rather longer than the head, inflected, 4-jointed, pilose, basal joint most robust, terminal joint slender rather the longest (2).

Labrum longer than the basal joint, strap-shaped, not striated (3, 3).

Mandibles and *Maxillæ* like setæ passing through the rostrum.

Head elongate cylindrical produced in front. Eyes small ovate lateral. Ocelli 2, remote, placed behind the eyes (1 a). Thorax sub-quadrate, sometimes elongate, carinated. Abdomen sublinear, the sides elevated. Scutellum minute. Elytra long and narrow, with strong elevated nervures at the costa and base, the area reticulated (9). Wings small or none, without nervures. Legs long and slender, hinder pair very long. Thighs clavate. Tibiæ simple swelled at their insertion. Tarsi 3-jointed, basal joint the longest, 2nd minute. Claws simple (6, a fore leg).

Obs. *The dissections were made from Berytus clavipes Fab.*

ELEGANS *Nob.*

Head black shining, ocelli and neck ochraceous. Thorax ochraceous, with a polished black spot on each side near the anterior margin, and a smaller one at the insertion of the elytra; granulated, slightly glittering, lateral margins angulated, a slight ridge down the centre very much developed and blackish posteriorly. Abdomen black at the base, brown in the middle and fuscous on the sides. Elytra and wings slightly iridescent and rugose, the former with a few nervures only at the costa and base, an elongated brown spot near the apex and a fainter one nearer the middle. Antennæ and legs pale ochre, the former with the basal joint spotted black, the 2nd spotted fuscous, terminal joint black, pubescent. Thighs slightly ferruginous at their apex, spotted black, especially the posterior pair. Tibiæ and tarsi all spotted black, the latter with the terminal joint black.

In the Cabinet of the Author.

THESE curious and elegant little insects are remarkable for their slender and long legs, especially the hinder pair, and for their clubbed and bent antennæ, which, when alive, they carry something like ants, as represented at fig. 4.

Our insect, from its head being less elongated than in the other species, its elytra having fewer nervures, the ample under wings, and the intermediate joints of the antennæ being of equal length, will form a 2nd division of the genus *Neides*, which name is restored because Latreille employed it in his characters published before Fabricius's *Systema Rhyngotorum* appeared.

We can now enumerate 3 species :

1. *N. tipularius* Linn., *Wolff. tab. 20. f. 198.* Inhabiting grassy places in June and August.
2. *clavipes* Fab. Inhabiting grassy places: not uncommon in Norfolk.
3. *elegans* Nob. Of this pretty insect, which appears to be perfectly new, I found a pair in the North Foreland meadow, Dover, on the 14th August last. The male, which sex is figured, is a little smaller than the female, but varies from it in no other respect: the scutellum, perhaps, may not be quite correctly represented, the pin having passed through both of them.

Asperula cynanchica (Small Woodroof), from the same neighbourhood as the insect, is figured with it.



MIRIS TRITICI.

ORDER Hemiptera.

FAM. Coreidæ.

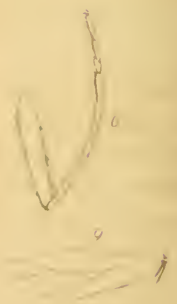
*Type of the Genus, Cimex dolabratus Linn.*MIRIS *Fab., Lat., Hahn., Curt.*—*Lygæus Wolff.*—*Stenodema De Lap.*—*Lopus Hahn.*—*Cimex Linn.**Antennæ* as long or longer than the body, inserted before the eyes, towards the base of the clypeus, remote, setaceous, pubescent and 4-jointed, basal joints parallel, stoutest, especially in the female, contracted at the base, longer than the head, 2nd capillary thrice as long, 3rd slender and about half as long as the 2nd, 4th the slenderest, not longer than the 1st (4).*Labrum* elongated, tapering, hairy outside (3).*Mandibles* and *Maxillæ* very slender.*Labium* inflected, reaching to the hinder coxæ, pubescent, 4-jointed, basal joint very stout, not longer than the head, the remainder slender, 2nd as long as the 1st, the others a little shorter, the terminal one tapering at the apex (2).Head *rhomboidal, small, the front triangular*: eyes *small, lateral, very prominent, ovate*: ocelli *none*. Thorax *elongate-trigonal, being narrowed and truncated before, the base broad with the angles rounded*; scutel *tolerably large and triangular*. Abdomen *flat and margined above, convex beneath with a long suture in the female to receive the ovipositor*. Elytra *not much broader than the base of the thorax, very long and linear, extending beyond the abdomen in the males, sometimes much shorter in the females, nervures few, stigma elongated, a long elliptical cell at the base of the membrane*. Wings *ample in the males, lobed at the base, larger than the elytra, with a large costal cell and 4 simple nervures*. Legs, *hinder very long*: thighs *long, especially the hinder*: tibiæ *as long but slenderer*: tarsi *triarticulate, basal joint the longest and stoutest, 2nd rather shorter than the third*: claws *slender and simple* (6).TRITICI *Kirby?*—*Curt. Guide, Gen. 1099. 8.**Male*. Head and thorax sulphureous variegated with slate black, the latter with 2 black stripes divided by a narrow line, with 2 black lines outside inclosing 2 slight tubercles before the middle, scutel slate-colour, with the edges and a line down the middle sulphureous: abdomen slate-black, elytra with the costa sulphureous-green, the interior portion brown, the membrane fuscous: wings iridescent, nervures brown: antennæ ferruginous, fuscous towards the apex, with a blackish stripe outside the basal joint, which is hairy: legs ferruginous-ochre; thighs pale towards the base: tibiæ hairy.*In the Author's and other Cabinets.*

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

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

The following are British species.

1. *pallescens* Don. v. 3. pl. 101. f. 5. 6. and pl. 102?—Marsham
Turt.
June and July, on grass under hedges.
2. *holsatus* Fab.—Hahn. pl. 85. f. 256.—*albidus* Hahn. 53.
162.
3. *ruficornis* Fall.—*pulchellus* Hahn. 66. 200.
End of July and August, Tollsbury, Essex.
4. *longicornis* Fall.—Hahn. 85. 258.
August, off grass, Sandwich.
- 4^b. *virens* Linn.—Hahn. pl. 54. f. 165.—*ruficornis* Hahn.? pl.
71. f. 220.
5. *hortorum* Wolff. pl. 16. f. 154.
June, Isle of Wight.
6. *lævigatus* Linn.—Hahn. 85. 259. and 53. 161. var.?
Pastures, August and September.
7. *erraticus* Linn.—Hahn. pl. 54. f. 163. ♂. 164. ♀.
September, Blackgang Chine; October, in New England,
on the Essex shore in abundance.
8. *Tritici* Kirby?—Curt. Brit. Ent. pl. 701. ♂. As it has been
sent to me by a friend with this name, I have retained it,
although I suspect it is only a variety of *M. erraticus*. I
have taken it, the end of July, at Tollsbury.
10. *ferrugatus* Fab.—Hahn. 86. 263. ♂.—*dolabratus* Fab.
Beginning of June, grass in meadows, Oxford, &c.
11. *dolabratus* Linn.—Lopus Hahn. 261. ♂. 262. ♀. and 53.
160. ♂.—*lateralis* Wolff. pl. 11. f. 109. ♂.—*abbreviatus*
Wolff. pl. 11. f. 110. ♀.
June, on grass in hay-fields round London in abundance;
also in August and September: I have taken the male paired
with the female of *M. ferrugatus*.
9. *picticeps* Curt. Having now a series of this insect, I am
inclined to believe that it is only a pale purplish variety of
M. dolabratus, with the yellow stripe on the thorax dilated
at the base.
July, Dover; August, Sandwich, off dried grass.
12. *calcaratus* Fall.—*dentata* Hahn. pl. 2. f. 8.
For specimens of *Arabis stricta*, Bristol rock cress, I am in-
debted to G. H. K. Thwaites, Esq., who found them last
April, on St. Vincent's Rocks.



Coreidae

HARPOCERA BURMEISTERI.

ORDER Coleoptera.

FAM. Coreidæ.

Type of the Genus, Harpocera Burmeisteri.

HARPOCERA Curt.

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

Labrum small, lanceolate and pubescent (3).

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

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

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

BURMEISTERI Curt. *Guide, Gen.* 1105?

In the Author's and other Cabinets.

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

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

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

It does not seem to be a rare species, for I have met with it in several localities ; in May in Coomb-wood, Surrey, upon grass ; on the foliage of oak-trees in the plantations at Arno's Grove, Southgate, in abundance ; also in a garden near London, as well as in Bagley-wood or at Shotover near Oxford in July. The following is the description of
H. Burmeisteri *Curt. Brit. Ent.* pl. 709.

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

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

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



CAPSUS HIRTUS.

ORDER Hemiptera.

FAM. Coreidæ.

*Type of the Genus, Capsus Danicus Fab.*CAPSUS *Fab., Lat., Hahn., Curt.*—*Lygæus Wolff.*—*Cimex Linn.*

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

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

Mandibles and *Maxillæ* long slender setæ.

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

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

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

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

In the Author's Cabinet.

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

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

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

* Neck very narrow.

1. tricolor *Linn.*—*Wolff.* pl. 4. f. 35.

On nettles in the summer.

2. Danicus *Fab.*—*Wolff.* 4. 34.—*Hahn.* pl. 2. f. 9.

Found also on nettles with the former species.

** Neck broader.

3. semiflavus *Linn.*—flavicollis *Fab.*—*Wolff.* 4. 32.—ater *Hahn.* pl. 20. f. 65.

June, sandy places, Isle of Portland; m. July, Dover.

4. ater *Linn.*—*Wolff.* 15. 146. var.—tyrannus *Fab.* var.—croceus *Geof.* var.

May, common in grassy places; June, Darent; August, sand hills, Sandwich.

5. unicolor *Hahn.* 59. 179. A.

Opake black, with scattered short yellowish hairs: membrane fuscous, iridescent: antennæ short, basal joint elongate, pyriform, 2nd stout fusiform: length $1\frac{3}{4}$ lines.

Taken near Oxford in July.

2. CHLAMYDATUS, membrane and wings wanting.

6. hirtus *Curt. Brit. Ent.* pl. 693.—saltator *Hahn.* pl. 76. f. 236.?

Whether *Hahn's* figure be intended for my insect I cannot determine, for he has not indicated the yellow hairs upon it; the hinder thighs are much thicker than in my specimens, the tibiæ are entirely ochreous, and the tarsi are very short.

I took 3 specimens off grass in dry meadows near Sandwich, the middle of last August.

7. marginatus *Curt.*

Olive-black, with short ochreous pubescence; head and thorax shining, the former ochreous at the base; elytra with a broad ochreous space at the base and a narrow margin, sometimes all round, of the same colour: abdomen black: hinder legs very long and the thighs very thick; legs ochreous, thighs black, the tips and anterior tibiæ ferruginous: 1 line long.

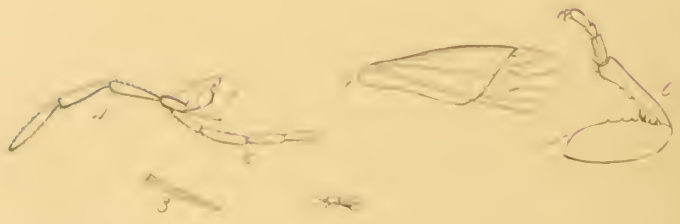
Not uncommon on the sand hills at Lowestoft the beginning of June. It resembles the *Cimex grylloides* *Linn.* in colour, but it is much smaller, and the antennæ are quite different.

8. ochripes *Curt.*—ambulans? *Hahn.* 108. 337. pupa of ♀.

Shining black, legs pale yellow, tips of tarsi fuscous: 1 line long.

I took a single specimen during my last visit to the Western Isles of Scotland.

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



RHYPAROCHROMUS MACULIPENNIS.

ORDER Hemiptera.

FAM. Coreidæ.

*Type of the Genus, Lygæus chiragra Fab.*RHYPAROCHROMUS *Hahn.*, *Curt.*—*Pachymerus LePel.*—*Aphanus LaPorte.*—*Lygæus Fab.*, *Fall.*—*Cimex Linn.**Antennæ* inserted on each side of the head before the eyes, as long as the head and thorax, filiform, hairy and 4-jointed, basal joint rather short, oblong, 3 following long, nearly of equal length, 2nd and 3rd clavate, the latter sometimes the shortest, 4th a little the longest and fusiform (4).*Labrum* as long as the basal joint of the labium, strap-shaped, but slightly attenuated (3).*Mandibles* and *Maxillæ* setiform.*Labium* as long as the antennæ, stout, inflected and 4-jointed, first 3 joints nearly of equal length, 2nd probably a little the longest, 4th a little the shortest, the apex conical (2).*Head* rather small and trigonate: eyes small, prominent, lateral and rather oval: ocelli 2, minute and placed close to the base of the head (1, the head in profile). Thorax long and broad, subcampanulate: scutellum large trigonate and acute. Abdomen elongate-ovate. Elytra generally covering the abdomen, horny, with 2 or 3 indistinct nervures towards the base, and 5 imperfect longitudinal ones on the apical membrane (9). Wings short and broad, with several furcate nervures. Legs short, anterior the shortest: thighs, posterior stout, elongate-ovate, with 1 or 2 strong, and several small spines, beneath: tibiæ, intermediate rather the longest, hinder the stoutest, a little clavate, with slender spurs: tarsi slender, triarticulate, basal joint the longest, especially in the hinder pair, 2nd small, 3rd elongate-ovate: claws simple (6, a fore leg).MACULIPENNIS *Curt. Guide, Gen. 1118. 7.*

Black, shining, coarsely thickly and irregularly punctured; thorax campanulate, with a strongly punctured transverse suture towards the base: elytra pale testaceous, with dark punctures and a broad oblique piceous band across the middle; membrane with a large fuscous lunule, leaving the base and a dot at the tip white; wings iridescent, apex of 2 basal joints of antennæ and legs ochreous; anterior thighs inflated, piceous and spined beneath at the apex.

In the Author's Cabinet.

THE following British species vary in the shape of the thorax, some being oblong, others a little transverse, yet it would be difficult to form them into sections.

1. *Echii Fab.*—*Panz. 72. 22.*—*carbonarius Rossi.*—*aterrimus Wolff. 19. 192.*—GENUS *Polyacanthus LaPorte.*
2. *micropterus Curt.* Narrow, black and shining, thorax campanulate, convex, excepting the base which is flat and testaceous as well as the elytra, which are very short, with brown rows of punctures and edged

with white instead of a membrane : coxæ and base of thighs ochreous, anterior inflated but not denticulate : length $1\frac{1}{2}$ line.

August, near Heron Court, Hampshire.

3. maculipennis *Curt. Brit. Ent. pl.* 612. ♀.

The middle of May, Mousehold Heath near Norwich, and Thetford Warren, amongst short grass.

4. chiragra *Fab.*

5. tibialis *Hahn. ?*

6. dimidiatus *Curt.* Testaceous-ochre, thickly punctured ; antennæ rather elongated and slender, head, thorax, scutellum and pectus piceous, excepting the base of the thorax and margins of the scutellum ; membrane of elytra pale with the edges and a spot on the middle fuscous : length $2\frac{1}{2}$ lines.

August 16th, on rushes, Blackgang Chine, Isle of Wight.

7. pedestris *Panz.* 92. 14.—luscus *Wolff. ? t.* 14. *f.* 139.

8. decoratus *Hahn.*—affinis *Schill.*

9. podagricus *F.*—pictus *Hahn.*

10. antennatus *Schill. ?*—*Hahn, t.* 9. *f.* 35.?

11. varius *Wolf.* 15. 142.

12. Rolandri *L.*—*Wolf.* 19. 193.

13. nubilus *Fal.*—arenarius *L. ?*

14 Pini *L.*—*Wolf.* 8. 71.

15. lynceus *F.*

16. plebeius *Fal.*

17. sylvestris *L.*—*Panz.* 92. 10.

18. erraticus *Fab.*

19. sylvaticus *Fab.*—*Panz.* 93. 16.—agrestis *Fal.*

20. vulgaris *Schill.*—apicalis *Ste. ?*

21. quadratus *F.*—*Panz.* 92. 11.

22. irroratus *Curt.* Dull black, thorax trigonate-truncate, the base pale ochre, punctured with black, elytra whitish-ochre with numerous black punctures, and a few spots on the disc between the nervures, membrane white with 5 fuscous stripes ; rostrum, excepting the base, anterior legs, excepting the thighs, and tips of the other tibiae and tarsi ferruginous : $2\frac{1}{2}$ lines long.

October, in decayed willows, I believe at Southend.

23. obtusus *Curt.* Elongate-ovate, dull black, thickly and strongly punctured, base of thorax and elytra tawny, the latter dark brown on the disc, leaving a few tawny dots ; membrane striped with fuscous, leaving the nervures pale : antennæ ferruginous, apical joint thickened and dusky, as well as the 1st ; legs subferruginous, thighs more or less piceous : length $1\frac{1}{2}$ line.

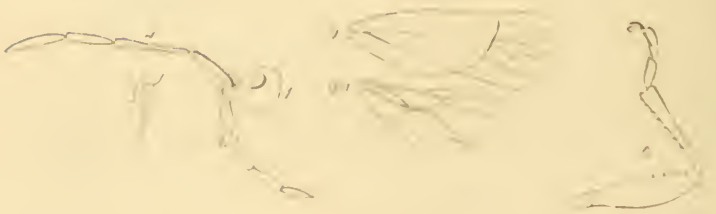
May and June, Lowestoft, Suffolk.

24. pubescens *Curt.* Male smaller than the female : piceous, coarsely punctured, pubescent ; angles of thorax and part of the base and elytra dull ferruginous, membrane pale, striped fuscous ; legs and antennæ ferruginous-ochre, last joint of the latter thickened and fuscous : length $1\frac{1}{2}$ line.

Sept. and Oct., on heath, Coomb Wood and Parley Heath.

25. rusticus *Fal. Mon. Cim. Succ.* 70. 17.

The rare Plant figured, *Trichonema Columnæ*, was kindly communicated by Dr. Bromfield, who gathered it last April on Dawlish Warren.



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 *subtrigonate* 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).



Scaphisoma

HETEROGASTER LATICEPS.

ORDER Hemiptera. FAM. Coreidæ.

*Type of the Genus, Lygæus Urticæ Fab.*HETEROGASTER *Hahn.*—*Lygæus Fab., Wolff, Curt.*

Antennæ inserted on each side the clypeus, remote from the eyes, as long as the thorax, scarcely clavate, pubescent, pilose and 4-jointed, basal joint short, elongate-ovate, scarcely stouter than the following, which are nearly equal in length, 2nd rather the longest, and a little clavate, terminal joint conical at the apex (4).

Labrum shorter than the basal joint of the labium, long and slender, incrassated and pilose outside at the base (3).

Mandibles and *Maxillæ* long and setiform.

Rostrum nearly as long as the antennæ, pubescent and 4-jointed, 2 basal joints the longest, 1st the stoutest, 3rd rather the shortest (2).

Head *short subtrigonal*, as broad often broader than the thorax, but narrowed at the base: eyes lateral, small, globose and very prominent, not touching the thorax: ocelli 2, remote, placed near the base of the head. Thorax *elongate-trigonal*, truncated before: scutellum much narrower than the thorax, *elongate-trigonal*. Abdomen *subelliptic* (5), covered by the Elytra, which are divided obliquely, the apical half membranous, with 5 longitudinal nervures. Wings very delicate and transparent. Ovipositor arising near the centre of the abdomen (5 o). Legs nearly equally stout, hinder a little the longest: thighs short: tibiæ simple, slightly clavate: tarsi shorter, triarticulate, basal joint elongated, 2nd the shortest, somewhat pear-shaped, 3rd a little longer: claws simply hooked: pulvilli distinct (6, a fore leg).

LATICEPS *Curt.*—*lineola Curt. Guide, Gen. 1121. 2.*

Ochreous, inclining either to white or castaneous; sparingly clothed with shining, yellowish hairs and black punctures, leaving an interrupted light line down the head thorax and scutel: head very short and broad, with 2 black forked marks on the crown, 2 black suffused spots on the disc of the thorax, with 4 fuscous stripes at the base and 2 short remote elevated lines in front; scutel black at the base with a light dot on each side, the disc orange: elytra with the coriaceous portion more or less castaneous at the apex, with a pale oblique line down each, forming a dot at the apex, membranous portion pearly clouded with fuscous, dotted with brown, the nervures dark, with a brown stripe between the furcate nervures: antennæ and legs mottled and dotted with piceous, apical joint of antennæ and of tarsi fuscous; thighs and underside orange; a black spot on the breast and another at the base of the abdomen, and a line of black dots on each side.

In the Cabinets of Mr. Dale and the Author.

WHEN the Guide was printed I considered this group to be the type of *Lygæus*, but as another insect is given to represent *Lygæus* by the Continental authors (vide fol. 481.) I have here adopted Hahn's generic name. There are 3 British species.

1. *Thymi Wolff, tab. 15. f. 143.—conica Gmel. ?*

Blackish, coarsely punctured; head and thorax with a few whitish-ochreous spots, one on the anterior margin of the thorax, with the hinder angles and a spot on the base of the same colour: elytra nearly white, basal portion with 2 lines of black dots on the nervures with the edge of the costa and the oblique margin black, the apical portion with 4 or 5 clouded stripes: antennæ pale brown, basal joint dark: legs dull ochreous, thighs, excepting the tips, black, base and apex of tibiæ, as well as the apex of the basal joint of the tarsi, and the whole of the apical one blackish: length, ♂ $1\frac{1}{2}$, ♀ $2\frac{1}{4}$ lines.

I have found many pairs of this pretty species in May under stones in the Isle of Portland, and in June running quickly over the sand-hills near Lowestoft: I also took a specimen in the Isle of Arran. It is said by Wolff to be attached to *Thymus Serpyllum* (pl. 581).

2. *laticeps Curt. Brit. Ent. pl. 597.*

As Fabricius has a *Lygæus lincola* I have been obliged to change the name; and as the head is broader than in the other species, I have called it *laticeps*. I took a specimen under a stone at Black-gang Chine the 4th of August, and I believe Mr. Dale has met with it.

3. *Urticæ Fab.*

Greenish-black, rather coarsely punctured and hairy: labrum, a dot at the base of the head, margin of thorax and 3 short lines at the base dirty ochre; tip of scutellum and elytra of the same colour, the latter punctured with black and spotted with the same, except at the base, apical portion with a single black dot in the centre; margin of abdomen spotted with ochre: antennæ sometimes reddish-brown, basal joint black, trochanters and knees ochreous, tibiæ and tarsi of the same colour, spotted with black: length, ♂ $2\frac{1}{2}$, ♀ $3\frac{1}{4}$ lines.

Common in most places on nettles in the spring.

Specimens of the *Arbutus Uncdo* (Common Strawberry-tree) I gathered in fruit on the rocks round the lakes of Killylarney and Glengariff in July: the outline of a flower is given from a garden specimen.



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. Legs 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: pulvilli 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.*—*Corcus Fall.*—*Lygæus Fab.*—*Cinex 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 *Mazillæ* 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 Ravensglass 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.



Chrysomelidae

ALYDUS CALCARATUS.

ORDER Hemipterá. FAM. Coreidæ.

*Type of the Genus, Cimex calcaratus Linn.*ALYDUS *Fab., Curt.*—Coreus *Lat.*—Lygæus *Fab., Wolff.*—Cimex *Linn.**Antennæ* inserted before the eyes, remote, long and nearly filiform, geniculated and pubescent; 4-jointed, three first joints nearly of equal length, rather long slender and clavate, the basal joint a little the shortest, 4th joint nearly twice as long as the 3rd, and considerably thicker, cylindrical, conical at the apex (4).*Labrum* a little longer than the basal joint of the labium, attenuated to the apex, pilose and transversely striated (3).*Mandibles* and *Maxillæ* setiform, inclosed in the*Labium* which is as long as the head and thorax, tapering, slightly pubescent and 4-jointed, 1st and 2nd joints the longest, of equal length, 3rd the shortest, slender, 4th a little longer (2).*Head* elongate-trigonal, forming a distinct neck behind. *Eyes* lateral, globose and very prominent. *Ocelli* 2, placed at the back part of the crown of the head, rather remote and elevated. *Thorax* subconical, truncate before, base concave. *Scutellum* rather long and narrow. *Abdomen* long and linear, the sides elevated, above concave, beneath convex, the apex furnished with 2 obtuse appendages in the male. *Wings*, superior with the basal part obliquely coriaceous, the apical portion striated longitudinally with numerous nervures: inferior wings transparent and iridescent, with several nervures, those towards the costa strong. *Legs*, anterior short, posterior long. *Thighs*, posterior incrassated, furnished with 5 or 6 teeth beneath. *Tibiæ* slender. *Tarsi* short, triarticulate, basal joint long, 2nd shortest. *Claws* acute, with a membranous appendage at the base of each. (6 hind leg.)CALCARATUS *Linn. F. S. n. 968.*—*Wolff. t. 14. f. 138.*—*Curt. Guide, Gen. 1125.*

Dull black above, more or less brassy or cupreous beneath; clothed with soft hairs: antennæ with the base of the joints ferruginous, 2nd and 3rd sometimes nearly entirely so: ocelli ruby colour: head and thorax thickly punctured, the latter being the coarsest with a transverse impression before, in the centre of it a foveolet: superior wings pale fuscous ochre, mottled with brown and rust colour at the base; nervures of inferior wings brown: abdomen red above, excepting the base and apex which are shining black, the elevated margins brassy black with 4 yellowish spots on each: tibiæ, except at the base and apex, and the base of the 1st joint of tarsi ferruginous.

In the Author's and other Cabinets.

THIS curious insect, which is found in Sweden, France, and Germany, as well as in England, is by no means common with us.

It inhabits heathy places, and flies well in the heat of the sun. The first specimen I captured was flying over heath near Lyndhurst, the end of August, and another I took the beginning of September, near Niton in the Isle of Wight. I believe it has been observed in Coombe Wood, Surrey, as early as July, where the Broom abounds; and Mr. Dale informs me that Capt. Blomer has taken it in Devonshire.

Alydus is characterized by its thick and elongated body, (as represented by the outline figure, of the natural size at the bottom of the plate,) as well as by the spined posterior thighs. The *A. calcaratus* and the *A. lateralis* seem to be the only European species described. When I was in France last summer, I took this latter species at Nismes and Marseille, and as there is room I shall here give its characters.

A. lateralis Ahrens, fasc. 8. tab. 21.

Six lines long. Pale castaneous, clothed with short yellowish pubescence: antennæ black, basal joint with a red stripe on the inside, 2nd and 3rd red, except at the tips, 4th with the base and apex reddish: head very minutely and thickly punctured, blackish, with the margins and three longitudinal lines, castaneous: thorax elytra and scutellum, thickly and coarsely punctured, the first blackish before, with a yellow line on the sides, the costa of the elytra, and the apex of the scutellum of the same colour: abdomen red above, with the base, apex and 2 or 3 dots on each side black; the elevated margins blackish, with 5 or 6 large yellowish spots on each: underside and thighs mottled with black and castaneous, the hinder pair furnished with 4 or 5 teeth beneath: tibiæ and tarsi reddish ochre, the tips black.

This species I believe is only found in the South of Europe, and is attached to the Spanish Broom which abounds there.

The Plant is *Jasione montana* (Mountain Jasione).



Stenobothrus (Klug) 1831

CHOROSOMA ARUNDINIS.

ORDER Hemiptera. FAM. Coreidæ *Leach.* Corisiæ *Lat.*

Type of the Genus, Chorosoma Arundinis Curt.

CHOROSOMA *Nob.*—*Lygæus Burrell.*

Antennæ inserted on each side the head, considerably before the eyes, as long as the fore legs, rather tapering and clothed with depressed hairs; 5-jointed, basal joints parallel, rather long and the most robust, 2nd the longest, 3rd nearly as long, 4th cup-shaped, 5th stouter, longer than the basal joint (4).

Labrum longer than the basal joint of the lip, slightly pubescent, nodiform at the base, slender and acuminate at the apex (3).

Mandibles and *Maxillæ*, setiform strong and enclosed in the *Labium* which is as long as the head and thorax and applied close to the breast when at rest (2), slightly pubescent and 4-jointed, basal joint the broadest, the same length as the 2nd; 3rd and 4th shorter, of equal length, the former indistinctly articulated, the latter the slenderest, sublanceolate (2*).

Male smaller than the female. Head elongate-ovate, produced in front, the sides forming shafts for the antennæ. Eyes lateral globose and prominent. Ocelli two, seated at the back part of the head (1). Thorax as long as the head, subconic, truncate and depressed. Scutellum rather large and triangular, considerably concealed by the thorax. Elytra much shorter than the body, membranous at the apex with a few longitudinal nervures at the base, an areolet at the centre and a larger cell above. Wings short, very thin, the nervures obscure. Abdomen very long, as broad or broader than the thorax, sides slightly convex, back depressed, terminated by a subquadrate process with a conical lobe on each side in the male (5), and by a tube in the female. Legs simple slender, hinder pair long. Tibiæ as long as the thighs, thickened and pilose at the apex. Tarsi half the length of the tibiæ, triarticulate, basal joint long, very pilose beneath, 2nd and 3rd very short of equal length (6). Claws not large, bent and acute, with a membranous appendage at the base of each (6 d).

ARUNDINIS *Nob.*

Pale and rather dull ochreous, punctured and slightly clothed with short rigid bristles. Antennæ and sides of head with a rosy tinge. Eyes and ocelli reddish. Clypeus with 4 abbreviated striæ. Thorax with a slightly elevated line down the centre and an impression near the posterior angles which are raised. Scutellum somewhat rosy with an elevated line down the centre and a black stripe on each side. Abdomen sparingly punctured, with 2 black abbreviated stripes down the back, attenuated towards the apex, sometimes united at the base, in others leaving a greenish stripe down the centre. Elytra with the costa thickened and ochreous, base of the same colour, the nervures rosy, with a black dot at the inferior basal angle. Wings with a black dot at the base. Posterior tibiæ black on the inside at the apex, the basal joint of the tarsus beneath, the terminal one and Claws black.

In the Cabinets of Mr. Paget, Mr. Davis, and the Author.

1. *C. Arundinis*. *Curt. Brit. Ent. pl.* 297.

As full generic descriptions are given on the other side, I shall proceed to transcribe the account transmitted to me with a fine series of this remarkable insect by C. J. Paget, Esq. of Great Yarmouth. "I find the *Lygæus* (*Chorosoma*) plentifully the latter end of August and beginning of September, at some sand-hills, about a hundred yards from the sea, which extend from a small village called Caistor, three miles north of this town, for many miles along the coast, and are called Marrams. They feed upon the *Arundo arenaria*; from the great abundance of which, together with *Elymus arenarius*, *Carex arenaria*, &c., all being vulgarly confounded under the common name of Marram-grass, the hills take their name. This *Lygæus* is not easily observed, resembling in colour the florets of the plant, which at this time of the year is precisely the same dry and autumnal tint as the insect. I have hitherto observed them only upon those plants which grow on the edge of the hills nearest the sea, where I have taken three, four, and five off one panicle."

At first sight this insect would be taken for one of that group of *Mirides* to which *Cimex dolabratus* Linn. belongs; but upon examining it more carefully, it will be found to possess characters so nearly similar to those of *L. micropterus*, that, for the present at least, they may be included in the same genus. I shall therefore subjoin its characters, &c.

2. *C. microptera* Nob.—*L. micropterus*. *Burrell Ent. Trans.* p. 73. pl. 1.

Green and pilose; the elytra and abdomen smooth and naked. Antennæ and legs rosy, especially the former. Elytra not half the length of the body, the inferior nervures red. Wings rudimentary. Abdomen very much dilated in the female, the back rose-colour, with a broken black stripe down the centre.

First discovered in Norfolk by the late Rev. J. Burrell. It was found upon grass in chalky districts in August; I have since captured it near Norwich; Mr. Paget takes it near Yarmouth, and Mr. Samouelle at Coombe, Surrey, in June.

Arundo arenaria (Sea Reed, Marram, Sea Mat-weed). This plant now forms the genus *Ammophila* Host, a name given by Mr. Kirby to a group of Hymenoptera in the Linnean Transactions for the year 1798.



ATRACTUS LITERATUS.

ORDER Hemiptera.

FAM. Coreidæ.

Type of the Genus, Atractus literatus.

ATRACTUS? *De Lap.*—*Coreus Fall., Ahr.*

Antennæ attached to two shoulders, considerably before the eyes, longer than the head and thorax, scabrous, capitate and 6-jointed?, basal joint short stout and subovate, 2nd and 3rd slender, the former shorter than the 1st, the latter equal in length to all the others, 4th minute, cup-shaped, the remainder forming an ovate conic mass as long as the 1st joint, divided by a suture at the middle but apparently not articulated, the apical portion pubescent (4).

Labrum very long and slender.

Labium shorter than the antennæ, extending in a groove beneath to the base of the intermediate coxæ, composed of 4 joints, two first of nearly equal length, 3rd and 4th shorter (2).

Head *convex above, subovate, the sides notched to receive the antennæ, the portion between them produced somewhat conically: eyes lateral, small, globose and prominent: ocelli 2, rather large, remote and placed at the back part of the crown (1, the head in profile, 1* underside of same).* Thorax *trapezate, not broader than the head before: scutellum not large, triangular and acute.* Abdomen *broader than the thorax, ovate, flat above, the margins dilated and a little reflexed.* Elytra *not covering the margin of the abdomen, the base coriaceous, with 3 longitudinal nervures furcate at the apex; the apical half membranous, with numerous ramified nervures: wings shorter, ovate and transparent, with a few longitudinal nervures and a small discoidal cell.* Legs *scabrous, rather short; posterior the longest: tibiæ slightly clavate and pectinated at the apex: tarsi rather short, triarticulate, basal joint the longest, especially in the hinder pair, 2nd obtrigonal, a little smaller than the 3rd which is obovate: claws and pulvilli small (6, a fore leg).*

LITERATUS *Curt. MSS.—Guide, Gen. 1127^a.*

In the Cabinets of Mr. Raddon and the Author.

FROM the characters given by M. De Laporte in his Essay on the Hemiptera, I believe our insect belongs to his Genus *Atractus*, and on comparing it with *Coreus* (pl. 174), the

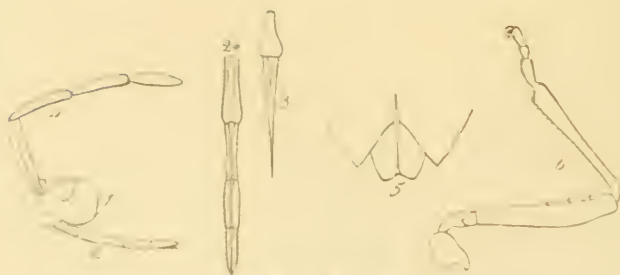
different form of the antennæ will at once present a distinctive character. I see that M. De Laporte has placed his Coreidæ and Tingidæ next to each other, and there certainly is a considerable resemblance between *Atractus* and *Aradus* (pl. 230), yet I doubt if any real affinity exists, since their œconomy is different and the labium and tarsi vary most materially in their structure.

The only specimen I ever saw alive of the Genus *Atractus*, I took in the neighbourhood of Marseilles, and it probably is the *A. cinereus* of Laporte. The species figured appears to be undescribed, as it does not agree with the *C. nubilus* of Fallen and Ahrens: it was beaten off thistles and nettles by Mr. Raddon about the middle of last September, on Braunton Burrows in the North of Devon, and I am indebted to him for my example.

A. literatus Curt. *Brit. Ent. pl.* 500.

Dull ochreous, variegated with pale green, granulated or scabrous; antennæ with the tip of the 3rd joint as well as the 4th and 5th black, the apex of the latter or 6th joint whitish; thorax with 2 oblique green ridges parallel to the sides which appear serrated, metathorax and base of abdomen black, the edges of the segments and dots on the margin black; elytra with the nervures spotted with black and brown, the membranous portion transparent, a little clouded with brown, the nervures irregularly lettered with black, 4 anterior tibiæ with the base, apex and a ring round the middle dusky, tips of tarsi black.

The Plant is *Nepeta cataria* (Cat-Mint).



Staphylinus

COREUS SCAPHA.

ORDER Hemiptera. FAM. Coreidæ *Leach.* Corisiæ *Lat.*

Type of the Genus Cimex marginatus Linn.

COREUS *Fab., Wolff., Lat., Fall., Panz.—Cimex Linn., Geoff.*

Antennæ inserted at the anterior angles of the head, longer than the thorax, 4-jointed, geniculated, basal joint robust, prismatic or cylindric, 2nd and 3rd rather slender, nearly equal in length, 4th shorter, thicker, conical pilose (fig. 4).

Labrum very long and slender towards the apex which is acuminated (3).

Mandibles and *Maxillæ* like setæ passing through the rostrum.

Rostrum inflected, as long as the thorax (2); distinctly 4-jointed, 1st and 2nd joints the longest, 3rd and 4th of nearly equal length (2*).

Head *subquadrate*, spined in front, neck not apparent. Eyes lateral, small prominent. Ocelli 2, placed near the base of the head (f. 1, the head in profile). Thorax not broader than the head anteriorly, more than twice as broad at the base, sides angulated. Scutellum triangular not large. Elytra not covering the abdomen, posterior portion membranous. Wings shorter than the abdomen which is depressed or concave, broader than the thorax, the sides dilated, very thin, and elevated; apex truncated in the males, emarginate having 2 or more lobes in the females (5). Thighs sometimes producing short spines and grooved beneath. Tibiæ simple, posterior rather the longest. Tarsi 3-jointed, basal joint the longest, 2nd small. Claws and Pulvilli small (6, a fore leg).

SCAPHA *Fab. Ent. Syst. v. 4. p. 127. n. 2.*

Granulated and punctured, ochraceous, some inclining to castaneous others to cinereous. Head producing a spine in the centre, and a pale ochre one at each angle, the sides being margined with the same colour. Thorax with the lateral margins and an obscure line down the centre pale ochre, the posterior angles notched. Elytra spotted or clouded with castaneous, the margin at the base ochraceous, the membrane bronzed; sides of the abdomen reflexed, the edges, 5 spots down each side and 3 at the apex pale ochre. Antennæ with the basal joint robust and cylindric, granulated, rosy ochre, the internal side fuscous, 2nd joint rufous, 3rd and 4th black, the former rufous at the base. Legs pale, the thighs maculated with dark fuscous, the tibiæ spotted with black; tarsi subferruginous, terminal joint black. Beneath pale dirty ochre clouded with cinereous and spotted with black.

In the Author's Cabinet.

THE broken antennæ composed of only four joints, will readily separate the genus *Coreus* from the *Pentatomidæ*, whilst the dilated abdomens with elevated margins will distinguish it from other groups of the *Coreidæ*.

The different species exhibit many variations of form in the antennæ, especially of the basal joint, in the process between them which in some is bifid, in the outline of the thorax and abdomen, as well as in the number of lobes or teeth at the apex.

We are now able to enumerate five perfectly distinct British species; the first of which only is common.

1. *C. marginatus* Linn., Wolff. tab. 3. f. 20.

Found in May and September in gardens and hedges upon the dock. This insect has such rigid elytra and wings, that when flying they create a very harsh sound.

2. *C. Scapha* Fab. Nob.

Amongst other characters which this insect possesses that will distinguish it from the foregoing one, is the simple spine between the antennæ, which in that species is cleft. The end of last August I found the larva and two specimens at the base of the Cliff near Dover, and in September another in the Isle of Wight.

3. *C. quadratus* Fab., Wolff. t. 7. f. 67.—*venator* Don? 11. 375.

Found in June and August in hedges.

4. *C. scabricornis* Panz. 99. 21.

5. *C. denticulatus* Scop., Wolff. t. 7. f. 68.—*hirticornis* Fab., Panz. 92. 17.

Inhabits sandy places in June.

The plant figured is *Crithmum maritimum* (Rock Samphire), and was obtained from the celebrated Shakspeare Cliff near Dover; it was also growing above the spot where the insects were found.



ÆLIA ACUMINATA.

ORDER Hemiptera.

FAM. Pentatomidæ.

Type of the Genus, Cimex acuminatus Linn.

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

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

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

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

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

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

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

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

The following table will serve to group the British Pentatomidæ:

1. Scutellum not covering the abdomen.

Tarsi biarticulate	ACANTHOSOMA pl. 28.
Tarsi triarticulate.	
Legs smooth.	
Head elongate trigonate	ÆLIA704
Head oblong	PENTATOMA 20
Legs spiny	CYDNUS..... 74
2. Scutellum nearly covering the abdomen TETYRA685
and the characters of the subgenera will be found in the accompanying folio. I may add that Hahn has divided our Pentatomæ into *Tropicoris*, *Ialla*, *Eysarcoris*, and *Strachia*, which are distinguished by the antennæ.

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



655

Phalaena (Gnathocentrus) ...

1-1827

ACANTHOSOMA HÆMORRHOIDALIS.

ORDER Hemiptera.

FAM. Pentatomidæ.

Type of the Genus, Cimex hæmorrhoidalis Linn.

ACANTHOSOMA Curt., DeLap., Burm.—Clinocoris Hahn.—Pentatoma Lat.—Cimex Linn., Fab., Wolff.

Antennæ inserted a little under the margin of the clypeus, before the eyes, rather long, filiform, pubescent and 5-jointed, basal joint long, stoutish and clavate, 2nd nearly as long but more slender, 3rd the shortest, 4th as long as the 1st, 5th scarcely so long (4).

Labrum long, attenuated, transversely striated, received into a canal in the basal joint of the rostrum (3 and 3 a).

Mandibles and *maxillæ* setiform.

Labium inflected, extending to the hinder pair of coxæ, slightly pubescent, 4-jointed, basal joint the stoutest, shorter than the head, 2nd and 3rd longer and equal, 4th a little longer than the 1st (2).

Head *trigonal*, flat, immersed to the eyes, which are small and very prominent: ocelli 2, placed near the base, but remote. Thorax transverse, each side produced into a trigonal spine, anterior margin very narrow, hinder broader, both concave: sternum keeled forming a large incurved spine (5 a). Abdomen depressed oblong, attenuated, truncated; slightly keeled beneath, and terminating in a long spine at the base, which lies over or by the side of the pectoral one (b). Scutel large and trigonal, the apex acuminate. Elytra ample, coriaceous, apex membranous with several obscure longitudinal nervures: wings large, with a few strong nervures. Legs moderate, hinder a little the longest: thighs simple: tibiæ, anterior faintly notched internally (6): tarsi short, biarticulate, 2nd joint the longest, clavate: claws curved, acute: pulvilli divaricating.

HÆMORRHOIDALIS Linn.—Curt. Guide, Gen. 1131. 1.

Ochreous-green, with irregular black punctures: angles of thorax rosy orange or black, and a transverse band near the anterior margin orange or rosy; apex of scutel yellow: abdomen black and scarlet above, margins and underside ochreous: membrane and wings pale fuscous-ferruginous: antennæ black, testaceous at the base: legs green, ochreous or rosy: tips of tarsi, claws and rostrum piceous.

In the Author's and other Cabinets.

NOTHING probably has contributed more in this country to the elucidation of neglected tribes of insects, than the miscellaneous form in which this work has been published, by which means the attention of the student has been invited to the investigation of every order, and even the Lepidopterist was often induced to extend his researches beyond the beautiful objects to which he was devoted.

In May 1824 I found on studying *Pentatoma* that it was

composed of groups exhibiting good generic characters, one of which I proposed to name *Acanthosoma*, in allusion to the spined keel on the underside; and if it be not a remarkable circumstance, it is a proof of the negligence of the German writers, when we find Hahn giving a new name to the same group ten years after it had been established in this work, and adopted by Laporte and Burmeister. Another peculiar mark of distinction is the *biarticulate* tarsi, which however are represented distinctly *triarticulate* in Hahn's figure, 158.

The larvæ of this family have no wings, and the pupæ have rudiments only; they generally resemble the imago in colour, are very active, and emit a very disagreeable scent when touched: in every stage they live upon the juices obtained from small insects, especially caterpillars.

When the first edition was published, there were only three British species of *Acanthosoma* discovered, and now five are recorded.

1. *hæmorrhoidalis* Linn.—Curt. Brit. Ent. pl. 28. ♂.

By no means a rare insect, inhabiting the white-thorn flowers in June, and found in hedges and plantations in October.

2. *liturata* Fab.—Panz. 40. 19. length $4\frac{1}{2}$ lines.

Similar to No. 1: elytra green margined with red, excepting the costa; membrane and wings hyaline, former with a brown patch on the costa.

This and the following species seem to have been confounded, the descriptions and figures consequently often suit both and yet differ materially. Found in May in Birch and Coomb-woods, and in August on larch trees, in a plantation on Shirley common.

3. *picta* Linn. Cab. *pictipennis* New.—*lituratus* Wol. t. 2. f. 14.

Beautiful green: hinder angles of thorax and coriaceous portion of elytra bright red, excepting the costa: membrane hyaline, with a wavy fuscous striga and a brown dot between it and the elytron: wings fuscous, tips hyaline: abdomen black above, margin and apex green: length $4\frac{1}{4}$ lines.

March and April, abundant on junipers in Birch-wood; end of August on larch trees, with No. 2. Mr. Davis.

4. *agathina* Fab.—*achatinus* Wolff. t. 6. f. 55.—length $3\frac{1}{2}$ lines.

Greenish-ochre, with black punctures; a broad transverse piccous and rosy band on the scutel; margins of abdomen spotted with black; tips of antennæ piccous.

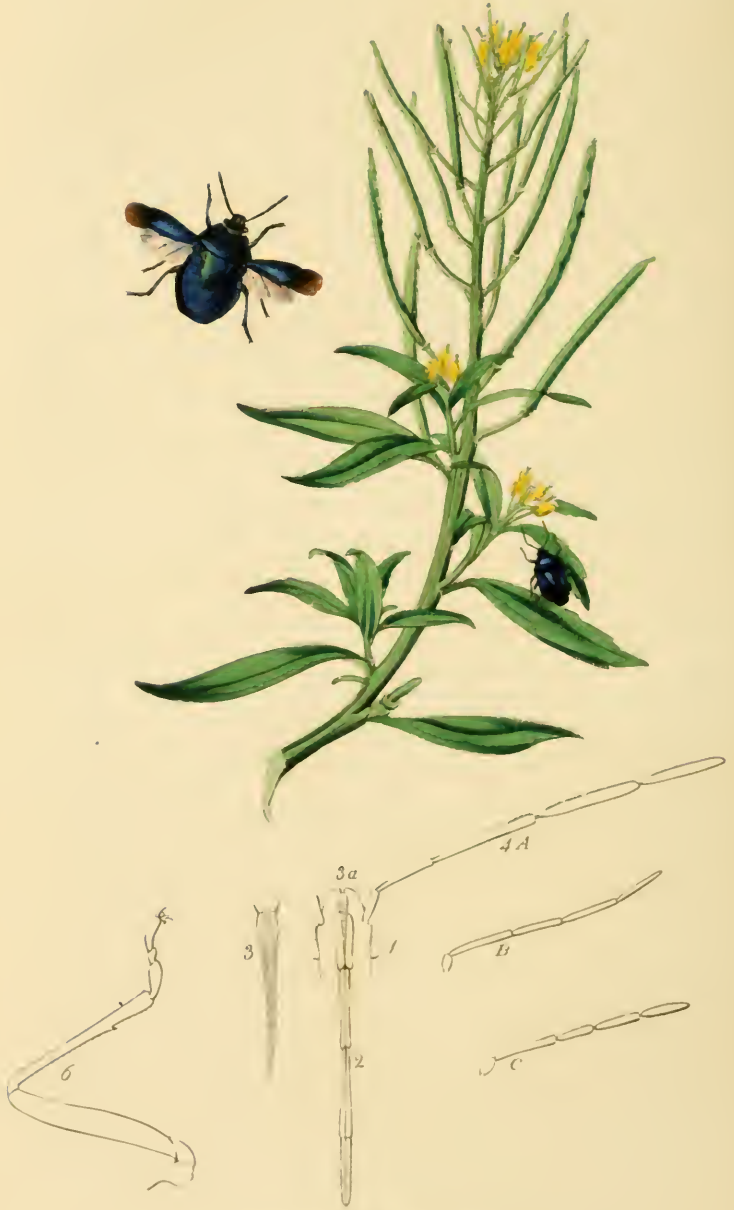
Beginning of June, Darent-wood, 31st Aug. on larch trees.

5. *grisea* Linn. F. S. n. 926.—Panz. 33. 17?—Wolff. t. 6. f. 56?

"Griseous with deep scattered punctures: scutel more fuscous towards the base; wings clouded with fuscous; antennæ blackish-fuscous: back of abdomen black, margins whitish, spotted with black." length $7\frac{1}{2}$ lines?

Never having seen this species, I cannot be certain that it belongs to this genus: the spine, if correctly represented by Wolff, is very different to that of *Acanthosoma*. Mr. Davis informed me that he took a specimen the 31st Aug. on a larch tree in a plantation on Shirley common, and that he found at the same time all the other species.

The plant is *Mercurialis perennis* mas, Dogs' Mercury.



1857
L. V. ...

PENTATOMA CÆRULEA.

ORDER Hemiptera. FAM. Pentatomidæ.

Type of the Genus, Cimex rufipes Linn.

PENTATOMA Oliv., Lat., De Lap., Curt.—Cimex Linn., Fab.

Antennæ inserted under the margin of the head, before the eyes, rather long, filiform or slightly clavate, 5-jointed, the joints varying in length (4 A, B, C).*Labrum* very long, attenuated, transversely striated (3): resting in a canal in the basal joint of the rostrum (3 a).*Mandibles* and *maxillæ* setiform.*Labium* inflected, reaching the hinder coxæ, 4-jointed, 2nd and 3rd joints rather the longest, 4th pubescent (2).*Head ovate or oblong* (1, underside), immersed nearly up to the eyes which are small globose and prominent: ocelli 2, placed near the base, very remote. Thorax broad, very narrow in front, sometimes produced into a spine on each side: scutellum large, elongate-trigonal, not covering the elytra. Abdomen broad, ovate, depressed and marginate. Elytra coriaceous, the apical membrane with several longitudinal nervures: wings ample, with a few strong nervures. Legs moderate, hinder the longest: thighs simple: tibiæ simple, pubescent, anterior with a notch and short spine towards the apex on the inside (6): tarsi short, triarticulate, 2nd joint minute: claws strong, curved: pulvilli bilobed.

CÆRULEA Linn.—Curt. Guide, Gen. 1131, 15.

Shining, punctured, cyaneous, sometimes tinged with violet or green: abdomen very finely and regularly punctured: tips of elytra brown: wings slightly fuscous and iridescent.

In the Author's and other Cabinets.

FEW orders present a greater variety of outline or more beautiful sculpture than the European Hemiptera, and even the Coleoptera and Lepidoptera cannot exceed many of the Indian and South American species in the brilliancy and powerful opposition of their colours. With such attractions, therefore, it is not a little surprising that in this country they should have been totally disregarded, and whilst on the one hand we have been assisted by Marsham's Coleoptera, and on the other by Haworth's Lepidoptera, we have no guide to the Hemiptera, except in the rare and incomplete works of our continental neighbours. Such were my remarks in May, 1824, and as the same are still applicable, I can only refer to M. DeLaporte's Monograph, an excellent memoir by Dr. Burmeister in the *Revue Entomologique*, and to Hahn, who has divided Pentatoma into the following genera, distinguished apparently by the

neuration of the membrane and by the antennæ, which however are subject to great variation.

ARMA Hahn. *Second and following joints nearly of equal length.*

1. *bidens* Linn. 2. *Custos* Fab. 3. *lurida* Fab.

TROPICORIS Hahn. *Third joint the longest.*

4. *rufipes* Linn. (Fig. 4 A.)

PENTATOMA Lat. *Second joint longest, third shortest, but variable.*

5. *nigricornis* Fab. 6. *marginoguttata* Hahn. 7. *Lynx* Fab.
8. *Baccarum* Linn. 9. *dissimilis* Fab. 10. *prasina* Linn.
11. *Juniperina* Linn. 2. *cœrulea* Linn. (Fig. C.)

JALLA Hahn. *Antennæ stout and very pubescent.*

13. *dumosa* Linn.

EYSARCORIS Hahn. *Fifth joint longest and stoutest.*

14. *perlata* Fab. 15. *melanocephala* Fab.
16. *punctata* Linn. 17. *inflexa* Wolff.

STRACHIA Hahn. *Fourth and fifth joints as long as and stouter than the antecedent.*

18. *oleracea* Linn. 19. *picta* Fab.
20. *festiva* Linn. 21. *ornata* Linn.

SCIOCORIS Fall. *Fourth and fifth joints the longest.*

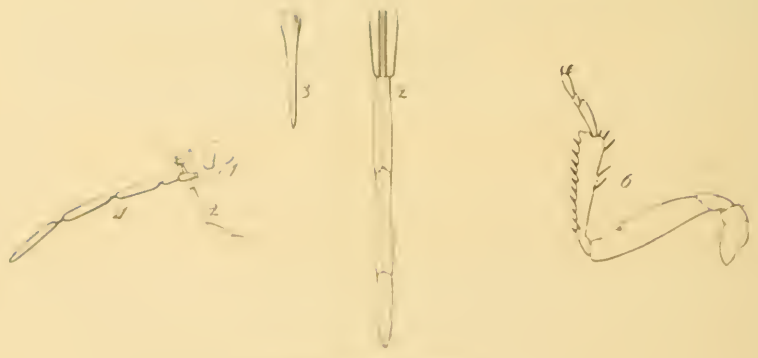
22. *umbrina* Wolf.

P. marginoguttata. Mr. Paget gave me a specimen which he found in a garden at Great Yarmouth upon *Ruscus aculeatus* (pl. 489.).

P. cœrulea flies well in the sunshine, and is to be met with on the leaves of plants in the heat of the day. I have taken it in June near Ambleside; July, Coombe-wood; September, on heath near Linton, Devon; and at Niton on the Wormwood.

In the cabinet of the Zoological Society is a species from Dr. Leach, bearing the name of *P. picta*: it agrees tolerably well with the Fabrician description, but I believe that Dr. L. was not satisfied of its authenticity as a British specimen.

The plant is *Erysimum cheiranthoides*, Treacle Worm-seed.



CYDNUS DUBIUS.

ORDER Hemiptera. FAM. Pentatomidæ Leach. Corisiæ Lat.

Type of the Genus *Cimex bicolor* Linn.

CYDNUS Fab., Leach. *Cimex* Linn., Fab., Scop., Schrank, Wolff.
Pentatoma Lat.

Antennæ exerted, inserted under the margin of the head before the eyes, nearly filiform, or slightly clavate, longer than the head, 5-jointed, the 1st and sometimes the 2nd joints very short, the 3 following long, nearly of equal length, and more robust (fig. 4).

Rostrum inflected, distinctly 4-jointed, the 2nd and 3rd joints somewhat the longest, terminal joint slightly hairy (2).

Labrum very long, subulate, received into a canal in the basal joint of the rostrum (3).

Mandibles and } like setæ passing through the rostrum.
Maxillæ

Head obtuse, immersed quite up to the eyes in the thorax. Clypeus with a notch in the centre of the margin. Thorax narrowed anteriorly, with the angles rounded. Abdomen ovate, somewhat orbicular, depressed, margined. Scutellum large, not covering the wings or elytra. Elytra coriaceous, membranaceous at the apex, crossing each other horizontally. Tibiæ robust, spinulose, not notched. Tarsi 3-jointed, middle joint minute (6 a fore leg).

DUBIUS Scopoli *Entomologia Carniolica*, p. 121. n. 355. Albo-marginatus Schrank *Austr.* n. 531.

Dark blue, slightly inclining to green and purple, lateral margins of thorax and external margin of elytra pale straw-colour: margin of abdomen alternately black and straw-colour. Head, thorax and scutellum coarsely punctured; elytra more thickly and minutely punctured.

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

FABRICIUS established this group as a genus in his *Systema Rhyngotorum*, but Latreille has only made it a principal division of his genus *Pentatoma*. Dr. Leach by some accident has stated in his characters of the genus *Cydnus*, that the 2nd

joint of the antennæ is longer than the 3rd; an error into which he was probably led by his having examined *Pentatoma Oleracea*, which he gave as the type of the genus *Cydnus*, but which in reality belongs to the 3rd division (C.) of *Pentatoma* (vide folio 20). The relative proportions of the joints of the antennæ are most important characters here; and it so happens that the 2nd joint is never longer, but generally shorter than the 3rd; and it is not so in *Pentatoma*, as will be seen by referring to plate 20, except in division A, which comes nearest to *Cydnus* in this respect; and there it arises from the 3rd joint being the longest of all, which is not the case in *Cydnus*: the absence of the notch in the anterior tibiæ, and all the legs being spined, are other very essential characters.

There are 7 or 8 British species of this genus: viz. 1. *C. bicolor* L.; 2. *morio* L.; 3. *marginatus*? 4. *biguttatus* L.; 5. *albo-marginatus* F.; 6. *dubius* Scop.; and a species in the cabinet of Mr. Stephens, larger than *C. morio*, but closely allied to it. The habits of these insects are like those of the kindred genera: several of the species are common. They are found upon plants in June, and frequently are to be seen in gravel-pits, into which they have accidentally fallen. Of the species figured I have seen but 2 specimens; one in the British Museum, from which the drawing was made, the other (which is of a duller colour) is in Mr. Stephens's cabinet.

Fabricius in his synonyms to *Cydnus morio*, includes figure 11 of the 57th table of Schæffer's *Icones*, which is a blue insect with a pale margin, whereas, to agree with his description it ought to be entirely black, with the exception of the rufous tarsi. There can be little doubt but this figure represents the *C. dubius* of Scopoli, and as such it is named by Panzer in his *Systematic Nomenclature* of Schæffer's *Icones*, page 75.

The plant figured is *Arabis turrata* (Tower Wall-cress), communicated by Professor Henslow, from the walls of Trinity and St. John's Colleges, Cambridge.



TETYRA FULIGINOSA.

ORDER Hemiptera.

FAM. Pentatomidæ.

*Type of the Genus, Cimex maurus Linn.*TETYRA *Fab., Leach, Curt.*—Scutellera *Lat.*—Cimex *Linn., Fab.*

Antennæ as long as the head and thorax, inserted under but remote from the eyes and close to the anterior margin of the pectus; clavate and 5-jointed, basal joint elongate and clavate, 3 following scarcely so long, 2nd and 3rd slender, 4th and 5th stout and pubescent, the latter twice as long as the 4th (4).

Labrum long slender and attenuated, transversely sulcated (3).

Labium long horny hollow and 4-jointed, basal joint the stoutest, oblong, 2nd twice as long but slenderer, 3rd shorter than the 1st, 4th about the same length, a little attenuated, rounded and hairy at the apex (2*).

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

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

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

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

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

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

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

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

TETYRA Fab. THYREOCORIS Schr.

1. Scarabæoides Linn.—Wolff. tab. 1. f. 4.

End of May, Durdledoor, Mr. Dale; June, Barton Cliff.

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

ODONTOSCELIS DeLap. ÜRSOCORIS Hahn.

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

4. fuliginosa Linn.—Curt. Brit. Ent. pl. 685.

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

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

BELLOCORIS Hahn. EURYGASTER DeLap.

5. picta Fab.—Hahn. pl. 45. f. 140.

Taken during Aug. off grass at the sides of fields near Dover, J. C. Isle of Portland and Blandford Race Course, Mr. Dale.

6. maura Linn.—Hahn. pl. 45. f. 139.—obliqua Guide, var.

Near Bristol, Mr. Millard; June, Monk's Wood, Mr. Bampton; October, in a garden at Islington, Mr. A. Cooper.

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

PODOPS DeLap.

2. inuncta Fab.—Panz. 36. 24.

June, sandy places, Bexley; August, on grass, near Dover.

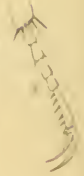
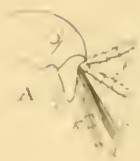
B. Antennæ inserted before the eyes; 2nd joint twice as long as the 3rd.

GRAPHOSOMA DeLap.—Scutellera Hahn.

7. lineata Linn.—nigrolineata Fab.—Don. 14. 473.

One, if not more specimens, were found several years since by Dr. Lindley, in a nursery-ground at Catton in Norfolk: as it is a common insect in France, it might have been imported with plants. It is attached to Elder-flowers, but I found it in abundance in June, near Toulouse, on *Heracleum laciniatum*.

The Plant is *Tamarix gallica*, French Tamarisk.



PULEX TALPÆ.

Mole's Flea.

ORDER Siphonaptera *Lat.* Aphaniptera *Kirby.* Suctoria *Lat.*
Aptera *Linn., Lam., Leach.*

Type of the Genus Pulex irritans Linn.

PULEX *Linn., Fab., Lat., &c.*

Antennæ? inserted in two excavations behind the eyes, small, lamelliform, ciliated with spines, having one very short joint at the base. *Lat. Gen. Crust. v. 4. p. 365.*

Labrum none.

Mandibles long, slender, compressed, corneous transparent, with a rib down the centre (d).

Tongue as long as the mandibles, slender, filiform, transparent (c).

Maxillæ lateral, somewhat hollow, receiving the base of the palpi, coriaceous, corneous transparent and obtuse at the apex (e).

Palpi robust, 4-jointed, somewhat pilose (f).

Mentum small coriaceous (C. E. h). *Labium* transparent, membranous (Ei), from each side of which arises a *Palpus* as long as the mandibles composed of 4 articulations, with a few hairs at the apex of each joint on the external side, and united internally by a continuous membranous dilated margin (k).

Head small, compressed, rounded above, truncated before, ciliated more or less with bristles. Eyes small lateral, generally orbicular (A). Thorax composed of 3 segments, to each of which a pair of legs is attached. Abdomen larger in the female than male, formed of several rings united on the sides by a sinuated suture. Legs, posterior the longest, formed for leaping. Coxæ very large. Thighs short. Tibiæ very pilose. Tarsi 5-jointed. Claws long, slender acute, incurved at their base. Pulvilli none (8).

Larvæ vermiform. Pupæ incomplete, inclosed in a cocoon.

TALPÆ *Nobis.*

Shining ferruginous. Head nutant. Eyes pale, ovate. Clypeus ciliated with very strong black bristles concealing the mouth. Maxillary palpi with the basal joint the longest? Thorax small cylindrical. Abdomen compressed, composed of several joints, the margins of which on the back and sides are ciliated with strong hairs; apex furnished with long bristles. Coxæ long, very much dilated at the base, notched and acuminate on the internal edge in the 4 posterior. Thighs short, compressed, narrowed towards their apex. Tibiæ and tarsi, especially the former, furnished with strong bristles.

In the Cabinet of the British Museum.

WE must content ourselves with referring to Kirby and Spence's *Introduction to Entomology* and to Latreille's *Histoire Naturelle* (tome 14.) for the history and various amusing

anecdotes of the Flea, and for figures of the larva and pupa, to Shaw's *Naturalist's Miscellany* (plate 178), and shall proceed to explain the dissections at the bottom of our plate.

- A. Represents the head of *Pulex Canis* in profile, with the trophi in a natural position.—B. The trophi seen from above.—C. The same from beneath, showing the lip or membrane connecting the base of the labial palpi.—D. One of the maxillæ, and a palpus attached to it.—E. The trophi in profile, with the maxillæ and their palpi removed to show the origin of the other organs.—8. The tarsus belonging to a fore leg.

No insect has been more repeatedly examined, or oftener figured than the Flea; yet so incorrectly has it been represented, that most of the figures tend only to mislead the inquirer: the consequence of which (combined with the difficulty of examining the mouth) has been, that the opinions entertained by authors with regard to its affinities are very unsettled. Having had the good fortune some years since to discover the tongue (which had never been noticed or figured until the publication of the *Introduction to Entomology*), I have been induced to make further investigations, the result of which has produced a view of the subject different to that which has hitherto been held.

The cavity behind the eye, which appears to be partly closed by a small lobe that may be distinctly seen to rise and fall, I am disposed to believe is an organ of respiration rather than the analogue of the antenna as suspected by my friend Mons. Latreille; and the absence of spiraculæ down the sides of the abdomen strengthens my opinion. Little as we know of the uses of the antennæ beyond the sense of touch, it is impossible to say that the maxillary palpi may not perform in this order the office of antennæ, and that the orifice behind the eye may not be also adapted to hearing.

We believe *Siphonaptera* will be found connected with the last family of the *Homoptera*, and the first of the *Diptera*, the absence of wings as well as the structure of the rostrulum being analogous to the former; the habit of its larva, its economy, metamorphosis, and the trophi being very similar to the latter.

As there is no doubt but all our wild quadrupeds have a distinct species of *Pulex* belonging to each, we may expect to add many to those already discovered. Our species, the largest I have seen, like the animal it inhabits, has a minute eye, which is oblong and of a ferruginous colour: the specimen figured was taken the latter end of May in Battersea Fields by Dr. Leach, and Mr. Samouelle having no doubt but it is the same as some taken by Mr. Weatherhead off a Mole in June, I have named it after that animal.

The plant figured is *Aster Tripolium*, var. β . (Sea Starwort), flowers without ray.



Chrysomelidae

CERATOPHYLLUS ELONGATUS.

Yellow Bat's Flea.

ORDER Siphonaptera *Lat.*—Aphaniptera *Kirby.*—Suctoria *Lat.*
Aptera *Linn., Lam., Leach.*

Type of the Genus, Pulex Hirundinis Sam.

CERATOPHYLLUS *Curtis.*—*Pulex of Authors.*

Antennæ inserted on each side the crown of the head, concealed in a cavity behind the eyes when at rest, as long as the head, slightly attenuated, 4-jointed, basal joint conic-truncate furnished with a few long bristles at the apex, 2nd longer, 3rd subglobose, 4th small subovate (A. 1).

Labrum none.

Mandibles long slender, compressed and transparent (E. d).

Tongue as long as the mandibles, slender, linear and transparent (c).

Maxillæ (D. e) lateral, coriaceous, slightly acuminate at the apex and shorter than the *Palpi* which are attached to the base; they are long rather robust and 4-jointed, 2nd and 4th joints a little the longest, 3rd and 4th slightly pilose, the latter ovate at the apex (f).

Labium? somewhat cup-shaped, from the apex of which arise the *Palpi* which are as long as the mandibles, slender, producing a few hairs and 4-jointed, 2nd joint small, 3rd the longest, 4th furnished with a few bristles at the apex (k).

Head small, compressed and rounded, sometimes ciliated with strong bristles. Eyes small lateral (A). Thorax composed of several segments. Abdomen elongated in the female, subclavate, compressed formed of several rings divided laterally. Legs, anterior short, posterior the longest, formed for leaping. Coxæ very large. Thighs short subovate compressed. Tibiæ rather short and pilose. Tarsi longer than the tibiæ, pilose and 5-jointed, basal joint the longest. Claws slender and acute, incurved at the base, (8 ♀, hind tibia and tarsus).

ELONGATUS *Curtis's Guide, Gen. 1136. 11.*

Ochreous, variegated with ferruginous, shining, elongated and attenuated towards the head which is not ciliated: antennæ subclavate, pilose 8-jointed, 1st and 2nd joints large, the former obovate, the latter subquadrate, 3rd narrower, the remainder forming an ovate club composed of 4 rings and an apical joint (l b). eyes undiscovered: maxillæ black; segments of the thorax and abdomen ciliated with short rigid black bristles; the abdomen very much dilated at the apex. Legs pale ochreous; tibiæ and tarsi sparingly clothed with long dark hairs; claws black.

In the Author's Cabinet.

It is now upwards of six years since I illustrated the genus *Pulex* (vol. 3. 114.), and by repeated examinations made by my friends and myself, I find it necessary to divide the Pulices into two genera. I am the more desirous to publish this genus that the structure of the antennæ may be made known to the student, and consequently a better idea given him of the affinities of this remarkable little Order.

It is necessary to observe, that the *P. Talpæ* figured in pl. 114. does not belong to the genus *Pulex* but to *Ceratophyllus*, and my friend Mr. Haliday having discovered the antennæ of *Pulex Canis*, I have copied it from his drawing into the present plate (fig. 1. d.). As this discovery confirms the opinion of Mons. Latreille, the 4th paragraph on the second page of the 114th folio should be erased. Mr. Haliday in his letter to me observes, "In investigating the analogy between *Cordyla* and *Mycetophila nigra* on the one hand and *Pulex* on the other, I was led to the discovery of the antennæ of the latter genus; they are situate nearly as in *Ceratophyllus*, but entirely covered by the frontal plate, are shorter than in it, very flat and 2-jointed; the first joint has a bristle near its internal apex, and the other is crowned with spines such as distinguish the incisures of the trunk."

I believe the following British species belong to my genus *Ceratophyllus*.

1. *C. Talpæ* Curt. Brit. Ent. pl. 114. ♂.

Antennæ elongate-ovate, pilose 10-jointed, basal joint ovate-truncate, the remainder forming rings, (B. 1 c. front view of head with the palpi and antennæ, as well as one of the latter detached and more magnified).

Mr. C. A. Johnson gave me a specimen found on a Rat, which appears to be the same as that from the Mole, and from this animal I have a smaller species which seems to be very different from *C. Talpæ*.

2. *C. Muris* Curt.—Off the Mouse.
3. *C. Melis* Lea.—Off the Badger.
4. *C. Sciurorum* Olf.—Off the Squirrel.
5. *C. Erinacci* Lea.—Off the Hedgehog.
6. *C. Leporis* Lea.—From the Hare.
7. *C. Columbæ* Ste.—Off Pigeons.
8. *C. bifasciatus* Curt.—Off a Sand-martin.
9. *C. Hirundinis* Sam.—Fig. A. head in profile, with the antennæ erect and the trophi separated. D. a maxilla and palpus. E. the mandibles, tongue, labium and palpi. 8 ♀, the hind tibia and tarsus.—On Swallows in June.
10. *C. Sturni* Dale.—Curt.—Middle of May, on young Starlings.
11. *C. elongatus* Curt. Brit. Ent. pl. 417. ♀. fig. 1. b, an antenna.—Off the Yellow Bat.
12. *C. Vespertilionis* Sam.—Found on Bats by Mr. Gray.
13. *C. fasciatus* Lat. H. N. 14. 412.—Off the Rat.
14. *C. trifasciatus* Curt.—Off a Bat, the smallest species I have seen.

The Plant is *Erigeron acre* (Blue Fleabane).

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609. Cınara roboris	576	634. Ilydrometra stagnorum	32
ORD. THYSANOPTERA, Hal.			
610. Thrips dispar.	748	Fam. TINGIDÆ.	
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612. Livilla ulicis	625	636. Tingis oxyacanthæ	741
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616. Eupteryx ornatipennis.	640	639. Acanthia pulchella	548
617. Amblycephalus Germari	572	Fam. CIMICIDÆ.	
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Fam. CERCOPIDÆ.			
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ERRATA.

Folio.

- 20 line 8 for articulated read pedicel.
 line 21 for Posterior tibiæ read Anterior tibiæ.
- 114 Since the genus *Pulex* was published, we have been favoured with specimens of *P. Hirundinis* by Thomas Carpenter, Esq., who has pointed out the antennæ, which in this species are as long as the head, placed above the eyes, and are received when at rest into a deep groove, and when erected look like the ears of a rabbit; they are 4-jointed, the basal joint having a few long bristles.—The trophi are similar to those of *P. Canis*, but the maxillæ are more slender and acute.
- 150 *Neides elegans*. Upon examining several specimens taken by Mr. Dale upon *Ononis arvensis*, I find that the scutellum is elongated, and hangs over the abdomen like a tail.
- 417 for CERATOPHYLLUS read CERATOPSYLLUS. This name, which was compounded to express the peculiar structure of the horned Fleas, was misprinted when the genus was established in this work, and it was not corrected, as the Author intended, in the Guide.
- 415 *Asiraca pulchella*. Mr. Dale has two females which are larger than the males.
- 453^b line 12 dele that. Mr. Dale has a male with elytra covering the whole body.
- 553 The *Gerris* is magnified; the length is $3\frac{1}{4}$ lines, the expanse $4\frac{1}{2}$.
- 565 5th line from the bottom, after "names" add "in his *Systema Naturæ*," for in his *Fauna Suecica*, Linnæus has described several species.
- 569^b line 37 for it is read it has.
- 657 the insect is magnified: the expanse is 5 lines.
- The length of two other insects is omitted in the plates, but their dimensions are given in the letter-press.

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<i>Acronycta salicis</i>	136	3	5	<i>Argynnis Aglaia</i>	290	7	5
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<i>Andrena Kirbii</i>	129	3	4	<i>Blemus micros</i>	310	7	1
<i>Aneurus lævis</i>	86	2	7	<i>Blethisa multipunctata</i>	326	7	1
<i>Anisoplia suturalis</i>	526	11	1	<i>Boarmia tetragonaria</i>	280	6	6
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<i>Cantharis vesicatoria</i>	658	14	2	<i>Cochylis rupicola</i>	491	11	6
<i>Capsus hirtus</i>	693	15	7	<i>Cedioxys vectis</i>	349	8	4
<i>Carabus exasperatus</i>	446	10	1	<i>Colax dispar</i>	166	4	3
<i>Caradrina bilineata</i>	651	14	5	<i>Colias hyale</i>	242	6	5
<i>Cardiapus Mathewsii</i>	435	10	2	<i>Colletes fodiens</i>	85	2	4
<i>Carpocapsa Leplastriana</i>	352	8	6	<i>Colymbetes consobrinus</i>	207	5	1
<i>Cassida salicorniæ</i>	127	3	2	<i>Comiopteryx psociformis</i>	528	11	4
<i>Catocala clocata</i>	217	5	5	<i>Conopalpus testaceus</i>	112	3	2
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<i>Cecidomyia verna</i>	178	4	8	<i>Copris lunaris</i>	414	9	1
<i>Celinius anceps</i>	289	6	3	<i>Coranus subapterus</i>	453	10	7
<i>Centrotus genistæ</i>	313	7	7	<i>Cordulia Curtisii</i>	616	13	4
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<i>Ceraphron Halidayi</i>	249	6	3	<i>Corizus hyoseyami</i>	481	10	7
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<i>Ceratopsyllus elongatus</i>	417	9	7	<i>Corynopus St. Farg.</i>	656	14	4
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<i>Ceropales variegatus</i>	756	16	4	<i>Cranibus radiellus</i>	109	3	6
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<i>Charissa operaria</i>	105	3	6	<i>Cryptus pallipes</i>	58	2	3
<i>Chelaria rhomboidella</i>	368	8	6	<i>Ctenophora ornata</i>	5	1	8
<i>Chelonus Wesmælii</i>	672	14	3	<i>Cucujus spartii</i>	510	11	2
<i>Chelostoma florisomnis</i>	628	14	4	<i>Cucullia asteris</i>	45	1	5
<i>Chilo lancoellus</i>	727	16	6	<i>Culex guttatus</i>	537	12	8
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<i>Chironomus festinus</i>	90	2	8	<i>Cychrus rostratus</i>	426	9	1
<i>Chlænien sulcicollis</i>	83	2	1	<i>Cydnius dubius</i>	74	2	7
<i>Chorosoma arundinis</i>	297	7	7	<i>Cynips nervosa</i>	688	15	3
<i>Chrysis fulgida</i>	8	1	4	<i>Cyphon pini</i>	602	13	2
<i>Chrysocorys scissella</i>	663	14	6	<i>Damophila trifolii</i>	391	9	6
<i>Chrysomela adonidis</i>	111	3	2	<i>Daphnis nerii</i>	626	14	5
<i>Chrysopa abbreviata</i>	520	11	4	<i>Dascillus cervinus</i>	216	5	2
<i>Chrysotoxum octomaculatum</i>	653	14	8	<i>Dasygaster Swammerdamella</i>	367	8	4
<i>Cicada anglica</i>	392	9	7	<i>Dasygaster brevis</i>	153	4	8
<i>Cicindela sylvicola</i>	1	1	1	<i>Decatoma Cooperi</i>	345	8	3
<i>Cieones carpini</i>	149	4	2	<i>Deilephila euphorbiæ</i>	3	1	5
<i>Cilleum laterale</i>	200	5	1	<i>Deiopeia pulchra</i>	169	4	5
<i>Cimbex 10-maculatus</i>	41	1	3	<i>Delphax longipennis</i>	657	14	7
<i>Cimex lectularius</i>	569	12	7	<i>Demetrias monostigma</i>	119	3	1
<i>Cinara roboris</i>	576	12	7	<i>Dendrolimus pini</i>	7	1	5
<i>Cinetus dorsiger</i>	380	8	3	<i>Dendrophilus Sheppardi</i>	131	3	1
<i>Cis bidentatus</i>	402	9	2	<i>Depressaria Bluntii</i>	221	5	6
<i>Cistela ceramoides</i>	594	13	2	<i>Dermestes lardarius</i>	682	15	2
<i>Cixius Dionysii</i>	673	14	7	<i>Dianous cæruleus</i>	107	3	1
<i>Cladius pilicornis</i>	457	10	3	<i>Diaperis boleti</i>	358	8	1
<i>Clavellaria marginata</i>	93	2	3	<i>Dictyonota crassicornis</i>	154	4	7
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<i>Dixa nebulosa</i>	409	9	8	<i>Gracillaria anastomosis</i>	479	10	6
<i>Dolichopeza sylvicola</i>	62	2	8	<i>Gryllotalpa vulgaris</i>	456	10	3
<i>Donacia tymphæ</i>	494	11	2	<i>Gymnætron graminis</i>	627	14	2
<i>Drapetis aterrima</i>	397	9	8	<i>Gyrinus bicolor</i>	79	2	1
<i>Dromius spilotus</i>	231	5	1	<i>Hadena Cucubali</i>	308	7	5
<i>Drosophila cameraria</i>	473	10	8	<i>Hæmatopota italica</i>	525	11	8
<i>Dryinus cursor</i>	206	5	3	<i>Hæmobora pallipes</i>	14	1	8
<i>Drymonia dodonæa</i>	755	16	5	<i>Halias quercana</i>	575	12	6
<i>Drypta emarginata</i>	454	10	1	<i>Halictophagus Curtisii</i>	433	9	3
<i>Dysclirius inermis</i>	354	8	1	<i>Halictus</i>	448	10	4
<i>Dytiscus dimidiatus</i>	99	3	1	<i>Halipus ferrugineus</i>	730	16	1
<i>Ederesa semitestacella</i>	719	15	6	<i>Hallomenus flexuosus</i>	474	10	2
<i>Elaphrus uliginosus</i>	179	4	1	<i>Hamearis Lucina</i>	316	7	5
<i>Elater aterrimus</i>	694	15	2	<i>Hapalia præcox</i>	539	12	5
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<i>Elenchus Walkerii</i>	385	8	3	<i>Harpiteryx scabrella</i>	535	12	6
<i>Elnis Voickmari</i>	294	7	1	<i>Harpocera Burmeisteri</i>	709	15	7
<i>Elodes pini</i>	602	13	2	<i>Hecabolus sulcatus</i>	507	11	3
<i>Elophorus fennicus</i>	466	10	1	<i>Hedychrum ardens</i>	38	1	4
<i>Emphytus fasciatus</i>	436	10	3	<i>Helcomyza ustulata</i>	66	2	8
<i>Empis borealis</i>	18	1	8	<i>Heleodromia bistigma</i>	513	11	8
<i>Emus hirtus</i>	534	12	1	<i>Heliothis scutosa</i>	595	13	5
<i>Encyrtus vitis</i>	395	9	3	<i>Helobia Gyllenhalii</i>	103	3	1
<i>Endomychus coccineus</i>	570	12	2	<i>Helodes beccabungæ</i>	506	11	2
<i>Endromis versicolor</i>	434	10	5	<i>Helomyza rufa</i>	545	12	8
<i>Enicocerus Gibsoni</i>	291	7	1	<i>Helophilus Ruddii</i>	429	9	8
<i>Ennomos angularia</i>	667	14	6	<i>Helops pallidus</i>	298	7	2
<i>Epeolus variegatus</i>	516	11	4	<i>Helorus anomalipes</i>	403	9	3
<i>Ephemera cognata</i>	708	15	4	<i>Hemerobius fimbriatus</i>	202	5	4
<i>Ephydra spilota</i>	413	9	8	<i>Henops marginatus</i>	110	3	8
<i>Ephyra pictaria</i>	447	10	6	<i>Hepialus sylvinus</i>	185	4	5
<i>Erastria ostrina</i>	140	3	5	<i>Heriades truncorum</i>	504	11	4
<i>Eriocephala calthella</i>	751	16	6	<i>Hesperia Actæon</i>	442	10	5
<i>Erioptera crassipes</i>	557	12	8	<i>Heterocerus obsoletus</i>	224	5	1
<i>Erirhinus æthiops</i>	634	14	2	<i>Heterogaster laticeps</i>	597	13	7
<i>Eristalis nubilipennis</i>	432	9	8	<i>Heteroneura albimana</i>	721	15	8
<i>Eubolia cervinaria</i>	707	15	6	<i>Hilara cilipes</i>	130	3	8
<i>Euceros albitarsus</i>	660	14	3	<i>Hipparchia Hero</i>	205	5	5
<i>Euclidia glyptica</i>	659	14	5	— Arcanius	205*	5	5
<i>Eudorea murana</i>	170	4	6	<i>Hipparchus smaragdarius</i>	300	7	6
<i>Eulepia cribrum</i>	56	2	5	<i>Hippobosca equina</i>	421	9	8
<i>Eulophus damicornis</i>	133	3	3	<i>Hister 4-maculatus</i>	470	10	1
<i>Eumenes atricornis</i>	13	1	4	<i>Holoparnemus depressus</i>	614	13	2
<i>Eumerus litoralis</i>	749	16	8	<i>Homalota dimidiata</i>	514	11	1
<i>Eupithecia linariata</i>	64	2	6	<i>Hybernia defoliaria</i>	703	15	6
<i>Euplocamus mediellus</i>	591	13	6	<i>Hybos pilipes</i>	661	14	8
<i>Eupteryx ornatipennis</i>	640	14	7	<i>Hydaticus cinereus</i>	95	2	1
<i>Evania fulvipes</i>	257	6	3	<i>Hydræna testacea</i>	307	7	1
<i>Eyprepia russula</i>	21	1	5	<i>Hydrobius chalconotus</i>	243	6	1
<i>Falagria thoracica</i>	462	10	1	<i>Hydrocampa stratiotata</i>	495	11	6
<i>Fœnus assectator</i>	423	9	3	<i>Hydrochus elongatus</i>	359	8	1
<i>Forficula borealis</i>	560	12	3	<i>Hydræssa pygmæa</i>	681	15	7
<i>Formica rufa</i>	752	16	4	<i>Hydrometra stagnorum</i>	32	1	7
<i>Galeruca viburni</i>	371	8	2	<i>Hydrophilus caraboides</i>	159	4	1
<i>Galesus fuscipennis</i>	341	8	3	<i>Hydroporus Davisii</i>	343	8	1
<i>Galleria mellonella</i>	587	13	6	<i>Hydropsiche fulvipes</i>	601	13	4
<i>Gasterophilus salutiferus</i>	146	3	8	<i>Hydrotæa ciliata</i>	768	16	8
<i>Gastropacha quercifolia</i>	24	1	5	<i>Hydrõus piceus</i>	239	5	1
<i>Geotrupes lævis</i>	266	6	1	<i>Ilygrotus decoratus</i>	531	12	1
<i>Geranomyia unicolor</i>	573	12	8	<i>Ilykeus dilatatus</i>	373	8	4
<i>Gerris apicalis</i>	553	12	7	<i>Ilyleccetus dermestoides</i>	654	14	2
<i>Gibbium scotias</i>	342	8	2	<i>Ilylesinus scaber</i>	522	11	2
<i>Glaea subnigra</i>	268	6	5	<i>Hylotoma Stephensii</i>	65	2	3
<i>Glyphipteryx Linneella</i>	152	4	6	<i>Hylurgus piniperda</i>	104	3	2
<i>Gonepteryx rhamni</i>	173	4	5	<i>Ilypena crassalis</i>	288	6	6

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<i>Hypera fasciculosa</i>	116	3	2	<i>Macaria liturata</i>	132	3	6
<i>Hypogymna monacha</i>	767	16	5	<i>Macrocera stigma</i>	637	14	8
<i>Hypophlæus bicolor</i>	430	9	2	<i>Macrocnema unimaculata</i>	486	11	2
<i>Hypulus biflexuosus</i>	255	6	2	<i>Macroglossa stellatarum</i>	747	16	5
<i>Hyria auroraria</i>	523	11	6	<i>Macroples equiseti</i>	318	7	2
<i>Jassus reticulatus</i>	636	14	7	<i>Magdalis carbonarius</i>	212	5	2
<i>Ibalia cultellator</i>	22	1	3	<i>Malachius bispinosus</i>	167	4	2
<i>Ichneumon amatorius</i>	728	16	3	<i>Masoreus luxatus</i>	287	6	1
<i>Ichneumon atropos</i>	234	5	3	<i>Medeterus notatus</i>	162	4	8
<i>Idiocerus maculipennis</i>	733	16	7	<i>Megachile Willughbiella</i>	218	5	4
<i>Incurvaria masculella</i>	607	13	6	<i>Megatoma serra</i>	244	6	2
<i>Ino statices</i>	396	9	5	<i>Melandrya canaliculata</i>	155	4	2
<i>Ips 4-punctata</i>	306	7	1	<i>Melanippe Blomeri</i>	416	9	6
<i>Issus coleoptratus</i>	449	10	7	<i>Melasis buprestoides</i>	55	2	2
<i>Lagria hirta</i>	598	13	2	<i>Melecta punctata</i>	125	3	4
<i>Lamia nubila</i>	172	4	2	<i>Meliana flammea</i>	201	5	6
<i>Lamprias cyanocephalus</i>	282	6	1	<i>Melitea Selene</i>	386	9	4
<i>Lampronia luzella</i>	639	14	6	<i>Mellinus sabulosus</i>	580	13	4
<i>Lampronota crenicornis</i>	407	9	3	<i>Meloc brevicollis</i>	279	6	2
<i>Lampyrus noctiluca</i>	698	15	2	<i>Melolontha fullo</i>	406	9	1
<i>Laphria nigra</i>	94	2	8	<i>Melophagus ovinus</i>	142	3	8
<i>Larissa imbutata</i>	324	7	6	<i>Merodon clavipes</i>	98	2	8
<i>Lasiocampa medicaginis</i>	181	4	5	<i>Mesochorus sericans</i>	464	10	3
<i>Lasioglossum tricingulum</i>	448	10	4	<i>Mesoleptus Waltoni</i>	644	14	3
<i>Lathrobium terminatum</i>	650	14	1	<i>Messala Saundersii</i>	581	13	8
<i>Lathridius elongatus</i>	311	7	2	<i>Methoca ichneumonides</i>	329	7	4
<i>Laverna ochraceella</i>	735	16	6	<i>Mezium sulcatum</i>	232	5	2
<i>Lebia turcica</i>	87	2	1	<i>Microdon apiformis</i>	70	2	8
<i>Ledra aurita</i>	676	15	7	<i>Microdus calculator</i>	73	2	3
<i>Leia pulchella</i>	645	14	8	<i>Microgaster alvearius</i>	321	7	3
<i>Leiochiton Readii</i>	346	8	1	<i>Micropeplus tesseraula</i>	204	5	1
<i>Leiodes cinnamomea</i>	251	6	1	<i>Milesia speciosa</i>	34	1	8
<i>Leiphrona apicalis</i>	476	10	3	<i>Miltogramina punctata</i>	529	11	8
<i>Leistus fulvibarbis</i>	176	4	1	<i>Mimesa Shuck.</i>	25	1	4
<i>Lepidocera Birdella</i>	344	8	6	<i>Miris tritici</i>	701	15	7
<i>Leptis diadema</i>	713	15	8	<i>Miscodera Readii</i>	346	8	1
<i>Leptocerus ochraceus</i>	57	2	4	<i>Miselia bimaculosa</i>	177	4	5
<i>Leptogramma irrorana</i>	440	10	6	<i>Molana angustata</i>	716	15	4
<i>Leptomorphus Walkeri</i>	365	8	8	<i>Molophilus brevipennis</i>	444	10	8
<i>Leptura apicalis</i>	362	8	2	<i>Molochus minor</i>	11	1	2
<i>Lesteva Leachii</i>	303	7	1	<i>Monocharmus sartor</i>	219	5	2
— <i>dichrous</i>	<i>ib.</i>			<i>Mononyclus pseudacori</i>	292	7	2
<i>Leucania litoralis</i>	157	4	5	<i>Mordella abdominalis</i>	483	11	2
<i>Libellula rubicunda</i>	712	15	4	<i>Musca chloris</i>	549	12	8
<i>Licinus depressus</i>	75	2	1	<i>Mutilla ephippium</i>	77	2	4
<i>Linnæitis Camilla</i>	124	3	5	<i>Mycetia hirta</i>	502	11	1
<i>Limnophilus elegans</i>	488	11	4	<i>Mycetophagus piceus</i>	156	4	1
<i>Limnobia ocellaris</i>	50	1	8	<i>Mymar pulchellus</i>	411	9	3
<i>Lissonota Græv.</i>	107	9	3	<i>Myopa fulvipes</i>	677	15	8
<i>Lithonia solidaginis</i>	683	15	5	<i>Myrmecina Latreillii</i>	265	6	4
<i>Lithosia muscerda</i>	36	1	5	<i>Nascia cilialis</i>	559	12	6
<i>Livia junceorum</i>	492	11	7	<i>Nebria livida</i>	6	1	1
<i>Livilla ulicis</i>	625	13	7	<i>Necrobia ruficollis</i>	350	8	2
<i>Lixus angustatus</i>	542	12	2	<i>Necrodes littoralis</i>	334	7	1
<i>Lobophora polyommata</i>	81	2	6	<i>Necrophorus germanicus</i>	71	2	1
<i>Locusta Christi</i>	608	13	3	<i>Necydalis minor</i>	11	1	2
<i>Lomechusa dentata</i>	110	9	1	<i>Neides elegans</i>	150	4	7
<i>Lomechusa flavicauda</i>	761	16	8	<i>Nemosoma elongata</i>	327	7	2
<i>Lophyrus pini</i>	54	2	3	<i>Nemotelus nigritus</i>	729	16	8
<i>Lucanus cervus</i>	490	11	1	<i>Nepa cinerea</i>	700	15	7
<i>Lucina fasciata</i>	621	13	8	<i>Nitidula colon</i>	675	15	1
<i>Luperus brassicæ</i>	370	8	2	<i>Nola monachalis</i>	428	9	6
<i>Lycena dispar</i>	12	1	5	<i>Nomada Dalii</i>	419	9	4
<i>Lycoperdina bovistæ</i>	355	8	2	<i>Nonagria vectis</i>	459	10	5
<i>Lycus minutus</i>	263	6	2	<i>Nosodendron fasciculare</i>	246	6	2
<i>Lyda fasciata</i>	381	8	3	<i>Noterus sparsus</i>	236	5	1
<i>Lygaeus equestris</i>	481	10	7	<i>Nothus bipunctatus</i>	538	12	2
<i>Lymexylon navale</i>	382	8	2	<i>Notiophilus rufipes</i>	254	6	1

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Notodonta dromedarius	739	16	5	Philalcea Juliana	583	13	6
Notonecta maculata	10	1	7	Philanthus androgynus	273	6	4
Nudaria mundana	400	9	5	Philonthus marginatus	610	13	1
Nycteribia Latreillii	277	6	8	Phlogophora lucipara	619	13	5
Nyssia zonaria	615	13	6	Phora abdominalis	437	10	8
Obrium cantharinum	91	2	2	Phryganea minor	592	13	4
Ochthebius hibernicus	250	6	1	Phthiria pulicaria	521	11	8
Ocyptera brassicaria	629	14	8	Phycita pinguis	233	5	6
Odacantha melanura	227	5	1	Physoscelus <i>St. Farg.</i>	656	14	4
Odonestis pini	7	1	5	Phytomyza lateralis	393	9	8
Odontia dentalis	563	12	6	Phytosus spinifer	718	15	1
Odynerus parietinus	137	3	4	Pieris crataegi	360	8	5
Æcophora sulphurella	408	9	6	Pimpla æthiops	214	5	3
Ædemera sanguinicollis	390	9	2	Pipiza biguttata	669	14	8
Æstrus pictus	106	3	8	Pipunculus pratorum	757	16	8
Omaseus aterrimus	15	1	1	Platycephala planifrons	725	16	8
Omophlus armeriæ	622	13	2	Platycerus caraboides	274	6	1
Onthophagus taurus	52	2	1	Platygaster Boscii	309	7	3
Onthophilus sulcatus	220	5	1	Platyptera <i>Meig.</i>	18	1	8
Oomorpha concolor	347	8	2	Platypteryx falcataria	555	12	6
Opatrum tibiale	319	7	2	Platypus cylindrus	51	2	2
Opetia lonchopterooides	489	11	8	Platyrhinus latirostris	723	16	2
Ophion ventricosus	600	13	3	Platystoma seminationis	505	11	8
Ophiusa lusoria	475	10	5	Platyura flavipes	134	3	8
Ophonus germanus	191	4	1	Plusia illustris	731	16	5
Opilus fasciatus	270	6	2	Pocilus lepidus	187	4	1
Orchesia fasciata	197	5	2	Pogonus Burrelli	47	1	1
Orchestes Waltoni	678	15	2	Polia occulta	248	6	5
Orgyia gonostigma	378	8	5	Polistichus fasciolatus	223	5	1
Ornithomyia fringillina	585	13	8	Polycentropus irroratus	544	12	4
Ortalis guttata	649	14	8	Polydrusus speciosus	278	6	2
Orthosia lunosa	237	5	5	Polyommatus <i>Lat.</i>	12	1	5
Orthotænia turionella	364	8	6	Pompilus rufipes	238	5	4
Oryssus coronatus	460	10	3	Pontia Daphidice †	48	1	5
Osmia parietina	222	5	4	Porphyrops Wilsoni	541	12	8
Otorhynchus maurus	690	15	2	Porrectaria albicosta	687	15	6
Ourapteryx sambucaria	508	11	6	Prionus coriarius	746	16	2
Oxybelus argentatus	480	10	4	Pristomerus vulnerator	624	13	3
Oxycera Morrisii	441	10	8	Proctotrupes areolator	744	16	3
Oxyporus maxillosus	418	9	1	Prostemma guttula	684	15	7
Pachyennemia hippocastanaria	611	13	6	Psammodius sulcicollis	258	6	1
Pachygaster Leachii	42	1	8	Psen equestris	25	1	4
Pachymerus <i>Grav.</i>	624	13	3	Psithyrus rupestris	468	10	4
Pachyrhinus comari	558	12	2	Psocus fenestratus	648	14	4
Pæderus fuscipes	108	3	1	Psodos equestrata	424	9	6
Pædisca semifasciana	571	12	6	Psyche radiella	332	7	5
Pancalia Woodiella	304	7	6	Psychoda 6-punctata	745	16	8
Panorpa germanica	696	15	4	Psylla fraxini	565	12	7
Panurgus ursinus	101	3	4	Pteromalus <i>Dalm.</i>	166	4	3
Papilio Podalirius	578	13	5	Pterophorus spilodactylus	161	4	6
Paragus sigillatus	593	13	8	Pterostichus elongatus	196	5	1
Paramecosoma bicolor	606	13	2	Ptilophora plumigera	328	7	5
Parnus impressus	80	2	1	Ptinus 6-punctatus	646	14	2
Patrobis alpinus	192	4	1	Pulex talpæ	114	3	7
Pelophila borealis	302	7	1	Pygæra Bucephala	530	12	5
Peltastes pini	4	1	3	Pyrallis cribralis	527	11	6
Pemphredon unicolor	632	14	4	Pyrausta cingulalis	128	3	6
Pentatoma cœrulea	20	1	7	Pyrochroa coccinea	590	13	2
Penthina Grevillana	567	12	6	Pyrrhocoris apterus	465	10	7
Penthophera nigricans	213	5	5	Quedius lateralis	638	14	1
Perilampus pallipes	158	4	3	Ranatra linearis	281	6	7
Perla cephalotes	190	4	4	Raphidia ophiopsis	37	1	4
Peronea ruficostana	16	1	6	Reduvius	453	10	7
Peronecera fuscipennis	589	13	8	Rhagio Heyshami	705	15	8
Pezomachus Hopei	536	12	3	Rhagium inquisitor	750	16	2
Phagonia smaragdina	427	9	3	Rhamphomyia pennata	517	11	8
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Phibalapteryx virgata	623	13	6	Rhingia campestris	182	4	8

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Rhynchites similis	642	14	2	Tasgius rufipes	438	10	1
Rhyarochromus maculipennis	612	13	7	Telcus elatior	333	7	3
Rhyphus fenestralis	102	3	8	Telephorus cyaneus	215	5	2
Rhyzophagus bipustulatus	579	13	2	Tenebrio obscurus	331	7	2
Ripiphorus paradoxus	19	1	2	Tenthredo cingulata	692	15	3
Rogas balteatus	512	11	3	Tephritis cornuta	241	5	8
Rugilus fragilis	168	4	1	Teras excavana	699	15	6
Saperda Atkinsoni	275	6	2	Tethea octogena	272	6	5
Sapromyza litura	605	13	8	Tetratoma ancora	123	3	1
Sapyga clavicornis	532	12	4	Tetyra fuliginosa	685	15	7
Sargus Reanurii	305	7	8	Thanasimus fornicarius	398	9	2
Saropoda bimaculata	361	8	4	Thecla pruni	264	6	5
Sarothrips ramosanus	29	1	6	Thera confierata	519	11	6
Sarrotrium muticum	314	7	2	Therion anictum	736	16	3
Seava unicolor	509	11	8	Thrips dispar	748	16	7
Scaphidium 4-maculatum	379	8	1	Throscus obtusus	163	4	2
Scatophaga scybalaria	405	9	8	Thyatira batis	72	2	5
Scelio rugosulus	325	7	3	Thymalus limbatus	39	1	1
Scenopinus rugosus	609	13	8	Tillus unifasciatus	267	6	2
Schizocerus pallipes	58	2	3	Tinea corticella	511	11	6
Sciophila sylvatica	641	14	8	Tingis oxvaccinæ	741	16	7
Scolobates vesparum	198	5	3	Tiphia minuta	664	14	4
Scolytus destructor	43	1	2	Tipula longicornis	493	11	8
Scopelosoma satellitia	635	14	5	Tortrix galiæna	763	16	6
Scopula longipedalis	312	7	6	Trachea atriplicis	431	9	5
Sepsis annulipes	245	6	8	Trachys minuta	686	15	2
Serrocerus pectinatus	375	8	2	Trichiosoma laterale	49	1	3
Sesia bombylifomis	40	1	5	Trichius variabilis	286	6	1
Siagonium quadricorne	23	1	1	Trigonometopus frontalis	689	15	8
Silpha opaca	742	16	1	Triplæna consequa	348	8	5
Simacthis Myllæra	320	7	6	Triplax ænea	706	15	1
Simploceria semistriata	335	7	2	Tritoma bipustulatum	498	11	1
Simulium trifasciatum	765	16	8	Trochilium bembeciforme	372	8	5
Simodendron cylindricum	478	10	1	— apiforme	<i>ib.</i>		
Siona dealbata	691	15	6	Trogosita mauritanica	734	16	2
Sirex juvenens	253	6	3	Trogus atropis	234	5	3
Sitaris humeralis	340	8	2	Tropidia rufomaculata	401	9	8
Smerinthus ocellatus	482	11	5	Trox sabulosus	574	12	1
Smicra Macleanii	472	10	3	Tryphon varitarsus	399	9	3
Spalangia nigra	740	16	3	Trypoxylon clavicerum	652	14	4
Sparasion frontale	317	7	3	Typhœa fumata	702	15	1
Speranza sylvaria	225	5	6	Tyrophaga casei	126	3	8
Spercheus emarginatus	394	9	1	Uloma fagi	363	8	2
Sphæridium 4-maculatum	518	11	1	Vanessa Antiope	96	2	5
Spheriestes foveolatus	662	14	2	Velia rivulorum	2	1	7
Sphæromias albomarginatus	285	6	8	Venilia 4-maculata	647	14	6
Sphinx carolina	195	5	5	Venusia cambrica	759	16	6
Spilosoma Walkerii	92	2	5	Vespa rufa	760	16	4
Spilonota marmorana	551	12	6	Volucella inflata	452	10	8
Staphylinus pubescens	758	16	1	Xanthia ventrago	84	2	5
Stauropus fagi	674	15	5	Xyela pusilla	30	1	3
Stenocera Walkeri	596	13	3	Xyina exoleta	256	6	5
Stenus Kirbii	164	4	1	Xylonomus pilicornis	353	8	3
Steropus concinnus	171	4	1	Xylophilus oculatus	299	7	2
— æthiops Panz	<i>ib.</i>			Xylosta bifasciata	425	9	8
Stilbia anomala	631	14	5	Yponomeuta echiella	412	9	6
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Stomoxys siberita	665	14	8	Zabrus obesus	188	4	1
Strongylus imperialis	339	8	1	Zarwa fasciata	97	2	3
Stylops Dalii	226	5	2	Zeiraphera bastiana	711	15	6
Syntomium nigroæneum	228	5	1	Zeze albiditarsus	415	9	3
Syrphus lucorum	753	16	8	Zerene plumbata	643	14	6
Tabanus alpinus	78	2	8	Zerynthia latenteria	296	7	6
Tachydromia arrogans	477	10	8	Zeuzera æsculi	722	16	5
Tachyporus littoreus	762	16	1	Zonitis testacea	112	3	2
Tanypus nebulosus	501	11	8	Zygana filipendule	547	12	5

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2. Cychrus rostratus	426	9	54. Parnus impressus	80	2
3. Carabus exasperatus	446	10	55. Heterocerus obsoletus	224	5
4. Calosoma sycophanta	330	7	Fam. ELMIDÆ.		
5. Pelophila borealis	302	7	56. Elmis Volckmari	294	7
6. Nebria livida	6	1	Fam. HELOPHORIDÆ.		
7. Helobia Gyllenhalii	103	3	57. Hydrochus elongatus	359	8
8. Leistus fulvibarbis	176	4	58. Elophorus fennicus	466	10
9. Brachinus sclopeta	554	12	59. Enicocerus Gibsoni	291	7
10. Drypta emarginata	454	10	60. Ochthebius libernicus	250	6
11. Odacantha melanura	227	5	61. Hydræna testacea	307	7
12. Polistichus fasciolatus	223	5	Fam. HYDROPHILIDÆ.		
13. Tarus basalis	235	5	62. Spercheus emarginatus	394	9
14. Lebia turcica	87	2	63. Hydræus piceus	239	5
15. Lamprias cyanocephalus	282	6	64. Hydrophilus caraboides	159	4
16. Demetrias monostigma	119	3	65. Hydrobius chalconotus	243	6
17. Dromius spilotus	231	5	66. Berosus æriceps	240	5
18. Clivina collaris	175	4	Fam. SPHÆRIDIIDÆ.		
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20. Leiochiton Readii	346	8	Fam. COPRIDÆ.		
21. Steropus concinnus	171	4	68. Onthophagus taurus	52	2
22. Omaseus aterrimus	15	1	69. Copris lunaris	414	9
23. Pterostichus elongatus	196	5	Fam. APHODIIDÆ.		
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25. Pogonus Burrellii	47	1	71. Psammodytes sulcicollis	258	6
26. Ophonus germanus	191	4	Fam. TROGIDÆ.		
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28. Zabrus obesus	188	4	Fam. GEOTRUPIDÆ.		
29. Masoreus luxatus	287	6	73. Geotrupes lævis	266	6
30. Pœcilus lepidus	187	4	74. Bolboceras mobilicornis	259	6
31. Calathus latus	184	4	Fam. MELOLONTHIDÆ.		
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33. Agonum austriacum	183	4	76. Anisoplia suturalis	526	11
34. Callistus lunatus	180	4	77. Trichius variabilis	286	6
35. Chlœnius sulcicollis	83	2	78. Cetonia stictica	374	8
36. Licinus depressus	75	2	Fam. LUCANIDÆ.		
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38. Blemus micros	310	7	80. Lucanus Cervus	490	11
39. Aëpus fulvescens	203	5	81. Platycerus caraboides	274	6
40. Cilleum laterale	200	5	Fam. HISTERIDÆ.		
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42. Notiophilus rufipes	254	6	83. Hister 4-maculatus	470	10
43. Blethisa multipunctata	326	7	84. Onthophilus sulcatus	220	5
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48. Colymbetes consobrinus	207	5			
49. Hydaticus cinereus	95	2			
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Fam. NITIDULID.E.			103. <i>Silpha opaca</i>	742	16
86. <i>Strongylus imperialis</i>	339	8	104. <i>Necrodes littoralis</i>	334	7
87. <i>Nitidula colon</i>	675	15	105. <i>Necrophorus germanicus</i>	71	2
88. <i>Thymalus linubatus</i>	39	1	Fam. STAPHYLINID.E.		
89. <i>Ips 4-punctata</i>	306	7	106. <i>Emus hirtus</i>	534	12
Fam. ENGID.E.			107. <i>Staphylinus pubescens</i>	758	16
90. <i>Mycetæa hirta</i>	502	11	108. <i>Tasgius rufipes</i>	438	10
91. <i>Antherophagus similis</i>	546	12	109. <i>Quedius lateralis</i>	638	14
92. <i>Cryptophagus populi</i>	160	4	110. <i>Philonthus marginatus</i>	610	13
93. <i>Byturus tomentosus</i>	618	13	111. <i>Cafius fucicola</i>	322	7
94. <i>Typhæa fumata</i>	702	15	112. <i>Achenium depressum</i>	115	3
Fam. MYCETOPHAGID.E.			113. <i>Lathrobium terminatum</i>	650	14
95. <i>Mycetophagus picus</i>	156	4	114. <i>Tachyporus littoreus</i>	762	16
96. <i>Tetratoma aucora</i>	123	3	115. <i>Syntonium nigroæneum</i>	228	5
Fam. TRITOMID.E.			116. <i>Lesteva Leachii</i>	303	7
97. <i>Triplax ænea</i>	706	15	117. <i>Siagonium quadricorne</i>	23	1
98. <i>Tritoma bipustulatum</i>	498	11	118. <i>Bledius Skrimshirii</i>	143	3
Fam. DIAPERID.E.			119. <i>Oxyporus maxillosus</i>	418	9
99. <i>Diaperis boleti</i>	358	8	120. <i>Phytosus spinifer</i>	718	15
Fam. ANISOTOMID.E.			121. <i>Callicerus Spencii</i>	443	10
100. <i>Leiodes cinnamomea</i>	251	6	122. <i>Homalota dimidiata</i>	514	11
Fam. SCAPHIDID.E.			123. <i>Lomechusa dentata</i>	410	9
101. <i>Scaphidium 4-maculatum</i>	379	8	124. <i>Dianöus cærulescens</i>	107	3
Fam. CHOLEVID.E.			125. <i>Stenus Kirbii</i>	164	4
102. <i>Catops dissimulator</i>	566	12	126. <i>Pæderus fuscipes</i>	108	3
			127. <i>Rugilus fragilis</i>	168	4
			128. <i>Falagria thoracica</i>	462	10
			Fam. PSELAPHID.E.		
			129. <i>Arcopagus puncticollis</i>	422	9
			130. <i>Bryaxis sulcicollis</i>	315	7

ORDER I. COLEOPTERA. VOL. II.

Fam. CORTICARID.E.			Fam. DIRC.EID.E.		
131. <i>Holoparamecus depressus</i>	614	13	148. <i>Hypulus biflexuosus</i>	255	6
132. <i>Paramecosoma bicolor</i>	606	13	149. <i>Hallomenus flexuosus</i>	474	10
133. <i>Latridius elongatus</i>	311	7	150. <i>Orchesia fasciata</i>	197	5
134. <i>Bitoma crenata</i>	283	6	Fam. MORDELLID.E.		
Fam. CERYLONID.E.			151. <i>Mordella abdominalis</i>	483	11
135. <i>Rhizophagus bipustulatus</i>	579	13	152. <i>Ripiphorus paradoxus</i>	19	1
Fam. TENEBRIONID.E.			Fam. CANTHARID.E.		
136. <i>Hypophæus bicolor</i>	430	9	153. <i>Sitaris humeralis</i>	340	8
137. <i>Tenebrio obscurus</i>	331	7	154. <i>Edemera sanguinicollis</i>	390	9
138. <i>Uloma fagi</i>	363	8	155. <i>Nothus bipunctatus</i>	538	12
139. <i>Opatrum tibiale</i>	319	7	<i>clavipes</i>	<i>ib.</i>	
140. <i>Sarrotrium muticum</i>	314	7	156. <i>Conopalpus (Zonitis) testaceus</i>	112	3
141. <i>Bolitophagus agricola</i>	586	13	157. <i>Pyrochroa coccinea</i>	590	13
Fam. HELOPID.E.			158. <i>Meloe brevicollis</i>	279	6
142. <i>Helops pallidus</i>	298	7	159. <i>Cantharis vesicatoria</i>	658	14
Fam. BLAPSID.E.			160. <i>Lymexylon navale</i>	382	8
143. <i>Blaps obtusa</i>	148	4	161. <i>Hylecæus dermestoides</i>	654	14
Fam. MELANDRYID.E.			162. <i>Antheicus tibialis</i>	714	15
144. <i>Melandrya canaliculata</i>	155	4	163. <i>Xylophilus ocellatus</i>	299	7
Fam. CISTELID.E.			Fam. PTINID.E.		
145. <i>Omophilus armeriæ</i>	622	13	164. <i>Ptinus 6-punctatus</i>	646	14
146. <i>Cistela ceramboides</i>	594	13	165. <i>Mezium sulcatum</i>	232	5
Fam. LAGRID.E.			166. <i>Gibbium scotias</i>	342	8
147. <i>Lagria hirta</i>	598	13	167. <i>Serrocerus pectinatus</i>	375	8
			168. <i>Anobium pertinax</i>	387	9

	Plate.	Vol.		Plate.	Vol.
Fam. DERMESTIDÆ.					
169. Dermestes lardarius	682	15	214. Hypera fasciculosa	116	3
170. Megatoma serra	244	6	215. Otiorhynchus maurus	690	15
171. Attagenus trifasciatus	247	6	216. Polydrusus speciosus	278	6
172. Aspidiphorus orbiculatus	450	10	217. Lixus angustatus	542	12
Fam. BYRRHIDÆ.					
173. Nosodendron fasciculare	246	6	218. Magdalis carbonarius	212	5
174. Oomorphus concolor	347	8	219. Apion difforme	211	5
175. Simplocaria semistriata	335	7	220. Rhynchites similis	642	14
176. Byrrhus Dennii	135	3	221. Attelabus curculionoides	710	15
177. Throschus obtusus	163	4	Fam. BRUCHIDÆ.		
Fam. BUPRESTIDÆ.					
178. Trachys minuta	686	15	222. Bruchus ater	754	16
179. Aphanisticus pusillus	262	6	Fam. ANTHRIBIDÆ.		
180. Agrilus chryseis	67	2	223. Platyrhinus latirostris	723	16
181. Buprestis nitidula	31	1	224. Anthribus albinus	726	16
182. Melasis buprestoides	55	2	Fam. SALPINGIDÆ.		
Fam. ELATERIDÆ.					
183. Elater aterrimus	694	15	225. Sphæriestes foveolatus	662	14
Fam. CYPHONIDÆ.					
184. Dascillus cervinus	216	5	Fam. TROGOSITIDÆ.		
185. Elodes pini	602	13	226. Trogosita mauritanica	734	16
Fam. LAMPYRIDÆ.					
186. Lycus miunus	263	6	Fam. CUCUJIDÆ.		
187. Lampyris noctiluca	698	15	227. Cucujus spartii	510	11
Fam. TELEPHORIDÆ.					
188. Telephorus cyaneus	215	5	Fam. PRIONIDÆ.		
Fam. MELYRIDÆ.					
189. Malachius bispinosus	167	4	228. Prionus coriarius	746	16
Fam. CLERIDÆ.					
190. Tillus unifasciatus	267	6	Fam. CERAMBYCIDÆ.		
191. Opilus fasciatus	270	6	229. Aromia moschata	738	16
192. Thanasimus formicarius	398	9	230. Monochamus sartor	219	5
193. Clerus alvearius	44	1	231. Lamia nubila	172	4
194. Necrobia ruficollis	350	8	232. Saperda Atkinsoni	275	6
195. Corynetes violaceus	351	8	233. Callidium striatum	295	7
Fam. CISIDÆ.					
196. Cis bidentatus	402	9	234. Clytus 4-punctatus	199	5
197. Cicones carpini	149	4	235. Oribium cantharinum	91	2
198. Nemosoma elongatum	327	7	236. Necydalis minor	11	1
199. Apate capucinus	271	6	Molorchus	ib.	
Fam. BOSTRICIDÆ.					
200. Platypus cylindrus	51	2	Fam. LEPTURIDÆ.		
201. Scolytus destructor	43	1	237. Rhagium inquisitor	750	16
202. Hylesinus scaber	522	11	238. Leptura apicalis	362	8
203. Hylurgus piniperda	104	3	Fam. CRIOCERIDÆ.		
Fam. CURCULIONIDÆ.					
204. Baris analis	766	16	239. Donacia typhæ	494	11
205. Cossonus Tardii	59	2	240. Macrolea equiseti	318	7
206. Gymnætron graminis	627	14	241. Crioceris puncticollis	323	7
207. Mononychus pseudacori	292	7	Fam. CASSIDIDÆ.		
208. Ceutorhynchus geranii	670	14	242. Cassida salicorniæ	127	3
209. Pachyrhinus comari	558	12	Fam. GALERUCIDÆ.		
210. Acalles roboris	550	12	243. Galeruca viburni	371	8
211. Orchestes Waltoui	678	15	244. Adimonia 4-maculata	366	8
212. Anthonomus pomorum	562	12	245. Luperus brassicæ	370	8
213. Eriirhinus æthiops	634	14	246. Altica ochripes	630	14
			247. Macrocnema unimaculata	486	11
			248. Cardiapus Mathewsii	435	10
			Fam. CHRYSOMELIDÆ.		
			249. Clythra tridentata	582	13
			250. Cryptocephalus bipustulatus	35	1
			251. Helodes beccabungæ	506	11
			252. Chrysomela adonidis	111	3
			253. Cacicula scutellata	144	3
			254. Coccinella ocellata	208	5
			255. Endomychus coccineus	570	12
			256. Lycoperdina bovistæ	355	8

ORDER 2. DERMAPTERA. VOL. III.

	Plate.	Vol.		Plate.	Vol.
Fam. FORFICULIDÆ.					
257. Forficula borealis	560	12	295. Cryptus bellosus	668	14
ORDER 3. DICTYOPTERA.					
Fam. BLATTIDÆ.					
258. Blatta lapponica.	556	12	296. Agriotypus armatus.	389	9
ORDER 4. ORTHOPTERA.					
Fam. ACHETIDÆ.					
259. Gryllotalpa vulgaris	456	10	297. Pezomachus Hopci	536	12
260. Acheta sylvestris	293	7	298. Mesochorus sericans	464	10
Fam. LOCUSTIDÆ.					
261. Aerida Bingleii	82	2	299. Lampronota crenicornis	407	9
262. Loensta Christii	608	13	Lissonota Grav.	ib.	
263. Aerydium subulatum	439	10	300. Pimpla æthiops	214	5
ORDER 5. STREPSIPTERA.					
264. Stylops Dalii	226	5	301. Peltastes (pini) dentatus	4	1
265. Elenchus Walkerii	385	8	302. Euceros albitarsus	660	14
266. Halictophagus Curtisii	433	9	303. Banehus Farrani.	588	13
ORDER 6. HYMENOPTERA.					
Fam. TENTHREDINIDÆ.					
267. Cimbex 10-maculata	41	1	304. Therion anietum	736	16
268. Trichiosoma laterale	49	1	Anomalon Grav.	ib.	
269. Clavellaria marginata	93	2	305. Ophion ventricosus	600	13
270. Zaræa fasciata	97	2	306. Pristomerus vulnerator	624	13
271. Abia nigricornis	89	2	Pachymerus Grav.	ib.	
272. Lophyrus pini	54	2	307. Nyxononus pilicornis	353	8
273. Schizocerus pallipes	58	2	Fam. ADSCITIDÆ.		
Cryptus pallipes.	ib.		308. Bracon denigrator	69	2
274. Hylotoma Stephensii	65	2	309. Bassus calculator	73	2
275. Athalia spinarum	617	14	Microdus Nees. ab Essen.	ib.	
276. Allantus flavipes.	764	16	310. Microgaster alvearius	321	7
277. Tenthredo cingulata	692	15	311. Leiophron apicalis	476	10
278. Emphytus fasciatus	436	10	312. Zele albiditarsus.	415	9
279. Cræsus septentrionalis.	17	1	313. Chelonus Wesmællii	672	14
280. Cladius pilicornis	457	10	314. Rogas balteatus	512	11
281. Lyda fasciata	381	8	315. Hecabolus sulcatus.	507	11
282. Cæphus femoratus	301	7	316. Alysia Apii	141	3
Fam. XIPIHYDRIDÆ.					
283. Xyela pusilla	30	1	317. Chænon anceps	289	6
Fam. SIRICIDÆ.					
284. Oryssus coronatus	460	10	Chælinius Nees. ab Essen.	ib.	
285. Sirex juveneus	253	6	318. Aphidius cirsi	383	8
Fam. EVANIDÆ.					
286. Evania fulvipes	257	6	Fam. DIPLOLEPIDÆ or CYNIPIDÆ.		
287. Fœnus assectator	423	9	319. Ibalia eultellator	22	1
Fam. ICHNEUMONIDÆ.					
288. Ichneumon amatorius	728	16	320. Cynips nervosa	688	15
289. Stilpnus dryadum	388	9	Fam. PROCTOTRUPIDÆ.		
290. Mesoleptus Waltoni	644	14	321. Galesus fuscipennis.	341	8
291. Tryphon varitarsus	399	9	322. Cinetus dorsiger.	380	8
292. Anomalon vesparum	198	5	323. Hælorus anomalipes	403	9
Scolobates vesparum	ib.		324. Proctotrupes areolator.	744	16
293. Trogus atropus	234	5	325. Dryinus cursor	206	5
Ichneumon atropus.	ib.		326. Bethylus fulvicornis	720	15
294. Alomya victor	120	3	327. Sparasion frontale	317	7
			328. Ceraphron Halidayi	249	6
			329. Teleas elator.	333	7
			330. Seelio rugosulus.	325	7
			331. Platygaster Boseii	309	7
			332. Mymar pulchellus	411	9
			Fam. SPALANGIDÆ.		
			333. Spalangia nigra	740	16
			Fam. CYNIPIDÆ or CHALCIDIDÆ.		
			334. Eulophus damicornis	133	3
			335. Encyrtus vitis	395	9
			336. Stenocera Walkeri	596	13
			337. Cleonymus maculipennis	194	4
			338. Colas dispar	166	4
			339. Phægonia smaragdina	427	9
			340. Smiera Macleanii	472	10
			341. Perilampus pallipes.	158	4
			342. Callimome subterraneus	552	12
			343. Decatoma Cooperi	345	8

ORDER 6. HYMENOPTERA. VOL. IV.

	Plate.	Vol.
Fam. CHRYSIDIDÆ.		
344. <i>Cleptes nitidula</i>	724	16
345. <i>Hedychrum ardens</i>	38	1
346. <i>Chrysis fulgida</i>	8	1
Fam. FORMICIDÆ.		
347. <i>Formica rufa</i>	752	16
348. <i>Myrmecina Latreillii</i>	265	6
Fam. MUTILLIDÆ.		
349. <i>Mutilla ephippium</i>	77	2
350. <i>Methocia ichneumonides</i>	329	7
Fam. SCOLIIDÆ.		
351. <i>Tiphia minuta</i>	664	14
Fam. SAPYGIDÆ.		
352. <i>Sapyga clavicornis</i>	532	12
Fam. POMPILIDÆ.		
353. <i>Pompilus rufipes</i>	238	5
354. <i>Ceropaes variegatus</i>	756	16
Fam. SPHEGIDÆ.		
355. <i>Ammophila campestris</i>	604	13
Fam. LARRIDÆ.		
356. <i>Astata victor</i>	261	6
357. <i>Oxybelus argentatus</i>	480	10
Fam. CRABRONIDÆ.		
358. <i>Trypoxolon clavicercum</i>	652	14
359. <i>Crabro subpunctatus</i>	680	15
360. <i>Rhopalum tibiale</i>	656	14
361. <i>Diodontus gracilis</i>	496	11
362. <i>Pemphredon unicolor</i>	632	14
363. <i>Mellinus sabulosus</i>	580	13
364. <i>Alyson Kennedii</i>	584	13
365. <i>Gorytes bicinctus</i>	524	11
366. <i>Psen equestris</i>	25	1
Fam. CERCERIDÆ.		
367. <i>Cerceris læta</i>	269	6
368. <i>Philanthus androgynus</i>	273	6
Fam. VESPIDÆ.		
369. <i>Odynerus parietinus</i>	137	3
370. <i>Eumenes atricornis</i>	13	1
371. <i>Vespa rufa</i>	760	16
Fam. ANDRENIDÆ.		
372. <i>Hylæus dilatatus</i>	373	8
373. <i>Colletes fodiens</i>	85	2
374. <i>Dasygaster Swammerdamella</i>	367	8
375. <i>Andrena Kirbii</i>	129	3
376. <i>Lasioglossum tricingulum</i>	448	10
<i>Halictus</i>	<i>ib.</i>	
Fam. APIDÆ.		
377. <i>Panurgus ursinus</i>	101	3
378. <i>Chelostoma florissomnis</i>	628	14
379. <i>Heriades truncorum</i>	504	11

	Plate.	Vol.
380. <i>Anthidium manicatum</i>	61	2
381. <i>Osmia parietina</i>	222	5
382. <i>Megachile Willughbiella</i>	218	5
383. <i>Cœlioxyx vectis</i>	349	8
384. <i>Epeolus variegatus</i>	516	11
385. <i>Nomada Dalii</i>	419	9
386. <i>Melecta punctata</i>	125	3
387. <i>Anthophora Haworthana</i>	357	8
388. <i>Saropoda bimaculata</i>	361	8
389. <i>Psithyrus rupestris</i>	468	10
390. <i>Bombus ericetorum</i>	564	12
391. <i>Apis mellifica</i>	769	16

ORDER 7. NEUROPTERA.

Fam. LIBELLULIDÆ.

392. <i>Libellula rubicunda</i>	712	15
393. <i>Cordulia Curtisi</i>	616	13
394. <i>Agrion rubellum</i>	732	16

Fam. EPHEMERIDÆ.

395. <i>Ephemera cognata</i>	708	15
396. <i>Baetis dispar</i>	484	11

Fam. PANORPIDÆ.

397. <i>Panorpa germanica</i>	696	15
398. <i>Boreus hyemalis</i>	118	3

Fam. HEMEROBIDÆ.

399. <i>Chrysopa abbreviata</i>	520	11
400. <i>Hemerobius fimbriatus</i>	202	5

Fam. PSOCIDÆ.

401. <i>Coniopteryx psociformis</i>	528	11
402. <i>Psocus fenestratus</i>	648	14

Fam. RAPHDIDÆ.

403. <i>Raphidia ophiopsis</i>	37	1
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Fam. PERLIDÆ.

404. <i>Perla cephalotes</i>	190	4
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ORDER 8. TRICHOPTERA.

Fam. PHRYGANIDÆ.

405. <i>Agrypnia Pagetana</i>	540	12
406. <i>Limnephilus elegans</i>	488	11
407. <i>Phryganea minor</i>	592	13

Fam. HYDROPSYCHIDÆ.

408. <i>Polycentropus irroratus</i>	544	12
409. <i>Hydropsyche fulvipes</i>	601	13

Fam. LEPTOCERIDÆ.

410. <i>Leptocerus ochraceus</i>	57	2
411. <i>Molanna angustata</i>	716	15

Fam. PSYCHOMIDÆ.

412. <i>Chimarra marginata</i>	561	12
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Fam. ACENTROPIDÆ.

413. <i>Acentropus Garnonsii</i>	497	11
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ORDER 9. LEPIDOPTERA. VOL. V.

	Plate.	Vol.		Plate.	Vol.
Fam. PAPHIIONIDÆ.			Fam. ARCTIIDÆ.		
414. Papilio Podalirius	578	13	457. Orgyia gonostigina	378	8
415. Pieris Cratægi	360	8	458. Arctia cænosa	68	2
416. Gonepteryx Rhamni	173	4	459. Arcturus Sparshalli	336	7
417. Colias Hylæe	242	6	460. Spilosoma Walkerii	92	2
418. Pontia Daplidice	48	1	461. Penthophera nigricans	213	5
419. Hipparchia Hero	205	5	462. Eyprepia russula	21	1
420. — Arcanius	205*	5	Fam. LITHOSIDÆ.		
421. Vanessa Antiope	96	2	463. Eulepia cribrum	56	2
422. Apatura Iris	338	8	464. Callinorpha jacobæe	499	11
423. Limenitis Camilla	124	3	465. Deiopeia pulchra	169	4
424. Argynnis Aglaia	290	7	466. Lithosia muscerda	36	1
425. Melitæa Selene	386	9	467. Nudaria mundana	400	9
426. Hamearis Lucina	316	7	468. Psyche radiella	332	7
427. Thecla Pruni	264	6	Fam. NOCTUIDÆ.		
428. Lycæna dispar	12	1	469. Cerapteryx hibernicus	451	10
<i>Polyommatus Lat.</i>	<i>ib.</i>		470. Agrotis ciucra	165	4
Fam. HESPERIDÆ.			471. Caradrina bilinea	651	14
429. Hesperia Actæon	442	10	472. Orthosia lunosa	237	5
Fam. ZYGÆNIDÆ.			473. Glæa subnigra	268	6
430. Ino statices	396	9	474. Scopelosoma satellitia	635	14
431. Zygæna filipendulæ	547	12	475. Triphaena consequa	348	8
Fam. SPHINGIDÆ.			476. Xylina exoleta	256	6
432. Sesia bombyliiformis	40	1	477. Lithonia solidaginis	683	15
433. Macroglossa stellatarum	747	16	478. Apamea Haworthii	260	6
434. Deilephila euphorbiæ	3	1	479. Hadena cucubali	308	7
435. Daphnis Nerii	626	14	480. Achætea sprete	117	3
436. Sphinx carolina	195	5	481. Misela bimaculosa	177	4
437. Acherontia Atropos	147	4	482. Trachea atriplicis	431	9
438. Smerinthus ocellatus	482	11	483. Acronycta salicis	136	3
Fam. HEPIALIDÆ.			484. Polia occulta	248	6
439. Trochilium bembeciforme	372	8	485. Hapalia præcox	539	12
<i>apiforme</i>	<i>ib.</i>		486. Diphthera Orion	404	9
440. Ageria ichneumoniformis	53	2	487. Phlogophora lucipara	619	13
441. Hepialus sylvinus	185	4	488. Thyatira batis	72	2
442. Cossus ligniperda	60	2	489. Tethea octogena	272	6
443. Zeuzera Esculi	722	16	490. Xanthia centrago	84	2
Fam. BOMBYCIDÆ.			491. Gortyna micacea	252	6
444. Stauropus fagi	674	15	492. Nonagria vectis	459	10
445. Pygæra Buccphala	530	12	493. Leucania litoralis	157	4
446. Clostera anachoreta	715	15	494. Cucullia asteris	45	1
447. Notodonta dromedarius	739	16	495. Chærolea delphinii	76	2
448. Drymonia dodonæa	755	16	Fam. PHYTOMETRIDÆ.		
<i>Dimorpha Hüb.</i>	<i>ib.</i>		496. Plusia illustris	731	16
449. Cerura latifascia	193	4	Fam. HEMIGEOMETRIDÆ.		
450. Ptilophora plumigera	328	7	497. Heliothis scutosa	595	13
451. Endromis versicolor	434	10	498. Anarta myrtilli	145	3
452. Clisiocampa castrensis	229	5	499. Acontia catena	276	6
453. Lasiocampa medicaginis	181	4	500. Erastria ostrina	140	3
454. Dendrolimus pini	7	1	501. Acosmetia fuscula	356	8
<i>Odonestis potatoria</i>	<i>ib.</i>		502. Stilbia anomalata	631	14
455. Gastropacha quercifolia	24	1	503. Ophiusa lusoria	475	10
456. Hypogyyna monacha	767	16	504. Catocala elocata	217	5
			505. Euclidia glyphica	659	14
			506. Brephla notha	121	3

ORDER 9. LEPIDOPTERA. VOL. VI.

Fam. GEOMETRIDÆ.			Fam. ARCTIIDÆ.		
507. Psodos equestrata	424	9	512. Bupalus favillaccarius	33	1
508. Nyssia zonaria	615	13	513. Aspilates gilvaria	467	10
509. Aleis scricearia	113	3	514. Hipparchus smaragdarius	300	7
510. Cleora cinetaria	82	2	515. Ennomis angularia	667	14
511. Speranza sylvaria	225	5	516. Eubolia cervinaria	707	15
			517. Zerynthia latentaria	296	7

	Plate.	Vol.		Plate.	Vol.
518. <i>Venusia cambrica</i>	759	16			
519. <i>Ephyra pictaria</i>	447	10			
Fam. PHALÆNIDÆ.					
520. <i>Charissa operaria</i>	105	3			
521. <i>Boarmia tetragonaria</i>	280	6			
522. <i>Hybernaria defoliaria</i>	703	15			
523. <i>Pachynemisia hippocastanaria</i>	611	13			
524. <i>Thera coniferata</i>	519	11			
525. <i>Lobophora polycommata</i>	81	2			
526. <i>Eupithecia linariata</i>	64	2			
527. <i>Hyria auroraria</i>	523	11			
528. <i>Venilia 4-maculata</i>	647	14			
529. <i>Siona dealbata</i>	691	15			
530. <i>Abraxas ulmata</i>	515	11			
531. <i>Zerene plumbata</i>	643	14			
532. <i>Electra albocrenata</i>	603	13			
533. <i>Larissa imbutata</i>	324	7			
534. <i>Phibalapteryx virgata</i>	623	13			
535. <i>Melanippe Blomeri</i>	416	9			
536. <i>Acidalia degeneraria</i>	384	8			
537. <i>Macaria liturata</i>	132	3			
538. <i>Ourapteryx sambucaria</i>	508	11			
Fam. FALCARIDÆ.					
539. <i>Platypteryx falcataria</i>	555	12			
Fam. TORTRICIDÆ.					
540. <i>Halias Quercana</i>	575	12			
541. <i>Tortrix galiana</i>	763	16			
542. <i>Amphisa Walkerana</i>	209	5			
543. <i>Pædisca semifasciana</i>	571	12			
544. <i>Penthina Grevillana</i>	567	12			
545. <i>Spilonota marmorana</i>	551	12			
546. <i>Zeiraphera hastiana</i>	711	15			
547. <i>Anchylopera ustomaculana</i>	376	8			
548. <i>Philalcea Juliana</i>	583	13			
549. <i>Carpocapsa Leplastriana</i>	352	8			
550. <i>Bactra pauperana</i>	599	13			
551. <i>Cnephasia bellana</i>	100	3			
552. <i>Orthotænia turionella</i>	364	8			
553. <i>Cochylis rupicola</i>	491	11			
554. <i>Teras excavana</i>	699	15			
555. <i>Leptogramma irrorana</i>	440	10			
556. <i>Peronea ruficostana</i>	16	1			
557. <i>Sarothrips ramosanus</i>	29	1			
558. <i>Nola monachalis</i>	428	9			
559. <i>Simaethis Myllerana</i>	320	7			
Fam. CRAMBIDÆ.					
560. <i>Pyrausta cingulalis</i>	128	3			
561. <i>Hydrocampa stratiotata</i>	495	11			
562. <i>Scopula longipedalis</i>	312	7			
563. <i>Odontia dentalis</i>	563	12			
Fam. PYRALIDÆ.					
564. <i>Pyralis cribralis</i>	527	11			
565. <i>Hypena crassalis</i>	288	6			
Fam. CRAMBIDÆ.					
566. <i>Asopia pictalis</i>	503	11			
567. <i>Aglossa Streatfieldii</i>	455	10			
568. <i>Galleria mellonella</i>	587	13			
569. <i>Meliana flammea</i>	201	5			
570. <i>Chilo lanceolellus</i>	727	16			
571. <i>Harpipteryx scabrella</i>	535	12			
572. <i>Nascia ciliaris</i>	559	12			
573. <i>Crambus radiellus</i>	109	3			
574. <i>Phycita pinguis</i>	233	5			
575. <i>Eudorea murana</i>	170	4			
Fam. TINEIDÆ.					
576. <i>Diurnea novembris</i>	743	16			
577. <i>Cochleophasia tessellea</i>	487	11			
578. <i>Adela Frischella</i>	463	10			
579. <i>Cecophora sulphurella</i>	408	9			
580. <i>Aplota Robertsonella</i>	655	14			
581. <i>Depressaria Bluntii</i>	221	5			
582. <i>Anacamptis longicornis</i>	189	4			
583. <i>Laverna ochraceella</i>	735	16			
584. <i>Chelaria rhomboidella</i>	368	8			
585. <i>Cleodora cytisella</i>	671	14			
586. <i>Batia lunaris</i>	543	12			
587. <i>Porrectaria albicosta</i>	687	15			
588. <i>Danophila trifolii</i>	391	9			
589. <i>Pancalia Woodiella</i>	304	7			
590. <i>Glyphipteryx Linneella</i>	152	4			
591. <i>Argyromiges autumnella</i>	284	6			
592. <i>Ederesa semitestacella</i>	719	5			
593. <i>Yponomeuta echiella</i>	412	9			
					<i>ib.</i>
594. <i>Cerostoma annulata</i>	420	9			
595. <i>Acrolepia betulella</i>	679	15			
596. <i>Euplocamus mediellus</i>	591	13			
597. <i>Tinea corticella</i>	511	11			
598. <i>Lepidocera Birdella</i>	344	8			
599. <i>Incurvaria mascullella</i>	607	13			
600. <i>Lampronia luzella</i>	639	14			
601. <i>Eriocephala cathella</i>	751	16			
602. <i>Gracillaria anastomosis</i>	479	10			
603. <i>Chrysocorys scissella</i>	663	14			
Fam. PTEROPHORIDÆ.					
604. <i>Adactylus Bennetii</i>	471	10			
605. <i>Pterophorus spilodactylus</i>	161	4			
Fam. ALUCITIDÆ.					
606. <i>Alucita hexadactyla</i>	695	15			

ORDER 10. HOMOPTERA. VOL. VII.

Fam. COCCIDÆ.					
607. <i>Coccus aceris</i>	717	15			
Fam. APHIDÆ.					
608. <i>Aphis tiliae</i>	577	12			
609. <i>Cinara roboris</i>	576	12			
ORD. THYSANOPTERA, Hal.					
610. <i>Thrips dispar</i>	748	16			
Fam. PSYLLIDÆ.					
611. <i>Livia juncorum</i>	492	11			
612. <i>Livilla ulicis</i>	625	13			
613. <i>Psylla fraxini</i>	565	12			
Fam. TETTIGONIDÆ.					
614. <i>Iassus reticulatus</i>	636	44			
615. <i>Idiocerus maculipennis</i>	733	16			
616. <i>Eupteryx ornatiipennis</i>	640	14			

	Plate.	Vol.		Plate.	Vol.
698. <i>Ailus germanicus</i>	46	1	Fam. SCENOPINIDÆ.		
Fam. HYBOTIDÆ.			734. <i>Scenopinus rugosus</i>	609	13
699. <i>Hybos pilipes</i>	661	14	Fam. CONOPSIDÆ.		
Fam. EMPIDÆ.			735. <i>Conops macrocephala</i>	377	8
700. <i>Hilara ciliipes</i>	130	3	736. <i>Myopa fulvipes</i>	677	15
701. <i>Empis borealis</i>	18	1	Fam. STOMOXIDÆ.		
Platyptera <i>Meig.</i>	<i>ib.</i>		737. <i>Stomoxys siberita</i>	665	14
Pachymeria <i>Step.</i>	<i>ib.</i>		Fam. ŒSTRIDÆ.		
702. <i>Rhamphomyia pennata</i>	517	11	738. <i>Œstrus pictus</i>	106	3
Fam. TACHYDROMIDÆ.			739. <i>Gasterophilus salutiferus</i>	146	3
703. <i>Heleodromia bistigma</i>	513	11	Fam. MUSCIDÆ.		
704. <i>Tachydromia arrogans</i>	477	10	740. <i>Phasia speciosa</i>	697	15
705. <i>Drapetis aterrima</i>	397	9	741. <i>Ocyptera brassicaria</i>	629	14
Fam. ACROCERIDÆ.			742. <i>Miltogramma punctata</i>	529	11
706. <i>Henops marginatus</i>	110	3	743. <i>Gonia ruficeps</i>	533	12
Fam. STRATIOMYDÆ.			744. <i>Musca chloris</i>	549	12
707. <i>Pachygaster Leachii</i>	42	1	745. <i>Hydrotæa ciliata</i>	768	16
708. <i>Sargus Reaumuri</i>	305	7	746. <i>Cordylura livens</i>	485	11
709. <i>Nemotelus nigrinus</i>	729	16	747. <i>Scatophaga scybalaria</i>	405	9
710. <i>Oxycera Morrisii</i>	441	10	748. <i>Sapromyza litura</i>	605	13
Fam. SYRPHIDÆ.			749. <i>Ortalis guttata</i>	649	14
711. <i>Ceria conopsoides</i>	186	4	750. <i>Sepsis annulipes</i>	245	6
712. <i>Microdon apiformis</i>	70	2	751. <i>Tephritis cornuta</i>	241	5
713. <i>Chrysotoxum 8-maculatum</i>	653	14	752. <i>Platystoma seminatiois</i>	505	11
714. <i>Paragus sigillatus</i>	593	13	753. <i>Tyrophaga casei</i>	126	3
715. <i>Baccha elongata</i>	737	16	754. <i>Actora æstum</i>	66	2
716. <i>Eumerus litoralis</i>	749	16	<i>Helcomyza ustulata</i>	<i>ib.</i>	
717. <i>Xylota bifasciata</i>	425	9	755. <i>Lucina fasciata</i>	621	13
718. <i>Milesia speciosa</i>	34	1	756. <i>Platycephala planifrons</i>	725	16
719. <i>Pipiza biguttata</i>	669	14	757. <i>Trigonometopus frontalis</i>	689	15
720. <i>Rhingia campestris</i>	182	4	758. <i>Helomyza rufa</i>	545	12
721. <i>Syrphus litorum</i>	753	16	759. <i>Drosophila cameraria</i>	473	10
722. <i>Scæva unicolor</i>	509	11	760. <i>Ephydra spilota</i>	413	9
723. <i>Tropidia rufomaculata</i>	401	9	761. <i>Heteroneura albimana</i>	721	15
724. <i>Merodon clavipes</i>	98	2	762. <i>Phytomyza lateralis</i>	393	9
725. <i>Helophilus Ruddii</i>	429	9	763. <i>Borborus hamatus</i>	469	10
726. <i>Eristalis cryptarum</i>	432	9	Fam. PHORIDÆ.		
— <i>nubilipennis</i>	<i>ib.</i>		764. <i>Phora abdominalis</i>	437	10
727. <i>Volucella inflata</i>	452	10	ORDER 14. OMALOPTERA.		
Fam. PIPUNCULIDÆ.			Fam. HIPPOBOSCIDÆ.		
729. <i>Pipunculus pratorum</i>	757	16	765. <i>Hippobosca equina</i>	421	9
Fam. DOLICHOPIDÆ.			766. <i>Hæmobora pallipes</i>	14	1
728. <i>Opetia lonchopteroides</i>	489	11	767. <i>Ornithomyia fringillina</i>	585	13
730. <i>Rhaphium macrocerum</i>	568	12	768. <i>Craterina hirundinis</i>	112	3
731. <i>Porphyrops Wilsoni</i>	541	12	769. <i>Melophagus ovinus</i>	142	3
732. <i>Medeterus notatus</i>	162	4	Fam. NYCTERIBIDÆ.		
Fam. LONCHOPTERIDÆ.			770. <i>Nycteribia Latreillii</i>	277	6
733. <i>Lonchoptera flavicauda</i>	761	16			

ENGLISH NAMES OF INSECTS.

	Plate.	Vol.	Vol.		Plate.	Vol.	Vol.
Ant, red	752	16	4	Bacon beetle	682	15	2
—, Latreille's	265	6	4	Bakehouse beetle	368	8	2
—, like beetle	398	9	2	Bat louse	277	6	8
Aphis, Lime-tree	577	12	7	Bee, Dale's	419	9	4
—, Oak	576	12	7	Feather-footed	357	8	4

	Plate.	Vol.	Vol.		Plate.	Vol.	Vol.
Bee. Flower-sleeping	628	14	4	Forest-fly	421	9	8
Hiver or honey	769	16	4	Froth-fly, beautiful	640	14	7
Humble, black-winged	468	10	4	—, Burdock	572	12	7
Humble heath	564	12	4	—, triple-banded	620	13	7
leaf-cutting	218	5	4	Gall-nut fly	688	15	3
Swammerdam's	367	8	4	Glow-worm	698	15	2
variegated	516	11	4	Gnat, long-horned	637	14	8
Bee-destroying wasp	273	6	4	Golden-eye	520	11	4
Bee-hive beetle	44	1	2	Grannom, elegant	488	11	4
Bees' nest beetle	340	8	2	—, fulvous-legged	601	13	4
Boat-fly, spotted	10	1	7	—, little	592	13	4
Bombardier beetle	554	12	1	—, many-spotted	544	12	4
Bot of the deer	106	3	8	—, margined	561	12	4
— Horse	146	3	8	—, narrow-winged	716	15	4
Breeze-fly	78	2	8	—, spurless	497	11	4
Bug-destroying Wasp	261	6	4	—, Paget's	540	12	4
— Bug	453	10	7	Grave-digger beetle	71	2	1
Bug, house or bed	569	12	7	— bent-legged	334	7	1
—, sickle-horned	709	15	7	House-fly, green-checked	549	12	8
—, wheat-field	701	15	7	Humble-bee Rove-beetle	534	12	1
Butterfly				Ichneumon, Death's-head	234	5	3
Black hair-streak	264	6	5	—, Knot-horned	660	14	3
Black-veined white	360	8	5	—, Pine	4	1	3
Brimstone	173	4	5	—, short-winged	536	12	3
Camberwell beauty	96	2	5	—, tooth-thighed	624	13	3
Copper, large	12	1	5	—, Wasps'	198	5	3
Fritillary, dark green	290	7	5	Lady-bird	208	5	2
—, Duke of Burgundy	316	7	5	Locust, Christy's	608	13	3
—, Small pearl bordered	386	9	5	Long-legs, long-horned	493	11	8
Green chequered-white	48	1	5	Mason-wasp	137	3	4
Pale clouded-yellow	242	6	5	May-bug, Sutherland	526	11	1
Plasteal's brown Ringlet	205	5	5	May-fly, dissimilar	484	11	4
— tawny do	205*	5	5	—, large	708	15	4
Purple Emperor	338	8	5	Melitta, long-tongued	448	10	4
Skipper, Lulworth	442	10	5	Mimic-beetle	470	10	1
Swallow-tail, scarce	578	13	5	Mole-cricket	456	10	3
White Admiral	124	3	5	Monstrosity, leg of	111	3	2
Cardinal beetle	590	13	2	Mosquito, white-spotted	537	12	8
Celery fly	141	3	3	Moth			
Cellar-beetle	502	11	1	Agrotis-likeness	683	15	5
— fly	473	10	8	Angleshades, small	619	13	5
Cheese-fly	126	3	8	Antler, Irish	451	10	5
Chermes of Ash	565	12	7	Bark clothes-moth	511	11	6
Cicada, New-forest	392	9	7	Beautiful Erastria	140	3	5
Clegg	525	11	8	Belted beauty	615	13	6
Cockchaffer of Kent	406	9	1	Bentley's marble	583	13	6
Cockroach, Lapland	556	12	3	Black Arches	767	16	5
Comb of Bees	769	16	4	— small	428	9	6
Corn-beetle	734	16	2	Black-neck	475	10	5
Cricket, pigtailed	439	10	3	Black-veined	691	15	6
— sylvan	293	7	3	Blomer's Phalæna	416	9	6
Death-watch, obstinate	387	9	2	Boletus Tinea	591	13	6
—, saw-horned	375	8	2	Bombyx, long-tailed	336	7	5
—, Scotch	342	8	2	—, Parley	213	5	5
—, slining	232	5	2	Brixton Beauty	276	6	5
—, G-spotted	646	14	2	Brocade, great	248	6	5
Demoiselle	732	16	4	Broom Tinea	671	14	6
Dor-beetle	266	6	1	Brush-legged Tortrix	29	1	6
— lunar-headed	414	9	1	Butt-tip	530	12	5
Dragon-fly, Curtis's	616	13	4	Burnet Noctua	659	14	5
—, white-faced	712	15	4	Bute Charissa	105	3	6
Dung-fly, largest	405	9	8	Button Tortrix	16	1	6
Earwig	560	12	3	Campion noctua	308	7	5
Elm-destroying beetle	43	1	2	Carpet cinereous	296	7	6
Flea, Bat's	417	9	7	— Durham	603	13	6
—, Mole's	114	3	7	— Kinnordy	643	14	6
Flour-beetle	331	7	2	Case-bearing Psyche	332	7	5
				Chestnut black	268	6	5

	Plate.	Vol.	Vol.		Plate.	Vol.	Vol.
China-marked	495	11	6	Peach-blossom	72	2	5
Chocolate-tip, scarce	715	15	5	Pearl, long-legged	312	7	6
Cinnabar	499	11	5	Pease blossom	76	2	5
Clouded-buff	21	1	5	Pine-destroying Tortrix	117	3	6
Dagger, November	743	16	6	Pine Lappet	7	1	5
Dark treble-lines	651	14	5	Pinion-spotted yellow	647	14	6
Dog's tooth, marbled	551	12	5	Plume, Bennet's	471	10	6
Dover Belle	469	10	6	— Wormwood	161	4	6
— Tortrix	352	8	6	— twenty-four	695	15	6
Durham Phalena	519	11	6	Portland Noctua	539	12	5
— Tinea	679	15	6	Prominent, feathered	328	7	5
Eggar, Medick, Bombyx	181	4	5	— Iron	739	16	5
Emerald, Essex	300	7	6	Pug, beautiful	64	2	6
Ermine, Gronwell	412	9	6	Purple-and-gold	523	11	6
— Bugloss	<i>ib.</i>		6	Purple-shades	731	16	5
Fan-foot, marsh	527	11	6	Pyralis poplar	503	11	6
Feathered diamond-back	607	13	6	Ribbon wave	384	8	6
Figure of 80	272	6	5	Ringed diamond-back	420	9	6
Flame-striped Pyralis	201	5	6	Rustic, light-feathered	165	4	5
Flat-back, Essex	221	5	6	— rosy	252	6	5
— long-horned	189	4	6	Rough-wing, sprinkled	440	10	6
Footman, red-speckled	169	4	5	Satellites	635	14	5
— false	631	14	5	Satin beauty	113	3	6
— gray-spotted	56	2	5	Scollop, gray	33	1	6
— ten-spotted	36	1	5	Scotch dagger	136	3	6
Four-spotted Tinea	639	14	6	Scotch-gray Eudorea	170	4	6
Girdled Cleora	88	2	6	Seraphim, Brown	81	2	6
Glory of Kent	434	10	5	Short-barred-gray	571	12	6
Goat	60	2	5	Silver-barred-sable	128	3	6
Gold 4-spot	424	9	6	Snout, beautiful	288	6	6
Green silver-lines	575	12	6	Spotted drab	599	13	6
Haworthian Noctua	260	6	5	Square-spot, brindled	280	6	5
Honey-comb	587	13	6	Starry-brindle	563	12	6
Hooktip-pebble	555	12	6	Starwort Shark	45	1	5
— wainscot	535	12	6	Swallow-tail	508	11	6
Hornet, Sesia	372	8	5	Sweet-gale Tortrix	763	16	6
— lunar	<i>ib.</i>		5	Swift, tawny-and-brown	185	4	5
Horsechestnut	611	13	6	Sword-grass	256	6	5
Japan, Frisch's	463	10	6	Tabby, Mendip	455	10	6
Kitten, broad-barred	193	4	5	Tawny-barred-angle	132	3	6
Kitten-likeness	755	16	5	Testaceous white-back	719	15	6
Knot-horn Tabby	233	5	6	Thick-horn trefoil	391	9	6
Lackey, ground	229	5	5	— yellow-underwing	408	9	6
Lappet	24	1	5	Thorn, clouded August	667	14	6
Lesser tawny crescent	543	12	6	Tinea, autumnal	284	6	6
Lilac Tinea	479	10	6	— pale checkered	487	11	6
Linnæus's spangled do.	152	4	6	Tortrix, chalk-cliff	491	11	6
Liverpool feather-horn	344	8	6	— Lanark	209	5	6
Lobster	674	15	5	— Arthur's Seat	100	3	6
Lobster-clawed	368	8	6	Treble-bar, dyed	324	7	6
Loch Rannoch Geom	225	5	6	Vapourer, scarce	378	8	5
— Tortrix	376	8	6	Veneer, Cambridge	559	12	6
Long-cloak, Scotch	567	12	6	— lance-winged	727	16	6
Magpie, Yorkshire	515	11	6	Underwing, beautiful	145	3	5
Mallow	707	15	6	— Bute yellow	348	8	5
Manchester Tinea	304	7	6	— large red	217	5	5
Many-oblique-line	623	13	6	— light-orange	121	3	5
Marbled white-spot	356	8	6	— lunar	237	5	5
Marsh marigold Tinea	751	16	6	— twin-spotted	177	4	5
Marvel du jour, scarce	404	9	5	Unicorn, white-edged	687	15	6
Mocha, Kent	447	10	6	Wainscot, Isle of Wight	459	10	5
Mottled-umber	703	15	6	— Sea-shore	157	4	5
Muslin	400	9	5	Wanstead-gray	655	14	6
Nettletap, Myller's	320	7	6	Welch Phalena	759	16	6
Notching Tortrix	699	15	6	White-barred Tortrix	711	15	6
Oblong gold-headed Tinea	663	14	6	Whittlesea Arctia	68	2	5
Ochreous Laverna	735	16	6	Wild Arrach	431	9	5
Orange-and-silver ribbon	364	8	6	Wood-Leopard	722	16	5

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Wormwood, marbled.	595	13	5				
Musk beetle	738	16	2				
Nigger Caterpillar	617	13	3				
Oak-beetle, 8-spotted	286	6	1				
Oil-beetle	279	6	2				
Pine-feeding beetle	104	3	2				
Puff-ball beetle	355	8	2				
Raspberry beetle	618	13	1				
Sand-wasp, 5-spotted	680	15	4				
—— stalk-celled	604	13	4				
Saw-fly, fir-destroying	253	6	3				
—— hermaphrodite	692	15	3				
—— ten-spotted	41	1	3				
—— Turnip.	617	13	3				
Scale insect.	717	15	7				
Scorpion-fly	696	15	4				
—— water	700	15	7				
—— linear	281	6	7				
Sheep-louse.	142	3	8				
Shield-beetle	127	3	2				
Ship-destroying beetle	382	8	2				
Snake's-head-fly	37	1	4				
Spanish fly	658	14	2				
Sparkler, Epping	1	1	1				
Sphinx.							
Death's head	147	4	5				
Eyed hawk-moth	482	11	5				
Forester, green.	396	9	5				
Humming-bird	747	16	5				
narrow-bordered bee	40	1	5				
Rose-bay	626	14	5				
6-belted clear-wing	53	2	5				
6-spotted Burnet	547	12	5				
spotted Elephant	3	1	5				
Tobacco	195	5	5				
Springing beetle	694	15	2				
Stag-beetle	490	11	1				
Stylops Dale's	226	5	3				
—— Walker's	385	8	3				
—— Curtis's	433	9	3				
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—— Yellow-hammer's	585	13	8				
Truffle-beetle	251	6	1				
Turnip-fly, yellow-legged	630	14	2				
Wasp, anchor-faced	760	16	4				
Wasps'-nest-beetle	19	1	2				
Water-flea-beetle	79	2	1				
Weevil Geranium	670	14	2				
—— Marsh cinquefoil	558	12	2				
—— Pear and apple	562	12	2				
—— single-clawed	292	7	2				
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Endomychus coccineus	570	12	2				
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Athalia spinarum	617	13	3				
Cæsus septentrionalis	17	1	3				
Cladius	457	10	3				
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Pieris Cratægi	360	8	5				
Colias Hyale	242	6	5				
Hipparchia Arcanias	205*	5	5				
Vanessa Antiope	96	2	5				
Apatura Iris	338	8	5				
Limenitis	124	3	5				
Argynnis Aglaia	290	7	5				
Melitæa Selene.	386	9	5				
Hamearis Lucina	316	7	5				
Thecla Pruni	264	6	5				
Lycæna dispar	12	1	5				
Ino Statices.	396	9	5				
Zygæna Filipendulæ	547	12	5				
Sesia bombylifomis	40	1	5				
Maeroglossa Stellatarum	747	16	5				
Deilephila Euphorbiæ	3	1	5				
Daphne Nerii	626	14	5				
Sphinx Carolina	195	5	5				
Acherontia Atropos	147	4	5				
Smerinthus ocellatus	482	11	5				
Cossus ligniperla	60	2	5				
Zeuzera Esculi	722	16	5				
Stauropus Fagi.	674	15	5				
Pygæa Bucephala	530	12	5				
Clostera anachoreta	715	15	5				
Notodonta dromedarius	739	16	5				
Drymonia dodonæa	755	16	5				
Ptilophora plumigera.	328	7	5				
Endromis versicolor	431	10	5				
Clisiocampa castrensis	229	5	5				
Lasiocampa Medicaginis.	181	4	5				
Dendrolimus (Odonestis)	7	1	5				
Gastropacha quercifolia	24	1	5				
Orgyia gonostigma	378	8	5				
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Callimorpha Jacobææ	499	11	5				
Deiopeia pulchra	169	4	5				
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— impatiens	630	14	2	Corrigiola littoralis	629	14	8
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— remota	672	14	3	Cynosurus cristatus	135	3	2
Carlina vulgaris	642	14	2	Cyperus fuscus	395	9	3
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<i>Empetrum nigrum</i>	526	11	1	— rectum	538	12	2
<i>Epilobium hirsutum</i>	57	2	4	<i>Hedera Helix</i>	557	12	8
— tetragonum	113	3	6	<i>Hedypnois hirta</i>	653	14	8
<i>Epipactis grandiflora</i>	305	7	8	— hispida	480	10	4
— <i>Nidus-avis</i>	498	11	1	<i>Hedysarum Onobrychis</i>	88	2	6
— palustris	527	11	6	<i>Helleborus foetidus</i>	363	8	2
— ovata	441	10	8	— viridis	148	4	2
<i>Equisetum arvense</i>	318	7	2	<i>Heracleum Sphondylium</i>	600	13	3
<i>Erica cinerea</i>	35	1	2	<i>Herniaria ciliata</i>	745	16	8
— Tetralix	13	1	4	<i>Hesperis inodora</i>	435	10	2
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<i>Eriocaulon septangulare</i>	561	12	4	— sylvaticum	511	11	6
<i>Eriophorum angustifolium</i>	428	9	6	<i>Hippocrepis comosa</i>	658	14	2
<i>Erodium cicutarium</i> var.	231	5	1	<i>Hippophæe rhamnoides</i>	454	10	1
<i>Ervum hirsutum</i>	266	6	1	<i>Hippuris vulgaris</i>	506	11	2
<i>Eryngium maritimum</i>	53	2	5	<i>Holcus mollis</i>	41	1	3
<i>Erysimum Alliaria</i>	569	12	7	<i>Hordeum murinum</i>	187	4	1
— Barbarea	86	2	7	<i>Hottonia palustris</i>	151	4	1
— cheiranthoides	20	1	7	<i>Humulus Lupulus</i> fem.	502	11	1
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<i>Eupatorium cannabinum</i>	400	9	5	<i>Hydrocharis Morsus-ranæ</i>	307	7	1
<i>Euphorbia amygdaloides</i>	34	1	8	<i>Hydrocotyle inundata</i>	541	12	8
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— helioscopia	589	13	8	<i>Hymenophyllum Tunbridgensis</i>	346	8	1
— Portlandica	322	7	1	<i>Hyoscyamus niger</i>	486	11	2
<i>Euphrasia officinalis</i>	263	6	2	<i>Hypericum Androsæmum</i>	545	12	8
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<i>Fagus sylvatica</i>	674	15	5	— pulchrum	496	11	4
<i>Fedia auricula</i>	668	14	3	<i>Hypnum alopecurum</i>	111	3	2
<i>Festuca rubra</i> var. ?	157	4	5	— velutinum	118	3	4
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<i>Fragaria vesca</i>	690	15	2	<i>Iberis amara</i>	274	6	1
<i>Frankænia lævis</i>	540	12	4	— nudicaulis	512	11	3
<i>Fraxinus excelsior</i>	565	12	7	<i>Ilex Aquifolium</i>	59	2	2
<i>Fritillaria Meleagris</i>	326	7	1	<i>Illecebrum verticillatum</i>	732	16	4
<i>Fumaria capreolata</i>	427	9	3	<i>Impatiens fulva</i>	747	16	5
— claviculata	46	1	8	<i>Inula crithmoides</i>	243	6	1
— officinalis	404	9	5	— dysenterica	682	15	2
<i>Funaria hygrometrica</i>	143	3	1	— Helenium	693	15	7
<i>Gagea lutea</i>	751	16	6	— pulicaria	198	5	3
<i>Galanthus nivalis</i>	462	10	1	<i>Iris foetidissima</i>	131	3	1
<i>Galeobdolon luteum</i>	178	4	8	—	292	7	2
<i>Galeopsis Ladanum</i>	175	4	1	— Pseudacorus	559	12	6
— versicolor	116	3	2	<i>Isatis tinctoria</i>	734	16	2
<i>Galium cruciatum</i>	329	7	4	<i>Jasione montana</i>	369	8	7
— palustre ?	397	9	8	<i>Juncus articulatus</i>	2	1	7
— verum	317	7	3	— cænosus	525	11	8
<i>Genista anglica</i>	89	2	3	— effusus	405	9	8
— tinctoria	313	7	7	— liniger	234	5	3
<i>Gentiana Amarella</i>	220	5	1	<i>Jungermannia epiphylla</i>	365	8	8
— campestris	105	3	6	<i>Juniperus communis</i> mas	519	11	6
— Pneumonanthe	281	6	7	<i>Knappia agrostidea</i>	748	16	7
— verna	444	10	8	<i>Knautia arvensis</i>	735	16	6
<i>Geranium lucidum</i>	426	9	1	<i>Lagurus ovatus</i>	756	16	4
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— pratense	51	2	2	— purpureum	70	2	8
— Pyrenaicum	188	4	1	<i>Lapsana communis</i>	253	6	3
— Robertianum	152	4	6	<i>Lathræa squamaria</i>	160	4	1
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—— ruderale	518	11	1	Nardus stricta	390	9	2
Leucojum æstivum	108	3	1	Narthecium ossifragum	115	3	1
Lichen parietinus	16	1	6	Neottia spiralis	176	4	1
—— Prunastri	29	1	6	Nepeta cataria	500	11	7
Ligusticum scoticum.	758	16	1	Nitella hyalina	484	11	4
Ligustrum vulgare	409	9	8	Nymphæa alba	485	11	8
Limnosa aquatica	765	16	8	—— lutea	495	11	6
Linnæa borealis	762	16	1	Enanthe pimpinelloides.	432	9	8
Linum catharticum	424	9	6	Ononis arvensis	332	7	5
—— perenne	55	2	2	Onopordum Acanthium	741	16	7
Listera cordata	634	14	2	Ophioglossum vulgatum.	303	7	1
Lithospermum arvense	331	7	2	Ophrys anthropophora	280	6	6
—— officinale.	412	9	6	—— apifera.	311	7	2
Littorella lacustris mas	107	3	1	—— aranifera	244	6	2
Lobelia Dortmanna	203	5	1	—— Monorchis	237	5	5
—— urens	550	12	2	—— muscifera	516	11	4
Lolium perenne	213	5	5	Orchis albida	641	14	8
Lonicera Caprifolium	124	3	5	—— bifolia	233	5	6
Lotus corniculatus	259	6	1	—— conopsea	268	6	5
Luzula campestris	616	13	4	—— fusca	255	6	2
Lychnis dioica mas	54	2	3	—— latifolia	423	9	3
—— var. diurna	182	4	8	—— maculata	285	6	8
—— Flos Cuculi	591	13	6	—— mascula	230	5	7
Lycoperdon Bovista	355	8	2	—— Morio	370	8	2
Lycopsis arvensis	413	9	8	—— pyramidalis	260	6	5
Lycopus europæus	461	10	7	—— tephrosanthos	679	15	6
Lysimachia nemorum	164	4	1	—— ustulata	216	5	2
—— Nummularia	476	10	3	—— viridis	570	12	2
—— vulgaris.	250	6	1	Origanum vulgare.	283	5	1
Lythrum Salicaria.	289	6	3	Ornithogalum nutans	481	10	7
Malaxis Loeslii	582	13	2	—— umbellatum.	470	10	1
Malva moschata	197	5	2	Ornithopus perpusillus	232	5	2
—— rotundifolia	696	15	4	Orobanche carulea	382	8	2
—— sylvestris.	465	10	7	—— minor	302	7	1
Marrubium vulgare	733	16	8	Orobis tuberosus	172	4	2
Matricaria Chamomilla	78	2	8	Osmunda regalis	704	15	7
Mecanopsis cambrica.	743	16	6	Oxalis acetosella	300	7	6
Medicago lupulina	6	1	1	Oxyria reniformis.	714	15	2
—— maculata	695	15	6	Papaver Argemone	458	10	1
—— sativa	687	15	6	—— hybridum	503	11	6
Melampyrum arvense	273	6	4	—— Rheas	276	6	5
—— cristatum	262	6	2	Parietaria officinalis	387	9	2
—— pratense.	225	5	6	Paris quadrifolia	138	3	8
Melica carulea.	205*	5	5	Parnassia palustris	79	2	1
—— uniflora	173	4	5	Pastinaca sativa	221	5	6
Melittis Melissophyllum	719	15	6	Pedicularis sylvatica	451	10	5
Mentha hirsuta	320	7	6	Peltidea canina	319	7	2
—— rotundifolia	269	6	4	Peplis Portula	459	10	5
Menyanthes trifoliata	294	7	1	Petroselinum segetum	691	15	6
Meziesia polifolia	574	12	1	Peucedanum Silaus	549	12	8
Mercurialis annua	218	5	4	Peziza aurantia.	15	1	1
—— perennis	28	1	7	Phalaris Arundinacea.	721	15	8
Mespilus Cotoneaster	129	3	4	—— canariensis	460	10	3
—— germanicus	759	16	6	Phallis foetidus, or impudicus.	469	10	8
Millium effusum	710	15	2	Phleum pratense	749	16	8
—— leudigerum	650	14	1	Phyteuma orbiculare.	738	16	2
Mniun hornum	23	1	1	Pieris echioides	314	7	1
Mnœchia erecta	377	8	8	—— hieracioides.	744	16	3
Monotropa Hypopithys	726	16	2	Pimpinella dioica	724	16	4
Montia fontana	456	10	3	—— saxifraga	92	2	5
Muscari racemosum	583	13	6	Pinguicula grandiflora	603	13	6
Myosotis arvensis	169	4	5	—— lusitanica	341	8	3
—— palustris	63	2	1	—— vulgaris	90	2	8
Myosurus minimus	437	10	8	Pinus Abies.	4	1	3
Myrica Gale	763	16	6	—— sylvestris	7	1	5

	Plate.	Vol.	Vol.		Plate.	Vol.	Vol.
<i>Plantago lanceolata</i>	448	10	43 ⁸	<i>Rubus fruticosus</i>	72	2	5
— <i>media</i>	651	14	55 ⁸	— <i>ideus</i>	618	13	1
<i>Poa annua</i>	1	1	1	— <i>saxatilis</i>	619	13	5
— <i>aquatica</i>	566	12	1	<i>Rumex Acetosa</i>	396	9	5
— <i>bulbosa</i>	467	10	6	— <i>Acetosella</i>	594	13	2
— <i>decumbens</i>	239	5	1	— <i>pratensis</i>	191	4	1
— <i>fluitans</i>	159	4	1	<i>Rupia maritima</i>	466	10	1
— <i>rigida</i>	134	3	8	<i>Ruscus aculeatus</i>	489	11	8
— <i>trivialis</i>	551	12	6	<i>Sagina procumbens</i>	584	13	4
<i>Polemonium cœruleum</i>	636	14	7	<i>Sagittaria sagittifolia</i>	700	15	7
<i>Polycarpon tetraphyllum</i>	760	16	4	<i>Salicornia herbacea</i>	119	3	1
<i>Polygala vulgaris</i>	62	2	8	<i>Salix Forbyana</i>	96	2	5
<i>Polygonum aviculare</i>	5	1	8	— <i>repens</i>	613	13	8
— <i>Bistorta</i>	622	13	2	— <i>Sallow</i>	24	1	5
— <i>Pagopyrum</i>	406	9	1		121	2	5
— <i>Hydropiper</i>	431	9	5	<i>Salsola Kali</i>	442	10	5
— <i>Persicaria</i>	284	6	6	<i>Salvia verbenaca</i>	222	5	4
— <i>viviparum</i>	652	14	4	<i>Sambucus nigra</i>	746	16	2
<i>Polypogon Monspeliensis</i>	767	16	5	<i>Samolus Valerandi</i>	154	4	7
<i>Populus Tremula</i>	715	15	5	<i>Sanguisorba officinalis</i>	493	11	8
<i>Potamogeton pectinatum</i>	359	8	1	<i>Sanicula europæa</i>	189	4	6
<i>Potentilla aserina</i>	227	5	1	<i>Saponaria officinalis</i>	722	16	5
— <i>reptans</i>	50	1	8	<i>Saxifraga aizoides</i>	103	3	1
— <i>verna</i>	623	13	6	— <i>cœrulea</i>	171	4	1
<i>Poterium Sanguisorba</i>	447	10	6	— <i>granulata</i>	84	2	5
<i>Prenanthes muralis</i>	391	9	6	— <i>hypnoides</i>	192	4	1
<i>Primula elatior</i>	282	6	1	— <i>oppositifolia</i>	683	15	5
— <i>farinosa</i>	215	5	2	— <i>stellaris</i>	170	4	6
— <i>Veris</i>	348	8	5	— <i>tridactylites</i>	219	5	2
— <i>vulgaris</i>	316	7	5	— <i>umbrosa</i>	573	12	8
<i>Prunella vulgaris</i>	202	5	4	<i>Scabiosa columbaria</i>	180	4	1
<i>Prunus Cerasus</i>	212	5	2	— <i>succisa</i>	40	1	5
— <i>spinosa</i>	81	2	6	<i>Scandix Pecten-Veneris</i>	401	9	8
<i>Pulmonaria angustifolia</i>	610	13	1	<i>Schoenus mariscus</i>	524	11	4
— <i>maritima</i>	556	12	3	— <i>nigricans</i>	544	12	4
<i>Pyrethrum inodorum</i>	393	9	8	<i>Scilla autumnalis</i>	586	13	2
— <i>Parthenium</i>	675	15	1	<i>Scirpus fluitans</i>	592	13	4
<i>Pyrola media</i>	93	2	3	— <i>maritimus</i>	472	10	3
— <i>minor</i>	647	14	6	— <i>palustris</i>	599	13	6
<i>Pyrus communis</i>	578	13	5	— <i>(Isoplepis) setaceus</i>	463	10	6
— <i>Malus</i>	91	2	2	<i>Scleranthus annuus</i>	299	7	2
— <i>torminalis</i>	535	12	6	<i>Scrophularia aquatica</i>	32	1	7
<i>Quercus Robur</i>	755	16	5	— <i>vernalis</i>	340	8	2
<i>Radiola millegrana</i>	358	8	1	<i>Scutellaria galericulata</i>	389	9	3
<i>Ranunculus aquatilis</i>	95	2	1	— <i>minor</i>	362	8	2
— <i>arvensis</i>	301	7	3	<i>Sedum acre</i>	379	8	1
— <i>auricomus</i>	420	9	6	— <i>dasyphyllum</i>	410	9	1
— <i>bulbosus</i>	408	9	6	— <i>villosum</i>	648	14	4
— <i>Ficaria</i>	25	1	4	<i>Selinum palustre</i>	580	13	4
— <i>Lingua</i>	394	9	1	<i>Senecio Jacobæa</i>	499	11	5
— <i>parvulus</i>	196	5	1	— <i>squalidus</i>	477	10	8
<i>Raphanus maritimus</i>	588	13	3	— <i>viscosus</i>	306	7	1
<i>Reseda lutea</i>	48	1	5	<i>Serratula tinctoria</i>	183	4	1
— <i>Luteola</i>	373	8	4	<i>Sesleria cœrulea</i>	661	14	8
<i>Rhamnus Frangula</i>	286	6	1	<i>Setaria viridis</i>	733	16	7
<i>Rhinanthus Cristagalli</i>	449	10	7	<i>Sherardia arvensis</i>	388	9	3
<i>Rhodiola rosea</i>	637	14	8	<i>Silene acaulis</i>	109	3	6
<i>Rhynchospora alba</i>	608	13	3	— <i>anglica</i>	350	8	2
<i>Ribes Grossularia</i>	419	9	4	— <i>inflata</i>	308	7	5
— <i>nigrum</i>	571	12	6	— <i>maritima</i>	287	6	1
<i>Rosa canina</i>	374	8	1	— <i>nutans</i>	429	9	8
— <i>hibernica</i>	596	13	3	<i>Sinapis alba</i>	546	12	1
— <i>spinosissima</i>	552	12	3	— <i>nigra</i>	764	16	3
<i>Rottbolla incurvata</i>	554	12	1	<i>Sison Amomum</i>	94	2	8
<i>Rubia peregrina</i>	327	7	2	<i>Sisymbrium Nasturtium</i>	201	5	6
<i>Rubus cæsius</i> , in fruit	356	8	5	— <i>Sophia</i>	542	12	2
— in flower.	384	8	6	— <i>sylvestre</i>	474	10	2
— <i>Chamæmorus</i>	643	14	6	— <i>tenuifolium</i>	293	7	3

	Plate.	Vol.	Vol.		Plate.	Vol.	Vol.
<i>Sium latifolium</i>	750	16	2	<i>Trollius europæus</i>	190	4	4
— <i>nodiflorum</i>	531	12	1	<i>Tuber cibarium</i>	251	6	1
<i>Smyrnum Olusatrum</i>	415	9	3	<i>Tulipa sylvestris</i>	513	11	8
<i>Solanum Dulcamara</i>	102	3	8	<i>Turritis glabra</i>	717	15	7
— <i>nigrum</i>	403	9	3	<i>Tussilago Farfara</i>	367	8	4
<i>Solidago virgaurea</i>	45	1	5	— <i>Petasites</i>	604	13	4
<i>Sonchus arvensis</i>	593	13	8	<i>Typha angustifolia</i>	702	15	1
— <i>oleraceus</i>	539	12	5	— <i>latifolia</i>	494	11	2
<i>Sparganium simplex</i>	436	10	3	<i>Ulex europæus</i>	21	1	5
<i>Spartina glabra</i>	638	14	1	<i>Ulmus campestris</i> ?	43	1	2
<i>Spartium Scoparium</i>	611	13	6	— <i>campestris</i> ?	515	11	6
<i>Spergula arvensis</i>	692	15	3	<i>Urtica dioica</i>	288	6	6
— <i>nodosa</i>	399	9	3	— <i>pilulifera</i>	536	12	3
<i>Spiræa Filipendula</i>	598	13	2	<i>Utricularia minor</i>	343	8	1
<i>Splachnum ampullaceum</i>	315	7	1	— <i>vulgaris</i>	207	5	1
<i>Stachys palustris</i>	247	6	2	<i>Vaccinium Myrtillus</i>	73	2	3
— <i>sylvatica</i>	65	2	3	— <i>Oxycoocus</i>	523	11	6
<i>Statice Armeria</i>	298	7	2	— <i>uliginosum</i>	631	14	5
— <i>Linonium</i>	47	1	1	— <i>Vitis idæa</i>	662	14	2
<i>Stellaria graminea</i>	295	7	2	<i>Valeriana Calcitrapa</i>	246	6	2
— <i>holostea</i>	130	3	8	— <i>dentata</i>	106	3	8
— <i>media</i>	22	1	3	— <i>auricula</i>	668	14	3
— <i>nemorum</i>	621	13	8	— <i>officinalis</i>	547	12	5
— <i>uliginosa</i>	587	13	6	<i>Verbascum nigrum</i>	602	13	2
<i>Stratiotes aloides</i>	488	11	4	— <i>Thapsus</i>	344	8	6
<i>Symphitum officinale</i> var.	155	4	2	<i>Verbena officinalis</i>	67	2	2
<i>Tamarix gallica</i>	685	15	7	<i>Veronica agrestis</i>	133	3	3
<i>Tamus communis</i>	443	10	1	— <i>Beccabunga</i>	236	5	1
<i>Tanacetum vulgare</i>	421	9	8	— <i>Chamædryis</i>	37	1	4
<i>Taxus baccata</i>	18	1	8	— <i>hederifolia</i>	615	13	6
<i>Teucrium Scorodonia</i>	560	12	3	— <i>hybrida</i>	646	14	2
<i>Thalictrum flavum</i>	376	8	6	— <i>montana</i>	678	15	2
— <i>minus</i>	664	14	4	— <i>officinalis</i>	660	14	3
<i>Thesium linophyllum</i>	228	5	1	— <i>scutellata</i>	553	12	7
<i>Thlaspi alpestre</i>	665	14	8	— <i>serpyllifolia</i>	371	8	2
— <i>arvense</i>	614	13	2	— <i>triphyllos</i>	567	12	6
— <i>Bursa-pastoris</i>	8	1	4	— <i>verna</i>	568	12	8
— <i>perfoliatum</i>	663	14	6	<i>Viburnum Lantana</i>	375	8	2
<i>Thymus Calamintha</i>	590	13	2	— <i>Opulus</i>	483	11	2
— <i>Serpyllum</i>	581	13	8	<i>Vicia Cræca</i>	457	10	3
<i>Tilia europæa</i>	667	14	6	— <i>lathyroides</i>	258	6	1
<i>Tillæa muscosa</i>	564	12	4	— <i>sativa</i>	321	7	3
<i>Tormentilla erecta</i>	33	1	6	— <i>var. angustifolia</i>	165	4	5
<i>Tragopogon porrifolius</i>	433	9	3	— <i>sepium</i>	438	10	1
— <i>pratensis</i>	275	6	2	— <i>sylvatica</i>	455	10	6
<i>Trichonema Columnæ</i>	612	13	7	<i>Villarsia nymphoides</i>	681	15	7
<i>Tridentalis europæa</i>	120	3	3	<i>Vinca major</i>	626	14	5
<i>Trifolium arvense</i>	576	12	7	— <i>minor</i>	112	3	2
— <i>glomeratum</i>	528	11	4	<i>Viola canina</i>	168	4	1
— <i>ochroleucum</i>	245	6	8	— <i>hirta</i>	386	9	5
— <i>officinale</i>	261	6	4	— <i>lutea</i> var.	166	4	3
— <i>pratense</i>	181	4	5	— <i>odorata</i>	42	1	8
— <i>subterraneum</i>	659	14	5	— <i>palustris</i>	411	9	3
<i>Triglochin maritimum</i>	58	2	3	— <i>tricolor</i>	605	13	8
<i>Trinia glaberrima</i>	724	16	4	<i>Viscum album mas.</i>	562	12	2
<i>Triticum repens</i> var	309	7	3	<i>Zannichellia palustris</i>	718	15	1

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CLASS 1. MONANDRIA.	Plate.	Vol.	Vol.	CLASS 2. DIANDRIA.	Plate.	Vol.	Vol.
<i>Salicornia herbacea</i>	119	3	1	<i>Ligustrum vulgare</i>	409	9	8
<i>Hippuris vulgaris</i>	506	11	2	<i>Circæa lutetiana</i>	140	3	5
<i>Callitriche aquatica</i>	708	15	4				

	Plate.	Vol.	Vol.
<i>Veronica hybrida</i>	616	14	2
— <i>officinalis</i>	660	14	3
— <i>serpyllifolia</i>	371	8	2
— <i>Beccabunga</i>	236	5	1
— <i>scutellata</i>	553	12	7
— <i>montana</i>	678	15	2
— <i>Chamædrys</i>	37	1	4
— <i>agrestis</i>	133	3	3
— <i>hederifolia</i>	615	13	6
— <i>triphyllos</i>	567	12	6
— <i>verna</i>	568	12	8
<i>Pinguicula lusitanica</i>	341	8	3
— <i>vulgaris</i>	90	2	8
— <i>grandiflora</i>	603	13	6
<i>Utricularia vulgaris</i>	207	5	1
— <i>minor</i>	343	8	1
<i>Verbena officinalis</i>	67	2	2
<i>Lycopus europæus</i>	461	10	7
<i>Salvia verbenaca</i>	222	5	4
<i>Anthoxanthum odoratum</i>	514	11	1

CLASS 3. TRIANDRIA.

<i>Valeriana Calcitrapa</i>	246	6	2
— <i>officinalis</i>	547	12	5
<i>Fedia dentata</i>	106	3	8
<i>Crocus aureus</i>	609	13	8
<i>Trichonema Columnæ</i>	612	13	7
<i>Iris Pseudacorus</i>	559	12	6
— <i>fœtidissima</i>	131	3	1
— <i>in fruit</i>	292	7	2
<i>Cladium Mariscus</i>	524	11	4
<i>Schænus nigricans</i>	544	12	4
<i>Blysmus compressus</i>	725	16	8
<i>Rhynchospora alba</i>	608	13	3
<i>Cyperus fuscus</i>	395	9	3
<i>Eleocharis palustris</i>	599	13	6
— <i>fluitans</i>	592	13	4
<i>Scirpus setaceus</i>	463	10	6
— <i>maritimus</i>	472	10	3
<i>Eriophorum angustifolium</i>	428	9	6
<i>Nardus Stricta</i>	390	9	2
<i>Phalaris canariensis</i>	460	10	3
— <i>arundiuacea</i>	721	15	8
<i>Setaria viridis</i>	733	16	7
<i>Cynodon dactylon</i>	728	16	3
<i>Phleum pratense</i>	749	16	8
<i>Alopecurus pratensis</i>	709	15	7
— <i>agrestis</i>	56	2	5
— <i>bulbosus</i>	534	12	1
<i>Gastridium lendigerum</i>	650	14	1
<i>Milium effusum</i>	710	15	2
<i>Polypogon Monspeliense</i>	767	16	5
<i>Agrostis vulgaris</i>	737	16	8
<i>Knappia agrostidea</i>	748	16	7
<i>Aira cristata</i>	357	8	4
— <i>cæspitosa</i>	689	15	8
— <i>præcox</i>	620	13	7
<i>Melica carulea</i>	205*	5	5
— <i>uniflora</i>	173	4	5
<i>Sesleria cærulea</i>	661	14	8
<i>Poa aquatica</i>	566	12	1
— <i>fluitans</i>	159	4	1
— <i>rigida</i>	134	3	8
— <i>bulbosa</i>	467	10	6
— <i>trivialis</i>	551	12	6
— <i>annua</i>	1	1	1
<i>Tridia decumbens</i>	239	5	1
<i>Briza minor</i>	353	8	3

	Plate.	Vol.	Vol.
<i>Briza media</i>	186	4	8
<i>Spartina glabra</i>	638	14	1
<i>Dactylis glomerata</i>	694	15	2
<i>Cynosurus cristatus</i>	135	3	2
<i>Festuca rubra</i>	157	4	5
<i>Bromus mollis</i>	128	3	6
— <i>diandrus</i>	640	14	7
<i>Brachypodium sylvaticum</i>	256	6	5
<i>Avena pubescens</i>	625	13	7
<i>Lagurus ovatus</i>	756	16	4
<i>Arundo Phragmites</i>	606	13	2
<i>Calamagrostis epigejos</i>	666	14	1
<i>Ammophila arenaria</i>	297	7	7
<i>Lolium perenne</i>	213	5	5
<i>Rotbolla incurvata</i>	554	12	1
<i>Elymus arenarius</i>	520	11	4
<i>Hordeum murinum</i>	187	4	1
<i>Triticum repens</i>	309	7	3
<i>Montia fontana</i>	456	10	3
<i>Polycarpon tetraphyllum</i>	760	16	4

CLASS 4. TETRANDRIA.

<i>Dipsacus sylvestris</i>	711	15	6
— <i>pilosus</i>	639	14	6
<i>Knautia arvensis</i>	735	16	6
<i>Scabiosa succisa</i>	40	1	5
— <i>columbaria</i>	180	4	1
<i>Sherardia arvensis</i>	388	9	3
<i>Asperula odorata</i>	184	4	1
— <i>cyanehica</i>	150	4	7
<i>Galium cruciatum</i>	329	7	4
— <i>palustre</i>	397	9	8
— <i>verum</i>	317	7	3
<i>Rubia peregrina</i>	327	7	2
<i>Exacum filiforme</i>	628	14	4
<i>Plantago media</i>	651	14	5
— <i>lanceolata</i>	448	10	4
<i>Centunculus minimus</i>	768	16	8
<i>Sanguisorba officinalis</i>	493	11	8
<i>Cornus sanguinea</i>	505	11	8
<i>Alchemilla vulgaris</i>	185	4	5
— <i>alpina</i>	204	5	1
<i>Cuscuta Epithymum</i>	464	10	3
<i>Ilex Aquifolium</i>	59	2	2
<i>Potamogeton pectinatum</i>	359	8	1
<i>Ruppia maritima</i>	466	10	1
<i>Sagina procumbens</i>	584	13	4
<i>Mœnchia erecta</i>	377	8	8
<i>Tillæa muscosa</i>	564	12	4
<i>Radiola millegrana</i>	358	8	1

CLASS 5. PENTANDRIA.

<i>Myosotis arvensis</i>	169	4	3
— <i>palustris</i>	63	2	1
<i>Lithospermum officinale</i>	412	9	6
— <i>arvense</i>	331	7	2
— <i>maritimum</i>	556	12	3
<i>Anchusa sempervirens</i>	452	10	8
<i>Cynoglossum officinale</i>	450	10	2
<i>Pulmonaria angustifolia</i>	610	13	1
<i>Symphytum officinale</i>	155	4	2
<i>Borago officinalis</i>	137	3	4
<i>Asperugo procumbens</i>	757	16	8
<i>Lycopsis arvensis</i>	413	9	8
<i>Echium vulgare</i>	563	12	6
<i>Primula vulgaris</i>	316	7	5
— <i>elatior</i>	282	6	1
— <i>veris</i>	348	8	5

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<i>Primula farinosa</i>	215	5	2	<i>Caucalis latifolia</i>	632	14	4
<i>Menyanthes trifoliata</i>	294	7	1	<i>Torilis infesta</i>	636	14	4
<i>Villarsia nymphaeoides</i>	681	15	7	— <i>Anthriscus</i>	14	1	8
<i>Hottonia palustris</i>	151	4	1	— <i>nodosa</i>	422	9	1
<i>Lysimachia vulgaris</i>	250	6	1	<i>Daucus Carota</i>	491	11	6
— <i>nemorum</i>	164	4	1	<i>Bunium flexuosum</i>	425	9	8
— <i>nummularia</i>	476	10	3	<i>Conium maculatum</i>	688	15	3
<i>Anagallis arvensis</i>	75	2	1	<i>Peucedanum palustre</i>	580	13	4
— <i>tenella</i>	440	10	6	<i>Athamanta Libanotis</i>	44	1	2
<i>Convolvulus arvensis</i>	205	5	5	<i>Silans pratensis</i>	549	12	8
— <i>Soldanella</i>	521	11	8	<i>Critillum maritimum</i>	174	4	7
<i>Polemonium aceruleum</i>	636	14	7	<i>Heracleum Sphondylium</i>	600	13	3
<i>Campanula rotundifolia</i>	324	7	6	<i>Ligusticum scoticum</i>	758	16	1
— <i>patula</i>	351	8	2	<i>Angelica sylvestris</i>	585	13	8
— <i>latifolia</i>	699	15	6	<i>Sium latifolium</i>	750	16	2
— <i>Trachelium</i>	627	14	2	<i>Carum verticillatum</i>	680	15	4
— <i>glomerata</i>	85	2	4	<i>Sison Amomum</i>	94	2	8
— <i>hybrida</i>	504	11	4	<i>Petroselinum segetum</i>	691	15	6
— <i>hederacea</i>	257	6	3	<i>Enanthe pimpinelloides</i>	432	9	8
<i>Phyteuma orbiculare</i>	738	16	2	<i>Coriandrum sativum</i>	729	16	8
<i>Jasione montana</i>	369	8	7	<i>Myrrhis odorata</i>	624	13	3
<i>Lobelia Dortmanna</i>	203	5	1	<i>Scandix Pecten Veneris</i>	401	9	8
— <i>urens</i>	550	12	2	<i>Charophyllum sylvestre</i>	30	1	3
<i>Impatiens fulva</i>	747	16	5	<i>Anthriscus</i>	<i>ib.</i>		
<i>Viola hirta</i>	386	9	5	<i>Pastinaca sativa</i>	221	5	6
— <i>odorata</i>	42	1	8	<i>Smyrnum Olusatrum</i>	415	9	3
— <i>palustris</i>	411	9	3	<i>Anethum Foeniculum</i>	126	3	8
— <i>canina</i>	168	4	1	<i>Foeniculum vulgare</i>	<i>ib.</i>		
— <i>tricolor</i>	605	3	8	<i>Pimpinella saxifraga</i>	92	2	5
— <i>lutea</i>	166	4	3	<i>Trinia glaberrima</i>	724	16	4
<i>Verbascum Thapsus</i>	344	8	6	<i>Apium graveolens</i>	141	3	3
— <i>nigrum</i>	602	13	2	<i>Egopodium Podagraria</i>	669	14	8
<i>Datura Stramonium</i>	673	14	7	<i>Viburnum Lautana</i>	375	8	2
<i>Hyoscyamus niger</i>	486	11	2	— <i>Opulus</i>	483	11	2
<i>Atropa Belladonna</i>	446	10	1	<i>Sambucus nigra</i>	746	16	2
<i>Solanum Dulcamara</i>	102	3	8	<i>Tamarix gallica</i>	685	15	7
— <i>nigrum</i>	403	9	3	<i>Corrigiola littoralis</i>	629	14	8
<i>Erythraea Centaurium</i>	238	5	4	<i>Parnassia palustris</i>	79	2	1
<i>Samolus Valerandi</i>	154	4	7	<i>Statice Armeria</i>	298	7	2
<i>Lonicera Caprifolium</i>	124	3	5	— <i>Limonium</i>	47	1	1
<i>Rhamnus Frangula</i>	286	6	1	<i>Linum perenne</i>	55	2	2
<i>Euonymus europæus</i>	194	4	3	— <i>catharticum</i>	424	9	6
<i>Ribes nigrum</i>	571	12	6	<i>Drosera anglica</i>	473	10	8
— <i>Grossularia</i>	419	9	4	<i>Myosurus minimus</i>	437	10	8
<i>Hedera Helix</i>	557	12	8				
<i>Illecebrum verticillatum</i>	732	16	4	CLASS 6. HEXANDRIA.			
<i>Glaux maritima</i>	548	12	7	<i>Galanthus nivalis</i>	462	10	1
<i>Thesium linophyllum</i>	228	5	1	<i>Leucojum æstivum</i>	108	3	1
<i>Vinca minor</i>	112	3	2	<i>Narcissus Pseudo-narcissus</i>	98	2	8
— <i>major</i>	626	14	5	<i>Allium arenarium</i>	697	15	8
<i>Herniaria ciliata</i>	745	16	8	— <i>ursinum</i>	366	8	2
<i>Chenopodium murale</i>	398	9	2	<i>Fritillaria Meleagris</i>	326	7	1
— <i>olidum</i>	414	9	1	<i>Tulipa sylvestris</i>	513	11	8
— <i>acutifolium?</i>	402	9	2	<i>Gagea lutea</i>	751	16	6
<i>Beta maritima</i>	310	7	1	<i>Ornithogalum umbellatum</i>	470	10	1
<i>Salsola Kali</i>	442	10	5	— <i>nutans</i>	481	10	7
<i>Ulmus campestris</i>	515	11	6	<i>Scilla autumnalis</i>	586	13	2
<i>Gentiana Pneumonanthe</i>	281	6	7	<i>Hyacinthus non-scriptus</i>	49	1	3
— <i>verna</i>	444	10	8	<i>Muscari racemosum</i>	583	13	6
— <i>Amarella</i>	220	5	1	<i>Narhecium ossifragum</i>	115	3	1
— <i>campestris</i>	105	3	6	<i>Asparagus officinalis</i>	740	16	3
<i>Eryngium maritimum</i>	53	2	5	<i>Convallaria majalis</i>	430	9	2
<i>Hydrocotyle vulgaris</i>	142	3	8	— <i>multiflora</i>	278	6	2
<i>Helosciadium inundatum</i>	541	12	8	<i>Acorus Calamus</i>	716	15	4
— <i>nodiflorum</i>	531	12	1	<i>Juncus effusus</i>	405	9	8
<i>Sanicula europæa</i>	189	4	6	— <i>articulatus</i>	2	1	7
<i>Bupleurum rotundifolium</i>	475	10	5	— <i>acutiflorus?</i>	<i>ib.</i>		
— <i>tenuissimum</i>	633	14	7	— <i>canosus</i>	525	11	8

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<i>Juncus bulbosus</i>	525	11	8	<i>Silene acaulis</i>	109	3	6
<i>Luzula campestris</i>	616	13	4	<i>Stellaria nemorum</i>	621	13	8
— <i>liniger</i>	234	5	3	— <i>media</i>	22	1	3
<i>Berberis vulgaris</i>	378	8	5	— <i>holostea</i>	130	3	8
<i>Frankenia levis</i>	540	12	4	— <i>graminea</i>	295	7	2
<i>Peplis Portula</i>	459	10	5	— <i>uliginosa</i>	587	13	6
<i>Rumex pratensis</i>	191	4	1	<i>Arenaria peploides</i>	223	5	1
— <i>Acetosa</i>	396	9	5	— <i>trinervis</i>	119	4	2
— <i>Acetosella</i>	594	13	2	— <i>serpyllifolia</i>	333	7	3
<i>Oxyria reniformis</i>	714	15	2	— <i>media</i>	349	8	4
<i>Triglochin maritimum</i>	58	2	3	<i>Cotyledon Umbilicus</i>	478	10	1
<i>Colchicum autumnale</i>	657	14	1	<i>Sedum villosum</i>	648	14	4
<i>Alisma Plantago</i>	36	1	5	— <i>acre</i>	379	8	1
<i>Actinocarpus Damasonium</i>	727	16	6	— <i>dasyphyllum</i>	410	9	1
CLASS 7. HEPTANDRIA.				<i>Oxalis Acetosella</i>	300	7	6
<i>Trientalis europæa</i>	120	3	3	<i>Agrostemma Githago</i>	61	2	4
CLASS 8. OCTANDRIA.				<i>Lychnis Flos Cuculi</i>	591	13	6
<i>Epilobium hirsutum</i>	57	2	4	— <i>dioica</i>	54	2	3
— <i>tetragonum</i>	113	3	6	— <i>sylvestris</i>	182	4	8
<i>Chlora perfoliata</i>	153	4	8	<i>Cerastium viscosum</i>	372	8	5
<i>Vaccinium Myrtillus</i>	73	2	3	— <i>arvense</i>	254	6	1
— <i>uliginosum</i>	631	14	5	— <i>latifolium</i>	209	5	6
— <i>Vitis Idea</i>	662	14	2	— <i>aquaticum</i>	10	1	7
— <i>Oxycoccus</i>	523	11	6	<i>Spergula arvensis</i>	692	15	3
<i>Menziesia polifolia</i>	574	12	1	— <i>nodosa</i>	399	9	3
<i>Erica Tetralix</i>	13	1	4	CLASS 11. DODECAN-			
— <i>cinerea</i>	35	1	2	DRIA.			
<i>Calluna vulgaris</i>	145	3	5	<i>Lythrum Salicaria</i>	289	6	3
<i>Daphne Mezereum</i>	507	11	3	<i>Agrimonia Eupatoria</i>	595	13	5
— <i>Laureola</i>	368	8	6	<i>Reseda Luteola</i>	373	8	4
<i>Polygonum Persicaria</i>	284	6	6	— <i>lutea</i>	48	1	5
— <i>Hydropiper</i>	431	9	5	<i>Enphorbia helioscopia</i>	589	13	8
— <i>Bistorta</i>	622	13	2	— <i>paralias</i>	3	1	5
— <i>viviparum</i>	652	14	4	— <i>Portlandica</i>	322	7	1
— <i>aviculare</i>	5	1	8	— <i>amygdaloides</i>	34	1	8
— <i>Fagopyrum</i>	406	9	1	CLASS 12. ICOSANDRIA.			
<i>Paris quadrifolia</i>	138	3	8	<i>Prunus Cerasus</i>	212	5	2
<i>Adoxa Moschatellina</i>	97	2	3	— <i>spinosa</i>	81	2	6
CLASS 9. ENNEANDRIA.				<i>Cratægus oxyacantha</i>	31	1	2
<i>Butomus umbellatus</i>	214	5	3	<i>Mespilus germanica</i>	759	16	6
CLASS 10. DECANDRIA.				<i>Cotoneaster vulgaris</i>	129	3	4
<i>Monotropa Hypopithys</i>	726	16	2	<i>Pyrus communis</i>	578	13	5
<i>Andromeda polifolia</i>	655	14	6	— <i>malus</i>	91	2	2
<i>Arbutus Unedo</i>	597	13	7	— <i>terminalis</i>	535	12	6
— <i>Uva ursi</i>	555	12	6	<i>Spiræa Filipendula</i>	598	13	2
<i>Pyrola minor</i>	647	14	6	<i>Rosa spinosissima</i>	552	12	3
— <i>media</i>	93	2	3	— <i>hibernica</i>	596	13	3
<i>Chrysosplenium oppositifolium</i>	110	3	8	— <i>canina</i>	374	8	1
<i>Saxifraga stellaris</i>	170	4	6	<i>Rubus idæus</i>	618	13	1
— <i>umbrosa</i>	573	12	8	— <i>cæsius</i> , fruit.	356	8	5
— <i>oppositifolia</i>	683	15	5	— <i>flower</i>	384	8	6
— <i>aizoides</i>	103	3	1	— <i>fruticosus</i>	72	2	5
— <i>granulata</i>	84	2	5	— <i>saxatilis</i>	619	13	5
— <i>cernua</i>	171	4	1	— <i>Chamæmorus</i>	643	14	6
— <i>tridactylites</i>	219	5	2	<i>Fragaria vesca</i>	690	15	2
— <i>hypnoides</i>	192	4	1	<i>Potentilla sterilis</i>	509	11	8
<i>Scleranthus annuus</i>	299	7	2	— <i>fragaria</i>	<i>ib.</i>		
<i>Saponaria officinalis</i>	722	16	5	— <i>anserina</i>	227	5	1
<i>Dianthus Armeria</i>	163	4	2	— <i>reptans</i>	50	1	8
— <i>cæsius</i>	522	11	2	— <i>verna</i>	623	13	6
<i>Cucubalus baccifer</i>	761	16	8	<i>Tormentilla erecta</i>	33	1	6
<i>Silene anglica</i>	350	8	2	— <i>officinalis</i>	<i>ib.</i>		
— <i>nutans</i>	429	9	8	<i>Geum urbanum</i>	271	6	2
— <i>inflata</i>	308	7	5	— <i>rivale</i>	193	4	5
— <i>maritima</i>	287	6	1	<i>Dryas octopetala</i>	644	14	3
				<i>Comarum palustre</i>	558	12	2

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CLASS 13. POLYANDRIA.				<i>Melampyrum cristatum</i>	262	6	2
<i>Actea spicata</i>	654	14	2	— arvense	273	6	4
<i>Chelidonium majus</i>	199	5	2	— pratense	225	5	6
<i>Glaucium luteum</i>	66	2	8	<i>Lathraea Squamaria</i>	160	4	1
— violaceum	479	10	6	<i>Pedicularis sylvatica</i>	451	10	5
<i>Papaver hybridum</i>	593	11	6	<i>Linaria Cymbalaria</i>	38	1	4
— Argemone	458	10	1	— Elatine	543	12	6
— Rhaeas	276	6	5	— spurium	158	4	3
<i>Meconopsis Cambricum</i>	743	16	6	— vulgare	64	2	6
<i>Nuphar lutea</i>	495	11	6	<i>Antirrhinum Orontium</i>	337	7	8
<i>Nymphæa alba</i>	485	11	8	<i>Scrophularia aquatica</i>	32	1	7
<i>Tilia europæa</i>	667	14	6	— vernalis	340	8	2
<i>Helianthemum vulgare</i>	279	6	2	<i>Digitalis purpurea</i>	468	10	4
<i>Delphinium Consolida</i>	76	2	5	<i>Linnaea borealis</i>	762	16	1
<i>Aconitum Napellus</i>	731	16	5	<i>Limosella aquatica</i>	765	16	8
<i>Aquilegia vulgaris</i>	392	9	7	<i>Orobanchè minor</i>	302	7	1
<i>Stratiotes aloides</i>	488	11	4	— cærulea	382	8	2
<i>Anemone Pulsatilla</i>	27	1	1	CLASS 15. TETRADY-			
— nemorosa	87	2	1	NAMIA.			
— apennina	383	8	3	<i>Draba verna</i>	122	3	8
<i>Clematis Vitalba</i>	342	8	2	<i>Lepidium ruderale</i>	518	11	1
<i>Thalictrum minus</i>	664	14	4	— latifolium	684	15	7
— flavum	376	8	6	— caespitè	677	15	8
<i>Adonis autumnalis</i>	167	4	2	<i>Hutchinsia petræa</i>	713	15	8
<i>Ranunculus Ficaria</i>	25	1	4	<i>Thlaspi arvense</i>	614	13	2
— Lingua	394	9	1	— perfoliatum	663	14	6
— auricomus	420	9	6	— alpestre	665	14	8
— aquatilis	95	2	1	<i>Capsella Bursa-pastoris</i>	8	1	4
— arvensis	301	7	3	<i>Cochlearia anglica</i>	240	5	1
— bulbosus	408	9	6	— danica	127	3	2
— parvulus	196	5	1	<i>Coronopus Ruellii</i>	200	5	1
<i>Trollius europæus</i>	190	4	4	<i>Iberis amara</i>	274	6	1
<i>Helleborus viridis</i>	148	4	2	<i>Teesdalia nudicaulis</i>	512	11	3
— fetidus	363	8	2	<i>Isatis tinctoria</i>	731	16	2
<i>Caltha palustris</i>	224	5	1	<i>Cakile maritima</i>	83	2	1
CLASS 14. DIDYNAMIA.				<i>Dentaria bulbifera</i>	144	3	2
<i>Ajuga reptans</i>	139	3	1	<i>Cardamine impatiens</i>	630	14	2
— Clamæpitys	537	12	8	— hirsuta	418	9	1
<i>Teucrium Scorodonia</i>	560	12	3	— pratensis	179	4	1
<i>Nepeta cataria</i>	500	11	7	<i>Nasturtium officinale</i>	201	5	6
<i>Mentha rotundifolia</i>	269	6	4	— sylvestris	474	10	2
— hirsuta	320	7	6	<i>Diploxix tenuifolia</i>	293	7	3
<i>Glechoma hederacea</i>	125	3	4	<i>Sisymbrium Sophia</i>	542	12	2
<i>Lanium album</i>	132	3	6	— officinale	705	15	8
— purpureum	70	2	8	<i>Barbarea vulgaris</i>	86	2	7
<i>Galeopsis Ladanum</i>	175	4	1	<i>Erysimum Alliaria</i>	569	12	7
— versicolor	116	3	2	— cheiranthoides	20	1	7
<i>Galeobdolon luteum</i>	178	4	8	<i>Cheiranthus fruticosus</i>	325	7	3
<i>Betonica officinalis</i>	235	5	1	<i>Matthiola sinuata</i>	347	8	2
<i>Stachys sylvatica</i>	65	2	3	<i>Hesperis inodora</i>	435	10	2
— palustris	247	6	2	<i>Arabis thaliana</i>	146	3	8
<i>Ballota nigra</i>	487	11	6	— stricta	701	15	7
<i>Marrubium vulgare</i>	753	16	8	— Turrita	74	2	7
<i>Clinopodium vulgare</i>	304	7	6	— hirsuta	635	14	5
<i>Origanum vulgare</i>	283	5	1	<i>Turritis glabra</i>	717	15	7
<i>Thymus Serpyllum</i>	581	13	8	<i>Brassica campestris</i>	211	5	2
<i>Acinus vulgaris</i>	723	16	2	— Rapa	336	7	5
<i>Calamintha officinalis</i>	590	13	2	— oleracea	617	13	2
<i>Melittis Melissophyllum</i>	719	15	6	— monensis	352	8	6
<i>Scutellaria galericulata</i>	389	9	3	— Sinensis	529	11	8
— minor	362	8	2	<i>Sinapis alba</i>	546	12	1
<i>Prunella vulgaris</i>	202	5	4	— nigra	764	16	3
<i>Bartsia viscosa</i>	354	8	1	<i>Raphanus maritimus</i>	588	13	3
— Odontites	270	6	2	CLASS 16. MONADEL-			
<i>Rhinanthus Cristagalli</i>	449	10	7	PHIA.			
<i>Euphrasia officinalis</i>	263	6	2	<i>Erodium cicutarium</i>	231	5	1

	Plate.	Vol.	Vol.
Geranium phæum	670	14	2
— pratense	51	2	2
— robertianum	152	4	6
— lucidum	426	9	1
— pyrenaicum	188	4	1
— sanguineum	100	3	6
Althæa officinalis	707	15	6
Malva sylvestris	465	10	7
— rotundifolia	696	15	4
— moschata	197	5	2

CLASS 17. DIADELPHIA.

Fumaria officinalis	404	9	5
— capreolata	427	9	3
Corydalis claviculata	46	1	8
Polygala vulgaris	62	2	8
Spartium scoparium	611	13	6
Cytisus	<i>ib.</i>		
Genista tinctoria	313	7	7
— anglica	89	2	3
Ulex europæus	21	1	5
Ononis arvensis	332	7	5
Anthyllis vulneraria	330	7	1
Orobus tuberosus	172	4	2
Lathyrus Aphaca	267	6	2
— Nissolia	445	10	7
— pratensis	249	6	3
— sylvestris	265	6	4
— palustris	492	11	7
Vicia sylvatica	455	10	6
— Cracca	457	10	3
— sativa	321	7	3
— angustifolia	165	4	5
— lathyroides	258	6	1
— sepium	438	10	1
Ervum hirsutum	266	6	1
Ornithopus perpusillus	232	5	2
Hippocrepis comosa	658	14	2
Hedysarum Onobrychis	88	2	6
Astragalus hypoglottis	698	15	2
— glycyphyllos	208	5	2
Melilotus officinalis	261	6	4
Trifolium subterraneum	659	14	5
— glomeratum	528	11	4
— arvense	576	12	7
— pratense	181	4	5
— ochroleucum	245	6	8
Lotus corniculatus	259	6	1
Medicago sativa	687	15	6
— lupulina	6	1	1
— maculata	695	15	6

CLASS 18. POLYADELPHIA.

Hypericum Androsæmum	545	12	8
— perforatum	510	11	2
— pulchrum	496	11	4

CLASS 19. SYNGENESIA.

Tragopogon pratensis	275	6	2
— porrifolius	433	9	3
Helminthia echioides	314	7	1
Picris hieracioides	744	16	3
Sonchus arvensis	593	13	8
— oleraceus	539	12	5
Prenanthes muralis	391	9	6
Leontodon Taraxacum	248	6	5
Apargia hispida	480	10	4

	Plate.	Vol.	Vol.
Thrinicia hirta	653	14	8
Hieracium pilosella	532	12	4
— sylvaticum	511	11	6
Crepis tectorum	17	1	3
Hypochaeris radicata	385	8	3
Lapsana communis	253	6	3
Cichorium Intybus	69	2	3
Arctium Lappa	572	12	7
Serratula tinctoria	183	4	1
Carduus acanthoides	323	7	2
Cnicus palustris	312	7	6
— arvensis	296	7	6
— pratensis	380	8	3
— heterophyllum	649	14	8
— acaulis	206	5	3
Onopordium Acanthium	741	16	7
Carlina vulgaris	642	14	2
Bidens tripartita	439	10	3
Eupatorium cannabinum	400	9	5
Tanacetum vulgare	421	9	8
Artemisia maritima	229	5	5
— Absinthium	161	4	6
— vulgare	671	14	6
Gnaphalium dioicum	645	14	8
— rectum	538	12	2
— germanicum	490	11	1
Conyza squarrosa	277	6	8
Erigeron acre	417	9	7
Tussilago Farfara	367	8	4
Petasites vulgaris	604	13	4
Senecio viscosus	306	7	1
— squalidus	477	10	8
— Jacobæa	499	11	5
Aster Tripolium	80	2	1
— var.	114	3	7
Solidago Virgaurea	45	1	5
Cineraria campestris	101	3	4
Inula Helenium	693	15	7
Pulicaria dysenterica	682	15	2
— vulgaris	198	5	3
Limbarda crithmoides	243	6	1
Doronicum Pardalianches	754	16	2
Bellis perennis	517	11	8
Chrysanthemum Leucanthemum	162	4	8
— segetum	335	7	2
Pyrethrum Parthenium	675	15	1
— inodorum	393	9	8
Matricaria Chamomilla	78	2	8
Anthemis Cotula	26	1	8
— nobilis	9	1	8
Achillea Ptarmica	52	2	1
— millefolium	19	1	2
Centaurea nigra	241	5	8
— Scabiosa	361	8	4
— Calcitrapa	676	15	7

CLASS 20. GYNANDRIA.

Habenaria bifolia	233	5	6
— viridis	570	12	2
— albida	641	14	8
Gymnadenia conopsea	268	6	5
Orchis maculata	285	6	8
— latifolia	423	9	3
— tephrosanthos	679	15	6
— fusca	255	6	2
— ustulata	216	5	2
— mascula	250	5	7

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Orchis Morio	370	8	2	Salix repens	613	13	8
— pyramidalis	260	6	5	Empetrum nigrum	526	11	1
Aceras anthropophora	280	6	6	Viscum album	562	12	2
Herminium monorchis	237	5	5	Hippophae rhamnoides	454	10	1
Ophrys muscifera	516	11	4	Myrica Gale	763	16	6
— apifera	311	7	2	Humulus Lupulus	502	11	1
— aranifera	244	6	2	Tamus communis	443	10	1
Neottia spiralis	176	4	1	Populus tremula	715	15	5
Epipactis palustris	527	11	6	Rhodiola rosea	637	14	8
— grandiflora	305	7	8	Mercurialis perennis	28	1	7
Listera Nidus-avis	498	11	1	— annua	218	5	4
— ovata	441	10	8	Hydrocharis Morsus-ranae	307	7	1
— cordata	634	14	2	Juniperus communis	519	11	6
Liparis Loeselii	582	13	2	Taxus baccata	18	1	8
Corallorhiza innata	736	16	3	Ruscus aculeatus	489	11	8
Cypripedium Calceolus	416	9	6				
Aristolochia Clematidis	501	11	8				
CLASS 21. MONOECIA.				CLASS 23. POLYGAMIA.			
Arum maculatum	607	13	6	Holcus mollis	41	1	3
Zannichellia palustris	718	15	1	Arrhenatherum avenaceum	742	16	1
Chara vulgaris	601	13	4	Parietaria officinalis	387	9	2
Nitella hyalina	484	11	4	Atriplex portulacoides	453	10	7
Typha latifolia	494	11	2	— patula	407	9	3
— angustifolia	702	15	1	Acer Pseudo-platanus	577	12	7
Sparganium simplex	436	10	3	— campestre	328	7	5
Carex dioica	381	8	3	Fraxinus excelsior	565	12	7
— remota	672	14	3				
— divisa	706	15	1	CLASS 24. CRYPTOGAMIA.			
— digitata	712	15	4	Hymenophyllum Tunbridgense	346	8	1
— Pseudo-cyperus	533	12	8	Osmunda regalis	704	15	7
— limosa	471	10	6	Ophioglossum vulgatum	303	7	1
— praecox	82	2	3	Equisetum arvense	318	7	2
Eriocaulon septangulare	561	12	4	Splachnum ampullaceum	315	7	1
Littorella lacustris	107	3	1	Mniium hornum	23	1	1
Alnus glutinosa	703	15	6	Funaria hygrometrica	143	3	1
Buxus sempervirens	339	8	1	Bryum subulatum	77	2	4
Urtica pilulifera	536	12	3	Hypnum alopecurum	111	3	2
— dioica	288	6	6	— velutinum	118	3	4
Ceratophyllum demersum	730	16	1	Jungermannia epiphylla	365	8	8
Myriophyllum verticillatum	497	11	4	Peltidea canina	319	7	2
Sagittaria sagittifolia	700	15	7	Lichen parietinus	16	1	6
Poterium sanguisorba	447	10	6	— prunastri	39	1	6
Quercus Robur	755	16	5	Coprinus ?	334	7	1
Fagus sylvatica	674	15	5	Agaricus coccineus	71	2	1
Betula alba	434	10	5	— flavipes?	123	3	1
Carpinus Betulus	579	13	2	— plicatilis	210	5	8
Corylus Avellana	345	8	3	Boletus versicolor	39	1	1
Pinus sylvestris	7	1	5	— subtomentosus?	156	4	1
— Abies	4	1	3	Peziza aurantia	15	1	1
Bryonia dioica	686	15	2	Phallus impudicus	469	10	8
				Tuber cibarium	251	6	1
				Lycoperdon Bovista	355	8	2
CLASS 22. DIOECIA.							
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— yellow-stalked	123	3	1	Alexanders	415	9	3
— scarlet	71	2	1	Alkanet, bastard	331	7	2
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— four-leaved	760	16	4
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— mountain	383	8	3
Angelica, wild	585	13	8
Archangel, white	132	3	6
— yellow	178	4	8
— red	70	2	8
Arrow-grass, sea	58	2	3
Arrow-head	700	15	7
Ash tree	565	12	7
Asparagus	740	16	3
Aspen tree	715	15	5
Asphodel, Lancashire	115	3	1
Avens, common	271	6	2
— mountain	644	14	3
— water	193	4	5
Balm, purple and white-bas- tard	719	15	6
Barberry	378	8	5
Barley, wall	187	4	1
Bartsia, viscous	354	8	1
— red	270	6	2
Base-rocket	48	1	5
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Bastard balm	719	15	6
— toad-flax	228	5	1
Bear-berries	555	12	6
Bear's foot	363	8	2
Bed-straw, white water	397	9	8
Beech tree	674	15	5
Beet, sea	310	7	1
Bell-flower, giant	699	15	6
— round-leaved	324	7	6
— field	351	8	2
— Nettle-leaved	627	14	2
— Ivy-leaved	257	6	3
— clustered	85	2	4
— corn	504	11	4
Bent grass, bearded	767	16	5
— fine	737	16	8
Bethlehem-star, common	470	10	1
— yellow	751	16	6
— drooping	481	10	7
Betony wood	235	5	1
Bilberry	73	2	3
— great	631	14	5
Bindweed, small	205	5	5
— sea	521	11	8
Birch tree	434	10	5
Bird grass	551	12	6
Bird's eye	215	5	2
Bird's foot	232	5	2
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Bird's-nest Orchis	498	11	1
—, yellow	726	16	2
Birthwort	501	11	8
Bistort, great	622	13	2
— alpine	652	14	4
Bitter-sweet	102	3	8
Black-thorn	81	2	6
Bladder-snout	207	5	1
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— fringed	681	15	7
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Borage	137	3	4
Box tree	339	8	1
Bramble, stone	619	13	5
— common	72	2	5
Breakstone, chickweed	584	13	4
Briar, wild	374	8	1
Brome grass, wood	256	6	5
— soft	128	3	6
— upright	640	14	7
Brook-lime	236	5	1
Brook-weed	154	4	7
Broom, common	611	13	6
Broom-rape, less	302	7	1
— purple	382	8	2
Bryony, black	443	10	1
— red-berried	686	15	2
Buck-bean	294	7	1
Buck-thorn, sea	454	10	1
— alder	286	6	1
Buck-wheat	406	9	1
Bugle, common	139	3	1
Bugloss, wild	413	9	8
Burdock	572	12	7
Burnet rose	552	12	3
Burnet Saxifrage, dwarf	724	16	4
— common	92	2	5
— great	493	11	8
Bur-reed, less	436	10	3
Butcher's broom	489	11	8
Butter-bur	604	13	4
Butter-wort, pale	341	8	3
— large-flowered	603	13	6
— common	90	2	8
Cabbage, Isle of Man	529	11	8
Cabbage, field	211	5	2
— sea	336	7	5
— sea	352	8	6
Calamint, common	590	13	2
Campion	109	3	6
—, white	54	2	3
—, red	182	4	8
Canary grass, manured	460	10	3
— reed	721	16	8
Candy-tuft, bitter	274	6	1
— naked-stalked	512	11	3
Canterbury-bells	627	14	2
Caraway, whorled	680	15	4
Carex, fingered	712	15	4
— remote	672	14	3
— bracteate-marsh	706	15	1
— vernal	82	2	3
— separate-headed	381	8	3
— green-and-gold	471	10	6
— bastard Cyperus	533	12	8
Carline thistle	642	14	2
Carrot, wild	491	11	6
Catchfly, sea	287	6	1
— English	350	8	2
— bladder	308	7	5
— moss	109	3	6
— Nottingham	429	9	8
Catchweed, trailing	757	16	8
Cat-mint	500	11	7
Cat's-ear, long-rooted	385	8	3
Cat's foot, mountain	645	14	8

	Plate.	Vol.	Vol.		Plate.	Vol.	Vol.
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Celandine, great	199	5	2	— chequered	326	7	1
Celery, wild	141	3	3	Daisy	517	11	8
Centauray, common	238	5	4	Damewort, scentless	435	10	2
Chamomile, common	9	1	8	Dandelion	248	6	5
— Feverfew	78	2	8	Darnel, perennial	213	5	5
— stinking	26	1	8	Dead-nettle	132	3	6
Cherry tree	212	5	2	Devil's-bit Scabious	40	1	5
Chervil, wild	30	1	3	Dew-berry bush	356	8	5
—	720	15	3	— fruit	384	8	6
Chickweed, common	22	1	3	Dittander, broad-leaved	684	15	7
— broad-leaved, rough	209	5	6	Dock, meadow	191	4	1
— berry-bearing	761	16	3	Dodder, less	464	10	3
Cicely, sweet	624	13	8	Dogberry tree	505	11	8
Cinquefoil, Marsh	558	12	2	Dog's mercury	28	1	7
— spring	623	13	6	Dog rose	374	8	1
— common	50	1	8	Dog's tail-grass, crested	135	3	2
Cistus, dwarf	279	6	2	Dog's violet	168	4	1
Clary, wild	222	5	4	Double-tooth, trifid	439	10	3
Cloud-berry	643	14	6	Dropwort, common	598	13	2
Clover	181	4	5	— Parsley water	432	9	8
Club-grass, salt-marsh	472	10	3	Dutch myrtle	763	16	6
Club-rush, floating	592	13	4	Earth-nut	425	9	8
— marsh-creeping	599	13	6	Elder, common	746	16	2
— least	463	10	6	Elecampane	693	15	7
Cockle, corn	61	2	4	Elm	515	11	6
Coek's-foot-grass, smooth	638	14	1	Epipactis, marsh	527	11	6
— rough	694	15	2	— white	305	7	8
— Weybridge	739	16	5	Eryngo, sea	53	2	5
Colewort	211	5	2	Eye-bright	263	6	2
Colt's-foot	367	8	4	Feather moss, Fox-tail	111	3	2
Columbine	392	9	7	— velvet	118	3	4
Comfrey, common	155	4	2	Feunel	126	3	8
Conferva, river	291	7	1	Fescue-grass, creeping	157	4	5
Coralwort, bulbiferous	141	3	2	Feverfew, common	675	15	1
Coriander, common	729	16	8	— corn	393	9	8
Cornel tree	505	11	8	Figwort, yellow	340	8	2
Corn-salad, oval-fruited	106	3	8	— water	32	1	7
Cotton-grass, common	428	9	6	Flag, stinking	131	3	1
Couch-grass	309	7	3	— in fruit	292	7	2
Cow-parsnep, common	600	13	3	— water	559	12	6
Cowslip	348	8	5	Flax, perennial	55	2	2
Cow wheat, crested	262	6	2	— purging	424	9	6
— purple	273	6	4	Fleabane, samphire-leaved	243	6	1
— meadow	225	5	6	— common	682	15	2
Crab tree	91	2	2	— less	198	5	3
Crake berry	526	11	1	— blue	417	9	7
Cranberry	523	11	6	— great	277	6	8
Cranesbill, shining	426	9	1	Fleawort, mountain	101	3	4
— Hemlock	231	5	1	Flix-weed	542	12	2
— mountain	188	4	1	Flowering-rush	214	5	3
— meadow	51	2	2	Fluellin, round-leaved	158	4	3
— dusky	670	14	2	Fly-trap, English	473	10	8
— bloody	100	3	6	Fools' parsley	11	1	2
Cresses, winter	86	2	7	Fox-glove	468	10	4
Crocus, golden	609	13	8	Fox-tail grass, bulbous	534	12	1
Crosswort	329	7	4	— field	56	2	5
Crow-berry	526	11	1	— meadow	709	15	7
Crow-foot, wood	420	9	6	Freshwater soldier	488	11	4
— bulbous	408	9	6	Fritillary, common	326	7	1
— small	196	5	1	Frog-bit, common	307	7	1
— water	95	2	1	Fumitory, ramping	427	9	3
— corn	301	7	3	— common	404	9	5
Cud-weed, common	490	11	1	— climbing	46	1	8
— upright	538	12	2	Furze	21	1	5
Cuckow-pint	607	13	6	— needle	89	2	3
Currants, black	571	12	6	Garlic sand	697	15	8
Cyperus, fuscous	395	9	3	Gentian, autumnal	220	5	1

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Gentian field	105	3	6	Holly tree	59	2	2
— spring	444	10	8	Hone-wort, corn	691	15	6
Gentianella, least	628	14	4	Honeysuckle, perfoliate	124	3	5
Germander	133	3	3	Hop, common	502	11	1
— wood	560	12	3	— trefoil	6	1	1
— wild	37	1	4	Horehound, black	487	11	6
Gladiole, water	203	5	1	—, water	461	10	7
Gladwyn	292	7	2	—, white	753	16	8
Glandmoss, bottle-shaped	315	7	1	Hornbeam tree	579	13	2
Glasswort, prickly	442	10	5	Horned-poppy, violet	479	10	6
Globe-flower	190	4	4	— yellow	66	2	8
Goat's-beard, yellow	275	6	2	Horned-pond-weed	718	15	1
— purple	433	9	3	Hornwort, common	730	16	1
Gold-dust	379	8	1	Horseshoe-vetch, tufted	658	14	2
Goldens	393	9	8	Horse-tail, cornfield	318	7	2
Golden-locks, little	143	3	1	Hound's-tongue, common	450	10	2
Golden-rod	45	1	5	Hyacinth	49	1	3
Goldilocks	420	9	6	— starch	583	13	6
Goldilocks, Tunbridge	346	8	1	Jack-by-the-hedge	569	12	7
Goldylocks	766	16	2	Jacob's-ladder	636	14	7
Gooseberry, rough	419	9	4	Jasione, mountain	369	8	7
Goose-foot, stinking	414	9	1	Juniper tree	519	11	6
— nettle-leaved	398	9	2	Ivy	557	12	8
— entire-leaved	402	9	2	Ixia, Dawlish	612	13	7
Gorze	21	1	5	Kidney-vetch	330	7	1
Goutweed	669	14	8	Knapweed, great	361	8	4
Grass-of-Parnassus	79	2	1	— black	241	5	8
Grass-vetch, crimson	445	10	7	Knapweed, early	748	16	7
Greenweed, Dyer's	313	7	7	Knawell, annual	299	7	2
Gromwell, corn	331	7	2	Knot-grass, whorled	732	16	4
— common	412	9	6	— common	5	1	8
Ground-ivy	125	3	4	Ladies-bed-straw, yellow	317	7	3
Ground-pine	537	12	8	Ladies'-finger	330	7	1
Groundsel, stinking	306	7	1	Ladies'-slipper	416	9	6
Guelder-rose	483	11	2	— smock, common	179	4	1
Hair-grass, crested	357	8	4	— hairy	418	9	1
— early	620	13	7	— impatient	630	14	2
— turf	689	15	8	— traces	176	4	1
Hard-grass, sea	554	12	1	Lady's-mantle, cinquefoil	204	5	1
Harebell, Suill.	49	1	3	— common	185	4	5
Hare's-tail grass	756	16	4	Lamb's-lettuce	668	14	3
Hawks'-beard, smooth	17	1	3	Larkspur	76	2	5
Hawkweed, mouse-ear	532	12	4	Lathyrus, yellow	267	6	2
— wood	511	11	6	— wild	265	6	4
Hawthorn	31	1	2	Leopard's-bane	754	16	2
Hazel-nut tree	345	8	3	Lily-of-the-valley	430	9	2
Heath, Irish	574	12	1	Lime-grass, sea	520	11	4
— fine-leaved	35	1	2	— tree	667	14	6
— cross-leaved	13	1	4	Linden tree	667	14	6
Heath-pea	172	4	2	Ling	145	3	5
Hedge-mustard	705	15	8	Linnaea, two-flowered	762	16	1
Hedge-parsley, red	14	1	8	Liquorice, wild	208	5	2
Hedypnois, rough	480	10	4	Liverwort, ground	319	7	2
— deficient	653	14	8	Lobelia, acrid	550	12	2
Hellebore, green	148	4	2	London-pride	573	12	8
Hemlock	688	15	3	Loose-strife, yellow	250	6	1
Hemp-nettle, red	175	4	1	Lords-and-Ladies	607	13	6
— large-flowered	116	3	2	Lousewort, common	451	10	5
Henbane	486	11	2	Lovage, Scottish	758	16	1
Hen's-foot, knotted	422	9	1	Lucerne	687	15	6
— broad-leaved	632	14	4	Lungwort, narrow-leaved	610	13	1
— hedge	14	1	8	— sea	556	12	3
Hep tree	374	8	1	Madder, wild	327	7	2
Herb Christopher	654	14	2	— little field	388	9	3
— Gerard	669	14	8	Maiden's-hair	186	4	8
— Paris	138	3	8	Malaxis, dwarf	582	13	2
— Robert	152	4	6	Mallow, musk	197	5	2
Hill-tulip	27	1	1	— dwarf	696	15	4

	Plate.	Vol.	Vol.		Plate.	Vol.	Vol.
Mallow, common	465	10	7	Nettle, Roman	536	12	3
Maple	328	7	5	Nightshade, common	403	9	3
Mare's-tail	506	11	2	— Enchanter's	140	3	5
Marigold, corn	335	7	2	— woody	102	3	8
Marjoram, wild	283	6	2	Nipplewort, common	253	6	3
Marram	297	7	7	Nonesuch	6	1	1
Marsh-mallow	707	15	6	Oak, true British	755	16	5
Marsh-marigold	224	5	1	Oat, downy	625	13	7
Matweed, small	390	9	2	Ophrys, spider	244	6	2
— sea	297	7	7	— fly	516	11	4
Meadow-grass, hard	134	3	8	— musk	237	5	5
— annual	1	1	1	Orache, halberd-leaved	407	9	3
— decumbent	239	5	1	— shrubby	453	10	7
— Flote	159	4	1	Orchis, bee	311	7	2
— reed	566	12	1	— brown	255	6	2
— bulbous	467	10	6	— dwarf	216	5	2
— roughish	551	12	6	— meadow	370	8	2
Meadow-pinks	591	13	6	— green, or frog	570	12	2
— rue-weed	376	8	6	— marsh	423	9	3
— saffron	657	14	7	— red-handed	268	6	5
— saxifrage	549	12	8	— late-flowering	260	6	5
Medick, purple	687	15	6	— green-man	280	6	6
— heart	695	15	6	— butterfly	233	5	6
Medlar tree	759	16	6	— monkey	679	15	6
Melie-grass, wood	173	4	5	— early	230	5	7
— purple	205*	5	5	— spotted	285	6	8
Mercury, annual	218	5	4	— whitish	641	14	8
Mezereon, laurel	368	8	6	Osier, basket	96	2	5
Mezereon	507	11	3	Owler	703	15	6
Mignonette, wild	48	1	5	Ox-eye	162	4	8
Milfoil, Less-hooded	343	8	1	Ox-lip	282	6	1
— whorled	497	11	4	Ox-tongue, bristly	314	7	2
Milk-vetch, purple	698	15	2	— hawkweed	744	16	3
Milkweed, marsh	580	13	4	Panick-grass, creeping	728	16	3
Milkwort	62	2	8	— green	733	16	7
Millet-grass, panick	650	14	1	Pansy, yellow-mountain	166	4	3
— soft	710	15	2	Parsley, spreading Hedge	656	14	4
Mint, round-leaved	269	6	4	Parsnep, wild	221	5	6
— hairy	320	7	6	Pasque-flower	27	1	1
Mistletoe	562	12	2	Pearlwort, upright	377	8	8
Mithridate mustard	677	15	8	Pear tree	578	13	5
Moneywort	476	10	3	Pellitory-of-the-wall	387	9	2
Monk's-hood	731	16	5	Penny rot	142	3	8
Moonwort, royal	704	15	7	Pennywort, narrow-leaved	518	11	1
Moor's-corn	227	5	1	Pepperwort, mountain	713	15	8
Moor-grass, blue	661	14	8	Periwinkle, greater	626	14	5
Moschatel, tuberous	97	2	3	— less	112	3	2
Moss, thread	23	1	1	Persicaria	284	6	6
Mother-of-thyme	581	13	8	Pheasant's-eye	167	4	2
Mountain-auricula	215	5	2	Pilewort	25	1	4
— sorrel	714	15	2	Pimpernel, bog	440	10	6
Mouse-ear, corn	254	6	1	— scarlet	75	2	1
— marsh	63	2	1	— hastard	768	16	8
— narrow-leaved	372	8	5	— yellow	164	4	1
— field	169	4	5	Pink, Deptford	163	4	2
— marsh	10	1	7	— mountain	522	11	2
Mouse-tail, little	437	10	8	Pipewort, jointed	561	12	4
Mudwort	765	16	8	Plantain, ribwort	448	10	4
Mugweed	329	7	4	— hoary	651	14	5
Mugwort	671	14	6	Plume-thistle, meadow	380	8	3
Mullein, black	602	13	2	Pondweed, fennel-leaved	359	8	1
— great	344	8	6	— tassel	466	10	1
Mustard, white	546	12	1	— horned	718	15	1
— common	764	16	3	Poppy, long rough-headed	458	10	1
— common hedge	705	15	8	— common red	276	6	5
Navelwort, common	478	10	1	— round rough-headed	503	11	6
Neottia, spiral	176	4	1	— yellow	743	16	6
Nettle, common	288	6	6	Prenanties, wall	391	9	6

	Plate.	Vol.	Vol.
Primrose	316	7	5
Privet	409	9	8
Puff-ball	355	8	2
Purslane, water	459	10	5
Quaker-grass	186	4	8
—, small	353	8	3
Radish, sea	588	13	3
Ragged-Robin	591	13	6
Ragwort	499	11	5
—, inelegant	477	10	8
Rampion, round-headed	738	16	2
Ramsons	366	8	2
Raspberry bush	618	13	1
Red-shanks, mossy	564	12	4
Reed, common	606	13	2
— wood	666	14	1
— sea	297	7	7
Reed-mace	494	11	2
—, less	702	15	1
Rest-harrow	332	7	5
Roast-beef Iris	292	7	2
Rock-cress, Bristol	701	15	7
Rocket	86	2	7
— wall	293	7	3
Rose, Belfast	596	13	3
Rosemary, wild	655	14	6
Rosewort, yellow	637	14	8
Rueweed, less	664	14	4
Rupturewort, ciliated	745	16	8
Rush, flaxen	234	5	3
— round-fruited	525	11	8
— field	616	13	4
— jointed	2	1	7
— soft	405	9	8
Rush-grass, white-headed	608	13	3
— compressed	725	16	8
Saintfoin	88	2	6
Sallow	121	3	5
Saltwort, black	548	12	7
Samphire, marsh	119	3	1
— rock	174	4	7
St. John's-wort, perforated	510	11	2
— upright	496	11	4
Sandwort, sea spurry	349	8	4
— sea	223	5	1
— plantain-leaved	149	4	2
— thyme-leaved	333	7	3
Sanicle	189	4	6
Satyrion	570	12	2
Sauce-alone	569	12	7
Sawwort, common	183	4	1
Saxifrage, yellow mountain	103	3	1
— drooping bulbous	171	4	1
— moss	192	4	1
— rue-leaved	219	5	2
— purple	683	15	5
— white	84	2	5
— hairy	170	4	6
Scabious, small	180	4	1
— field	735	16	6
Scotch fir	7	1	5
Screw-moss, awl-shaped	77	2	4
Scurvy-grass, English	240	5	1
— Danish	127	3	2
Sea-heath, smooth	540	12	4
— holly	53	2	5
— purslane	453	10	7
— rocket	83	2	1

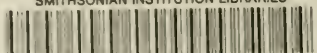
	Plate.	Vol.	Vol.
Sea stock	347	8	2
Self-heal	202	5	4
Sengreen, opposite-leaved	110	3	8
Service-tree, wild	535	12	6
Sheep-killing penny-grass	142	3	8
Shepherd's-needle	401	9	8
— purse	8	1	4
— perfoliate	663	14	6
— alpine	665	14	8
Shoreweed, plantain	107	3	1
Silverweed	227	5	1
Skirret, broad-leaved	750	16	2
Skull-cap, less	362	8	2
— common	389	9	3
Sloe tree	81	2	6
Smallage	141	3	3
Snakeweed, spotted	284	6	6
Snadragon, ivy-leaved	38	1	4
— less	337	7	8
Sneezewort, yarrow	52	2	1
Snowdrop	462	10	1
Snow-flake, summer	108	3	1
Soapwort	722	16	5
Soft-grass, oat-like	742	16	1
— creeping	41	1	3
Solomon's-seal, common	278	6	2
Sorrel, sheep's	594	13	2
— mountain	714	15	2
— common	396	9	5
— wood	300	7	6
Sow-thistle, common	539	12	5
— corn	593	13	8
Spatling, poppy	308	7	5
Spearwort, great	394	9	1
Speedwell, Welch	646	14	2
— mountain	678	15	2
— smooth	371	8	2
— common	660	14	3
— ivy-leaved	615	13	6
— fingered	567	12	6
— narrow-leaved	553	12	7
— vernal	568	12	8
Spignell, mountain	44	1	2
Spindle tree	194	4	3
Spread-cup, orange	15	1	1
Spring-grass	514	11	1
Spruce fir	4	1	3
Spurge, Portland	322	7	1
— sea	3	1	5
— sun	589	13	8
— wood	34	1	8
Spurry, corn	692	15	3
— knotted	399	9	3
Squill, autumnal	586	13	2
Star-grass	708	15	4
— thistle	676	15	7
— wort, sea	80	2	1
—, var.	660	3	7
Stitchwort, less	295	7	2
— bog	587	13	6
— great	130	3	8
— broad-leaved	621	13	8
Stonecrop, biting	379	8	1
— round-leaved	410	9	1
— hairy	648	14	4
Stone-parsley, bastard	94	2	8
Stonewort, common	601	13	4
— little transparent	484	11	4

	Plate.	Vol.	Vol.		Plate.	Vol.	Vol.
Strangle-tare	258	6	1	Vetch, tufted	457	10	3
Strapwort, sand	629	14	8	— common	165	4	5
Strawberry, wood	690	15	2	— wood	455	10	6
— barren	509	11	8	Vetchling, meadow	249	6	3
— tree	597	13	7	— marsh	492	11	7
Succory, wild	69	2	3	Violet, dog's	168	4	1
Sulphurwort, meadow	549	12	8	— marsh	111	9	3
Sun-dew, great	473	10	8	— hairy	386	9	5
Sweet-flag	716	15	4	— sweet	42	1	8
— gale	763	16	6	— pansy	605	13	8
Swine's-cress	200	5	1	— Calathian	281	6	7
Sycamore tree	577	12	7	Viper-grass	563	12	6
Tamarisk, French	685	15	7	Upland-Burnet	447	10	6
Tansy	421	9	8	Wake-robin	607	13	6
Tare, hairy	266	6	1	Wall-cress, tower	74	2	7
— common	321	7	3	— common	146	3	8
—	165	4	5	— flower	325	7	3
Teasel, wild	711	15	6	— pepper	379	8	1
— small	639	14	6	Wartwort	589	13	8
Thistle, welted	323	7	2	Water-blinks	456	10	3
— dwarf	206	5	3	— -cross, creeping	474	10	2
— creeping	296	7	6	— -cross	201	5	6
— marsh	312	7	6	— -lily, yellow	495	11	6
— cotton	741	16	7	— white	485	11	8
— melancholy	649	14	8	— -parsnep, procumbent	531	12	1
Thorn-apple	673	14	7	— pepper	431	9	5
Thorough-wax, common	475	10	5	— -plantain, great	36	1	5
— less	633	14	7	— violet	151	4	1
Thrift, lavender	47	1	1	— pennywort	142	3	8
— common	298	7	2	Wayfaring tree	375	8	2
Throatwort	699	15	6	Weld	373	8	4
Thrumwort, star-headed	727	16	6	Welch-medlar	129	3	4
Timothy-grass	749	16	8	Whin	21	1	5
Toad-flax, common	64	2	6	— petty	89	2	3
— sharp-pointed	543	12	6	White-rot	142	3	8
Toothwort, great	160	4	1	— floating	541	12	8
Tormentil, officinal	33	1	6	White-thorn	31	1	2
Touch-me-not, fulvous	747	16	5	Whitlow-grass	122	3	8
Tower-mustard, hairy	635	14	5	Whortleberry, red	662	14	2
— smooth	717	15	7	Willow, creeping dwarf	613	13	8
Towerwort	717	15	7	— herb, purple-spiked	289	6	3
Traveller's-joy	342	8	2	— large-flowered	57	2	4
Treacle-mustard	614	13	2	— square-stalked	113	3	6
Truffle	251	6	1	Winter-green, intermediate	93	2	3
Trefoil, melilot	261	6	4	— chickweed	120	3	3
— round-headed	528	11	4	— less	647	14	6
— common purple	181	4	5	Woad, wild	734	16	2
— subterraneous	659	14	5	Wolds	373	8	4
— hare's-foot	576	12	7	Woodroof, sweet	184	4	1
— brimstone	245	6	8	— small	150	4	7
— marsh	294	7	1	Wood-sage	560	12	3
Tulip, wild	513	11	8	— sorrel	300	7	6
Turkey-pod	74	2	7	Wormseed, treacle	20	1	7
Turnip	617	13	3	Wormwood, sea	229	5	5
Tutsan	545	12	8	— common	161	4	6
Tway-blade, least	634	14	2	Woundwort, marsh	247	6	2
— common	441	10	8	— hedge	65	2	3
Valerian, Portuguese	246	6	2	Yarrow, common	19	1	2
— great wild	547	12	5	Yellow-rattle	449	10	7
Vervain	67	2	2	— -wort, perforated	153	4	8
Venus's-comb	401	9	8	Yew tree	18	1	8
Vetch, bush	438	10	1				





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