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# MONOGRAPHIA

# PSELAPHIDARUM ET SCYDMÆNIDARUM

# BRITANNIÆ:

OR

#### AN ESSAY ON THE BRITISH SPECIES

OF THE GENERA

Pselaphus, of Herbst, and Scydmænus, of Latreille:

IN WHICH

THOSE GENERA ARE SUBDIVIDED, AND ALL THE SPECIES
HITHERTO DISCOVERED IN GREAT BRITAIN ARE ACCURATELY DESCRIBED AND
ARRANGED, WITH AN INDICATION OF THE SITUATIONS IN WHICH
THEY ARE USUALLY FOUND:

EACH SPECIES ILLUSTRATED BY A HIGHLY MAGNIFIED FIGURE.

# BY HENRY DENNY.

#### NORWICH:

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#### TO THE

# REV. W. KIRBY, M.A. F.R.S. F.L.S.

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lat West Survey Mrs Sherman

Indebted as I have been to you for innumerable instances of patronage, and personal favours, gratitude prompts me to acknowledge them in my first efforts to illustrate that science, which you have so eminently contributed to improve and advance in England.

Accept, then, my warmest thanks for your kind attentions to me, and permit me respectfully to present this little work as a pledge of my remembrance of the continued favours which you have conferred on your

Obliged and humble servant,

HENRY DENNY.



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# PREFACE.

In submitting the present work to the publick, the author hopes he is rendering a service not altogether unacceptable to the Entomologist of Great Britain; since the only distinct notice which has hitherto appeared in this country, of the minute, but interesting, tribes in question, is to be found in the Zoological Miscellany, a work far too voluminous and expensive for amateurs in general. The third volume of Dr. Leach's continuation of that work contains an enumeration of the British Pselaphidæ; but this is without figures. Reichenbach has, indeed, published a tract on the Family (Monographia Pselaphidarum) in which this deficiency is satisfactorily supplied; but his work is not easily to be obtained. Besides which, there are several species found in Great Britain, which he has not noticed: and the Scydmænidæ (a tribe which, though differing from the *Pselaphidæ* in the number of the joints of the palpi and tarsi, are yet closely allied to them) he altogether omits. The author hopes that these remarks will be sufficient to shew that the Pselaphidæ and Scydmænidæ, have not been hitherto sufficiently illustrated. He was led to investigate them rather by accident than by choice;

but should it be objected that some more interesting tribe might have been selected, he may remark that however minute, these little beings are not without characters highly interesting to the admirer of nature: their remarkable palpithe symmetry and neatness of their form—their polished armour, and singularity of appearance, are all sufficiently calculated to please and to interest.

The author has gerat pleasure in offering his most grateful thanks to those gentlemen who have most liberally and kindly opened to him their cabinets, and allowed him to describe the species which were new to him. He is especially indebted to Rev. W. Kirby, F.L.S., J. F. Stephens, Esq. F.L.S., Rev. J. Burrell, F.L.S., N. A. Vigors, Esq. F.L.S., Rev. T. Skrimshire, A. H. Haworth, Esq. F.L.S., T. Brightwell, Esq. F.L.S., J. Sparshall, Esq. F.L.S., Mr. G. Samouelle, A.L.S., and Mr. R. Wigham.

He has only, in conclusion, to assure his friends that he has laboured to render this work as complete and as accurate as possible; and he ventures to intimate that should it be approved he may at some future time be induced to attempt the illustration of some other minute tribes.

# PSELAPHIDÆ.



# FAMILY I.

# PSELAPHIDÆ.

#### ESSENTIAL CHARACTER.

MAXILLARY PALPI elongated; with three or five joints; the last joint much the largest.

Mandibulæ acute.

Eyes granulated and prominent.

ELYTRA abbreviated, and covering only half the abdomen.

Tarsi with three joints; claw single.

#### NATURAL CHARACTER.

Palpi four, unequal.

Maxillary Palpi large and elongated, with three or five joints; the first at the base very small; the second long, slender, and gradually clavated; the third about the same length, and clavated at both ends; fourth small, and nearly oval; fifth very long, and clavated; the clava pyriform, or with the first joint long and clavated; the second short and angular; the last large, and either ovate or securiform.

Labial Palpi very short, with two joints; the first at the base cylindrical and truncated, with two setæ, the second smaller, curved, and pointed; inserted widely apart.

LABIUM membranaceous; nearly cordate; truncated before and behind.

Ligula membranaceous and small; nearly quadrate; front a little emarginated; anterior angles rounded.

LABRUM transverse and horny; the anterior angles rounded; base having the sides a little excavated and truncated.

Maxilla membranaceous and bifid; the apex curved, and either rounded and flat, or produced to a point; the anterior edge strongly ciliate.

Mandibulæ horny, arched, and acute; the exterior margin thickish; the anterior with two sharp teeth; the base much dilated and roundish.

Antennæ large and pubescent; inserted in the anterior part of the head; about as long as the head and thorax, with eleven articulations; the first long and cylindrical: the second much smaller; the following six still smaller, nearly equal, and either oblong or globose; ninth and tenth still larger, and somewhat angular; rounded or lengthened; the last very large, and either oval, ovate, or acuminated.

Eyes large, prominent, and composed of many spheres, conglomerated similar to a raspberry.

HEAD porrected, and nearly triangular or quadrate; convex; the anterior part produced and bilobed; the lobes bearing the antennæ.

THORAX either subcordate, subovate, or subcylindrical; convex and tuncate.

ELYTRA abbreviated, and either subtriangular or subquadrate; depressed or convex; a little elevated at the shoulder, and scutellum; the declivity at the apex in some very great, with one or more striæ; the exterior margin inflexed.

Wings whitish and clear; longer and wider than the body; complicate and closely hid under the elytra; the nervures slender.

Scutellum very small; elongated; the base widest; the apex either round or acute.

Abdomen either depressed or convex; elongated or contracted and round; the margin at the sides of the three first segments reflexed; apex obtuse or nearly acute.

Legs formed for running.

Thighs long and gradually clavated.

 $\mathbf{T}_{\mathrm{IBLZE}}$  long and slender; rather thicker at the apex; curved and compressed.

Tarsi with three joints; the first short; the second elongated, with its apex rather dilated; the third filiform, with one claw.

Sexes, male generally the smallest, with the antennæ thickish; the antennæ of the female slender.

Transformations unknown.

Food, mites in damp situations.

# SYNOPSIS SPECIERUM.

# PSELAPHIDÆ.

Stirps 1. Corpus elongatum, depressum.

#### GENUS I. EUPLECTUS K.

- 1. Reichenbachii. E. obscure piceo-fuscus, nitidus, latus, depressus, subpubescens: capite medio lævi, elevato, antice punctis duobus impressis confluentibus, foveola occipitali; elytris, striatis striis basin versus valde impressis.
- 2. Sanguineus. E. elongatus, castaneo-fuscus, pubescens: capite antice foveolis duabus confluentibus; thorace antice foveola unica, postice tribus lineola unitis.
- 3. Karstenii. E. depressus, lævissimus, subpubescens, leviter castaneus: capite latissimo, punctatissimo; thorace fere obcordato, postice trifoveolato.
- 4. Signatus. E. elongatus, depressus, pubescens, ferrugineus: capite antice linea transversa impressa, foveolisque duabus inter oculos.
- 5. Kirbii. E. valde elongatus et depressus, rufo-castaneus: thorace antice et postice angustato, antice fove-ola unica oblonga, postice tribus linea impressa unitis.
- 6. Pusillus. E. levissime punctulatus, pubescens, niger, nitidus: thorace rotundato, subdepresso, postice

foveolis tribus linea impressa arcuata transversa unitis; antennis tenuissimis.

- 7. Bicolor. E. piceo-niger, nitidus: thorace magno, rotundato, leviter punctulato, postice foveolis tribus, intermedia majori.
- 8. Brevicornis. E. leviter pubescens, nitidus, castaneus: antennis thoracis longitudine, articulo ultimo maximo; thorace elongato, postice foveolis tribus linea transversa arcuata unitis.

#### STIRPS 2. Corpus breve, convexum.

#### GENUS II. BYTHINUS.

- 1. Curtish. B. nitidus, dense pubescens, punctatus, castaneo-fuscus, vel fere hepatico colore: antennis *mas culis* articulo secundo spherico, prominentia interna.
- 2. Securiger. B. piceo-fuscus: antennis masculis articulo secundo securiformi; thorace punctato, nitido; antennis pedibusque intense ferrugineis.
- 3. Burrelli. B. piceo-fuscus, antennis *masculis* articulo secundo maximo angulato ex lunato subquadrato, antennis pedibusque ferrugineis.

# GENUS III. ARCOPAGUS.

- 1. Bulbifer. A. niger, nitidus, pubescens: palpis pallide ferrugineis; antennis clavatis; pedibus piceo-rufis; elytris impresse punctatis.
- 2. Clavicornis. A. piceo-castaneus; thorace capite latiori, antice et postice lævi angustato; femoribus crassiusculis.
- 3. Puncticollis. A. piceo-ferrugineus, punctatus, nitidus: thorace maximo, antice dilatato, punctatissimo; femoribus femineis crassissimis.
  - 4. Glabricollis. A. obscure ferrugineus: thorace

capite longiori, obcordato, lævi; antice et postice angustato, postice lineola transversa arcuata.

# GENUS IV. TYCHUS.

1. NIGER. T. niger, pubescens: antennis testaceis, pubescentibus; thorace lævi, antice angustato; elytris impresse striatis.

#### GENUS V. BRYAXIS.

- 1. Longicornis. B. valde elongatus, nitidus, niger: elytris rufis; thorace postice foveolis tribus lineola transversa impressa arcuata unitis; antennis longissimis, tenuissimis; tibiis anticis emarginatis.
- 2. Sanguineus. B. niger, nitidus, obtusus, brevis: thorace postice foveolis tribus linea arcuata transversa impressa unitis; elytris rufis; antennis articulo ultimo obtusiusculo.
- 3. Impressus. B. niger: elytris obscure rufis, thorace nitido, foveolis tribus, intermedio minori; antennis articulo extimo magno obtuso.
- 4. Fossulatus. B. lævis, pubescens, nigro-castaneus: palpis testaceis; thorace foveolis tribus æqualibus.
- 5. Hæmaticus. B. vivide castaneus: thorace obcordato, foveolis tribus, intermedia minori.
- 6. Juncorum. B. brevis, subrotundus, leviter pubescens, ferrugineus: thorace subrotundato, punctulatissimo; foveola magna utrinque, et alia intermedia postica minutissima.
- 7. Nigriventris. B. intense ferrugineo-rufus: abdomine nigro; thorace spherico, canaliculato; elytris unistriatis.

# GENUS VI. PSELAPHUS.

1. Herbsth. P. nigro-castaneus, subpubescens: tho-

race elongato, subcylindrico, læví, nitido; abdomine triangulari.

- 2. Heish. P. elongatus, nigro-castaneus, nitidus: thorace antice et postice angustato, medio valde dilatato; femoribus crassis.
- 3. Longicollis. P. nigro-castaneus, nitidus: thorace subovali; postice lineolis duabus arcuatis puncto centrali concatenatis.
- 4. Dresdensis. P. piceo-niger, pubescens: thorace angulato, postice lineola impressa arcuata.

# GENUS I. EUPLECTUS.

#### SYNONYMS.

Euplectus; KIRBY:-Pselaphus, fam. iii; REICHENBACH.

#### GENERIC CHARACTER.

Antennæ thickish: the first and second joints large; the third, fourth, fifth, sixth, seventh, and eighth, much smaller and of an equal size; the ninth and tenth larger; the cleventh the largest and ovate or oval. Maxillary Palpi nearly as long as the head: the first joint long and gradually clavated; second shorter and nearly triangular; third very large and ovate, with its apex a little acuminated. Body elongated and depressed.

# Species 1. Euplectus Reichenbachii.

#### SPECIFIC CHARACTER.

Pitchy brown, and shining; broad and depressed; finely pubescent. Head elevated in the centre and smooth, with two converging depressions in front, and a foveola in the back part. Elytra with two strice very deeply impressed towards the base.

#### SYNONYMS.

Euplectus Reichenbachii.

Leach, Zool. Misc. vol. iii, p. 82, spec. 1.

----- Staphylinoides. Kirby, MSS.

Pselaphus Nanus.

Reichenbach, Monog. p. 69, tab. ii, f. 20.

Mus. Dom. Schueppel.

#### DESCRIPTION.

HEAD nearly quadrate, the anterior part with two converging depressions, joined in front; the centre elevated and smooth, with a foveola at the base.

Antennæ testaceous and pubescent, about as long

as the head and thorax; the first and second joints long and thick, the six following shorter and nearly globular, ninth and tenth a little lengthened, the last large and obtuse.

Palpi pale testaceous, about as long as the head.

Eyes black, prominent, and granulated.

THORAX rather wider than the head, and cordate, convex and shining, with a few hairs; the anterior part very much narrowed, with an oblong foveola in the centre, and three at the base; the centre one triangular, and those at the side round.

ELYTRA as long as the head and thorax, and rather wider, elongated, quadrate, depressed, shining, and finely pubescent; with two deeply impressed lines on each, one line next the suture, the other near the outer margin.

ABDOMEN long and rather depressed; the segments nearly equal in size; the first, second, and third, next the Elytra, with the margin reflexed; the apex nearly acute, smooth and shining.

LEGS pale testaceous yellow, shining, pubescent, short

and thick.

LENGTH scarcely one line.

HABITAT, stable muck on cucumber beds.

This species, although in most of the principal cabinets in the kingdom, is very rare; the first specimen I was able to examine, was sent to me by my kind and much respected friend, the Rev. W. Kirby, F. L. S., Rector of Barham in Suffolk, who captured it in that neighbourhood. It has also been taken in Norfolk, by the Rev. Thos. Skrimshire of South Creak, who favoured me with a specimen, now in my possession: and by Mr. J. Curtis, F. L. S., of London.

# Species 2. Euplectus Sanguineus.

SPECIFIC CHARACTER.

Elongated, chesnut brown, and pubescent. Head with two converging depressions, joined in front.

#### DESCRIPTION.

HEAD nearly quadrate, and shining, with two depressed lines joined in front, forming an angle, each terminating in a puncture at the base; the centre very much elevated and smooth, sides and base thickly punctured.

Antennæ testaceous and pubescent, about the length of the head and thorax; the first, second, and three last

joints the largest, apex obtuse.

Palpi pale testaceous, shining, and pubescent.

EYES black, prominent, and granulated.

THORAX about the width of the head, cordate, convex, smooth, and shining; the anterior part with an oblong foveola in the centre, the base with three foveolæ joined by a semicircular impressed line.

ELYTRA elongated, quadrate, smooth, shining, and finely pubescent; with a stria on each side of the suture, and one half the length from the base, at which part

they are very much dilated and impressed.

ÅBDOMEN elongated and convex, smooth, shining, and finely pubescent; the first three joints with the margin reflexed; apex ovate.

LEGS pale ferruginous, pubescent, and slender.

Length about three quarters of a line. Habitat, stable muck on cucumber beds.

I could never ascertain who first gave this insect the specific name of Sanguineus. I have retained it, although I cannot see in what respect it agrees with the colour, which is a chesnut brown. The first specimens I ever saw of this species were kindly sent me by the Rev. T. Skrimshire of South Creak, in Norfolk, who captures it by placing pieces of boards upon his cucumber beds, which he examines at noon in sunny weather; the insect is then found adhering to the under sides of the boards; which, from lying upon the stable muck, must naturally have derived a great degree of heat. He informs me that he has seen them greedily devour the mites, found so abundantly in those situations. I found a single specimen in May, 1823; but June, July, and August, I

believe, are the best months for finding this species. It is rather singular that this and the following species (viz. *Karstenii*) should differ so widely from all the others of the Family in their habitat, these two preferring warmth, while the others seem to delight in cold, moist situations, such as moss in damp woods, and at the roots of trees, on marshes.

# Species 3. Euplectus Karstenii.

Plate i, fig. 3.

#### SPECIFIC CHARACTER.

Light chesnut, very smooth, finely pubescent, and depressed. Head very wide, and thickly punctured. Thorax nearly cordate, with three foveolæ at the base.

#### SYNONYMS.

Pselaphus Karstenii. Reichenbach, Monog. p. 71, tab.ii, fig. 21.

Mus. Hoffmansegg.

Euplectus Castaneus. Leach, MSS.?

Staphylinus Sanguineus. Panz. Faun. Germ. 11, 9.

#### DESCRIPTION.

HEAD large, wide, and obtuse, depressed, and thickly punctured, with two angular impressions in front.

Antennæ pale chesnut and pubescent, not quite so long as the head and thorax; the last joint very large and obtuse.

Palpi pale testaceous yellow, the length of the head, and finely pubescent.

Eyes black, granulated, and prominent.

THORAX rather longer than the head, thickly punctured, nearly cordate, the anterior part with an abbreviated longitudinal line in the centre, the base very much contracted, with three foveolæ, the centre one the largest.

ELYTRA nearly quadrate, depressed, smooth, and finely pubescent, with a line on each side of the suture, and a slender depression at each shoulder.

Abdomen depressed, smooth, shining, and finely pubescent; the three first segments with the margin reflexed, and a slender depression at the base of each; apex nearly acute.

Legs pale chesnut, and finely pubescent; tibiæ thick;

tarsi slender.

LENGTH rather more than half a line.

Habitat, stable muck on cucumber beds.

This species is found in society with the *E. Sanguineus*, by the Rev. T. Skrimshire, to whom I am indebted for specimens of it. I have seen it in most cabinets *Castaneus*, and am inclined to suppose, from having observed it under this name in the British Museum, that it may probably be a *manuscript* name of Dr. Leach's. I have adopted *Reichenbach's* name of *Karstenii*, as the insect agrees with his figure and description.

# Species 4. Euplectus Signatus.

Plate i. fig. 4.

#### SPECIFIC CHARACTER.

Ferruginous, clongated, depressed, and pubescent; the head with a transverse impressed line in front, and two foveolæ between the eyes.

#### SYNONYMS.

Pselaphus Signatus. Euplectus Unicolor.

Reichenbach, Monog. p. 73, tab ii, fig. 22. Kirby, MSS.

#### DESCRIPTION.

Head nearly quadrate, and depressed; shining and smooth; the front with a transverse impressed line, and two foveolæ between the eyes.

Antenne ferruginous, and slightly pubescent, about the length of the head and thorax, and clavated; the

last joint nearly cordate, with its apex acute.

Palpi pale ferruginous, and shining. Eyes black, small, and granulated.

THORAX nearly round, smooth, and shining; the anterior part with a single foveola in the centre; the posterior part, or base, a little narrowed, with three foveolæ, joined by a semicircular line; very much depressed at the sides.

ELYTRA ferruginous, shining, smooth, and pubescent; about half the length of the abdomen, and depressed; with a line on each side of the suture, and a depression at the shoulder.

Abdomen elongated, smooth, shining, and finely pubescent; the first three joints with the margin reflexed; apex nearly acute.

Legs pale ferruginous, shining, finely pubescent, and

slender.

LENGTH not quite one line.

Навітат,

I know of only a pair of this insect, which are in the valuable cabinet of the Rev. Wm. Kirby, and were captured by him near Barham, some few years since. I have no hesitation in pronouncing this to be the *Pselaphus Signatus* of *Reichenbach*, as it agrees with his description in every respect, except that he does not mention the foveolæ at the base of the thorax being joined by a semicircular line. This insect when first taken is finely pubescent, but I conclude that it is very easily deprived of that appearance, from observing that the specimens from which I made my drawings were in many places quite free from hair.

# Species 5. Euplectus Kirbii.

Plate ii, fig. 1.

SPECIFIC CHARACTER.

Dark red chesnut, very much elongated and depressed. Thorax narrowed before and behind.

SYNONYM.

Euplectus Kirbii. Leach, MSS.

#### DESCRIPTION.

HEAD nearly quadrate, elevated, and smooth, with two converging depressions in front; chesnut-coloured and shining.

Antennæ about the length of the head and thorax, of a very pale chesnut colour, and thickly pubescent.

Palpi nearly as long as the head.

Eyes granulated and black.

THORAX dark chesnut and shining; nearly cordate, with an oblong foveola in front, and three at the base,

joined by an impressed line.

ELYTRA dark red chesnut, shining, pubescent, and rather depressed; about half the length of the abdomen; with a line on each side of the suture, and one from the base, about half way down.

Abdomen elongated and depressed; the first three joints nearly equal in size; the margin reflexed; apex

nearly acute, smooth and shining.

LEGS pale ferruginous, finely pubescent, and slender.

LENGTH one line.

Навітат,

I have never seen but one specimen of this insect, which is in the cabinet of the British Museum. This is a much more elongated and depressed insect than Euplectus Sanguineus, which it resembles very nearly. It will readily be perceived that the name by which Dr. Leach has designated this species is in honour of one of the most illustrious Entomologists of the age, and to whom the science is very greatly indebted for the valuable works which he has produced, all of which show the indefatigable zeal and profound judgment of the author.

# Species 6. Euplectus Pusillus.

Plate ii. fig. 2.

#### SPECIFIC CHARACTER.

Black and shining, finely punctured and pubescent. Thorax rotundated, and rather depressed; the posterior part with three

foveolæ, joined transversely by a semicircular impressed line.

Antennæ very slender.

#### SYNONYMS.

Euplectus Pusillus.

Leach, MSS.?

---- Tenuicornis.

Kirby, MSS.

#### DESCRIPTION.

Head nearly triangular, shining, and finely punctured; the anterior part with two oblong depressions, forming an angle, and terminating in two punctures between the eyes.

ANTENNÆ light chesnut, with the apex much darker; about as long as the head and thorax; thickly pubescent and slender; the first joint cylindrical, second larger, following six minute, ninth and tenth enlarged, eleventh the largest and nearly acuminated.

Palpi obscure chesnut, and pubescent; not so long

as the head.

Eyes granulated and black.

THORAX pitchy black, rotundated, punctured, and rather depressed; the posterior part with three foveolæ, joined transversely by a semicircular impressed line.

ELYTRA quadrate, thickly punctured, pubescent, and shining; with a line on each side of the suture, and two

small depressions at the shoulders.

Abdomen elongated, punctured, and pubescent; the segments nearly equal in size; the first three with the margin reflexed, the last nearly acute.

Legs obscure liver colour, slender, and pubescent.

Length about three quarters of a line.

Habitat, moss in woods, and on marshes.

I find this species pretty plentiful at Horning and Woodbastwick, in Norfolk, in the months of October, November, and December. It agrees, in some respects, with the *Pselaphus Ambiguus* of *Reichenbach*, but I should think it is distinct, because it differs in the sculpture of the thorax, as well as in colour.

# Species 7. Euplectus Bicolor.

Plate ii, fg. 3.

#### SPECIFIC CHARACTER.

Pitchy black. Thorax large and rotundated, the posterior part narrowed, with three foveolæ, the centre one rather the largest.

#### SYNONYM.

Euplectus bicolor. Kirby, MSS.

#### DESCRIPTION.

HEAD cordate, pitchy black, and shining; with two

deeply impressed punctures between the eyes.

Antenne obscure chesnut, about the length of the head and thorax; the first, second, and last three joints the largest; apex nearly acute.

Palpi pale, ferruginous, and pubescent. Eyes large, finely granulated, and black.

THORAX pitchy black, large and rotundated; the posterior part emarginated, with three foveolæ, the centre one rather the largest, the side ones situated in a deeply impressed and finely punctured line.

ELYTRA pitchy black and shining, nearly quadrate; with a few very fine punctures, a line down each side of the suture, and another half the length, deeply impress-

ed, from the base.

Abdomen pitchy black and shining; the first segment the largest, and following two with the margin reflexed; apex obtuse.

Legs obscure chesnut; thighs thickish; tibiæ slender;

tarsi paler.

LENGTH about three quarters of a line.

Навітат,

I have never seen this species in any other cabinets than those of the Rev. Wm. Kirby, F.L.S., of Barham, (who kindly favoured me with the specimens from which the present figure was taken); and J. F. Stephens, Esq., F.L.S., of London, who possesses a single specimen: I therefore consider it as one of our rarest species.

I am not aware that it is even known upon the continent, having never seen either figure or description of it in any work. I have never been able to learn in what situation it was found, but probably its habitat is much the same as that of other species.

# Species 8. Euplectus Brevicornis.

Plate ii, fig. 4.

#### SPECIFIC CHARACTER.

Chesnut, shining, and finely pubescent. The antennæ about the length of the thorax, and pubescent; the last joint very large.

Thorax elongated, with three foveolæ, joined by a semicircular line at the base.

#### SYNONYMS.

Pselap. Brevicornis. Reichenbach, Monog. Pselap. p. 47, t. i, f. 10.

Mus. Dom. Schueppel.

Euplectus Kunzii. Leach, MSS.

#### DESCRIPTION.

HEAD rotundated and shining; with two converging

depressions in front, each ending in a puncture.

Antennæ pale testaceous and pubescent; about the length of the thorax; with the first and second joints a little enlarged, the last very large and ovate, with its base truncated and its apex acute.

Palpi pale, testaceous, and finely pubescent, not quite

so long as the head.

Eyes small, granulated, and black.

THORAX obscure chesnut, shining, smooth, and finely pubescent, oblong; oval towards the head, narrower and truncate at the base, with three foveolæ, joined by a semicircular impressed line, the centre one the largest and in the form of a half circle.

ELYTRA obscure chesnut, shining, smooth, and pubescent, nearly triangular; with a line down each side of the suture, and another from the base half the length.

Abdomen elongate-oval, convex, smooth, shining, and

finely pubescent; apex obtuse; the first three segments the largest, with the margin reflexed; in the centre of the first at the base are two depressed lines.

Legs much paler than the body; thighs thick; tarsi about half the length of the tibia, still paler, and slender.

LENGTH from the apex of the antennæ to the apex of the abdomen about three quarters of a line.

Habitat, the same as the other species.

This species is extremely rare in Britain. I know of only four specimens; (besides that in my own cabinet, which belongs now to the Norwich Museum:) one of these is in the British Museum, three in the cabinets of the following gentlemen: the Rev. J. Burrell, F.L.S., of Letheringsett, in Norfolk, (to whom I was indebted for my specimen); N. A. Vigors, Esq., F.L.S., of Whitehead's Grove, Chelsea; and Mr. J. Sparshall, F.L.S., of Norwich: this last is in a very fine state of preservation, and much darker than the preceding. I suspect this insect is very easily deprived of its pubescent appearance, as four out of the five specimens which I have examined were nearly divested of hair.

# GENUS II. BYTHINUS.

SYNONYMS.

Bythinus; Leach: - Pselaphus, fam. ii; Reichenbach.

#### GENERIC CHARACTER.

Antennæ clavated; the second joint from the base, in the male, internally produced and very large; the third, fourth, fifth, sixth, seventh, and eighth, much smaller; ninth and tenth much wider; eleventh, the largest, with its apex acute. Maxillary Palpi having the first joint filiform, with its apex gradually clavated; second much smaller; third very large, flat, and hatchet-shaped.

# Species 1. Bythinus Curtisii.

Plate iii, fig. 1.

#### SPECIFIC CHARACTER.

Dark chesnut brown, inclining to a liver colour, shining, punctured, and thickly pubescent. Second joint of the Antennæ, in the male, globular, with a protuberance on the internal side.

SYNONYMS.

Bythinus Curtisii.

Leach, Zoolog. Misc. vol. iii, p. 83.

Pselaphus Binodis.

Kirby, MSS.

#### DESCRIPTION.

HEAD elongated and triangular, smooth, shining, and finely pubescent; the anterior part with a large excavation; the base with two foveolæ between the eyes, and a longitudinal impressed line in the centre.

Antennæ about as long as the head and thorax, of a

ferruginous yellow, and thickly pubescent.

Palpi twice as long as the head; the last joint very much elongated and flat; finely pubescent and testaceous.

Eyes prominent, granulated, and black.

THORAX dark chesnut brown, cordate and convex; finely punctured, pubescent and shining; longer and wider than the head; the anterior part much the largest, and rotundated; the base narrowed, with an impressed semicircular line.

ELYTRA wider than the thorax, thickly punctured, pubescent and shining; with a line down each side of the suture, impressed very deep at the base.

Abdomen not quite so long as the elytra, punctured

and shining; with its margin a little reflexed.

Legs testaceous brown; thighs thickish; tibiæ and

tarsi slender and pubescent.

Length from the apex of the abdomen to the apex of the antennæ, not quite one line.

Habitat, moss at the roots of trees.

This species was, I believe, first discovered in Norfolk by Mr. J. Curtis, F.L.S., of London, well known to the scientific world for his abilities as an artist. It has since been taken by the Rev. F. W. Hope, F.L.S., at Netley, near Shrewsbury, who kindly favoured me with the specimen from which my drawing was made.

# Species 2. Bythinus Securiger. Plate iii, 6g. 2.

#### SPECIFIC CHARACTER.

Pitchy brown. Thorax punctured and shining. Second joint of the antennæ, in the male, securiform; antennæ and legs bright ferruginous.

#### SYNONYMS.

Bythinus Securiger. Pselaphus Securiger. Pselap. Grandipalpus. Leach, Zool. Misc. vol. iii, p. 83.

Reichenb. Monog. p. 25, tab. i, fig. 9.

Kirby, MSS.

#### DESCRIPTION.

HEAD subtriangular, deeply punctured and shining, with two foveolæ between the eyes.

Antenne ferruginous and pubescent; rather longer than the head and thorax; the first joint long and cylindrical; second exactly securiform, and large in the male; the following six much smaller; the three last much the largest.

Palpi pale, ferruginous; not quite so long as the an-

tennæ; the last joint very large and securiform.

Eyes prominent, granulated, and black.

THORAX longer than the head and rather wider; the anterior part much the largest and rotundated, deeply punctured and shining; the posterior part with a semi-circular impressed line.

ELYTRA pitch-coloured, longer and wider than the head and thorax, thickly punctured, shining, and finely pubescent; suture a little elevated, with an impressed line on each side; the shoulder very much elevated.

Abdomen pitchy black and shining; the first two joints

with the margin reflexed.

Legs ferruginous; thighs thickish; tibiæ and tarsi slender.

LENGTH nearly three quarters of a line.

Habitat, moss at the roots of trees in woods.

For a figure of this very rare species, I am indebted to the Rev. Wm. Kirby, who captured a specimen of the male some few years since, which is the only male I have had an opportunity of examining; there are two females in London, one in the rich and valuable cabinet of J. F. Stephens, Esq., the other in the British Museum.

## Species 3. Bythinus Burrellii.

Plate iv, fig. 1.

#### SPECIFIC CHARACTER.

Pitchy black, punctured, and shining. The second joint of the antennæ of the male very large, somewhat lunulate and flat; antennæ and legs pale ferruginous.

#### DESCRIPTION.

HEAD subtriangular, finely punctured, and shining; with a depression across the front; two fovcolæ between the eyes, and another in the anterior part somewhat

oblong.

ANTENNE pale ferruginous, shining, and pubescent; the second joint in the male nearly lunulate, very flat towards the concave edge, much thicker at the convex or exterior edge, and somewhat truncated at its apex; the succeeding joints gradually increasing in size towards the extremity; the last very large and ovate.

Palpi pale ferruginous yellow, pubescent, very much

resembling those of the preceding species.

Eyes black, granulated, and shining.

THORAX pitchy black, shining, and finely punctured; the anterior part the largest; the base with a transverse line, terminating at each end in a puncture.

ELYTRA thickly punctured, finely pubescent, shining

and convex.

Abdomen pitchy black, shining and pubescent; the first segment with the margin reflexed; apex obtuse.

Legs pale ferruginous, and rather slender. LENGTH about three quarters of a line.

Навітат,

The genus Bythinus, when first established by Dr. Leach, contained only two species (Curtisii and Securiger;) a third was discovered in the latter part of April, 1824, near Letheringsett in Norfolk, by the Rev. J. Burrell, who obligingly sent me specimens of it. I have therefore named it in honour of that gentleman. At first view it very much resembles B. Securiger; but the singular form of the second joint of the antennæ clearly distinguishes it from that species. The females of this as well as of the other species of the genus are smaller than the males; but invariably the reverse is observed in in all the other genera of the family.

## GENUS III. ARCOPAGUS.

SYNONYMS.

Arcopagus; Leach:-Pselaphus, fam. ii; Reichenbach.

#### GENERIC CHARACTER.

Antennæ as long as the head and thorax; the first joint large; in the male cylindrical, in the female internally dilated; the second smaller and nearly globular; the six following smaller and nearly equal; ninth and tenth larger and wider; eleventh still larger, ovate, and acute. Maxillary Palpi nearly as long as the antennæ; the first joint filiform and long, with its apex abruptly clavated; second elongate; third very large and nearly securiform.

# Species 1. Arcopagus Bulbifer. Plate v, fig. 1.

#### SPECIFIC CHARACTER.

Black, shining, and pubescent. Antennæ clavated. Palpi pale ferruginous. Legs dark chesnut. Elutra strongly punctured.

#### SYNONYMS.

Leach, Zool. Misc. vol. iii, p. 84. Arcopagus Bulbifer.

Pselaphus Bulbifer. Reichenbach, Monog. Psel. p. 37, tab. i, f. 6.

Knoch, et Dahl, MSS. -Klugii. olim. in Mus. Hellwig.

Bostrichus Anomalus. Schrank, Donaumorr, brief. viii, p. 136.

#### DESCRIPTION

HEAD nearly triangular, black and shining; the anterior part produced and depressed; with two large punctures between the eyes.

Antennæ pale, ferruginous, and pubescent; the length of the head and thorax; the first joint in the female very large; the last ovate; base truncated. Palpi nearly twice the length of the head; pale ferruginous, and pubescent; the last joint large and securiform.

Eyes black, prominent, and granulated.

THORAX shining and finely pubescent; rather longer and wider than the head, and rotundated; base a little contracted, with a transverse impressed line, terminating at each end in a puncture.

ELYTRA thickly punctured, shining and pubescent, broader than the thorax, and convex; the base with four depressions, and a line on each side of the suture,

entire; apex dilated.

ABDOMEN oval and black, pubescent and shining; the

margin a little reflexed

Legs dull chesnut and shining; the thighs a little thickened; tibiæ slender and compressed; tarsi much paler.

LENGTH not quite a line.

Habitat, moss in woods, and on marshes.

This species is by far the most plentiful in Norfolk. One hundred specimens might be taken in a single day, merely by examining moss, collected towards the latter end of the year. This insect varies exceedingly in size, some being nearly twice the size of others.

# Species 2. Arcopagus Clavicornis.

late v, fig. 2.

#### SPECIFIC CHARACTER.

Dark chesnut, and larger than any others of the genus. Thorax wider than the head; the anterior part large; the posterior part contracted. Thighs rather thick.

#### SYNONYMS.

Arcopagus Clavicornis. Leach, Zool. Misc. vol. iii, p. 84.

Pselaphus — Reichenbach, Mon. Psel. p. 40, tab. i, f. 7.

Panzer, Faun. Germ. H. 99, no. 3

Antennarius. Mus. Hoffmansegg et Schueppel.

#### DESCRIPTION.

HEAD nearly triangular and smooth, and deeply impressed in the centre, with two foveolæ between the eyes.

Antenne dark chesnut and pubescent; not quite so long as the head and thorax; the first, second, and last joints very large; the second nearly quadrate; the last with its base truncated.

Palpi pale ferruginous, and finely pubescent; nearly as long as the antennæ.

Eyes black, prominent, and granulated.

THORAX dark chesnut, wider than the head; the anterior part the largest, and rounded; the base contracted

and slightly punctured, with an impressed line.

ELYTRA pitch coloured and shining; very thickly punctured toward the posterior part, and pubescent; much wider than the thorax, with a line on each side of the suture, and one at the shoulder, deeply impressed.

Abdomen pitchy black and shining; the segments

nearly equal in size, and finely pubescent.

Legs testaceous and shining; thighs thickish; tibiæ slightly curved and compressed; tarsi yellow.

LENGTH rather more than one line.

HABITAT, the same as the other species.

This is certainly the rarest species of the genus. I never saw it in any cabinet but that of the British Museum, in which there are a pair, one of which was taken at Swansea, by Mr. Millard, the other at Falmouth, by Mr. Prideaux; this is clearly distinguished from all the others of the genus, by being nearly twice the size.

## Species 3. Arcopagus Puncticollis.

Plate v. fig. 3.

#### SPECIFIC CHARACTER.

Dark ferruginous, punctured, and shining. Thorax very large; dilated in front, and thickly punctured. Thighs very thich in the female.

#### DESCRIPTION.

HEAD triangular, rather short, and thickly punctured; deeply depressed in front, with two large foveolæ between the eyes.

Antennæ ferruginous and pubescent; not quite so long as the head and thorax; the last joint very large,

and rather acuminate.

Palpi pale yellow brown, and pubescent. Eyes black, prominent, and granulated.

THORAX obscure, ferruginous, but paler than the body, thickly punctured, and pubescent; much wider than the head in front, and having the base very much narrowed, with an impressed line terminating in a puncture at each end.

ELYTRA dark ferruginous, punctured, pubescent, and shining, wider than the thorax, and rather longer than the head and thorax, with four excavations at the base, and a line on each side of the suture, entire.

Abdomen large, the segments equal in size; the first

three with the margin slightly reflexed.

Legs pale ferruginous yellow, and pubescent; thighs very thick in the female; tibiæ short and compressed; tarsi slender.

LENGTH from three quarters to one line.

Habitat, moss in damp situations.

Of this species, which is new to Britain, I have caught several specimens, at Horning, where I first discovered it, in 1822, as a Norfolk species. I believe it stands in some cabinets as the *Clavicornis*, which I, at first, supposed it to be, until I saw the difference by comparing it with the Museum specimens; the male is considerably smaller than the female; the thighs are also much slenderer. There are some varieties of a plain ferruginous brown; but they are found most frequent with the thorax much paler than the elytra; this species is next in size to *Clavicornis*.

## Species 4. Arcopagus Glabricollis.

Plate v, fig.34

#### SPECIFIC CHARACTER.

Obscure ferruginous. Thorax longer than the head, cordate, and smooth; the anterior and posterior parts narrowed, the latter with a transverse line.

#### SYNONYMS.

Arcopagus Glabricollis. Leach, Zool. Misc. vol. iii, p. 83. spec. 1.

Pselaphus ———— Reich. Monog. p. 43, tab. i, fig. 8.

#### DESCRIPTION.

Head triangular and smooth; the anterior part produced and bifid; the base with two punctures between the eyes.

ANTENNÆ ferruginous and pubescent, the length of the head and thorax; the first joint very large in the female; the second smaller and round; the last ovate, with its base rounded.

Palpi pale ferruginous yellow, half the length of the antennæ, and pubescent.

Eyes black, prominent, and granulated.

THORAX cordate, smooth, and shining, about the width of the head, and a little longer; the anterior and posterior parts narrowed, the latter with a transverse line.

ELYTRA ferruginous, punctured, and shining, as long as the head and thorax, and a little wider; with a line on each side of the suture, and a depression at the shoulder.

Abdomen oblong, convex, shining, and pubescent;

the margin slightly reflexed.

Legs pale ferruginous, and slender; tarsi pale yellow. Length about three quarters of a line.

HABITAT the same as the preceding.

This Insect is easily distinguished from any of the others, by the size and more elongated and slender form; it is not so common as *Bulbifer*, but is by no means rare in Norfolk; it is found varying from a bright ferruginous

to a pitch colour. Glabricollis, the name by which both Reichenbach and Dr. Leach have designated this species, I think not very applicable; as, from the term, it might be supposed the thorax of the insect is perfectly free from hairs; but such is not the case; a few fine hairs are scattered over its surface.

### GENUS IV. TYCHUS.

SYNONYMS.

Tychus; LEACH:-Pselaphus, fam. ii; REICHENBACH.

#### GENERIC CHARACTER.

Antennæ with the first joint long, thick, rather curved, and cylindrical; the second somewhat smaller; the third, fourth, fifth, sixth, seventh, and eighth, much smaller; the fifth joint, in the male, large and very conspicuous; ninth and tenth, very much truncated; eleventh very large, with its apex acute. Palpi longer than the head, with the first joint filiform, the second oblong and angulated; the third very large and securiform; body depressed.

# Species 1. Tychus Niger.

Plate vi. fig. 1.

#### SPECIFIC CHARACTER.

Black and pubescent. Thorax smooth and narrowed in front. Antennæ testaceous and pubescent. Elytra deeply striated.

#### SYNONYMS.

Tychus Niger.	Leach, Zool. Misc. vol. iii, p. 84.
Pselaphus Niger.	Reich. Monog. Pselap. p. 35, t. i, fig. 5, 3
	Kirby, MSS.
3	Paykul, Faun. suec. iii, p. 365, no. 4.
Nodicornis	. Beck. in litt.
2 ——Ruficornis.	Dalıl. in litt.
———Detritus.	et Congener. Nees. ab Esenbeck, in litt.

#### DESCRIPTION.

HEAD nearly triangular, smooth, convex, and shining. Antennæ testaceous and hairy, about half the length

of the body and thick; the last three joints the largest; the apex acute.

PALPI longer than the head, of a pale yellowish brown,

and pubescent.

Eyes black, prominent, and granulated.

THORAX black, smooth, and shining; the anterior

part much the narrowest, the base rounded.

ELYTRA black and shining, subquadrate, convex, and pubescent, rather more than half the length of the abdomen; a little depressed at the base, with a longitudinal line at the suture.

Abdomen black, shining, and pubescent; the first segment the largest, with the margin reflexed, the rest growing gradually smaller, the apex nearly acute.

Legs ferruginous and slender; thighs thickish, tibiæ

and tarsi slender.

LENGTH scarcely one line.

HABITAT, moss in dry woods and clayey situations.

In some instances, though rarely, the elytra of this insect vary in colour from black to a red brown. The male has the fifth joint of the antennæ enlarged; the antennæ of the female grow gradually thicker towards the apex. It is found in London, Bristol, Norfolk, and many other parts of the Kingdom; and is by no means an uncommon species. The drawing was taken from a specimen in the cabinet of the Rev. J. Burrell, which was the first I examined. I have since taken several. The moss, in which it is most frequently found, is the Hypnum Triquetrum; but Richenbach mentions its being found at the root of the oak.

## GENUS V. BRYAXIS.

SYNONYMS.

Bryaxis;  $K_{NOCH}$ :—Pselaphus, fam. iii;  $R_{EICHENBACH}$ .

#### GENERIC CHARACTER.

Antennæ long and gradually clavated; the first, second, ninth, tenth, and eleventh, joints the largest; the third, fourth, fifth, sixth, seventh, and eighth, smaller, of nearly equal size, and slender. Palpi short and thick; with the first joint very abruptly clavated; the second large, and a little angulated; the third ovate, with its apex acute.

# Species 1. Bryaxis Longicornis.

#### SPECIFIC CHARACTER.

Body black, shining, and much elongated. Elytra bright red. Thorax with three foveolæ joined by a semicircular impressed line. Antennæ very long and slender. Anterior tibiæ notched.

#### SYNONYMS.

Bryaxis Longicornis. Leach, Zoolog. Misc. vol. iii, p. 85. Pselaphus Foveolatus. Kirby, MSS.

#### DESCRIPTION.

HEAD black and shining; nearly quadrate, with three foveolæ deeply impressed, and forming an angle.

ANTENNÆ of a dusky liver colour, and pubescent, more than half the length of the body; the first joint long and cylindrical; second a little enlarged; third and fourth shorter; fifth much longer than the three preceding; sixth, seventh, and eighth, growing gradually shorter;

ninth, tenth, and eleventh, much the largest, and cylin-

drical; apex nearly acute.

Palpi light chesnut brown, and pubescent; the first joint abruptly clavated; second angular, with the exterior angle rounded; third very large and acute.

Eyes prominent, granulated, and black.

THORAX black, shining, and smooth; larger than the head; narrowed before and behind; the base with three foveolæ joined transversely by a semicircular impressed line, the centre one very much in the form of an angle.

ELYTRA bright red, shining, and smooth, with a black band across the apex, very finely pubescent, about half the length of the abdomen; with a line down each side of the suture, and an arcuated line from the base.

ABDOMEN black and shining; the first segment much the largest, with two depressed lines in the centre; each segment having a brown tinge towards the extremity, with the margin reflexed.

Legs chesnut-brown, long, and slender; the anterior tibiæ notched, with a small spine, and a row of fine hairs down the internal edge; tarsi paler and pubescent.

LENGTH about one line and three quarters. HABITAT, moss in damp woods, and rushes.

This species very much resembles Bryaxis Sanguineus at first sight; and has, indeed, by many persons, been considered the female of that species. But, after examining them very closely, I think I may venture to pronounce them distinct. Dr. Leach was, I believe, the first who divided them as species; his division was from the length of the antennæ, which is certainly a very striking characteristick; but I am not aware that any one has ever noticed the notch in the anterior tibiæ, which I think is another distinguishing character, as well as the general formation of the insect; the size of the notch varies very much in different specimens. This species is also subject to great change of colour. I have one which was taken by Mr. D. Bydder, in Epping Forest, and is entirely of a pale ferruginous brown.

I have beaten it from off aquatic plants, in the summer months; but its most common habitat is moss in damp woods.

## Species 2. Bryaxis Sanguineus.

Plate vii, fig. 3.

#### SPECIFIC CHARACTER.

Body black and shining, rather short and obtuse. Elytra red. Thorax black, with three foveolæ, joined by a semicircular impressed line. Antennæ with the last joint nearly obtuse.

#### SYNONYMS.

Bryaxis Sanguineus.	Leach, Zool. MSS. vol. iii, p. 85, spec. 2.
Pselaphus Sanguineus.	Reich. Monog. Pselap. p. 49, tab. ii, fig. 11.
	Illiger, Käf. Preuss.i, p. 292.
	Paykul, Faun. Suec. iii, p. 363.
Mucronatus.	Panzer, Faun. Germ. H. lxxxix, no. 10.
	Panzer, Krit. Revis. Bd. i, p. 62.
Paykullii.	Gyllenhall, MSS.
Anthicus Sanguineus.	Fab. Syst. Eleuth. i, p. 293, no. 22.
Staphylinus Sanguineus	. Linn. Syst. Nat. xiii, Gm. i, iv, p. 2029, n. 19.
	- Linn. Act. Ups. 1736, p. 15, no. 12.
	Linn. Faun. Suec. ed. I, Holm. 1746, p.194,
	no. 612.
	ed. II, Stockh. 1761, p.
	232, no. 853.
	- Paykul, Monog. Staphyl. p. 39, no. 29.
	Oliv. Ins. xlii, tab. 6, fig. 54, (teste Illigero
	Fabricio et Sturmio)
	- Ross. Faun. Etrusc. ed. Hellw. Mant.
	p. 444, no. 223.

#### DESCRIPTION.

HEAD black, shining, smooth, and nearly quadrate; with an impressed foveola on each side, between the eyes, and a third in front.

ANTENNÆ dusky liver colour and pubescent; the

first eight joints nearly equal and cylindrical; the last three largest, with the apex nearly obtuse.

PALPI pale chesnut brown, and pubescent; the last

joint much the largest, and nearly acute.

Eyes prominent, granulated, and black.

THORAX black, shining, and smooth, a little wider, and longer than the head; anterior part rounded; base rather contracted, with three foveolæ, joined by a semi-

circular impressed line.

ELYTRA red, smooth, and shining, rather more than half the length of the abdomen; with two longitudinal lines on each, one in the centre, the other at the suture; the basal margin and the suture of a dusky brown, inclining to black.

Abdomen gibbous, black, shining, and very finely pubescent; the first segment the largest, with two impressed lines in the centre, the margin a little reflexed;

apex nearly obtuse.

Legs pitchy brown and finely pubescent, long, slender, and rather compressed; tarsi pale chesnut colour.

LENGTH about one line and a quarter.

HABITAT, the same as the preceding species.

This species is the Staphylinus Sanguineus of Linnæus, Olivier, and Paykul; but for what reason they placed it in that family is very difficult to determine, unless from the similarity of their habitats, as their forms do not agree in any one respect. It is true they are found in society with numbers of the smaller Staphyliandæ, which perhaps might unite them in some degree; nevertheless, the tarsi, and the general form of the insect, would clearly point it out as belonging to a distinct family. This species is very common in many parts of Norfolk. It is subject to great variation of colour in the Elytra, from a bright red to nearly a black.

## Species 3. Bryaxis Impressus.

Plate vii, fig. 4

#### SPECIFIC CHARACTER.

Body black. Elytra obscure red. Thorax black and shining, with three foveolæ. The centre one the smallest. Antennæ with the aper obtuse.

#### SYNONYMS.

Bryaxis Impressus.	Leach, Zool. Misc. vol. iii, p. 86, spec. 3.
Pselaphus Impressus.	Reichenbach, Monog. p. 58, tab. ii, fig. 15.
	Panzer, Faun. Germ. H. 89, no. 10.
	Krit. Revis. i, p. 62.
Tripunctatus.	Kirby, MSS.

#### DESCRIPTION.

Head black, shining, and nearly quadrate; with a large foveola in front, and two smaller between the eyes.

Antennæ pitchy and obscure, thickly pubescent, about half the length of the body; the first, second, and last three joints the largest, the apex nearly obtuse.

PALPI testaceous and finely pubescent; about the

length of the head.

Eyes black, prominent, and granulated.

THORAX black, smooth, very finely pubescent, and nearly globular, a little longer and wider than the head; the base with three round foveolæ, the centre one the smallest.

ELYTRA obscure red, finely pubescent, and shining, wider than the thorax, and nearly quadrate, with a line on each side of the suture, and one in the centre of each elytron, beginning at the depressed points at the base; the suture and margin much darker, and nearly black.

Abdomen black, shining, and smooth; finely pubescent; oval and very obtuse; the margin a little reflexed.

LEGS pitchy brown and slender; tibiæ compressed; tarsi much paler.

Length one line.

Habitat, moss on marshes, and at the stumps of trees in damp woods.

This insect is of much rarer occurrence than the two preceding species, and is also subject to great variation in colour. The prevailing colour is much duller than either Bryaxis Longicornis or Sanguineus; but I have seen specimens of as bright a red as either of these; and some nearly black. This species is very easily distinguished from Sanguineus, by the three foveolæ on the base of the thorax not being united by a line; also by the Antennæ being more obtuse, and the insect altogether smaller.

## Species 4. Bryaxis Fossulatus.

Plate viii, fig. 1

#### SPECIFIC CHARACTER.

Pitch-coloured, pubescent, and smooth. Palpi testaceous. Thorax with three foveolæ of an equal size.

#### SYNONYMS.

Bryaxis I ossulatus.	Leach, Zool. Misc. vol. iii, p. 86, spec. 4.
Tripunctata.	Koch. in litt. teste Meg. a Muehlfeld.
Pselaphus Fossulatus.	Reichenbach, Monog. Psel. p. 54, tab. ii, f. 13.
Cruentatus.	Knoch. in litt.
Fuscipes.	Dahl. in litt.
Pratensis.	s. } Schueppel. Mus.
Tripunctatu	s. ) compression
Ruficornis.	Kirby, MSS.

#### DESCRIPTION.

Head pitchy and shining; obtusely triangular and depressed in front, with two foveolæ between the eyes.

Antennæ rather paler than the body, and pubescent; about the length of the head and thorax; the last joint nearly oval.

Palpi as long as the head; testaceous and pubescent.

Eyes prominent, granulated, and black.

THORAX pitchy and shining; smooth and finely pu-

bescent; longer and wider than the head; rotundated; the base truncated, with three large foveolæ of an equal size.

ELYTRA obscure pitch-colour; shining, smooth, and pubescent; nearly quadrate; wider than the thorax, and about half the length of the abdomen, with a depressed curved line from the base of each, and another down each side of the suture.

Abdomen shining, smooth, pubescent, and obtuse, with a reflexed margin; the first segment next the elytra the largest, with two depressed lines at the base, in the centre of which is a row of yellowish hairs.

Legs much paler than the body; slender, and finely

pubescent.

LENGTH rather more than one line.

Habitat, moss in damp situations, and sandy places.

This species is found in various parts of England, but it is by no means a common insect. I have never found it in any other situation than in moss on the stumps of trees; but my kind friend, Mr. G. Samouelle of London, the author of the Entomologist's Compendium, (a work which has contributed greatly to the advancement of Entomology in Britain), informs me that he has taken it in sandy places, near Bexley. I have a bright ferruginous variety of this insect, which is rare, as the prevailing colour is a dark pitchy brown. It was named Ruficornis by the Rev. Wm. Kirby, from the colour of its antennæ, which are much brighter in recent specimens, than in those preserved in cabinets.

## Species 5. Bryaxis Hæmaticus.

Plate viii, fig. 2.

SPECIFIC CHARACTER.

Bright chesnut. Thorax obcordate, with three foveolæ at the base, the centre one the smallest.

#### SYNONYMS.

Bryaxis Hæmaticus.	Leach, vol. iii, p. 86, spec. 5. Zool. Misc.
Pselaphus ———	Reich. Monog. p. 52, spec. 12, tab. ii, f. 12.
Rubellus.	Mus. Dom. Schueppel.
Sanguineus.	Mus. Hübnerrianum, Dr. Germar.

#### DESCRIPTION.

HEAD nearly triangular; convex and shining; rather elevated in the centre, with three punctures; the largest in front, between the antennæ, the other two between the eyes.

ANTENNÆ pale chesnut and pubescent; not quite half the length of the body; the last joint nearly ovate.

Palpi pale yellow and finely pubescent; about the length of the head.

Eyes black, prominent, and granulated.

THORAX obcordate; rather longer and wider than the head; convex and shining, with a few punctures; the base with three foveolæ, the centre one rather the smallest.

ELYTRA nearly quadrate, convex, and finely pubescent; suture a little elevated, with a line on each side, and another from the shoulder, deeply impressed at the base.

Abdomen gibbous, smooth, and shining; the first segment much the largest, and elevated, with two impressed lines in the centre, and the margin reflexed; the following joints much smaller, with the apex nearly obtuse.

Legs obscure chesnut; thighs thickish; tibiæ compressed and slender; tarsi paler.

LENGTH rather more than a line.

Habitat, moss on marshes, and in damp woods.

The true *Hæmaticus* is very rare in Britain. The *Juncorum* is frequently mistaken for this species. But the former is clearly distinguished from the latter, by its form and diminutive size, as well as by the head and thorax being thickly punctured; and the centre foveola at the base of the thorax being excessively small. Some Entomologists, again, have considered them as

male and female of the same species; but this seems very improbable, since a dozen specimens of the *Juncorum* may be taken in the same situation, where not a single *Hæmaticus* can be discovered; whereas, in all the other genera of the family, the sexes are observed to occupy, in nearly equal proportions, the same habitat. I am obliged to T. Brightwell, Esq., F.L.S., of Norwich, for the loan of the specimen from which my drawing was made. This insect is also in the cabinets of the British Museum; J. F. Stephens, Esq., and Mr. J. Curtis.

## Species 6. Bryaxis Juncorum.

Plate viii, 6g. 3.

#### SPECIFIC CHARACTER.

Ferruginous and finely pubescent. Thorax nearly round, and thickly punctured, with a large foveola on each side, and one at the base, very minute. Body short and globose.

#### SYNONYM.

Bryaxis Juncorum. Leach, Zool. Misc. vol. iii, p. 86, spec. 6.

#### DESCRIPTION.

Head nearly quadrate; the angles rounded and thickly punctured, with two foveola between the eyes, and a great depression in front.

Antennæ pale ferruginous, and pubescent; the first,

second, and last, joints large; the apex obtuse.

PALPI pale yellow, and finely pubescent; about the length of the head.

Eyes black, prominent, and granulated.

THORAX nearly globular; rather narrowed at the base, and thickly punctured; with three foveolæ, the centre one very minute.

ELYTRA nearly quadrate, and finely pubescent, with a line on each side of the suture, and one from the shoulder

deeply impressed at the base.

ABDOMEN contracted, round, convex, and finely pu-

bescent; the first segment much the largest, with two depressed lines in the centre, and a row of yellowish hairs; the margin reflexed; apex nearly obtuse.

LEGS ferruginous, pubescent, and slender.

LENGTH about a line.

HABITAT, moss at the roots of trees, and amongst rushes.

This species is frequently found at Battersea, and other places near London; also in different parts of Norfolk, where it is taken in moss which grows amongst rushes and at the roots of trees.

# Species 7. Bryaxis Nigriventris.

#### SPECIFIC CHARACTER.

Bright ferruginous red. Abdomen black. Thorax globular and cana. liculate. Elytra with one stria.

#### SYNONYM.

Pselaphus Nigriventris. Kirby, MS .

#### DESCRIPTION.

HEAD red, thickly punctured, and nearly quadrate; with an angular depression in front, terminating in two punctures and an oblong foveola in the centre.

ANTENNÆ ferruginous; short, and thick; finely pubescent, with a few long hairs intermixed; the last joint

very large and acute.

Palpi testaceous and pubescent; the first joint long, and nearly cylindrical; second short and nearly angular; third as long as the first two, and very much larger, oblong, and acute.

Eyes small, granulated, black, and shining.

THORAX red and thickly punctured; longer and wider than the head; the anterior part with the angles rounded; the posterior part contracted; a deeply impressed longitudinal line down the centre, and one on each side, all

three terminating in punctures at the base, which are also situated in a semicircular line.

ELYTRA bright red, thickly punctured, and shining; as long as the head and thorax, and spherical, with four depressions at the base, and a line on each side of the suture.

Abdomen smooth, black, shining, and spherical; not quite so long as the elytra; the first segment the largest, with two impressed lines in the centre; margin reflexed.

LEGS ferruginous, long, and slender.

LENGTH rather more than one line and a half.

Навітат,

This beautiful species was first discovered by the Rev. W. Kirby, who captured a specimen near Barham in Suffolk. A second was taken by Mr. J. Curtis, of London, in the New Forest, Hants, in 1823; and the Rev. F. W. Hope captured another at Shrewsbury, in Shropshire. This specimen comes very near to Reichenbach's Sulcicollis, at first sight, but differs in the sculpture of the thorax, as well as in colour, the former being of a cinnamon brown.

The peculiarity in the formation and proportion of the *Palpi* in this species might seem to afford sufficient ground for constituting it a new genus. Certainly, had I met with other species bearing the same character, I should have availed myself of them to divide the genus into two distinct sections.

## GENUS VI. PSELAPHUS.

SYNONYMS.

Pselaphus; HERBST:-Pselaphus, fam. i; REICHENBACH.

#### GENERIC CHARACTER.

Antennæ about half the length of the body, long, slender, and gradually clavated; the first joint long and cylindrical; the second shorter; the third, fourth, fifth, sixth, seventh, and eighth, of an equal size, shorter and cylindrical; ninth and tenth larger, and rather angulated; the eleventh the largest, and elongate, oval, or ovate. Maxillary Palpi three times as long as the head; with five joints;\* the first very small; second long, slender, and gradually clavated; the third about the same length, and clavated at both ends; fourth small, and nearly oval; fifth very long and clavated; the clava pyriform. Elytra nearly triangular, and about half the length of the Abdomen.

## Species 1. Pselaphus Herbstii.

Plate ix, fig. 1.

#### SPECIFIC CHARACTER.

Thorax elongated; nearly cylindrical; smooth and shining. Abdomen triangular, dark chesnut, and slightly pubescent.

#### SYNONYMS.

Pselaphus Herbstii.	Reichenb. Monog. Psel. p. 25, tab. i, f. 1.
	Leach, Zool. Misc. vol. iii, p 87, spec. 1.
——— Heisii, З?	Herbst. Käf. iv, p. 110, tab. xxxix, f. 10.
Brevipalpis, β.	Schrank. Fn. Boic. i, 438.

<sup>\*</sup> I am not aware that any preceding writer has detected five joints in the Maxillary Palpi of this genus. Reichenbach, Leach, and others describe hem as having only three.

#### DESCRIPTION.

Head longer than broad; the anterior part with a longitudinal furrow, and bifid; the front impressed;

the vertex convex, smooth, and shining.

ANTENNÆ darkish chesnut and pubescent; rather more than half the length of the body; the first and second joints long and cylindrical; the following six nearly equal in size, and much smaller; ninth and tenth nearly triangular, and larger; the eleventh the largest, elongated, and ovate.

Palpi pale yellow, and pubescent; nearly three times the length of the head; the clava at the apex nearly

oval.

EYES large, prominent, granulated, and black.

THORAX longer than the head, and nearly cylindrical; smooth and shining; anterior and posterior parts nar-

rowed and nearly equal.

ELYTRA dark chesnut and shining; longer than the thorax; nearly triangular and convex, with a longitudinal line on each side of the suture, and another at the shoulder arched and entire; the apex thickly covered with yellowish inflexed hairs.

Abdomen twice as long as the thorax; smooth and shining; the first segment the largest, with a few yellowish hairs; the margin at the sides very broad and re-

flexed; the following much shorter.

Legs bright chesnut and pubescent; longer than the abdomen; thighs, tibiæ, and tarsi, rather slender.

LENGTH a little exceeding one line.

Habitat, moss on the stumps of trees in damp woods, and on marshes.

This species is by no means so common as *Heisei*. I, however, generally take one or two every year, at Loddon and Woodbastwick. Reichenbach mentions a specimen being taken under a stone near Berne, in Switzerland.

## Species 2. Pselaphus Heisei.

Plate ix, fig. 2.

#### SPECIFIC CHARACTER.

Dark chesnut, and shining. Thorax narrowed before and behind, and much dilated in the middle. Body elongated. Thighs very thick.

#### SYNONYMS.

Pselaphus Heisei.	Reichenbach, Monog. p. 28, tab. i, fig. 2.
	Herbst. Käf. iv, p. 109, no. 1, tab. xxxix,
	fig. 9. a
α.	Schrank. Faun. Boic. i, 438.
	Latr. Gen. Crust. et Insect. iii, p. 76, spec. 1.
	Leach, Zool. Misc. vol. iii, p. 87, spec. 2.
Gracilicollis.	Dahl. in litt.
Eyrygaster.	Beck. in litt.

#### DESCRIPTION.

Head elongated; the anterior part narrowed; depressed and bifid, with a longitudinal furrow in the centre; the vertex convex and shining, with two small globular and hairy elevations between the eyes.

ANTENNÆ dull chesnut and pubescent; about half the length of the body, and rather thick; the last joint

very large, and a little produced on one side.

Palpi pale chesnut and pubescent; three times the length of the head; the clava oblong.

Eyes black, granulated, and prominent.

THORAX longer than the head, and wider; narrowed at both ends, and much dilated in the middle; shining, smooth, and convex; the anterior part with two short impressed lines, nearly obsolete.

ELYTRA longer than the thorax, and considerably wider; triangular, smooth, shining, and finely pubescent; with a line on each side of the suture, and another from

each shoulder deeply impressed.

Abdomen very long and narrow; more than twice the length of the thorax; the first joint much the largest, and convex, with the margin reflexed; the three others smaller; apex a little produced.

Legs light chesnut and pubescent; the thighs very thick; tibiæ compressed; tarsi slender and yellowish.

LENGTH about one line and a quarter.

HABITAT, the same as the preceding species.

This seems the commonest species of *Pselaphus* we have in Norfolk. It is distinguished from *Herbstii* by its more elongated form, and the width of the thorax; the antennæ and legs are also much thicker.

## Species 3. Pselaphus Longicollis.

Plate x. fig. 1.

#### SPECIFIC CHARACTER.

Dark chesnut and shining. Thorax nearly oval; the base with two semicircular lines, joined by a puncture in the centre.

#### SYNONYMS.

Pselaphus Longicollis.	Reich. Monog. Pselap. p. 30, t. 1, fig. 3.
	Dahl. in litt.
	Leach, Zool. Misc. vol. 3, p. 87, spec. 3.
Anthicus Dresdensis.	Panz. Faun. Germ. Fasc. 98, no. 1.

#### DESCRIPTION.

Head nearly as broad as the thorax, and shorter than in the preceding species; anterior part producted and depressed, with two impressed punctures between the eyes.

Antennæ pale and pubescent; half the length of the body; the first and three last joints the largest; apex ovate; the intermediate ones equal and slender.

Palpi pale ferruginous, and finely pubescent; three times the length of the head; the clava at the apex obliquely truncated.

Eyes black, granulated, and prominent.

THORAX longer than the head, and a little wider; oval, convex, and smooth, with a few hairs; the anterior part with two oblique impressed lines; the base with two curved lines, joined in the centre by a puncture.

ELYTRA nearly triangular, convex, smooth, and shining; the margin at the sides a little elevated; the de-

clivity at the apex thickly punctured; the posterior margin covered with yellowish inflexed hairs.

ABDOMEN broad; the first segment much the largest;

the margin at the sides reflexed; apex obtuse.

LEGS chesnut, pubescent, and shining; thighs thickish; tibiæ compressed; tarsi slender.

LENGTH rather more than one line.

HABITAT the same as with the preceding species.

This species is rare in England. The specimen from which my drawing was made, was captured at Horning, in Norfolk, by my respected friend Mr. R. Wigham of Norwich, an indefatigable collector of British Insects This is the only specimen of it in Norfolk, and Plants. and is now in the cabinet of Mr. J. Sparshall.

# Species 4. Pselaphus Dresdensis.

#### SPECIFIC CHARACTER.

Pitchy black and pubescent. Thorax angulated; the base with a semicircular impressed line.

#### SYNONYMS.

Pselaphus Dresdensis.	Reichenb. Monog. Pselaph. p. 32, t.1, ng. 4.
	Leach, Zool. Misc. vol. 3, p. 87, spec. 4.
	Herbst. Käf. iv, p. 110, no. 2, tab. xxxix,
	fig. 11, et B.
——— Hiesii.	Payk. Faun. Sueci. ii, p. 361, no. 11.
Anthicus Dresdensis.	Fabric. Syst. Eleuth. vol. i, no. 23, p. 293

#### DESCRIPTION.

HEAD oval; the anterior part slender; lengthened, and very much depressed; the back part rounded.

ANTENNÆ dull liver colour and pubescent; rather more than half the length of the body, and slender; the last joint lanceolate-ovate.

PALPI yellowish brown, and finely pubescent; about

twice as long as the head.

Eves prominent, granulated, and black.

THORAX pitchy black, smooth, shining, and pubescent; rather longer than the head, and convex; the anterior part the narrowest, and obtusely angulated; the base rounded, and much the broadest, with a semicircular impressed line.

ELYTRA subtriangular, and convex; the posterior margin with a row of light, yellowish, inflexed hairs; an impressed line on each side of the suture, and pubescent.

Abdomen pitchy black, pubescent, and shining; very broad; the exterior margin reflexed; apex a little produced.

Legs dull red, and hairy; tibiæ and tarsi slender.

LENGTH a little exceeding one line.

Habitat, moss on the stumps of trees in woods.

This is certainly next, in point of rarity, to Longicollis; it is, however, found occasionally about Norfolk. I have taken six specimens, at different times, at Woodbastwick; one has also been found near Loddon, by Mr. R. Wigham. The figure which I have given is of the female. There is a variety with the elytra inclining to chesnut. Many persons have confounded Bryaxis Juncorum with this insect. I have seen two or three of that species in different cabinets, with the name Dresdensis attached to them; but I think no one could make this mistake who had seen a specimen of each of the Genera, their forms being so very dissimilar as well as the colour.





## FAMILY II.

## SCYDMÆNIDÆ.

#### ESSENTIAL CHARACTER.

MAXILLARY PALPI with four joints; the last joint the smallest and very minute.

MANDIBULÆ bifid.

ELYTRA covering the whole of the abdomen.

TARSI with five joints.

#### NATURAL CHARACTER.

Palpi four, unequal.

MAXILLARY PALPI elongated, inflexed, and clavated, with four joints; the first short and thick; the second long, curved, and gradually clavated; the third very large and ovate, or pyriform; (in Sec. 1, with its apex round; in Sec. 2, with its apex truncated); the fourth subulate and almost obscured by hairs; (in Sec. 1, nearly obtuse, and so small as to be easily overlooked:\* in Sec. 2, distinct, and acute).

<sup>\*</sup> Kunze, not perceiving this minute joint, characterized the section, "palpis triarticulatis." See S. thoracicus.

Labial Palpi short and retracted, with two joints; the first cylindrical and large, the interior edge ciliate; the apex terminating with a long seta; the second joint small and subulate, inserted between the lobes of the ligula.

LABIUM cartilaginous and subquadrate; the anterior angles and the process in the centre produced and acute; base truncated.

LIGULA membranaceous and nearly quadrate; apex three lobed; the lobes at the sides large and produced, the centre one rounded with two setæ.

LABRUM transverse and horny; the anterior angles rounded; the base excavated.

 $\mathbf{M}_{\mathbf{AXILL}\mathbf{\mathcal{E}}}$  horny, curved, and acute; the anterior edge thickly ciliate.

Mandibulæ horny, curved, and produced to a point; the anterior edge with one tooth; the base very much dilated and roundish.

Antennæ long and slender, with eleven articulations; about half the length of the body; the first, second, and last three or four joints the largest, or gradually clavated from the base; the intermediate ones smaller, and either oblong or nearly globose; the eleventh the largest, and either acuminated or ovate.

Eyes large, globular, prominent, and finely granulated. Head either porrected or contracted; the front con-

vex or flat.

THORAX either elongated, nearly cordate, quadrate,

ovate, or globose; the base impressed and contracted.

ELYTRA oblong and ovate, or oval; convex; the margin inflexed; the angles at the shoulders prominent; the base with deep sulci and foveolæ; punctured and pubescent; covering the whole of the abdomen.

Wines pale yellowish white and clear; longer than the abdomen and complicate; the nervures light brown and slender.

Scutellum triangular and scarcely visible.

Abdomen ovate or oval; smooth; the base truncated.

Legs formed for running; slender, and without spines.

Thighs very abruptly clavated; in one species with the anterior thigh triangular and compressed.

Tible slender; rather curved; gradually clavated and pubescent.

Tarsi with five joints; long and slender; nearly the length of the tibiæ; the first and last joints rather the longest; two claws.

Sexes. The antennæ and legs of the male much thicker than those of the female.

TRANSFORMATIONS unknown.

Food unknown.

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## SYNOPSIS SPECIERUM.

### SCYDMÆNUS.

Stirps 1. Palpis maxillaribus articulo quarto obsoleto.

### GENUS VII. SCYDMÆNUS.

- 1. Tarsatus. S. piceo-fuscus, pubescens, nitidus: thorace subovato postice foveolis quatuor notato: elytris basi lineolis duabus impressis: tarsis anticis dilatatis.
- 2. Ruficornis. S. piceo-niger: antennis pedibusque ferrugineis: capite porrecto: thorace dense pubescenti; elytris latissimis.
- 3. Thoracicus. S. piceus, pubescens; thorace maximo; antice rotundato, gibbo, elytris latiori; capite parvo, inserto, deflexo; antennis pedibusque flavo-ferrugineis.

## STIRPS 2. PALPIS maxillaribus distincte quadriarticulatis.

- 4. Hirticollis. S. niger nitidus; antennis articulis quatuor extimis majoribus: thorace antice angustiori, pube densa fusca vestito.
- 5. Rutilipennis. S. niger, nitidus; antennis thorace longioribus, castaneis, pubescentibus; articulis quatuor extimis majoribus nigris; thorace pube densa vestito; elytris castaneis pubescentibus; pedibus castaneis.

- 6. Denticornis. S. lævis nitidus, piceo-niger; antennis *masculis* articulis octavo et nono denticulatis; thorace dense pubescenti, postice foveolis duabus notato.
- 7. Elongatulus. S. elongatus, piceus, nitidus, pubescens; foveolis duabus interocularibus; thorace elongato deflexo, postice utrinque fovea angulari impresso.
- 8. Sparshalli. S. ferrugineus, pubescens, nitidus; capite angustato; thorace basi impresso.
- 9. Scutellaris. S. ovatus, pubescens, niger; thorace subquadrato convexo, basi angustato punctis sex transversis impressis; elytris basi foveolis quatuor; scutello suturaque subelevatis.
- 10. Bicolor. S. elongatus, nitidus, pubescens, nigro-castaneus; antennis flavescentibus; articulo octavo reliquis minori; thorace nigriori postice ruguloso.
- 11. Collaris. S. oblongus, niger, punctatus; thorace antice latiori, postice valde angustato; seriebus duabus transversis punctorum impressorum; elytris, sutura, et scutello, elevatis.
- 12. Pusillus. S. oblongus, niger, subpubescens, nitidus; thorace subelongato basi angustato serie transversa punctorum impressorum; elytris punctatis basi quadrisulcatis.
- 13. WIGHAMH. S. piceus, nitidus, læviter pubescens; antennis pedibusque pallide castaneis; capite puncto gemino frontali; thorace postice truncato, trifoveolato; elytris basi quadriimpressis.

### GENUS VII. SCYDMÆNUS.

SYNONYM.

Scydmænus, (Palpatores, fam. viii); LATREILLE.

### GENERIC CHARACTER.

Antennæ gradually clavated: the first joint at the base a little lengthened; the last three and four joints the largest; eleventh ovate. Maxillary Palpi with the first joint short and thick; second long, curved, and gradually clavated; third large, and nearly pear-shaped, apex either rounded or truncated; fourth very small, and either nearly obsolete and obtuse, or a little curved, and acute. Abdomen nearly ovate; base truncated; femur clavated.

SECTION 1. Palpi with the fourth joint nearly obsolete.

# Species 1. Scydmænus Tarsatus.

Plate xi, fig. 1.

### SPECIFIC CHARACTER.

Pitchy brown, pubescent, and shining. Thorax nearly ovate, with four foveolæ at the base. Elytra nearly ovate, with two depressed lines at the base; anterior tarsi dilated.

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Lytta Picea. Scydmænus Illigeri.

- Piceus.

Marsham, Entomolog. Britannic. p. 486, 5. Schuppel, MSS.

Kirby, MSS.

### DESCRIPTION.

HEAD pitch coloured, shining, and finely pubescent; the anterior part a little attenuated and truncated.

Antennæ testaceous, pubescent, and rather thick; the first joint long and cylindrical, having a long excavation on the internal side, proceeding from the insertion of the second joint; the last three joints the largest; the fifth from the base a little elongated; the eleventh ovate, with its base truncated.

Palpi obscure testaceous and thickly pubescent; the third joint large and pyriform; the fourth short and

thick, and scarcely perceptible.

Eyes black, prominent, and finely granulated.

THORAX pitch coloured, shining, and finely pubescent, about twice the length of the head, and nearly ovate; the base abruptly truncated, with four foveolæ transversely situated.

ELYTRA pitch coloured, but lighter than the thorax, shining, and finely pubescent; elongate-oval, with two

deep depressions at the base; apex rounded.

ABDOMEN shining and ovate.

Less pale testaceous and thickly pubescent; thighs long and abruptly clavated; tibiæ and tarsi thickish; the anterior tarsi much dilated.

LENGTH rather more than one line and a quarter.

Habitat, moss at the roots of trees in moist places, and under stones.

Scydmænus Helwigii is the type of this Genus, and has been described as a British species by most authors. I have never seen a British specimen of it, although I have examined all the principal cabinets in London and Norfolk: the specimens which are there named Hellwigii are the true Tarsatus of Kunze, which has been described as Helwigii by Latreille and Gyllenhall. One species, however, is clearly distinguished from the other, not only by the four foveolæ at the base of the

thorax, and the dilated tarsi, but by the general form— Hellwigii being a much narrower insect about the thorax, and the base of the elytra, than Tarsatus. I shall here give Kunze's specific character of it:—

Spec. i, S. Hellwigii. N. rufo-testaceus, nitidus, sub-pubescens; thorace ovato inflato, postice obsolete bifoveolato punctulato; punctis basi crebrioribus; coleoptris oblongo-ovatis, convexis, connatis punctulatis; apice truncatis; fig. 1.

This insect is also standing in many cabinets under the name of *Piceus*, in consequence of Marsham having described it as *Lytta Picca*. This appears to be the only species of *Scydmænus* known by him. For a figure of this species I am indebted to Mr. J. Sparshall, who very liberally granted me free access to his cabinet on all occasions: it is also in the cabinets of the Rev. W. Kirby, J. F. Stephens, Esq., A. H. Haworth, Esq., and in the British Museum. It has been taken in London and Bristol by Dr. Leach.

# Species 2. Scydmænus Ruficornis.

Plate xi, fig. 2.

### SPECIFIC CHARACTER.

Pitchy black. Thorax thickly pubescent. Antennæ and legs dark ferruginous, and hairy. Elytra very broad. Head porrected.

#### SYNONYM.

Scydmænus Ruficornis. Kirby, MSS.

### DESCRIPTION.

Head shining, very large, round, and porrected.

Antenne dark testaceous, hairy, and very thick; the first joint long and cylindrical; the second conical; the next five much shorter, and nearly equal in size; the last four the largest, and much darker; the apex acute.

Palpi pale ferruginous, finely pubescent, about the length of the head; the last joint rather more prominent than in the preceding species.

Eyes black, finely granulated, and shining.

THORAX black and shining, very thickly covered with dusky brown hairs, the anterior part the smallest, and rounded; the base transversely impressed with two deep punctures, and a little contracted at the sides.

ELYTRA shining, covered with yellow hairs, much wider than the thorax, large, nearly ovate, and convex; with two depressions at the base; apex inclining to a

red brown, and rounded.

Abdomen pitchy and shining; a little produced be-

yond the elytra.

Legs pubescent; thighs pitchy black and thick; tibiæ dark chesnut, very thick towards the apex; tarsi much paler.

LENGTH nearly one line and a quarter.

Habitat, moss on damp banks in sandy situations, and under stones.

The first specimen I examined of this species was taken by Mr. Wilkin, and is now in the cabinet of N. A. Vigors, Esq. I have since seen specimens of it in the British Museum and other cabinets. Mr. J. Sparshall and myself were so fortunate as to meet with a pair in the beginning of April, 1824, near Loddon, in Norfolk, from out of moss in a sandy situation; it has also been taken at Barham, by the Rev. W. Kirby, and in Epping Forest, by Mr. Doubleday.

## Species 3. Thoracicus.

Plate xi, fg. 3.

### SPECIFIC CHARACTER.

Pitch-coloured and pubescent. Thorax very large, the fore part rounded, gibbous, and wider than the elytra. Head small, inserted into the thorax and deflexed. Antennæ and legs ferruginous yellow and hairy.

SYNONYMS.

Scydmænus Thoracicus.

Auripes.

Kunze, Monog. Scyd. p. 12, fig. 4. Wilkin, MSS.

### DESCRIPTION.

HEAD dull chesnut, small, flat, inserted into the tho-

rax, deflexed and shining.

Antennæ testaceous yellow and hairy, about the length of the head and thorax; the first and second joints large and cylindrical; third, fourth, fifth, and sixth of an equal size, and smaller than the preceding; seventh larger and round; eighth small; the last three the largest; apex nearly acute.

PALPI pale yellow and pubescent, about the length of the head; the last joint very small, and nearly con-

cealed by hairs.

Eyes testaceous and shining, not very prominent.

THORAX dark chesnut, shining, smooth, and pubescent, very large, the fore part rounded, gibbous, and wider than the elytra; the base a little contracted; the sides slightly emarginated.

ELYTRA pitch coloured and shining, thickly covered with fine fuscous hairs; a little elongated; the base with

two angular depressions; the apex rounded.

ABDOMEN pitchy red and shining, rather longer then

the elytra; the apex somewhat ovate.

Legs ferruginous yellow, shining, and finely pubescent; thighs thick; tibiæ and tarsi slender and much paler.

LENGTH rather more than half a line.

Habitat, moss on moist banks.

This species was first discovered by Mr. Wilkin, in

Cossey Park, near Norwich. He found only one specimen of it, which is now in the cabinet of N. A. Vigors, Esq., who kindly permitted me to make a drawing from it. This is an exceedingly fine variety of the species, with its legs of a bright gold colour, (whence Mr. Wilkin named it Auripes), and its thorax much brighter than in any specimen I have since seen. Mr. R. Wigham discovered a new habitat for it near Loddon, in Norfolk, from which place we have taken several, all of which are much more obscure in colour than the former. This species is included in Kunze's first family—Palpi Triarticulati.

SECTION 2. Palpi with the fourth joint prominent.

## Species 4. Scydmænus Hirticollis.

Plate xii, fig. 1.

### SPECIFIC CHARACTER.

Black and shining. Thorax thickly covered with fuscous hairs; the anterior part the smallest. Antennæ with the last four joints the largest and blackish.

	SYNONYMS.
Scydmænus Hirticollis.	Gyllenhall, Ins. Suec. 1, p. 286.
	Kunze, Monog. Scydm. p. 16, spe. 7, f. 7.
Pilosicollis.	Dahl. MSS.
Pselaphus Hirticollis.	Illiger, Kaef. pr. i, p. 292.
	Paykul, Faun. Suec. iii, p. 367.

#### DESCRIPTION.

HEAD black and shining, with a few hairs; very much porrected, round and smooth.

Antennæ dusky ferruginous and hairy; about half the length of the body; the last four joints the largest and blackish.

Palpi fuscous and hairy, longer than the head, slender and porrected; the fourth joint very conspicuous.

EYES black and finely granulated, not very prominent. THORAX black, obscure, oblong, convex, and thickly covered with fuscous hairs; the anterior part the smallest; base transversely impressed.

ELYTRA black, shining, and smooth, with a few hairs,

large, oblong, ovate, and convex; the apex rounded.

ABDOMEN pitchy black and shining.

Legs dusky ferruginous, and finely pubescent; thighs black, very abruptly clavated; the base very slender; tibiæ long and slender, gradually thickened towards the apex; tarsi long, slender, and much paler.

LENGTH about three quarters of a line.

Habitat, moss in damp woods in sandy soils, and under stones.

Gyllenhall mentions this species inhabiting the sandy shores of the sea; I have never taken it in those situations myself. In moss from off the stump of trees in damp woods I have most frequently found it.

## Species 5. Scydmænus Rutilipennis.

late xii, tig. 2

### SPECIFIC CHARACTER.

Body black and shining. Thorax black and thickly pubescent. Antennæ about the length of the Elytra, chesnut-coloured, and pubescent; the last four joints black. Elytra bright red chesnut, with their apex blackish. Legs chesnut.

#### SYNONYM.

Scydmænus Rutilipennis. Kunze, Monog. Scyd. p. 17, sp. 8, f. 8.

### DESCRIPTION.

HEAD black, shining, round, and porrected.

Antennæ bright chesnut, slender, and pubescent, about the length of the elytra; the last four joints black.

PALPI pale testaceous and pubescent; the third joint much darker than the preceding.

EYES large, granulated, and black.

THORAX not quite half the length of the abdomen, black and covered with hairs of a fuscous brown; the anterior part narrowed; base a little impressed.

ELYTRA bright red chesnut, smooth, finely pubescent, and shining; the apex, margin, and suture, blackish; the base with two impressed lines; suture a little elevated.

ABDOMEN pitchy black and shining.

Legs, dark chesnut, pubescent, and shining; thighs thick; tibiæ and tarsi much paler.

LENGTH a little exceeding one line.

HABITAT, at Swansea.

This appears to be the scarcest species we have in England. I have never heard of more than one specimen being captured, which is in the cabinet of the British Museum. This was taken at Swansea, and, I believe, by Mr. Millard. I do not know in what situation it was found, but should think most probable the habitat is the same as with the other species.

## Species 6. Scydmænus Denticornis.

Plate xiii, fig. 1.

### SPECIFIC CHARACTER.

Pitchy black, shining, and smooth. Thorax thickly pubescent, with two foveolæ at the base. The male with the eighth and ninth joints of the antennæ denticulated.

#### SYNONYM.

Scydmænus denticornis. Kunze, Monog. p. 20, fig. 11, spec. 11.

### DESCRIPTION.

Head pitchy black, smooth, shining, and porrected.

Antennæ fuscous brown, slender, and pubescent; the last four joints the largest, and much darker; the eighth and ninth joints towards the apex, in the male, very much denticulated; apex nearly acute.

PALPI pale, testaceous, shining, and pubescent; about

the length of the head; the fourth joint prominent.

Eyes black, prominent, and finely granulated.

THORAX nearly quadrate, the anterior angles rounded; the base with two foveolæ, smooth, shining, and thickly pubescent. The hairs of a fuscous brown.

ELYTRA nearly ovate, convex smooth, and shining, with a few fuscous hairs; the base narrowed, with six depres-

sions; apex rounded.

ABDOMEN pitchy black, smooth, and shining.

Legs dark fuscous brown, slender, and pubescent; thighs abruptly clavated.

LENGTH about three quarters of a line.

Навітат,

This species is very nearly allied to *Hirticollis*: the female, in particular, might easily be confounded with it. I know of only one specimen, which is in the British Museum, and which was captured in Norfolk, either by Mr. Curtis, or by Mr. Griffin, I am not certain which. This is a female; I have, therefore, copied the *Antennæ* of the male from the *Monographie der Ameisenkäfer*, by Kunze, (an admirable work on the *Scydmænidæ* of Germany).

## Species 7. Scydmænus Elongatulus.

Plate xiii, fig. 2.

### SPECIFIC CHARACTER.

Pitchy, pubescent, shining, and clongated. Head with two foveolæ between the eyes. Thorax clongated and deflexed, with two angular depressions at the base.

### SYNONYM.

Scydmænus Elongatulus. Kunze, Monog. p. 19, fig. 10, spec. 10.

### DESCRIPTION.

Head smooth, shining, and pubescent; the anterior angles elevated; the centre depressed; the base with

two deeply impressed foveolæ situated between the eyes.

ANTENNÆ dark chesnut, and thickly pubescent; the last four joints the largest; apex nearly acute.

Palpi pale testaceous yellow, shining, and pubescent; the fourth joint prominent.

Eyes black, finely granulated, and prominent.

THORAX finely punctured, pubescent, shining, and elongated; narrowed in front, anterior angles rounded and deflexed; base truncated, with an angular impression on each side, and two small foveolæ in each angle; the centre a little elevated.

ELYTRA paler than the thorax, elongate-ovate, punctured, shining, and pubescent; with a deep excavation on each side of the suture at the base, and a slight

depressed line at the shoulder.

ABDOMEN elongate-ovate, smooth, and shining.

Legs pale chesnut, pubescent, shining, and slender; thighs clavated.

LENGTH not quite one line.

HABITAT, moss in woods and damp places.

The specimen from which my drawing was made, was captured in Norfolk by the Rev. J. Burrell, in the Spring of 1824. This species is distinguished from any of the others by its more elongated form; the foveolæ between the eyes; and the depressed lines at the base of the thorax.

# Species 8. Scydmænus Sparshalli.

### SPECIFIC CHARACTER.

Ferruginous, pubescent, and shining. Head rather contracted. Thorax, with a parallel depression at the base, extending a little way up the sides.

### DESCRIPTION.

HEAD rather contracted, punctured, pubescent, and

shining; the anterior angles much elevated, and bearing the antennæ.

Antennæ pale ferruginous, thickly pubescent, and

gradually clavated; apex nearly acute.

PALPI pale testaceous yellow, and pubescent; the last joint prominent.

EYES black, finely granulated, and prominent.

THORAX rather elongated, finely punctured, pubescent, and shining; the anterior part rounded and deflexed; the sides rather contracted; a parallel depression at the base, extending a little way up each side; the base finely rugulose and slightly emarginated.

ELYTRA elongate-oval, punctured, pubescent, and shining; base truncated, with a deep excavation on each side of the suture; and a slight depressed line at

the shoulder.

ABDOMEN oval, smooth, and shining.

Legs pale ferruginous, and pubescent; thighs clavated.

LENGTH rather more than half a line.

Habitat, moss in damp woods.

I am not aware that this insect is in any other cabinet than that of Mr. J. Sparshall, of Norwich, who captured it in Arminghall Wood, in Norfolk, in November, 1823. I therefore avail myself of an opportunity thus afforded me of attaching his name to this species, as a slight tribute of respect and gratitude, due to the constant and liberal kindness of an early and valued friend.

## Species 9. Scydmænus Scutellaris.

Plate xii, fig. 8.

### SPECIFIC CHARACTER.

Ovate, black, and pubescent. Thorax nearly quadrate and convex; the base narrowed, with six transverse impressed punctures. Elytra with four deep excavations at the base. Scutellum and suture a little elevated.

### SYNONYMS.

### DESCRIPTION.

HEAD contracted and flat, smooth, shining, and pubescent.

Antennæ testaceous, pubescent, and gradually clavated, with the apex acute.

PALPI pale testaceous, pubescent, and shining.

Eyes black and finely granulated.

THORAX nearly quadrate, convex, shining, and pubescent; the anterior angles rounded; the base narrowed, truncated, and a little emarginated, with six transverse impressed punctures.

ELYTRA ovate, punctured, shining, and pubescent; the base with four deep excavations; suture and scu-

tellum a little elevated.

Abdomen ovate, black, and shining.

Legs pitch-coloured and slender; the anterior thigh, in the male, triangular, compressed, and dilated.

LENGTH about three quarters of a line.

Habitat, moss on hedge-rows and woods; and in sandy or gravelly situations.

This species was first discovered, in England, near Bristol, by Dr. Leach. It has since been taken in Norfolk, by the Rev. J. Burrell, Mr. R. Wigham, and Mr. J. Sparshall; but it must still be considered as a rare British species. These specimens were taken in a sandy or gravelly soil.

## Species 10. Scydmænus Bicolor.

Plate xiii, fig. 4.

### SPECIFIC CHARACTER.

Elongated, darkish chesnut, shining, and pubescent. The base of the thorax rugulose. The eighth joint of the antennæ smaller than the preceding.

### SYNONYM.

Scydmænus Bicolor. Curtis, MSS.

### DESCRIPTION.

HEAD small, flat, shining, and finely punctured.

Antennæ bright testaceous yellow, shining, pubescent, and rather thick; the seventh joint from the base enlarged; the eighth much smaller, the last three the largest.

PALPI pale yellow, thickly pubescent, about the length

of the head; the last joint acute.

Eyes black, prominent, and granulated.

THORAX much darker than the elytra, shining and thickly punctured, the punctures very minute; the anterior part large and rounded; the base contracted and rugulose.

ELYTRA bright chesnut, finely punctured, and thickly covered with yellow hairs, elongate-ovate, and rather depressed, with two deep impressions at the base.

ABDOMEN chesnut, ovate, shining, and smooth.

Legs chesnut, slender, and shining; thighs gradually clavated; tarsi paler.

LENGTH rather more than half a line.

Habitat, moss in woods at the roots of trees.

The first specimen of this insect I ever saw, was captured by Mr. J. Curtis, of London, in the New Forest, Hants. I took another in Arminghall Wood, near Norwich, in the Spring of 1823; a third has been taken at Netley, by the Rev. F. W. Hope; these are, I believe, the only three specimens known—at least, I have never seen or heard of any others. Not finding this species described by any author, either as Foreign or British, it was consequently without a name; I have therefore adopted that of *Bicolor*, under which it stood in the cabinet of Mr. Curtis.

## Species 11. Scydmænus Collaris.

Plate xiv, fig. 2.

### SPECIFIC CHARACTER.

Oblong, black, and punctured. The anterior part of the thorax the widest; the base with a double row of punctures, and very much contracted. Suture and scutellum a little elevated.

### SYNONYMS.

Scydmænus Collaris.

Kunze, Monog. p. 26, spec. 16, fig. 16. Gyllenhall, Ins. Suec. tom. i, p. 285.

### DESCRIPTION.

HEAD short, nearly triangular, smooth, and shining.

Antennæ pale testaceous, shining, pubescent, and slender; gradually clavated; the ninth and tenth joints nearly round; the last elongate-ovate.

PALPI pale testaceous, and about the length of the

head

Eyes black, finely granulated, and shining.

THORAX smooth, shining, slightly pubescent, and rather elongated; the anterior part much the widest; the base narrowed, with a double row of punctures; the first consisting of four, the second of only two.

ELYTRA elongated, punctured, and pubescent; with two depressions at the base; the suture a little elevated.

Abdomen elongate-oval, black, smooth, and shining. Legs pitch-coloured and shining; thighs thick; tibiæ and tarsi slender and paler.

LENGTH about one line.

Habitat, moss, at Horning, Loddon, and South Creak.

This species is distinguished from Scydmænus Pusillus by its being larger, the thorax much wider, and the double row of punctures at the base. This is by no means rare in the parts of Norfolk already mentioned, where it is taken in society with Scydmænus Thoracicus, Scutellaris, and Hirticollis.

# Species 12. Scydmænus Pusillus.

Plate Xiv, fig. 1.

### SPECIFIC CHARACTER.

Black, oblong, slightly pubescent, and shining. Thorax rather elongated; the base narrowed, with a transverse row of impressed punctures. Elytra punctured; the base with four sulci.

### SYNONYM.

Scydmænus Pusillus. Kunze, Monog. p. xxv, fig. 15.

### DESCRIPTION.

HEAD contracted, and nearly triangular, smooth, and shining.

ANTENNÆ testaceous, pubescent, and shining, gra-

dually clavated; apex nearly acute.

Palpr pale testaceous, and finely pubescent, about the length of the head; the last joint prominent.

EYES black, finely granulated, and shining.

THORAX rather elongated; the anterior part the largest, and rounded; the base contracted, with six impressed punctures forming a transverse line.

ELYTRA elongate-ovate, punctured, pubescent, and shining; the base with four sulci; suture a little elevated,

near the Scutellum.

ABDOMEN black, shining, and smooth.

Legs slender, shining, and pubescent; thighs pitch-coloured; tibiæ, and tarsi testaceous.

LENGTH about three quarters of a line. HABITAT, moss. Bristol and London.

I am not aware that this species has ever been found in Norfolk. It is, however, not uncommon about Coombe Wood, and other adjacent parts of London; as well as at Bristol, where it has been taken by Mr. Millard. This is much smaller than the preceding species; to which it is nearly allied, as *Collaris* is sometimes found very small, and with the second row of punctures nearly obsolete, which gives them a great similarity.

# Species 13. Scydmænus Wighamii.

Plate xiv. fg. 3.

### SPECIFIC CHARACTER.

Pitchy, shining, and finely pubescent. Thorax truncated at the base, with three foveolæ. Head with two punctures in front. Antennæ and legs bright chesnut. Elytra with four depressions at the base.

### DESCRIPTION.

HEAD flat, shining, and very much contracted.

Antennæ bright chesnut, shining, and pubescent, gradually clavated; the last joint nearly acute.

Palpi pale testaceous and finely pubescent. Eyes black, prominent, and granulated.

THORAX shining, smooth, and finely pubescent; convex, short, the anterior part round; the sides very much emarginated towards the base, which is abruptly truncated; with three foveolæ.

Elytra oblong, and finely pubescent; the base with four depressions; the two nearest the suture the largest.

Abdomen oblong, smooth, and shining; the apex

rounded.

LEGS bright chesnut, pubescent, and slender.

Length a little exceeding one line. Habitat, moss. Near Loddon.

I have named this insect as above, as a token of respect due to Mr. R. Wigham, of Norwich, who took the first specimen of it, I ever saw, near Loddon, in March, 1824, and to whom I am indebted for the habitats of several other species, before unknown to me.

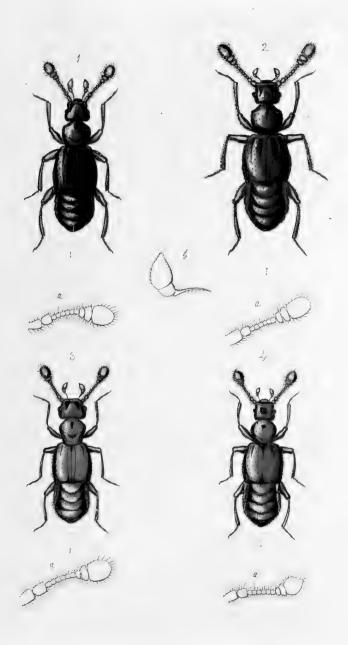
# EXPLANATION

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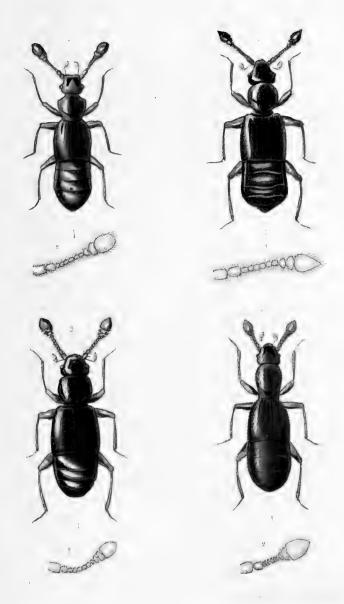
### THE PLATES.

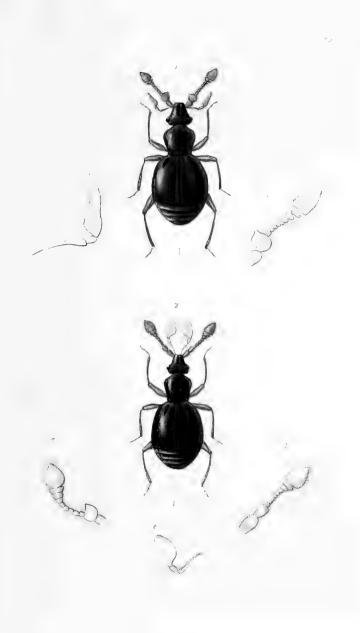
PLATE I.	fig. 1. Euplectus Reichenbachii, a Antennæ
	fig. 2. Euplectus Sanguineus, a Antennæ
	fig. 3. Euplectus Karstenii, a Antennæ, b Palpi
	fig. 4. Euplectus Signatus, b Palpi
PLATE II.	fig. 1. Euplectus Kirbii, a Antennæ
	fig. 2. Euplectus Pusillus, a Antennæ
	fig. 3. Euplectus Bicolor, a Antennæ
	fig. 4. Euplectus Brevicornis, a Antennæ
PLATE III.	fig. 1. Bythinus Curtisii, a Antennæ, b Palpi
	fig. 2. Bythinus Securiger, a Antennæ of the male, b an-
	tennæ of the female, c Palpi
PLATE IV.	fig. 1. Bythinus Burrelli, a Antennæ of the male, b the
	four first joints of the Antennæ of the female,
	c Palpi
PLATE V.	fig. 1. Arcopagus Bulbifer, a Antennæ of the male,
	b the two first joints of the antennæ of the fe-
	male, c Palpi
	fig. 2. ——— Clavicornis, a Antennæ
	fig. 3. ——— Puncticollis, a Antennæ
	fig. 4. ———— Glabricollis, a Antennæ
PLATE VI.	fig. 1. Tychus Niger
PLATE VII.	fig. 1. Bryaxis Nigriventris, a Palpi, b Antennæ
	fig. 2. Bryaxis Longicornis, a Palpi, b Antennæ, c an-
	terior tibia
	fig. 3. Bryaxis Sanguineus, a Antennæ
	fig. 4. Bryaxis Impressus, a Antennæ

-	fig. 1. Bryaxis Fossulata, a Antennæ fig. 2. Bryaxis Hæmatica, a Antennæ fig. 3. Bryaxis Juncorum, a Antennæ
PLATE IX.	<ul> <li>fig. 1. Pselaphus Herbstii, a Antennæ</li> <li>fig. 2. Pselaphus Heisii, a Antennæ, b Maxillary Palpi, c Maxilla, d Labial Palpi, c Ligula, f Labium, g Mandibula, h Labrum</li> </ul>
PLATE X.	fig. 1. Pselaphus Longicollis, a Antennæ, b Palpi fig. 2. Pselaphus Dresdensis, a Antennæ, b Palpi
PLATE XI.	fig. 1. Scydmænus Tarsatus, a Antennæ fig. 2. Scydmænus Ruficornis, a Antennæ fig. 3. Scydmænus Thoracicus, a Antennæ, b Palpi
PLATE XII.	<ul> <li>fig. 1. Scydmænus Hirticollis, a Antennæ</li> <li>fig. 2. Scydmænus Rutilipennis, a Antennæ</li> <li>fig. 3. Scydmænus Scutellaris, fem. a Maxillary Palpi,</li> <li>b Labial Palpi, c Ligula, d Labium, e Labrum,</li> <li>f Mandibulæ, g Maxilla, h Antennæ, i One of</li> <li>the anterior legs, to shew the angulated thigh</li> <li>of the male</li> </ul>
PLATE XIV.	fig. 1. Scydmænus Denticornis, a Antennæ of the male fig. 2. Scydmænus Elongatulus, a Antennæ fig. 3. Scydmænus Sparshalli, a Antennæ fig. 4. Scydmænus Bicolor, a Antennæ fig. 1. Scydmænus Pusillus, a Antennæ fig. 2. Scydmænus Collaris, a Antennæ fig. 3. Scydmænus Wighamii, a Antennæ.
	LINE 8, for semicircular, read transverse  ——13, for semicircular, read transverse ——14, for dark ferruginous, read pitchy brown ——3, after obscure ferruginous, read, and finely pubescent ——31, for Helwigii, read Hellwigii ——37, for Helwigii, read Hellwigii

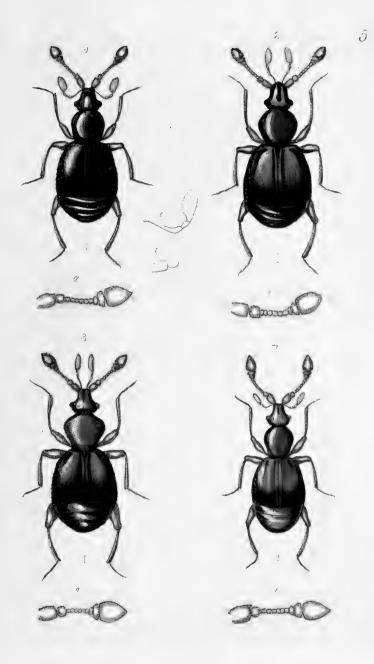




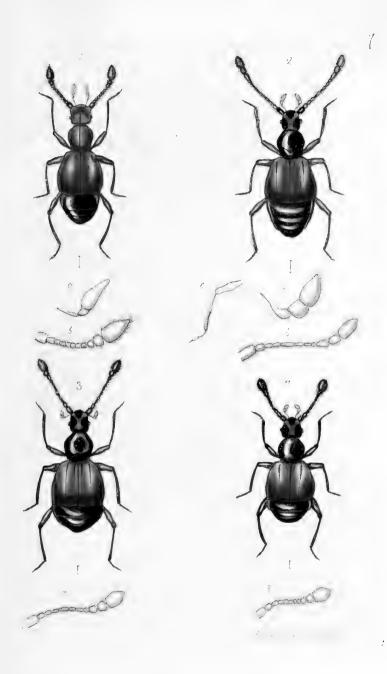


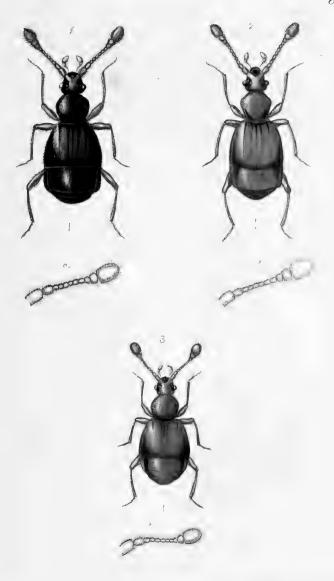




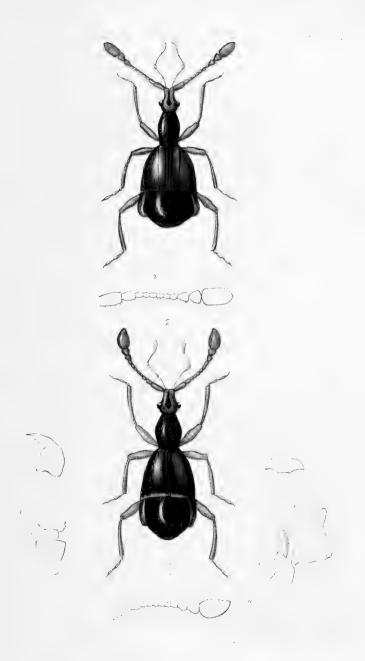




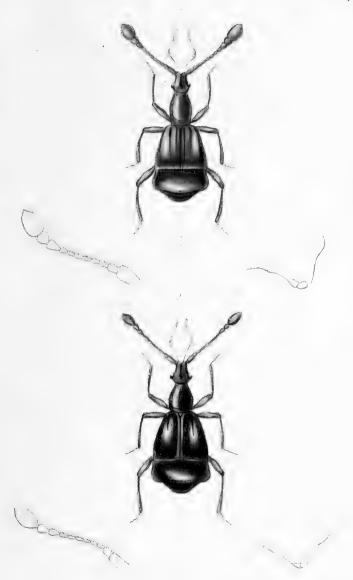




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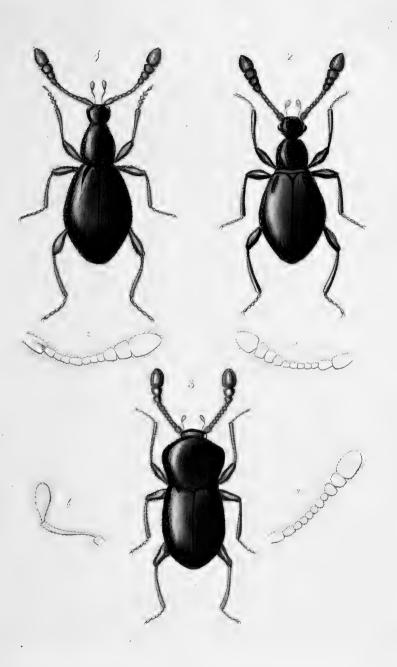


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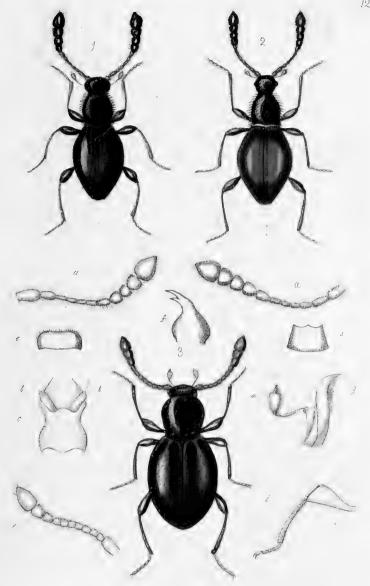


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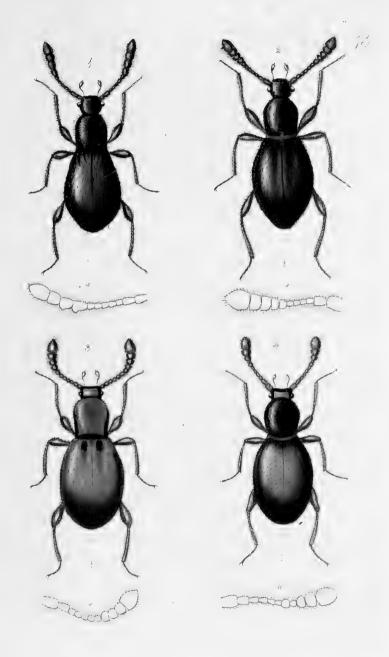
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