

Stephens, J. F. (1836)
Illustrations of British Entomology
Section II. - Anisoptera, Leach.-
Mandibulata 6: 53-70, pl. 29, London

the same, with the extreme apex alone fuscous, the nervures slightly brownish, and the costa faintly testaceous; legs pitchy.

This insect is much smaller than either of the other species, and may be known by having the extreme tips alone of all the wings deep fuscous.

I possess a pair of this species that occurred in the vicinity of London; one at Darenth wood, in June.

Sp. 4. borealis. *Nigra, rostro, abdominis apice pedibusque piceis, alis hyalinis venis maculâque costali fuscescentibus.* (Exp. Alar. $9\frac{1}{2}$ lin.)

Pan. borealis. *Steph. Nomen. 2d edit. col. 112.*

Black; rostrum, apex of the abdomen, and the legs pitchy; thorax with some obscure testaceous spots; wings hyaline, with the nervures, and a spot on the costa, towards the apex, brownish.

This may probably be a variety of the following species.

Found in the neighbourhood of Edinburgh.

Sp. 5. germanica. *Nigra, rostro, abdominis apice pedibusque rufis, alis hyalinis subnebulosis, maculâ costali conspicuâ fuscâ.* (Exp. Alar. 9—13 lin.)

Pan. germanica. *Linné.—Steph. Catal. 305. No. 3368.*

Black; rostrum, apex of the abdomen and legs red or reddish; thorax with a dorsal row of testaceous or yellowish spots; wings hyaline, obscurely clouded with fuscous, with a conspicuous spot of the same towards the apex of the costa, and some darker clouds near the hinder margin, or tip of the wing.

As in the other species of this genus, some examples are more clouded with fuscous, on the wings, than others.

Much less abundant, at least within the metropolitan district, than either *P. communis* or *P. affinis*: it occurs, however, not uncommonly, especially in the New Forest, in the months of June and July.

SECTION II.—ANISOPTERA, Leach.

Antennæ short, subulated; *mandibles* obsolete or wanting; *wings* erected during repose, anterior generally elongated, of a somewhat triangular form, with the hinder margin rounded, and considerably larger than the posterior, which in some cases are totally wanting; *abdomen* furnished at its apex with two or three *setæ* or filaments, variable in length, according to the species; *legs* various; anterior elongated, porrected; intermediate and posterior short; *tarsi* with four joints. Metamorphosis quadruple.

The insects comprehended in this division of Neuroptera are remarkable for several peculiarities, both of structure and of habit, as

more particularly detailed in the notice of the only family in which they are embraced: it may, however, be here remarked that they may be known by their minute antennæ, porrected anterior legs, the filamentous appendages to the abdomen, and by the great dissimilarity in the size of the two pair of wings, the second, or posterior, being sometimes entirely absent; again, the insects are nearly, or totally in some instances, destitute of a mouth, and the eyes are usually very large.

FAMILY III.—EPHEMERIDÆ, *Leach.*

Antennæ inserted on the inner margin of the eyes, triarticulate, the two basal joints very short and thickened, the third long, and resembling a slender tapering bristle; *mouth* wanting? *body* elongate, soft; *head* as wide as the thorax, transverse; *eyes* large, suboval, united on the forehead in the males; *ocelli* three, placed triangularly; *thorax* subcylindric; *wings* two or four; *abdomen* elongate-conic, with two or three very long setæ, or filaments, at the apex, composed of numerous joints, and two or three shorter setaceous ones (also jointed) beneath; *legs* slender, anterior remote from the others, inserted, to appearance, beneath the head, much longer than the others, their femora thickened, the intermediate and anterior pairs with the femora less robust; all the tibiæ simple, and forming at first sight, as it were, the basal joint of the tarsi, being gradually attenuated from the base, the *tarsi* consisting of a few cylindric articulations, of which the first is shortest, and the terminal one is furnished with two unequal membranous compressed *claws*, the smallest having a horny tooth at the apex, and the other being broader and obtuse. The metamorphosis is quadruple, inasmuch as the insect is furnished with wings, enveloped in an outer case, which is ultimately slipped off before the true imago is declared.

The insects of this family, as previously alluded to, are remarkable for undergoing a quadruple metamorphosis, as, in addition to the ordinary states of egg, larva, pupa, and imago, there is an intermediate one to the last two, inasmuch as a sort of representative of the imago is produced after the pupa, but which has to undergo a further ecdysis, or shedding of its skin, before the true insect appears: in this state the insect is capable of flying, the true wings being encased in a delicate membrane, which is cast very expeditiously, when sufficiently mature: in this operation a slit is made on the back, through which the insect forces itself, and gradually withdraws its body, limbs, and wings, leaving its exuvium, exactly corresponding with its previous form, excepting that portion which enveloped the wings,

and which is rolled up into a mass on each side of the thorax: in the first three states these insects inhabit the water, and upon their emersion from the pupa they become inhabitants of the air; their life is of short duration, but nevertheless some of the species exist for a considerable period, as noticed under *Cloëon dipterum*: the larvæ vary slightly in structure, according to the genera, those of the true *Ephemera* and of *Baëtis* having exserted respiratory organs along both sides of the body.

The indigenous genera may be thus distinguished:—

Alæ quatuor, posticis distinctis:

Cauda triseta: 3. EPHEMERA.
biseta: 5. BAËTIS.

duæ, posticis nullis, aut vix conspicuis:

Cauda triseta: 4. CÆNIS.
biseta: 6. CLOËON.

GENUS III.—EPHEMERA *Auctorum*.

Head small, emarginate in front; *eyes* rather large, ovate, united on the crown in the males, somewhat remote in the females; *thorax* not very stout, elongate-ovate; *wings* four, anterior much longer than the abdomen, somewhat lanceolate, more or less reticulated, the *costa* slightly waved, posterior very small, ovate-triangular; *abdomen* as long again as the thorax, slightly tapering at the apex, and terminated by three very long filaments, of which the central one is shortest in the males; *legs* rather long and slender.

The species of this genus are probably more numerous than I have indicated, as the account of them is entirely made up from those that are contained in my own cabinets, other collections thereof not being *named* or divided into species: it is therefore fair to conclude, that if among the more conspicuous long genera I occasionally lack specimens, such is the case in this genus, which may be known by having four wings and three filaments, or setæ, at the apex of the abdomen.

A. The transverse nervures of the wings very distinct, giving the wings a strongly reticulated appearance.

Sp. 1. *vulgata*. *Obscure-fusca, abdomine lutescente, alis fuscis reticulatis et maculatis, costâ anticarum pallide fuscâ, pedibus pallidis obscure nebulosis.* (Exp. Alar. 1 unc. 2–4 lin.;—Long. corp. 6—7½ lin.; 1. setarum 1 unc. 3—4 lin.)

Ep. *vulgata*. Linné.—Wood, v. ii. pl. 47.—Steph. Catal. 305. No. 3369.

Dull fuscous; anterior portion of the thorax yellowish, with a brighter stripe of the same colour on each side before the wings, the latter hyaline, the anterior suffused with pale fuscous, excepting towards the inner portion of the base, the costa of a rather darker hue, nervures fuscous, the transverse ones edged with the same, producing a variegated appearance; towards the base is a small irregular fuscous cloud, and about the middle, near the costa, is an interrupted waved fascia of the same hue; posterior wings fuscescent towards the apex, and with a spot of brown in the centre; abdomen fuscescent, varied with yellowish, or with the basal and terminal joints dusky, and the remainder ochreous-yellow, with brownish edges to the stigmata; legs pale, anterior with the femora, and the others clouded with, fuscous.

Rather variable in the spotting of the wings, some examples being more clouded than others.

This insect—the *May-fly*—sometimes occurs in great abundance in the vicinity of the metropolis, especially on the banks of the New River and of the Lea, near Hackney and at Hertford, towards the end of May, flying about, with the peculiar vacillating motion of the family, in the afternoon in myriads, and again towards evening.

Sp. 2. *cognata*. *Fusco-ferruginea, abdomine pallidiore, marginibus segmentorum albis, alis hyalinis subluteo-fuscis, nervis maculisque fuscis, pedibus rufescentibus, geniculis fuscis.* (Exp. Alar. 1 unc. 6—7 lin.:—Long. corp. 8—9 lin.; l. setar. 8—9 lin.)

Eph. *cognata*. *Steph. Catal.* 305. No. 3370.—Eph. *vulgata*. *Donovan, v. iv. pl.* 128 ?

Rusty-brown; collar anteriorly and a stripe before the wings pale yellowish-white; wings hyaline, of a somewhat yellowish-, or luteous-brownish, with the nervures, especially the transverse ones, fuscescent, two or three conspicuous brown spots about the middle towards the costa, and one near the base; abdomen of a pale reddish-ochre, with the apex dusky, and the margins of the segments whitish; beneath on each segment are two oblique fuscous lines, and another on each side; legs reddish, with the knees and tips of the tibiæ and tarsi dusky.

The great dissimilarity in the proportions of the parts, as well as the difference in colouring, sufficiently point out the propriety of establishing this as a species. Not having an opportunity of reconsulting Donovan's figure at present, I have placed a query to the reference.

Also found in the neighbourhood of London, about the beginning of June, but apparently rare.

Sp. 3. *Stigma*. *Piceo-fusca, abdomine pallidiore, pedibus setisque luridis, immaculatis, alis hyalinis pallide lutescentibus, haud maculatis, anticarum costâ ad*

apicem luteo-fuscescente. (Exp. Alar. 11 lin.:—Long. corp. $4\frac{1}{2}$ lin.; 1. setar. $8\frac{1}{2}$ lin.)

Eph. Stigma. *Steph. Catal.* 305. No. 3371.

Pitchy-brown; thorax in front and abdomen paler, or of a rusty tinge; legs and setæ, or filaments, lurid, and not spotted; wings hyaline, of a pale yellowish hue and immaculate, the anterior with the costa at the apex luteous-brown.

I have a single example of this insect, of which I know not the locality.

Sp. 4. *talcosa. Piceo-fusca, abdominis apice pedibus setisque luridis, alis hyalinis immaculatis.* (Exp. Alar. 10 lin.:—Long. corp. $4\frac{1}{2}$ lin.; 1. setar. 7 lin.)

Eph. *talcosa. Mus. Marsham.—Steph. Catal.* 305. No. 3372.

Pitchy-brown, immaculate, with the apex of the abdomen and the legs lurid; filaments the same, but paler; wings transparent, immaculate, nervures very pale ochreous-brown, the costal ones slightly yellowish, and the costa itself towards the apex of a luteous-brown hue.

Of this species—which I obtained from the Marshamian collection—I am ignorant of its locality.

Sp. 5. *lutea. Lutea, oculis marginibusque segmentorum abdominis nigris, alis hyalinis, albis, immaculatis, setis nigro punctatis.* (Exp. Alar. 10 lin.:—Long. corp. 4 lin.; 1. setar. 6 lin.)

Eph. *lutea. Linné.—Steph. Catal.* 305. No. 3373.

Luteous; eyes and margins of the abdominal segments black; legs pale luteous, immaculate; filaments also pale luteous, rather closely dotted with black; wings very clear and transparent white and immaculate, with the nervures slightly luteous, the costal ones brightest.

Found, but not commonly, within the metropolitan district, in June.

Sp. 6. *marginata. Nigra, alis hyalicis albis, margine exteriore fusco.* (Exp. Alar. 10 lin.:—Long. corp. 4 lin.—long. set. 5 lin.)

Eph. *marginata. Linné.—Shaw Gen. Zool. v. vi. pl. 81, fig. inf.?*—*Steph. Catal.* 305. No. 3374.

Black; abdomen brownish, with darker rings; wings hyaline white, with the costa fuscous; legs pale; filaments spotted with black, with long articulations.

Found in the vicinity of the metropolis in June, apparently rare.

B. With the transverse nervures of the wings indistinct.

Sp. 7. submarginata. *Rufo-picea, pedibus pallidioribus, geniculis posticis nigricantibus, alis hyalinis, costâ subochraceâ.* (Exp. Alar. $9\frac{1}{2}$ lin.; Long. corp. 4 lin.; l. set. 2 lin.)

Eph. submarginata. *Steph. Catal. 305. No. 3375.*

Reddish pitch colour, glossy; eyes and ocelli black; legs very pale pitchy-red, posterior pair with blackish knees; filaments pale ferruginous; wings clear and spotless, anterior pair with the costa slightly ochraceous.

Found in the vicinity of London.

Sp. 8. dispar. *Piceo-nigra, abdominis basi pedibusque pallide rufo-piceis, setis luridis fusco subannulatis.* (Exp. Alar. 9— $9\frac{1}{2}$ lin.; long. corp. $4\frac{1}{4}$ lin.; l. set. 4 lin.)

Eph. dispar. *Steph. Catal. 305. No. 3376.*

Pitchy-black, shining: abdomen pale reddish, pitchy at the base, with the sides paler, and marked with an indistinct row of dots, the apex blackish; legs pale rusty-piceous; filaments long, lurid, obscurely annulated with fuscous; the joints short; wings transparent; anterior with the costa slightly yellowish.

Pseudimago with the wings fuscous, the nervures, especially the transverse ones, darker, producing a pale spotted appearance.

Not uncommon within the metropolitan district in July.

Sp. 9. fusca. *Obscure picea, vertice et basi pedum anteriorum ferrugineis, pedibus posterioribus ochraceis, setis luridis fusco punctatis.* (Exp. Alar. 7—8 lin.; long. corp. $2\frac{1}{4}$ — $2\frac{1}{2}$ lin.; l. set. $3\frac{1}{2}$ —4 lin.)

Eph. fusca. *Curtis, Phil. Mag. 1834—Eph. nigricanus. Steph. Catal. 305. No. 3377.*

Obscure pitchy, crown and base of the anterior legs ferruginous, two hinder pair ochreous; filaments pale lurid, dotted with fuscous; the joints long; wings transparent.

Found at Hertford in June.

Sp. 10. diluta. *Pallide rufo-ferruginea, abdomine nigricante, pedibus pallidis, alis hyalinis costâ concolore.* (Exp. Alar. 9 lin.; long. corp. 4 lin.; l. set. 3 lin.)

Eph. diluta. *Steph. Catal. 305. No. 3378.*

Shining, pale rusty-red; abdomen dusky, the apex and the margins of the segments reddish; legs pale ochreous; filaments lurid, immaculate; wings transparent, with the costa concolorous.

Inhabits the neighbourhood of London.

Sp. 11. *apicalis*. *Fusco-ferruginea, nitida, abdominis basi pallidæ, pedibus ochraceo-ferrugineis, alis hyalinis.* (Exp. Alar. 8 lin.; long. corp. 3½ lin.; l. set. 5 lin.)

Eph. *apicalis*. *Steph. Catal. 305. No. 3379.*

Rusty-brown, shining; thorax very glossy; abdomen pale, with the margins of the segments and its apex rusty-brown; filaments pale lurid, immaculate, with long joints; legs pale ochreous; wings transparent, costa faintly yellowish.

Also found near London.

Sp. 12. *rufescens*. *Pallide rufo-fulva, subnitida, pedibus rufescentibus posterioribus pallidioribus, setis luridis fusco maculatis, alis hyalinis costâ flavescente.* (Exp. Alar. 8—9½ lin.; long. corp. 3½—4 lin.; l. set. 4—5 lin.)

Eph. *rufescens*. *Steph. Catal. 305. No. 3380.*

Pale tawny-red, slightly shining; abdomen dusky-red; legs reddish, two hinder pair paler; filaments lurid, spotted with fuscous, the joints short; wings transparent, costa yellowish.

Abundant throughout the metropolitan district at the end of June and beginning of July.

Sp. 13. *rosea*. *Pallide rosea, subnitida, pedibus pallidioribus, setis luridis, fusco maculatis; alis hyalinis basi summa et costâ dilute roseis.* (Exp. Alar. 7—8½ lin.; Long. corp. 3—4 lin.; l. set. 4—4½ lin.)

Eph. *rosea*. *Steph. Catal. 306. No. 3383.*

Pale rose colour, slightly shining; legs very pale rosy, anterior pair darkest; filaments pale lurid, spotted with fuscous; wings hyaline, with the extreme base and the costa pale rose colour.

Found near Hertford in June: not very common.

Sp. 14. *helvipes*. *Piceo-nigra obscura, pedibus helvolis, setis pallide luridis, immaculatis, alis hyalinis.* (Exp. Alar. 9 lin.; long. corp. 4 lin.; l. set. 3 lin.)

Eph. *helvipes*. *Steph. Catal. 306. No. 3382.*

Dull pitchy-black, thorax slightly shining; legs pale red, with a rosy tinge; filaments pale lurid, immaculate, joints short; wings narrow, transparent, costa slightly tinted with yellowish.

Also taken near Hertford: apparently rare.

Sp. 15. *dubia*. *Fusca subnitida, abdominis basi pedibusque pallidis, setis pallide luridis, immaculatis, alis hyalinis, costâ subflavescente.* (Exp. Alar. 7 lin.; long. corp. 2½ lin.; l. set. 3 lin.)

Eph. *dubia*. *Steph. Catal. 305. No. 3381.*

Fuscous, slightly shining; abdomen pale, the apical segments and the margins of the central ones dusky-brown; legs pale; filaments pale lurid, immaculate, joints short; wings transparent, costa faintly yellowish.

Found within the metropolitan district.

Sp. 16. minor. *Obscure fusca, segmentorum marginibus rufescentibus, pedibus pallidis, alis angustis hyalinis costâ concolore.* (Exp. Alar. $5\frac{1}{4}$ lin.; long. corp. $\frac{2}{2}$ lin.; l. set. 3 lin.)

Eph. minor. *Steph. Nomen. 2d edit. Appendix.*

Slender, dull fuscous; segments of the abdomen with their margins slightly reddish; legs very pale; filaments lurid, immaculate; wings narrow, transparent, costa concolorous.

Taken at South Lambeth, in June.

GENUS IV.—CÆNIS *mih*i.

Head broad, short: *eyes* small, remote, rounded: *thorax* large, ovate: *wings* two, short, broad, with numerous longitudinal nervures, and two or three transverse ones near the costa: *abdomen* about as long as the thorax, obtuse at the apex, and terminated by three filaments of very variable length in the respective species: anterior *legs* in the male long, their femora thickened, tibiæ and tarsi slender, four hinder pair short, rather slender.

This genus is readily known by the brevity of its wings and abdomen, the latter not exceeding the length of the thorax, and scarcely extending beyond the outer anal edge of the expanded wings; its apex is, however, furnished with three setæ, or filaments, by which character alone it may be distinguished from the two following genera. The species appear to be rather scarce, or are very local.

A. With the *filaments* several times longer than the body:—CÆNIS *mih*i.

Sp. 1. macrura. PLATE XXIX. f. 1.—*Fusco-nigra, abdomine piceo, pedibus piceofuscis, alis hyalinis costâ fuscâ, setis longissimis.* (Exp. Alar. $4\frac{1}{4}$ lin.; Long. corp. $1\frac{1}{2}$ lin.; l. set. 7 lin.)

N. G. macrura. *Steph. Catal. 306. No. 3385.*—Cænis macrura. *Steph. Nomen. 2d edit. col. 112.*

†Sp. 17. vespertina. *Nigra, alis posticis albis.*

Eph. vespertina. *Linné.—Berkenhout (!)—Steph. Catal. 306. No. 3384.*

Amongst the smaller species of the genus (family) with the entire body, and the anterior wings black; the posterior wings white.

Probably the pseudimago of one of the foregoing species.

Deep brown-black, slightly shining; abdomen pitchy; filaments nearly four times as long as the body, pale fuscous, faintly dotted with fuscous, articulations long; legs pitchy-brown; wings transparent; costa, especially towards the base, fuscous.

Taken in the vicinity of London, in June.

Sp. 2. *dimidiata*. *Piceo-nigra, abdomine pallido, pedibus ochraceis, alis lacteis costâ fuscâ.* (Exp. Alar. $3\frac{1}{2}$ lin.; Long. corp. $1\frac{1}{2}$ lin.; l. set. 4 lin.)

Cæ. *dimidiata*. *Steph. Nomen. 2d edit. Appendix.*—Br. *minimus*. *Curtis, Phil. Mag. 1834?*

Pitchy-black, shining; abdomen pale; legs ochreous; setæ long and pale; wings milk-white, costa fuscous.

Taken near London; and in Norfolk?

B. With the *filaments* scarcely longer than the body, or shorter, stout at the base:—BRACHYERCUS, *Curtis*.

Sp. 3. *brevicauda*. *Piceo-fusca, abdomine pedibusque pallidis, alis albidis, costâ fuscâ, setis brevibus.* (Exp. Alar. $4-4\frac{1}{2}$ lin.; Long. corp. $1\frac{1}{2}-2$ lin.; l. set. $\frac{3}{4}$ lin.)

Eph. *brevicauda*. *Fabricius.*—N. G. *brevicauda*. *Steph. Catal. 306. No. 3386.*

Pitchy-brown, or black, slightly shining; abdomen pale, its base fuscous; filaments about half its length, and, with the legs, pale; anterior femora dusky; wings whitish, transparent, the costal nervures fuscous.

Found near London, in June; and near Cambridge and Whittlesea Mere, in July 1833.

†Sp. 4. *Harrisella*. *Pallida, alis hyalinis, costâ concolore.* (Exp. Alar. 6 lin.; Long. corp. $2\frac{1}{2}$ lin.? l. set. 1 lin.?)

Br. *Harrisellus*. *Curtis, Phil. Mag. 1834.*—Ephemeron. *Harris, Exp. pl. vi. f. 3.*—Cæ. *Harrisella*. *Steph. Nomen. 2d edit. Appendix.*

Pale: wings "deadish-white," transparent; costa concolorous.

Harris says the *expansion* of this insect is about half an inch: *Curtis* that it is five lines *long*. I have never seen a specimen corresponding with Harris's figure, but, if his dimensions are correct, the other must be erroneous: this latter appears to have been arrived at by measuring the lower figure in Harris's plate, which represents the insect in a sitting position.

Found by Harris in a window, in London.

Sp. 5. *pennata*. *Thorace lato fusco ferrugineo, abdomine pedibusque albidis, oculis atris, setis brevibus pennatis.* (Exp. Alar. 5 lin.; Long. corp. $2-2\frac{1}{2}$ lin.; l. set. 1 lin.)

N. G. *pennata*. *Steph. Catal. 306. No. 3387.*

Rusty-brown: eyes black; thorax broad, ovate, glossy; abdomen pale; setæ short, pale, pilose; legs very pale; wings whitish, costa somewhat fuscous.

Pseudimago with ashy, ciliated, wings.

Taken in June, at Hertford.

Sp. 6. chironomiformis. *Ochracea nitida, oculis nigris, pedibus pallidis, alis lacteis, costâ fuscâ.* (Exp. Alar. 5 lin.; Long. corp. $2\frac{1}{4}$ lin.; l. set. 1 lin.)

Br. chironomiformis. *Curtis, Phil. Mag.* 1834.—Cæ. chironomiformis. *Steph. Nomen. 2d edit. Appendix.*

Shining, ochreous: eyes black; legs whitish; wings milk-white, costa fuscous.

Found near London; and at Bath, by C. C. Babington, Esq.

Sp. 7. interrupta. *Atra nitida, abdomine pallido, strigis 2-bus dorsalibus atris interruptis, pedibus fuscis, alis fuscescentibus, costâ saturatiore.* (Exp. Alar. $4\frac{1}{2}$ lin.; Long. corp. 2 lin.; l. set. $\frac{3}{4}$ lin.)

Cæ. interrupta. *Steph. Nomen. 2d edit. Appendix.*

Deep glossy black: abdomen pale, with an interrupted black streak on each side down the back; filaments and legs fuscous; wings also fuscous, with the costa darker.

Found at Whittlesea Mere, in July 1833.

GENUS V.—BAËTIS, Leach.

Head large, transverse, hemispherical: *eyes* large, united on the crown in the males, remote in the females: *thorax* ovate, stout: *wings* four, anterior long, narrow, obtuse, considerably reticulated, costa slightly varied; posterior small, somewhat ovate: *abdomen* moderately long, rather tapering, furnished at its apex with two filaments: anterior *legs* long, with the femora compressed; four hinder ones short; *claws* dissimilar.

The insects contained in this genus may be readily known by having two filaments only at the apex of the abdomen, and at the same time being furnished with two pair of wings: it is probably a more numerous genus than I have indicated, but the species of this family are so extremely fragile, and are so susceptible of injury, that they are difficult to investigate satisfactorily, after having been long preserved in cabinets, and unfortunately several of my old specimens were injured by the damp, several years back, at South Lambeth.

A. *Wings very distinctly and rather thickly reticulated.*

Sp. 1. *dispar. Pallide castanea, abdominis segmentorum marginibus brunneis, alis hyalinis, costâ flavescente ante apicem fuscescente. (Exp. Alar. 14 lin.; Long. corp. 5½—6 lin.; l. set. 16—17 lin.)*

Ba. *dispar. Curtis, v. xi. pl. 484.—Steph. Nomen. 2d edit. Appendix.*

“Pale castaneous: eyes and disc of thorax sometimes much darker in the male; segments of the abdomen with the margins brown, filaments more than twice as long as the insect; tibiæ, excepting the anterior pair, ochreous towards the apex; tarsi fuscous; wings transparent, anterior pale yellow at the base in the male, as well as the costal margin, which is pale brown towards the apex, nervures of the same colour.

“The wings in the pseudimago—a term employed by Mr. Curtis—have all the nervures suffused with fuscous, and the costa not darker than the rest of the wing.”—*Curtis, l. c.*

Found, but rarely, in the vicinity of London, in June: also taken in the north of England.

Sp. 2. *venosa. Obscure fusca, alis albis, nervuris fuscis. (Exp. Alar. 15 lin.; Long. corp. 6 lin.; l. set. 8 lin.)*

Eph. *venosa. Fabricius.—Ba. venosa. Steph. Catal. 366. No. 3369.*

Dull fuscous: wings broad, white, with fuscous nervures.

Probably a variety of the foregoing species; but the wings are much broader, and the filaments shorter.

Found near London, in June.

Sp. 3. *longicauda. Ochraceo-lutea, pedibus pallidioribus, geniculis abdominisque segmentorum marginibus fuscis, setis longissimis. (Exp. Alar. 14 lin.; Long. corp. 5½ lin.; l. set. 14½ lin.)*

Ba. *caudata. Steph. Catal. 366. No. 3388.*

Pale luteous-ochre: eyes fuscous; thorax glossy; abdomen pale ochreous at the base, the apex darker, the segments edged with fuscous; filaments considerably above twice the length of the insect, pale ochreous, with faint fuscous spots; legs pale ochreous, tips of femora fuscescent; wings transparent, with the costa and nervures yellowish.

Pseudimago?—Ba. *mellea. Curtis, Phil. Mag. 1834.*

“Bright ochreous: eyes black; segment of abdomen edged with brown, with a trigonate brown mark on the back of each, and the spiracles forming a double row of black dots down each side; filaments longer than the insect, dotted with brown; wings pale yellow, costa a little darker, nervures yellow and brown.”—*Curtis, l. c.*

Taken near Hertford, towards the middle of June.

Sp. 4. *costalis*. *Pallide castanea, thoracis lateribus abdominis apice et pedibus ochraceis, alis hyalinis, costâ flavescente.* (Exp. Alar. $13\frac{1}{2}$ lin.; Long. corp. 5 lin.; l. set. 9 lin.)

Ba. *costalis*. *Curtis, Phil. Mag.* 1834.—*Steph. Nomen.* 2d edit. *Appendix.*

Slender, pale chestnut, with the sides of the thorax, tip of the abdomen, and the legs ochreous; joints of the tarsi fuscous at their articulations; filaments very long, pale yellow, each joint tipped with black; wings transparent, anterior with the costa dirty-yellowish.

Also found in June, near Hertford.

Sp. 5. *subfusca*. *Obscure castanea, abdomine fuscescente, segmentorum marginibus saturatioribus, alis subflavescentibus costâ concolore stigmatâ subochraceâ.* (Exp. Alar. 11 lin.; Long. corp. $4\frac{1}{2}$ lin.; l. set. 7 lin.)

Ba. *subfusca*. *Steph. Catal.* 306. No. 3390.

Dull chestnut: eyes and abdomen brownish, the latter with the margins of the segments fuscous; legs dull ochreous; filaments dusky, each joint with a darker spot at the tip; wings faintly suffused with yellowish, the costa towards the apex darker; nervures luteous.

Found in June, at Hertford.

Sp. 6. *elegans*. *Ochraceo-flava, abdomine pallide subcastaneo, tarsorum articulorum apicibus niger alis subflavescentibus, costâ saturatiore.* (Exp. Alar. $13\frac{1}{2}$ lin.; Long. corp. $4\frac{1}{2}$ lin.; l. set. 8 lin.)

Ba. *flavescens*. *Steph. Catal.* 306. No. 3391.—Ba. *elegans*. *Curtis, Phil. Mag.* 1834.

Bright ochreous yellow: abdomen palish chestnut; filaments pale, the tips of the joints fuscous; legs very pale ochreous; the tarsi with the apex of each joint blackish; wings iridescent, pale ochreous-yellow, costa darker, especially towards the apex, forming a stigmoid spot.

Taken within the metropolitan district.

Sp. 7. *semicolorata*. *PLATE XXIX. f. 2.—Fulvescente-ochracea, abdominis segmentorum marginibus brunneis, alis flavescente-brunneis, anticis apice hyalino.* (Exp. Alar. 11—12 lin.; Long. corp. 3— $3\frac{1}{2}$ lin.; l. set. 13 lin.)

Ba. *basalis*. *Steph. Catal.* 306. No. 3392.—Ba. *semicolorata*. *Curtis, Phil. Mag.* 1834.

Tawny-ochreous: thorax sometimes varied with a darker hue; abdomen paler, the edges of its segments brown or dusky; legs pale; knees and tarsi brown; filaments long and slender, pale, with the tips of the joints darker; wings pale brownish-yellow, the anterior with the tips transparent and colourless; nervures all yellowish-brown.

Found in the neighbourhood of London: not very common.

Sp. 8. *lateralis*. *Picea, thorace maculâ aurantiacâ, abdomine ferrugineo lateribus pallidis, alis hyalinis, nervuris 3-bus costalibus carneis.* (Exp. Alar. 8—9 lin.; Long. corp. $3\frac{1}{4}$ — $3\frac{3}{4}$ lin.; l. set. 7 lin.)

Ba. *phæopa*. *Steph. Catal.* 306. No. 3394.—Ba. *lateralis*. *Curtis, Phil. Mag.* 1834.

“Piceous, shining, an orange spot before the wings; abdomen dull ferruginous, the sides paler, with the spiracles piceous; filaments very long; wings with the three costal nervures rosy or ferruginous; legs lurid, excepting the anterior, which are ochreous at the base.”—*Curtis, l. c.*

Taken, in June, within the metropolitan district.

Sp. 9. *obscura*. *Piceo-rufa, abdomine pallidior, setis luridis fusco annulatis, alis hyalinis costâ subochraceâ.* (Exp. Alar. $7\frac{1}{2}$ lin.; Long. corp. $3\frac{1}{2}$ lin.; l. set. 6 lin.)

Ba. *obscura*. *Steph. Catal.* 306. No. 3395.

Dull pitchy-red: abdomen paler, its filaments lurid, long, the joints tipped with fuscous; legs pale lurid; wings hyaline, costa somewhat ochreous, the nervures brownish.

Found at Hertford, &c. in June and July.

Sp. 10. *carnea*. *Incarinata, abdomine saturatiore, setis immaculatis, alis elongatis, hyalinis, costâ subroseâ, nervuris subbrunneis.* (Exp. Alar. $8\frac{1}{2}$ lin.; Long. corp. $3\frac{1}{2}$ lin.; l. set. $6\frac{1}{2}$ lin.)

Ba. *carnea*. *Curtis, Phil. Mag.* 1834.—*Steph. Nomen.* 2d edit. *Appendix.*

“Ochreous, with a pink tinge; abdomen darker; filaments twice as long as the insect, pale, unspotted; wings elongated, with the costa slightly tinged, nervures reddish-brown.”—*Curtis, l. c.*

Also found within the metropolitan district, in June and July.

B. Wings faintly reticulated.

Sp. 11. *striata*. *Fusca, abdomine albo maris pellucido, femina opaco rufescente, alis hyalinis, nervuris subfuscis.* (Exp. Alar. 4 lin.; Long. corp. 3 lin.; l. set. 5 lin.)

Eph. *striata*. *Linné.*—Ba. *striata*. *Steph. Catal.* 306. No. 3393.

Fuscous: abdomen white, pellucid in the male, opaque and somewhat reddish in the female; filaments short, immaculate; legs lurid; wings hyaline, longitudinal nervures rather brownish.

Found occasionally within the metropolitan district, in June.

Sp. 12. *bioculata*. *Ochraceo-lutea, abdominis medio albo diaphano, apice sub-fusco, pedibus niveis, setis longioribus, albis, fusco punctatis.* (Exp. Alar. $6\frac{1}{2}$ — $7\frac{1}{2}$ lin.; Long. corp. $3\frac{1}{2}$ lin.; l. set. 3 lin.)

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Eph. bioculata. Linné.—*Ba. bioculata*. *Steph. Catal.* 306. No. 3399.

Ochreous-yellow: head with two largish luteous tubercles; thorax clouded with brownish; abdomen with the basal segment brownish; abdomen with the basal segment brownish, the four following white and pellucid, the remainder brownish; legs white; filaments also white, faintly spotted with fuscous, and much longer than the body; wings hyaline, faintly reticulated.

Pseudimago pale ochreous, legs paler; wings brownish.

The silence of Linnæus as to the number of wings possessed by this species is fair presumption that it has four, as he expressly states "alis duabus" where there are but two only; and, as the above insect agrees in the main with the Linnæan definition, I consider his insect to be a *Baëtis*.

Found abundantly near Hertford, in June and July.

Sp. 13. *fuscata*. *Fusca, abdominis medio pedibusque pallidis, setis brevibus.* (Exp. Alar. 6—7 lin.; Long. corp. 3—3½ lin.; l. set. 4 lin.)

Eph. fuscata. Linné.—*Ba. fuscata*. *Steph. Catal.* 306. No. 3398.

Fuscous, shining: abdomen with the basal segment fuscous, the four following pale or whitish, the remainder fuscous; filaments shorter than the body, white, immaculate; legs pale, claws fuscous; wings hyaline, immaculate.

Inhabits the vicinity of London, in June.

Sp. 14. *culiciformis*. *Nigricans, abdomine fusco, pedibus pallidis, alis immaculatis.* (Exp. Alar. 6—7 lin.; Long. corp. 3 lin.; l. set. 6 lin.)

Eph. culiciformis. Linné.—*Ba. culiciformis*. *Steph. Catal.* 306. No. 3397.

Blackish, shining: abdomen fuscous; filaments as long as the body, pale lurid, immaculate; legs pale; wings hyaline.

Pseudimago pale reddish-ochre; wings yellowish-brown.

Not uncommon in the metropolitan district, especially near Hertford, in June and July.

Sp. 15. *horaria*? *Fusca, abdomine cinerascete, segmentorum marginibus albis, pedibus pallidis, alis hyalinis, costâ nigricante.* (Exp. Alar. 6—7 lin.; Long. corp. 3 lin.; l. set. 4 lin.)

Eph. horaria. Linné?—*Ba. horaria*. *Steph. Catal.* 306. No. 3396.

Fuscous, shining: abdomen ashy, with the edge of the segments white; NOT COMMON: FOUND NEAR HERTFORD, IN JULY. — wings hyaline costâ

Sp. 16. *verna*. *Pallide ferruginea, thorace piceo, ochraceo maculato, setis pallidis, fusco punctatis, pedibus obscuris.* (Exp. Alar. 7—8 lin.; Long. corp. 3½ lin.; l. set. 7 lin.)

Ba. vernus. *Curtis, Phil. Mag.* 1834.—*Steph. Nomen. 2d edit. Appendix.*

“Pale ferruginous: head and thorax piceous above, with an ochreous dot on each side the collar, and several beneath the wings; filaments twice as long as the insect, pale and dotted; legs dirty ochre; wings (hyaline) with the costa tinged.”—*Curtis, l. c.*

Taken in May and June, near London.

Sp. 17. autumnalis. *Pallide brunnea, thoracis lateribus ochraceis, setis longissimis pallidis, pedibus luridis.* (Exp. Alar. 6—7 lin.; Long. corp. 2—2½ lin.; l. set. 5½ lin.)

Ba. autumnalis. *Curtis, Phil. Mag.* 1834.—*Steph. Nomen. 2d edit. Appendix.*

“Pale castaneous-brown; margin of eyes and sides of thorax ochreous; filaments thrice as long as the insect, whitish; legs pale lurid; wings with the anterior margin slightly tinged. Pseudimago more ochreous.”—*Curtis, l. c.*

Also found near London, in July.

Sp. 18. cingulata. *Gracilis, fusca, abdominis segmentorum marginibus pedibusque posterioribus luridis, alis hyalinis.* (Exp. Alar. 7—8 lin.; Long. corp. 3½ lin.; l. set. 3¼ lin.)

Ba. cingulata. *Steph. Catal.* 306. No. 3401.

Slender, fuscous, shining; abdomen with the margins of the segments livid; filaments pale livid, scarcely so long as the insect, and faintly dotted with brown; anterior legs fuscous, four posterior ones livid; wings hyaline, rather narrow.

Taken near Hertford, in June.

GENUS VI.—CLOËON, *Leach.*

Head small, somewhat transverse, hemispherical: *eyes* moderate, remote, lateral: *thorax* ovate, convex, robust: *wings* two, elongate, rounded at the apex, with numerous longitudinal nervures, and a few transverse ones; posterior pair wanting: *abdomen* rather long, attenuated to the apex, which is furnished with two, more or less elongated, filaments: *legs* slender, anterior pair frequently elongated, their femora occasionally thickened: *claws* unequal.

†Sp. 19. nigra. *Nigra, pedibus pallidioribus, alis nigricantibus, posticis minimis*

Eph. nigra. Linné.—Ba. nigra. *Steph. Catal.* 306. No. 3400.

Size of a gnat: black; legs palish; wings blackish, posterior ones very small; all with the hinder margin somewhat fringed.

A pseudimago, but of what species I am not aware.

This genus differs from the preceding one by possessing one pair of wings only (the anterior), and from the other two genera of this family by having two filaments only at the apex of the abdomen; the wings are generally furnished with but few transverse nervures, and are mostly of very delicate structure, and the insects are usually of pale yellowish or ochreous tints.

Sp. 1. dipterum. PLATE XXIX. f. 3.—*Pallide rufescente-griseum, segmentorum marginibus fuscescentibus, alis hyalinis, costâ flavescente-brunnâ, albo marmoratâ, setis fusco punctatis.* (Exp. Alar. 8—10 lin.; Long. corp. 3¼—4 lin.; l. set. 6—7 lin.)

Eph. diptera. Linné.—Cl. dipterum. Steph. Catal. 306. No. 3402.

Pale reddish griseous: the edges of the abdominal segments brownish, filaments as long again as the insect, closely dotted with fuscous; legs pale ochreous, anterior femora lurid; wings hyaline, faintly tinged with yellowish, costa broadly brownish yellow, marbled with irregular white dots.

Pseudimago ashy-ochreous, with the wings fuscescent and ciliated, the costa dusky.

Abundant throughout the metropolitan district from the end of May, and at intervals during the summer: it is, for an insect of this family, tenacious of life, as I have twice kept individuals alive above three weeks.

Sp. 2. ochraceum. *Pallide rufo-ochraceum, pedibus pallidioribus, alis hyalinis costâ concolore, setis pallidis fusco subpunctatis.* (Exp. Alar. 6 lin.; Long. corp. 3 lin.; l. set. 2 lin.)

Cl. ochraceum. Steph. Catal. 307. No. 3403.

Pale reddish-ochreous: eyes dusky; legs very pale ochreous; filaments pale, very faintly, but closely, dotted with pale fuscous; wings hyaline, costa concolorous.

Taken near Hertford, in June.

Sp. 3. hyalinatum. *Incarnatum, pedibus pallidioribus, alis hyalinis, nervuris obsoletissimis.* (Exp. Alar. 5½—6½ lin.; Long. corp. 2½—3¼ lin.; l. set. 3½ lin.)

Cl. hyalinatum. Steph. Catal. 307. No. 3405.

Pale flesh-colour: thorax with two fainter lines; legs pale flesh-colour; filaments as long as the insect, whitish, with a tint of red, and faintly dotted with fuscous; wings long and narrow, very clear and transparent, colourless; nervures extremely faint.

Pseudimago pale ochreous, with the wings above brownish-yellow.

Not uncommon throughout the metropolitan district; also found near Dover and in Devonshire, in June and the beginning of July.

Sp. 4. albipenne? *Nigrum, abdominis basi pallido, apice fusco, pedibus pallidis geniculis nigricantibus; alis hyalinis.* (Exp. Alar. $5\frac{1}{2}$ lin.; Long. corp. 3 lin.; l. set. 4 lin.)

Cl. dorsale. *Steph. Catal. 307. No. 3406.*—Ep. albipennis. *Fabricius, E. S. ii. 70?*

Black: abdomen pale at the base and diaphanous, the apex fuscous; filaments very long, white, faintly dotted with fuscous; legs pale, the tips of the femora dusky; wings hyaline, colourless.

Not uncommon near Hertford, in June, and occasionally found in other parts of the metropolitan district.

Sp. 5. unicolore. *Rufescente-ochraceum, pedibus pallidioribus, setis albis immaculatis, alis hyalinis, costâ versus apicem brunnescente.* (Exp. Alar. 8 lin.; Long. corp. 4 lin.; l. set. 4 lin.)

Cl. obscurum. *Steph. Catal. 307. No. 3404.*—Cl. unicolore. *Curtis, Phil. Mag. 1834.*

Reddish ochre: filaments pale; legs pale ochreous; wings hyaline, nervures reddish ochre; costa pale brown towards the tip.

Taken in June, near Hertford.

Sp. 6. cognatum. *Piceo-rufum, abdominis basi pallidioris, pedibus setisque luridis, his fusco punctatis, alis hyalinis.* (Exp. Alar. $9\frac{1}{2}$ lin.; Long. corp. 4 lin.; l. set. 3 lin.)

Cl. cognatum. *Steph. Catal. 307. No. 3407.*

Shining pale pitchy-red: eyes dusky; abdomen rather palish towards the base, the apex darker, filaments about the length of the insect, pale livid, irregularly dotted with fuscous; wings hyaline, the nervures very pale, the three costal ones tinted with rose-colour.

Found near London, in June.

Sp. 7. dimidiatum. *Castaneo-brunneum, collaris lateribus puncto ochraceo, pedibus stramineis.* (Exp. Alar. 7— $8\frac{1}{2}$ lin.; Long. corp. 3—4 lin.; l. set. 6—7 lin.)

Cl. consobrinum. *Steph. Catal. 307. No. 3408.*—Ba. dimidiatum. *Curtis, Phil. Mag. 1834.*

Chestnut-brown: collar with an ochreous dot on each side; abdomen banded with ochre, especially at the base; filaments very long, white, more or less minutely dotted with fuscous and black; legs pale straw-colour; wings hyaline, colourless, with very faint nervures.

Pseudimago ashy-brown, with fainter rings at the base of the abdomen; wings pale fuscous, with the costal nervures darker.

Found near London, in June; at Hertford, Dover, &c.

Sp. 8. *Virgo*. *Pallidum, oculis nigris, femoribus anticis versus apicem obscuris, alis hyalinis.* (Exp. Alar. 5 lin.; Long. corp. 2 lin.; l. set. 3 lin.)

Eph. *Virgo*. *Olivier.*—Cl. *Virgo*. *Steph. Catal.* 307. No. 3409.

Pale: eyes black; filaments longer than the body, immaculate; legs pale, anterior pair moderate, their femora obscure towards the apex; wings hyaline, colourless.

Inhabits the vicinity of London, in June.

SECTION III.—LIBELLULINA, *Mac Leay*.

