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# XXVI. Descriptions of some nondescript British species of may-flies of anglers

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ceedingly faint bands of red and green light perpendicular to the direction of the motion.

When the eye has not been fatigued by light, the luminous ground on which these phænomena are seen has a minutely granular appearance; and by the continued action of the light an apparent effervescence appears over the whole, as if each grain of light, or the minute spaces between the grains, were becoming more or less luminous in succession.

Belleville, Dec. 18, 1833.

XXVI. Descriptions of some nondescript British Species of May-flies of Anglers. By John Curtis, Esq., F.L.S., &c.\*

As few insects are more remarkable in their economy or more employed for the amusement of men than the *Ephemeræ* and *Phryganidæ*, I hope the characters of some new genera and species may induce others to pay attention to these curious and interesting tribes of insects.

The following descriptions are scarcely more than the essential characters: the numbers refer to Mr. Curtis's Guide to an Arrangement of British Insects, in which a list of the

species has been given.

## Order NEUROPTERA. Fam. EPHEMERIDÆ.

## Gen. 734. EPHEMERA Linn.

7. fusca Curt.

24 lines long: dull piceous, the space between the eyes and the base of the anterior legs ferruginous, the others ochreous; filaments longer than the insect, pale lurid, dotted; the articulations long: wings transparent, superior with few transverse nervures and the longitudinal ones most distinct; inferior very small.

Gen. 735. BAETIS Lea.

A. The wings very much reticulated.

A. The wings very much reticulat

2. dispar Curt. Brit. Ent. pl. 484.

The Pseudimagot of this insect may be the E. venosa DeGeer.

7. costalis Curt.

5 lines long: slender, pale castaneous, sides of thorax, apex of abdomen and legs ochreous, the joints of tarsi fuscous at the articulations; filaments very long, pale yellow, each joint with the apex black: superior wings with the costa brownish yellow.

6. elegans Curt.

- 4½ lines: bright ochre, abdomen inclining to pale chestnut; filaments whitish dotted with fuscous, tarsi with all the joints tipped with black: wings beautifully opalescent, stained very pale yellowish brown, the costa darker, especially towards the apex.
  - \* Communicated by the Author.
  - † By Pseudimago I designate the fourth state of the Ephemeridæ.

5. mellea Curt., a beautiful Pseudimago.

5; lines: bright ochreous, eyes black, segments 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.

5<sup>a</sup>. straminea Curt., a Pseudimago.

4 lines: deep straw-colour, eyes black, segments of abdomen edged with brown, wings fuscous-ochre, tarsi fuscous at the apex, filaments whitish dotted with brown.

- 8. flavescens Curt., a Pseudimago. Like the last, but only  $2\frac{1}{2}$  lines long.
  - 82. lateralis Curt.
- 3; lines: piceous, shining, an orange spot before the wings; abdomen dull ferruginous, the sides paler, with the spiracles piceous; filaments very long: wings with the 3 costal nervures rosy or ferruginous; legs lurid, excepting the anterior, which are ochreous at the base.
  - 9. semicolorata Curt.

3 lines: ochreous, thorax variegated with brown, abdomen banded with the same colour, filaments very long and slender, knees and tarsi brown, superior wings with the basal half and inferior entirely pale yellowish brown.

9<sup>a</sup>. carnea Curt.

3½ lines: ochreous, with a pink tinge, abdomen darker, filaments twice as long as the insect, pale unspotted; wings elongated, with the costa slightly tinged, the nervures reddish brown.

- B. Wings very little reticulated. Pseudimago with the wings ciliated.
- 112. vernus Curt.

3; lines: 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 with the costa tinged.

11<sup>b</sup>. autumnalis Curt.

2 lines: 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. Pseudinago more ochreous.

## Gen. 736. Cloëon Lea.

- 1. dipterum Linn., marmoratum Curt.
- 8. obscurum *Curt*.

The Pseudimago, I believe, of C. dipterum: the wings are fuscous and ciliated.

4. unicolore Curt.

4 lines: reddish ochre; filaments lost; legs ochreous; costa pale brown towards the tip; nervures reddish ochre.

- 6. dimidiatum Curt.
- 3 lines: castaneous brown; collar with an ochreous dot on each side; abdomen, especially at the base, banded with ochre; filaments very long and white, remotely dotted with black; legs straw-colour; nervures of wings very faint.

#### Gen. 736<sup>a</sup>. Brachycercus Curt.

Head short; eyes small and remote, at least in one sex; thorax large and ovate; abdomen not longer than the thorax, terminated by 3 very short setæ, thick at the base: wings 2, rather short but ample, the form of a Musca, with many longitudinal nervures and 3 transverse ones between the costa and disc; legs short, at least in one sex.—Obs. These characters, although imperfect for want of specimens, are sufficient to distinguish this group for the present.

- 1. Harrisella Curt.—Harris's Exposition, tab. 6. f. 3 & 1. 5 lines long.
  - 2. Chironomiformis Curt.

2½ lines: ochreous shining; eyes black; wings milk white, costa fuscous; legs whitish. This insect somewhat resembles a large female Chironomus.

3. minima Curt.

14 line. My specimen, taken in Norfolk twenty years since, is much injured; the head and collar are blackish, the body white, legs and filaments pale ochre; wings similar to the last.

## Order TRICHOPTERA. Fam. PHRYGANIDÆ.

Gen. 748. LIMNEPHILUS Leach.—Curt. Brit. Ent. v. 11. fol. 488.

A. Posterior margin of superior wings emarginate.

1. basalis Curt.

Expansion of wings 16 lines: pale dirty ochre; superior wings freckled with brown, leaving an oblique plain spot on the disc, with a larger one connecting it with the apex; stigma and a sinuated oblique line at the base piceous, 3 pale spots on the posterior margin; tips of inferior wings ochreous variegated with brown; body green.

emarginatus Curt.

17 lines: dull ochre; superior wings mottled with a deeper colour, a pale oblique spot on the disc unconnected with one beyond it, and a short narrow one approaching the posterior margin, which has three spots, and the edge of the angle as well as the stigma piceous; apex of inferior wings brownish ochre; body green.

B. Superior wings truncated obliquely at the apex.

3. Strigosa Gmel.

20 lines: dull ochre; superior wings more or less freckled with brown, having a dark longitudinal line at the apex of each wing, sometimes obliterated in the superior.

5. binotatus *Curt*.

16 lines: superior wings ochreous yellow, deepest towards the base, with three pale spots on the disc and a large one covering the transverse nervures, a large brown spot at the posterior angle; stigma large ovate and piceous.

6<sup>2</sup>. discoidalis Curt.

15 lines: superior wings pale brown, with the costa (as far as the stigma), a large spot below the disc connected with a large one covering the transverse nervures, and numerous dots semitransparent; apical margin of inferior wings fuscous.

8. marmoratus Curt.

14 lines: superior wings dull pale ochreous, variegated with brown, leaving an oblique transparent spot below the centre, a large one covering the transverse nervures (which are brown) and several dots surrounding them; stigma brownish.

9. nebulosus Curt., probably a var. of the next.

14 lines; superior wings yellowish ochre, the posterior margin brown, with a pale lunule on the edge, the inferior margin brown also, with the disc pale, forming 2 lobes below; stigma deep ochreous.

10. apicalis Curt.—rhombica Ahr., fas. 9. pl. 13.

14 lines: superior wings dull ochreous, the lower portion variegated with bright brown, leaving an oblique subreniform transparent spot on the disc, a larger one covering the transverse nervures (which are piceous) with various dots, and a lunule on the posterior margin; stigma piceous.

10<sup>b</sup>. Stigma Curt.

142 lines: superior wings yellowish ochre; stigma piceous.

10°. lunatus Curt.

144 lines: superior wings brown, the costa, a spot on the disc, and a large sublumulate spot beyond it semihyaline, there are four pale rays between this and the posterior margin which is spotted brown and whitish; stigma large and piceous.

A single specimen of this fine species was taken last July at Whittlesea

Mere by J. C. Dale, Esq.

12. fenestralis Curt.

10 to 15 lines: superior wings dirty white freckled with pitchy brown, generally leaving a plain spot near the base, an oblique one on the disc, a sublunulate one beyond the transverse nervures connected with another on the inferior margin; stigma piceous and spotted pale.

13. bipunctatus Curt.

11 to 13 lines: superior wings pubescent, pale brown, darkest towards the apex, very much freckled with ochreous white, the costa plain, as well as a lunulate spot on the disc, two smaller ones beyond it forming an 2, a pale spot on the posterior margin; stigma and some of the longitudinal nervures piceous dotted with white.

14. affinis Curt.

11 lines: superior wings more or less pubescent, fuscous freckled with pale dull ochre; stigma, most of the nervures and the inferior margin spotted with piceous.

23. sparsus Curt.

11 to 13 lines: superior wings very silky brown freckled with ochre, with an ochreous mark on the inferior margin towards the angle, inferior wings pale fuscous, brown at the apex; antennæ brown, annulated with ochre; anterior tibiæ annulated fuscous and ochre.

23<sup>b</sup>. tenebricus *Curt*.

13 lines: superior wings very pubescent, dark brown more or less freckled with ochre, the costa often very ochreous, a spot of the same colour before the stigma and another opposite to it on the posterior margin; stigma piceous; inferior wings slightly fuscous, with the apex brown.

24. coenosus Curt.

11 lines: ochreous brown; superior wings rather short and broad; stigma

## 124 Mr. Curtis's Descriptions of nondescript May-flies.

scarcely visible, with a pale spot on each side the posterior angle; inferior wings paler except at the tips.

A single specimen in Scotland.

#### 25. Vinculum Curt.

9½ lines: superior wings deep fuscous; the stigma a little darker with numerous pale dots, and a larger one before the stigma, two opposite on the inferior margin and another upon the transverse nervures; apex of inferior wings fuscous.

## 15. obscurus Curt.

11 lines: superior wings fuscous ochre; the stigma brown, a pale dot at the disc and 2 interrupted transverse lines of dots beyond it; inferior wings tipped with fuscous.

### 11. Auricula Curt.

10 lines: superior wings pubescent, dark ochre with a hyaline spot on the disc and a larger ear-shaped one covering the transverse nervures; stigma obscure; tips of the inferior wings pale brown.

## 16. ochraceus Curt.

11 lines: superior wings pale fuscous yellow, freckled with yellowish spots; stigma obscure; inferior wings slightly ochreous at the apex.

## 18. bipartitus Curt.

10½ lines: superior wings pale ochreous, very much freckled with brown, excepting the costa, the sixth or apical longitudinal nervure forming a brown line; apex of inferior wings tinged with ochre.

#### 19. Consobrinus Curt.

11 lines: superior wings ferruginous-ochre freckled with brown excepting the costa, the posterior angle brown freckled with ochre; apex of inferior wings ochreous.

### 21. terminalis *Curt*.

11 lines: superior wings ferruginous ochre, the inferior portion freckled with brown, leaving a large plain subtrigonate spot on the posterior margin; apex of inferior wings pale ochreous.

## 22. centralis Curt.

11 lines: superior wings brown freckled with ochre, the costa entirely ochreous, a pale spot on the disc, a smaller one beyond it, and a large semi-orbicular one on the posterior margin; inferior wings ochreous at the tips.

#### 17. incisus Curt.

10 lines: wings scarcely longer than the body, superior ochreous, the inferior margin and the nervures freckled with brown, the discoidal cell very long; inferior wings deeply notched beneath the apex, which is slightly ochreous.

## 17b. elegans Curt. Brit. Ent. pl. 488.

#### 26. luridus Curt.

13 lines: superior wings dirty reddish ochre freckled with paler dots, the nervures darker; inferior wings with the apex tinged with the same colour.

## 27. nervosus Leach.—Sam. pl. 7. f. 3.

14 to 15 lines: superior wings ochreous brown, with a pale lunulate whitish spot near the centre and a dot at the base of the third marginal cell.

C. Superior wings broad and rounded at the apex.

28. radiatus Leuch.

19 to 22 lines: pale dirty ochre; superior wings with brown spots and lines variegating the cells, the transverse nervures surrounded with the same colour, the posterior margin brown, with a long pale stripe down each cell, with a brown line in the centre.

29. hieroglyphicus Curt.

2 inches: ochreous; superior wings with numerous brown markings (excepting a broad portion next the costa) forming irregular pale spots.

30. Vibex Curt.

14 to 20 lines: ochreous; superior wings mottled with pale brown, excepting the costa, forming innumerable ochre dots.

31. latipennis Curt.

19 lines: pale ochreous, silky; superior wings with the edges of the nervures very pale fuscous, forming indistinct rays towards the apex.

32. stellatus Curt.

16 to 17 lines: superior wings very pubescent fuscous ochre, with pale lines at the base and centre of the discoidal nervures, 2 or 3 small spots at the base, a bilobed one near the centre, 2 dots by the transverse nervures and a curved series of pale streaks beyond them; inferior wings fuscous ochreous, very pale at the base.

D. Wings short, rough or hispid.

33. brevipennis Curt.

Il lines: superior wings scabrous tawny ochre, a pale dot at the base of the third marginal cell, another below the centre, and a third near it towards the posterior angle, posterior edge dark, dotted pale.

34. villosus Fab.

8 to 11 lines: superior wings hispid, being clothed with bristly erect hairs, ochreous brown, with a pale dot on the inferior margin towards the posterior angle and another above it.

[To be continued.]

## XXVII. Proceedings of Learned Societies.

#### ROYAL SOCIETY.

1833. A PAPER was read, entitled, "Historical Notice to the Nov. 21.—A Paper May a read, entitled, "Historical Notice to the supposed Identity of the large mass of Meteoric Iron now in the British Museum, with the celebrated Otumpa Iron described by Rubin de Celis, in the Philosophical Transactions for 1786." Communicated in a letter from Woodbine Parish, jun., Esq., F.R.S., to Charles Konig, Esq., Foreign Secretary of the Royal Society.

The mass of iron in question was transmitted to Buenos Ayres, for the purpose of being manufactured into fire-arms, at the period when the people of that country declared themselves independent of Spain; but a supply of arms having in the meanwhile arrived, it was deposited in the Arsenal, and afterwards given to Mr. Parish, who transmitted it to England. Its identity with the mass of iron described by De Celis, though probable, is not exactly determined.

A paper was also read, entitled, "Observations of Nebulæ and