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1879.

# THE FAUNA OF DEVON.

## NEUROPTERA.

BY E. PARFITT.

(Read at Ilfracombe, July, 1879.)

THE insects of the order Neuroptera are some of the oldest known, the great stone book having preserved to us in some places fragments only, and in others the entire insect almost as perfect as when the creature was alive. The earliest known, so far as has been discovered, were found in the coal measures. These were the remains of the highly organized dragon flies, whose habits, if we may judge from those of the present day, and there seems no reason why we should not, were insectivorous, catching their prey as they fly. They are, in fact, the parallel among insects to the insectivorous birds in the ornithological world.

The wings, and indeed the entire dragon fly, is from its peculiar coriaceous skin and the hard neuration of its wings admirably adapted for preservation in the swamps and muddy flats in which the plants of our coal fields seem to have flourished; and the connecting link here between the coal plants living in watery or swampy ground and the dragon flies would seem to be complete, as the whole of the early life of the dragon flies right up to the time of their emergence into the beautiful creatures we see flitting over the waters, is spent in such places as slowly-running streams, or even stagnant waters, and more especially where aquatic plants are abundant.

Sir R. Murchison, in discussing the finding of the remains of Neuropterous insects and marine and brackish water shells, says,\* "An estuarine intermixture is observable in the coal-bearing strata of parts of Shropshire, Staffordshire, and Lancashire. It is well seen in the district of Colebrook

\* *Siluria*, edit. 1859, pp. 320-21.

Dale, where even insects allied to the *Corydalis* of America are found associated with marine and fluviatile shells and land plants . . . . other probable examples of such associations indicating the contiguity of land on which plants grew, and from which they were transported during long periods to marine or brackish water estuaries." A verification of nearly all this can be seen in the brackish water ditches, or salt water marshes, such as at Topsham or Exminster, and at Seaton. The larvæ of the dragon flies, and more especially those of the small ones, the section *Agrionidæ*, abound in these ditches, and seem almost to prefer the brackish waters to those of the fresh. Whether it is a particular kind of food they find here which suits them better in the larvæ state I am not prepared to say, but nevertheless the fact remains the same, that they are found here in the greatest abundance. The Lias of this country and the Solenhofen slates of Germany have preserved to us several fine specimens of the Neuroptera. The Purbecks have also contributed their quota of species to this group; so that there is no want of evidence of the order Neuroptera being firmly established from the Coal Measures through the various geological formations up to the present time, and so far as we can see there seems to be no diminution either in specific forms or of size or vigour of the species. That small flies of various kinds abounded in such localities as we have named in these remote times there can, I think, be little doubt; for so far as the oral or masticatory organs are concerned, the fossil forms appear to be organized just the same as their representative forms now living. The inference therefore is that they caught their food in a similar manner.

The habits of the Neuroptera, and we might say the habits of this order of insects, are perhaps as various as, if not more so than, any group we could point to, as they range from the muddy ditch to clear lakes and streams, to the rapid falls, such as on our weirs, where the moss-covered stones harbour many rare forms, up to the forest trees, such, for instance, as the beautiful lace-wings or golden-eyed flies, the larvæ of which are found about our trees feeding on those pests to all cultivators of the garden—the Aphides or "green flies." These are therefore the gardeners' friends. The larvæ of these beautiful insects are provided with large and very sharp pincer-like jaws, with which they pierce their victims. They suck out the blood or vital juice of the Aphides, and then use the skin to make themselves a shield-like covering. Under this covering the larva is enabled to withdraw its anterior

and posterior parts; the creature then has the appearance of a rough piece of dirt. In this disguise it in all probability eludes the prying eyes of insectivorous birds.

A few years ago I bred specimens of *Chrysopa flavifrons* from larvæ, having the habits just described. When full fed the larva of this species makes itself a white ovate or nearly globular cocoon, in which it undergoes its metamorphosis. From this the perfect insect emerges in about a month. The eggs of these *Chrysopa* are as remarkable as the larvæ. There is nothing like them, so far as we are aware, in this country. They are small ovate bodies placed on very long footstalks, and are either deposited singly or in twos or threes together on the leaves or stems of plants. Why these eggs should be so provided is a problem yet unsolved. It has been suggested that it is to protect them from the attacks of parasites, but this suggestion does not suffice, as it is well known that the little parasitic *Ichneumons* could easily attack them.

The small family *Panorpidæ*, of which we have, so far as has yet been ascertained, three species only in this country, are perhaps as remarkable as any of our native insects. They are generally called scorpion flies, from the almost exact resemblance of the posterior extremity of the males to the same part of that loathsome animal, the scorpion. The similarity of structure, so far as external appearances are concerned, is very remarkable. The three posterior segments are differently formed from the rest; so that the creature can easily move these about in all directions. The last or extreme joint is swollen into an ovate mass divided into two claw-like processes, somewhat like the large claw of a crab. This gives the insect a rather formidable appearance. The habits of these scorpion flies have yet, we believe, to be worked out; for comparatively nothing is known of eggs and larvæ, or the food on which the latter live.

The section *Trichoptera* forms by far the largest part of the order *Neuroptera* inhabiting this country. The larvæ of these, as a rule, are all aquatic, and live either in still or rapidly-running waters, and are commonly known by the name of caddis worms, and the perfect insects are called caddis flies, and in this fly-fishing county are well known to fishermen. Although the caddis worms mostly live in the same element, and are more or less subject to the same conditions, the various larvæ construct for themselves cases which differentiate, generally speaking, from an early period after the development from the egg. There are, however,

exceptions from this; thus the larva of *Anabolia nervosa* constructs for itself a tube-like covering made of small grains of sand, agglutinated together with a secretion that is insoluble in water. These tubes, as the animal grows larger, are increased to suit the development; and they have a graceful curve given to them, so that they are like cornucopias in miniature. Up to this point there appears to be no particular difference in the construction of the tube or case of *Anabolia* from that of the genus *Leptocerus*, although in the imago or perfect state the insects are very different in appearance and structure. From the cornucopia stage in the *Anabolia* the difference becomes very apparent. It begins to use larger materials for its case; these, such as bits of sticks, straws, &c., are added to the outside, and in addition to them one or two long pieces are attached to the sides of the case as balancers. These bits project considerably beyond the case behind, and thus by their buoyancy they throw the anterior part of the case forward, so that the creature inside can feed without inconvenience. At the same time, the case being rendered so buoyant, the larvæ can move about from place to place with the greatest facility; whereas before the balancers were added the case was heavy and inconvenient to move about. When the larvæ is full fed, and ready to go through the wonderful metamorphosis, it attaches the case to a stone or some firm substance at the bottom of the water, and there undergoes its final change to the perfect insect. Some species appear to have a sense of beauty. It must, we think, be either this, or that they are conchologists or bric-a-brac hunters; for some adorn their cases with bits of different coloured stones, and others with different species of small shells. Thus *Limnophilus flavicornis* covers its case with *Valvata picinalis*, and the young of *Planorbis carinatus*.

The little delicate insects forming the genus *Setodes*, the larvæ of which live amongst water plants, construct a very neat and elegant little case made of yellow silk, strongly agglutinated together. It is straight, and tapers gradually from a point, so that it reminds us of a "post-horn," except that the large end is not reflected. But the great variety of the cases and homes in which the larvæ of the various genera and species reside form quite a study in themselves, and the peculiarities and habits of the creatures making them open up a source of almost inexhaustible interest to the lover of nature.

In the section *Trichoptera*, as the name implies, the wings are more or less covered with hairs; and in one or two

instances these hairs are very peculiar, and resemble more the scales on the wings of the Lepidoptera. Thus the curious genus *Glossosoma* has its little tympanum or drum-like basis of the anterior wings of the male set round with curiously-developed hairs, some of which are spear-headed, and sharp-pointed; others are rounded at the top; some are short, and flabelliform, and striate; some are spatulate, or like little spoons; others again are linear; and all more or less opaque, except on the edge, where they are somewhat transparent. What the use of this little drum and its ornamentation really is requires elucidation.

In the family Ephemeridæ we feel quite sure that many more species exist than those we have enumerated; every river and stream should be properly worked at different seasons of the year; for from the early part of March to quite late in autumn the different kinds appear, even on the same stream, so that for any one wishing to make a thorough investigation of our streams in this department of entomology alone here is work for many years to come. These insects are some of the well-known fishermen's flies, and we endeavoured to find out the names of the different kinds as known to fishermen by showing live specimens to a well-known "fly maker;" but we soon found that with the exception of a very few the rest were not known; or numbers of genera and species, because they were of a similar colour, were all known by the name of "black gnats," so that we failed in making anything like a catalogue of fishermen's names.

When we were working at this group of insects a few years ago, we had the pleasure of rearing many, and therefore studying their habits. Having some larvæ of *Limnephilus marmoratus* in the tank, or aquarium, we were fortunate enough to breed a Dipterous insect, a parasite on the larvæ of the *Limnephilus*, which was new to science; the late Mr. Walker named it *Hydrotachina limnephili*.

In conclusion of this section, so far as we have been able to ascertain the number of species inhabiting Devonshire at this time as compared with the whole of the United Kingdom, we cannot compare this county with any other; for we are not aware of any other county having been worked up in this order of insects. The number of species given for the whole kingdom is 323. Out of this number we have 298, and the number of specimens we have in our cabinet is about 1,000.

## CATALOGUE.

WITH NOTES AND OBSERVATIONS.

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Order, NEUROPTERA, *Linnaeus*.

Section, PSEUDO-NEUROPTERA.

Family, PSOCIDÆ, *Stephens*.GENUS, *ATROPUS*, *Leach*.DIVINATORIA, *Müll.**McLachlan*, in Ent. Month. Mag., vol. iii, pl. 2, f. 1.

In houses amongst old books and herbaria, &c.; neglected cases of insects, &c.; generally distributed.

GENUS, *CLOTHILLA*, *Westwood*.PULSATORIA, *Linn.**McLachlan*, Ent. Month. Mag., vol. iii, pl. 2, f. 2.

In old houses. Taken amongst my collection of shells; had been feeding probably on some animal matter? The eyes of this species are a brilliant carmine, the nasus tinged with the same colour, jaws black.

PICEUS, *Motsch.**McLachlan*, Ent. Month. Mag., vol. iii, pl. 2, f. 3.

I captured this species among some dried Devon fungi in my room, Feb. 8th, 1879. This, when alive, had the face and vertex strongly tinged with red, while the rest of the insect was olivaceous. There are three or four folds or wrinkles on the vertex, between which I thought I detected ocelli, but a closer inspection only showed wrinkles. When the insect died it assumed the colour, as described, "pitchy black." The coriaceous,

scale-like wings, are very easily removed, but when in situ they cover quite one-fourth of the abdomen. The whole insect is sparsely covered with rather stiff, curved white hairs.

GENUS, *PSOCUS*, Latrille.

LONGICORNIS, *Fab.*

*McLachlan*, Ent. Month. Mag., vol. iii., p. 229; Ill. Man., vol. vi., p. 119, *P. lineatus*.

Beaten off alders by the Exe, June 8th, and on trunks of trees where the bark is rugged. Generally distributed.

NEBULOSUS, *Steph.*

Ill. Man., vol. vi., p. 119.

Not common; taken at Newton Abbot, and at Killerton, in July and August, 1867.

VARIEGATUS, *Fab.*

*Stephens*, Ill. Man., vol. vi., p. 118. (*P. atomarius*.)

Beaten out of bushes by the Exe, in July and August; not common. Taken also by Mr. Bignell, near Plymouth.

BIFASCIATUS, *Latr.*

*Stephens*, Ill. Man., vol. vi., p. 120; *McLachlan*, Ent. Month. Mag., vol. iii., p. 341.

Rather common. Beaten out of fir trees in Stoke Wood, near Exeter, July, 1868.

QUADRIMACULATUS, *Latr.*

*Stephens*, Ill. Man., vol. vi., p. 126, No. 37; *Hagen*, Ent. Ann., p. 31, 1861.

Very rare. I have taken only one specimen of this distinct little species.

BIPUNCTATUS, *Linn.*

*Stephens*, Ill. Man., vol. vi., p. 123; *McLachlan*, Ent. Month. Mag., vol. 3, p. 243.

Rare. Beaten out of bushes by the Exe, August 6th, 1861. I have but one specimen of this, and will not insist that this is correct, as the markings in all this group of insects are variable.

GENUS, *STENOPSOCUS*, *Hagen*.

IMMACULATUS, *Steph.*

Ill. Man., vol. vi., p. 125. Nos. 17, 31-32 are considered to be the same species.

Frequent in woods, and amongst thick bushes in the middle of summer.



**CRUCIATUS, Linn.**

*McLachlan*, Ent. Month. Mag., vol. iii., pl. 2, f. 7; *Stephens*, Ill. Man., vol. vi., p. 125, Nos. 29-35.

This is a very variable form, both as regards size and markings; some of the varieties are entirely without the dark markings at the base of the wings, from which the species has derived its trivial name; some specimens have one spot only, others two, but so far as my observation goes they never exceed four. Taken in June, in Stoke Wood, near Exeter, and at Dunsford, in August, 1861 and 1871.

GENUS, **CÆCILIUS**, *Curtis*.

**PEDICULARIS, Linn.**

*West*. Introduction, vol. ii., t. 59, f. 16; *Stephens*, Ill. Man., vol. vi., p. 127, No. 40-42.

On mossy trunks of trees.

**FLAVIDUS, Steph.**

Ill. Man., vol. vi., p. 122, Nos. 20, 21-34. (?) *McLachlan*, Ent. Month. Mag., vol. iii., p. 271.

Generally distributed; Plymouth, Dawlish, Exeter, Seaton, &c.; beaten out of oaks, from June to October.

**VITTATUS, Dalm.**

*Stephens*, Ill. Man., vol. vi., p. 122; *McLachlan*, Ent. Month. Mag., vol. iii., p. 272.

This very distinctly-marked species is not very common with us in woods. Amongst bracken and low-growing bushes, &c., in September and October. Taken at Alphington by the brook, and in Stoke Wood.

GENUS, **PERIPSOGUS**, *Hagen*.

**PHÆOPTERUS, Steph.**

Ill. Man., vol. vi., p. 127, Nos. 38-39; *McLachlan*, Ent. Month. Mag., vol. iii., p. 273.

Not common. Beaten out of trees in Stoke Wood, near Exeter, June 21st, 1876.

The fascia on the abdomen, described by Mr. Stephens as white, were in most of my specimens either bright orange-red, or dull red.

GENUS, **ELIPSOGUS**, *Hagen*.

**UNIPUNCTATUS, Müll.**

*Stephens*, Ill. Man., vol. vi., p. 121, Nos. 15-16; *McLachlan*, Ent. Month. Mag., vol. iii., p. 274.

On mossy trunks of trees in June, July.

**WESTWOODII, *McLachlan*.**

Ent. Month. Mag., vol. iii., p. 274; *Westwood*, Int., vol. ii., t. 19, figs. 8, 9.

Not uncommon at Newton Bushel and in the Exeter district in June and October.

**HYALINUS, *Steph.***

Ill. Man., vol. vi., p. 123, Nos. 23, 24, 25; *McLachlan*, Ent. Month. Mag., vol. iii., p. 275.

Beaten out of bushes and trees by the Exe, in August, 1861; not uncommon.

**FLAVICEPS, *Steph.***

Ill. Man., vol. vi., p. 124; *McLachlan*, Ent. Month. Mag., vol. iii., pl. 2, figs. 9, 10, p. 275.

I captured this species at Dawlish in October, 1861; not uncommon.

Family, *PERLIDÆ*, *Leach*.  
GENUS, *DICTYOPTERYX*, *Pictet*.

**MICROCEPHALA, *Pict.***

*Stephens*, Ill. Man., vol. vi., p. 136 (*P. bicaudata*).

Very common along all our streams, from early spring until autumn.

**RECTANGULA, *Pict.***

*Stephens*, Ill. Man., vol. vi., p. 136 (*P. caudata*, var. *B. nervosa*).

Taken in Devonshire, according to *Stephens*.

GENUS, *PERLA*, *Geoffroy*.

**MARGINATA, *Panz.***

*Stephens*, Ill. Man., vol. vi., p. 135.

This fine insect is rather common, and widely distributed along the banks of our streams in June.

GENUS, *CHLOROPERLA*, *Newman*.

**GRAMMATICA, *Poda.***

*Stephens*, Ill. Man., vol. vi., p. 138, and Nos. 1, 2, 3 and 5.

Very abundant along all our rivers and streams from May to October. It varies greatly in size and colouring, so much as to lead one to think there are two or three species collected under this head.

GENUS, *ISOPTERYX*, *Pictet*.

**TORRENTIUM, *Pict.***

*Pictet*, *Perl.*, p. 307, pl. 36, figs. 1-4 (!).

This is a rare species with us. I have taken it near the Exe, in Stoke Wood, in May.

GENUS, *TENIOPTERYX*, *Pictet*.TRIFASCIATA, *Pict.*

*Stephens*, Ill. Man., vol. vi., pl. 31, f. 3, nec. 2.

This very distinct and apparently rare species I captured by the Exwick Weir, April 21st, 1879. The fascia on the wings are very distinct when the insect is fresh. The posterior wings have a beautiful delicate purple tint, except along the anterior edge, where it is, as Mr. Stephens remarks, "fuscescent." The body and legs of the insect vary a good deal in colour, from reddish yellow to pitchy black.

NEBULOSA, *Linn.* The Red-Upright of Fishermen.

*Pictet*, *Perl.*, p. 347, pl. 43 (larva and imago).

Very scarce; previously only captured by the river Clyst, March 12th, 1862. This year (1879) I captured three specimens by the side of the Exe on March 1st. The larvæ of this species live among the stones of which the weirs on the Exe are built, and where the water rushes over with great force. When about to undergo the last change, or rather the emergence of the imago, the sub-imago creeps up the woodwork of the weir, or to the sluice gates, and grasps the wood very firmly, with legs outstretched, and the sharp claws of the tarsi firmly pressed into the wood. The head is first ruptured; the skin then parts along the back from the pressure within, as far as the base of the wing cases; the insect gradually by a series of movements emerges, leaving its old skin to dry on the woodwork. The difference in the colouring in the sub-imago and the perfect insect is very striking. In the former it is shining blackish brown. The face is ornamented with a white mark in form of a Greek or Egyptian vase, having two curved cornutæ for the handles, mouth white, with ferruginous jaws, antennæ pale yellow. The thoracic region is maculated with white, and the tips of the wing-cases are whitish; the abdomen has two rows of angular white spots on each segment, setæ pale yellow, legs whitish, femora dusky beneath. All the tibia, and especially the posterior, are provided with a row of long ciliæ on the outside to assist them in swimming.

GENICULATA, *Steph.*

Ill. Man., vol. vi., pl. 31, f. 4, p. 145.

Not uncommon. Bovey Heathfield in May, and by the Exe in August.

**FUSCIVENTRIS**, *Steph.* Black Ant of Fishermen.

Ill. Man., vol. vi., p. 145.

Abundant along all our streams from May to October.

GENUS, **NEMOURA**, *Latrielle*.

**VARIEGATA**, *Oliv.*

*Stephens*, Ill. Man., vol. vi., p. 140, and Nos. 1-7 and 9.

Very variable both in size and colouring. Common from May to September along most of our streams.

**MEYERI**, *Pict.*

*Perlides*, pl. 51, fgs. 1, 2, p. 390.

Rare; taken on the banks of the Exe in June.

**NITIDA**, *Pict.*

*Perlides*, pl. 52, fgs. 1-4 (?).

Very scarce; taken in Devon by Mr. J. C. Dale, who presented me with a specimen.

**SULCICOLLIS**, *Steph.*

Ill. Man., vol. vi., p. 143, and Nos. 12-14.

Rather scarce; along the rocky parts of our streams in June and July.

Family, **EPHEMERIDÆ**, *Leach*.

GENUS, **EPHEMERA**, *Linnaeus*.

**VULGATA**, *Linn.*

*Stephens*, Ill. Man., vol. vi., p. 55; *Don.*, Brit. Insects, pl. 128.

Common, some seasons; this year they have been very scarce; flying over our rapid streams.

**LINEATA** (?) *Eaton*.

Trans. Ent. Soc., 1871, pl. 4, fgs. 7, 7A, 7B.

Captured on the bridge leading to Exwick, in the evening, in June; rare.

**DANICA**, *Müll.*

*Donovan*, Brit. Insects, vol. iv., pl. 128, p. 58 (*E. vulgata*); *Stephens*, Ill. Man., vol. vi., p. 56, No. 2.

Not uncommon in similar situations as the former; for instance, flying over the mill-stream at Exwick, near the weir, the end of May.

GENUS, **LEPTOPHEBIA**, *Westwood*.

**HELVIPES**, *Steph.*

Ill. Man., vol. vi., p. 58, No. 7; *Eaton*, Trans. Ent. Soc., 1871, pl. 4 fgs. 26, 26A.

Captured sparingly on the Exe in June.

**FUSCA, Curt.**

*Stephens*, Ill. *Man.*, vol. vi., p. 60; *Eaton*, Trans. Ent. Soc., 1871, pl. 2, figs. 2, 2B.

Very scarce; taken on the Exe in June.

GENUS, **GENIA**, *Stephens*.

**MACRURA, Steph.**

*Stephens*, Ill. *Man.*, vol. vi., pl. 29, f. 1, p. 60.

Taken in May and June, flying mostly in the evening over the Exeter canal and the river. Common, literally in swarms, over the canal below the Double Locks, June 18th, 1879, between seven and eight o'clock in the evening.

**DEMIDIATA, Steph.**

Ill. *Man.*, vol. vi., p. 61, and No. 3.

Captured on the Exe, May 31st, and flying over the mill-stream at Exwick, at 7 p.m., in considerable numbers. On June 18th, at 8 p.m., these were in small clouds over the side of the canal, Exeter. *Macrura* was also in abundance, but I observed that they did not mix together, although the groups were not far apart.

GENUS, **CLOEON**, *Leach*.

**DIPTERUM, Linn.**

*Stephens*, Ill. *Man.*, vol. vi., pl. 29, f. 3; *Eaton*, Trans. Ent. Soc., 1871, pl. 5, f. 10.

Taken by slowly running streams in June.

GENUS, **CENTROPTILUM**, *Eaton*.

**LUTEOLUM, Müll.**

*Stephens*, Ill. *Man.*, vol. vi., p. 68, Nos. 2, 3, 4.

Taken "in Devonshire in June and the beginning of July." (Mr. Stephens.) I captured two specimens by the weir at Exwick, on the Exe, May 6th, 1879. The males of this insect were plentiful over the mill-stream at Exwick, May 16th, flying for about an hour, in the evening about seven o'clock; after this none were to be seen. The females very scarce.

GENUS, **BAETIS**, *Leach*.

**BINOCULATUS, Linn.**

*Stephens*, Ill. *Man.*, vol. vi., p. 67, B; *Eaton*, Trans. Ent. Soc., 1871, pl. 5, figs. 16, 16A.

Captured on the Exe and Creedy the end of May to September. The bright yellow eyes of the males distinguish this from all other British species yet discovered.

**SCAMBUS, *Eaton*.**

Trans. Ent. Soc., 1870, pl. 5, figs. 171, 7A.

Captured on the Exe, near Exeter, May 19th, 1879;  
apparently rare.

**RHODANI, *Pict.* The Blue Upright of Fishermen.**

*Eaton*, Trans. Ent. Soc., pl. 5, figs. 20, 20A, 1870.

Captured by the weir at Exwick, on the Exe, April 23rd;  
plentiful.

**PHÆOPS, *Eaton*.**

Trans. Ent. Soc., 1870, p. 4.

I captured a female of this species at Exwick Weir,  
April 5th, 1879.

**NIGER, *Linn.***

*Eaton*, Trans. Ent. Soc., pl. 5, figs. 26, 26a, 1870.

Apparently rare. I took the first I have seen at the  
bottom of the Weir at Exwick, on the Exe, May 6th,  
1879. Since the above I have taken several others.  
The sub-imago is quite black in both male and female;  
but independent of the eyes, the colour of the abdomen  
in the male can be detected through the integument.

**GENUS, *HEPTAGENIA*, *Walsh*.****SEMICOLORATEA, *Curtis*.**

*Stephens*, Ill. Man., vol. vi., pl. 29, f. 2, p. 64.

Captured at Dunsford, on the Teign, June 19th, 1865, and  
also taken on the Exe; but not common.

**VOLITANS, *Eaton*.**

Trans. Ent. Soc., 1871, p. 147.

This species may be known from its congeners by having  
a narrow black ring round the middle of all the femora.  
Taken at Dunsford, on the Teign, June 19th, 1865.

**ELEGANS, *Curtis*.**

*Stephens*, Ill. Man., vol. vi., p. 64 (*Baetis elegans*).

Taken on the Exe, near Stafford's Weir, June 6th, 1878.  
It does not appear to be common. This insect well  
deserves its trivial name. The female is most con-  
spicuous, being of a bright gamboge yellow, both body  
and wings. The male is a great contrast to the female  
in colour, as the only yellow he has is along the costal  
margin of his wings.

I have taken many specimens this year of both sexes flying over the mill-stream near Exwick. They fly between seven and eight o'clock in the evening. The female has a peculiar flight when depositing her eggs; she flies up to a considerable height, and then suddenly drops into the water, as if shot.

**VENOSA, Fabr.**

*Stephens*, Ill. Man., vol. vi., p. 63 (*B. dispar*); *Eaton*, Trans. Ent. Soc., 1870, pl. 6, f. 24.

Captured by the Exeter Canal, below the Double Locks, June 18th, 1879. My specimens do not agree exactly with Mr. Eaton's description; nevertheless I think I am right in referring them to this species. (?)

**INSIGNIS, Eaton.**

Trans. Ent. Soc., 1870-71, p. 153.

Captured on the Dart (Rev. E. A. Eaton). I took one fine male over the mill-stream at Exwick, June 17th, 1879.

Section, ODONATA, *Fabricius*.  
Family, LIBELLULIDÆ, *Leach*.  
GENUS, SYMPETRUM, *Newman*.

**STRIOLATUM, Charp.**

Libel. Europ., pl. 10, f. 2.

Captured on the Exe, near Stoke (common), September 26th, 1876; and also by the railway ponds in the Exminster marshes (rather common), and near Plymouth.

**FLAVEOLUM, Linn.**

*Charp.*, Libel. Europ., pl. 9; *Stephens*, Ill. Man., vol. vi., p. 96.

Rare. Captured at Lapford, August 30th, 1876, and on the Clyst river; also on the Exe, near Stafford's Weir, above Exeter.

**SANGUINEUM, Müll.**

*Charp.*, Libel. Europ., pl. 10, f. 1 (*Luigripes*); *Stephens*, Ill. Man., vol. vi., pp. 95, 96, Nos. 10, 11.

I have not taken this myself; but Mr. Stephens says, "Found in Devonshire."

**SCOTICUM, Don.**

*Charp.*, Libel. Europ., pl. 12, p. 88; *Stephens*, Ill. Man., vol. vi., p. 94.

Very rare. One specimen captured by the Rev. J. Hellens, near Stafford Bridge, on the Exe, September 19th, 1875, and presented to me.

GENUS, **PLATETRUM**, *Newman*.**DEPRESSUM**, *Linn.**Charp.*, Libel. Europ., pl. 4; *Stephens*, Ill. Man., vol. vi., p. 91.

Rather common, and generally distributed along our streams in June.

GENUS, **LIBELLULA**, *Linnaeus*.**QUADRIMACULATA**, *Linn.**Charp.*, Libel. Europ., pl. 3; *Stephens*, Ill. Man., vol. vi., p. 92.

Generally distributed over the county, but can scarcely be called common, in June and July.

GENUS, **ORTHETRUM**, *Newman*.**CÆRULESCENS**, *Fabr.**Charp.*, Libel. Europ., pl. 6; *Donovan*, Brit. Insects, vol. xiii., p. 449; *Stephens*, Ill. Man., vol. vi., p. 93.

Captured flying over the river Clyst, near the bridge on the road to George's Clist, in July; also at Strete Raleigh, and near Plymouth.

**CANCELLATUM**, *Linn.**Charp.*, Libel. Europ., pl. 5; *Stephens*, Ill. Man., vol. vi., p. 93.

Taken in the Exeter district, but it is rare.

Family, **CORDULIIDÆ**.GENUS, **CORDULIA**, *Leach*.**CURTISII**, *Dale*.*Stephens*, Ill. Man., vol. vi., p. 90.Extremely rare. Captured at Braunton Burrows by J. C. Dale, Esq., and recorded in *London Magazine of Natural History*.Family, **GOMPHIDÆ**, *Rambur*.GENUS, **CORDULEGASTER**, *Leach*.**ANNULATUS**, *Latr.**Charp.*, Libel. Europ., pl. 26; *Stephens*, Ill. Man., vol. vi., p. 96.

This grand insect is widely distributed; but so far as my experience goes, it cannot be ranked as common.

GENUS, **BONCHYTEON**, *Evans*.**PRATENSE**, *Müll.**Charp.*, Libel. Europ., pl. 21; *Stephens*, Ill. Man., vol. vi., p. 85, No. 7.

This pretty little species is widely distributed, but by no means common, along the quiet streams and ponds in June and July.



GENUS, *ÆSCHNA*, *Fabricius*.CYANEA, *Müll.*

*Charp.*, Libel. Europ., pl. 24; *Stephens*, Ill. Man., vol. vi., p. 83.

On the banks of the Otter, Exe, Teign, &c., in July. This is the most abundant of the large species that I have met with in Devon.

GRANDIS, *Linn.*

*Charp.*, Libel. Europ., pl. 24; *Stephens*, Ill. Man., vol. vi., p. 83.

Mr. Stephens says, "Abundant during the summer and autumn" in several places named, including Devonshire.

## Family, CALOPTERYGIDÆ.

GENUS, *CALOPTERYX*, *Leach*.VIRGO, *Linn.*

*Charp.*, Libel. Europ., pl. 31; *Stephens*, Ill. Man., vol. vi., p. 79.

Very scarce in the Exeter district as compared with the following, but common in the Plymouth district. Taken in Devon by Mr. Stephens, Mr. Bignell, and myself. I captured specimens of both sexes on the Lyd, near Lydford, in August this year.

## VIRGO.

Variety, with wings the colour of the female as she is generally seen, but with the neurulation of the male, both pairs edged with steel blue. Pterostigma none, head, thorax, and abdomen green shot with steel blue; legs black. Superior and inferior anal organs, the same as in the considered normal form; apex of abdomen luteus beneath. There is a faint tinge of this colour between the wings. Taken by Mr. Bignell in the Plymouth district. Mr. McLachlan suggests that this may be only an immature form.

SPLENDENS, *Harris*.

*Charp.*, Libel. Europ., pl. 33; *Stephens*, Ill. Man., vol. vi., p. 79 (*partim*).

Common, and generally distributed throughout the county around ponds and along rivers.

Family, AGRIONIDÆ, *Leach*.GENUS, *LESTES*, *Leach*.SPONSA, *Hans.*

*Charp.*, Libel. Europ. pl. 34; *Stephens*, Ill. Man., vol. vi., p. 77, Nos. 2 and 3.

Found in Devonshire, according to Stephens.

GENUS, *PLATYCHEMIS*, *Charpentier*.*PENNIPES*, *Pall.*

*Charp.*, Libel. Europ., pl. 43, f. 2; *Stephens*, Ill. Man., vol. vi., p. 76, No. 18.

Common some seasons in the Topsham marshes in July.

GENUS, *PYRRHOSOMA*, *Charpentier*.*MINIUM*, *Harris*.

*Charp.*, Libel. Europ., pl. 36, f. 2; *Stephens*, Ill. Man., vol. vi., p. 75.

Generally distributed, and abundant in marshy places, and by the side of the Exeter canal in June and July.

GENUS, *ISCHNURA*, *Charpentier*.*PUMILIO*, *Charp.*

Libel. Europ., pl. 39; *Stephens*, Ill. Man., vol. vi., p. 72 (var.).

An abundant species along the banks of the Exeter canal and railway ponds. The variety figured on the left below on the plate by Charpentier is not uncommon by the canal.

*ELEGANS*, *Lind.*

*Charp.*, Libel. Europ., pl. 38, f. 2; *Stephens*, Ill. Man., vol. vi., p. 72, 74, No. 9 (var.).

Banks of the Teign near Dunsford, June 19th, 1865; and in abundance by the Exeter canal, July 17th, 1876.

*Var. RUFESCENS*, *Leach*.

This very pretty insect is frequent along the banks of the Exeter canal in June.

GENUS, *AGRIUM*, *Fabricius*.*PULCHELLUM*, *Lind.*

*Charp.*, Libel. Europ., pl. 40; *Stephens*, Ill. Man., vol. vi., p. 73, No. 5.

Captured by the side of the Exe, May 19th, and in Topsham marshes in July.

*PUELLA*, *Linn.*

*Charp.*, Libel. Europ., pl. 41, f. 2; *Stephens*, Ill. Man., vol. vi., p. 73.

Common in the Topsham marshes near the bridge. The larvæ live in the brackish, and, at even high-tide, salt water. Plentiful also along the canal banks in July; also in the Plymouth district.

*Neuroptera*, PLANIPENNIA, Latreille.  
 Family, SIALIDÆ, Leach.  
 GENUS, SIALIS, Latreille.

LUTRARIA, Linn.

Stephens, Ill. Man., vol. vi., p. 133.

An abundant species along the river banks, and on rocks and stones above water-line in most of our streams, end of May, June, &c. I have a specimen deviating from the recognized normal form, in this, instead of four wings it has an extra one, about one-fourth the length of the others. It is on the left side, when the insect is held with its head towards you, and placed above the other two. The wing is composed of one large elliptical cell, which forms the costa, and three radial nerves and one transverse, one near the base forming a triangular closed cell. I captured this specimen in June, 1859. This specimen, as well as another I have, has two transverse nervules in the sub-costal area; but this is no distinction, as it is difficult to find two specimens exactly alike in the venation.

Family, RAPHIDIIDÆ, Linnæus.  
 GENUS, RAPHIDIA, Linnæus.

NOTATA, Fab.

Stephens, Ill. Man., vol. vi., pl. 31, f. 1; Hagen, Ent. Ann., 1858, p. 31, No. 37.

Captured in North Devon by the late Mr. Raddon.

XANTHOSTIGMA, Schaum.

Stephens, Ill. Man., vol. vi. (*R. Londinensis*).

Very rare. I have a specimen from Mr. Raddon's collection, believed to have been taken in North Devon.

Family, OSMYLIDÆ, Leach.  
 GENUS, OSMYLUS, Latreille.

MACULATUS, Fab.

Stephens, Ill. Man., vol. vi., p. 99; Donovan, Brit. Insects, pl. 188; McLachlan, Trans. Ent. Soc., 1868, p. 165.

Very rare. Captured at Newport, near Topsham, June, 1855.

GENUS, SISYRA, Burmeister.

FUSCATA, Fab.

Stephens, Ill. Man., vol. vi., pl. 30, f. 4, p. 114, and Nos. 30, 31; Hagen, Ent. Ann., 1858, p. 25.

Not uncommon among fir trees, &c., in our woods in June and August, especially where water is.

TERMINALIS, *Curtis*.

*McLachlan*, Trans. Ent. Soc., 1868, pl. 9, f. 3, p. 169.

Scarce. Captured in May and June in the Exeter district.  
The wings of both these species are beautifully iridescent.

Family, **HEMEROBIIDÆ**, *Leach*.

GENUS, **MICROMUS**, *Rambur*.

VARIEGATUS, *Fab*.

*Stephens*, Ill. Man., vol. vi., p. 118; *McLachlan*, Trans. Ent. Soc., 1868, pl. 9, f. 4.

Common, and widely distributed in woods and thick lanes.

PAGANUS, *Linn*.

*Stephens*, Ill. Man., vol. vi., p. 110; *McLachlan*, Trans. Ent. Soc., 1868, pl. 9, f. 4A.

Common, and widely distributed; found in similar places as the above, and at the same time.

GENUS, **HEMEROBIVS**, *Linnaeus*.

NITIDULUS, *Fab*.

*McLachlan*, Trans. Ent. Soc., 1868, pl. 10, f. 3.

Rare; captured in the Exeter district.

MICANS, *Oliv*.

*Stephens*, Ill. Man., vol. vi., p. 111, Nos. 18, 24; *McLachlan*, Trans. Ent. Soc., 1868, pl. 10, f. 4.

Captured in Stoke Wood, May 10th, 1861; not very common.

## Var. B.

Head, antennæ, thorax, ferruginous (body broken off), wings iridescent, stigma very pronounced in both fore and hind wings, stained with orange-red; nerves in all the wings brown. Captured near Exeter, June 27th, 1861. This would seem to be intermediate between the typical form and the variety *fuscinervis* of Schneider (?).

HUMULI, *Linn*.

*Stephens*, Ill. Man., vol. vi., p. 109, Nos. 14, 16, 17; *McLachlan*, Trans. Ent. Soc., 1868, pl. 10, f. 5.

The most abundant of the whole group; in woods and thick lanes, &c., May 28th, 1861. When the wings are closed a distinct and conspicuous X mark will be observed on the jointure of the wings.

MARGINATUS, *Steph*.

Ill. Man., vol. vi., p. 109, No. 12; *McLachlan*, Trans. Ent. Soc., 1868, pl. 10, f. 6.

Captured in Exeter district in June, but rare.

**LIMBATUS**, *West.*

*Stephens*, Ill. Man., vol. vi., p. 111, No. 20; *McLachlan*, Trans. Ent. Soc., 1868, pl. 10, f. 7.

Very rare; taken in Devon. *Stephens*, and also by myself.

**PINI**, *Steph.*

Ill. Man., vol. vi., p. 111.

Stoke Wood, near Exeter.

**SUBNEBULOSUS**, *Steph.*

Ill. Man., vol. vi., p. 107, Nos. 4, 6, 8, 10, 11; *McLachlan*, Trans. Ent. Soc., pl. 10, f. 8.

Scarce; captured in the Exeter district in May and September.

GENUS, **MEGALOMUS**, *Rambur.*

**HIRTUS**, *Linn.*

*Stephens*, Ill. Man., vol. vi., p. 113, No. 26; *McLachlan*, Trans. Ent. Soc., 1868, p. 189.

Scarce. I have two specimens captured in the Exeter district, but I omitted to label them as to locality at the time.

Family, **CHRYSOPIDÆ**, *Auctores.*

GENUS, **CHREYSOPA**, *Leach.*

**FLAVA**, *Scopoli.*

*Stephens*, Ill. Man., vol. vi., p. 105; *Hagen*, Ent. Ann., 1858, p. 21.

Not common, but widely distributed in woods and wooded lanes in June.

**VITTATA**, *Wesm.*

*Stephens*, Ill. Man., vol. vi., p. 105; *Hagen*, Ent. Ann., 1858, p. 21.

Common, and widely distributed in woods, and especially amongst hazel bushes, from June to September.

**ALBA**, *Linn.*

*Stephens*, Ill. Man., vol. vi., p. 104; *Evans*, Trans. Ent. Soc., vol. v., pl. 9, f. 1, p. 78.

Common; captured in the Exeter district in June, especially amongst hazel bushes. Mr. Bignell has also taken it at Plymouth.

**FLAVIFRONS**, *Brau.*

*Hagen*, Ent. Ann., 1858, p. 22; *McLachlan*, Trans. Ent. Soc., 1868, p. 199.

I bred this from a dirty whitish larva; mouth, eyes, and claws of the feet darker. Each segment of the body has four tube-like processes, crowned with diverging

bristles. The centre of the body carried a vast shield-like mass of skins of its victims; namely, Aphidea. This underwent its change in a white ovate or nearly globular cocoon, not attached to anything, but lying loose upon the ground. It remained in pupa about a month, and came out June 27th, 1861.

**VULGARIS, Schn.**

*Stephens, Ill. Man., vol. vi., p. 103, No. 7; Hagen, Ent. Ann., 1858, p. 21.*

The most abundant of the whole group. Taken from May to the end of September. Generally distributed over the county.

**VENTRALIS, Curt.**

*Stephens, Ill. Man., vol. vi., p. 103; Hagen, Ent. Ann., 1858, p. 23.*

Rare; captured in Stoke Wood, near Exeter, in June.

**ABBREVIATA, Curt.**

*Stephens, Ill. Man., vol. vi., p. 103 (partim); Evans, Trans. Ent. Soc., vol. v., pl. 10, f. 5.*

Taken in Devon, according to Stephens.

**PERLA, Linn.**

*Stephens, Ill. Man., vol. vi., p. 102; Evans, Trans. Ent. Soc., vol. v., pl. 10, f. 4.*

Common in woods, and generally distributed in June to September.

**GENUS, NOTHOCHERYSA, McLachlan.**

**FULVICEPS, Steph.**

*Ill. Man., vol. vi., pl. 30, fig. 2, p. 101; Hagen, Ent. Ann., 1858, p. 24.*

Stephens records this species as taken in Devon.

**CAPITATA, Fab.**

*Stephens, Ill. Man., vol. vi., p. 102, No. 2; Evans, Trans. Ent. Soc., vol. v., pl. 10, f. 2.*

This is also a Devonshire insect, as we are informed by Stephens.

**Family, CONIOPTERYGIDÆ, Burmeister.**

**GENUS, CONIOPTERYX, Curtis.**

**TINEIFORMIS, Curt.**

*Brit. Insects, pl. dxxviii., fig. 9; Stephens, Ill. Man., vol. vi., p. 116; McLachlan, Trans. Ent. Soc., 1868, pl. 11, f. 2.*

Common in June in woods; generally distributed.

**ALEYRODIFORMIS, Steph.**

Ill. Man., vol. vi. p. 116; *Hagen*, Ent. Ann., 1858, p. 29.

In woods amongst fir-trees; not very common with us;  
Stoke Wood, near Exeter, in July.

Family, PANORPIDÆ, *Leach*.

GENUS, PANORPA, *Linnaeus*.

**COMMUNIS, Linn.**

*Stephens*, Ill. Man., vol. vi., p. 52; *McLachlan*, Trans. Ent. Soc., 1869, p. 4, f. 3.

Captured by beating hedges, in lanes, and the sides of woods; generally distributed from May to October.

**GERMANICA, Linn.**

*Stephens*, Ill. Man., vol. vi., p. 52, Nos. 2, 3, 4; *Donovan*, Brit. Insects, pl. 201; *McLachlan*, Trans. Ent. Soc., 1869, pl. 4, f. 4.

Not so frequent as the last, but widely and sparsely distributed in our woods in July.

**COGNATA (†), Ramb.**

*Stephens*, Ill. Man., vol. vi., p. 53, No. 5; *McLachlan*, Trans. Ent. Soc., 1868, pl. 11, fig. 8A, 1869, pl. 4, f. 10.

Taken in a fir plantation near Powderham in July, but very scarce.

Section, TRICHOPTERA, *Kirby*.

Sub-Section, INÆQUIPALPIA.

Family, PHEYGANIDÆ, *Burmeister*.

GENUS, PHEYGANEA, *Linnaeus*.

**GRANDIS, Linn.**

*Stephens*, Ill. Man., vol. vi., p. 205, Nos. 1-3; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, pl. 2, f. 2.

Rare. Captured by the Exeter Canal, June 12th, 1862.  
This fine insect is rather plentiful by the river Tone, below Taunton.

**VARIA, Fab.**

*Stephens*, Ill. Man., vol. vi., p. 206; *Donovan*, Brit. Insects, pl. 277, f. 1.

Taken near Shaugh Bridge; very sparingly, in July.

Family, LIMNOPHILIDÆ, *Burmeister*.

GENUS, COLPOTAUZIUS, *Kolenati*.

**INCISUS, Curtis.**

*Stephens*, Ill. Man., vol. vii., p. 228; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, pl. 4, f. 1.

Captured by our Dartmoor streams, at Ashburton and Tavistock, in July.

GENUS, **GRAMMOTAULIUS**, *Kolenati*.

**ATOMARIUS**, *Fab.*

*Stephens*, Ill. Man., vol. vi., p. 213.

Captured in Devonshire, in July, by Mr. Stephens.

GENUS, **GLYPHOTÆLIUS**, *Stephens*.

**PELLUCIDUS**, *Oliv.*

*Stephens*, Ill. Man., vol. vi., p. 211; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, pl. 4, f. 1b (male).

A common species in June and July; very variable in its markings. The female might be mistaken by the beginner for *L. lunatus*, but *pellucidus* is always larger.

GENUS, **LIMNOPHILUS**, *Leach*.

**RHOMBICUS**, *Linn.*

*Stephens*, Ill. Man., vol. vi., p. 214; *Donovan*, Brit. Insecta, pl. 220; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 9, fgs. 12, 13.

Not very common. Captured May 30th, and again in July.

**FLAVICORNIS**, *Fab.*

*Stephens*, Ill. Man., vol. vi., p. 218; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, pl. 2, fgs. 24-26.

Captured by the Canal; frequent. The abdomen varies from green, with a white line along the spiracles, to rosy-red; taken in July.

I bred this species in 1861 from shortish cases, made of short bits of grass and fine roots placed transversely. The whole is then covered with small shells. I also bred a *dipterous parasite* from this species.

**MARMORATUS**, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 214, Nos. 7, 8; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, pl. 9, fgs. 17, 18.

Taken by the Teign, near Dunsford, in May. I bred this species in 1861 from larvæ living in cases made of bits of sticks placed transversely; to this is added some rough pieces very irregularly placed, giving to the case a slovenly appearance; but this appearance, I have no doubt, answers some special end.

Great care is required in separating this species from large specimens of *lunatus*; the only safe guide is the appendices.

**LUNATUS**, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 215, Nos. 10, 15; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 2, f. 28.

Bred from larvæ living in a thin case covered with short bits of stick placed longitudinally; the case is weighted



at both ends with small stones. The perfect insects came out August 20th, 1862.

**GRISEUS, *Linn.***

*Stephens*, Ill. Man., vol. vi., p. 218, No. 16; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, pl. 9, fgs. 26-28.

Taken in Devonshire, according to *Stephens*, in July.

**BIPUNCTATUS, *Curtis.***

*Stephens*, Ill. Man., vol. vi., p. 217, No. 13; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 10, fgs. 1, 2.

Captured by St. James's Weir, Exeter, May 22nd, 1862; very scarce.

**AFFINIS, *Curtis.***

*Stephens*, Ill. Man., vol. vi., p. 217, No. 14; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 10, f. 3.

Taken very sparingly at Lynton by Mr. Rawlinson in July, 1860.

**AURICULA, *Curtis.***

*Stephens*, Ill. Man., vol. vi., p. 380, Nos. 22, 23; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 10, fgs. 4, 5.

Not uncommon, in May and October, at Alphington brook, and by the Exe, near the Blackaller Weir.

**VITTATUS, *Fab.***

*Stephens*, Ill. Man., vol. vi., pp. 324, 225, Nos. 35-39; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 2, f. 27.

Not a common species, but appears to be generally distributed in May and September.

**CENTRALES, *Curtis.***

*Stephens*, Ill. Man., vol. vi., pp. 223, 226, Nos. 27, 28; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 10, fgs. 9, 10.

Taken at Stoke Wood, near Exeter, and by the Alphington brook, in May and June, and at Christow, May 18th, 1868.

**LURIDUS, *Curtis.***

*Stephens*, Ill. Man., vol. vi., p. 223, No. 32; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 10, fgs. 15, 16.

By no means a common species; taken by the Exe, July 29th, 1861.

**SPARSUS, *Curtis.***

*Stephens*, Ill. Man., vol. vi., p. 222; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 10, fgs. 17, 18.

Captured sparingly by the Upper Weir, Exeter, in May; also by the Alphington brook in June.

**FUMIGATUS, Germ.**

*Hagen*, Ent. Ann., 1859, p. 89; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., p. 53.

This is rather a rare species with us; at the same time I have taken several specimens.

GENUS, **ANABOLIA**, *Stephens*.**NERVOSA, Curtis.**

*Stephens*, Ill. Man., vol. vi., p. 230; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 2, f. 2.

Bred from larva, in cases when young composed of clayey mud, tessellated with small stones of different colours. I have one case of this kind, in which the larva underwent all its transformations; but generally, as they grow old the case is covered with rough pieces of sticks, and balanced with two or three long pieces, which gives them a remarkable appearance. This is a common species in ponds and slow-running streams, especially in September and October.

GENUS, **STENOPHYLAX**, *Kolenati*.**CONCENTRICUS, Zett.**

Ill. Man., vol. vi., pp. 209, 210; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 10, f. 21.

Not common, but widely distributed over the county by the sides of streams in August and October.

**VIBEX, Curtis.**

*McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 11, f. 1.

Rare; captured at Alphington, October 20th.

**STELLATUS, Curt.**

*Stephens*, Ill. Man., vol. vi., pp. 209, 210, Nos. 2-7; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v. pl. 4, f. 4.

Rare; captured at Alphington, at "sugar," in October, 1862.

GENUS, **MICROPTERNA**, *Stein*.**SEQUAX, McLach.**

Trich. Europ. Fauna, pl. 15, f. 1; *Stenophylax striatus*, Pictet.

Captured by Alphington brook, August, 1861; very rare.

**LATERALIS, Steph.**

*McLachlan*, Trich. Europ. Fauna, pl. 15; *Stephens*, Ill. Man., vol. vi., p. 210, No. iv.

By no means a common species; captured in the Exeter district in July.

GENUS **HALESUS**, *Stephens*.**DIGITATUS**, *Schr.*

*Stephens*, Ill. Man., vol. vi., p. 208, *partim*; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 4, f. 5.

Frequent and generally distributed along the banks of streams in October.

**RADIATUS**, *Leach*.

*McLachlan*, Trich. European Fauna, pl. 16. *Stephens*, Ill. Man., vol. vii., p. 208 *partim*.

Captured in the Exeter district, not common in the autumnal months, generally taken by beaten hedges and trees in the neighbourhood of water.

GENUS **DRUSUS**, *Stephens*.**ANNULATUS**, *Steph.*

Ill. Man., vol. vii., pl. 34, f. 3, p. 231; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 12, f. 11.

Captured by the stream at Dawlish, by Mr. McLachlan, Sept. 1861; it had previously been taken in Devon, as recorded by Mr. Stephens.

GENUS, **CHLETOPTERYZ**, *Stephens*.**VILLOSA**, *Fab.*

*Stephens*, Ill. Man., vol. vi., p. 238; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 4, f. 8.

This is, so far as my experience goes, a very scarce species in Devon, appearing in August.

Family, **SERICOSTOMATIDÆ**, *Stephens*GENUS, **SERICOSTOMA**, *Latrielle*.**PERSONATUS**, *Spence*.

*Stephens*, Ill. Man., vol. vi., pl. 33, f. 2; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, p. 77.

This is a generally distributed species over the county. I have specimens from the Plymouth district, Newton, Exeter, North Devon; all taken in August.

*Var.* **MULTIGUTTATUM**, *Pictet*.

*Stephens*, Ill. Man., vol. vi., pl. 34, f. 4, p. 183.

I have not seen a Devonshire specimen of this, but Mr. Stephens says it is taken here in July. So far as is known it is only the female that varies so much as to acquire a distinct appellation, and this only applies to British examples.

GENUS, **NOTIDOBIA**, *Stephens*.**CILIARIS**, *Linn.*

*Stephens*, Ill. Man., vol. vi., p. 186; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 5, f. 1.

Very generally distributed in the Dartmoor streams in August.

GENUS, **GOERA**, *Leach*.**PILOSA**, *Fab.*

*Stephens*, Ill. Man., vol. vi., p. 187; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 11, f. 8.

Captured at Shaugh Bridge, and several other places on the streams from Dartmoor in August; abundant.

GENUS, **SILLO**, *Curtis*.**PALLIPES**, *Fab.*

*Stephens*, Ill. Man., vol. vi., p. 186-188, No. 3; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 5, f. 3.

Captured by Alphington brook, June 5th, and at Bickleigh Bridge; common.

GENUS, **LEPIDOSTOMA**, *Rambur*.**HIRTUM**, *Fab.*

*Stephens*, Ill. Man., vol. vi., p. 189, pl. 32, f. 2, Nos. 1-3; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 5, f. 4.

Rather common on the Teign, near Dunsford Bridge in August and September.

GENUS, **CRUNECIA**, *McLachlan*.**IRRORATA**, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 189, No. 4; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 12, f. 7.

This little species appears to be rare with us. I have a specimen given me by Mr. D'Orville; captured, I believe, at Dunsford, on the Teign; Mr. McLachlan has taken it at Plymouth.

GENUS, **LASIOCEPHALA**, *Costa*.**BASALIS**, *Kolen*.

*McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 1, f. 4.

Not very common, but I have taken it at Dunsford on one or two occasions rather freely; the earliest on May 21st, to the end of June.

GENUS, **BRACHYCENTRUS**, *Curtis*.

**SUBNUBILUS**, *Curtis*. The female is the Black Gnat of Fishermen; the male the Hare's Flex.

*Stephens*, Ill. Man., vol. vi., p. 182, Nos. 2-3; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 5, figs. 5A, 5B, pl. 12, figs. 9, 9A.

Not very common, but taken occasionally in some numbers by the Head Weir, Exeter, and at Exwick and Stafford Weirs, on the Exe. I captured males and females this year, April 21st, 1879, at the Weir, Exwick. There is a triangular tooth on the penultimate segment beneath, arising in the middle of the segment, the point of which

projects over the edge, directed backwards. This is not peculiar to one sex. The body in both sexes is black, with narrow rings of yellow on the apices of the segments when the insect is alive; these turn black when dead; there are also two broad yellow spiracular lines.

See *Zoologist*, 1860, pp. 7068-9; for a notice of this insect by me.

Section, EQUIPALPIA.

Family, LEPTOCERIDÆ, *Leach*.

GENUS, ODONTOCERUM, *Leach*.

# ALBICORNE, *Scop.*

*Stephens*, Ill. Man., vol. vi., pl. 24, f. 1; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5.

Not very common. I captured specimens at Newton and Bovey Heathfield in May, and again in August.

GENUS, MOLANNA, *Curtis*.

# ANGUSTATA, *Curtis*.

*Stephens*, Ill. Man., vol. vi., pl. 83, f. 3; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 6, f. 2.

I have never taken this insect myself, but Mr. *Stephens* says, "Devonshire in June."

GENUS, LEPTOCERUS, *Leach*.

# NIGRO-NERVOSUS, *Retz*.

*Stephens*, Ill. Man., vol. vi., p. 194; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 6, f. 3.

Not common, but may be captured occasionally by the river in June.

# ALBO-GUTTATUS, *Hagen*.

*Stephens*, Ill. Man., vol. vi., p. 197; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, f. 13.

Very rare. The Rev. J. Hellens captured this pretty species in his garden, in August, 1862. He kindly presented the specimen to me.

# ANNULICORNIS, *Steph*.

Ill. Man., vol. vi., p. 199; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, fgs. 13, 14.

Rather plentiful by the Blackaller Weir, Exeter, in May.

# CINEREUS, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 197, Nos. 8, 9; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, fgs. 16, 17.

This is a variable species as regards colouring. In some specimens the wings have two yellowish-white blotches, one in the middle, the other on the anal angle of the

wings; sometimes these are seen running into each other, forming fascia. In others there is a costal blotch near the apex; this sometimes joins the anal blotch and forms a fascia. The posterior wings of all the specimens I have of this species, except three which I bred, are beautifully iridescent. The specimens bred have not a trace of this colouring, the anterior wings are broader at the apex, with no trace of markings, the tarsi have scarcely a mark on them, but the appendices are those of *Cinereus*. The larvæ live in small cases, about half an inch long, made up of grains of sand and very small flat bits of stone, closely cemented together; the posterior end of the case is rounded off, leaving a small hole in the centre. When about to undergo its transformation the larva builds up the anterior end in a similar manner to the posterior, leaving a small hole in the centre. When the imago is about to escape it makes itself a kind of door by cutting three parts round the case, leaving the fourth part for a hinge; the door is pushed open, and the insect escapes. Before the larva is quite full fed it attaches its case to stems of plants.

**ATERRIMUS, Steph.**

Ill. Man., vol. vi., p. 196, Nos. 5-7, and p. 200, No. 19; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, fgs. 18, 19.

This is not a common species with us, so far as my experience goes. Taken in June and July.

**DISSIMILIS, Steph.**

Ill. Man., vol. vi., pp. 197, 198, No. 14; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, f. 20.

Not very common. Captured on the Teign, near Dunsford, August 21st; taken also by the Exe in September.

**BILINEATUS, Linn.**

*Stephens*, Ill. Man., vol. vi., p. 198, No. 13; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, fgs. 21, 22.

I have taken it at Dunsford, on the Teign, Dawlish; common in June and again in August; and a few specimens by the canal, Exeter. This pretty species is liable to vary considerably in the number of markings on the anterior wings, but not so much as to cause confusion; but when the wings become depilated great care must then be taken not to confuse this with *aterrimus*. This absolutely swarmed over the mill-stream at Exwick, between seven and eight in the evening, this year, end of August.

**ALBIFRONS, Linn.**

*Stephens*, Ill. Man., vol. vi.; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, fgs. 23, 24.

Taken by Alphington brook, July 1st, and also by the Exe; very numerous this season, July, August, 1879.

**COMMUTATUS, McLach.**

Trich. European Fauna, pl. 33, p. 308.

I captured this species at Dunsford, on the Teign, in August, 1861. This was new to Britain.

GENUS, **TRIÆNODES, McLachlan.****BICOLOR, Curtis.**

*Stephens*, Ill. Man., vol. vi., p. 201; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, fgs. 25, 26.

Rare, but captured in Devonshire in July (Mr. Stephens).

**CONSPERSA, Ramb.**

*Stephens*, Ill. Man., vol. vi., p. 201, No. 23; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 6, f. 4A.

A rare species with us, but has been taken on the Exe in August.

GENUS, **MYSTACIDES, Latreille.****NIGRA, Linn.**

*Stephens*, Ill. Man., vol. vi.; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 12, fgs. 27, 28.

By no means a common species, so far as my experience go. I have a specimen with the antennæ entirely silvery white, the legs smoky black, torsi whitish, with dark rings on the anterior portion of the articulations. This was captured in September, 1859.

**AZUREA, Linn.**

*McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 6, f. 5; *Hagen*, Ent. Ann., 1860, p. 75.

Common. Captured by the Blackaller Weir, Exeter, June 16th, and again in August on most of our streams.

**LONGICORNIS, Linn.**

*Stephens*, Ill. Man., vol. vi., p. 200; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 13, fgs. 1, 2.

A rather common species by the Canal and other slow waters, in June and September. I have a specimen with unicolorous anterior wings without the least trace of the fascia, as in the supposed normal form.

GENUS, *EGETIS*, *McLachlan*.TESTACEA, *Curtis*.

*McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 13, f. 4; *Stephens*, Ill. Man., vol. vi., p. 196.

This is a widely, but sparsely distributed species. I have specimens from Shaugh Bridge, near Plymouth, captured in August; and also I have taken it by the Exe, in June and August 3rd.

GENUS, *ADICELLA*, *McLachlan*.REDUCTA, *McLachlan*.

Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 7, f. 1; *Stephens*, Ill. Man., vol. vi., p. 201.

A widely distributed species. I have taken it at Dunsford, in June, and at Woodbury.

GENUS, *SETODES*, *Rambur*.TINEIFORMIS, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 202; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 2, f. 3 (larva case), pl. 13, f. 6.

I bred this species from larvæ found in a straight case, tapering gradually to a point, the orifice at the larger end elliptical. It appears to be composed of silk, agglutinated together into a solid structure, having the appearance of horn; the outside of the case is finely striated transversely, some of the striæ decussating. Length of case, five lines; diameter at larger end, three parts of a line. This species is not common, but I have taken it in several places in the county in June.

INTERRUPTA, *Fabr.*

This beautiful little species was first described by Fabricius, from an English specimen, in 1775; and from that time no English specimen had been seen until I discovered a single specimen by the canal, near Taunton, in 1859. From that time I had not seen another. This year (1879) I have had the good fortune to add it to the Devonshire fauna, having discovered it in some numbers on the Exe, near Exeter, on alder bushes, near the Exwick water-mill. The specimens occurred for only about twenty yards, and none were to be found above or below this place. I took them between seven and eight o'clock in the evening, the latter end of July.



Family, HYDROPSYCHIDÆ, *Curtis*.GENUS, **HYDROSPYCHE**, *Pictet*.**LEPIDA**, *Pictet*.

*Stephens*, Ill. Man., vol. vi., p. 164, No. 7; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 7, f. 2E.

Rare. Captured by the Exeter Canal, August 16th.

**PELLUCIDULU**, *Curtis*.

*Stephens*, Ill. Man., vol. vi., pp. 171, 172, Nos. 2-4; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 7, f. 2.

Taken on the Exe, at Stafford's and Blackaller Weirs, and generally distributed in South Devon, from the middle of May. I have taken it also on Bovey Heathfield.

**INSTABILIS**, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 173, No. 6; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 1, f. 7.

Captured on the Teign, near Drewsteignton, in June, and at Newton in August; by no means common.

**ANGUSTIPENNIS**, *Curtis*.

*Stephens*, Ill. Man., vol. vi., pp. 173, 174, No. 8; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. 5, pl. 2, f. 8.

Captured by the Higher Weir, Exeter, May 15th; also by a little stream beyond Stoke Hill House, near Exeter, June 1st, 1878. These specimens are darker; the wings of a smoky hue, and the femora and tibia are more or less fuscous. Plentiful over the mill-stream at Exwick below the sluices, near the weir, June 10th.

**GUTTATA**, *Pictet*.

*McLachlan*, Trich. Europ., pl. 89; *Stephens*, Ill. Man., vol. vi., p. 173.

I captured specimens of both sexes on the Exe, near Exeter, on June 17th, 1879; by no means common.

GENUS, **TINODES**, *Leach*.**WÆNERI**, *Linn.*

*Stephens*, Ill. Man., vol. vi., p. 162, Nos. 1, 2; p. 163, Nos. 3, 5, 6.

Very common. Captured by the River Exe in August, and at Dunsford, on the Teign, in September.

**AUREOLA**, *Zett.*

*McLachlan*, Trich. Europ. Fauna, pl. 44.

Captured at Dawlish by Mr. McLachlan.

GENUS, **PSYCHOMYIA**, *Latreille*.**PUSILLA**, *Fabr.*

*Stephens*, Ill. Man., vol. vi., p. 160; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 7, f. 4.

Common by the Exe in September.

GENUS, *LYFE*, *McLachlan*.*PHŒOPA*, *Steph.*

*Stephens*, Ill. Man., vol. vi., p. 159; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 13, fgs. 18-19.

Captured near the river Exe in September.

GENUS, *DIPLECTRONA*, *Westwood*.*FELIX*, *McLach.*

• *Stephens*, Ill. Man., vol. vi., pl. 32, f. 3 (var. ?); *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 7., f. 5.

Taken at Cornwood and near Plymouth. Captured by Mr. Reading at Bickleigh, at Shaugh Bridge, and on most of the streams in South Devon in June and in August.

GENUS, *PHILOPOTAMUS*, *Westwood*.*MONTANUS*, *Donovan*.

Ill. Man., vol. vi., p. 169; *Donov.*, Brit. Insects, pl. 148, f. 2.

Abundant at Shaugh Bridge, sitting about on the stones in the stream, and at Lynton and Dunsford, in June and July.

GENUS, *WORMALDIA*, *McLachlan*.*OCCIPITALIS*, *Pictet*.

*Stephens*, Ill. Man., vol. vi., p. 180, No. 2; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 7, f. 7.

Rare. Captured at Dawlish in July and October.

GENUS, *PLECTRONEMIA*, *Stephens*.*CONSPERSA*, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 168; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 7, f. 8.

Not uncommon in July by the side of streams. (Mr. Stephens.) Before this year I had seen only one specimen I captured at Dunsford, on the Teign. This year, 1879, I have taken several specimens by the Exwick Weir, on the Exe, May 6th. It is common near Plymouth.

GENUS, *POLYCENTROPUS*, *Curtis*.*FLAVOMACULATUS*, *Pictet*.

*Stephens*, Ill. Man., vol. vi., p. 176, Nos. 1-4; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 8, f. 1.

Common by Ide brook, the Exeter Canal, railway ponds, &c. in June.

*MULTIGULTATUS*, *Curt.*

*McLachlan*, Trans. Ent. Soc., pl. 13, f. 28.

Captured by the Exwick Weir, May 31st, 1879, both sexes not common.

GENUS, **HELOCENTROPUS**, *McLachlan*.**DUBIUS**, *Ramb.*

*Stephens*, Ill. Man., vol. vi., p. 178; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 13, f. 28.

Rare by the canal in June.

**PICICORNIS**, *Steph.*

Ill. Man., vol. vi., p. 147; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 14, f. 2.

Not very common by the side of streams in June and July.

GENUS, **CYRNUM**, *Stephens*.**TRIMACULATUS**, *Curt.*

*Stephens*, Ill. Man., vol. vi., p. 175; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 8, f. 3.

Captured in June by the side of the canal, Exeter, and in the Exminster marshes.

GENUS, **ECONOMUS**, *McLachlan*.**TENELLUS**, *Ramb.*

*McLachlan*, Trans. Ent. Soc., Ser. 3d, vol. v., pl. 8, f. 4; *Hagen*, Ent. Ann., 1861, p. 5.

This requires close attention to the neururation of the wings to distinguish it from the closely allied and similarly coloured *Polycentropus* and *Cyrnus*. It is found in similar places, and at the same time.

Family, **RHYACOPHILIDÆ**, *Stephens*.GENUS, **RHYACOPHILA**, *Pictet*.**DORSALIS**, *Curt.*

*Stephens*, Ill. Man., vol. vi., p. 165; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 14, fgs. 7-8.

Common at Shaugh Bridge, and on the Teign, at Dunsford, and in some places on the Exe, in August and September.

**OBLITERATA**, *McLach.*

*McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 8, f. 6.

Specimens of this distinct species have been taken in North Devon, as recorded by Mr. *McLachlan*.

**MUNDA**, *McLach.*

Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 14, f. 10.

First taken in Devon at Shaugh Bridge, by the junction of the rivers, and at Cornwood, by Mr. *McLachlan*. I have also taken it there and at Drewsteignton, on the Teign, in August. It appears to be generally distributed along all the streams arising on Dartmoor.

GENUS, *GLOSSOSOMA*, *Curtis*.*BOLTONI*, *Curt*.

*Stephens*, Ill. Man., vol. vi., p. 161; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, p. 161.

Captured at Dunsford, on the Teign, and on the Exe, near Stoke Canon, in May and in August; but not common.

*VERNALE*, *Pictet*.

Ill. Man., vol. vi., pl. 32, f. 1; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 14, f. 11.

Taken at Stafford Bridge, on the Exe, near Exeter, March 14th, 1878, and at Dunsford, on the Teign, in September.

On March 12th, 1879, I captured a specimen, which had just emerged from the pupa case. There are then seen two conspicuous white transverse spots, one on the discoidal cell, and the other on the apex of the thyridium; also a bright golden spot on the arculus. The coxia are all dusky; legs, pale, testaceous; spurs, brown. This is frequently met with through the spring.

GENUS, *AGAPETUS*, *Curtis*.*FUSCIPES*, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 156; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 8, f. 8.

Taken on the Teign, near Dunsford, in June, and at Woodbury Common, June 30th.

*COMATUS*, *Pictet*.

*Stephens*, Ill. Man., vol. vi., p. 156, No. 3; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 14, f. 14.

Captured by Alphington brook, June 14th, and at Dunsford, near the bridge, in June; plentiful. This is a more abundant species than the former.

GENUS, *BEREA*, *Stephens*.*PULLATA*, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 158; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 8, f. 9.

Captured at Woodbury, June 30th. Not very common.

*MARSHAMELLA*, *Steph*.

Ill. Man., vol. vi., p. 158.

This is a much darker insect, and densely covered with black hairs, more than any specimens I have seen of the former, to which Mr. McLachlan unites it with a note of interrogation. The general facies of the insect is different, and the basal joints of the antennæ are larger.

My specimens are too much dried up to examine the appendices.

I took two specimens of this in Stoke Wood, near Exeter, May 10th, 1861. It appears to be rare. (?)

GENUS, **BEREODES**, *Eaton*.

**MINUTA**, *Linn.*

*Ann. Mag. Nat. Hist.*, Ser. 3rd, p. 400., for neuration of wings, and description of genus and species.

This minute and unattractive species is not uncommon, by the Exeter Canal, in May and June.

GENUS, **CHIMARRA**, *Leach*.

**MARGINATA**, *Linn.*

*Stephens*, Ill. Man., vol. vi., pl. 34, f. 4; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 8, f. 10.

I have this insect from Shaugh Bridge, where it is not uncommon. I have taken it on the Teign, at Drewsteignton.

Family, **HYDROPTILIDÆ**, *Westwood*.

GENUS, **AGRAYLEA**, *Curtis*.

**MULTIPUNCTATA**, *Curtis*.

*Stephens*, Ill. Man., vol. vi., p. 153; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 5, f. 6.

Not uncommon by Stafford's Weir, near Exeter, and on the Teign, near Dunsford.

GENUS, **HYDROPTILA**, *Dalman*.

**TINEOIDES**, *Dalm.*

*Stephens*, Ill. Man., vol. vi., p. 152, and No. 2; *McLachlan*, Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 5, f. 7.

Very generally distributed round both quiet and running waters, in May and September.

On June 14th, 1860, I took *H. pulchricornis*, Pict., and the present species in cop., *H. tineoides* being the male, and *pulchricornis* the female, consequently the latter name is sunk, and preference is given to the former. Previous to this, these insects were regarded as distinct species.

**ANGUSTELLA**, *McLach.*

Trans. Ent. Soc., Ser. 3rd, vol. v., pl. 1, f. 5.

I have a specimen which I believe belongs to this species, but it is faded and not satisfactory.