INTRODUCTION TO CRANEFLIES—PART VI

False Tigers and Limonia's

Craneflies with R_2 and 3 unbranched and/or vein R_1 curving down to $R_2 + 3$.

There are only two groups of craneflies with wing vein $R_2 + 3$ unbranched (see fig. 1C) so the nature of this vein is one of the first characters to determine. The wing venation of representative members of the two groups are illustrated (fig. 4). Note that *Phalacrocera* is the only species here with $R_2 + 3$ branched, and is distinct from genera in other groups with a very short upright R_2 vein in having R_1 curving down into $R_2 + 3$. The Tipulid groups concerned are the sub-family Cylindrotominae and the tribe Limoniini of the sub-family Limoniinae.

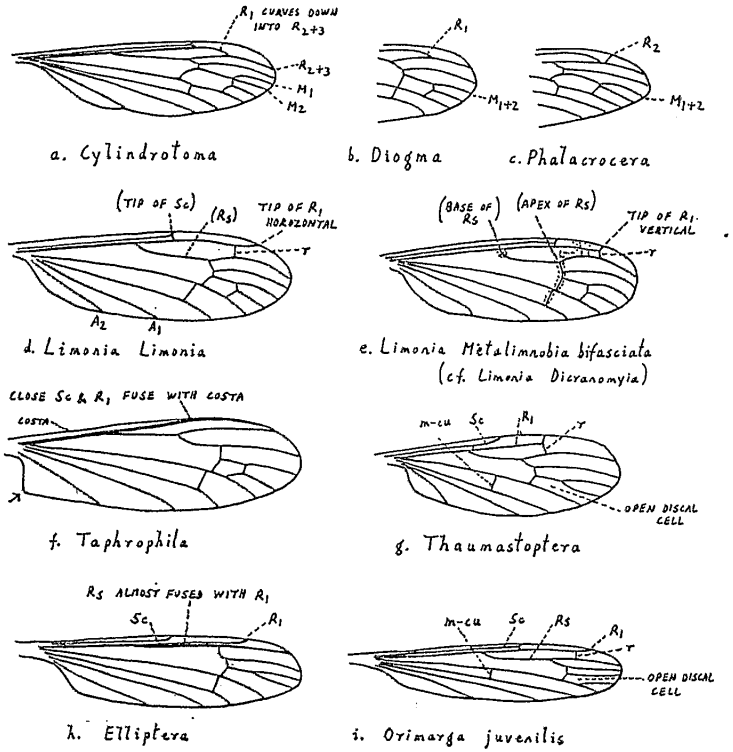

Fig. 4.

Fig. 4. Wings of Craneflies with $R_2 + 3$ simple or R_1 curving down into $R_2 + 3$. Cylindrotominae a-c, Limoniinae Limoniini d-i.

Sub-family Cylindrotominae False Tigers.

There are only four British species, all medium sized and characterised by the way R_1 curves down to meet $R_2 + 3$ (fig. 4 a-c). They have a rather distinctive appearance, in particular the abdomen looking long and thin. The major feature of the sub-family is found in the specialised larvae; three species live in moss and have peculiar projections on the body and one (*Cylindrotoma*) has a legless caterpillar like larvae which feeds on the leaves of herbaceous plants.

Yellow False Tigers. Two species have yellowish bodies with three deep black stripes (sometimes partially fused) on top of the thorax. The only other craneflies with this distinctive pattern are the true Tigers, *Nephrotoma*, which are Tipulinae with $R_2 + 3$ branched. *Cylindrotoma distinctissima* Mg., with cell M_1 present, is fairly common in May and June and again in the autumn in damp woods. *Diogma glabrata* Mg., which lacks cell M_1, is less frequently seen and is out in July and early August.

Brown False Tigers. These lack the tiger pattern and are drab brown or dark grey brown species of local occurrence by mossy pools and on bogs. *Phalacrocera replicata* L. has R_2 present and *Triogma trisulcata* Schum. lacks R_2 and has the surface of the head and thorax deeply pitted (the latter character is not found in any other British Craneflies).

Sub-family Limoniinae.

Tribe **Limoniini.** Of the 3 tribes, this is the only one with $R_2 + 3$ unbranched. Members of this tribe are on the wing from April to November and include some of the most abundant and widespread Tipulids. They are mostly medium sized, but include a few small species. Some species have distinctive patterns on the wings, either mottling or spots.

For present purposes the Tribe may be divided into a number of major groupings. One very useful character is the nature of the end of vein R_1 in relation to cross vein r; the tip of R_1 may be long and horizontal (fig. 4d) or short and vertical (fig. 4e). Most of the genera contain only a few, and often scarce, species, so most specimens will run to the large genus *Limonia*—within the genus the most frequently met sub-genera are *Limonia, Dicranomyia* and *Rhipidia.*

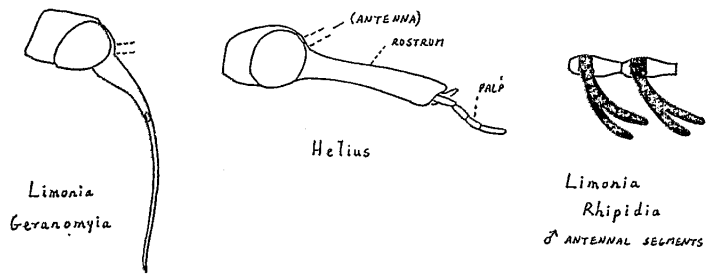

Fig. 5. Limoniinae Limoniini. Special characters of head and antennae of *Limonia* (*Geranomyia*), *L.* (*Rhipidia*) and *Helius.*

The following key includes the genera and sub-genera of Limoniini. This type of key is frequently used in some biological groups, but is rarely used with insects. Since a tabulated key has advantages over a dichotomous one, this experimental version is given to see if amateur entomologists find it easier to follow. Choose the high order description which fits your specimen and move to successively lower order descriptions.

Wing venation typical (discal cell and **r** present [vein Sc and Rs clearly separated]).

Special features.

Long proboscis blunt tipped	*Helius*
pointed	*Limonia* (*Geramomyia*)
Pectinate antennae (wings mottled or with spots)	*Limonia* (*Rhipidia*)
Ring like markings on wing and cross vein between A_1 and A_2	*Limonia* (*Discobola*)
Praescutum shining black and wings clear	*Limonia* (*Melanolimonia*)

Above special features lacking.

Tip of R_1 long and horizontal	*Limonia* (*Limonia*)
Tip of R_1 short and vertical	
Sc ending nearly opposite base of Rs	*Limonia* (*Dicranomyia*)
Sc extending well beyond base of Rs	
Wings with or without distinct spots	*Limonia* (*Dicranomyia*)
Wings either yellow with a black bar or with brownish mottling and spots	*Limonia* (*Metalimnobia*)

Wing venation atypical

Discal cell absent.	
r present	
Tip of R_1 short and vertical	
m-cu near centre of wing (small pale yellow species)	*Thaumastoptera*
m-cu nearer wing margin	*Limonia* (*Dicranomyia*)
Tip of R_1 long and horizontal	*Orimarga*
r absent, Rs almost fused with R_1	*Elliptera*
Discal cell present.	
Sc fused with R_1, **r** absent	*Taphrophila*

genus *Thaumastoptera* Lemon Limonia

The single species in the genus is very distinctive in its small size, the pale greenish lemon coloured body (when alive) and the black tips to the femora and tibia. Superficially it resembles the small pale yellow *Cheilotrichia imbuta* (tribe Eriopterinii) which has a very different wing venation. *Thaumastoptera calceata* Mik is a local species of marshy woods.

genus *Taphrophila* Milky-winged Limonia

The milky coloured wings and distinctive wing venation of this pale brown bodied cranefly makes the single species, *T. vitripennis* Mg., simple

to identify. It may be locally found on the banks of large streams and rivers, but sometimes strays from the breeding site.

genus *Orimarga*

The two poorly known British species are found by streams in western and northern districts. In *O. virgo* Zett. the horizontal tip of R_1 is 2 to 4 times as long as **r** (i.e. from the junction of R_1 and **r**) whereas in *O. juvenilis* Walk the tip of the R_1 is less than twice as long as **r.**

genus *Elliptera*

The adult of the single species, *E. omissa* Egg., has never been found in Britain, but the empty pupal skins were found projecting from a log partly submerged in a waterfall in Yorkshire.

genus *Helius* Pond Snouts

There are three species which may be found among vegetation by ponds, canals and sluggish rivers. *H. flavus* is yellowish and without a stigma, *H. longirostris* is brown with a pale stigma and *H. pallirostris* is a local dark brownish species with a dark oval stigma.

genus *Limonia* Limonias

sub-genus *Geranomyia* Sea Snouts

The two British species are confined to the sea shore, *G. unicolor* Hal. occurs on rocky coasts (and lacks stripes on praescutum) whilst *G. bezzii* Alex. lives in sheltered lagoons with shingle shores in Dorset (and has stripes on the praescutum).

sub-genus *Rhipidia* Feathered Limonias

Limonia (*R.*) *duplicata* Doane is one of the commonest Limonias of woods and hedgerows—the profuse diffuse spots on the wings give a mottled appearance and the pectinate antennae (most marked in the male) are not so clearly marked in any British Craneflies except the large *Ctenophora* species (Tipulinae). The other two British species, *L.* (*R.*) *ctenophora* Lw. and *L.* (*R.*) *uniseriata* Schum., are rare species which breed in rotten wood and only have a few spots on the wings.

sub-genus *Melanolimonia* Black Limonias

Of the five small British species with a shining black praescutum and clear wings, only one is widespread in the south, *L.* (*M.*) *morio* F., the other species being local in northern and western districts. It should be noted that two rare medium sized species, *Limonia* (*Limonia*) *maculipennis* Mg., and *L.* (*Dicranomyia*) *consimilis*, also have a shining black thorax, but they have mottled or spotted wings.

sub-genus *Discobola* Eyed Limonia

The only two British specimens have been taken in Scotland, both *L.* (*D.*) *annulata* L., but a further species could occur. The eye like ring markings on the wing are not found in any other cranefly except *Epiphragma occellaris* (tribe Hexatomini) which has $R_2 + _3$ forked and lacks the cross vein between A_1 and A_2.

sub-genus *Limonia* True Limonias

These are medium sized species including some of the commonest craneflies in Britain. They may be divided into two major groups depending on whether the wings are mottled or not.

There are four mottle winged species. *L.* (*L.*) *nubeculosa* is unmistakeable in having three dark rings on the femora—a very abundant species in woods, whilst *L.* (*L.*) *flavipes* F. only has one ring on the femora at the tip and is common in early summer particularly in woods on calcareous soils. The other two species are not often found—*L.* (*L.*) *dilutior* Edw. has two rings on the femora and occurs on heathland among gorse and broom and *L.* (*L.*) *maculipennis* has a shining black praescutum.

Six species have only a few spots on the wings or lack spots. Three species are yellow, of which *L.* (*L.*) *tripunctata* is the commonest (out mostly in May and June) with three small spots on each wing, *L.* (*L.*) *trivittata* has three stripes on top of the thorax and occurs in wet woods and *L.* (*L.*) *stigma* Mg. is a rare species with a yellow head and lacks the characters of the other two. The local species *L.* (*L.*) *nigropunctata* Schum. has an orange thorax and black abdomen, whilst the rarity *L.* (*L.*) *masoni* Edw. has an all black body. The remaining species *L.* (*L.*) *macrostigma* Schum. is left till last since its ease of recognition lies in its lack of conspicuous features; it is drab brown in colour with a dark ring just before the tip of the femora and is often common in wet woods.

sub-genus *Metalimnobia* Giant Limonias

There is no simple distinctive character which will separate the three species from the sub-genus *Dicranomyia*. However, all three are very distinctive and are generally over 11 mm in wing length whereas 10 mm is normally the maximum for *Dicranomyia*. The larvae all live in fungi, though some *Dicranomyia* have similar habits.

L. (*M.*) *bifaciata* Schr. is a large yellow species having broad yellow wings with a narrow black band across the wing (at a level with the back of the discal cell)—there is no other British cranefly like this. The remaining two species are brown with strongly mottled wings—a wing pattern which is not found in any *Dicranomyia*. *L.* (*M.*) *quadrimaculata* L. is a rare species of ancient forest (two dark rings on femora) while *L.* (*M.*) *quadrinotata* Mg. is quite common in woods (one dark ring on femora, and closely resembling *L.* (*L.*) *flavipes*).

sub-genus *Dicranomyia* Dicranomyias

This sub-genus contains a wide variety of very different looking species and indeed a few have been placed in other sub-genera which are not considered here. Some very common species belong to this group.

Ten species have spots or dark patches on the wings (in addition to a dark stigma). Two with silvery frons (area on face between eyes) are sometimes common around rotten logs—*L.* (*D.*) *decem-maculata* Lw. is blackish with roughly ten wing spots (five on each wing) and *L.* (*D.*) *dumetorum* Mg. with two spots on each wing has a yellow thorax with a dark stripe along the side (see *inusta* later). Two species occurring in marshes and wet woods have a dark tip to the wing and two or three spots on the fore margin; *L.* (*D.*) *lucida* de Meig. is locally common in mid summer and has an orange thorax whilst *L.* (*D.*) *ornata* Mg. is found on butterbur in the spring and has a black thorax. *L.* (*D.*) *didyma* Mg. is a dark species with five spots running along the foremargin to tip of the wing and breeds in wet moss on waterfalls and by stream banks and *L.* (*D.*) *consimilis* Zett. is rather similar but with a shining blackish thorax —this is a Scottish rarity. One species is confined to sea cliffs and has many spots on the wings, especially a row of minute ones along vein Cu (forming the lower edge of the lower basal cell)—*L.* (*D.*) *goritiensis* Mik. Another species is a familiar sight in summer evenings since it is frequently the one which composes dancing swarms of craneflies similar to those of winter gnats—*L.* (*D.*) *chorea* Mg. which has a spot at the apex of Rs and a drab yellowish or pale brown body. Some varieties of *L.* (*D.*) *mitis* Mg. are closely similar, but are confined to streams (true *mitis*) or have a dark thorax with shining central stripe (form *affinis* Sch. of heathland and moorland) or are entirely yellow. The *chorea* (form *lutea* Mg.) *mitis* group is a difficult one for the beginner to separate.

Four species have an open discal cell, but all are rarities or confined to the north. The first two have the last antennal segments elongate—*L.* (*D.*) *ventralis* Schum. is found around ponds by the sea (only 2 segments to the palpi) and *L.* (*D.*) *ommissinervis* de Meij. is found on river banks (4 segments to palpi). *L.* (*D.*) *aperta* Wahl. is a locally common brownish species in the north in late summer whilst *L.* (*D.*) *aquosa* Ver. is blackish with a dark stigma and is found by mossy waterfalls and gorges in the north and west.

The remaining species have a closed discal cell and lack wing markings except that the stigma may or may not be dark. *L.* (*D.*) *inusta* is distinctive in having yellowish pleurae with a dark stripe (as in *dumetorum*). *L.* (*D.*) *fusca* Mg., a black species with hairy wing membrane, occurs by shaded streams. In woodland and hedgerows two brownish orange species are at times common through most of the season, *L.* (*D.*) *modesta* with the last antennal segments elongate and *L.* (*D.*) *autumnalis* with these segments short. *L.* (*D.*) *sericata* Mg. is a spring species, usually on calcareous soils, which has an ash grey thorax with three blackish stripes on the praescutum. On boggy ground in mountain areas, *L.* (*D.*) *stigmatica* Mg. with its black stigma is locally frequent in late summer. Three species are found on coastal marshes—*L.* (*D.*) *sera* Walk. (pale brown and with basal antennal joint pale), *L.* (*D.*) *complicata* de Meij. (sides of thorax dark, base of legs (coxae) pale, stout dark species) and *L.* (*D.*) *danica* Kuntze (antennae entirely dark, and sides of thorax and coxae similar colour, male genitalia complex).

(*to be continued*)

Alan E. Stubbs

Firstly, the group will have a Bulletin, in which all members can publish observations, etc.

Secondly, a library of photostated and original papers, which can be circulated to members.

This will I hope, fill a great need, but will at today's prices be very expensive. If you are interested and prepared to help, please write, and if you have any suggestions, please write, if you don't—it will not happen. A group can only flourish when sufficient people show enough interest and active support.

Best wishes for the season.

Richard Hoyle (4886)

INTRODUCTION TO CRANEFLIES—PART VII

Hairy-Eyed Craneflies

A closely defined group of craneflies have hairy eyes. These belong to the tribe Pediciini of the sub-family Limoniinae. The hairs are usually sparse, but none-the-less very distinct using a hand lens; (view either against the light or view an illuminated specimen against a dark background). The larvae are mostly predatory in wet soil and mud by streams and in marshes and bogs. The adults are in greatest diversity in the north and west of Britain since acid streams and bogs are favoured habitats.

The key by Coe is not particularly easy to use so a revised one is given below:—

1. Discal cell present (eliminate in following order)
   - a. Large *Tipula* like species with bold wing markings — *Pedicia rivosa*
   - b. Entirely yellow or yellowish-brown species — *Crunobia*
   - c. Wing membrane hairy, wing rather broad — *Ula*
   - d. Blackish or at least partly brown species without above characters — See 2 c and d
2. Discal cell open (eliminate in following order).
   - a. Two cross veins between R_1 and R_2 — *Dicranota*
   - b. Wings with a bar one third from wing tip and some spots — *Amalopis*
   - c. Predominantly dark grey or black species — *Tricyphona*
   - d. All coxae yellow, underside of abdomen largely yellowish — *Ludicia*
   - e. Light greyish brown species — *Dicranota*

Genus *Pedicia*

This genus is characterised by the antennal segments having 15-17 segments. There are five sub-genera—*Pedicia, Crunobia, Amalopis, Ludicia* and *Tricyphona. Pedicia rivosa* L. is the sole British member of the sub-genus *Pedicia.* The wing markings are so distinctive that there can be no confusion with any other crane. It is a widespread species occurring locally from April to September in marshes, bogs and by streams. The larva, a large white leatherjacket with vicious looking black 'jaws' which are vigorously extended from the hidden head, is predatory in wet mud and peat.

Crunobia; there are two species which are confined to stony streams. Whilst frequent in northern and western districts, they are virtually unknown in the SE of Britain—no doubt because suitable stony streams are scarce. *C. littoralis* Mg. is a large yellowish-brown species with a long body, wing length 12-16mm and dark grey head, whilst *C. straminea* Mg. is smaller, pale yellow and has an entirely yellow head. (Note that *Lipsothrix*, an Eriopterine, without hairy eyes, to be dealt with later, can look very similar to the latter species.)

Amalopis; the single species is *A. occulta* Mg. which is found on bogs and sometimes by upland streams, particularly in early spring and autumn. It is almost unknown in S.E. England. In addition to the bar like marking on the wing, there is a spot at the base of R_5 and another over *r*.

Ludicia; for separation of the two species one should note the distinct anal angle in the wing of *lucidipennis* Edwards, whereas in *claripennis* Verrall, the anal angle is much less pronounced. They are mainly found by boggy streamsides in the west and north.

Tricyphona; the discal cell is typically open, but may occasionally be closed. *T. immaculata* Mg. is one of the most common blackish craneflies to be found by muddy streams and seepages. The wing venation (illustrated) and yellowish bases to the femora are very characteristic. The praescutum has a broad dark median stripe, but if this stripe is divided at least in part into two bands then the specimen will be one of the two local species; *schummeli* Edw. is found on acid bogs (cell R_3, the second sub-marginal cell, is very short stalked) and *unicolor* Schum. is a scarce species of boggy or upland districts (with a longer stalk as in *immaculata).*

Genus *Dicranota*

There are only 13 segments in the antennae of this genus. There are two sub-genera, *Dicranota* and *Paradicranota.* The two cross veins between R_1 and R_2 are distinctive of the genus but there is only a single cross vein in one species of the later sub-genus. All species are confined to streams as a breeding site. This is not an easy genus for the beginner.

Dicranota; there are two species which are characterised by a darkish stigma.

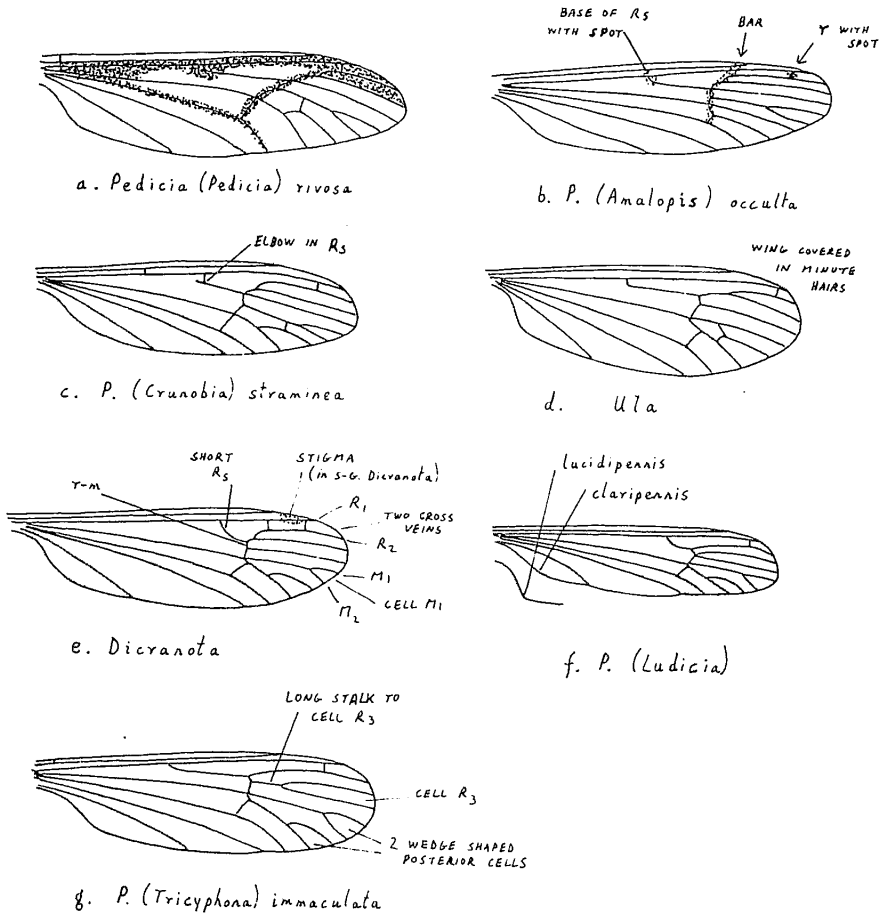

Fig. 6

Wings of Hairy-eyed Craneflies (Pediciini). These are not drawn to scale: typical wing lengths are as follows *Pedicia rivosa* (20-24mm), *Amalopis* (11-15mm), *Crunobia* (9-16mm), *Ula* (6-10mm), *Dicranota* (5-10mm), *Ludicia* (7-12mm) and *Tricyphona* (6-9mm).

D. bimaculata Schum. is widespread by small streams but rarely common. *D. guerini* Zett. is largely an upland species, occurring even by small snow melt streamlets, and has a much darker cloud over wing vein r-m than has *bimaculata.*

Paradicranota; the six species include some rare ones. Of the five species with two cross veins between R_1 and R_2, *D. pavida* Hal. is both common and distinct in having cell M_1 absent.

D. robusta Lund. is a dumpy western species, pale brown and with 10 or 11 antennal segments instead of 12 and is rare. Of the remaining three, D. *subtilis* Lw. has reddish yellow tinged coxae and is the second most frequent species whilst *D. simulans* Lack. and *D. gracilipes* Wahl. have grey coxae and are rare species of high upland streams. The sixth species *D. exclusa* Walk, is atypical in having only vein *r* present; it is fairly widespread in Wales and Scotland in the spring and has been found commonly in Wales in the autumn.

Genus *Ula*

The broad hairy wing membrane, with discal cell present, and hairy eyes makes these craneflies quite distinct. They are also exceptional among the Pediciines in their larval habits, since they live in fungi. The two species are not easily separated, but both occur widely in woodlands.

(to be continued)

L. is niet gebeurd, Gutr, Zool. Rec gecontroleerd.

Alan E. Stubbs

ON VANISHING BUTTERFLIES

For the past century and a half, when reliable records have been kept, there has been a continuous decrease in the number of our butterflies. Today less than half of the total number of species are on a safe footing and even these are not as abundant as they were at the turn of the century.

Europe is poor in butterflies and more species may be found in a few square miles of the Amazon valley than exist in the vast area extending from Ireland to the Urals; from the arctic circle to Sicily. Of the 15,000 recorded world species less than 1,000 are European and only 69 British and even of this small total about 20 per cent rely for their presence here solely to regular immigration, chiefly from the Mediterranean region.

During the past century several of our species have become extinct. There is some evidence that even more species have vanished over the past three hundred years as there is a strong tradition among Entomologists that butterflies such as the Scarce swallowtail *(Papilio podalirius* L.); the scarce and purple edged coppers *(Chrysophanus hippothoë* L. *C. Virgaurea* L.) existed in England during the seventeenth and eighteenth centuries. The habit of early authors on the subject to include Continental species in their books; their lack of labelling; the known importation of foreign specimens for display in their cabinets, makes it impossible today, over this distance of time, to prove conclusively whether or not these were ever British residents. In some cases the circumstantial evidence indicates that they were and there is a very strong case in regard to the Swallowtail.