

THE 1997 PRESIDENTIAL ADDRESS—PART 2 WHY DO NAMES CHANGE?

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Few things annoy amateur entomologists more than the changes in names of familiar species. This paper is an attempt to describe some of the problems, and the rules or abuse of them which cause the changes to occur. In order to illustrate this, changes in the list of British Lepidoptera since Emmet (1991) are listed, except those treated in Emmet (1996b) (Volume 3 of *The Moths and Butterflies of Great Britain and Ireland*) where adequate detail is given. For those families, only changes since publication of that work are given. There will be little in the paper to interest an experienced taxonomist, other than some pleas and correctives.

The rules of nomenclature are laid down by the International Code of Zoological Nomenclature (ICZN) managed by a trust based within the Natural History Museum in London. The 4th edition is now in force (from Jan 2000). The object of the Code is to promote stability and universality in the scientific names of animals and to ensure that the name of each taxon is unique and distinct.

Those who complain about name changes may be surprised by this emphasis; the problems arise from the next paragraph in the Preamble to the Code. "Priority is the basic principle of zoological nomenclature. Its application may be moderated, however, under conditions specified in the Code to conserve a long-accepted name in its accustomed meaning." This means that the oldest name rules, unless another has become established. This sounds fine, but there are authors who argue that the oldest name should be used whenever possible. In general, as soon as someone brings an old name into use, that name has priority and is no longer classed as forgotten (or a *nomen oblitum*). The procedure for having an older name suppressed, because it has not been used for over 50 years, is involved and lengthy and this often deters scientists from making applications to the Commission—which has to be done individually for each name. A proposal circulated for inclusion in the new Code was that names over 50 years out of use should automatically be suppressed even if they have priority, but this did not meet with the unanimous approval it deserved. However, the new Code (4th edition) will give more powerful support to the maintenance of names in use, hopefully making an end to the spate of changes to which we have been subject.

The scientific name of a species consists of two parts (a binomen), the genus and species name. If there are more or less than two names it is invalid. The authors name and the date of description are not obligatory but are useful to avoid confusion. A subspecific name is a trinomen. Any name inserted in parentheses between the generic and specific name, such as subgenus or species-group, is not part of the name proper.

The specific names are those to which I will give most attention. Higher classification can be problematic and can be at the whim of a reviser, although we can hope for stability in the use of generic and family names! The species is not such a watertight entity as was once thought, as will be apparent when we look at examples.

Which species is implied by a given name? Ideally this is determined by the type specimen or holotype, i.e. the specimen used for the species description. Any new species nowadays will have the holotype designated, but this was not the case for

many older named species. A description in the literature was sufficient to define a species, even of the early stages without the adult. Problems arise when it is not clear to which species a name applies. Ascertaining the date of publication (which is what counts for the purpose of priority) is also a problem with some early works, since they were not always dated or else were published over a period in serial form. At times it is not clear who is the author, for although a name may have been proposed by one scientist and become used by others, it is the first published use of it which decides the authorship, even if that was not the original proposer of the name. In the middle of the last century many species were being described and the communications between authors were considerable. At times names were in use before they were published and if one author misinterpreted the name of another, two different species could be described under the same name.

Gender is another issue which affects the endings of names. Most Lepidoptera have names which are feminine, reflecting the delicacy and beauty of the insects (in contrast with horny insects like beetles which are mostly given masculine gender!). According to ICZN rules the gender of a species should agree with that of the genus in which it is placed. This means if a species is assigned to a new genus of different gender the name will change, so for example the clouded yellow used to be known as *crocea* or *edusa*, but now it is in the genus *Colias* it has become *croceus*. Similarly the common swift *lupulina* was described in *Phalaena*, but since it has been placed in *Hepialus* or *Korscheltellus* the specific name has become *lupulinus*. Many generic names have no gender, or it is not possible to know what it should be. This has led some scientists to regard all scientific names as nouns and to use the original spelling regardless of gender, especially now that most scientists no longer have a classical education and know little of Latin or Greek. Lepidopterists have been foremost in adopting this view and were pleased when a proposal for the new Code to this effect was circulated, but it was rejected by most other taxonomists.

The following are changes currently being imposed that illustrate the above and some other problems as examples.

SENIOR SYNONYMS

Most species names change because an older name has been discovered. The younger name becomes a synonym of the older name, which has priority. Most entomologists will be familiar with the use of parentheses, placed round the author's name when the species is in a different genus to that in which it was originally described. Square brackets are used when the actual date of publication differs from that on the title page, e.g. Meyrick's *Revised Handbook* is dated 1927, but did not appear until 1928. Therefore it is cited as Meyrick [1928]. Table 1 gives changed names since Emmet (1991).

In some cases a name has to be replaced because it is discovered that the name in use is a homonym, that is an older combination of the same names existed, sometimes written *nec* and the earlier author's name and date.

Cases of this kind are:

Pammene aurita Razowski, 1991
Eilema depressa (Esper, 1787)

P. aurantiana (Staudinger, 1871) preocc.
E. deplana (Esper, 1787) preocc.

In the majority of cases listed the senior synonym has not been in use for 50 years, sometimes for 200 years, and there could have been made an application to have the name suppressed, but it would have meant a lot of applications. In some of these

Table 1.

New name	Former (junior) name
<i>Eriocrania cicatricella</i> (Zett., 1839)	<i>E. haworthi</i> Bradley, 1966
<i>Lampronia corticella</i> (L., 1758)	<i>L. rubiella</i> (Bjerkander, 1781)
<i>Diplodoma laichartingella</i> (Goeze, 1783)	<i>D. herminata</i> (Fourcroy, 1785)
<i>Narycia duplicella</i> (Goeze, 1783)	<i>N. monilifera</i> (Fourcroy, 1785)
<i>Bacotia claustrella</i> (Bruand, 1845)	<i>B. sepium</i> (Speyer, 1846)
<i>Bucculatrix obscurella</i> Klemensiewicz, 1899	<i>B. capreella</i> Krogerus, 1952
<i>Phyllonorycter kuhlweiniella</i> (Zeller, 1839)	<i>P. saportella</i> (Dup., [1840])
<i>Phyllonorycter esperella</i> (Goeze, 1783)	<i>P. quinnata</i> (Fourcroy, 1785)
* <i>Paraswammerdamia nebulella</i> (Goeze, 1783)	<i>P. lutarea</i> (Haworth, 1828)
<i>Ochsenheimeria taurella</i> ([D. & S.], 1775)	<i>O. mediopectinellus</i> (Haworth, 1828)
* <i>Coleophora kuehnella</i> (Goeze, 1783)	<i>C. palliatella</i> (Zincken, 1813)
<i>Coleophora inulicolella</i> Bruand, 1859	<i>C. inulae</i> Wocke, 1876
<i>Elachista maculicerusella</i> Bruand, 1859	<i>C. monosemiella</i> Rössler, 1881 = <i>cerusella</i> (Hübner, 1796) preocc.
<i>Diurnea lipsiella</i> ([D. & S.], 1775)	<i>D. phryganella</i> (Hübner, 1796)
<i>Ethmia quadrillella</i> (Goeze, 1783)	<i>E. funerella</i> (Fab., 1787)
<i>Depressaria sordidatella</i> Tengström, 1848	<i>D. weirella</i> Stainton, 1849
<i>Pancalia schwarzeella</i> (Fab., 1798)	<i>P. latreillella</i> Curtis, 1830
<i>Dichomeris derasella</i> ([D. & S.], 1775)	<i>D. fasciella</i> (Hübner, 1796)
<i>Mompha sturnipennella</i> (Treitschke, 1833)	<i>M. nodicolella</i> Fuchs, 1902
<i>Acleris kochiella</i> (Goeze, 1783)	<i>A. boscana</i> (Fab., 1794)
<i>Epiblema sticticana</i> (Fab., 1794)	<i>E. farfarae</i> (Fletcher, 1938)
<i>Phiaris micana</i> ([D. & S.], 1775)	<i>P. olivana</i> (Treitschke, 1830)
<i>Agdistis meridionalis</i> (Zeller, 1847)	<i>A. staticis</i> Millière, 1875
<i>Stenoptilia millieridactyla</i> (Braund, 1861)	<i>S. saxifragae</i> Fletcher, 1940
<i>Dioryctria simplicella</i> Heinemann, 1863	<i>D. mutata</i> Fuchs, 1903
<i>Myelois circumvoluta</i> (Fourcroy, 1785)	<i>M. cribrella</i> (Hübner, 1796)
* <i>Nymphula nitidulata</i> (Hufnagel, 1767)	<i>N. stagnata</i> (Donovan, 1806)
<i>Pyrausta despicata</i> (Scop., 1763)	<i>P. cespitalis</i> ([D. & S.], 1775)
<i>Palpita vitrealis</i> (Rossi, 1794)	<i>P. unionalis</i> (Hübner, 1796)
<i>Idaea rusticata</i> ([D. & S.], 1775)	<i>I. vulpinaria</i> (H.-S., 1851)
<i>Cyclophora annularia</i> (Fab., 1775)	<i>C. annulata</i> (Schulze, 1775)
<i>Xanthoroe decoloraria</i> (Esper, 1806)	<i>X. munitata</i> (Hübner, 1809)
<i>Macaria alternata</i> ([D. & S.], 1775)	<i>Semiothisa alternaria</i> (Hübner, 1799)
<i>Ectropis similaria</i> (Hufnagel, 1767)	<i>E. extersaria</i> (Hübner, 1799)
<i>Epione vespertaria</i> (L., 1767)	<i>E. paralellaria</i> ([D. & S.], 1775)
<i>Hoplodrina octogenaria</i> (Goeze, 1781)	<i>H. alsines</i> (Brahm, 1791)

*denotes species discussed in text

cases the original descriptions are not very clear and one cannot be sure which species was before the author, and their introduction is regrettable. John Bradley and Steve Fletcher, who have done so much formative work on the nomenclature of species known in Britain, were aware of many of these names and left them in oblivion for the sake of stability. Since they did not take formal action to get them suppressed we have had a succession of changes.

Goeze's name features many times: the work by Goeze (1783) gives scientific names to many species described by Geoffroy (1762), Réaumur (1734–42) and others before scientific names were introduced in their familiar form. The Latin diagnosis from the earlier work is quoted verbatim with the vernacular name although the

detailed description is simply referred to; this means that one has to study Geoffroy and Réaumur in order to see which species is meant. Many, but not all, of the descriptions are good and unmistakable. Goeze's work was regarded by Sherborn (1902) as not consistently binominal and therefore the names were not listed in his catalogue of names much used by taxonomists and consequently have often been overlooked but reintroduced in some Continental checklists.

Retzius's names present particular problems, since his use of binomens was not consistent and yet several of his names are well established. For example:

Hedya nubiferana (Haworth, 1811) formerly *H. dimidioalba* (Retzius, 1783)

The older name has been reintroduced in both the European and French checklists. Even though we cannot be sure which species was indicated he spelt the name *dimidio-alba*. The Code states that two names, whether separate or hyphenated, can be made into one if they describe one concept so long as the work is consistently binominal. This cannot be said of Retzius, which is presumably why this name is rejected, but *fusco-venosa* is in exactly the same position. Happily the new Code may be in force before anyone proposes further changes.

Those names marked with an asterisk in Table 1 deserve some mention:

Paraswammerdamia nebulella:

I have resisted this change since one cannot be sure from a brief description of one of the *Swammerdamia* group which species is implied. In addition Goeze names two species *nebulella*, the other being the same as the Denis & Schiffermüller species now in *Phycitodes* (Pyralidae). That made it a secondary junior homonym, but since *lutarea* (Haworth) was not described as a replacement name the name *nebulella* is still valid now that it is in a different genus. It has been used in Spanish, Austrian and French checklists and it is hard now to make a case for its suppression since it is the oldest name in the complex and has not recently been applied to another species, even though it would have been better left in oblivion.

Coleophora kuehnella:

The case against this change was argued by Emmet (1996a), but, according to the Code, description of an early stage is valid for nomenclatural purposes. In addition further senior synonyms are cited by Continental authors even though all of these could have been suppressed as *nomina oblita*.

Nymphula nitidulata

This is a name which Speidel even applied to the ICZN to have suppressed in favour of *stagnata* (Donovan), but he did not make this a separate submission and therefore it did not stand.

MISIDENTIFICATIONS

Another reason for a name change is when there has been a misidentification. This can be confusing since one may identify a species correctly according to the reference work being used, but if the name was originally used by its author for a different species, then the original use has priority. This type of change often occurs when a

type specimen is re-examined. It can be overruled by application to the Commission for the sake of stability. There have been some disastrous instances in the Lepidoptera, worst of all the recent change of names in the genus *Abrostola*. When the types were re-examined it was found that the pins used by Linnaeus could be distinguished, and using this information it appeared that the labels had been moved around. For this reason the name *triplasia* (L., 1758) is back with the dark spectacle, and *tripartita* (Hufnagel, 1766) therefore has to be used for the spectacle.

Coleophora alcyonipennella (Kollar, 1832) formerly *C. frischella* (L., 1758)

The metallic green coleophorids have been much confused in the past as described by Emmet *et al.* (1996). What British entomologists were not aware of then was that *frischella* and *alcyonipennella* are both good species, and the genitalia figures in Patzak (1974) were transposed. As a result the description in Emmet (1996b) is of *alcyonipennella* whereas the genitalia figures are of *frischella*. It is quite possible that *frischella* could occur in Britain, but no specimens have been identified as yet. They cannot be separated by the antennae although there is a slight difference in wing colour. This species is not known to be double brooded. In order to make the position clear, the genitalia of both species are illustrated (Figs 1–4). The difference in the male is chiefly in the cornuti within the aedeagus, which are many and short in *frischella* and fewer and longer in *alcyonipennella*. In the females the ostial plate of *frischella* is much longer than that of *alcyonipennella*.

REASSESSMENT OF SPECIES

Most interesting are changes which come about on account of a reassessment of the status of species. When Linnaeus laid down his system of nomenclature a species was a clearly understood entity. Understanding of the evolution of species has made this less clear-cut and the nomenclature reflects the problems encountered.

Niditinea striolella (Matsumura, 1931) formerly *N. piercella* (Bentinck, 1935)

The eastern Palaearctic and western Palaearctic taxa were found by Petersen & Gaedike (1993) to be conspecific, therefore the senior name applies.

Phyllonorycter cerasicolella (H.-S., 1855) and ?*P. spinicolella* (Zeller, 1846)

In Spanish, Austrian, French and European checklists this name has been listed in the synonymy of *P. spinicolella*, in each case on the recommendation of Dr Deschka (Austria). *P. spinicolella* feeds on blackthorn, *P. cerasicolella* on cherry, but the two are very similar. Pierce & Metcalfe (1935) describe differences in the genitalia, followed by Emmet *et al.* (1985) where also different distributions of the two taxa are given. This is an example of where the problems with the names reflect difficulties in determining the status of a taxon, especially where different food plants are involved.

In many cases it is well known that a species can use different food plants, and in some cases this causes a different appearance in the adult. The powdered quaker (*Orthosia gracilis*) is a good example; where larvae feed on bog myrtle (*Myrica gale*) the forewings of adults are reddish instead of the normal powdered whitish colour. When it comes to *Eupithecia denotata* the two forms on *Jasione* (sheep's-bit) and *Campanula* (bellflower) are assigned to different subspecies *jasioneata* and *denotata*, and they tend to occur in different places as determined by the plants. One of the most studied groups with different taxa associated with different plants is the *Yponomeuta padella* complex. After applying many sophisticated techniques,

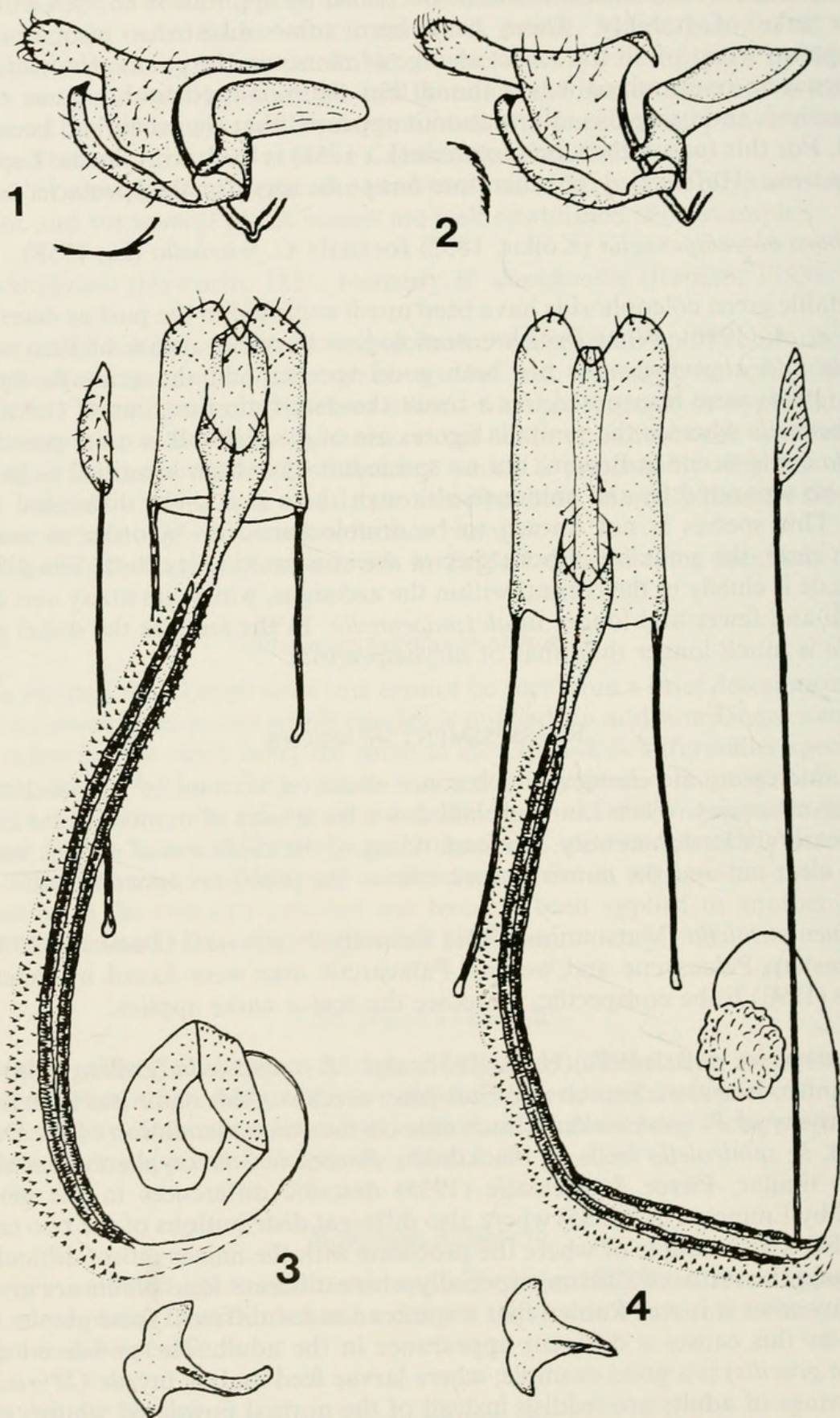


Fig. 1. *C. alcyonipennella* male genitalia; 2. *C. frischella* male genitalia; 3. *C. alcyonipennella* female genitalia; 4. *C. frischella* female genitalia, after Patzak (1974)

researchers in the Netherlands concluded that these taxa are still in the process of speciation. When should we assign different names in this continuous evolutionary process?

It is important to remind ourselves that the normal definition of a species is one which only breeds successfully with other members of the same species; hybrids occasionally happen but are seldom viable. Different species can usually be distinguished by structural characters separating them, although account must be made for variation. Taxonomists whose work is based primarily in museums may be unaware of the propensity or otherwise of species to interbreed, which must surely be more important than structural differences.

In Ireland Ken Bond has been researching into the 5th instar larvae of *Phyllonorycter* spp. and (pers. comm.) has found differences between larvae on cherry and blackthorn. It would be a valuable experiment if a microlepidopterist could overwinter mines from both blackthorn and cherry, and then sleeve half of the progeny on the opposite foodplant. The other half should be sleeved on the foodplant from which they come to act as a control. If a change of foodplant does not affect the survival of the species then the case for synonymy is proven.

Antispila treitschkiella (Fischer von Röslerstamm, 1843) formerly *A. petryi* Martini, 1898. I believe *petryi* was considered a distinct species, but is no longer.

Leucoptera wailesella (Stainton, 1858) = *laburnella* (Hübner, [1813])

Leucoptera orobi (Stainton, 1869) = *lathyrifoliella* (Stainton, 1865)

In his revision of the Lyonetiidae, Mey (1994) placed *wailesella* in synonymy on account of the lack of differences in the genitalia. The taxa look slightly different, and the remarks about different food plants apply. He also placed *orobi* in synonymy for the same reason.

Prays ruficeps (Heinemann, 1854)

This taxon I referred to in Emmet (1996b) as being of uncertain status. Since then the evidence for its being distinct from *fraxinella* (Bjerkander, 1784) has been growing. A paper I formerly overlooked by Chapman (1888) is of particular interest, although in some details it may not describe the whole picture.

Bembecia ichneumoniformis ([D. & S.], 1775) and *B. scopigera* (Scopoli, 1763)

Spatenka & Lastuvka (1990) showed that the species formerly known as *scopigera* is a complex of three species and ours is *ichneumoniformis*. One other species in this complex, *B. albanensis* (Rebel, 1918), presents a problem since there are two specimens of this species in the Prague museum labelled "Anglia", but confirmation is needed before this unlikely species could be included in the British fauna.

In the Pterophoridae there are a number of problems. The clearest one concerns *Pterophorus tridactyla* (L., 1758) and *P. tetradactyla* (L., 1758). Robinson & Nielsen (1983) examined the type material in the Linnaean collection and considered that the material labelled *tetradactyla* did not warrant type status since labels had been moved around, therefore they left *tetradactyla* in the synonymy of *tridactyla*. *P. tridactyla* was then used for a well known species on thyme, but in the British Isles there is a very similar scarcer species recorded from the Burren and Cornwall known most recently as *fuscolimbatus*. Arenberger examined the genitalia of the Linnaean *tridactyla* and found that it was identical with this latter species, and therefore our scarcer species takes that name, the former species having to be known by the next most senior name: *leucodactyla* ([D. & S.], 1775). Then Gielis (1996) in

Microlepidoptera of Europe and an associated catalogue applied the name *tetradactyla* to *Platyptilia ochrodactyla* ([D. & S.], 1775), ignoring the opinion of Robinson & Nielsen. Now Leraut in the second edition of this French checklist has retained *tetradactyla* in the synonymy of *tridactyla*, even though it is now used for a different species. Consider what Tutt wrote in his monograph on the Pterophorina in 1890–92 “There is no mention of *ochrodactyla* for the Linnean description does not fit it. As a result I am applying to the ICZN to have the name *ochrodactyla* retained for the *Platyptilia* species and for *tetradactyla* to be suppressed”.

The *Stenoptilia bipunctidactyla* complex present a notorious problem. I would hesitate to do more than follow the botanists’ practice of referring to them as *bipunctidactyla* agg. until all aspects of their biology and taxonomy over a wide geographical area has been thoroughly researched.

Among the Macrolepidoptera the blood-vein, *Timandra griseata* Petersen, 1902, has been split into two species by Kaila (1995), the other species being named *comae* Schmidt, 1931. The type-species of *griseata* is not the taxon we know in Britain, and therefore our species becomes *comae*, although the status of this taxon is not beyond doubt as a distinct species.

Idaea vulpinaria (H.-S., 1851) had been thought distinct from *rusticata* ([D. & S.], 1775) but apparently that no longer holds, so the older name returns to our list.

Ectropis bistortata (Goeze, 1781) and *E. crepuscularia* ([D. & S.], 1775) have been regarded as two distinct taxa, the engrailed and the small engrailed, the latter being single-brooded and appearing between the broods of the former. In central Europe, from where both *bistortata* and *crepuscularia* were named, only one species is recognised, therefore these names are synonymous and *crepuscularia* has priority. That leaves our small engrailed (which form also occurs in other parts of northern Europe) without a name. If this can be proved a distinct species a new name may be needed, since all those in existence seem to be either first or second brood *crepuscularia*.

Noctua janthina ([D. & S.], 1775) was the name by which our lesser broad-bordered yellow underwing was known until it was found that two species were involved, *N. janthe* (Borkhausen, 1792) being the other. *N. janthe* is the species common in Britain although the other, which is slightly darker with a broader band of black encircling the yellow marking on the hindwing, could be found here. Although less common than *janthe* it does occur in near parts of the Continent.

This is probably an incomplete treatment of the changes which have recently come about, but I hope it makes a bit clearer why names have been changed, and raises hopes that eventually stability will be achieved.

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