The nomenclature of the family-group names of Eupterotidae (Bombycoidea)

WOLFGANG A. NÄSSIG 1, 3 & ROLF G. OBERPRIELER 2

1 Entomologie II, Forschungsinstitut und Museum Senckenberg, Senckenberanlage 25, D-60325 Frankfurt am Main, Germany; e-mail: wolfgang.naessig@senckenberg.de
2 Zimmerman Fellow, CSIRO Entomology, GPO Box 1700, Canberra, ACT 2601, Australia; e-mail: rolf.oberprieler@csiro.au
3 Studies in Eupterotidae no. 6

Abstract. The origin and historical use of all family-group names pertaining to the bombycoid family Eupterotidae are determined. The family-group name Eupterotidae takes Swinhoe, 1892 as authorship, although the name was evidently originally coined by Hampson, 1893. However, three older family-group names are available for the taxon: Striphnopterygidae Wallengren, 1858, Phialidae Wallengren, 1865 and Janidae Aurivillius, 1892. Striphnopterygidae has been used as the valid name for the family by at least ten authors until at least 1965 and again in 2006, and as a valid subfamily name throughout, but the younger Eupterotidae gained almost universal acceptance as the name of the family in the literature since about 1928. Application of Article 35.5, introduced in the current, 4th edition of the Code (ICZN 1999), allows the retention of the younger name Eupterotidae as the valid name of the family. The authorship of another bombycoid family name, Lemoniidae, is corrected from Hampson, 1918 to Neumoegen & Dyar, 1894.

Introduction

The bombycoid family Eupterotidae contains about 53 genera, the majority of them occurring in the Ethiopian and Oriental regions but a few also in the eastern Palearctic, the Australian region and Central America. The classification and phylogeny of the group remains inadequately studied, the major recent works being Forbes (1955), Minet (1994) and Oberprieler et al. (2003). The family was deemed to be monophyletic by Minet (1994) and Lemaire & Minet (1998) based on three synapomorphies, but Oberprieler et al. (2003) demonstrated that two of them cannot be regarded as such, leaving the family defined on a single (weak) character and its monophyly under some doubt. However, a recent study of the phylogenetic relationships of the Anthelidae (Zwick 2006) provides some molecular support for the monophyly of the Eupterotidae. The division of the family into natural subfamilies and tribes is also not yet settled. Following Aurivillius (1901a), early classifications (e.g., Distant 1903; Gaede 1927) generally recognised only two subfamilies, Striphnopteryginae and Janinae, although American authors often also included Apatelodes Packard, 1864 and related genera in Eupterotidae as a subfamily Apatelodinae (e.g., Grote 1896; Forbes 1923; Remington 1954). In his revision of the entire family, Forbes (1955) added to it the Australian Panacelinae and Asian Prismostictinae and divided the Eupterotinae into five tribes, Janini, Tissangini, Eupterotini (including Striphnopteryx), Phialini and Cotanini. Minet (1994) again restricted the concept of the family by excluding Apatelodinae and Prismostictinae and recognised five subfamilies: Hibridinae, Tissanginae, Janinae, Eupterotinae (including Striphnopteryginae) and Panacelinae (including Cotanini). Oberprieler et al. (2003) included Tissanginae and Hibridinae in Janinae and Cotanini in Eupterotinae, treated Striphnopteryginae as a separate subfamily and identified an informal “Ganisa group” that does not fit into any of the formal subfamilies.
Apart from these taxonomic issues, the nomenclature of the family is also subject to some confusion, regarding both its valid name and its precise authorship. This issue resurfaced recently when the older name Striphnopterygidae was again used for the family (Mielke & Casagrande 2006), despite changes introduced to the latest edition of the International Code of Zoological Nomenclature (ICZN 1999) designed to preserve the stability of widely used family-group names when threatened by older but less often used ones. In this paper we clarify the nomenclature and synonymy of all the family-group names applying to the taxon Eupterotidae. The authorship of another bombycoid family name, Lemoniidae, is corrected at the same time.

The family-group names

The reference point to the use of the family name Eupterotidae in all recent literature appears to be Fletcher & Nye (1982: viii), who gave its authorship as “Swinhoe, 1892”. Earlier works, however, either explicitly (Aurivillius 1894b, 1901a; Dyar 1895; Distant 1903; Bryk 1944; Griveaud 1962) or seemingly implicitly credited the name to “Hampson, 1892”. Neither Swinhoe nor Hampson stated specifically that they established a new family, but they were evidently in contact with each other at the time and seemingly coordinated their classification systems. In his preface, Hampson (1893b: iii) wrote that he hoped to have “evolved” a natural classification scheme of the Heterocera, to replace the outdated one of Guenée, and he provided a description of the family Eupterotidae, whereas Swinhoe (1892) only gave the family name and, in the preface to his work, thanked Hampson for “working out the genera”. Shortly before he had still treated Eupterote in Lasiocampidae (Swinhoe 1891), the usual classification by British authors at the time (e.g., Butler 1881; Moore 1883; Cotes & Swinhoe 1887; Kirby 1892). Also Distant (1892), describing a new species in Eupterotidae, thanked Hampson for deciding its “true generic position”. No contemporary author ever credited Swinhoe with the family name, and therefore it appears that it was, in fact, Hampson who originally coined the name Eupterotidae. However, the Moths Volume 1 of the Fauna of British India series, in which Hampson’s description of the family Eupterotidae was published, only became available in 1893 (see Fletcher & Nye 1982, Nässig & Nye 1991, and the bibliographical notice of Butler 1893), and hence both Swinhoe (1892) and Distant (1892) published the name Eupterotidae before Hampson. In both these works the name meets the conditions of Art. 11.7.1 of the Code (ICZN 1999) and is thus available. Swinhoe’s Catalogue only bears a publication date of 1892, but the preface is dated 1 October and the copy in the Macrolepidoptera Sectional Library of the Natural History Museum, London, is annotated "Nov 4th" in Hampson’s handwriting (Kitching, pers. comm. 2007), taken here as the earliest day on which the work is demonstrated to have been in existence as a published work (Art. 21.3). Hampson’s (1893a) bibliographical notice of Swinhoe’s Catalogue, issued in January 1893, confirms that the latter was indeed published in 1892. The publication date of Distant’s (1892) paper is given in the journal as “November 1892”, for nomenclatural purposes deemed to be the 30th November (Art. 21.3.2). Consequently, the name Eupterotidae must take Swinhoe, 1892 for its authorship.
Hampson may have simply based the name of the family on the oldest included genus, *Eupterote* Hübn., 1820, but, although no such origin is cited, he may also have taken the concept from Hübn.’s original name “Eupterotae”. In fact, Grote (1896: 45) explicitly credited the name Eupterotidae to Hübn., not to Hampson. Hübn. (1820: 187) used the plural noun “Eupterotae” in his category of *Verein, or Coitus*, and included in it two species, *Eupterote fabia* Cramer and *E. petosiris* Cramer. Hemming (1937: 16) established that Hübn.’s *Coitus* is equivalent to the genus category in modern nomenclature, and “Eupterotae” must therefore be regarded as the original citation of the genus name *Eupterote* Hübn., 1820 (“1816”). Furthermore, plural nouns merely referring to members of a genus are not considered valid family-group names (Art. 11.7.1.2). Therefore, the family name Eupterotidae cannot take Hübn., 1820 for its authorship.

Describing numerous new genera of moths particularly from the expeditions of Delegorgue and Wahlberg in southern Africa, Wallengren (1858: 210) proposed a new family, “Fam. Striphnopteryges”, for two new genera, *Striphnopteryx* from “Caffraria” (South Africa) and *Festra* from “N. Hollandia” (Australia), the latter a synonym of *Chelepteryx* Gray, 1835 (“1836”), now placed in Anthelidae. A few years later he supplied a proper description of the family (Wallengren 1865: 28) and added the genus *Homochroa* Wallengren, 1858 (a junior synonym of *Phyllalia* Walker, 1855, and a junior homonym; see Fletcher & Nye 1982). In the same paper he also described another new family, “Fam. Phialidæ Wallengr.”, for a “new” genus, *Phiala* (already validly described by Wallengren 1860, see Fletcher & Nye 1982, and a junior subjective synonym of *Euchera* Hübn., 1825 (“1816”), see Vári et al. 2002: 150, 219). Wallengren (1875) later described another species of *Phiala* in the Phialidae and Aurivillius (1879) a new genus, *Trichophiala*. Aurivillius (1892: 195) proposed another new family, Janidae, for a new species of *Jana* Herrich-Schäffer, 1854 (“1850–1858”) from Cameroon. The Häfte 2–3 of vol. 13 of the Entomologisk Tidskrift, in which this family name was published, was issued on 1 June 1892, Janidae thus also taking priority over Eupterotidae Swinhoe, 1892. Aurivillius (1893) placed some other African genera in Janidae and also the Asian genus *Melanothrix* C. & R. Felder, 1874 (Aurivillius 1894a) but then synonymised both Phialidae and Janidae with Striphnopterygidae (Aurivillius 1894b).

The family name Janidae was afterwards apparently only used three times, by Strand (1911a, b) and, somewhat surprisingly, Aurivillius (1921).

Aurivillius was a firm proponent of the principle of priority in taxonomic nomenclature, which was, at the time, not yet officially entrenched in a universal code of zoological nomenclature (ICZN 1999: XXI). Being familiar with the African as well as the Asian faunas of bombycoids, Aurivillius further concluded that Wallengren’s Striphnopterygidae and Phialidae, his Janidae and Hampson’s Eupterotidae together constituted a “natural unit”, which had to take the oldest Striphnopterygidae as its valid name, and he clearly tabulated this synonymy of family names (Aurivillius 1894b: 185). He consistently used Striphnopterygidae in all his later publications dealing with this group of moths (Aurivillius 1901a, b, 1904, 1905a, b, 1906, 1909, 1910, 1911, 1914, 1925a, b), and this concept and name was also adopted by many contemporary German-speaking authors (e.g., Karsch 1895, 1898a, b; Weymer 1909; Grünberg 1910; Strand 1909, 1911c, 1927; Schultze 1915; Krausse & Wolff 1919), but not by, e.g., Semper (1896), Rebel (1900,
1914) and the authors of the chapters on Eupterotidae in Seitz’ *Gross-Schmetterlinge
der der Erde* (Grünberg 1911; Strand 1922; Gaede 1927; Draudt 1928). English-speaking authors, however, used the name Eupterotidae throughout, often dealing only with the Asian or Australian fauna (the “true” eupterotines) (e.g., Hampson 1896, 1918; Bethune-Baker 1904, 1908; Swinhoe 1905; Rothschild 1917a; Turner 1922, 1947) but sometimes also including African (stripheopterygine and janine) genera (Butler 1898; Hampson 1910; Rothschild 1917b; Platt 1921). Distant (1903) was an exception in using Striphnopterygidae for the South African fauna. The American authors, too, following Schaus (1894), placed their *Apatelodes* (or Apatelodinae) in Eupterotidae and apparently always used this name (e.g., Dyar 1895, 1901; Grote 1896; Fracker 1915; Forbes 1923), except Holland (1920), who placed African taxa in Striphnopterygidae.

In some cases the use of the name Eupterotidae may have arisen out of ignorance of Aurivillius' work, but in others (e.g., Rebel 1900; Hampson 1901; Gaede 1927) it evidently flowed out of a rejection or disregard of the priority principle. After Aurivillius’ death in 1928, Striphnopterygidae almost completely disappeared from the literature as a family name in favour of Eupterotidae (e.g., Candèze 1927; de Joannis 1929; van Eecke 1930; Mell 1930, 1937; Golding 1940; Bryk 1944; Sevastopulo 1944; Remington 1954; Forbes 1955; Berger 1958, 1980; Griveaud 1962; Kuznetsov 1967; Fletcher 1968; Brock 1971; D’Abrera 1974; Fontaine 1975; Pinhey 1975; Holloway 1976, 1987; Dall’Asta 1979; Fletcher & Nye 1982; Inoue et al. 1982; Barlow 1983; Vári & Kroon 1986; Holloway et al. 1987, 2001; Nässig 1989, 1995, 2000; Viette 1990; Common 1990; Nielsen & Common 1991; Scoble 1992; Kishida 1992; Minet 1994; Oberprieler & Duke 1994; Becker 1996; Edwards 1996; Lemaire & Minet 1998; Heppner 1998; Kroon 1999; Deml & Nässig 2001; Robinson et al. 2001; Vári et al. 2002; Oberprieler et al. 2003; Fu & Tuzuoo 2004), although Striphnopteryginae persisted as a valid subfamily name throughout (e.g., Gaede 1927; Fontaine 1975; Pinhey 1975; Vári & Kroon 1986; Oberprieler et al. 2003). A lone exception was Taylor (1949, 1950, 1951, 1957, 1961, 1965) in South Africa, who continued using Striphnopterygidae as the name of the family. No further uses of this family name have come to light until the recent bibliographic catalogue of ordinal names in Lepidoptera (Mielke & Casagrande 2006), which again listed Striphnopterygidae as the valid family name over Eupterotidae.

Additional family-group names were proposed in the Eupterotidae by Forbes (1955) – Tissangini, Cotanini and Panacelinae (seemingly also Phialini, not cited as of Wallengren, 1865) –, and Minet (1994) added Hibridinae, proposed as a family by Berger (1958). None of the family-group names pertaining to this taxon of moths is contained in the official lists of valid names in zoology (Hemming & Noakes 1958a; Melville & Smith 1987; Smith 2001; ICZN 2006) or in the index of rejected and invalid family-group names (Hemming & Noakes 1958b). Their priority is as follows:

- Striphnopterygidae Wallengren, 1858: 210 (type genus: *Striphnopteryx* Wallengren, 1858)
- Phialidae Wallengren, 1865: 33 (type genus: *Phiala* Wallengren, 1860 [= *Euchera* Hübner, 1825 (“1816”)])
Janidae Aurivillius, 1892 [1 June]: 195 (type genus: *Jana* Herrich-Schäffer, 1854 (“1850–1858”))  
Eupterotidae Swinhoe, 1892 [4 November]: 408 (type genus: *Eupterote* Hübner, 1820 (“1816”))  
Tissangini Forbes, 1955: 98 (type genus: *Tissanga* Aurivillius, 1903)  

**The valid family name**  
From the above overview of the history of the family-group names pertaining to the taxon in question we conclude that:

- the name Eupterotidae, although evidently originally coined by Hampson, takes Swinhoe, 1892 for its authorship;
- when the genera *Striphnopteryx*, *Euchera* (= *Phiala*), *Jana* and *Eupterote* are placed in the same family-group taxon, *Striphnopterygidae* Wallengren, 1858 is the oldest available family-group name for it;
- *Striphnopterygidae* Wallengren, 1858 was used as the valid name for the family by at least ten authors until at least 1965, and again in 2006, and as a valid subfamily or tribe name continuously into the present;
- the junior synonym Eupterotidae Swinhoe, 1892 gained almost universal acceptance as the name of the family after about 1928, the priority of *Striphnopterygidae*, *Phialidae* and *Janidae* being overlooked or ignored.

In strict compliance with the Principle of Priority (ICZN 1999, Art. 23), the name of the family taxon in question should therefore be *Striphnopterygidae*. The moderation of this principle as regulated by Art. 23.9 (reversal of precedence) does not apply, as the conditions of Art. 23.9.1.1 are not met since *Striphnopterygidae* has been used as a valid family-group name well after 1899. A further moderation of the priority principle specifically in the family-group category was added in the current, 4th edition of the Code (ICZN 1999), preserving, after 1999, prevailing usage of a younger name when threatened by an older name in use for a category of lower rank (Art. 35.5). However, since this moderation is not specifically included in Art. 23, and Art. 35.5 does not explicitly state that it moderates Art. 23, only the general statement in Art. 23.1 “unless ... another name is given precedence by any provision of the Code” provides grounds to regard Art. 35.5 as a valid moderation of Art. 23. Further ambiguity exists in Art. 35.5 in that it stipulates that the older name (of the lower-ranked taxon) has to be “in use” and, in the example given, that its precedence over the younger name (of the higher-ranked taxon) is maintained (only) as long as both names “are used for different subfamilies [= lower-ranked taxa] within the [family, = higher-ranked taxon]”. This implies that, if the older name is not in use for a separate taxon (i.e. is a plain older synonym of the same taxon), Art. 35.5 does not apply and the matter has to be settled by application of Art. 23.
In Eupterotidae, Art. 35.5 is readily applicable as, in the current classification system (Oberprieler et al. 2003), the older name is in use for a different lower-ranked taxon (subfamily Striphnopteryginae) than that denoted by the younger name (subfamily Eupterotinae), and the name in prevailing usage for the higher-ranked taxon (family Eupterotidae) is therefore to be maintained. Before 2000, i.e. before Art. 35.5 came into existence, the family would have had to be called Striphnopterygidae, in compliance with Art. 23.

In this group of moths, the current family-group names and their synonymies (following Oberprieler et al. 2003) therefore are:

- **Family Eupterotidae** Swinhoe, 1892
  - Subfamily Janinae Aurivillius, 1892 (= Tissanginae Forbes, 1955; = Hibrildinae Berger, 1958)
  - Subfamily Striphnopteryginae Wallengren, 1858 (= Phialinae Wallengren, 1865)
  - Subfamily Eupterotinae Swinhoe, 1892 (= Cotaninae Forbes, 1955)
  - Subfamily Panacelinae Forbes, 1955

The confusion surrounding the names of this family, and the time and effort spent on resolving it, highlight the urgent need for stabilisation of the Lepidoptera family-group names and their authorships. The only currently available attempt to do so (Fletcher & Nye 1982, and other volumes of the *Generic Names of Moths of the World* series) is clearly inadequate; only for the Noctuoidea a more complete catalogue has recently been compiled (Speidel & Naumann 2005).

As a further example, the bombycoid family name Lemoniidae does not take Hampson, 1918 for its authorship (Fletcher & Nye 1982: viii) but in fact Neumoegen & Dyar, 1894 (as Lemoniinae – Neumoegen & Dyar 1894: 121), thus avoiding the invocation of Art. 35.5 to preserve this family name over Sabaliidae Hampson, 1901 (in the current concept of the family Lemoniidae). Likewise, the correction of the family-group name Lemoniidae Kirby, 1871, based on the riodinid butterfly genus *Lemonias* Hübner, 1807, to Lemoniidae by Hall & Heppner (1999, as Lemoniinidae) had already been effected a century earlier by Rebel (1900), who then also proposed a new family Lemoniidae for *Lemonia* Hübner, 1820 (“1816”). Rebel (1900) therefore did not create a homonym with Kirby’s name, but he evidently did not know that Neumoegen & Dyar (1894) had already proposed this family name earlier, and a homonymy between the Kirby and the Neumoegen & Dyar family-group names thus existed only between 1894 and 1900 – even though Rebel (1914) himself later incorrectly used “Lemoniidae” for the butterfly group again.

An analogous situation involving family-group names in Coleoptera was addressed by the compilation of a comprehensive synopsis of family and subfamily names (Lawrence & Newton 1995). While necessitating a number of name changes at the time (under the previous edition of the Code), this list provides an invaluable reference point to beetle family-group names and their authorships and greatly stabilises their nomenclature. We believe that a similar effort is urgently needed in Lepidoptera. The recent bibliographic catalogue of ordinal names (Mielke & Casagrande 2006) provides a first step in this direction but needs to be expanded to the family level.
Acknowledgments

We sincerely thank Bruce Halliday, Andreas Zwick and Ted Edwards (CSIRO Entomology, Canberra) for thoughtful discussion and constructive comments on this matter and for reading the manuscript; Miguel Alonso-Zarazaga (Museo Nacional de Ciencias Naturales, Madrid) for advice on zoological nomenclature; Katherine Drayson (Oxford University Museum of Natural History, Oxford), Bert Gustafsson (Naturhistoriska Riksmuseet, Stockholm) and Ian Kitching (The Natural History Museum, London) for tracing critical publication dates; Melanie Grimm (Forschungsinstitut und Museum Senckenberg, Frankfurt am Main), the staff of the university library (Universitätsbibliothek) Johann Christian Senckenberg (Frankfurt am Main) and Trudi Prideaux (CSIRO Black Mountain Library, Canberra) for procuring various old publications; and two anonymous referees for their comments on the manuscript.

References


Butler, A. G. 1881. Illustrations of typical specimens of Lepidoptera Heterocera in the collection of the British Museum, Part V. – London (Trustees of the BMNH), xii + 74 pp., pls LXXVIII–C.
Distant, W. L. 1892. Contributions to a knowledge of the entomology of the Transvaal. – Annals and Magazine of Natural History (6) 10: 407–408.


Hampson, G. F. 1918. Some small families of the Lepidoptera which are not included in the key to families in the catalogue of Lepidoptera Phalaenae, a list of the families and subfamilies of the Lepidoptera with their types and a key to the families. – Novitates zoologicae 25: 366–394.


Nota lepid. 30 (2): 315–327


Moore, F. 1883. The Lepidoptera of Ceylon, vol. II. – London (L. Reeve); 162 p. + pls. 72–143.


Vári, L., D. M. Kroon & M. Krüger 2002. Classification and checklist of the species of Lepidoptera recorded in southern Africa. – Sasolburg (the authors), Chatswood (Simple Solutions Australia), xxi + 385 pp.


