New synonyms and several nomenclatural clarifications on family-group names in the Aphididae (Hemiptera Sternorrhyncha)

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Abstract

In the context of the preparation of Part of the List of Available Names of the family group taxa of the superfamily Aphidoidea for submission to the International Commission on Zoological Nomenclature new synonyms have been detected and several nomenclatural problems have been clarified. Three new objective synonymies are established: Drepanosiphoninae Börner, 1944 syn. nov. of Drepanosiphinae Herrich-Schaeffer, 1857, Macrosiphonini Börner, 1952 syn. nov. of Macrosiphini Wilson, 1910 and Trichosiphonini Börner & Heinze, 1957 syn. nov. of Trichosiphini Wilson, 1910. A subjective synonymy is established: Asiphonaphidina Börner, 1952 syn. nov. of Rhopalosiphina Mordvilko, 1914. Dasiina van der Goot, 1918 is an objective invalid name, and it must be replaced, if is necessary by Baizongina Börner, 1944(1914). Nomenclatural status affecting the names Tetraneuriden, Tycheinae, Pteroclorini and Macrosiphini are clarified: Tetraneuriden is an available name, it is a valid name in some classifications but a junior subjective synonym in others; Tycheinae is an available but objective invalid name; Pteroclorini is an available but objective invalid name; and Macrosiphini Wilson, 1910(1887) takes the date of Nectarophorini Oestlund, 1887. Also the authorship and date of nomenclatural acts in the chapter on Aphids in the Handbuch der Pflanzenkrankheiten, 1932, are clarified.

Key words: Aphids, Aphididae, family-group names, new synonyms

Introduction


Some time ago we undertook the preparation of Part of the List of Available Names of the family group taxa of the superfamily Aphidoidea, under the rules of the Art. 79 of the International Code of Zoological Nomenclature (International Commission on Zoological Nomenclature 1999). This Part was approved by the aphidologist present at the Seventh International Symposium on Aphids (Fremantle, Western Australia, Australia, October 2005). Later (December, 2005), the Part was formally presented to the International Commission on Zoological Nomenclature. The Part has been receipted by the Commission for discussion (Art. 79.2.1), the first step for notification, consultation and voting by the Commission (Art. 72.2.2).

During the project to prepare this Part, we have detected several names that are not included in the list by Nieto Nafría et al. (1998a), and the successive additions, and we have revisited some nomenclatural problems.

New synonymies

Three names are new objective synonymies [I.C.Z.N articles 61.3.2. and 61.3.3.]: Drepanosiphoninae Börner, 1944 [page 214] is syn. nov. of Drepanosiphinae Herrich-Schaeffer, 1857 [page VII], Macrosiphonini Börner, 1952 [page 157] is syn. nov. of Macrosiphini Wilson, 1910 [page 317], and Trichosiphonini Börner & Heinze,
1957 [page 71] is syn. nov. of Trichosiphini Wilson, 1910 [page 316]. The name of the type genus of each one, respectively are (1) Drepanosiphon Börner, 1931 (genitive drepanosiphonis, root drepanosiphon) and an unjustified emendation of Drepanosiphum Koch, 1855 (genitive drepanosiphi, root drepanosiph); (2) Macrosiphon Börner, 1931 (genitive macrosiphonis, root macrosiphon) and an unjustified emendation of Macrosiphum Passerini, 1860 (genitive macroisphi, root macrosiph); and (3) Trichosiphon Börner & Heinze, 1957 (genitive trichosiphis, root trichosiphon) and an unjustified emendation of Trichosiphum Pergande, 1906 (genitive trichosipi, root trichosiph) (Koch 1855; Herrich-Schaeffer 1857; Wilson 1910; Börner 1944, 1952; Börner & Schilder 1931; Börner & Heinze 1957).

Asiphonaphidina Börner, 1952 [page 244] syn. nov., is a subjective synonym of Rhopalosiphina Mordvilko, 1914, because Asiphonaphis Wilson & Davis, 1919 is currently included in the same subtribe as Rhopalosiphum Koch, 1854, the type genus of Rhopalosiphina (Mordvilko 1914; Börner 1952; Remaudière & Remaudière 1997).

Dasiina is an objective invalid name, because Dasia van der Goot is junior homonym of Dasia Gray, 1839 (Reptilia) [I.C.Z.N. article 39]. In addition, Dasiina van der Goot, 1918 [in Das, page 152] is a subjective syn. nov. of Baizongiina Börner 1944(1914), because Dasia van der Goot, 1918 is a synonym of Baizonia Rondani, 1848 (Das 1918; Börner 1944).

What is the priority date of Macrosiphini?

Siphonophorini Thomas, 1879, Nectarophorini Oestlund 1887 and Macrosiphini Wilson, 1910, are objective synonyms because Siphonophora Koch, 1855, Nectarophora Oestlund, 1887 and Macrosiphum Passerini, 1860 are objective synonyms [I.C.Z.N. article 61.3.2], as the type-species of all of these three genera is Aphis rosae Linnaeus, 1758 [I.C.Z.N. article 61.3.3], with Macrosiphum as a replacement name of the other two genus-names. Moreover, Siphonophorini is intrinsically an invalid name, because Siphonophora is a junior homonym of Siphonophora Fischer, 1823 (Cnidaria) and Siphonophora Brandt, 1837 (Diplopoda). According the I.C.Z.N. [article 40.2] Macrosiphini is the valid name for this taxon, and it take priority from its oldest synonym, 1887 (from Nectarophorini), not 1879, from Siphonophorini (Nieto Nafría et al. 1998a).

Tetraneuriden or Tetranevriden?

Herrich-Schaeffer (1854) wrote “Tetranevriden”, with “Tetranevra Hart.” as name-bearing genus. However, the name Tetranevra is an unjustified emendation by Agassiz (1846), though Herrich-Schaeffer attributed it to Hartig. Some authors, for example Börner (1952) and Heie (1980), wrote the name of the taxon with “u”, whilst Nieto Nafría et al. (2003) wrote it with “v”. The name should be written with “u” because «A family-group name is an incorrect original spelling and must be corrected if it is formed from an unjustified emendation of a generic name (unless the unjustified emendation has become a substitute name)» [I.C.Z.N. article 32.5.3.2], and «The correction of an incorrect original spelling in accordance with the article 32.5 is a “justified emendation”, and the name thus corrected retains the authorship and date of the original spelling» [I.C.Z.N. article 33.2.2].

Is Tycheinae an aphid taxon?

Koch (1857) described the genus Tychea and two species: Tychea graminis (pages 298-299, figures 365, 366a, 366b) and Tychea amycti (page 300, figure 367). The descriptions and illustrations are not detailed enough to clearly indicate which species the author was referring to. As the studied material was not kept (i.e. there is now no type material), we can only be sure of this by designating the neotype of each species. However, it is
evident that Koch had described and illustrated coccids (figures 365, 366a) and aphids in the genus Geoica Hart, 1894 (figure 366b), but using the name T. graminis. He described some aphids, possibly also in the genus Geoica, using the name T. amyclii. We now know that several species of coccids, and aphids belonging to the tribe Fordini, other tribes of Eriosomatinae or Anoeciinae coexist in the nests of aphidophilous ants: however, Koch (1857) believed that all the specimens collected together belonged to the same species, which is an understandable error, given the level of knowledge of aphids at that time.

Three years later, Passerini (1860) described five species (also radicicolous) of the genus Tychea: T. setulosa (currently Geoica setulosa), T. phaseoli (junior synonym of Smynthurodes betae Westwood, 1849), T. trivialis (junior synonym of Forda marginata Koch, 1857), T. eragostidis and T. setariae (both are in the group uricularia of the genus Geoica and possibly synonyms of some other species in this group (Remaudière & Remaudière 1997). Undoubtedly, Passerini (i) attributed the genus to Koch, (ii) did not mention either of the two species of Koch because his study dealt with Italian aphids and Koch’s species were German, (iii) did not intend to describe a new genus (Passerini clearly indicated his own taxa, and article 65.1 of the I.C.Z.N. must be applied, (iv) established the species type of the genus in an invalid nomenclatural act because the type-species should have been one of the two species of Koch and not Tychea phaseoli.

Passerini (1862) attributed again these five species to “Tychea Koch” and established the tribe Tycheinae exclusively for this genus.

Wilson (1910) validly designated Tychea graminis as the type-species, without adding any explanations or comments.

Börner (1930) corroborated the type-species established by Wilson, as have subsequent aphidologists, and established the synonymy between Tychea phaseoli Passerini, 1860 (now Smynthurodes betae Westwood) and T. graminis Koch, 1857. This has not been accepted by other authors as the viviparous apterous female (fig. 366b) in the description by Koch is not Smynthurodes betae. We are agree with this last opinion, because Koch illustrated an aphid as green-coloured, with short antennae and without long conspicuous setae on the body and appendages, but S. betae is dirty yellowish white-coloured and wax-dusted in life, it has more large antennae and long and conspicuous setae.

Eastop & Hille Ris Lambers (1976) stated that (i) Tychea Koch, 1857 (Type-species Tychea graminis Koch, 1857) is a coccid but they forgot that Koch described and illustrated both aphids and coccids under this taxon name, (ii) Tychea amyclii Koch, 1857 is nomen dubium, (iii) there is a genus Tychea Passerini (junior homonym of Tychea Koch, type-species Tychea phaseoli Passerini, 1859 (= Smynthurodes betae Westwood, 1849), and junior synonym of Smynthurodes Westwood, 1849). But as has been demonstrated there is no such genus of Passerini and neither can it be stated that T. graminis is a coccid or an aphid while its neotype is not designated. For the moment it is regarded as a coccid and, at the same time, an aphid, in other words, it is nomen dubium!

Remaudière & Remaudière (1997) (i) followed what was indicated by Eastop & Hille Ris Lambers (1976), (ii) placed Tychea Passerini amongst the synonyms of Smynthurodes Westwood, (iii) included Tychea Koch (Coccoidea) in the unavailable genera. This is not nomenclaturally correct, though, and in fact the name should not be used because its taxonomic significance is not clear.

Nieto Nafría et al. (1998b) also sustained the existence of Tychea Passerini as a junior homonym of Tychea Koch and thus [I.C.N.Z. article 39] consider Tycheinae Passerini as an unavailable name.

Nieto Nafría et al. (2003) maintained that Tycheinae Passerini was invalid, though they wrote «Tychea Koch, 1857 sensu Passerini, 1860 (mistaken identity)» in the list of synonyms of Smynthurodes. We cannot actually say whether Passerini was mistaken in his generic identification of the observed specimens or whether his taxonomical of Tychea concept was correct. In any case, this discrepancy does not affect the point in question because Passerini not established a new genus named Tychea.

In conclusion: (1) the type genus of Tycheinae Passerini is Tychea Koch and is not the “non-existent” Tychea Passerini, (2) Tychea Koch is nomen dubium and not necessarily only a coccid or only an aphid, and (3) Tycheinae Passerini is an available name, but also nomen dubium referring to either coccids or aphids.
Pteroclorini or Pterochlorini?

Mordvilko (1914) established the tribe name “Pterochlorini”, *Pterochlorus* Passerini being the name-bearing genus. However, *Pterochlorus* is an unjustified emendation of *Pteroclorus* Rondani, 1848 (Passerini 1860), as recognised by most aphidologists, for example, Börner (1952) and Eastop & Hille Ris Lambers (1976); and the fact that Nieto Nafría *et al.* (2003: 308) considered *Pterochlorus* as a mistake for *Pteroclorus*.

Baker (1920) used *Pterochlorina* as a valid subtribe name, and Nieto Nafría *et al.* (1998a) considered it a junior synonym of Lachninae, also writing it with “ch”. However, the correct spelling of the taxon is *Pteroclorini*, because «A family-group name is an incorrect original spelling and must be corrected if it is formed from an unjustified emendation of a generic name (unless the unjustified emendation has become a substitute name)» [I.C.Z.N. article 32.5.3.2], and «The correction of an incorrect original spelling in accordance with the article 32.5 is a “justified emendation”, and the name thus corrected retains the authorship and date of the original spelling» [I.C.Z.N. article 33.2.2].

However, on the other hand *Pteroclorini* is an objective invalid name because it comes from the name of the genus which is an objective synonym of another genus, *Lachnus* Burmeister, 1835.

Börner & Schilder or Börner? 1931 or 1932?

The work by Börner & Schilder as a chapter in the well-known *Handbuch der Pflanzenkrankheiten*, 1932, often simply named “the Sorauer”, referring to the name of the renowned German entomologist, is attributed to this year. The descriptions of taxa in this book have sometimes been attributed to both authors (for example Nieto Nafría *et al.* 2006) or to the first only (for example Börner 1952; Remaudière & Remaudière 1997); but there are some discrepancies regarding the date. The most common one is 1932 but Börner (1952) gives two versions, he writes «*Aphis ruborum* CB. 1932», «*Belochilum* CB. 1932» and «*Belochilum inulae* [Pass. errore] CB. 1931/1932», and this work appears in the references «(1931) 1932». The same occurred with other nomenclatural acts such as new combinations.

G. Remaudière has a separate or offprint of the study with a dedication by Börner himself. The following can be read in seven lines on the first un-numbered page: «Sonderabdruck aus // Sorauers Handbuch der Pflanzenkrankheiten // Fünfter Band // Tierische Schädlinge an Nutzpflanzen. II. Teil // Vierte Auflage // Verlag von Paul Parey in Berlin // 1931».

Therefore, and applying article 21.8 of the I.C.Z.N., the nomenclatural valid date is 1931.

The seventh footnote of the first page of this study states: «Ersterer [Börner] bearbeitete Systematik, Biologie und Illustration, beide Bekämpfung und Literatur. Rektifizierte Schreibweise von Gattungs- un Artnamen bei Abweichung vom Original nach Börner (Zool. Anz. 1931)», and in the mentioned separate Börner wrote: «nicht publizie…». We have verified this to be correct, as the publications by Börner in “Zool. Anz” do not contain the information referred to, which in any case would only be a reiterated nomenclatural act.

In conclusion: (1) the publication by Börner and Schilder corresponds to 1931 and not 1932. To avoid confusion in this article and in future, we will refer to it as “Sorauer Handbuch der Pflanzenkrankheiten” and not “Handbuch der Pflanzenkrankheiten. Begründet von Paul Sorauer” indicating that it is a separate and (2) nomenclatural acts, including the descriptions of some taxa (*Aphis ruborum*, *Belochilum*, *Belochilum inulae*) should be exclusively attributed to Börner.

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References


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