

Names established by C.S. Rafinesque (1815) in Heteroptera

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The text on Heteroptera from the poorly known publication by Rafinesque (1815) is reproduced. The family-group and genus-group names of Heteroptera in this work are examined, and their nomenclatural status is discussed.

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C.S. Rafinesque or Rafinesque-Schmaltz (1783-1840) is known by his taxonomic publications in various groups of animals and plants, both from Europe (mainly Sicily) and the USA. In 1815 he published a pamphlet containing a review of the generic and suprageneric classification of all plants and animals, with many new names (Rafinesque, 1815). The work is extremely rare, it is known to us from a photostat copy in the library of the Natural History Museum, London (formerly British Museum of Natural History). The text on Heteroptera is reproduced below.

[p. 119] “V. O. HEMIPTERIA. Les Hémiptères.

1. Sous-Ordre. STYRELYTRA. Les *Styrelytes*. Elytres croissées, ordinairement coriaces ou épaisses, bec naissant du front.

28. Famille. PHYTADELGIA. Les *Phytadelges*. Tarses à trois articles, pattes non propres à nager, antennes découvertes, droites, claviformes ou filiformes, bec droit.

1. S. F. TETYRIDIA. Les *Tétyrides*. Antennes à 5 articles. G. 1. *Tetyris* Fabr. 2. *Thyreocoris* Schrank. 3. *Scutellera* Lam. 4. *Alcinoe* R. sp. do. 5. *Canopus* Fabr. 6. *Pentatoma* Ol. 7. *Aeliana* R. 8. *Aelia* Fabr. 9. *Edessa* Fabr. 10. *Cydnus* Fabr.

2. S. F. CORIDIA. Les *Coridiens*. Antennes à 4 articles, le second article des tarses le plus petit. G. 11. *Coridus* R. 12. *Coreus* Fabr. 13. *Coriscus* Schrank sp. do. 14. *Alydus* Fabr. 15. *Polyxoia* R. sp. do. 16. *Leides* Latr. 17. *Berysus* Fabr. 18. *Lyginus* R. 19. *Lygeus* Fabr. 20. *Pandareus* R. sp. do. 21. *Psaphonus* R. sp. do. 22. *Tharops* R. sp. do. 23. *Saldarius* R. sp. do. 24. *Capsocerus* R. 25. *Capsus* Fabr. 26. *Pachycerus* R. sp. do. 27. *Myrisus* R. 28. *Myris* Fabr. 29. *Pyrechnus* R. sp. do. 30. *Phryxus* R. sp. do. 31. *Myodocha* Latr. 32. *Podicerus* Dum.

3. S. F. TINGIDIA. Les *Tingidiens*. Antennes à 4 articles, le premier article des tarses le plus petit. G. 28. *Phymata* Latr. 29. *Systis* Fabr. 30. *Tingis* Fabr. 31. *Aradus* Fabr. 32. *Macrocephalus* Swed. 33. *Amathusa* R. 34. *Acanthia* Latr. 35. *Leptopus* Latr.

29. Famille. ZOADELGIA. Les *Zoadelges*. Tarses à trois articles, le premier le plus petit, pattes non propres à nager, antennes découvertes, sétacées couchées plus longues de la tête, bec arque.

1. S. F. CIMEXIA. Les *Cimexiens*. Corps non [p. 120] filiforme ni linéaire ordinairement arrondi. G. 1. *Cimex* L. Latr. 2. *Nabis* Latr. 3. *Reduvius* Fabr. 4. *Aulonius* R. sp. do. 5. *Petalochirus* Palissot.

2. S. F. ZELESIA. Les *Zélésiens*. Corps filiforme, ou linéaire. G. 6. *Zelesus* R. 7. *Zelus* Fabr. 8. *Ploioaria* Scop.

30. Famille. HYDRODELGIA. Les *Hydrodelges*. Tarses à un ou deux articles, pattes ordinairement propres à nager, antennes ordinairement cachées et plus courtes de la tête.

1. S. F. PLOTERIDIA. Les *Plotériens*. Antennes plus longues que la tête et saillantes. G. 1. *Hydrometra* Latr. 2. *Gerrys* Latr. 3. *Ploteris* R. 4. *Velia* Latr.

2. S. F. HYDRORIDIA. Les *Hydroridéens*. Antennes cachées plus courtes que la tête. G. 4. *Pelagonus* Latr. 5. *Galgulus* Fabr. 6. *Belostoma* Latr. 7. *Naucoris* Geoff. 8. *Neparia* R. 9. *Nepa* L. 10. *Ranatra* Fabr. 11. *Notonecta* L. 12. *Corixa* Geoff. 13. *Sigara* Fabr.”

Rafinesque’s work contains six available family-group names in Heteroptera, all of them used by him for subfamilies (HYDRORIDIA is unavailable as it is not based on a generic name):

TETYRIDIA Rafinesque, 1815 (type genus *Tetyra* F., misspelt as *Tetyris*) is of the same year as SCUTELLERIDAE Leach, 1815 and earlier than PACHYCORINAE Amyot & Serville, 1843 and its synonym TETYRINAE Amyot & Serville, 1843;

CORIDIA Rafinesque, 1815 (type genus *Coridus* Raf. = *Coreus* F.) is of the same year as COREIDAE Leach, 1815;

TINGIDIA Rafinesque, 1815 (type genus *Tingis* F.) is earlier than TINGIDAE Laporte, 1832 (or Westwood, 1840, or Costa, 1843);

CIMEXIA Rafinesque, 1815 (type genus *Cimex* L.) is already placed in the Official Index of Rejected and Invalid Family Names in Zoology as incorrect subsequent spelling of CIMICIDAE Latreille, 1804;

ZELESIA Rafinesque, 1815 (type genus *Zelus* Raf. = *Zelus* F.) is earlier than HARPACTORINAE Amyot & Serville, 1843 and its synonym ZELINAE Amyot & Serville, 1843;

PLOTERIDIA Rafinesque, 1815 (type genus *Plotaris* Raf. = *Velia* Latr.) is earlier than VELIIDAE Brullé, 1836.

The family-group names established by Rafinesque were never used later. If they will be accepted, this will lead to the change of three names (TETYRINAE instead of PACHYCORINAE, ZELESINAE instead of HARPACTORINAE, and PLOTERIDIDAE instead of VELIIDAE) and of the accepted authorship of one name (TINGIDAE). It is clear that the discussed Rafinesque's names should be referred to the Commission for suppression, and the authors are working on such a proposal. Fortunately, Leach (1815) was published in April and Rafinesque (1815) between April and July 15 (Thompson et al., 1999), and thus, the Leach's names SCUTELLERIDAE and COREIDAE have priority.

Most generic names in Rafinesque (1815) are those established earlier by other authors, some of them cited by him using incorrect spelling (*Leides* for *Neides*, *Berysus* for *Berytus*, *Systis* for *Syrtris*, etc.). The new names are marked with "R." Ten of them are unavailable because they are not provided with description or indication (*Alcinoe*, *Polyxoa*, *Pandareus*, *Psaphonus*, *Tharops*, *Saldarius*, *Pachycerus*, *Parechnus*, *Phryxus*, and *Aulonus*).

Only ten of Rafinesque's generic names are available, because they are provided with a citation of an earlier available name in synonymy. Sherborn (1922-1933) and Neave (1939-1940) considers these names as emendations, but they are rather unnecessary new replacement names, as their spellings considerably differ from those of the replaced names. All of the 10 names are junior objective synonyms: *Aeliana* Rafinesque,

1815 of *Aelia* Fabricius, 1803, *Halysius* Rafinesque, 1815 of *Halys* Fabricius, 1803 (misspelled by Rafinesque as *Halis*), *Coridus* Rafinesque, 1815 of *Coreus* Fabricius, 1794, *Lyginus* Rafinesque, 1815 of *Lygaeus* Fabricius, 1794 (misspelled as *Lygeus*), *Capsocerus* Rafinesque, 1815 of *Capsus* Fabricius, 1803, *Myrisus* Rafinesque, 1815 of *Miris* Fabricius, 1794 (misspelled as *Myris*), *Amathusa* Rafinesque, 1815 of *Acanthia* Fabricius, 1775 (as "Acanthia Latr."; see further discussion), *Zelus* Rafinesque, 1815 of *Zelus* Fabricius, 1803, *Plotaris* Rafinesque, 1815 of *Velia* Latreille, 1804, and *Neparia* Rafinesque, 1815 of *Nepa* Linnaeus, 1758.

The generic names by Rafinesque were mostly overlooked in the heteropterological literature, and only some of them were mentioned as junior synonyms in catalogues in the second half of the 20th century. Of these names, only *Amathusa* deserves a discussion. As Rafinesque gave no explanation for the authorship used by him, it may be argued that *Amathusa* is a junior synonym of *Acanthia* Fabricius, which in turn is a junior synonym of *Cimex* Linnaeus, 1758. On the other hand, it may be speculated that the indication of Latreille instead of Fabricius by Rafinesque was intentional and *Amathusa* should be considered a replacement name for *Acanthia* sensu Latreille (for which Latreille (1810) designated *Cimex saltatoria* Linnaeus, 1758 as type species), and, hence, a senior synonym of *Saldula* Van Duzee, 1914. This opinion is supported by the fact that Rafinesque indicated as author Latreille instead of Fabricius for two genera, *Acanthia* and *Gerris* (misspelled as *Gerrys*); both were used by Latreille (1796) in a restricted sense, for saltids and water striders, respectively (Fabricius used the both names for a mixture of species belonging to unrelated families). We do not consider that the latter treatment obligatorily follows from the Code, but in the event that somebody will accept it, we reject *Amathusa* under provisions of Art. 23.9.2: *Amathusa* was never used as a valid name, whereas *Saldula* was used in numerous works (much more than the required 25 works by 10 authors) in the last 50 years (see Schuh et al., 1987 for references).

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