

The analysis supported the monophyly of the Nearctic genus *Hymetta* and the subgenera *Erythridula*, *Erythroneura* (s.s.) and *Erasmoneura*, but indicated that *Eratoneura* gave rise to *Erythroneura* and suggested that *Arboridia* (sensu lato), *Erythroneura* (sensu lato), and *Zygina*, as currently defined, are polyphyletic. The New World species currently placed in *Zygina* did not group with Old World representatives of the genus, but instead formed two groups corresponding to the informal “*ceonothana*” and “*ritana*” species groups recognized by Young (1952). Some newly discovered undescribed erythroneurine species from Mexico and South America were placed in separate lineages and should therefore be placed in new genera. These results indicate that substantial revisions to the classification of New World Erythroneurini are needed.

References

- Dworakowska, I. 1970.** On the genus *Thaia* Ghauri (Homoptera, Cicadellidae, Typhlocybinæ). Bull. Acad. Pol. Sci., Biol. 18: 347-354.
- Hepner, L. W. 1966.** Twenty new species of *Erythroneura* related to *Erythroneura bigemina* (Homoptera: Cicadellidae). J. Kans. Entomol. Soc. 39: 78-89.
- Ross, H. H. 1965.** The phylogeny of the leafhopper genus *Erythroneura* (Hemiptera, Cicadellidae). Zoologische Beiträge 11: 247-270.
- Young, D. A. 1952.** A reclassification of Western Hemisphere Typhlocybinæ (Homoptera, Cicadellidae). University of Kansas Science Bulletin 35: 1-217.

The phylogenetic relationships among the higher taxa of the Dictyopharidae (Hemiptera: Fulgoroidea)

Leo R. Donovall, University of Delaware, Newark, DE 19716 USA, donovall@udel.edu;

Charles R. Bartlett, University of Delaware, Newark, DE 19716 USA, bartlett@udel.edu

The planthopper family Dictyopharidae consists approximately 489 species in 119 genera worldwide (Metcalf 1946, O'Brien and Wilson 1985). Traditionally, the family consists of 2 subfamilies and four tribes: the Orgeriinae with two tribes, the Orgeriini (31 gen., 108 sp., Mediterranean, Palearctic and North American) and the Lyncidini (5 gen., 8 sp., African), and the Dictyopharinae with two tribes, Cladodipterini (3 gen., 14 sp., Central and South American) and Dictyopharini (74 gen., 350 sp., Cosmopolitan). These designations are primarily based on overall morphological similarities with few inferences of primitive or advanced characters. Emeljanov (1983) further divided the Dictyopharini into 9 tribes based on fossil evidence, though many modern genera were not treated in his tribal designations. Currently, analyses of the phylogenetic relationships among the higher taxa are lacking and the higher taxonomy of the group remains unclear.

Here we present a portion of an ongoing research project on the phylogeny of the Dictyopharidae. Included are the preliminary results of morphological maximum parsimony analyses (using PAUP*, version 4.0b1) of relationships among the higher taxa of the Dictyopharidae. Our analyses includes representatives of all 4 traditional tribes, as well as representatives of 7 of 8 of Emeljanov's tribes, using the sister taxon Fulgoridae as an outgroup. The results will be used as a guideline in determining phylogenetic and taxonomic relationships between the genera within the traditional tribe Dictyopharini, with emphasis on New World Groups.

References

- Emeljanov, A. F. 1983.** Dictyopharidae from the Cretaceous deposits on the Taymyr Peninsula (Insecta, Homoptera). Paleontologicheskii Zhurnal 1983(3): 79-85 (Translated in: Paleontological Journal 17(3) 1983[1984]: 77-82).
- Metcalf, Z. P. 1946.** General Catalogue of the Hemiptera. Fascicle IV, Fulgoroidea, Part 8 Dictyopharidae. Smith College, Northhampton, Massachusetts. 246 pp.
- O'Brien, L. B. and Wilson, S. W. 1985.** Planthopper Systematics and External Morphology. Pp. 61-102. In: Nault L.R. and Rodriguez, J.G. (Eds.). *The Leafhoppers and Planthoppers*. John Wiley and Sons, New York.

Auchenorrhyncha on Postage Stamps of the World from 2000-2005

Paul H. Freytag, Department of Entomology, University of Kentucky, Lexington, KY 40506 USA;
pfreytag@ix.net.com

The Auchenorrhyncha on postage stamps of the world up to the 21st Century was covered in a paper at the Wales meeting in 1999, and was published the next year (Freytag, 2000). At that time the stamps that were known to have been issued up to and through 1999 were covered.

Results

There have been 24 stamps issued with Auchenorrhyncha on them in the last five years. Included are 15 with cicadas on them (at least one each year), 1 with a spittlebug, 7 with planthoppers and 1 with a leafhopper. Many of these will be illustrated in the format, or formats, in which they were issued. Also, a new up-to-date list of the Auchenorrhyncha on postage stamps will be available for those who are interested.

Freytag, P. H. 2000. Auchenorrhyncha on Stamps. *Biophilately* 49(1): 55-56.

New Records of Membracidae (Hemiptera: Membracoidea) in Costa Rica

Carolina Godoy, Instituto Nacional de Biodiversidad (INBio), Ap. 22-3100 Santo Domingo, Heredia, Costa Rica, cgodoy@inbio.ac.cr; **Ximena Miranda**, Escuela de Biología, Universidad de Costa Rica, San Pedro de Montes de Oca, San José, Costa Rica, ximenamiranda@hotmail.com; **Kenji Nishida**, Escuela de Biología, Universidad de Costa Rica, San Pedro de Montes de Oca, San José, Costa Rica, knishida@cariari.ucr.ac.cr and kenji.nishida@gmail.com

Treehoppers use several groups of herbaceous and woody plants as hosts, including both gymnosperms and angiosperms (none are known from ferns). The degree of host specialization varies considerably, including some species that are specialists (monophagous; i.e. utilizing plants in just one plant genus) and others that are generalists (polyphagous). The latter range from those that utilize plants in related genera to those that use plants belonging to different families (Ballou 1936; Dietrich and Dietz 1991; Wood, 1984; 1993). A better understanding of patterns of host plant utilization by Membracidae requires more field observations, especially in tropical regions, as well as a careful distinction between plants harboring only adults versus those harboring all developmental stages. In this study new host plant records are presented for 28 genera of Membracidae occurring in Costa Rica.

Methods and Materials

This study was carried out in various regions of Costa Rica and involved searching for plants harboring both adults and eggs and/or nymphs. Specimens of the host plants were collected for later identification by botanists at the National Biodiversity Institute of Costa Rica (INBio) or at the University of Costa Rica. Membracids were identified to species, either named species or morphospecies, and in both cases voucher specimens are deposited in the membracid collection at INBio.

Results and Discussion

Adults with eggs and/or nymphs of 28 membracid genera were collected from 44 species of plants, belonging to 22 families. The plant family from which most treehoppers were collected was Asteraceae with 14 records, followed by Fabaceae and Melastomataceae with 8 records each. Treehopper genera with the most host records include *Membracis*, collected from 8 plant families and *Bolbonota* from 5 families. The results of this study, together with a summary of host records from the literature, will be included in an illustrated guide to neotropical treehoppers (Godoy *et al.*, 2005)

References

- Ballou, C. H. 1935.** Insect notes from Costa Rica in 1934. *The Insect Pest Survey Bulletin* 15: 163-212.
- Dietrich, C. H.; Deitz, L. L. 1991.** Revision of the Neotropical treehopper tribe Aconophorini (Homoptera: Membracidae). *North Carolina Agricultural Research Service Technical Bulletin* 293: 1-134.
- Godoy, C. Miranda, X. Nishida, K. 2005.** Treehoppers of America Tropical. INBio Editorial (In Press) .
- Wood, T. K. 1984.** Life history patterns of tropical membracids (Homoptera: Membracidae) *Sociobiology* 8: 299-344.
- Wood, T. K. 1993.** Diversity in the New World Membracidae. *Annual. Review of Entomology* 38: 409-435.