

A Review of the Taxonomy and Systematics of New World Delphacidae (Hemiptera : Fulgoroidea)

Bartlett C. R.

University of Delaware, Department of Entomology and Wildlife Ecology
Bartlett@udel.edu

The New World Delphacidae consists of approximately 100 genera and 571 species, distributed approximately equally between the Nearctic and Neotropical region (Table 1). The higher systematics of the Delphacidae was recently investigated by Urban and colleagues (in press) using a combination of molecular (18S, 28S, Wg, CO1) and morphological data. Their results generally support the hypothesis of Asche (1990), except mainly that the Asiracinae (s.l.) did not sort into the expected clades. Within the Delphacini, Urban and colleagues suggest at least 3 clades, with differing tendencies with respect to host plants. The status of the higher taxonomy is reviewed with particular reference to New World taxa.

New World Delphacidae currently lacks modern identification tools; however, Lucid3 interactive online keys are currently under development for Nearctic taxa, including potentially invasive species. In addition to Lucid3 keys, an online interactive morphology guide, extensive bibliography (PDF library planned), and an online information system are being compiled (see web reference below). As part of the development of online interactive identification tools, revisionary taxonomic efforts are primarily directed at partitioning the polyphyletic New World *Delphacodes* species (s.l.) into monophyletic clades. In addition to *Delphacodes*, there are several other outstanding taxonomic or nomenclatural challenges remaining in addition to many new taxa, particularly from the Neotropics.

Table 1. Number of genera and species of New World Delphacidae

Higher taxon	Nearctic	Neotropical (#genera/#species)	All New World
Asiracinae s.l.	2/6	11/48	8/52
Plesiodelphacinae	0/0	2/7	2/7
Kelisiinae	1/12	1/1 ¹	1/12
Stenocraninae	3/16	4/10	5/24
Delphacinae: Saccharosydniini	1/1	3/9	3/9
Delphacinae: Tropidocephalini	0/0	5/20	2/20
Delphacinae: Delphacini	54/303	44/209	73/446
Total	61/338	67/304	100/571

Web reference: <http://ag.udel.edu/enwc/research/delphacid/index.html>.

References

- Urban, J. M., Bartlett, C. R., and J. R. Cryan. in press. Evolution of Delphacidae (Hemiptera: Fulgoroidea): Combined-evidence phylogenetics reveals importance of grass host shifts. *Systematic Entomology*.
- Asche, M. 1990. Vizcayinae, a new subfamily of Delphacidae with revision of *Vizcaya* Muir (Homoptera: Fulgoroidea) - a significant phylogenetic link. *Bishop Museum Occasional Papers* 30: 154-187.

¹ *Kelisia vittata* Muir, 1926 is misplaced at the genus and tribal level.