



Synopsis of *Clinonana* Osborn (Hemiptera: Cicadellidae: Iassinae): new distributional records and description of a new species

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Abstract

Based on the study of over 100 specimens, the apparently rare leafhopper genus *Clinonana* Osborn, 1938 is redescribed, new distributional records are given, a new species is described, and a taxonomic key to all three species is given. The internal female genitalia of *C. mirabilis* (Spångberg, 1878) and *C. impensa* Kramer, 1966 are described and illustrated for the first time and no diagnostic characteristics to distinguish females of these species were found. *Clinonana impensa* is newly recorded from Bolivia and *Clinonana mirabilis* is newly recorded from Bolivia, Peru, Suriname, and from the Brazilian states Amazonas, Maranhão, Mato Grosso, and Rondônia. *Clinonana rafaelli* sp. nov. is described from Rondônia (Brazil) and may be distinguished from other *Clinonana* species because of the following characteristics: (1) pronotum width up to 1.8 times as broad as greatest visible width of mesonotum; (2) styles in lateral view with ventral concavity in median portion; and (3) aedeagus preatrium with basal processes not extending to apex of shaft.

Key words: Amazon, biodiversity, Gyponini, taxonomy, new species

Introduction

The approximately 1,300 species of the cicadellid tribe Gyponini are restricted to the New World and classified in 49 genera (and 89 subgenera), with 85% of genera endemic to the Neotropical Region and 8% to the Nearctic Region (Nielson & Knight, 2000; Oman *et al.*, 1990). Members of Gyponini have a well-delimited crown margin; ocelli on the crown distant from the anterior margin; and hindwing veins R4+5 and M1+2 free (Dietrich, 2005). It is believed that the group originated in the Cretaceous and radiated in the Neotropical region after the separation of Africa from South America. Dispersal into the Nearctic region probably occurred after the rise of the Panamanian isthmus during the Eocene (Nielson & Knight, 2000). Gyponini was erected by Stål (1870) at the subfamilial rank and treated this way for many years. Linnavuori & Quartau (1975) first proposed that the group be treated as a tribe of the cosmopolitan subfamily Iassinae.

Clinonana was erected by Osborn (1938) based on the type-species, *C. magna* Osborn, 1938, and *C. declivata* Osborn, 1938 and included in Gyponini. However, Kramer (1966) excluded the latter species from *Clinonana* based on unpublished correspondence with DeLong and Freytag, who later transferred it to a new genus *Clinonella* (DeLong & Freytag 1971). In his revision of the New World Ledorinae, Kramer (1966) transferred the genus to Ledorinae based on the hind femur setal formula of the type-species of *Clinonana* (2-1-0). He also synonymized *Clinonana magna* with *Gypona mirabilis* Spångberg, 1878 and described a second *Clinonana* species, *C. impensa* Kramer, 1966.

Evans (1969) disagreed with Kramer's placement of the genus in Ledorinae, stating that although *C. mirabilis* shared the hind femoral setal formula with other ledrines, it should be placed in Gyponini because of characteristics of head shape, tegmina, and genitalia. Forty years later Jones & Deitz (2009) conducted a phylogenetic analysis of the ledrines and recovered *Clinonana* near *Gypona* Germar and argued that the similarities shared by *Clinonana* and ledrines could be considered plesiomorphies, ecological convergence, or both.