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The old-world Zygonini tr. nov. (Hemiptera, Cercopoidea, Clastopteridae), with new taxa from the related Machaerotinae

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Abstract

Three new species of old-world Clastopteridae belonging to Machaerotinae are described, two in new monobasic genera: *Allox transfigurata* (Hindolini) from Borneo and *Irridiculum deformatum* (Machaerotini) from Sulawesi. One new species *Machaeropsis dramatica* (Hindolini) is described from Borneo. It is the first male known from the genus and shows that *Machaeropsis* Melichar is not synonymous with *Metaenderleinia* Lallemand. Five other new species are described, belonging to a new, related tribe Zygonini. Two of these new species (*Ambonga lanceolata* and *Pseudomachaerota cucullata*) belong to formerly monobasic genera from Madagascar incorrectly assigned to Cercopidae and Aphrophoridae respectively. These are related to 3 new genera: (1) from Madagascar, *Pseudoclastoptera* with new species *P. irrubesco* and *P. invidia*; from sub-Saharan Africa, (2) *Zygon* with 1 new species *Z. desegregatum*, and (3) *Hemizygon*, the latter with 2 new combinations from *Pseudomachaerota*: *H. grande* (Maa) and *H. saturnus* (Linnavuori). *Zygon* is possibly the most basal genus in Clastopteridae, according to its remarkable antennal characters with 5 different types of sensilla that show how basiconic and coeloconic sensilla are homodynamous. Genera related to *Zygon* are widely divergent from other spittlebugs as measured by mDNA “barcode” data from the COI gene.

Key words: Cercopoidea, Clastopterinae, Machaerotinae, Zygonini, new genera, new species

Introduction

Froghoppers or Cercopoidea are insects needing extensive revisionary work because published information on the world fauna of approximately 3000 described species remains in a rudimentary state. Very few species, even among the most distinctive genera, have been adequately characterized and illustrated and there are many taxa that are new to science or poorly known. Even the higher taxa are only provisional and require a phylogenetic framework.

The first stage in discussing the complexities of the superfamily (Hamilton 2001) involved defining three monophyletic families: (1) a new family Epipygidae for rare neotropical insects previously assigned to *Aphrophora* Germar and *Eicissus* Fowler, (2) a broader definition of Clastopteridae to include “Machaerotidae,” and (3) redefinition of Cercopidae (to include “Aphrophoridae”) for insects known as “spittlebugs” whose nymphs produce large bubbles in plant sap. The reference to the family-group name Machaerotinae being published before Clastopteridae (Maa 1963) was shown to be erroneous, thus establishing Clastopteridae Dohrn (1859) as the name of the clade embracing Machaerotidae Stål (1866). This first contribution to this phylogenetic study also presented evidence that the tube-dwelling Machaerotinae and the spittle-producing Clastopterinae are linked by eight intermediate “aphrophorid” genera: *Abbalomba* Distant, *Beesoniella* Lallemand, *Grellaphia* Schmidt, *Nyanja* Distant, *Patriziana* Lallemand, *Pseudomachaerota* Melichar, *Sepullia* Stål and *Tremapterus* Spinola. Seven of these have greatly enlarged antennal ledges containing deep antennal pits like those of *Clastoptera* Germar. The exact position of the eighth, *Pseudomachaerota*, was not resolvable until examination of unsorted specimens from southern Africa in several collections found additional related genera, and recent surveys in Madagascar discovered still more examples that are described in this contribution.

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