



Taxonomic review of *Sphenoclypeana* and cladistic analysis of Ischnorhinini (Hemiptera, Cercopidae, Tomaspidae)

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Abstract

Ischnorhinini currently comprises nine genera: *Baetkia* Schmidt, *Homalogrypota* Schmidt, *Ischnorhina* Stål, *Laccogrypota* Schmidt, *Neosphenorhina* Distant, *Schistogonia* Stål, *Sphenoclypeana* Lallemand & Synave, *Tiodus* Nast, and *Typeschata* Schmidt. A phylogenetic analysis is presented for defining the relationship between the genera and between the species of *Sphenoclypeana*, and this genus is revised and two new synonymies are proposed and the monophyly of *Sphenoclypeana* was corroborated. The data matrix comprises 47 characters: 31 relating to the external morphology, 10 to male genitalia and six to female genitalia. The analysis resulted in one cladogram with 102 steps CI = 0.50 and RI = 0.66. (*Hyboscarta melichari* (*Monecphora cingulata* *Tunaima semiflava*) (*Schistogonia cercopoides* *Schistogonia sanguinea*) (*Neosphenorhina ocellata* *Neosphenorhina scombergi*) (*Ischnorhina unifascia* (*Homalogrypota interrupta* *Ischnorhina surinamensis*) (*Laccogrypota valida* (*Baetkia maroniensis* (*Baetkia compressa* (*Homalogrypota coccinea* (*Typeschata marginata* (*Sphenoclypeana parana* *Sphenoclypeana haematina*)))))))))

Key words: Monophyly, phylogeny, cladogram, spittlebugs, morphology

Introduction

The Cercopoidea (froghoppers) form the largest xylem-sap sucking insect group in the world (Carvalho & Webb, 2005). The insects belonging to the largest family (Cercopidae) are popularly known as "spittlebugs". They are easily characterized by their bright colors of the tegmina and by the presence of two lateral spines and an apical crown of spines in the hind tibia. Fennah (1968) divided the family into four tribes: Ischnorhinini, Tomaspidini, Hyboscartini and Naenini.

Ischnorhinini was described by Schmidt (1920) and a taxonomic review of their genera was made by Carvalho (1993). The tribe currently comprises 10 genera: *Baetkia* Schmidt, 1920 with three species; *Homalogrypota* Schmidt, 1920 including three species; *Ischnorhina* Stål, 1869 with five species; *Laccogrypota* Schmidt, 1920 with 18 species; *Neolaccogrypota* Lallemand, 1924 with one species; *Neosphenorhina* Distant, 1909 with five species; *Schistogonia* Stål, 1869 with five species, *Sphenoclypeana* Lallemand & Synave, 1952 currently has two species, *Tiodus* Nast, 1951 with six species and *Typeschata* Schmidt, 1920 including three species. Species of this tribe have the postclypeus compressed laterally, in profile forming an acute or right angle, with a lateral ridge extending from the angle toward the mandibular plate; the antennae with the basal body of the flagellum conical; the tegmina longer than wide, with venation slightly prominent; the femur of the hind leg with an inconspicuous spine on its inner face; the tibia with two lateral spines, the basal one shorter than those located in the apical crown; and the pygofer with a finger-like lateral process between the anal tube and the subgenital plate, which is short compared to the pygofer and may have a spiniform process at the apex and at the base of the subgenital plate. A phylogenetic analysis of Ischnorhinini is presented to clarify and propose a hypothesis of relationships among the genera of the tribe and to define the phylogenetic position of *Sphenoclypeana*, which is reviewed in this paper.