



Cladistic Analysis of *Kanaima* Distant, 1909 (Hemiptera, Cercopidae)

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Abstract

The *Mahanarva* group comprises five genera: *Sphenorhina*, *Aeneolamia*, *Pachypterinella*, *Kanaima*, and *Mahanarva* (*sensu lato*). A cladistic analysis is presented to define the relationship between these genera and subgenera, and the species of *Kanaima*, testing its monophyly. The data matrix comprises 18 taxa with 49 characters. The outgroup used in the analysis was *Neosphenorhina ocellata*. *Kanaima* is represented by six previously described species and a new species. Based on the phylogenetic analysis *Kanaima* is a polyphyletic group. The *Mahanarva* group is supported by three synapomorphies and the following relationships are recovered for the *Mahanarva* group: (*N. ocellata* (*S. rubra* ((*A. colon*, *A. postica*))) ((*M. (I.) rubripennis*, *M. (I.) integra*) (*K. vittata*, *K. fortunata*)) ((*K. dubia* (*K. radiata* (*M. (M.) liturata*, *M. (M.) consita*))) (*K. katzensteini* ((*K. n. sp.*, *P. fusca*) (*K. fluvialis*)))))). Based on the cladogram five new combinations are proposed: *Mahanarva (Ipiranga) fortunata* (Lallemand, 1924) n. comb.; *Mahanarva (Ipiranga) vittata* (Walker, 1851) n. comb.; *Mahanarva (Mahanarva) dubia* (Stancik & Cavichioli, 2003) n. comb.; e, *Mahanarva (Mahanarva) radiata* (Walker, 1851) n. comb.; *Kanaima fusca* (Lallemand, 1927) n. comb.

Key words: spittlebug, phylogeny, classification, taxonomy, distribution

Introduction

The Cercopidae, commonly referred to as spittlebugs, feed on the xylem of a wide variety of vascular plants, removing liquids and nutrients, and sometimes deforming plant tissues which may reduce plant fitness and value. A few species cause heavy economic damage in pastures and sugar-cane. The actual damage caused by spittlebugs to crops is underestimated. In Central America *Aeneolamia postica* Walker is known as a serious pest of the sugar-cane (*Saccharum officinarum*), maize (*Zea mays*) and rice (*Oryza sativa*). Spittlebugs also are associated with transmission of plant pathogens, being vectors of bacterial or fungal diseases.

According to the classification proposed by Schmidt (1920), Ischnorhininae comprises only New World species and can be differentiated from the Old World subfamily Cosmoscirtinae, by the following characters: (1) complete fusion of the subgenital plate to the pygofer; (2) subgenital plates joined in the basal portion or throughout their length; (3) first valvula of the ovipositor with basal processes that vary in size and form; (4) tibia of the posterior legs with two lateral spines.

The classification of Cercopidae is based on the work of Lallemand (1912), who emphasized the number of spines on the hind tibia, and characters of the head, pronotum and forewings. Using additional characters of the male and female genitalia Fennah (1968) proposed the most recent and widely accepted classification for the Cercopidae, which groups them into two subfamilies: Cercopinae (Old World) and Tomaspidinae (New World). He included a key to tribes and genera, with redescriptions. Tomaspidinae, is divided into four tribes: