



# Article

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## Revision of Neotropical aphrophorine spittlebugs, part 1: Ptyelini (Hemiptera, Cercopoidea)

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### Abstract

*Cephisus* Stål, formerly with only 3 recognized species, is now known from at least 10 species ranging from southwestern USA to Argentina. Eight are keyed and described, including *C. siccifolia* (Walker), the economic species in South America, *C. variolosus* (Walker), the common species in Central America, *C. brevipennis* **sp. nov.** and *C. laticeps* **sp. nov.** from Mexico, plus *C. magnificus* **sp. nov.** from Brazil; two other biological species were identified in the *C. variolosus* species complex from the results of genetic “barcoding.” These are differentiated from *Plinthacrus phaleratus*, *P. mexicanus* and *P. irroratus* (all described by Spinola in 1850) that are new synonyms of *Novaphrophara tasmaniae* Lallemand, 1940 (as *N. phalerata* **comb. nov.**), a species collected recently only in Madagascar. These two genera along with 6 others are placed in the redefined tribe Ptyelini (= Takagiinae **syn. nov.**) as sister-genus to the palaeartic genus *Cnemidanomia* Kusnezov (= *Takagia* Matsumura), suggesting a pre-Oligocene dispersal from the old world to the new. A preliminary key is provided to the families and tribes of Cercopoidea represented in the new world.

**Key words:** Cercopidae, Aphrophorinae, *Cephisus*, *Novaphrophara*, new species

### Introduction

Cercopidae (known in North America as “spittlebugs”) comprise the majority of the included species of new world Cercopoidea or “froghoppers.” The family is traditionally divided into two subfamilies, sometimes accorded family rank. Cercopinae are usually large and brightly colored (Carvalho and Webb 2005), and Aphrophorinae are generally somewhat smaller and brown-hued. Other spittlebug families in the new world are the common but tiny Clastopteridae and the rare, relict Epipygidae that has only four described species (Hamilton 2001) and about 30 others that await description and assignment to genera. The only tribe of new-world Aphrophorinae that has been revised is the Philaenini (Hamilton 1979) which is holarctic in distribution and, in the nearctic, is found from Canada south to the highlands around Mexico City.

The traditional subdivision of Cercopidae is convenient because it splits the world fauna roughly into two nearly equal halves. These subfamilies are, however, very unequally distributed. Cercopinae are dominant in equatorial localities, whereas Aphrophorinae comprise most of the spittlebugs of the holarctic and oceanic regions. Within these regions there are major faunal differences. The cercopoid fauna of New Zealand is composed entirely of 14 species of Aphrophorinae (Hamilton and Morales 1992). By contrast, the comparatively huge area of mainland Australia has only 12 species of Aphrophorinae (Evans 1966) representing 40% of the 30 species of their froghoppers, the remainder being split evenly between Cercopinae and the clastopterid subfamily Machaerotinae. In the new-world, almost all the species in Canada and the USA are Aphrophorinae (Doering 1929, 1930; Hamilton 1982) whereas Cercopinae are hugely diverse in the neotropics from low altitudes in Mexico to Argentina (Carvalho and Webb 2005). The only spittlebugs equally common in both North and South America are Clastopteridae.

Neotropical Aphrophorinae are both depauperate and mostly quite rare, and as a consequence are particularly in need of revision. Only a single neotropical aphrophorine species, *Cephisus siccifolia* (Walker), attains pest status