



# Article

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## CLADISTIC ANALYSIS OF NEOCOELIDIINAE (HEMIPTERA: CICADELLIDAE) WITH DESCRIPTION OF A NEW TRIBE

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### ABSTRACT

A cladistic analysis of Neocoelidiinae was conducted, including representatives of 31 genera of the 32 comprised in the subfamily (except *Krocarites* Dietrich & Vega, known from a single fossil species) to obtain a hypothesis of relationships among them. The analysis was based on a matrix with 71 terminal taxa, and 85 characters of external morphology and male genitalia. It yielded a single most parsimonious tree, in which Neocoelidiinae appears as a monophyletic group. All the genera constitute natural groups, except *Coelidiana* Oman, which appears as polyphyletic. *Krocodona* Kramer, *Krocozzota* Kramer, *Retrolidia* Dietrich, and *Krocolidia* Dietrich, constituted a distinct clade in Neocoelidiinae, and for this reason, herein a **new tribe**, Krocodonini, is established in the subfamily to include these taxa.

**Key words:** leafhoppers, neocoelidiines, morphology, phylogeny, taxonomy.

### RESUMO

Uma análise cladística de Neocoelidiinae foi realizada, incluindo 31 gêneros dos 32 atualmente pertencentes à subfamília (exceto *Krocarites* Dietrich & Vega, conhecido apenas de uma espécie fóssil) buscando uma hipótese de relacionamento entre os gêneros. A análise foi baseada em uma matriz com 71 táxons terminais e 85 caracteres de morfologia externa e genitália dos machos. Resultou em uma única árvore mais parcimoniosa, na qual Neocoelidiinae aparece como um grupo monofilético. Todos os gêneros constituem grupos naturais, exceto *Coelidiana* Oman, que aparece como polifilético. *Krocodona* Kramer, *Krocozzota* Kramer, *Retrolidia* Dietrich e *Krocolidia* Dietrich, constituíram um clado distinto dentro de Neocoelidiinae, e por este motivo, neste trabalho uma **nova tribo**, Krocodonini, é criada na subfamília para incluir estes táxons.

**Palavras-chave:** cigarrinhas, neocoelidíneos, morfologia, filogenia, taxonomia.

### Introduction

Neocoelidiinae comprises leafhoppers that can be found in fields and forests, on trees and bushes, many of them having a specific host (DeLong 1953; Kramer 1964a; Nielson & Knight 2000). Nearctic species were collected on plants of the following genera: *Pinus* Perry, *Acacia* Müller, *Rhus* L., *Arctostaphylos* Adams, and *Sphaeralcea* A.St. Hil. (DeLong 1953). These leafhoppers have usually been collected in forests, mainly using lights or by canopy fogging. The subfamily comprises 173 species in 32 genera (Marques-Costa 2011; Gonçalves *et al.* 2011, 2012). In Brazil, 64 species have been recorded representing 18 genera. The subfamily is mainly Neotropical, and only four genera have been recorded from the Nearctic Region: *Coelella* DeLong, *Neocoelidia* Gillette & Baker, *Cocoelelia* DeLong, and *Neocoelidiana* DeLong (Nielson & Knight 2000).

Leafhoppers of this subfamily are small to large sized (3.0–14.0 mm), with general color mainly pale, and may