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Review of the Neotropical scale insects formerly assigned to Coelostomidiidae and here transferred to a new tribe within the Monophlebidae (Hemiptera: Sternorrhyncha: Coccoidea)

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Table of contents

Abstract	3
Introduction	4
Material, methods and terminology	5
Phylogenetic relationships and a revised taxonomic classification	7
Taxonomy	8
Monophlebidae	8
Cryptokermesini Foldi & Gullan, tribe n.	8
Diagnosis of tribe Cryptokermesini	8
Key to separate the tribes Llaveiini and Cryptokermesini	11
Key to genera of Cryptokermesini based on adult females	11
Key to genera of Cryptokermesini based on preadult females	11
Key to genera of Cryptokermesini based on first-instar nymphs	11
Descriptions of genera and species	12
<i>Cryptokermes</i> Hempel	12
<i>Cryptokermes brasiliensis</i> Hempel	13
<i>Mimosicerya</i> Cockerell	20
<i>Mimosicerya hempeli</i> (Cockerell)	22
<i>Mimosicerya mexicana</i> (Morrison) comb. n.	28
<i>Mimosicerya schraderae</i> (Vayssière) comb. n.	31
<i>Neocoelostoma</i> Hempel	41
<i>Neocoelostoma xerophila</i> Hempel	42
<i>Paracoelostoma</i> Morrison	54
<i>Paracoelostoma peruvianum</i> Morrison	55
Acknowledgements	61
References	61

Abstract

This study reviews the status of all Neotropical genera and species of Coelostomidiidae (Hemiptera: Coccoidea) and transfers them to the family Monophlebidae in the Cryptokermesini Foldi & Gullan **tribe n.** (the tribe Cryptokermesini Tao & Hao is recognised here as a *nomen nudum*). This change of family placement for Neotropical taxa is based on the morphology of adult males, as supported by the phylogenetic study of Hodgson & Hardy (2013), and by unpublished DNA data. New diagnoses are provided for each of the four recognised genera of Cryptokermesini: *Cryptokermes* Hempel, *Mimosicerya* Cockerell, *Neocoelostoma* Hempel and *Paracoelostoma* Morrison. The genus *Nautococcus* Vayssière is considered here to be a junior synonym (**syn. n.**) of *Mimosicerya* and the type species of *Nautococcus*, *N. schraderae* Vayssière, thus becomes *M. schraderae* (Vayssière) **comb. n.** *Cryptokermes mexicanus* Morrison is transferred to *Mimosicerya* as *M. mexicana* (Morrison) **comb. n.** Also *Cryptokermes mimosae* Foldi does not fit the morphological concept of *Cryptokermes* and is excluded from this genus and revision, and from the new tribe; its taxonomic position is uncertain and requires further study. All type species of the Cryptokermesini, including *N. schraderae* (as *M. schraderae*), are re-described and illustrated based on most female instars and available adult males, examined using optical and scanning electron microscopes. Adult males are described and illustrated only for *M. schraderae* and *N. xerophila*. Keys are provided to distinguish the Neotropical monophlebid tribes Cryptokermesini and Llaveiini and to recognise each cryptokermesine genus based on female instars and first-instar nymphs. The included species of Cryptokermesini and their known distributions are: *Cryptokermes brasiliensis* Hempel from Brazil and *C. oaxaensis* Foldi from Mexico; *Mimosicerya hempeli* (Cockerell) from Brazil, *M. mexicana* from Mexico, *M. schraderae* from Panama and *M. williamsi* Foldi from Venezuela; *Neocoelostoma xerophila* Hempel from Argentina, Bolivia, Brazil, Paraguay and Uruguay; and *Paracoelostoma peruvianum* Morrison from Peru. All these insects live exposed on their host plant, either inside a secreted test (as for female and immature male instars of *Cryptokermes*, *Neocoelostoma* and *Paracoelostoma*) or the strongly sclerotised derm of the preadult female protects the adult (as for all species of *Mimosicerya*). Adult females of *Mimosicerya* are pupillarial, remaining within the exuviae of the previous instar, whereas adult females of the other three genera either remain within their test (and some species may be pupillarial) or escape the test to oviposit. The morphology of the adult female and often the preadult female is strongly modified, with reduction of antennae and legs, and with legs lacking in some species.

Key words: Cryptokermesini, *Cryptokermes*, *Mimosicerya*, *Nautococcus*, *Neocoelostoma*, *Paracoelostoma*

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