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Seven new species and new distributions of Old World Chiasmini (Hemiptera: Cicadellidae: Deltocephalinae), with a redescription, key to genera, and species checklist for the tribe

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Abstract

Seven new species of Chiasmini are described, some of which, in combination with generic synonymies included here, substantially extend the known ranges of their genera. The new species are *Pratura ceylona* **sp.nov.** from Sri Lanka, *Leofa thompsoni* **sp.nov.** from Rwanda and Uganda, *L. kumasamba* **sp.nov.** from Zambia, *L. pedunculata* **sp.nov.** from

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the Democratic Republic of Congo, *L. palearctica* **sp.nov.** from Spain, *Exitianus ghaurii* **sp.nov.** from South Africa, and *E. apophysisiosus* **sp.nov.** from Madagascar. The classification of Chiasmini is reviewed. Some new characters defining the tribe are described, and of particular importance are those of the female genitalia. A description of the tribe and a list of included genera are provided. *Baileyus* Pruthi and *Gurawa* Distant are transferred from Aphrodini to Chiasmini. *Leofa* Distant 1918 is transferred from Stenometopiini to Chiasmini, and *Oneratulus* Vilbaste 1975, *Prasutagus* Distant 1918, and *Tortotettix* Theron 1982 are considered junior synonyms of *Leofa*. *Leofa* is interpreted to include four subgenera: the nominotypical subgenus, *Prasutagus*, *Tortotettix*, and *Edmundiana* **subgen.nov**. *Pratura* Theron 1982 is transferred from Deltocephalini to Chiasmini, and *Doraturella* Emeljanov 2002 is considered a junior synonym. *Picchusteles* Linnavuori and DeLong, originally included in Macrostelini, is included in Chiasmini. A checklist of the 323 species and subspecies in the tribe, including partial information on distribution and holotype depositories, is provided.

Key words: Leafhopper, Chiasmusini, Doraturini, grassland, Auchenorrhyncha, brachyptery

Introduction

Chiasmini Distant 1908 (=Chiasmusini, Doraturini) is one of 14 grassland associated tribes in the deltocephaline lineage of leafhoppers (Deltocephalinae *sensu lato*; Dietrich and Rakitov, 2002). It is moderately large, containing 323 described species and subspecies, and some members, for example in the genera *Exitianus* Ball, *Athysanella* Baker, and *Doratura* Sahlberg, can be common to extremely abundant inhabitants of grassland ecosystems. Almost all species feed exclusively on grasses, and many species are predominantly brachypterous. Although the tribe is well characterized for the Nearctic and Palearctic regions, new species continue to be discovered (e.g., Hamilton, 2002; Hicks et al., 1992; Hicks and Whitcomb, 1996; Hicks and Smith, 2006). Except for comprehensive treatments of *Exitianus* (Ross, 1968) and *Nephotettix* Matsumura (Ghauri, 1971), the Old World tropical and subtropical fauna is known only from smaller regional works.

In the course of an ongoing study on the phylogeny and biogeography of Chiasmini, seven new species were identified from collections holdings and from recent field collections. These new species shed light on the distributions and diversity of their genera. Work with these and other specimens also revealed that a reassessment of some genera, a morphological characterization of the tribe, and a revised circumscription of the tribe were needed. Some generic synonymies are made, and the morphological definition and circumscription of Chiasmini is revised in light of newly found characters defining the tribe. Overall, this will provide a more stable and predictive classification of the tribe and its included taxa.

Materials and methods

Morphological terminology follows Oman (1949), Kramer (1950), Mejdalani (1998) and Linnavuori (1959). Abdomens were cleared in KOH solution, rinsed in water, and suspended in glycerin. Digital photographs were taken with a Q Imaging Micropublisher 3.3 digital camera mounted on an Olympus SZX12 stereo microscope and with a Nikon D1x digital SLR camera configured with lenses by Microptics, Digital Lab XLT system. Photographs were modified with Adobe Photoshop CS and line drawings were made with Adobe Illustrator 10. Unless otherwise noted, all scale bars = 1.0 mm.

Specimen label data lines are separated by a virgule (/). The material studied here is deposited at the following institutions: Illinois Natural History Survey (INHS); South African National Collection of Insects (SANC); The Natural History Museum, United Kingdom, London (BMNH); American Museum of Natural History (AMNH); and California Academy of Sciences (CAS). Most codes are from Evenhuis and Samuelson (2004), and private collections codes are from a leafhopper species database (McKamey, unpublished).