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A revised classification of the jumping plant-lice (Hemiptera: Psylloidea)

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Abstract

A revised classification for the world jumping plant-lice (Hemiptera: Psylloidea) is presented comprising all published family and genus-group names. The new classification consists of eight families: Aphalaridae, Carsidaridae, Calophyidae, Homotomidae, Liviidae, Phacopteronidae, Psyllidae and Triozidae. The Aphalaridae, Liviidae and Psyllidae are redefined, 20 family-group names as well as 28 genus-group names are synonymised, and one replacement name is proposed [*Sureaca* **nomen nov**., for *Acaerus* Loginova, 1976]. Forty two new species combinations are proposed resulting from new genus-group synonymies and a replacement name. One subfamily and three genera are considered taxa incertae sedis, and one genus a nomen dubium. Finally eight unavailable names are listed (one family-group and seven genus-group names).

Key words: Psyllids, classification, diagnosis, systematics, taxonomy, new taxa, synonymy.

Introduction

Jumping plant-lice have lately shifted into general awareness as vectors of serious plant diseases, as economically important pests in agriculture and forestry and as potential control organisms of exotic invasive plants. *Diaphorina citri* Kuwayama which transmits the causal agent of huanglongbing (HLB, greening disease) is considered today the most serious citrus pest in Asia and America (Bonani *et al.*, 2009; de Leon *et al.*, 2011; Tiwari *et al.*, 2011). In Europe and North America some of the Phytoplasma transmitting *Cacopsylla* species are economically important in apple, pear and stone fruit orchards. In South America, and in Brazil in particular, eucalypts, which are planted on a rapidly increasing surface, are seriously damaged by introduced psyllids (Bouvet & Burckhardt, 2008; de Queiroz Santana & Burckhardt, 2007). On the other hand the Australian *Boreioglycaspis melaleucae* Moore has recently been successfully used to control the aggressive *Melaleuca quinquinervis* (Myrtaceae) in the Everglades in Florida (Morath *et al.*, 2006; Taylor *et al.*, 2010). Other psyllid species are considered for the control of invasive weeds in Europe, North America, Australia and on several Pacific Islands (Burckhardt *et al.*, 2011; Olckers, 2011; Syrett *et al.*, 2007; Taylor *et al.*, 2010; Vitorino *et al.*, 2011; Wheeler & Hoebeke, 2009).

The last three decades have also seen an impressive amount of taxonomic publications more or less doubling the number of described species to around 3850 (Li, 2011). Information on the described species can be found in the printed catalogues of Klimaszewski (1973), Hodkinson and White (1981), Hodkinson (1983, 1986b, 1988), Gegechkori and Loginova (1990) and Hollis (2004) which are now updated and supplemented by the electronic catalogues of Burckhardt (2011) (Fauna Europaea) and Ouvrard (2012) (world fauna). The last comprehensive psylloid classification is based on a cladistic and phenetic study of larval and adult morphological characters of the world fauna by White and Hodkinson (1985) who also described in detail the history of psyllid classifications and phylogenetic research. Several recent morphology based studies have tested, modified and expanded their classification (e.g. Hollis, 1985, 1987;

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