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A revision of the endemic Chinese genus *Cornopsylla* (Hemiptera: Psyllidae), with potential pests on *Zanthoxylum* (Rutaceae)

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Abstract

The endemic Chinese psyllid genus *Cornopsylla* Li is reviewed with a revised generic diagnosis. *Cornopsylla zanthoxylae* Li and *C. trichotoma* Li are redescribed, and *Cornopsylla magna* **sp. nov.** and *C. rotundiconis* **sp. nov.** are described. Keys to adults and nymphs of this genus are given, and the systematic position of *Cornopsylla* is reviewed. The potential of *Cornopsylla* spp. as major pests on cultivated *Zanthoxylum* is discussed. *Psylla sarcospermae* (Li) **comb. nov.** is proposed for this species that does not share the generic characters of *Cornopsylla*.

Key words: Psyllidae, taxonomy, jumping plant-lice, prickly-ash, Oriental Region

Introduction

Jumping plant-lice, or psyllids, are phytophagous insects belonging to the superfamily Psylloidea (Hemiptera: Sternorrhyncha). They are phloem-sucking, and most genera display strict host plant specificity. Some species of psyllids are known on various agricultural, ornamental or forest plants as severe pests, among which *Diaphorina citri* Kuwayama on *Citrus* spp., *Bactericera cockerelli* (Šulc) on potatoes and tomatoes, pear psyllids (*Cacopsylla* spp.) on *Pyrus* spp., are notorious.

Cornopsylla was originally described by Li (1994) in the Psyllidae, based on the type species *C. zanthoxylae* Li and *C. trichotoma* Li, both associated with *Zanthoxylum* spp. Li (2011) proposed a new classification of Psyllomorpha (= Psylloidea sensu auct.) and assigned *Cornopsylla* to Euphaleridae: Cornopsyllinae, with a new species *C. sarcospermae* Li from *Sarcosperma kachinensis* (Sapotaceae). In their new classification of Psylloidea, Burckhardt & Ouvrard (2012) redefined the Liviidae and included two subfamilies, Euphyllurinae and Liviinae. Euphyllurinae sensu Burckhardt & Ouvrard contains four tribes: Diaphorinini, Euphyllurini, Pachypsylloidini and Strophingiini, which were said to be "poorly defined and of doubtful phylogenetic significance". Cornopsyllinae (written as tribe 'Cornopsyllini') was synonymised with Diaphorinini by them, and hence *Cornopsylla* was assigned to Diaphorinini. In the past two years we received two series of material of *Cornopsylla* spp. from *Zanthoxylum* spp. from Yunnan Province for identification, they all turned out to be undescribed species and gave us the incentive for the present study, which seeks to redefine the genus and discuss its systematic position.

Zanthoxylum spp. are shrubs, sometimes scrambling, trees or woody climbers (Zhang *et al.* 2008) and are relatively primitive members of the family Rutaceae (Cao 2007). Their common names include "hua jiao shu" (in Chinese), "prickly-ash", "Hercules' club" (in English), "sanshō" (in Japanese). The genus contains 200 or more species worldwide, distributed pantropically and extending to temperate latitudes in East Asia and Eastern North America. In China there are 41 species of *Zanthoxylum*, of which 25 are endemic (Zhang *et al.* 2008), and *Fagara* is here considered as a subgenus. The taxonomic history of these taxa was given by Cao (2007).

Due to the various chemical compounds (Huang 1997) contained in different organs, *Zanthoxylum* spp. have been utilized by humans over the centuries. The pericarp contains various types of coumarin that give a benumbing and somewhat spicy taste (Huang 1997), making a very popular culinary spice in many countries. Their seeds,

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