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A revision of Chinese pear psyllids (Hemiptera: Psylloidea) associated with *Pyrus ussuriensis*

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Abstract

The Chinese pear psyllids, *Cacopsylla* spp., associated with *Pyrus ussuriensis* are reviewed. Three new species, *C. accincta* **sp. n.**, *C. burckhardti* **sp. n.**, and *C. cinereosignata* **sp. n.**, are described. *Cacopsylla liaoli* (Yang & Li), *C. qiuzili* Li, *C. maculatili* Li and *C. chinensis* (Yang & Li) are redescribed. A key to the adults of the seven species and a key to nymphs of three species are given.

Key words: Jumping plant lice, taxonomy, China, Palaearctic region, *Cacopsylla*

Introduction

Pear psyllids are pest insects injurious to cultivated and wild pear trees, species of *Pyrus*, and are currently all assigned to the genus *Cacopsylla* s. l. Some species, such as *Cacopsylla pyricola*, have been recorded and studied as major pests on cultivated pears in the Palaearctic and, as introductions, in the Nearctic Region. Pear psyllids of the western Palaearctic were revised by Burckhardt & Hodkinson (1986), who recognized eight species, assigning *Psylla pyrisuga* Foerster to subgenus *Cacopsylla* (*Thamnopsylla*), and the other seven species to *Cacopsylla* (*Hepatopsylla*). The *Thamnopsylla* pear psyllids are univoltine and overwinter as adults on conifers, while those of *Hepatopsylla* are polyvoltine, overwinter as adults on the host plant and often display seasonal dimorphism. This term ‘seasonal dimorphism’ refers to summer and winter forms of a species that differ in size, coloration and even shape and structure of fore wing. This led to a lot of taxonomic confusion. From China, 22 species of pear psyllids have been recorded since Yang & Li (1981) launched their study on Chinese psyllids. The known Chinese species appear to differ from those of the western Palaearctic Region, and are all assigned to *Cacopsylla* s. l. (Burckhardt & Hodkinson 1986; Li 2011). The detailed phylogenetic relationships among the pear psyllids remain unknown.

Pear trees have a long history of cultivation, and modern cultivated varieties are usually hybrids of several wild species. Pears in China are mainly cultivated from homebred *Pyrus* species that display a very different germplasm resource system from that of Europe. In China, there are 14 species of pear trees (Yü 1979), among which only *Pyrus communis* was introduced from Europe. The four most popular series of cultivated pear varieties are respectively bred from *P. bretschneideri*, *P. ussuriensis*, *P. pyrifolia* and *P. communis*, while other species are usually cultivated locally. *P. ussuriensis* is a wild species that is widely distributed in northern China, and often used as stock for the cultivated pear trees. Strains bred from *P. ussuriensis* are cultivated mainly in northeastern China. A diagnosis of this species was given by Yü (1979).

Four species of psyllids on *P. ussuriensis* (including cultivated strains) have been reported from China prior to this study: *Cacopsylla chinensis*, *C. liaoli*, *C. qiuzili* and *C. maculatili*. The purpose of this paper is to describe three new species of the genus found on *P. ussuriensis* from Linxia, Gansu Province, and to revise the *Cacopsylla* species known on *P. ussuriensis* in China.

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