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Potential economic pests of solanaceous crops: a new species of *Solanum*-feeding psyllid from Australia and first record from New Zealand of *Acizzia solanicola* (Hemiptera: Psyllidae)

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Abstract

Acizzia credoensis sp. n. is described from a single population on the native plant, *Solanum lasiophyllum*, from semi-arid Western Australia. The host range of *Acizzia solanicola* Kent & Taylor, initially recorded as damaging eggplant, *S. melongena*, in commercial crops and gardens and on wild tobacco bush, *S. mauritianum* in eastern Australia, is expanded to include the following Solanaceae: rock nightshade, *S. petrophilum*, cape gooseberry, *Physalis peruviana*, and an undetermined species of angel's trumpet *Brugmansia* and *Datura*. New Zealand specimens of *A. solanicola* collected in early 2012 from *S. mauritianum* are the first record for this species from outside Australia, and possibly represent a very recent incursion. The potential for the solanaceous-inhabiting Psyllidae to vector *Candidatus Liberibacter solanacearum*, an economically important plant pathogen, on native Australian Solanaceae is discussed. The occurrence of *A. credoensis* and *A. solanicola* on native Australian *Solanum* supports the Australian origin for the solanaceous-inhabiting *Acizzia* psyllids.

Key words: *Candidatus Liberibacter solanacearum*, eggplant, plant biosecurity, 'psyllid yellows' *Psyllaephagus*, Psylloidea

Introduction

The world fauna of Solanaceae-inhabiting jumping plant bugs (Psylloidea) comprises just 21 described (and at least 9 undescribed) species from seven genera in five psyllid families. These are: from Aphalaridae: *Lanthanaphalara* (1 species) (Tuthill 1959); Liviidae: *Diaphorina* (3 species) (Burckhardt & Mifsud 1998; Ouvrard 2012); Psyllidae: *Acizzia* (2 species) (Kent & Taylor 2010) and *Russelliana* (6 species/+ 7 undescribed) (Tuthill 1959; Burckhardt 1987; Burckhardt *et al.* 2012); and from Triozidae: *Bactericera* (5 species) (Ouvrard 2012), *Leuronota* (1 species/+ 2–3 undescribed) (Burckhardt & Queiroz 2012), *Schedoneolithus* (1 species) (Tuthill 1959) and *Trioza* (2 species) (Hollis 1984; Burckhardt & Mifsud 1998; Ouvrard 2012) (Table 1). This number could be expanded somewhat, but even so, considering the rich diversity of the world Solanaceae, the diversity of psyllid fauna from this plant family remains remarkably low.

The genus *Acizzia* contains in excess of 40 described species from Australia, New Zealand, the Old World tropics, North Africa, the Middle East and the Mediterranean (Hodkinson & Hollis 1987; Burckhardt & Mifsud 1998). The Australian fauna comprises 27 species although many remain undescribed (Yen 2002; Hollis 2004). The New Zealand fauna comprises 10 species of which most occur on introduced plant hosts and are generally considered of Australian origin (Dale 1985). Apart from these early introductions into New Zealand, a number of other Australian species have subsequently been introduced into South Africa, Europe, USA, Central America and Chile, and are considered either a developing pest of ornamentals or a potential threat to native acacias (Hodkinson & Hollis 1987). Some species have been proposed as potential biological control agents for introduced weed species (Ulyshen & Miller 2007).