



## In threat of co-extinction: two new species of *Acizzia* Heslop-Harrison (Hemiptera: Psyllidae) from vulnerable species of *Acacia* and *Pultenaea*

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### Abstract

Two new species of *Acizzia*, *A. veski*, **sp. nov.** and *A. keithi*, **sp. nov.** are described from the vulnerable or threatened plant species respectively, *Acacia veronica* Maslin (Fabaceae: Mimosoideae), with a restricted distribution in the south-west of Western Australia and *Pultenaea glabra* Benth. (Fabaceae: Faboideae), with a restricted distribution in eastern Australia. *Pultenaea* is recorded here as a new host genus record for *Acizzia*. Both new species of *Acizzia* are considered at risk of extinction as they have been recorded only from single localities on vulnerable or threatened hosts with restricted distributions.

**Key words:** Host-specificity, insect herbivores, plant-insect interactions, plant-lice, short-range endemic, species loss

### Introduction

The Australian Psylloidea fauna is hyperdiverse, consisting of more than 10 % of the world fauna, and the genus *Acizzia* represents a large proportion of this diversity (Austin *et al.* 2004). Froggatt (1901, 1903) described 11 species of Australian *Acizzia* (in *Psylla*); ten species are recognised in New Zealand (mostly described by various authors from New Zealand material, but presumed that Australia was the country of origin) (Dale 1985, Hollis 2004); Burckhardt & Mifsud (1998) and Burckhardt (2007) reported ten species from the Middle East; and Hodkinson & Hollis (1987) cited four species from the Mediterranean (including two introductions from Australia). The world fauna currently comprises some 50 described species from Australia, New Zealand, South-east Asia, India, Africa and the Middle East (Yen 2002). Several Australian species have now been introduced into South Africa, southern Europe, USA, Central America and Chile, and are considered either a developing pest of ornamentals and a potential threat to native acacias (Hodkinson & Hollis 1987), or potential biological control agents for introduced weed species (Ulyshen & Miller 2007). In Australia, there are currently 25 described species of *Acizzia*, although the number of undescribed species may be in the hundreds (Hollis 2004).

Species of *Acizzia* feed predominantly on *Acacia* Miller (Fabaceae: Mimosoideae) (Yen 1977; Morgan 1984; Hodkinson & Hollis 1987; Hollis 2004). Other host records include *Albizia* Durazzini (Fabaceae: Mimosoideae) (Hodkinson & Hollis 1987), *Amyema* Tiegh. (Loranthaceae) (Taylor 1999), *Apophyllum* F.Muell. and *Capparis* L. (Capparidaceae) (Froggatt 1901; Hollis 2004), *Dodonaea* Mill. (Sapindaceae) (Tuthill 1952; Hollis 2004), *Hakea* Schrad. & J.C.Wendl. (Proteaceae) (Tuthill 1952) and *Solanum* L. (Solanaceae) (Kent & Taylor, in press). This paper describes two new species of *Acizzia* from plant species listed as vulnerable or threatened, and therefore most likely represent co-threatened fauna. The host plants are *Acacia veronica* Maslin (Fabaceae: Mimosoideae: Acacieae) with a restricted distribution in the Stirling Range of Western Australia (Western Australian State Government conservation status of 'Priority 3' see