



Grass-dependent Thysanoptera of the family Thripidae from Australia

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Abstract

The diversity of Thysanoptera associated with grasses worldwide is discussed. Associations between thrips and members of the Poaceae have evolved independently in three thrips families. In Australia, almost 70 species of Thripidae are recorded as specific to Poaceae. Most of these thrips breed only on leaves, with 10 species in four genera breeding in grass florets, and a very few species feeding on both leaf and flower tissues. An identification key is provided to 28 genera of Thripidae found in Australia and known to be fully dependent on Poaceae, including four new genera of Thripinae with 16 new species. The new taxa are: *Aliceathrips* **gen.n.**, *A. mnestes* **sp.n.**, *A. engaius* **sp.n.**, *A. palmeri* **sp.n.**, *A. sorghi* **sp.n.** *Bregmatothrips australis* **sp.n.** *Kranzithrips mareebai* **gen. & sp.n.** *Masamithrips* **gen.n.**, *M. masamii* **sp.n.**, *M. geikiei* **sp.n.**, *M. melinus* **sp.n.**, *M. tanyoeikus* **sp.n.**, *M. williei* **sp.n.**, *M. wyndhami* **sp.n.** *Monothrips cuspis* **sp.n.** *Parexothrips palumai* **sp.n.** *Stenchaetothrips bambusicola* **sp.n.** *Striathrips sulcatus* **gen. & sp.n.** One nomenclatural change is *Aliceathrips australiensis* (Girault) **comb.n.** transferred from *Bolacothrips*. The following five species are newly recorded from Australia: *Bolacothrips striatopennatus* (Schmutz), *Bregmatothrips binervis* (Kobus) [with *Bregmatothrips saccharicolus* (Bianchi) as a **new synonym**], *Exothrips sacchari* (Moulton), *Stenchaetothrips indicus* (Ramakrishna & Margabandhu) [with *Stenchaetothrips brasiliensis* (Hood) as a **new synonym**], *Takethrips megas* Nonaka & Jangvitaya.

Key words: Poaceae, Thripinae, new genera, new species

Introduction

The relationship between the species richness of a plant family and the number of phytophagous insects that exploit members of that family as hosts is far from linear. At plant family level, the host associations of the insect Order Thysanoptera exhibit little obvious pattern. For example, among the 5,500 species of Thysanoptera, scarcely 30 species, all but one of which are Thripidae, are associated with the Orchidaceae, a family of 18,500 species (Mabberley, 1997). In contrast, the 18,000 species of Fabaceae support two extensive radiations - flower-living Thripidae in the *Megalurothrips* genus-group (Xie *et al.*, 2010), and foliage-feeding Phlaeothripidae particularly on *Acacia* (Crespi *et al.*, 2004). The largest plant family, the Asteraceae with 23,000 species, supports many unrelated flower-thrips species, including two substantial radiations - the *Frankliniella minuta* group (Thripidae) in South America (Mound & Marullo, 1996), and *Haplothrips* (Phlaeothripidae) in the Holarctic (Minaei & Mound, 2008). In contrast, the Poaceae includes only 9,000 species, half the number recognised in the Orchidaceae, but at least 300 species of thrips are fully dependent on grasses and bamboos, and these represent more than 10% of all phytophagous Thysanoptera.