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The genus *Scirtothrips* (Thysanoptera: Thripidae) in Malaysia, with four new species and comments on *Biltothrips*, a related genus

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Abstract

Species of the genus *Scirtothrips* are studied from Malaysia for the first time. Six species of this genus are here recorded from Malaysia: *S. dobroskyi* is newly recorded, and four new species: *S. lantanae* sp.n., *S. linoxiae* sp.n., *S. hitam* sp.n. and *S. malayensis* sp.n. are described together with an illustrated identification key. Relationships were examined between *S. dorsalis* and the closely related *S. hitam* sp.n., based on the mitochondrial gene COI, and a redescription of the widespread pest species, *dorsalis*, is provided. *Biltothrips minutus* (Bhatti) is reported from Malaysia for the first time, and illustrations provided to distinguish this genus from *Scirtothrips*.

Key words: *Scirtothrips*, Thysanoptera, Thripidae, Malaysia, new species

Introduction

The genus *Scirtothrips* is commonly associated with agricultural crops, with several species well documented as pests of economic importance on tea, coffee, citrus, chillis, grapes, avocados and mangos (Mound & Palmer 1981; Garmis *et al.* 2013). These thrips are native to subtropical and tropical countries, and when introduced into new habitats and new areas some species cause serious problems. For example, *S. perseae* from Mexico is now a serious pest on avocado crops in California (Hoddle *et al.* 2003), and the Oriental species *S. dorsalis* is now a pest in Florida as well as Israel (Masumoto & Okajima 2007). These thrips have the potential to become even more widespread as pests in tropical and temperate countries. However, many species of *Scirtothrips* remain poorly defined. Rugman-Jones *et al.* (2007) produced molecular evidence that *S. dorsalis* populations in South Africa probably represent a distinct species, although Mound and Stiller (2011) found only one minor structural difference between South African females and those of the pest species.

The number of species listed in the genus *Scirtothrips* has increased from about 40 in the 1980s to the present total of 108 with the addition of the four new species described below (ThripsWiki 2014). Hoddle and Mound (2003) described 11 new species from Australia, Masumoto and Okajima (2007) described four new species from Japan, Mound (2010) and Mound and Stiller (2011) described two new species from Africa, and Majid *et al.* (2012) described one new species from *Ginkgo biloba* in China. Johansen and Mojica-Guzman (1998) described 32 new species from Mexico, but five of these were subsequently recognized as synonyms of *S. perseae* (Hoddle *et al.* 2008). Moreover, since many of the others are known only from mango trees that are not native to Mexico, an exhaustive revision is needed of the Central American species of this genus to establish the native host plants and recognise potential synonyms (Mound & zur Strassen 2001).

The original purpose of the present paper was to describe a new species from Malaysia that had previously been identified on morphological characters as *S. dorsalis*. However, this new species is here distinguished on small but consistent morphological differences as well as molecular characters. In addition, four further new species of *Scirtothrips* are described from Malaysia, together with a new record of the related monobasic genus *Biltothrips*.

Material studied. Holotype female: **MALAYSIA**, Terengganu, Gunung Tebu, on *Allamanda* sp. (Apocynaceae), 1–6.viii.2012 (Ng, Y.F.). (in CISUKM).

Paratypes: 7 females collected with holotype; Pahang, Tasik Chiini, 2 females on *Allamanda* sp., 28.i.2013 (Ng, Y.F.), (in CISUKM and ANIC); Gombak, 1 female from *Clerodendron myricoides* lvs, 4.iii.2007; Selangor, Kota Damansara, 4 females from *Barringtonia* sp., 17.iv.2011, (in CISUKM, MZUM and ANIC).

Comments. This is probably another widespread and common species in tropical Asia. It is similar in structure to *S. dobroskyi*, but is distinguished in the key above by the presence of microtrichia on tergite VIII, and the greater distance between the setal pair S1 medially on the abdominal tergites. However, there is considerable variation between the available specimens in the form of the pronotal sculpture (Figs 27, 28).

***Biltothrips* Bhatti**

(Figs 33–38)

Biltothrips Bhatti, 1973: 438. Type species *Sericothrips minutus* Bhatti 1967, by monotypy

The only species in this genus shares many character states with *Scirtothrips*, but is distinguished as follows: absence of a pair of setae in front of the first ocellus (ocellar setae pair I); absence of mid-dorsal seta on antennal segment II; absence of setae on fore wing second vein; lateral position of tergal setal pair S1 that arise close to S2 and to the lateral microtrichial fields (Fig. 36).

The only known species in this genus was described from both sexes collected in West Bengal, India (Bhatti 1967). Subsequently, specimens were collected on the **SOCIETY ISLANDS** in the Pacific Ocean (Hoddle *et al.* 2008), one female from Bangkok, **THAILAND**, is available in ANIC, Canberra, and the species is here recorded from **MALAYSIA**, Pahang, Pulau Tioman, 4 females 3 males collected on Cassava leaves, 8.vii.2013 (Ng, Y.F.), (in CISUKM and ANIC).

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