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A new species of genus *Thrips* (Thysanoptera, Thripinae) from flowers in Peninsular Malaysia

Y.F. NG[1], L.X. EOW[1] & L.A. MOUND[2]

[1]*Centre for Insect Systematics (CIS), Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia. E-mail: ng_yf@ukm.my*
[2]*CSIRO Ecosystems Services, Canberra, ACT 2601, Australia. E-mail: laurence.mound@csiro.au*

Abstract

Thrips razanii **sp. n.** is described from the flowers of various unrelated plants in Peninsular Malaysia. This new species is a member of the *Thrips hawaiiensis* group, but has uniformly dark forewings.

Key words: *Thrips*, Thripinae, flowers, new species, Malaysia

Introduction

Thrips is the largest genus in the Thysanoptera subfamily Thripinae, with 280 described species (Mound & Ng, 2009; Mound, 2010). Of these, 91 species are recorded from the Oriental and Pacific Regions (Palmer, 1992), and an identification key is available to the 23 species known from Peninsular Malaysia (Mound & Azidah, 2009). In the latter paper, the authors described one new species and recorded seven species as new records for the area, and these totals suggest that many more species are likely to occur here.

Several species in genus *Thrips* are among the most significant crop pests, in part through feeding damage, but particularly because they vector important tospovirus diseases of plants (Marullo & Mound, 2002). There are also beneficial *Thrips* species, as pollinators of tropical and subtropical trees. For example, *Thrips setipennis* is considered the sole pollinator of *Wilkiea huegeliana* (Monimiaceae) in Australian subtropical rainforest (Williams et al., 2001), and Appanah & Chan (1981) found that *Thrips* are associated with the flowers of Dipterocarps in Malaysia. Despite the importance of these insects in S.E.Asia, the taxonomic study and associated biological information of *Thrips* species is often inadequate, particularly in Malaysia. For instance, we have little knowledge of the plants on which different species can breed, insufficient studies about their roles as pollinators of higher plants, limited information about the viruses they may transmit, and there are few records of the identity of the species that infest local crops.

This paper is part of continuing studies on the Thysanoptera fauna of Peninsular Malaysia. One new species of the genus *Thrips* is described and illustrated, and the relationship of this species to others in the S.E.Asian region is considered. This new species has been found widely in the area, and is described here particularly because it is likely to be confused with two common pest species, as discussed further below. The new species is named in recognition of the support provided by the present director of the Forestry Department of Peninsular Malaysia (Dato' Razani Ujang) and for his encouragement in organising scientific expeditions in all states in Peninsular Malaysia.

Thrips razanii sp. n.

Female macroptera. Body brown (Fig. 4), apex of tibiae paler, tarsi yellow; antennal segments brown, including segment III (Fig. 3); forewings uniformly brown; major setae on pronotum and metanotum dark. Antennae 8-segmented, segments VII–VIII small. Head wider than long; with faint transverse striations in front of first ocellus, ocellar area smooth, vertex with fine transverse striations (Fig 1); ocellar setae III arising on or just outside anterior margins of ocellar triangle; postocular setae arising in a row parallel to eye margin, seta II smaller than I or III. Pronotum wider than long, with faint transverse striations medially, almost none laterally; less than 20 small scattered discal setae; 2 pairs of long posteroangular setae, posterior margin with 2 pairs of short setae (Fig. 2). Mesonotum with fine transverse striations; anteromedian campaniform sensilla present, but no striations close to these. Metanotum striate laterally,

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anterior half with weak transverse striations but irregular longitudinal reticulation posteromedially; median setae stout, at anterior margin, arising closer to each other than to lateral pair (Fig. 5). Forewing first vein with 7 setae on basal half, 3 setae on distal half; second vein with 11 setae; forewing clavus apical and subapical setae variable, more or less equally long (Fig. 8). Abdominal tergite I transversely reticulate, campaniform sensilla close to posterior margin; tergites II-VII with 1 or 2 faint transverse lines anteriorly between setae pair I, but almost no sculpture on median area mesad of setae pair II; tergite VIII posteromarginal comb complete but microtrichia unusually short and irregular (Fig. 7); tergite IX with 2 pairs of campaniform sensilla, median setae extending beyond apex of X. Pleurotergites without discal setae. Sternites III–VII with 8–11 discal setae, II with about 4 discal setae and 2 pairs of marginal setae; sternite VII posteromarginal setae long, S1 arising in front of posterior margin.

Measurements (holotype female in microns). Body length 1430. Head, length 115; width across eyes 150; ocellar setae III length 20. Pronotum, length 127, width 203; posteroangular setae 58; posteromarginal setae 14–19. Metanotum median setae 45. Forewing, length 700; distal setae on first vein length 30–40. Antennal length 301; segments III–VIII length 62, 56, 36, 66, 5, 10.

Male macroptera. Body paler brown than female; antennal segment III paler brown than other segments; forewings slightly paler at base. Abdominal sternites III–VII with pore plates medially (Fig. 6).

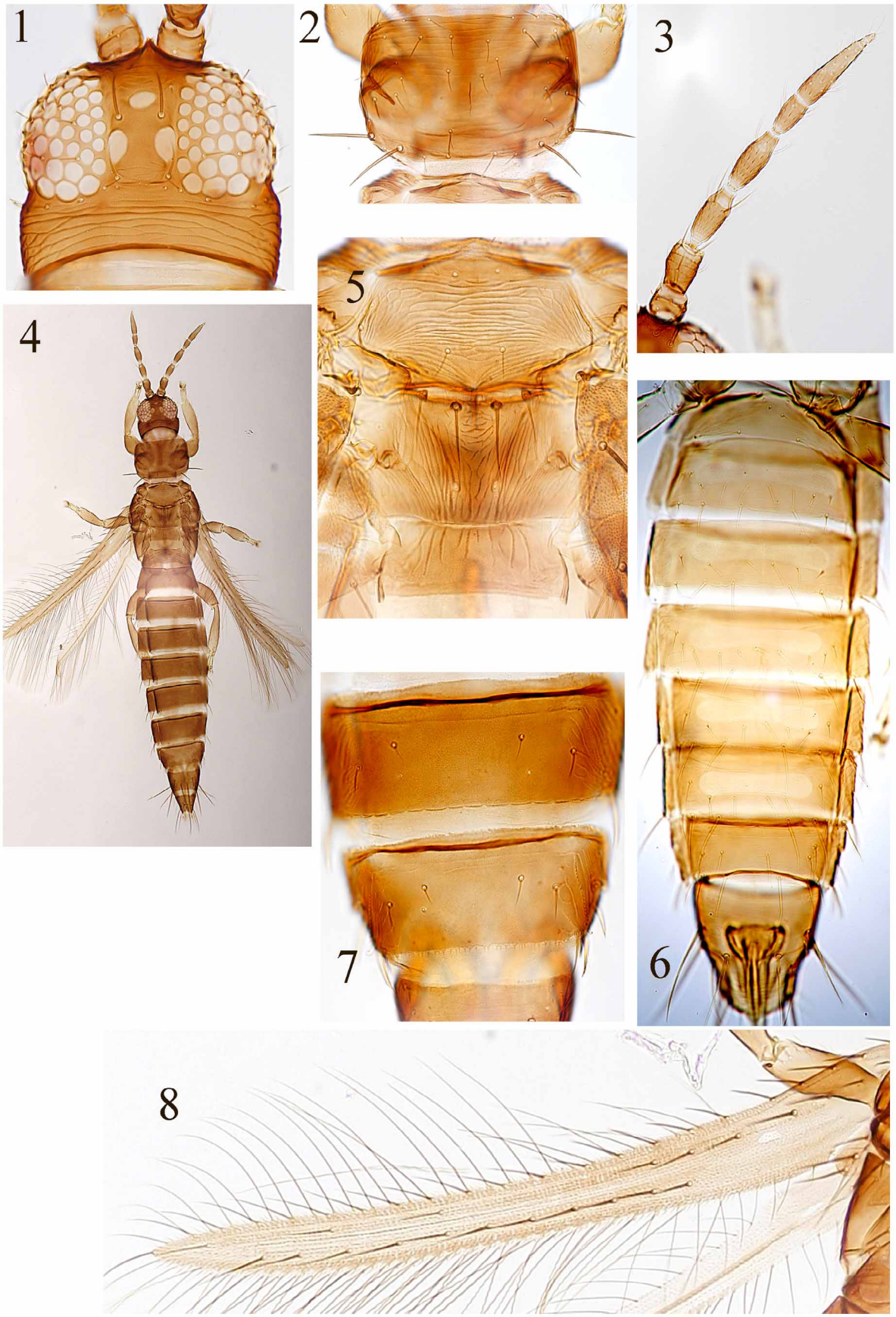
Measurements (paratype male in µm). Body length 1030. Head, length 100; width across eyes 140; ocellar setae III 20. Pronotum, length 114, width 175; posteroangular setae 56–58. Metanotum median setae 38; Forewing, length 605. Antennal length 275; segments III–VIII length 51, 49, 33, 56, 5, 9.

Material studied. Holotype female: **MALAYSIA**, Perak, Pulau Pangkor, on *Ixora* sp. flowers (Rubiaceae), 5–7.v.2009 (Ng, Y.F. & Eow, L.X.)(in Centre for Insect Systematics, UKM, Malaysia). Paratypes: 14 females, 8 males, all collected Ng, Y.F. & Eow, L.X.: collected with holotype, 2 females, 1 male; Penang, Penang Butterfly Farm, 3 females, 1 male on *Stachytarpheta mutabilis* flower (Verbenaceae), 10.vii.2009; Penang, Penang Botanical Garden, 1 female, 1 male on *Clerodendrum paniculatum* flower (Verbenaceae), 9.vii.2009; Melaka, Melaka Botanical Garden, 2 females on *Clerodendrum paniculatum* flower, 5.ii.2009; Pahang, Lata Jarum, 1 female on *Cosmos caudatus* flower (Asteraceae), 19.xi.2009; Pahang, Lata Jarum, 1 female on dry leaves, 16.xi.2009; Penang, Berapit, Bukit Mertajam, 4 females, 5 males on *Ixora* sp. flower, 12-17.xii.2009 (in CIS; Australian National Insect Collection, Canberra, Australia; Natural History Museum, London, UK; National Museum of Natural History, Washington DC, USA).

Comments. This new species shares many morphological character states with *T. hawaiiensis* and *T. florum*, and it keys to that pair using the key to Malaysian *Thrips* species (Mound & Azidah, 2009). However, it differs from both of them in having uniformly dark forewings that are not paler at the base. Moreover, antennal segment III is deeply shaded not pale, and ocellar setae pair III arise on the anterior margins of the ocellar triangle not clearly outside the triangle. Judging from the key to Asian species by Palmer (1992), this new species is similar to *T. tristis* (Priesner) from Java, and to *T. pavettae* (Priesner) from Sumatra. It differs from the former in having the two median metanotal setae closer to each other than they are to the lateral pair, and from the latter in having tergite II with four rather than three lateral marginal setae.

TABLE 1. Comparisons between three common species of *Thrips* from Malaysia.

Thrips razanii **sp. n.**	*Thrips hawaiiensis*	*Thrips florum*
Body brown	Body brown or bicoloured	Body brown
Antennal segments brown, segment III paler at base.	Antennal segments brown, segment III yellow.	Antennal segments brown, segment III yellow.
Ocellar setae III arising on margins of ocellar triangle.	Ocellar setae III arising outside ocellar triangle	Ocellar setae III arising outside ocellar triangle
Postocular seta II shorter than seta I and III	Postocular seta I much longer than seta II and III	Postocular seta II shorter than seta I and III
Pronotum posterior margin with 2 pairs of setae	Pronotum posterior margin with 3 pairs of setae	Pronotum posterior margin with 3 pairs of setae
Mesonotum without sculpture lines near campaniform sensilla	Mesonotum with sculpture lines near campaniform sensilla	Mesonotum without sculpture lines near campaniform sensilla
Metanotum medially with irregular linear reticulation.	Metanotum with transverse lines at anterior and laterally.	Metanotum with many lines at the anterior and laterally.
Forewing uniformly brown	Forewing brown with base paler	Forewing brown with base paler



FIGURES 1–8. *Thrips razanii* **sp. n.**. **(1)** Head, dorsal; **(2)** Pronotum; **(3)** Antenna; **(4)** Female; **(5)** Meso- and metanotum; **(6)** Male abdominal sternites; **(7)** Female abdominal tergite VII–VIII; **(8)** Forewing.

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