



The *Stenchaetothrips* species (Thysanoptera, Thripidae) of Malaysia, with one new species

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Abstract

Four species of *Stenchaetothrips* are here recorded from Peninsular Malaysia. These are *S. biformis*, the widespread rice thrips, *S. hullikali*, known only from Karnataka in Southwest India, *S. indicus*, a widespread species on grasses, and *S. langkawiensis* **sp. nov.**, described here from Langkawi Island, West Malaysia. Species descriptions, photographs and an identification key are provided.

Key words: Thysanoptera, *Stenchaetothrips*, Malaysia, new species, new records

Introduction

The genus *Stenchaetothrips* Bagnall, comprising a group of Poaceae-living species, is closely related to the genus *Thrips*. These two genera belong to a genus-group of Thripinae that exhibit the important synapomorphy of the ctenidia on abdominal tergite VIII being situated postero-mesad to the spiracles (Mound 2002). Moreover, all of the species in this group lack a pair of setae on the head immediately anterior to the first ocellus (ocellar setal pair I). In *Stenchaetothrips* the adults bear a pair of unusually long setae anterolateral to the first ocellus (ocellar setal pair II), and these setae are always longer than ocellar setal pair III, which are associated with the ocellar triangle. The postocellar setae I and III of these thrips are both usually very long, and the metascutum is sculptured with closely-spaced longitudinal striations.

Stenchaetothrips species are found predominantly in Asia, but a few have become distributed worldwide (Mound & Ng 2009; Mound 2011). Only the rice thrips, *S. biformis* (Bagnall), has previously been recorded from Malaysia, although so far it has not been regarded as a major pest on paddy in this country (Talekar 1991; Pathak & Khan 1994; Saiful Zaimi J., MARDI entomologist, personal communication, 2011). Currently the genus includes 33 species (Mound 2012). A full account of 15 *Stenchaetothrips* species known from India was provided by Bhatti (1982), but Tyagi & Kumar (2008) subsequently described two further new species from that country. Wang (2000) provided a key to eight species of the genus from Taiwan; zur Strassen (1994) listed four species from Indonesia; Reyes (1994) treated three species from the Philippines, and Mound (2011) three species from Australia.

In this paper, four species are recorded from Peninsular Malaysia, including one species new to science and two new country records. Among the known species of this genus, the new species shares only with *S. indicus* the absence of a comb of long regular microtrichia on the posterior margin of the eighth abdominal tergite. Females of this new species have a comb of irregular, short, rather dentate teeth on tergite VIII, whereas in *S. indicus* there is no comb at all. Nomenclatural details of all the taxa discussed here are available in Mound (2012).

Key to *Stenchaetothrips* from Malaysia

- 1. Body pale yellow (Fig. 4)2
- Body either uniformly brown or bicoloured (Figs 12, 19)3

2. Abdominal tergites VI–VII posterior margins at least laterally with microtrichia, VIII posterior margin with almost complete comb of small, irregular, sometimes dentate microtrichia (Figs 5a, 5b). *langkawiensis* sp. nov.
- Abdominal tergites VI–VII posterior margins with no microtrichia, VIII posterior margin without a comb but sometimes with small flattened lobes (Fig. 6). *indicus*
3. Head, pronotum and abdominal tergite I yellowish brown, abdomen dark brown (Figs 12, 13); ocellar setae II and III subequal (Figs 13, 14); male sternal posterior margins without rows of tooth-like microtrichia (Fig. 9). *hullikali*
- Head, pronotum and entire abdomen uniformly dark brown (Fig. 19); ocellar setae II much longer than setae III (Fig. 17); male sternites V–VII posterior margins with tooth-like microtrichia (Fig. 20). *biformis*

***Stenchaetothrips biformis* (Bagnall)**

Female macroptera. Body uniformly brown (Fig. 19); antennal segments I–II dark, II paler at apex, III pale, IV slightly shaded, V–VII dark; all tibiae and tarsi pale, femur slightly shaded near base; fore wing uniformly shaded, clavus strongly shaded (Fig. 22). Head not convex in front; ocellar setal pair II longer than setal pair III; post-ocellar setal pair I variable, either both present or with one or both setae absent, when present longer than pair II and subequal to pair III, these setae usually as long as distance between hind ocelli. Pronotum with about 12 discal setae, median area smooth, posterior margin with a few weak transverse striations; posterior margin with 3–4 pairs of setae (Fig. 17), median pair variably long. Mesonotum without anterior campaniform sensilla. Metanotum with closely spaced striations, campaniform sensilla absent, median setae arising behind anterior margin but varying in position. Meso- and metafurca each without a spinula. Metasternum with about 14 discal setae. Abdominal tergites V–VIII with paired ctenidia; tergites I–VII posterior margin with a few tooth-like microtrichia laterally, VIII posterior margin with a complete comb of long slender microtrichia; submedian setae on VIII not extending beyond posterior margin; IX without anterior pair of campaniform sensilla. Sternites with irregular minute microtrichia on sculpture lines, sometimes with a few marginal microtrichia.

Male macroptera. Similar to female but smaller; sternites III–VII with a transverse pore plate, microtrichia more prominent on sternites and sternal posterior margins (Fig. 20).

Specimens studied. MALAYSIA, Selangor, UKM campus, 6 females, 1 male on grass near damp site, 14.ii.2012 (Ng, Y.F.) (CISUKM; ANIC).

Comments. This species, the rice thrips, is common in the state of Kedah, the primary rice production state in Peninsular Malaysia. It seems to be more abundant during the flowering season of paddy, but is usually considered a pest of seedling rice (Pathak & Khan 1994). Serious crop loss to this pest species has not been recorded in Malaysia. A few specimens, presumably vagrants, were recorded on *Capsicum annuum* in Peninsular Malaysia by Azidah (2011). Variation in the head chaetotaxy between populations of this species was discussed by Vierbergen (2004) and by Mound (2011).

***Stenchaetothrips hullikali* Tyagi & Kumar**

Female macroptera. Body bicoloured, head, thorax and abdominal tergite I brownish yellow; head at anterior, and mesothorax laterally, slightly darker; tergites II–X dark brown (Fig. 12); antennal segment I and base of II pale brown, III yellow, IV–VII brown; all legs yellow; fore wing pale sub-basally and at apex, brown medially (Fig. 16), clavus slightly shaded at base. Head wider than long; ocellar setae II scarcely longer than III (Figs 13, 14); post-ocellar setae III about twice as long as setae I and II. Pronotum with about 16 discal setae, median area almost smooth or with very weak transverse striations; 2 pairs of long postero-angular setae, 3 pairs of postero-marginal setae, median pair longer than submedian setae. Mesonotum with a pair of anterior campaniform sensilla. Metanotum with closely spaced striations, campaniform sensilla absent, median setae close together near anterior margin (Fig. 15). Meso- and metafurca each without a spinula. Metasternum with about 16 discal setae. Abdominal tergites VI–VIII with paired ctenidia, V with a very weak pair; tergites I–VII posterior margin laterally sometimes with a few minute teeth or microtrichia; VIII with a complete comb of long, slender microtrichia (Fig. 11); submedian setae on VIII not extending beyond posterior margin; IX with anterior pair of campaniform sensilla present (Fig. 11). Sternites V–VII with margin smooth, without rows of minute teeth or microtrichia (Fig. 9).

Male macroptera. Similar to female but smaller; tergites II–VII posterior margin with more extensive microtrichial teeth than in female, on IV–VII the row almost complete; tergite VIII posterior margin with row of microtri-

chial teeth not quite complete, unlike that on the female; sternites III–VII with oval pore plates, pore plates reaching submedian posteromarginal setae.

Specimens studied. MALAYSIA, Selangor, Kota Damansara Forest Reserve, 4 females, 1 male on grass, 19.iv.2011 (Ng, Y.F. & Eow, L.X.) (CISUKM; ANIC).

Comments. This species is here identified by comparison with the original description and illustrations of *S. hullikali*. However, the specimens listed bear unusually long post ocellar setae III that are about twice as long as setae pair II, and antennal segment I is shaded in contrast to the original description. In India, this species was collected from *Oryza sativa*, the major host plant of *S. biformis*. However, the Malaysian specimens were taken from unidentified grasses, and there is no evidence that this thrips might be specific on any particular species of Poaceae.

Stenchaetothrips indicus (Ramakrishna & Margabandhu)

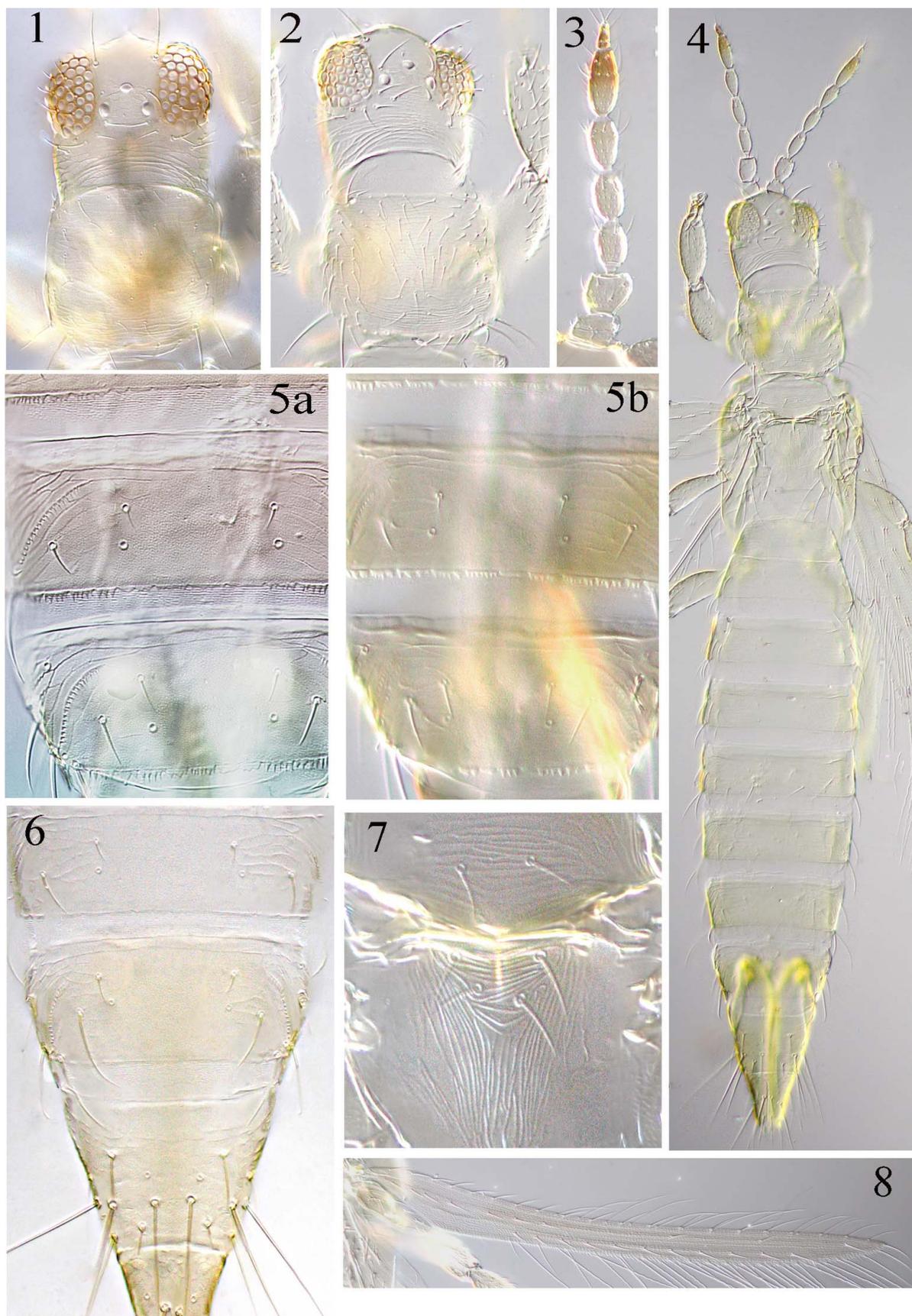
Female macroptera. Body and legs clear yellow, abdominal segments VIII–X slightly darker (Fig. 4); antennal segments I–V pale, V slightly shaded at extreme apex, VI light brown on distal third, VII light brown; fore wing pale. Head evenly convex in front (Fig. 2); ocellar setae II long, but not twice as long as ocellar setae III; all post-ocellar setae long and subequal in length. Pronotum with more than 50 discal setae, widely spaced transverse striations at anterior and median area, and closely spaced striations near posterior margin; with 2 pairs of long, slender postero-angular setae, 5 pairs of short postero-marginal setae (Fig. 2). Mesonotum with no anterior campaniform sensilla. Metanotum with closely spaced striations, campaniform sensilla absent, median setae arising far behind anterior margin. Meso- and metafurca each without a spinula; metasternum with about 30 discal setae. Abdominal tergites VI–VIII with paired ctenidia, V with a very weak pair; tergite I with a few striations across segment, II–VII without transverse striations medially; tergites II–VIII posterior margin simple, without microtrichia; submedian discal setae on VIII unusually long, extending beyond posterior margin (Fig. 6); IX without anterior pair of campaniform sensilla (Fig. 6). Sternites with no marginal microtrichia.

Specimens studied. MALAYSIA, Terengganu, Kuala Ibai, 5 females on *Cymbopogon citratus*, 9.xii.2011 (Ng, Y.F.) (CISUKM; ANIC).

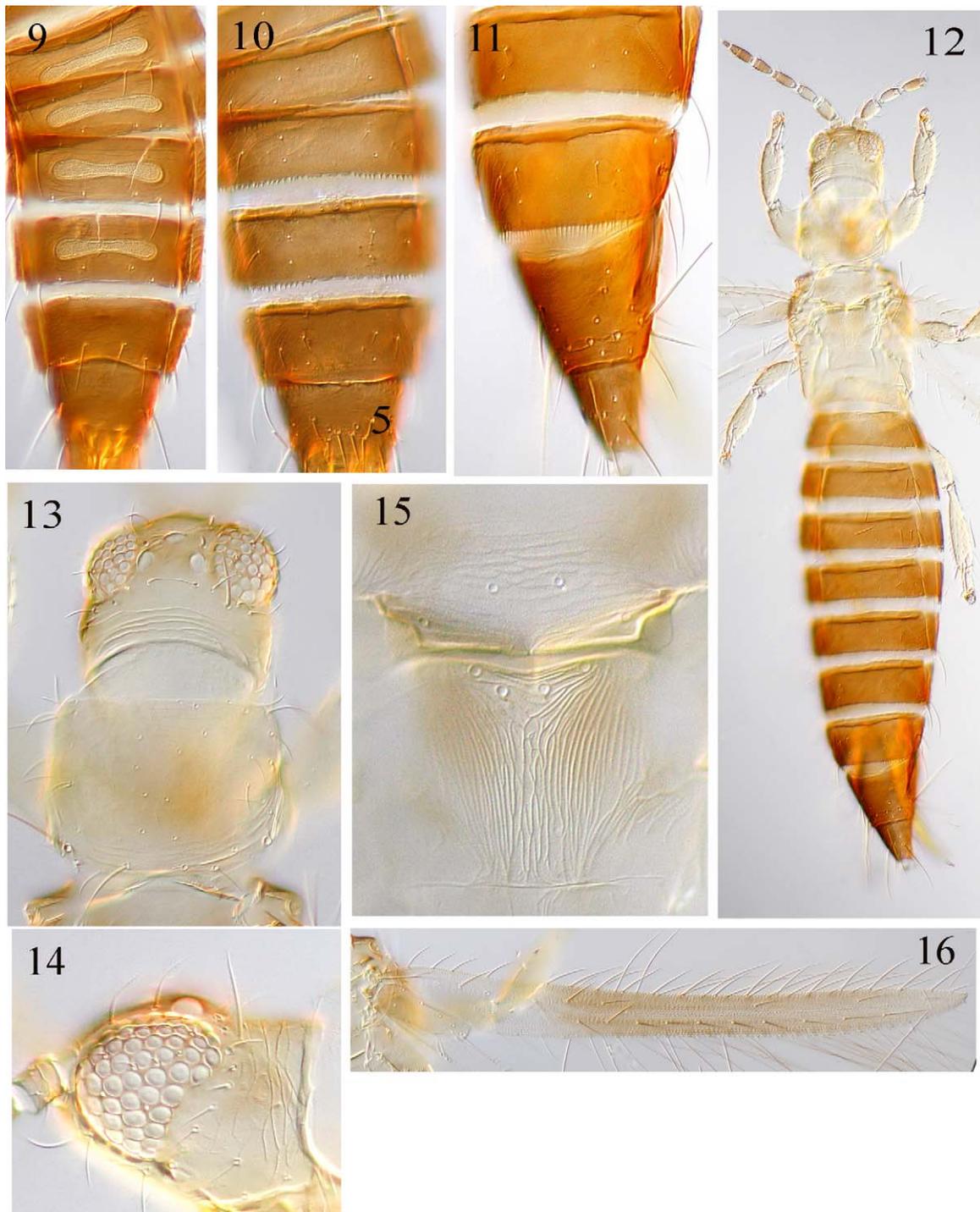
Comments. The females identified here as *S. indicus* differ from those seen from Australia (Mound 2011) in having the submedian discal setae on tergite VIII very long, extending beyond the posterior margin of the tergite. Similar specimens have been studied from Thailand and from Papua New Guinea, but the Australian specimens have this pair of setae not extending beyond the posterior margin of the segment. The specimens from Malaysia have numerous pronotal discal setae, but the number of these setae is considered to be variable in *S. indicus* (Mound 2011). One of these females has a complete row of setae on the first vein of one fore wing, although the other wing has the normal chaetotaxy of 3 or 4 setae on the distal half.

Stenchaetothrips langkawiensis sp. n.

Female macroptera. Body and legs clear yellow, abdominal segments VIII–X darker yellow; antennal segments I–V pale, V slightly shaded at extreme apex, VI light brown on distal half, VII light brown (Fig. 3); fore wing pale (Fig. 8). Head, about as long as wide; ocellar setae II at least twice as long as ocellar setae III; post-ocellar setae subequal in length (Fig. 1). Pronotum with 20–25 discal setae, and weak, widely spaced transverse striations; with 2 pairs of long postero-angular setae, 3 pairs of postero-marginal setae. Mesonotum with no anterior campaniform sensilla. Metanotum with closely spaced striations, campaniform sensilla absent, median setae arising behind anterior margin (Fig. 7). Meso- and metafurca each without a spinula; metasternum with about about 6–14 discal setae. Abdominal tergites VI–VIII with paired ctenidia, V with a very weak pair; I–VII posterior margin laterally with a few weakly dentate microtrichia, sometimes extending across the margin medially on VI–VII; tergite VIII with almost complete comb of small, irregular, sometimes dentate microtrichia (Figs 5a, 5b); submedian setae on VIII not extending beyond posterior margin; anterior pair of campaniform sensilla on IX variable, present or absent. Sternites VI–VII posterior margin laterally, between setae S2 and S3, with a small craspedum comprising 3–6 dentate microtrichia.



FIGURES 1–8. *Stenchaetothrips langkawiensis* sp. n.: (1) Head; (3) Antenna; (5) Abdominal tergites VI–VIII: (5a) Holotype, (5b) Paratype; (7) Meso- and metanotum; (8) Fore wing. *S. indicus*: (2) Head; (4) Female; (6) Abdominal segments VII–X.



FIGURES 9–16. *Stenchaetothrips hullikali*: (9) Male abdominal sternites; (10) Male abdominal tergites; (11) Female abdominal tergites; (12) Female; (13) Head and pronotum; (14) Head (lateral view); (15) Meso- and metanotum; (16) Fore wing.

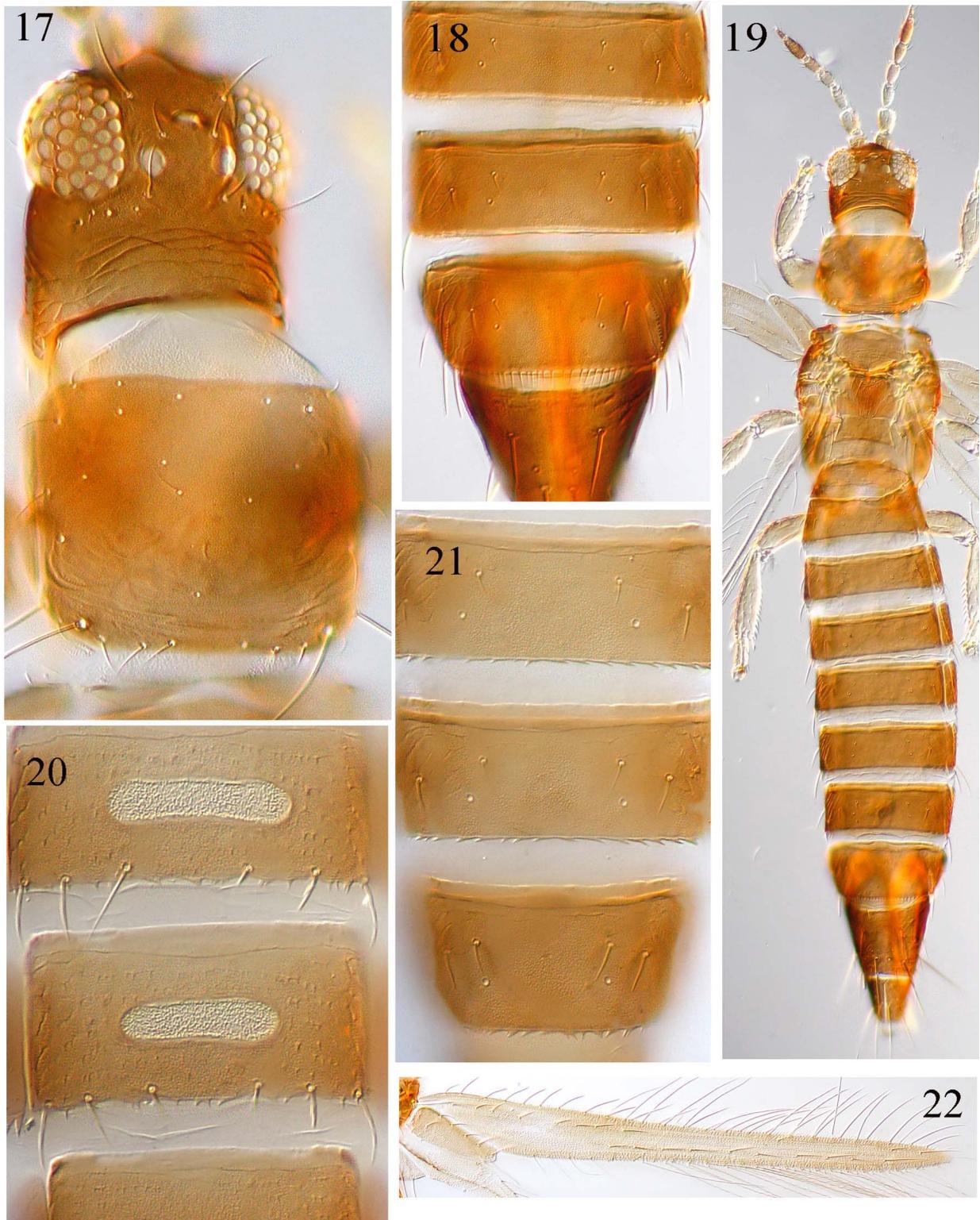
Measurements (holotype female in microns). Body length 1150. Head length 110; width across eyes 115; ocellar setal pair II each 40; ocellar setal pair III each 20. Pronotum, length 118; width 125, postero-angular setae, inner 50, outer 30. Fore wing length 600. Antennal segments III–VII length, 33, 33, 33, 45, 20 respectively.

Male. Unknown.

Specimens studied. Holotype female. **MALAYSIA**, Kedah, Langkawi, on grass, 15.i.2011 (Eow, L.X. & Ng, Y.F.) (ANIC). Paratypes: 2 females collected with holotype (CISUKM).

Comments. This new species is particularly similar to *S. indicus*, in that the females lack a comb of long regular microtrichia on the posterior margin of the eighth abdominal tergite, and both species are almost completely

yellow. However, the new species differs from *S. indicus* in having the posterior margins of the abdominal tergites, at least laterally, with short almost dentate microtrichia, and on VIII there is an almost complete comb of small, irregularly dentate microtrichia. All other species in this genus are reported to have a comb of long slender microtrichia on this tergite. The anterior campaniform sensilla on tergite IX vary among the three available specimens; the holotype and one paratype each have only the left one present, but the other paratype has a pair of sensilla.



FIGURES 17–22. *Stenchaetothrips biformis*: (17) Head and pronotum; (18) Female abdominal tergites VI–IX; (19) Female; (20) Male abdominal sternites VI–VIII; (21) Male abdominal tergites VI–VIII; (22) Fore wing.

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