



A new species of *Merothrips* from the Dampa Tiger Reserve, Mizoram, India (Thysanoptera, Terebrantia)

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Abstract. *Merothrips mizoramensis* sp.n. is described from northeastern India based on a single macropterous female. The fore wings of this specimen have a single longitudinal vein, the pronotal notopleural sutures are very long with the posteroangular setae displaced laterally, tergite IX lacks trichobothria, and many tergites and sternites bear an unusual number of sculptured lines.

Key words: notopleural sutures, fore wing veins, trichobothria

Introduction

The Terebrantian family Merothripidae is currently considered to include six genera that between them comprise a total of 24 small to minute thrips species. Three of the genera, each comprising a single species, are known only from fossils (ThripsWiki 2021). Of the three genera with extant species, *Damerothrips* is known only from a single species in southern Brazil, and *Erotidothrips* is known only from a single species that has been taken widely but rarely in the Old World tropics (Mound & O'Neill 1974). The third genus, *Merothrips*, currently includes four species known only from fossils (Ulitzka 2020), and 15 extant species from various warmer parts of the world (ThripsWiki 2020). Most of these 15 species are known only from the Neotropics, although three of these Neotropical species have been dispersed widely around the world (*M. floridensis*; *M. morgani*; *M. williamsi*). In contrast, four *Merothrips* species have been described from very different areas: *brunneus* from New Zealand; *ottonis* from South Africa, *indicus* from India, and *yii* from Malaysia. The objective here is to describe a further new *Merothrips* species from the rich tropical forest of Mizoram in northeast India close to the border with Bangladesh.

Although currently interpreted as a single lineage, there is a considerable diversity of body structure amongst the members the genus *Merothrips*. An alternative interpretation by Bhatti (1989) placed three species each into its own separate new genus, in recognition of the unusual structure of each one (see illustrations in Mound & O'Neill 1974). The pronotal chaetotaxy among *Merothrips* species commonly involves three pairs of posteromarginal setae (pairs I, II and III), although this is sometimes reduced to two setae. Around the posterior angles of the pronotum most *Merothrips* species bear two pairs of setae, pair IV being long and pair V very short. However, in one species, *mirus*, there is a sixth pair of setae that are also long and placed unusually far forward. This condition was interpreted by Mound and O'Neill (1974) as a second pair of long posteroangular setae, although these setae were referred to by Bhatti (1989) as “a long midlateral pronotal seta”. Presumably this latter interpretation, and the placement of *mirus* in a new genus, assumed homology with the pronotal midlateral setae of *Damerothrips gemmatus* (see illustration in Mound & O'Neill 1974). A second species placed by Bhatti into its own genus, *fusciceps*, has the pronotum unique in structure with the anterior margin weakly defined and the membrane anterior to this margin bearing lines of sculpture; the postocular region of the head in this species is also unusually short. The third monobasic genus was erected for *williamsi*, a species in which the head is exceptionally long, with the long postocular region bearing many transverse striae (illustration in Bhatti 1989). The objective here is to describe a further new species that similarly exhibits some unusual character states that distinguish it from all other members of the genus *Merothrips*. These include the absence of ocelli in the macroptera, the absence from the fore wing

of a second longitudinal vein, the absence of trichobothria on tergite X, the presence of many longitudinal lines of sculpture on the pronotum, tergites and sternites, the presence of a pronotal structure and chaetotaxy that is unique within the genus, and the presence of a remarkably elongate pterothorax. Despite these differences the species is here interpreted as an unusual member within this lineage, rather than as sister-species to the rest of the genus.

The area within eastern India where this new species was found is the Dampa Tiger Reserve in western Mizoram. The 500 km² of this reserve forms part of the Indo-Burma biodiversity hotspot and has moist evergreen to semi evergreen rainforests (Champion & Seth 1968). The reserve covers mountainous terrains with elevation ranging from 250 to 1100 m above sea level. Situated on the Tropic of Cancer, the seasonal climate involves relatively mild winters (December to February, average temperature of 15°C), with warm summers and a distinct rainy season from May to October (Raman *et al.* 1998).

Within India, the genus *Merothrips* was first reported by Ananthakrishnan (1966), based on one apterous female from Madras that was subsequently identified as *M. morgani* Hood (see Bhatti & Ananthakrishnan 1975). These authors also described a new species, *M. indicus*, based on two macropterous females and one apterous male collected from dry twigs in Kerala and Tamil Nadu. However, *indicus* is very similar in structure to the widespread species *M. floridensis* Watson. In recording some specimens that might be considered as *indicus* from Christmas Island in the Indian Ocean, Mound (2019) stated that the character states distinguishing these two species need further study.

***Merothrips mizoramensis* sp. n.**

(Figs 1–7)

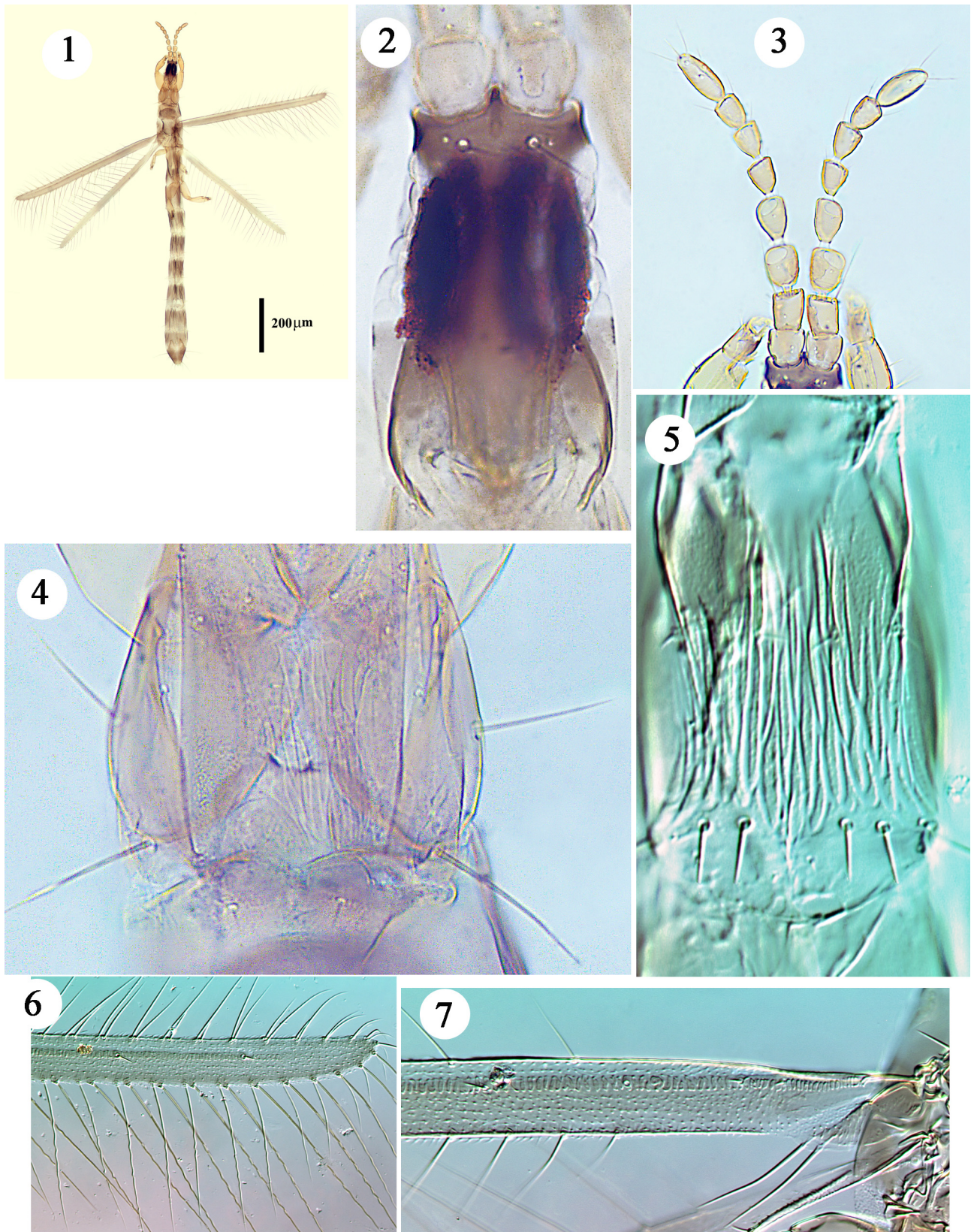
Female macroptera. Body exceptionally long and slender (Fig. 1), light brown, head progressively darker towards base of antennae; legs and antennae uniformly yellow; fore wings grey with longitudinal vein darker. Antennae 8-segmented, segments III and IV each with a transverse oval sensorium, surface microtrichia absent; III large, almost quadrate, IV smaller than III, V–VII small (Fig. 3). Head with compound eyes well developed, ocelli not developed; pre-ocular vertex with one pair of setae arising in transverse line with campaniform sensilla (Fig. 2); postocular setae not developed. Prothorax elongate; with narrow median sclerite delimited by long notopleural sutures; this pronotal sclerite bears medially several longitudinal sculpture lines, but with anterior, lateral and posterior areas finely granulate; anterior margin with one pair of minute setae, and lateral margins on anterior half with two pairs of minute setae; two pairs of posteromarginal setae, of which the lateral pair is minute; notopleural suture incomplete posteriorly with the two posteroangular setae arising lateral to this suture on the epimeral sclerite, one seta long and one very short. Fore coxae long and swollen, with two pairs of long setae, one ventrally and one laterally (Fig. 4). Fore tarsi apparently with pre-apical claw. Meso and metathorax greatly elongate. Mesonotum medially with weak longitudinal lines of sculpture; mesosternum with bold elongate reticulation. Metanotum with longitudinal reticulation on anterior half and one pair of setae medially, posterior half without sculpture but with one pair of minute setae; metascutellum without sculpture except for a few lines near posterior margin. Fore wing with a single longitudinal vein bearing 7 (or 9) setae (Fig. 6), and no indication of a veinal fork or second vein (Fig. 7); posterior margin with the usual two series of cilia, all of them strongly wavy; clavus without veinal setae. Tergites and sternites each with longitudinal lines of sculpture medially; tergite VIII spiracles scarcely 5 microns in diameter; tergite IX with two pairs of long setae; tergite X with trichobothria represented by pair of very small campaniform sensilla with no axial seta. Sternites II–VII with many strong longitudinal sculpture lines; sternite VII with 2 pairs of minute discal setae, with 3 pairs of marginal setae and 1 or 2 pairs of minute setae on weakly sclerotised posteromarginal lobes (Fig. 5).

Measurements (holotype female in microns). Body length 1120. Head, length 85; width 54. Pronotum, length 80; epimeral setae 40. Coxa lateral setae 30. Fore wing length 600. Tergite IX median and lateral setae lengths 70. Antennal segments I–VIII length (width), 18 (18), 20 (16), 24 (17), 23 (15), 19 (13), 19 (13), 17 (13), 29 (12), respectively.

Specimen examined. Holotype female macroptera, **INDIA**, Mizoram, Dampa Tiger Reserve (23°36' N and 92°20' E), from dried twigs, 31.x.2014 (Th. Johnson), deposited in the Indian National Bureau of Insect Resources, Bengaluru.

Comments. The single available specimen is slightly distorted, with the compound eyes apparently slightly compressed laterally (Fig. 2), and the abdominal segments similarly compressed laterally. Despite the fore wings being fully developed (Figs 6, 7) there is no indication of any ocelli on the head, and on tergite X the trichobothria are absent despite these structures generally being present in macropterous females of *Merothrips* species (Mound & O'Neill 1974). This new species is unusually long and slender, with the pterothorax particularly long. It differs from other members of this genus in having many sclerites bearing longitudinal lines of sculpture, including the pronotum, tergites and sternites, in having the fore wing with a single longitudinal vein (Fig. 7), and in having an elongate prothoracic notum that is delimited

by longitudinal notopleural sutures (Fig. 4). The structure of the elongate meso and metathorax is particularly difficult to interpret due to their weak sclerotisation, but both of them are unusually elongate.



FIGURES 1–7. *Merothrips mizoramensis*: (1) female; (2) head; (3) antennae; (4) prothorax; (5) sternite VII; (6) fore wing apex; (7) fore wing base.

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