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A new species of *Taeniothrips* (Thysanoptera: Thripidae) from India

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Taeniothrips bharokariensis sp. n. is described from specimens collected on ferns from Himachal Pradesh state of India. This is the third species in which S2 setae on abdominal sternite VII are positioned marginally. Partial sequence data of mitochondrial cytochrome c oxidase (mtCOI) from holotype and paratypes is provided.

Key words: Thripidae, *Taeniothrips*, *T. bharokariensis*, new species, India

Introduction

The genus *Taeniothrips*, one of the oldest generic names in the Thysanoptera, was established by Amyot & Serville (1843) for four species described by Haliday (1836) in the genus *Thrips*: *primulae*, *decora*, *dispar* and *brevicornis*. The type species of *Taeniothrips* was designated by Karny (1907: 45) as *primulae*. Ahlberg (1918) recognised that *primulae* and *picipes* Zetterstedt represent the same species, but mistakenly considered that *picipes* dated from 1840 not 1828. Of the four species listed originally by Amyot & Serville, *primulae* and *decora* are now considered synonyms of *picipes*, and *brevicornis* is a synonym of *dispar* in the genus *Baliothrips* (see ThripsWiki 2014). The genus *Taeniothrips* is found in Holarctic region, Southeast Asia and India, but of the 45 listed species 21 are fossils (Mound *et al.* 2012). In India, *Taeniothrips* is known by only three species, *T. major* Bagnall, *T. orchidi* Ananthakrishnan and *T. tigris* Bhatti (Bhatti 1990, 1995).

The genus *Taeniothrips* can be distinguished from other genera of Thripidae by the following characters; antennae 8-segmented; segment I without dorso-apical setae; ocellar seta pair I absent; fema entire, undivided; mesosternum with spinula, metasternum without spinula (Fig. 3); tergite VIII with complete comb of microtrichia at posterior margin; sternite VII with setae S1 and S2 arising ahead of the posterior margin (excluding *T. arbuti* Bournier, *T. insequens* Uzel, and the new species described below, in all of which S2 setae on sternite VII arise at the margin); each paramere bent nearly at right angle just before middle (Bhatti 1978). A key to non-fossil species of the genus *Taeniothrips* is available (Mound *et al.* 2012).

The objective of this paper is to describe a new species of *Taeniothrips* collected on fern at high altitude from Himachal Pradesh State of India. Photographs were taken through a Leica Microscope Model DM-1000 using the Leica software application suite (LAS EZ).

Molecular data

Specimen collection, DNA isolation and amplification of partial fragment of mtCOI gene were performed as earlier protocol (Buckman *et al.* 2013). Voucher specimens were retrieved and slide mounted in Canada balsam for morphological examination. PCR products were purified from the Agarose gel using Macherey Nagel Gel Purification Kit as per manufacturer's instructions. Sequencing of purified PCR product was carried out in both directions using 48-capillary Genetic Analyzer (Applied BioSystems ABI 3730) using BigDye® Terminator Cycle Sequencing Kit (v3.1). The generated forward and reverse COI fragments of the holotype and two paratypes of new species were analysed with SeqScape software version 2.7 (Applied Biosystems) and consensus sequences were obtained after checking deletion, insertion and stop codons. The generated sequences were submitted to NCBI Genbank to get accession numbers (KM485668- KM485670) and BOLD (Barcode of Life Database) under the project titled "DNA Barcoding Thrips of India".

Etymology. This new species is named after its type locality.

Comments. This new species is the third member in genus *Taeniothrips* where S2 setae on abdominal sternite VII are positioned marginally. The other two species with same positioning of setae S2 are *inconsequens* and *arbuti* (Mound *et al.* 2012). The new species can be separated from the Indian species *T. major* described from Himalayas by the following characters: forewing brown with clavus except pale proximal end (brown with light distal end in *major*); distance of median pair of setae is less than the distance between median and submedian (distance between median pair of metanotal setae is more than the distance between median and submedian in *major*); abdominal tergites IV–VII without reticulations (with weak reticulation medially between setal pair S2 in *major*); male sternal pore plates are transverse in shape and more than 50 microns wide (oval in shape and less than 40 microns wide in *major*).

It can be separated from *inconsequens* by the absence of curved terminal claw on fore tarsus (with claw in *inconsequens*) and fore wing first vein with 2 setae distally (3–6 setae distally in *inconsequens*). This new species was compared with two paratype specimens of *arbuti* (Registration No. 2069/H17 to 2070/H17) available at National Zoological Collection (NZC), Zoological Survey of India, Kolkata. It can be separated from female of *T. arbuti* by the following characters: the fore wing clavus brown; fore wing first vein with 1 seta medially and 2 setae distally; metanotal median pair of setae far behind the anterior margin and close to each other; male body colour brown including antennal segments I–II. In contrast *arbuti* has: fore wing clavus pale; fore wing first vein with 1–2 setae medially and 3–6 setae distally; metanotal median pair of setae arising near the anterior margin and close to submedian pair. The body colour of the male is pale including antennal segments I–II.

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