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Short paper

The first record of the genus and species of *Dichromothrips smithi* (Thysanoptera: Thripidae) from Iran

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Abstract: Genus and species of *Dichromothrips smithi* (Zimmermann) (Thripidae: Thripinae) is recorded from Iran, Ilam province for the first time. Specimens of this species have been collected on rangeland plants by beating an unknown plant over a white plate. Diagnostic morphological characters and the geographical distribution of the newly recorded thrips are given.

Keywords: taxonomy, Thripidae, Iran, new record

Introduction

Dichromothrips Priesner is a small genus in the family Thripidae, comprising 18 species (ThripsWiki, 2020), all of which appear to be associated with flowers of Orchidaceae (Mound, 1976). More than half of the described species were originally recorded from the Old World, five species from Africa, and two species from Australia and New Zealand (Lee *et al*., 2002). *Dichromothrips* is very similar to the genus *Taeniothrips* Amyot et Serville (Mound, 1976; Okajima, 1999). However, *Taeniothrips* species are easily distinguished from the former by the combination of following characters: interocellar setae situated between hind ocelli, 2 pairs of pronotal posteroangular setae well developed, absence of metasternal spinula, and abdominal tergite X longitudinally split (Mound, 1976; Okajima, 1999). In addition, males in *Dichromothrips* have 2 or 3 pore plates on several sternites (Mound, 2009).

A key to world species of this genus was given by Mound (1976). Thereafter, zur Strassen (1993) and Okajima (1999) described two species from Madagascar and South Africa, and two species from Borneo, respectively.

Recently, the second author, Behzad Miri collected thrips specimens on rangeland plants in Eyvan city, Ilam Province, Iran. Finally, based on four female specimens, the thrips was identified as *Dichromothrips smithi* (Zimmermann), a newly recorded genus and species in Iran. Because of its agricultural importance, we re-describe *D. smithi* with illustration of many parts of body in this paper. The new record genus increases the known thripine thrips reported in Iran to 42 genera (Mirab-balou, 2018; Minaei, 2018).

Materials and Methods

Specimens were collected on rangeland plants from Eyvan city, Ilam province, and prepared onto slides using the method of Mirab-balou and Chen (2010). The specimens are deposited in the collection of Department of Plant

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Protection, College of Agriculture, Ilam University, Iran (ILAMU).

Results

***Dichromothrips* Priesner, 1932**

Type species. *Dichromothrips orchidis* Priesner, 1932: 110.

Generic diagnosis: Head with longitudinal row of tubercles present in front of median ocellus. Ocellar setae pair I absent; interocellar setae various in position and length. Antennae 8-segmented, antennal segments III & IV with apical neck, and elongate, with forked sense cones; segment V relatively broad at apex. Maxillary palps 3-segmented. Pronotum transverse, with 0, 1 or rarely 2 pairs of long posteroangular setae. Fore wing with about 12 basal, 1 median and 2 distal setae on first vein, second vein with 10-20 setae. Metanotum with median setae near anterior margin. Meso- and metasternal both with spinulae. Abdominal tergites without lateral ctenidia; tergite VIII with group of microtrichia anterolaterad spiracles; posterior margin of tergite VIII with complete row of long comb; tergite X of female entire. Abdominal sternites without discal setae; sternite VII with median and submedian setae arising in front of posterior margin.

Male. Abdominal tergite IX without stout dorsal setae, lateral and posteroangular setae stout; sternites III–VII each with paired oval or round pore plate, these fused medially.

***Dichromothrips smithi* (Zimmermann)**

Physopus smithi Zimmermann, 1900: 10.

Diagnosis: Female dark brown (Fig. 1), tarsi and apices of tibiae yellow, antennae dark except apex of segment III yellow (Fig. 2A); fore wing brown with sub-basal area pale (Fig. 2B). Antennae 8-segmented, segments III & IV with apex slender (Fig. 2A). Head almost as long as wide, with 2 pairs of ocellar setae, pair III anterolateral to ocellar triangle (Fig. 2C). Pronotum with one pair of prominent posteroangular setae (Fig. 2D). Metanotum reticulate on anterior half, median setae situated at anterior margin (Fig. 3A). Meso- and metasternal both with spinulae (Fig. 3B). Fore wing first vein with 2 distal setae, second vein with 12 to 15 setae. Abdominal tergites without sculpture medially; tergite VIII with complete posteromarginal long comb (Fig. 3C); tergite IX with a pair of campaniform sensilla at posterior margin, tergite X entire (Fig. 4A). Abdominal sternite VII with median 2 pairs of setae arising well in front of posterior margin (Fig. 4B).

Material examined: IRAN, Ilam province: 4♀, Tang-e Danuk, unknown plant, 26.v.2019, Leg. B. Miri, (in ILAMU).

Distribution: China, Japan, Korea, India, Malaysia, Singapore, Indonesia, Australia, USA (Lee *et al*., 2002; Mirab-balou *et al*., 2011), and Iran (Ilam province).

Figure 1 *Dichromothrips smithi* (female).

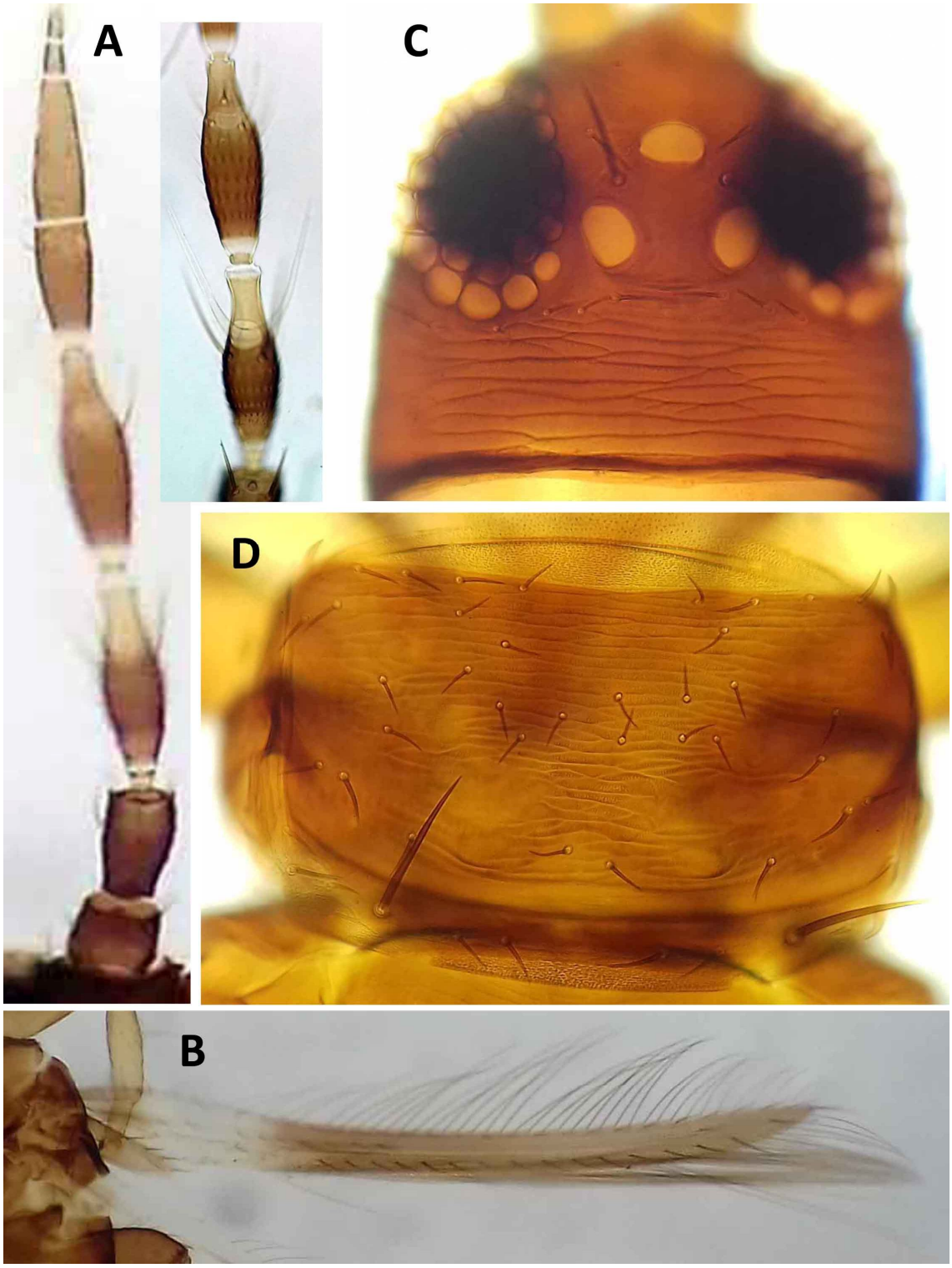

Figure 2 *Dichromothrips smithi*, **A.** Antenna, showing segments III & IV; **B.** Fore wing; **C.** Head; **D.** Pronotum.

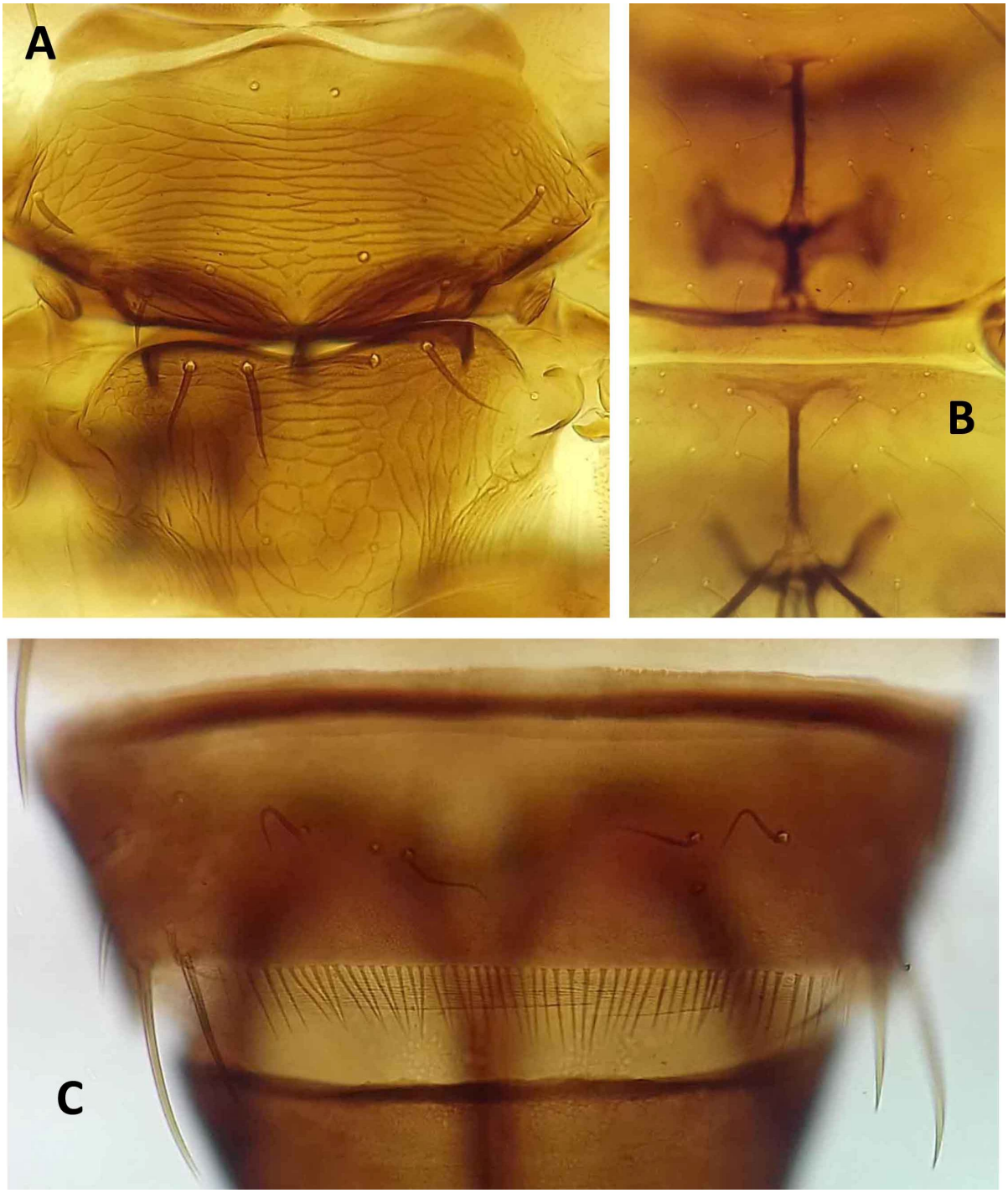

Figure 3 *Dichromothrips smithi*, **A.** Meso-& metanotum; **B.** Meso-and metasternal spinulae; **C.** Abdominal tergite VIII, showing comb at posterior margin.

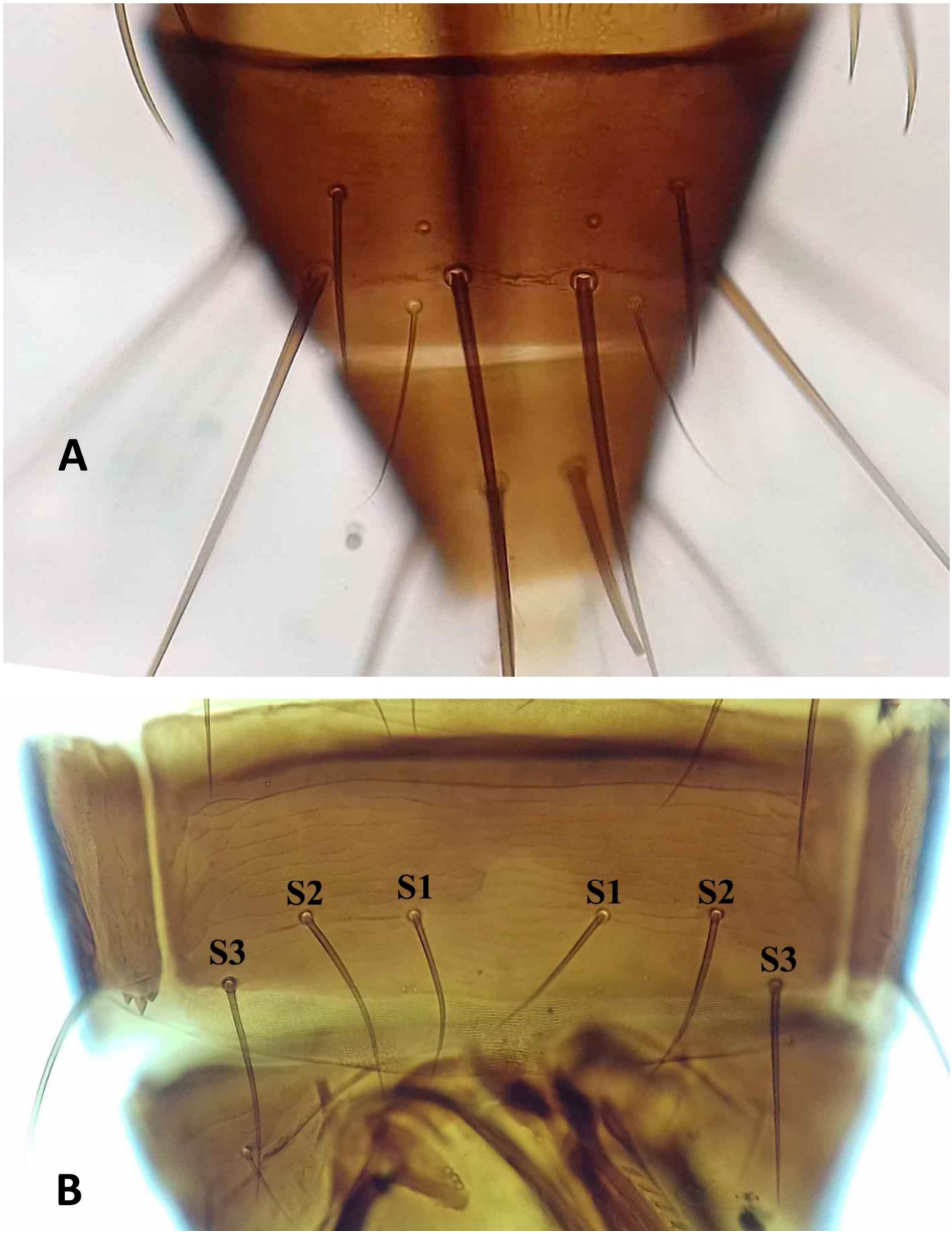

Figure 4 *Dichromothrips smithi*, **A.** Abdominal tergites IX & X; **B.** Abdominal sternite VII.

Discussion

The orchid thrips, *D. smithi* is native to Southeast Asia that feeds on orchids and sometimes a pest on cultivated vanilla in India (Mound and Ng, 2009; Mound and Azidah, 2009). Plants recorded as hosts for *D. smithi*, of which all are orchids, are found in the genera *Vanilla*, *Arundina*, *Vanda*, *Cattleya*, *Spathoglottis*, *Cymbidium*, *Dendrobium*, and *Phalaenopsis* (Mound, 1976; Lee *et al*., 2002; Mound and Azidah, 2009). In this study, two economically important thrips in rangeland plants i.e. *D. smithi* and *Scirtothrips dorsalis* have been collected from Ilam province. It should be noted, the latter species was reported as a pest of citrus in Fars province, Iran (Minaei *et al*., 2016). But, it isn't known how these two species arrived in Iran.

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Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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نخستین گزارش جنس و گونه‌ی *Dichromothrips smithi* (Thysanoptera: Thripidae) از ایران

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چکیده: جنس و گونه‌ی *Dichromothrips smithi* (Zimmermann) (Thripidae: Thripinae) که از روی گیاهان مرتعی استان ایلام جمع‌آوری شده، برای اولین بار از ایران گزارش می‌شود. نمونه‌های این گونه در استان ایلام از روی گیاهان مرتعی به روش تکاندن گیاه روی سینی سفید رنگ جمع‌آوری شده است. ویژگی‌های ریخت‌شناسی و دامنه انتشار جغرافیایی رکورد جدید نیز ارائه می‌شود.

واژگان کلیدی: تاکسونومی، Thripidae، ایران، گزارش جدید