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Short Paper

First report of the genus and species *Nesothrips brevicollis* (Bagnall) (Thysanoptera: Phlaeothripidae: Idolothripinae) from Iran

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Abstract: Four genera and five species of Idolothripinae are recorded in Iran: *Allothrips* Hood, *Compsothrips* Reuter and *Pseudocryptothrips* Priesner each with one species, and *Megathrips* Targioni-Tozzetti with 2 species. In this paper, the genus *Nesothrips* Kirkaldy, with one species *N. brevicollis* (Bagnall) collected on grasses in Marivan, Kurdistan Province, is recorded in Iran for the first time. A key is provided to distinguish five Idolothripine genera from Iran. Diagnostic morphological characters and geographical distribution of the newly recorded species are briefly discussed.

Keywords: Idolothripinae, *Nesothrips*, grass, key, Iran

Introduction

The Thysanoptera with more than 6000 known species is one of the orders of insects distributed throughout the world. This order includes nine families for living species (plus three fossil families) belonging to two suborders: Terebrantia and Tubulifera. The family Phlaeothripidae is the only family in suborder Tubulifera (Mound, 2013). This family is currently comprising about 3500 known species in the world (Mound, 2013), of which 49 species in 20 genera have been reported from Iran (Mirab-balou, 2013). At least half of the species in this family are fungus-feeders, mostly on hyphae but one major group, the Idolothripinae, feeding on spores. More than one-third of the species are phytophagous, including the *Haplothrips* lineage in flowers, and the much larger *Liothrips* lineage on leaves. Some leaf-feeding species causing galls on their host plants (Mound, 1994). A few species are predatory on scale insects and mites (Palmer and Mound, 1991), and some of them feed on mosses (Mound, 1989).

All species of the subfamily Idolothripinae feed on fungi by ingesting whole spores and the adults are usually large and black. Idolothripines are particularly common on dead hanging leaves or on recently dead branches and twigs, but some live on leaf litter or at the bases of grasses and sedges (Mound and Marullo, 1996). About 700 species and 80 genera are currently included in this subfamily, of which, 5 species in 4 genera has previously been recorded from Iran (Mirab-balou, 2013). Full nomenclatural information about Thysanoptera is available on the web (ThripsWiki, 2013).

Materials and Methods

Specimens were collected from Kurdistan province, western Iran, in 2012. The specimens mounted on slide using the method of Mirab-balou and Chen (2010). All descriptions, measurements and photos were made with a Leica DM IRB microscope, a Leica MZ APO microscope with a Leica Image 1000 system, EVOS digital inverted microscope and a Nikon Y-IDT microscope with a Q-image CCD. The specimens are deposited in the collection of Department of Plant Protection, College of

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Results and Discussion

Four genera and five species of Idolothripinae are recorded in Iran: *Allothrips* Hood, *Compsothrips* Reuter and *Pseudocryptothrips* Priesner each with one species, and *Megathrips* Targioni-Tozzetti with 2 species (Mirab-balou, 2013)**.** Here, the fifth genus of this subfamily is recorded for fauna of Iran for the first time (Table 1).

Key to Idolothripine genera from Iran

1. Tube with long lateral setae ***Megathrips***
- Tube without lateral setae 2
2. Antennae 7-segmented; segment IV with 2 sense cones ***Allothrips***
- Antennae 8-segmented; segment IV with 2 or 4 sense cones 3
3. Body constricted at metathorax; antennal segment IV with 2 sense cones ***Compsothrips***
- Body not constricted at metathorax; antennal segment IV with 4 sense cones 4
4. Maxillary palps with a large terminal sense cone which looks like a third segment; body color yellow ***Pseudocryptothrips***
- Maxillary palps without a single large sense cone terminally; body dark brown ***Nesothrips***

Nesothrips Kirkaldy, 1907

Nesothrips Kirkaldy, 1907: 103.
Oedemothrips Bagnall, 1910: 680.
Rhaebothrips Karny, 1913: 128.

This genus comprises 28 species in the world, and is represented in Iran by *N. brevicollis* (Bagnall) that is newly recorded from Kurdistan province. The specimens were collected on grasses.

Diagnosis: Macroptera, microptera or aptera (Fig. 1 A−C). Head variable, usually broader than long, often longer than broad, usually not prolonged in front of eyes; postocellar setae usually short; eyes often prolonged on ventral surface; antennae 8-segmented, segments III with 2 and IV with 4 sense cones; maxillary stylets V-shaped; pronotal notopleural suture complete, basantra present, prospinasternum well developed; fore tarsal tooth present in male, absent in female; metanotal median setae usually short; metanotal sternopleural suture present; fore wings, if present, usually with duplicated cilia; pelta broadly hat-shaped; abdominal tergites II to VII each with one pair of wing retaining setae at least in macroptera; tube with sides rather straight.

***Nesothrips brevicollis* (Bagnall, 1914)**

Oedemothrips brevicollis Bagnall, 1914: 29.
Neosmerinthothrips formosensis Priesner, 1935: 368.
(Fig. 1 A–G)

Material examined: 6 apterous females, 3 macropterous females, 6 apterous males, IRAN: Kurdistan Province: Marivan, on grasses, 10.vii.2012, Leg. M. Mirab-balou, (in ILAMU).

Diagnosis: Female macroptera (Fig. 1 A); body color dark brown; head brownish yellow, thorax and abdomen brown to dark brown, tube the darkest; antennal segments I−V yellow, VI brown but yellow at base, VII & VIII brown (Fig. 1 E); femora yellowish, shaded with pale brown basally; fore tibiae brownish yellow, mid- and hind tibiae brownish yellow; wings shaded with pale brown.

Table 1 Updated list of Idolothripinae (Thysanoptera: Phlaeothripidae**)** recorded from Iran.

Taxa	Distribution in Iran by provinces
Allothrips bournieri Mound	Fars
Compsothrips albosignatus (Reuter)	Fars
Megathrips flavipes (Reuter)	Fars, Azarbaijan-e-Sharghi
Megathrips inermis Priesner	Fars
Nesothrips brevicollis	Kurdistan
Pseudocryptothrips flavipes (Reuter)	Fars, Hamedan

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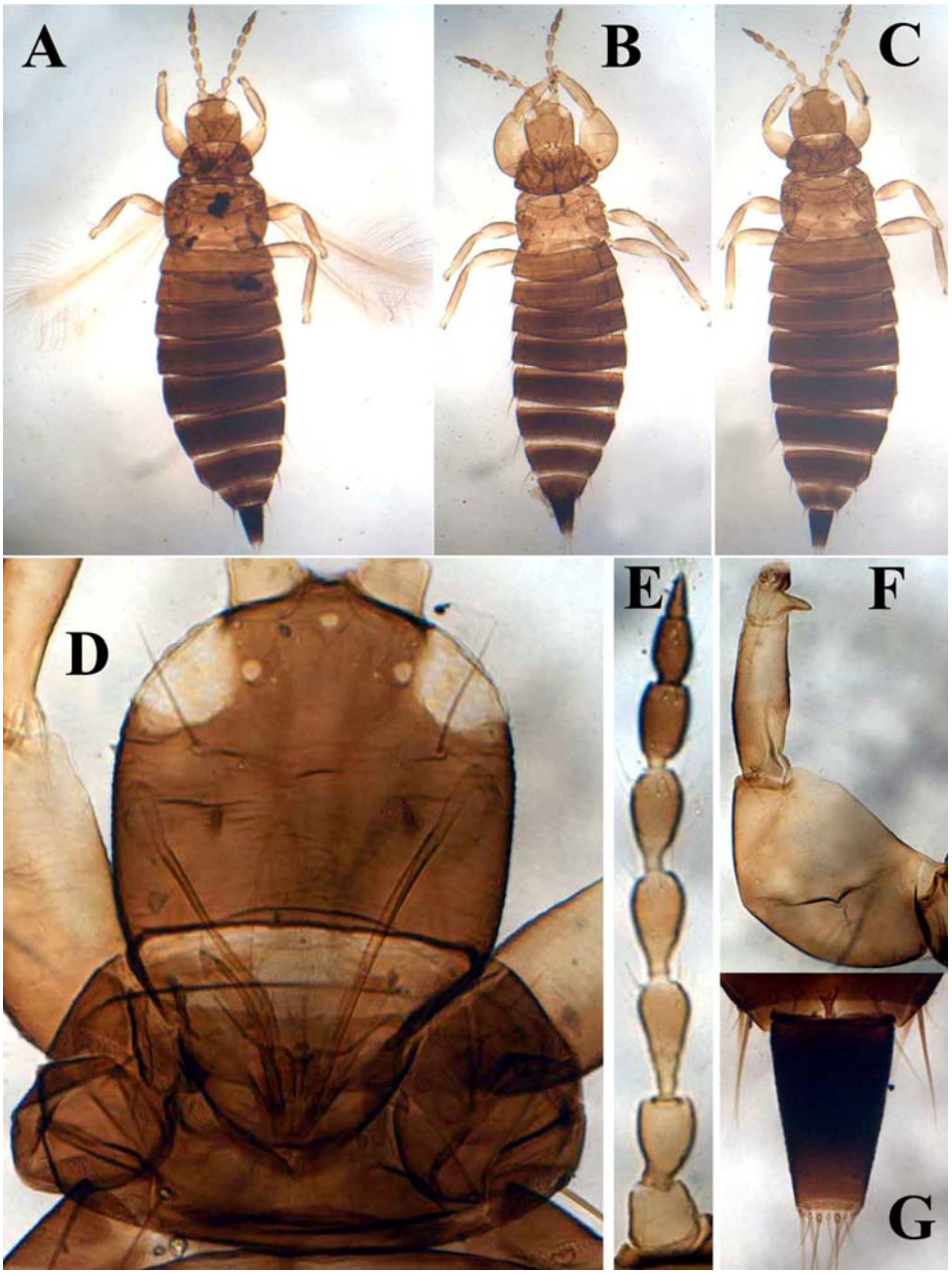

Figure 1 Morphological characteristics of *Nesothrips brevicollis* (Bagnall). (A) Female, macroptera; (B) Male, aptera; (C) Female, aptera; (D) Head and pronotum; (E) Antenna; (F) Fore leg, male; (G) Tube (abdominal segment X).

Head wider than long, dorsally sculptured posteriorly and laterally, cheeks weakly rounded, postocular setae almost as long as eyes, pointed at apex, postocellar setae well developed, half the length of postocular setae (Fig. 1 D); ocelli small; antennae more than 2 times as long as head; pronotum almost smooth, sculptured posteriorly, with major setae blunt or pointed at apex, anteromarginal setae short; metanotum weakly sculptured with polygonal reticulation; fore wings with 7−9 duplicated cilia, usually with 2 subbasal setae developed; pelta eroded posteromedially, median lobe broader than that of minor, campaniform sensilla present; abdominal tergite II−VII each with a pair of short and straigth wing retaining

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setae; tube about 0.8 times as long as head, with sides weakly convex (Fig. 1 G).

Female aptera (Fig. 1 C); very similar to macropterous female, but wings absent.
Male aptera (Fig. 1 B); very similar to apterous female, but fore femora usually well developed, moderately enlarged (Fig. 1 F).
Distribution. India, Japan, China (including Taiwan), Java, Mauritius (Indian Ocean), Philippines, Indonesia, USA (Mirab-balou *et al*., 2013), new record for Iran
Remarks. The genus *Nesothrips* belongs to the subtribe Diceratothripina of the tribe Pygothripini, and is very similar to the genus *Neosmerinthothrips*. The difference between these two genera is a combination of the heavy tube and the elongate lateral setae on the ninth abdominal tergite in *Neosmerinthothrips*. Moreover, the fore tarsal tooth is absent in females of *Nesothrips*, though it is frequently present in females of *Neosmerinthothrips* (Okajima, 2006). A key to the world species of *Nesothrips* was given by Mound (1974).

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اولین گزارش جنس و گونه *Nesothrips brevicollis* (Bagnall) (Thysanoptera: Phlaeothripidae: Idolothripinae) از ایران

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چکیده: چهار جنس و پنج گونه از زیرخانواده Idolothripinae از ایران گزارش شده است: جنس‌های *Allothrips* Hood، *Compsothrips* Reuter و *Pseudocryptothrips* Priesner هر یک دارای یک گونه، و جنس *Megathrips* Targioni-Tozzetti دارای ۲ گونه در ایران می‌باشد. در این مقاله، پنجمین جنس از این زیرخانواده، *Nesothrips* Kirkaldy با داشتن یک گونه *N. brevicollis* (Bagnall) که از روی چمن جمع‌آوری شده برای اولین بار از ایران گزارش می‌شود. همچنین کلید شناسایی جنس‌های زیرخانواده Idolothripinae، ویژگی‌های ریخت‌شناسی و انتشار جغرافیایی رکورد جدید تهیه شده است.

واژگان کلیدی: زیرخانواده Idolothripinae، جنس *Nesothrips*، چمن، کلید، ایران

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