DOI:10.24394/NatSom.2015.27.45 | Natura Somogyiensis | 27 | 45-50 | Kaposvár, 2015

Description of a new species of *Haplothrips* (Thysanoptera: Phlaeothripidae) from Iran

Majid Mirab-Balou[1]* & Xue-xin Chen[2]

[1]Department of Plant Protection, College of Agriculture, Ilam University, 69315–516, Ilam, Iran
[2]Institute of Insect Sciences, Zhejiang University, 866 Yuhangtang Road, Hangzhou 310058, China
*Corresponding author: E-mail: majid.mirab@gmail.com

Mirab-Balou, M. & Chen, X.,-x.: *Description of a new species of Haplothrips (Thysanoptera: Phlaeothripidae) from Iran.*
Abstract: *Haplothrips rasouliani* **sp. n**. (Phlaeothripidae: Phlaeothripinae) is described and illustrated from Iran.

Keywords: Thysanoptera, *Haplothrips*, new species, Iran.

Introduction

About 6000 species of Thysanoptera are known worldwide. These are classified into two suborders Terebrantia and Tubulifera, comprising nine families, of which 8 families belong to Terebrantia and 1 family belongs to Tubulifera (see Mirab-Balou et al. 2011: 720–721). The suborder Tubulifera consists of about 3500 species in 450 genera placed in the single family Phlaeothripidae (Thripswiki 2015), of which 48 species in 20 genera have been recorded in Iran (Mirab-Balou 2013). At least half the species are fungus-feeders, mostly on hyphae but with 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 induce galls on their host plants (Mound 1994). A few species are predatory on scale insects and mites (Palmer & Mound 1991, Reyes 1994) and the members of one small lineage feed on mosses (Mound 1989). However, only a few species of the Phlaeothripidae are considered as crop pests. Pest Phlaeothripidae are primarily members of *Haplothrips* and are reported on various crops in different parts of the world (Mound & Marullo 1996).

In Iran, most of the species that have been recorded are from the tribe Haplothripini. Among them, *Haplothrips* Amyot & Serville, 1843 with 24 species have a diversity of biology, with ten described species apparently predatory and others phytophagous, particularly in the flowers of Asteraceae and Poaceae (Minaei & Mound 2008). In the present paper, a new species is described and illustrated from Iran.

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

Material and methods

Specimens were collected from different places in Hamedan and Alborz Provinces, Iran, and prepared on slides using the method of MIRAB-BALOU & CHEN (2010). Morphological terminology follows OKAJIMA (2006). All descriptions, measurements and photos were made with a Leica DM IRB microscope, a Leica MZ APO microscope with a Leica Image 1000 system. The type specimens are deposited in the Institute of Insect Sciences, Zhejiang University, Hangzhou, China (ZJUH).

Description of the new species

Haplothrips rasouliani sp. n.

Material examined: Holotype female, IRAN: Hamedan Province, YeknAbad (48○ 48' N, 34○ 86' E, 1742 m), on wheat, *Triticum aestivum* L. (Poaceae), 19.v.2009. Paratypes, 1♀, Hamedan Province, Medicinal Plant Garden of Bu-Ali Sina (48° 60' N, 34° 86' E, 1395 m), on *Hyssopus angustifolius* M. (Lamiaceae), 23.v.2009; 1♀, Alborz Province, Karaj (ValadAbad) (51° 42' N, 35° 67' E, 1149 m), on *Mercurialis annua* L. (Euphorbiaceae), 28.v.2009, all collected by M. Mirab-balou.

Description: Female macroptera. Body brown to dark brown, fore tarsi and distal half of fore tibiae yellowish brown; middle and hind tarsi unicolorous as tibiae; antennal segment III paler than other segments (Fig. 3); major setae shaded.

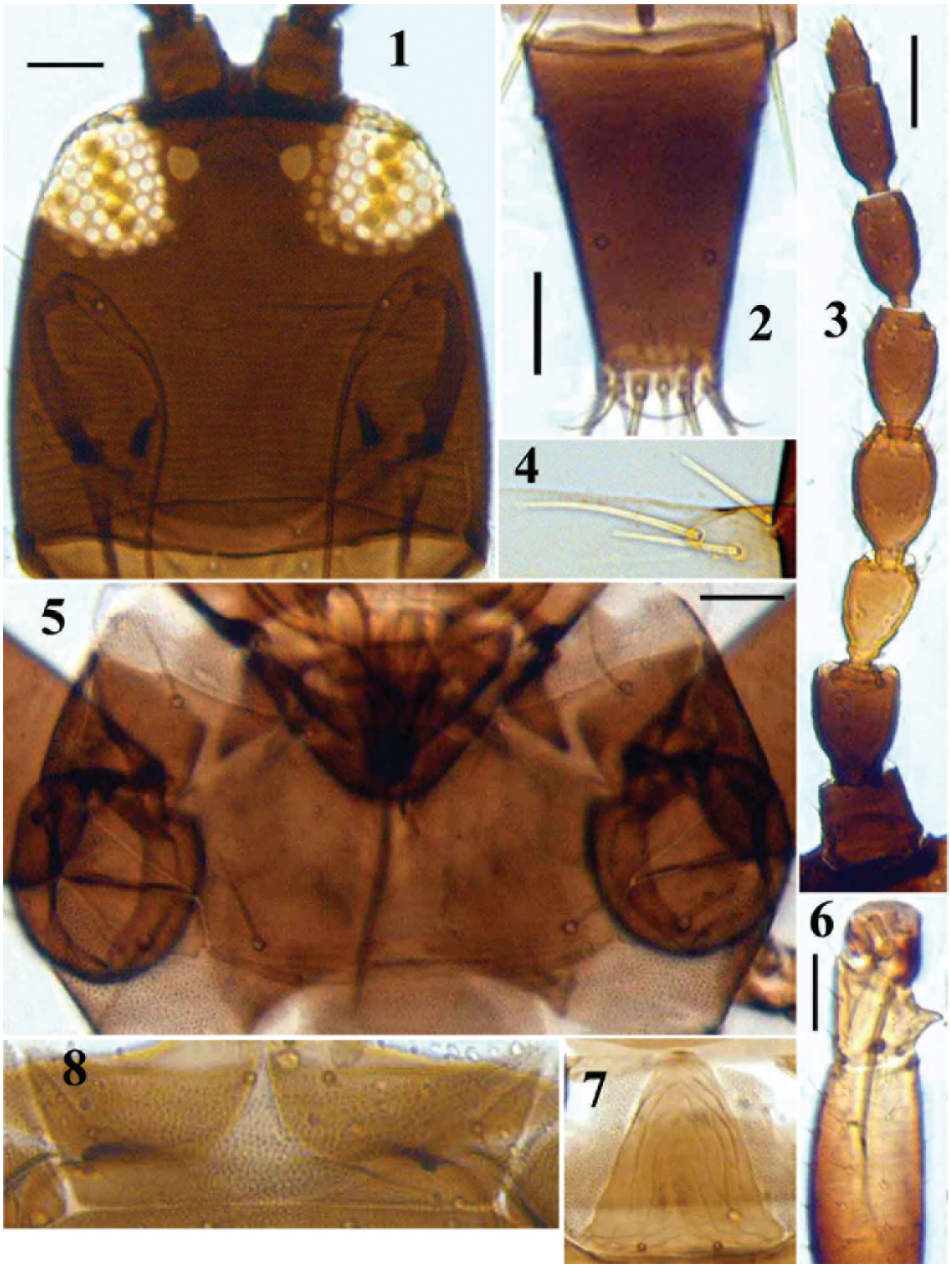
Head. Head about as long as width (Fig. 1); postocular setae weakly capitate, extending beyond posterior margin of eyes; maxillary stylets retracted to eyes (not retracted in one of paratype); ocelli present. Antennae 8-segmented; antennal segment III with two sense cones, and segment IV with four sense cones. Antennal segments I–VIII length/width as follows: I 0.8, II 1.3, III 1.5, IV 1.6, V 1.8, VI 1. 8, VII 1.8, and VIII 1.7.

Thorax. Pronotum with five pairs of major setae, capitate at apices; epimeral setae longest; anteromarginal setae two-thirds of anteroangular setae (Fig. 5). Mesopresternum reduced to two lateral triangles (Fig. 8). Mesoscutum with two pairs of campaniform sensilla laterally; metascutum sculptured with reticulation medially, median setae situated at middle of sclerite. Basantra and ferna present. Fore wings constricted medially, with 6 (left) and 8 (right) duplicated cilia in holotype (6+6 and 7+6 in paratypes); subbasal setae arranged in a triangle, finely capitate (Fig. 4). Fore tarsus with a conspicuous triangular tooth on the inner margin (Fig. 6).

Abdomen. Pelta long, triangular (Fig. 7). Abdominal tergites II–VII with two pairs of wing-retaining setae, darker than other setae; tergite IX setae S1 finely acute, S2 and S3 blunt; tube short, 1.3 times as long as basal width (Fig. 2).

Measurement (Holotype in micron) (width): Body ♀ 1985(395); head 187(193); distance between compound eyes 60; postocular setae 60. Antennae 280. Pronotum 110(270), anteroangular setae 40, anteromarginal setae 30, midlateral setae 35, epimeral setae 60, posteroangular setae 45; fore wing 720; hind wing 670; tube 100(76), setae S1 90, S2 100, S3 85.

Male. Unknown.



Figs. 1-8. *Haplothrips rasouliani* sp. n.: (1) Head, (2) Tube, (3) Antenna, (4) Fore wing sub-basal setae, (5) Pronotum, (6) Fore tarsus, (7) Pelta, (8) Mesopraesternum. (Scale bar= 30µm)

Etymology: This species is named in honor of Prof. Gholam-Reza Rasoulian from Tehran University, Iran.

Remarks: This new species, by having sub-basal setae arranged in a triangle, is similar to several species of *Haplothrips*. It is similar to *H. reuteri* (Karny, 1907) but can be easily distinguished from the latter by the following characters: short tube (vs. long in *reuteri*); fore wings with smooth distal cilia (vs. distal cilia of forewing with surface rough in *reuteri*). It can be distinguished from *H. caespitis* Priesner, 1932 by the following characters: only fore tarsi yellow (vs. all tarsi yellow in *caespitis*); antennal segment III paler than other segments (vs. antennal segments III–V paler than other segments in caespitis); postocular setae, pronotal setae and sub-basal setae capitate (vs. acute in *caespitis*); fore tarsal with conspicuous tooth (vs. minute in *caespitis*); setae S2 and S3 blunt (vs. with abdominal tergite IX setae S1, S2 and S3 finely acute in *caespitis*).

According to the key and descriptions in MINAEI & MOUND (2008), this new species is similar to *H. clarisetis*, but is distinguished from latter by the following character states: fore wing with duplicated cilia (vs. absent in *clarisetis*); presence of a conspicuous triangular tooth on the inner margin on fore tarsus (vs. fore tarsal tooth apparently absent in *clarisetis*).

However, forewing sub-basal setae are arranged in a triangle in *H. ordi* Mound & Minaei, 2007, *H. robustus* Bagnall, 1918, *H. salicorniae* Mound & Walker, 1986 and *H. varius* Hood, 1918 but these species are readily distinguished from our new species because of the absence of duplicated cilia on the fore wing (MOUND & MINAEI 2007).

Distribution: Iran (Hamedan and Alborz Provinces).

Acknowledgements

We are grateful to Prof. Feng Ji-nian of Northwest A & F University, Yangling, Shaanxi-China, for supplying some materials in Thrips & Coccid Systematic Research.

References

MINAEI, K. & MOUND, L. A. 2008: The Thysanoptera Haplothripini (Insecta: Phlaeothripidae) of Iran. - Journal of Natural History 42(41-42): 2617-2658.

MIRAB-BALOU, M. 2013: A checklist of Iranian thrips (Insecta: Thysanoptera). - Far Eastern Entomologist 267: 1-27.

MIRAB-BALOU, M. & CHEN, X. X. 2010: A new method for preparing and mounting thrips for microscopic examination. - Journal of Environmental Entomology 32(1): 115-121.

MIRAB-BALOU, M., TONG, X. L., FENG, J. N. & CHEN, X. X. 2011: Thrips (Insecta: Thysanoptera) of China. - Check List (Journal of species lists and distribution) 7(6): 720-744.

MOUND, L. A. 1989: Systematics of thrips (Insecta: Thysanoptera) associated with mosses. - Zoological Journal of the Linnean Society 96: 1-17.

MOUND, L. A. 1994: Thrips and gall induction: a search for patterns. - In: Plant galls: Organisms, Interactions, Populations. (ed. M. A. J. WILLIAMS). Systematics Association Special Volume 49: 131-149. Clarendon Press, Oxford.

MOUND, L. A. & MARULLO, R. 1996: The Thrips of central and south America: An introduction (Insecta: Thysanoptera). - Memoirs on Entomology, International, Vol. 6: 487 pages.

MOUND, L. A. & MINAEI, K. 2007: Australian thrips of the Haplothrips lineage (Insecta: Thysanoptera). - Journal of Natural History 41: 2919-2978.

OKAJIMA, S. 2006: The Insects of Japan. Volume 2. The suborder Tubulifera (Thysanoptera). - Fukuoka: Touka Shobo Co. Ltd., pp. 1-720.

PALMER, J. M. & MOUND, L. A. 1991: Thysanoptera. Chapter 22. 5: 67-76. - In: ROSEN, D. (ed.), The Armoured Scale Insects, Their Biology, Natural Enemies and Control, Vol B. Amsterdam.

REYES, C. P. 1994: Thysanoptera (Hexapoda) of the Philippine Islands. - Raffles Bulletin of Zoology 42: 107-507.

ThripsWiki. 2015: ThripsWiki - providing information on the World's thrips. Retrieved September 15, 2015. from http://thrips.info/wiki/.

Submitted: 18. 10. 2015
Accepted: 22. 10. 2015
Published: 20. 12. 2015