

First record of the genus *Eryngyothrips* from Iran with description of a new species (Thysanoptera: Thripidae)

Kambiz MINAEI¹), Jalil ALAVI²), Lida FEKRAT³) & Maryam ALEOSFOOR⁴)

^{1,4}) Department of Plant Protection, College of Agriculture, Shiraz University, Shiraz, Iran;
e-mail: kminaei@shirazu.ac.ir, saghar1382@yahoo.com

²) Agricultural and Natural Resources Research Center of Khorasan-e Shomali, Bojnourd, Iran;
e-mail: ja_al932@stu-mail.um.ac.ir

³) Department of Plant Protection, College of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran;
e-mail: fekrat@ferdowsi.um.ac.ir

Abstract. The genus *Eryngyothrips* Bhatti, 1979 is recorded from Iran for the first time. *Eryngyothrips banhashemii* sp. nov. is described and illustrated from specimens collected at the base of *Cirsium* sp. in Fars province. The problems in morphological character interpretation for discrimination of two genera, *Eryngyothrips* and *Oxythrips* Uzel, 1895 are discussed.

Key words. Thysanoptera, *Eryngyothrips banhashemii*, *Oxythrips*, new record, new species, host plant, *Cirsium* sp., Fars province, Iran, Palaearctic Region

Introduction

Most genera in *Anaphothrips* genus-group have no long setae on the pronotum (NAKAHARA 1995, MOUND & MASUMOTO 2009). However, the species in some genera in this group have one or two pairs of elongate pronotal posteroangular setae. One example is the genus *Eremi-othrips* Priesner, 1950 in which most of species have one pair of posteroangular setae on the pronotum, with the majority of these species having been found in Iran (BHATTI et al. 2003; MINAEI 2012b, 2014). Another example is *Oxythrips* Uzel, 1895 with 50 described species (including 12 fossils), almost all from the Northern Hemisphere and associated with plants in many different families (THRIPS WIKI 2014). The pronotum of *Oxythrips* species bears one pair of posteroangular setae, and this is also true of species placed in *Eryngyothrips*. BHATTI (1979) distinguished this from *Oxythrips* as a new genus to include *O. eryngii* Priesner, 1940 and *O. ferulae* Priesner, 1933 together with a new species, *E. discolor* Bhatti, 1979. Moreover, ZUR STRASSEN (2003) moved *Oxythrips nickela* zur Strassen, 1968 to *Eryngyothrips* and provided a key for all four species in the genus.

According to BHATTI (1979), *Eryngyothrips* is distinguished from *Oxythrips* by the presence of a posteromarginal craspedum on the abdominal tergites and sternites (versus lacking in *Oxythrips*), the median pair of mesonotal setae inserted at the same level as the submedian setae (versus anterior to submedian setae) and the position of seta S6 on abdominal tergites (placed on pleurotergites in *Eryngyothrips* while on laterotergites in *Oxythrips*).

The purpose of this paper is to report the occurrence of *Eryngyothrips* in Iran and to describe a new species, *E. banhashemii* sp. nov., based on recently collected specimens from Fars province, south of Iran.

Full nomenclatural information about these taxa and all other Thysanoptera is available on the web (THRIPSWIKI 2014).

Material and methods

Collecting, preserving and slide preparation. Thrips specimens were collected by beating the base of a species of *Cirsium* on a white tray and transferred in 2 mm vials containing 96% ethanol. The specimens were mounted onto slides in Canada balsam after dehydration through a series of ethanol using a form of the protocol given by MOUND & MARULLO (1996).

Morphological examination techniques. The photomicrographs as well as measurements were obtained using a Motic BA310 microscope with attached camera.

Depositories. The material examined is deposited in the following collections:

- ANIC Australian National Insect Collection, CSIRO Ecosystem Sciences, Canberra, Australia;
BMNH Natural History Museum, London, United Kingdom;
PPSU Department of Plant Protection, Shiraz University, Iran.

Taxonomy

Eryngyothrips banhashemii sp. nov.

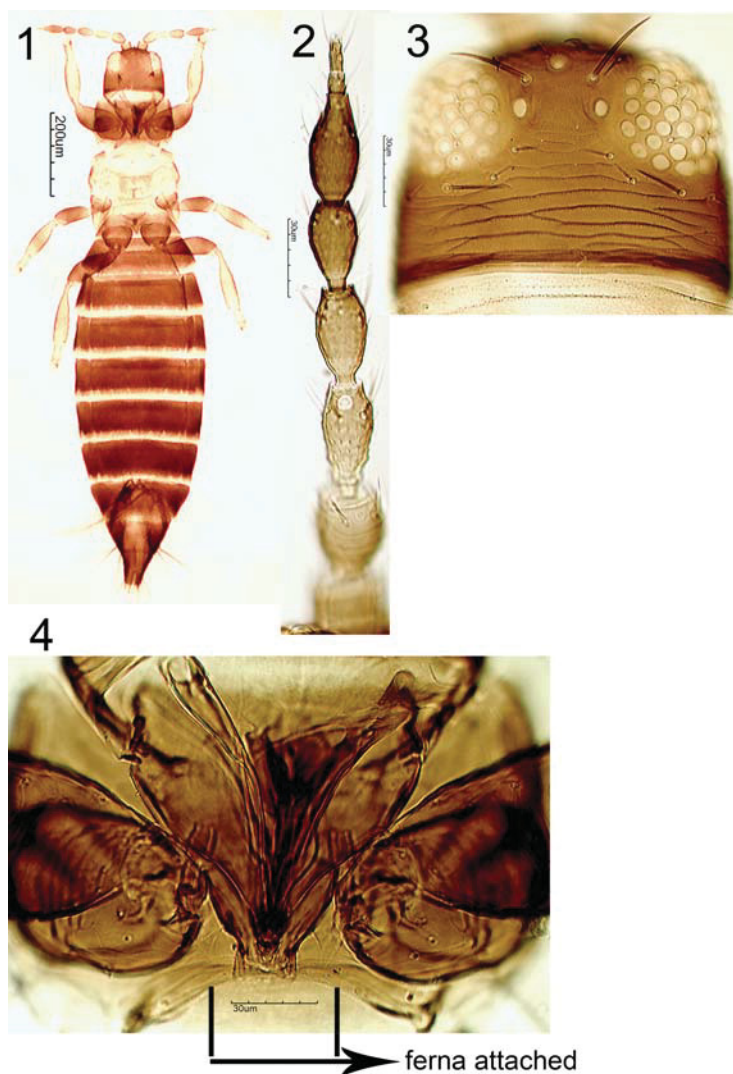
(Figs 1–8)

Type locality. Iran, Fars province, Tange-abolhayat, 80 km south west of Shiraz.

Type material. HOLOTYPE: ♀, IRAN, Fars province, Tange-abolhayat, from base of *Cirsium* sp., 26.iii.2014 (KM 1138) (BMNH). PARATYPES: 4 ♀♀, same label data (1 ♀ in ANIC, 3 ♀♀ PPSU).

Diagnosis. In both the new species and *E. ferulae*, post ocular setae III are longer than the other post ocular setae. However *E. banhashemii* sp. nov. is distinguished from *E. ferulae* by the length of posteromarginal seta S1 on pronotum, because in *E. ferulae* setae S1 are longer and stronger than the other setae, whereas in *E. banhashemii* the setae are all the same length. Moreover, the posteromarginal craspedum on abdominal sternites is narrow in *E. ferulae* whereas it is broad in *E. banhashemii*. The new species is similar to *E. eryngii* and *E. discolor* in sharing the following characters: posteromarginal craspedum on abdominal sternites broad and median pair of mesonotal setae inserted at the same level as submedian setae. However it differs from both species in the length of postocular setae III that is longer than the other setae, while all postocular setae are almost the same length in both *E. eryngii* and *E. discolor*.

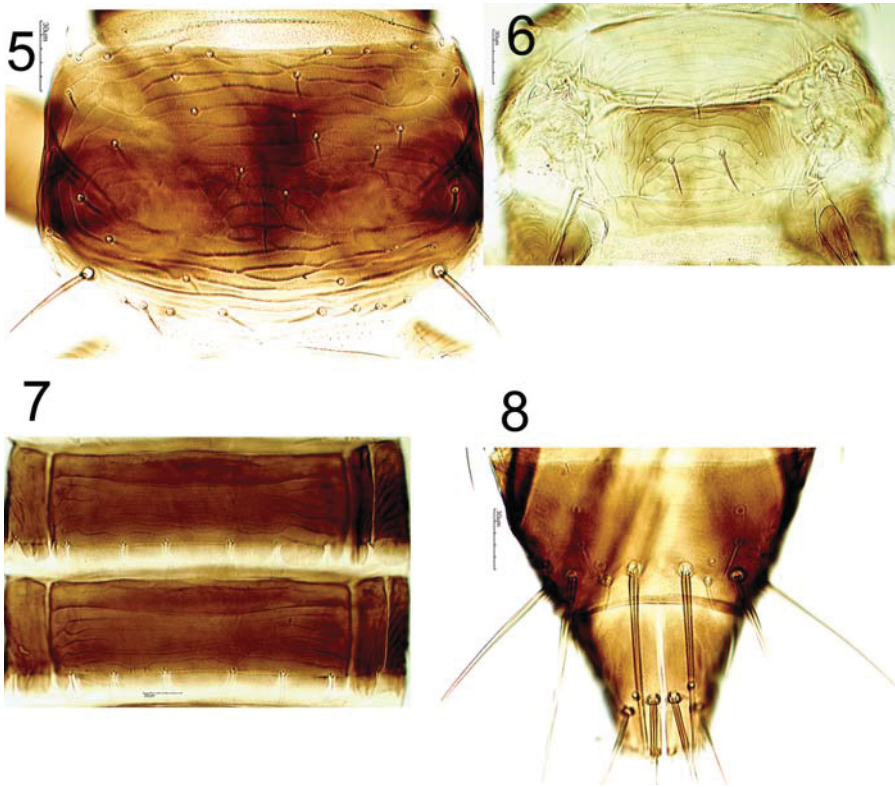
Finally according to the key by ZUR STRASSEN (2003: 241), the new species is different from *E. nickelae* in the color of posteroangular setae (in *E. nickelae* this is pale) as well as the ferna which are separated in *E. nickelae* but are attached in *E. banhashemii*.



Figs 1–4. *Eryngyothrips banhashemii* sp. nov., female. 1 – holotype, general habitus; 2 – antenna; 3 – head; 4 – prosternum.

Description. Female (brachypterous) (Fig. 1). Head, prothorax, and abdomen dark brown; meso- and metathorax yellow-brownish; prominent setae brown. Antennal segments I–II brown, segment II yellow apically; segment III light brown, paler at the apex; segments IV–VIII dark brown (Fig. 2); tibiae yellowish brown, tarsi yellow. Wings including scale are pale.

Antennae 8-segmented, segments III and IV with forked sensoria, segment VI pedicellate; microtrichia present on segments III–VI. Head broader than long, slightly produced in front



Figs 5–8. *Eryngyothrips banihashemii* sp. nov., female. 5 – pronotum; 6 – meso- and metanotum; 7 – tergites IV–V; 8 – tergites IX–X.

of eyes, basal half with transverse reticulations (Fig. 3), eyes with 6 pigmented facets; ocelli present, 3 pairs of ocellar setae present; ocellar setae III on anterior margins of triangle; 4 pairs of postocular setae present; III longer than the others (Fig. 3). Mouth cone short, relatively conical (Fig. 4). Maxillary palps 3-segmented.

Pronotum with widely spaced anastomosing striae, irregular at middle; with one long seta on each posterior angles; posterior margin with four pairs of setae (Fig. 5). Ferna fused medially (Fig. 4). Mesonotum transverse, campaniform sensilla present at anterior margin; median pair of setae inserted at the same level as submedian setae; metascutum irregularly reticulate, median setae on basal third of sclerite, campaniform sensilla present (Fig. 6); mesosternum with, metasternum without spinula. Tarsi 2-segmented.

Abdominal tergites I–VIII with transverse sculpture medially, with no microtrichia on lateral sculpture lines (Fig. 7); without ctenidia; posteromarginal craspeda present on tergites II–VIII; one pair of campaniform sensilla present on posterior margin of tergites I–VIII (unusually, there are two pairs of campaniforms ensilla on tergite VIII of holotype), median setae wider

apart than their length; VIII without marginal comb, IX without sculpture lines; tergite IX with two pairs of campaniform sensilla, mid dorsal setae short and arising laterally; tergite X with complete median split (Fig. 8). Setae S6 on tergites II–VII inserted on pleurotergite. Sternites without discal setae; sternite II with one pair, III–VII with 2 pairs of marginal setae; craspedum present on sternites II–VII.

Measurements (holotype female in microns). Body distended length 1296. Head length (width) 99 (140). Pronotum length (width) 103 (187); posteroangular setae 45. Fore wing length (median width) 100 (57). Tergite IV S1 setae 24; tergite IX S1 setae 100, S2 setae 110. Antennal segments III–VIII length (width) (left) 43 (20), 40 (20), 32 (17), 43 (19), 8 (6), 12 (5).

Male. Unknown.

Etymology. The species is named in honor of Professor Ziaadin Banihashemi. He has been working as a Plant Pathologist in Department of Plant Protection, Shiraz University for almost 40 years. In his scientific career he has published several valuable papers mostly in international journals as well as trained many students in the field of Plant Protection around Iran.

Bionomics. The new species was collected on the base of a species of *Cirsium* (Asteraceae).

Distribution. Iran, Fars province.

Discussion

With this new record, the family Thripidae with 45 genera is the most species-rich thrips group in Iran (MINAEI 2013). The habitat for the new species described here is curious as the previous species in the genus apparently live on various flowers (BHATTI 1979; THRIPIWIKI 2014).

BHATTI (1978) included 19 genera (*Agalmothrips* Priesner, 1965, *Anaphothrips* Uzel, 1895, *Aurantothrips* Bhatti, 1978, *Baileyothrips* Kono & O'Neill, 1964, *Belothrips* Haliday, 1836, *Dictyothrips* Uzel, 1895, *Flavidothrips* Bhatti, 1978, *Hemianaphothrips* Priesner, 1925, *Hyalopterothrips* Priesner, 1939, *Nigritothrips* Bhatti, 1978, *Odontanaphothrips* Moulton, 1926, *Palmiothrips* Bhatti, 1978, *Proscirtothrips* Karny, 1921, *Retamothrips* Bhatti, 1978, *Rubiothrips* Schliephake, 1975, *Tamaricothrips* Priesner, 1964, *Tameothrips* Bhatti, 1978, *Thermothrips* Pelikán, 1949, *Zurstrassenia* Bhatti, 1978) in *Anaphothrips* genus-group. One of these, *Retamothrips*, was subsequently synonymised with *Oxythrips*. In the most recent study on this group, MOUND & MASUMOTO (2009) reviewed Australian *Anaphothrips* genus-group and added six further genera (*Aptinothrips* Haliday, 1836, *Caprithrips* Faure, 1933, *Ozananaphothrips* Mound & Masumoto, 2009, *Apterothrips* Bagnall, 1908, *Dodonaeathrips* Mound & Masumoto, 2009, *Pandorathrips* Mound & Masumoto, 2009). They also claimed that five other genera (*Chilothrips* Hood, 1916, *Eremiothrips*, *Glaucothrips* Karny, 1921, *Helenothrips* zur Strassen, 1976, *Oxythrips*) might be considered as members of this group (see also BHATTI et al. 2003 for *Eremiothrips*). Despite these authors, *Eryngyothrips* has not been mentioned as part of *Anaphothrips* genus-group. However, due to several shared characters with the group, *Eryngyothrips* might be included in *Anaphothrips* genus-group.

It seems likely that the characters defined by BHATTI (1979) to separate *Eryngyothrips* from *Oxythrips* are insufficient and not well defined. Moreover, some characters employed by BHATTI (1979) have been criticized by some authors. For example, MINAEI & MOUND

(2010) indicated that the presence of a tergal and sternal craspedum is not a good character to recognize *Agrostothrips* Hood, 1954 as a separate genus from *Chirothrips* Haliday, 1836. Furthermore, the number of discal setae on abdominal sternite II has been used in keys to distinguish species of *Eryngyothrips* by BHATTI (1979) and ZUR STRASSEN (2003), while in *Thrips australis* (Bagnall, 1915) the number of discal setae on sternite II varies from 2 to 4 (MINAEI 2012a).

Acknowledgements

The manuscript was improved through the advice kindly provided by Laurence Mound (CSIRO Ecosystem Sciences, Australia), Desley Tree (Queensland Primary Industries Insect Collection, Australia) and Petr Kment (National Museum, Prague, Czech Republic).

References

- BHATTI J. S. 1978: Systematics of Anaphothrips Uzel 1895 sensu lato and some related genera. *Senckenbergiana Biologica* **59**: 85–114.
- BHATTI J. S. 1979: Eryngyothrips n. gen., with three species including a new one from Turkey (Insecta: Thysanoptera: Thripidae). *Senckenbergiana Biologica* **59**: 389–397.
- BHATTI J. S., TELMADARRAIY Z., KUMAR V. & TYAGI K. 2003: Species of Eremiothrips in Iran (Terebrantia: Thripidae). *Thrips* **2**: 49–110.
- MINAEI K. 2012a: First report of an endemic Australian thrips, *Thrips australis* (Thysanoptera: Thripidae) on Eucalyptus in Shiraz, Iran. *Journal of Entomological and Acarological Research* **44**: 42–45.
- MINAEI K. 2012b: The genus Eremiothrips (Thysanoptera: Thripidae) in Iran, with one new species. *Zootaxa* **3349**: 56–62.
- MINAEI K. 2013: Thrips (Insecta: Thysanoptera) of Iran: a revised and updated checklist. *ZooKeys* **330**: 53–74.
- MINAEI K. 2014: A new species of Eremiothrips (Thysanoptera: Thripidae) from Iran. *Acta Entomologica Musei Nationalis Pragae* **54**: 29–34.
- MINAEI K. & MOUND L. A. 2010: Grass-flower thrips of the genus *Chirothrips* (Thysanoptera:Thripidae), with a key to species from Iran. *Zootaxa* **2411**: 33–43.
- MOUND L. A. & MARULLO R. 1996: The thrips of central and south America: An introduction (Insecta: Thysanoptera). *Memoirs on Entomology International* **6**: 1–488.
- MOUND L. A. & MASUMOTO M. 2009: Australian Thripinae of the Anaphothrips genus-group (Thysanoptera), with three new genera and thirty-three new species. *Zootaxa* **2042**: 1–76.
- NAKAHARA S. 1995: Review of the Nearctic species of Anaphothrips (Thysanoptera: Thripidae). *Insecta Mundi* **9**: 221–248.
- THRIPSWIKI 2014: *ThripsWiki – providing information on the World's thrips*. Available from: <http://thrips.info/wiki/> [Accessed 2.vi.2014].
- ZUR STRASSEN R. 2003: Die terebranten Thysanopteren Europas und des Mittelmeer-Gebietes. In: *Die Tierwelt Deutschlands. Vol. 74*. Goecke & Evers, Keltern, 271 pp.