



ESI

Received:
29 November, 2019

Accepted:
17 January, 2020

Published:
30 January, 2020

Subject Editor:
Kambiz Minaei

Taeniothrips eucharii (Whetzel) (Thysanoptera: Thripidae): a newly recorded species on rangeland plants in Iran

Behzad Miri¹, Naser Moeini-Naghadeh¹, Hassanali Vahedi¹ & Majid Mirab-balou^{2*}

¹ Department of Plant Protection, College of Agriculture, Razi University, Kermanshah, Iran.

² Department of Plant Protection, College of Agriculture, Ilam University, Ilam, Iran.

ABSTRACT. The genus *Taeniothrips* Amyot & Serville is belonging in the subfamily Thripinae with only one species in Iran. Here, the second species, *T. eucharii* (Whetzel) is newly recorded from the country. Male and female specimens of this species have been collected on the flowers of *Ixiolirion tataricum* (Amaryllidaceae) from Ilam province (west of Iran).

Key words: Thysanoptera, new record, thrips, Ilam

Citation: Miri, B., Moeini-Naghadeh, N., Vahedi, H. & Mirab-balou, M. (2020) *Taeniothrips eucharii* (Whetzel) (Thysanoptera: Thripidae): a newly recorded species on rangeland plants in Iran. *Journal of Insect Biodiversity and Systematics*, 6 (1), 21–27.

Introduction

The genus *Taeniothrips* Amyot & Serville (Thripidae: Thripinae) with 32 non-fossil species (ThripsWiki, 2019) is one of the oldest generic names in the Thysanoptera (Mound et al., 2012; Mirab-balou et al., 2015), of these only one species *T. inconsequens* (Uzel) was recorded from Iran (Mirab-balou, 2018). This genus is very similar to *Thrips* but it can be easily distinguished from the later by the absence of the ctenidia on abdominal tergites, while the ctenidia present on abdominal tergites V–VIII in species of *Thrips* (Nakahara, 1994). Recently, we have collected many thrips specimens from rangeland plants in west of Iran. They have been identified as the oriental lily-flower thrips, *Taeniothrips eucharii* (Whetzel), which is newly recorded for fauna of Iran.

Material and methods

Specimens were collected from pastures of Eyvan city, Ilam province, and prepared onto slides using the method of Mirab-balou & Chen (2010). All specimens are deposited in the collection of Department of Plant Protection, College of Agriculture, Ilam University, Iran (ILAMU).

Results

The species, *Taeniothrips eucharii* (Whetzel) is recorded from Iran for the first time.

Taeniothrips eucharii (Whetzel)

Physothrips eucharii Whetzel, 1923: 30.

Corresponding author: Majid Mirab-balou, E-mail: m.mirabbalou@ilam.ac.ir

Copyright © 2020, Miri et al. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Material examined: Iran, Ilam province: 10♀♀ 5♂♂, Tang-e Danuk, on flowers of *Ixiolirion tataricum* (Amaryllidaceae), 17.iv.2019, Leg. B. Miri.

Diagnosis: Female macroptera (Fig. 1A). Body brown to dark brown, tarsi yellow, also apex of antennal segment III; mid and hind tibiae brown with apex yellow, fore wings brown with base slightly paler. Antennae 8-segmented (Fig. 2C), segments III & IV with apex neck-like, with long forked sense cones. Head longer than wide (Fig. 2A); two pairs of ocellar setae, pair III slightly longer than distance between compound eyes, arising close together between posterior ocelli; postocular setae small and close to posterior margin of eyes. Pronotum (Fig. 2B) with two pairs of long posteroangular setae; posterior margin with three pairs of setae. Mesonotum with transverse sculpture, anterior campaniform sensilla present. Metanotum weakly reticulate; campaniform sensilla present (sometimes absent), median setae situated at anterior margin. Mesofurca with spinula. Fore wing first vein with 1 seta medially and 2 nearer apex (Fig. 2D); second vein with complete row of 10–12 setae. Abdominal tergites III–VII with no sculpture mesad of setal pair S2 (Fig. 3D); tergite VIII with long regular posteromarginal comb (Fig. 2E); tergite X with incomplete short split. Abdominal sternites without discal setae; setae S1 and S2 on sternite VII arising in front of margin (Fig. 3A).

Male: macroptera (Fig. 1B). Similar to female but smaller; abdominal sternites III–VII with large transverse pore plate (Figs 3B, 3C).

Distribution: China, Japan, Korea, USA, Bermuda, Netherlands, Australia (Mound & Tree, 2009; Mirab-balou et al., 2011), and Iran (New record).

Key to *Taeniothrips* species in Iran

1. Fore wing first vein with 3–6 setae distally; female sternite VII setal pair S2 arising at margin; fore tarsus with strongly recurved terminal claw; males with small pore plate medially on abdominal sternites V–VII. *T. inconsequens*
- Fore wing first vein with only 2 setae distally and one medially; female sternite VII setal pair S2 arising sub-marginally; fore tarsus without terminal claw; males with large transverse pore plate on abdominal sternites III–VII. *T. eucharii*

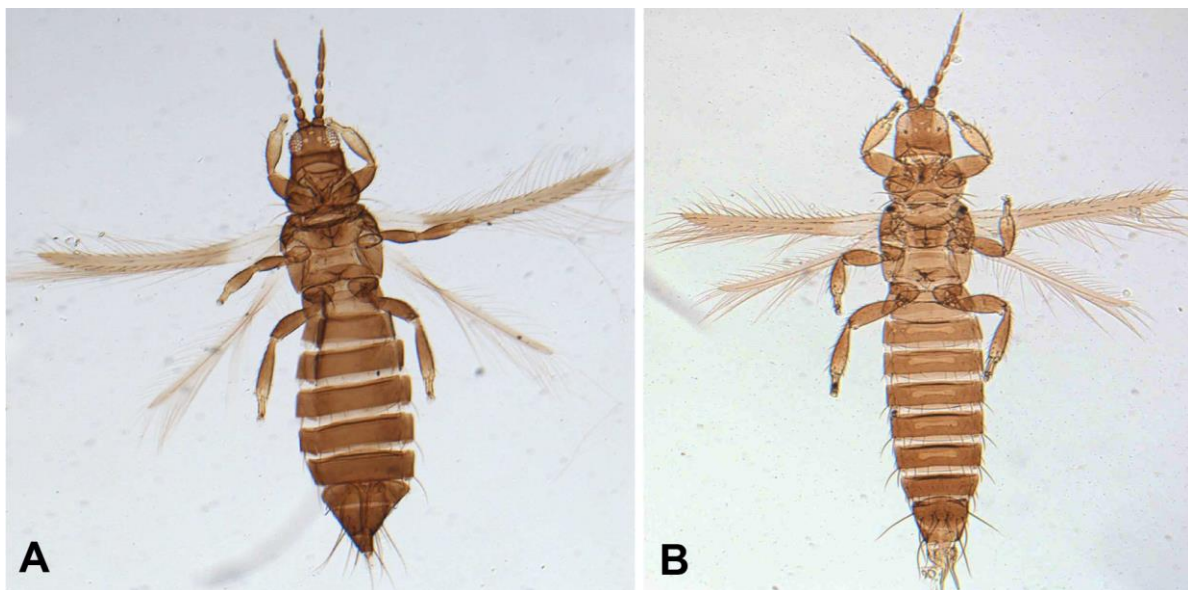


Figure 1. *Taeniothrips eucharii*, A. Female; B. Male.

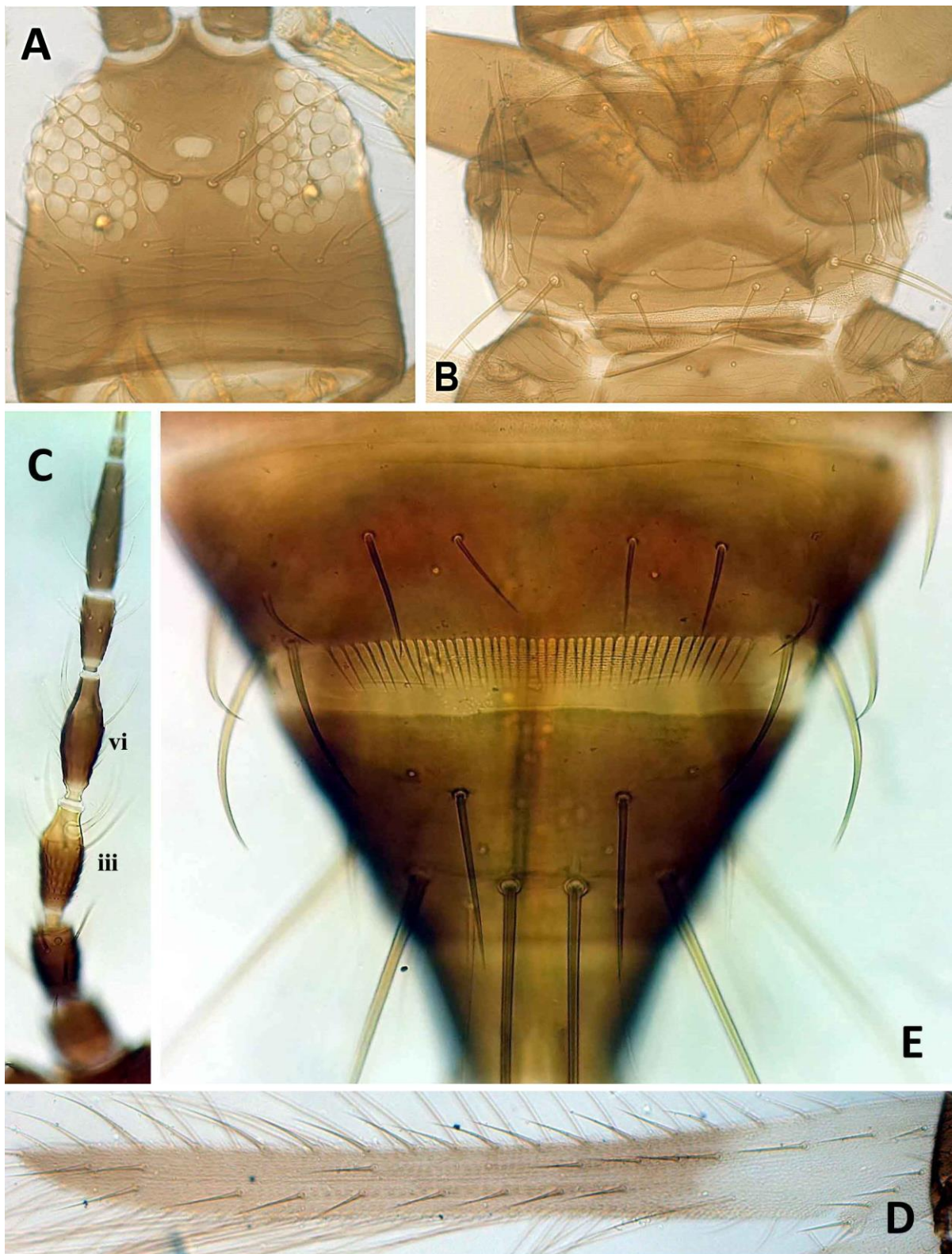


Figure 2. *Taeniothrips eucharii* (female), **A.** Head; **B.** Pronotum; **C.** Antenna; **D.** Fore wing; **E.** Abdominal tergites VIII & IX, showing complete comb on posterior margin of tergite VIII.

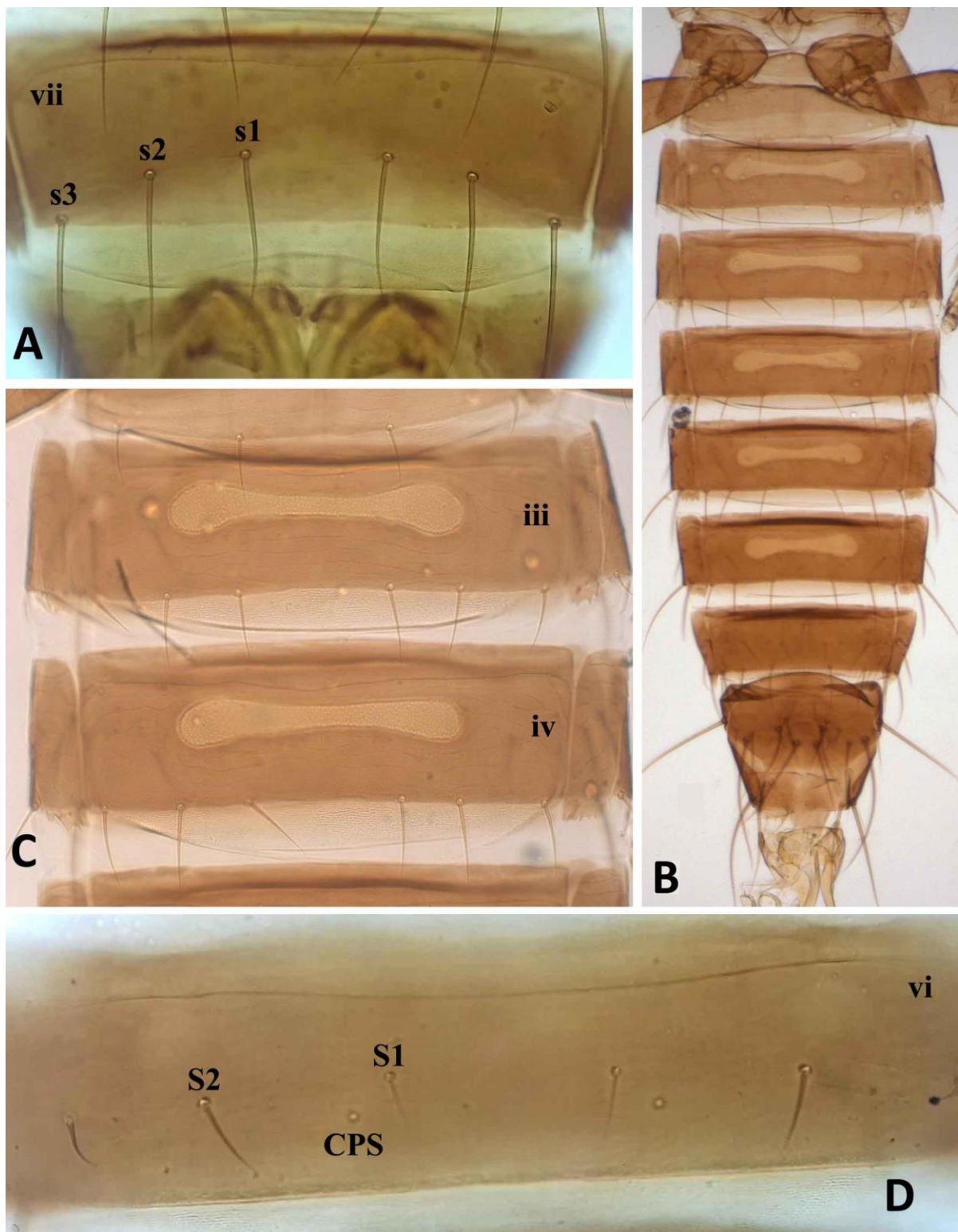


Figure 3. *Taeniothrips eucharis* (A-D: female; B-C: male), A. Abdominal sternite VII; B. Abdominal sternites; C. Pore plates on abdominal sternites III & IV; D. Abdominal tergite VI.

Discussion

The oriental lily-flower thrips, *T. eucharii* was described on *Eucharis lily* during the study of a mosaic disease in Bermuda (Whetzel, 1923), but known widely around the world (Mound & Tree, 2009). This species was subsequently recorded in association with *Lamium* spp. and *Tucarium* spp., and on the flowers of broad-bean (*Vicia faba*), in Zhejiang Province, China (Steinweden & Moulton, 1930). In 1933, *T. eucharii* was recorded on *Hymenocallis* spp. from Hawaii, where it was widespread (O'Neill, 1963). This species has been intercepted numerous times by quarantine procedures in different countries, but it is now widely distributed around the world and in association with the flowers of cultivated Amaryllidaceae such as *Hymenocallis* (Mound & Tree, 2009). Recently, it was also reported as vector of Hippeastrum chlorotic ringspot virus (HCRV) in China (Xu et al., 2017). Antennal segment IV of *T. eucharii* varies in shape depending on the body size (Mirab-balou et al., 2015). The specimens collected from Iran have campaniform sensilla on the metanotum, in contrast to specimens studied from China.

Acknowledgments

We are grateful to anonymous reviewers for useful comments. This paper is extracted from part of the Ph.D. thesis of the senior author, who was financially supported by research vice-chancellor of Razi University, Kermanshah, Iran.

Conflict of Interests

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

References

- Mirab-balou, M. (2018) An updated checklist of Iranian thrips (Insecta: Thysanoptera). *Far Eastern Entomologist*, 361, 12–36. <https://doi.org/10.25221/fee.361.2>
- 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., Mound, L.A. & Tong, X.L. (2015) New combinations and a new generic synonym in the genus *Taeniothrips* (Thysanoptera: Thripidae). *Zootaxa*, 3964 (3), 371–378. <http://dx.doi.org/10.11646/zootaxa.3964.3.6>
- 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. & Tree, D.C. (2009) The oriental lily-flower thrips, *Taeniothrips eucharii* (Whetzel) (Thysanoptera: Thripidae) new to Australia. *Australian Entomologist*, 35, 159–160.
- Mound, L.A., Azidah, A.A. & Ng, Y.F. (2012) Key to the non-fossil species of the genus *Taeniothrips* (Thysanoptera, Thripidae). *Zootaxa*, 3414, 33–42. <http://dx.doi.org/10.11646/zootaxa.3414.1.2>
- Nakahara, S. (1994) The genus *Thrips* Linnaeus (Thysanoptera: Thripidae) of the New World. United States Department of Agriculture. *Technical Bulletin*, 1822, 1–183.
- O'Neill, K. (1963) An Oriental *Taeniothrips* (Thysanoptera: Thripidae) infesting certain Amaryllidaceae. *Annals of the Entomological Society of America*, 56 (3), 399–401.
- Steinweden, J. B. & Moulton, D. (1930) Thysanoptera from China. *Proceedings of the Natural History Society of the Fukien Christian University*, 3, 1–12.
- ThripsWiki. (2019) ThripsWiki-providing information on the World's thrips. Available from: <http://thrips.info/wiki/> [Accessed 28th November 2019].
- Whetzel, H.H. (1923) Report of the plant pathologist for the period January 1st to May 31st, 1922. *Reports Board and Department of Agriculture, Bermuda*, 1922: 28–32.
- Xu, Y., Gao, X., Jia, Z., Li, W., Hu, J., Li, Y., Li, Y. & Liu, Y. (2017) Identification of *Taeniothrips eucharii* (Thysanoptera: Thripidae) as a vector of Hippeastrum chlorotic ringspot virus in Southern China. *Plant Disease*, 101, 1597–1600. <https://doi.org/10.1094/PDIS-01-17-0045-RE>

تریپس (*Taeniothrips eucharii* (Whetzel) (Thysanoptera: Thripidae): گزارش جدیدی در مراتع ایران

بهزاد میری^۱، ناصر معینی نقده^۱، حسنعلی واحدی^۱ و مجید میراب بالو^{۲*}

۱ گروه گیاهپزشکی، دانشکده کشاورزی، دانشگاه رازی، کرمانشاه، ایران.

۲ گروه گیاهپزشکی، دانشکده کشاورزی، دانشگاه ایلام، ایلام، ایران.

* پست الکترونیکی نویسنده مسئول مکاتبه: m.mirabbalou@ilam.ac.ir

تاریخ دریافت: ۸ آذر ۱۳۹۸، تاریخ پذیرش: ۲۷ دی ۱۳۹۸، تاریخ انتشار: ۱۰ بهمن ۱۳۹۸

چکیده: جنس *Taeniothrips* Amyot & Serville متعلق به زیرخانواده Thripinae دارای تنها یک گونه گزارش شده از ایران می باشد. در این تحقیق، دومین گونه به نام *T. eucharii* (Whetzel) نیز از این کشور گزارش شد. نمونه های نر و ماده این گونه از روی گل های *Ixiolirion tataricum* متعلق به خانواده Amaryllidaceae از استان ایلام (غرب ایران) جمع آوری شدند.

واژگان کلیدی: بال ریشکداران، گزارش جدید، تریپس، ایلام