

A new species of *Tephritis* Latreille (Diptera: Tephritidae) from Iran

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Tephritis nozarii **sp. n.** from East Azerbaijan Province (North West of Iran) is described and illustrated. It is similar to *T. hendeliana* Hering, *T. hyosciami* Linnaeus and *T. multiguttata* Becker in its pale brownish grey wing pattern, differing by the number of hyaline spots in marginal part of r_1 cell and some other details of pattern. Cell r_1 in *T. nozarii* **sp. n.** contains 3 subequally large spots (resembling some *Campiglossa* species), a character rarely encountered in *Tephritis*.

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1. Introduction

With about 120 species (Norrbom *et al.* 1999, Korneyev & Dirlbek 2000, Freidberg & Kutuk 2002, Kutuk 2008), *Tephritis* Latreille is the largest genus of Tephritidae in the Palaearctic Region. Most species of *Tephritis* infest the flowerheads of Asteraceae hosts of several tribes, with or without the induction of galls. A few species induce formation of galls in the upper or subterranean parts of stems of Asteraceae (Freidberg 1984).

Tephritis are small to medium-sized flies, which can be recognized by the combination of the following characters: proboscis capitate; 2 frontal and 2 orbital setae present; posterior orbital (except in *T. arnicae* Linnaeus) and lateral vertical setae whitish and acuminate; postocular setae whitish and lanceolate; posterior notopleural seta white (except in *T. conura* Loew and *T. arnicae*); anepisternal, katapisternal and anepisternal usually concolorous with most setae, other setae brownish or blackish; dorsocentral seta on or slightly posterior to transverse suture;

scutellum with 2 pairs of setae, apical seta about 0.5–0.6 times as long as basal seta. Wing with reticulate pattern, highly variable among the species, usually with 2 large and one small hyaline spots in cell r_1 and 2 dark bars divergent to apices of veins R_{4+5} and M, or with these spots isolated from the rest of the markings; cell bcu with short posteroapical extension. Abdomen commonly microtrichose, usually whitish setulose (in a few species widely shining and/or with black setulae); epandrium oval, with 2 small subequal prenisetae; glans elongate and weakly sclerotized, with membranous part (sometimes called vesica) about as long as basal sclerotized part, differing mainly by wider or narrower outlines among species; oviscape somewhat flattened dorsoventrally, with shape of its apex often species-specific; 2 spermathecae, elongate oval to pear-shaped in different species (Merz 1994, Freidberg & Kutuk 2002, S. Korneyev, pers. comm.).

During the study of tephritid flies in the fauna of Azerbaijan region (NW Iran) in 2009–2011, a previously unknown species of the genus *Tephritis* was collected on flower heads of *Cir-*

sium sp. (Asteraceae). The new species is described and figured below.

2. Material and methods

The examined material was minuten-pinned and deposited in collections of the following institutions:

- JAZM, Jalal Afashar Zoological Museum, College of Agriculture, University of Tehran, Karaj, Iran
- SIZK, I. I. Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, Kiev, Ukraine
- Author's personal collection.

Morphological terminology follows White *et al.* (1999). The following morphometric characters with their abbreviations are used: Body length (BL), Wing length (WL), Aculeus length (AL), Dorsal length of ovicape (DOL) and Ventral length of ovicape (VOL).

3. Description of *Tephritis nozarii* Mohamadzade Namin sp. n. (Figs. 1–3)

Type material. Holotype (female): Iran: East Azerbaijan province, 30 km SE Tabriz, Sahand Mountain, 2,900 m a.s.l., 30.VIII.2010, swept from *Cirsium* sp., Mohamadzade and Najarpour leg. (JAZM).

Paratypes: 2♂, 3♀, same collection data as in holotype; 1♀, Ardabil Province, Sabalan Mountain, 2,500 m a.s.l.; 28.VIII.2010, swept from *Cirsium* sp.; 1♀, West Azerbaijan province, 3 km west Ziveh, 2,500 m a.s.l., 25.V.2011, swept from *Cirsium* sp., (Mohamadzade and Najarpour leg.) (some paratypes are deposited also in SIZK and author's personal collection).

Description. Head: Yellowish. Length: height: width ratio = 1: 1.15: 1.47. Ocellar spot, mark on upper part of occiput and slender part of arista black. Antennae yellow, scape covered with densely black setulae. Face whitish yellow. First flagellomere rounded antro-ventrally and 1.6 times as long as wide. Frons as wide as eye. Com-

pound eye 1.3 times as high as long. Gena 0.5 times as high as length of first flagellomere. Ocellar, median vertical, anterior orbital and frontal setae dark brown and acuminate; genal seta pale brown and acuminate; remaining setae whitish or yellowish and lanceolate; setulae on anterior part of gena, distal part of palpus and on pedicel brownish; remaining setulae whitish (Figs. 1b, 2b).

Thorax: Ground color black, covered with gray microtomentum. Postpronotal lobe, dorsal margin of anepisternum, posterior part of notopleural area around posterior notopleural seta and scutellum margin yellow. Basal part of scutellum dark brown and the area between scutellar setae brownish. Dorsocentral seta situated slightly posterior to transverse suture. Most setae dark brown and acuminate; posterior notopleural seta yellowish and lanceolate; setulae whitish. Anterior scutellar setae 0.45 times as long as posterior ones (Fig. 1c). Halter yellow.

Wing: Wing pattern reticulated, pale brown, base of wing hyaline. Stigma yellowish. Cell r_1 with three subequal hyaline spots distally of R_1 apex; cell r_{2+3} basally hyaline, in distal 0.8 pale brown, with 3 hyaline spot in middle portion and connected with hyaline spots in cell r_1 and 2 apical spots, both of them connected with 2 subapical hyaline spots in r_{4+5} cell. Cell br hyaline, in distal 1/3 pale brown with 3–4 hyaline spots and 2 partly confluent dots aligned to r-m crossvein. Cell r_{4+5} with 2 partly confluent dots aligned to r-m crossvein, elongate trapezoid or subrectangular spot as wide as cell and 7 hyaline spots apical of them. Apical spot bordered by 2 moderately wide apical rays joined to remaining dark pattern in middle of cell r_{4+5} and along vein M. Cell dm hyaline in basal 1/4 and with 5–6 hyaline spots in distal portion. Cell m with 5 separate large oval hyaline spots; apical spot narrowly touching subapical hyaline spot in r_{4+5} cell. Cell cua brown in anterior part of longitudinal fold, with 3 large and 2 apical small hyaline spots. Wing pattern with two grey bars extending into anal cell. Vein R_{4+5} with 0–2 setulae ventrally (Figs. 1a, 2a).

Legs: Brownish yellow with black setulae. Fore femur with two dorsal and one ventral rows of setae. Mid tibia with long black spur ventro-apically.

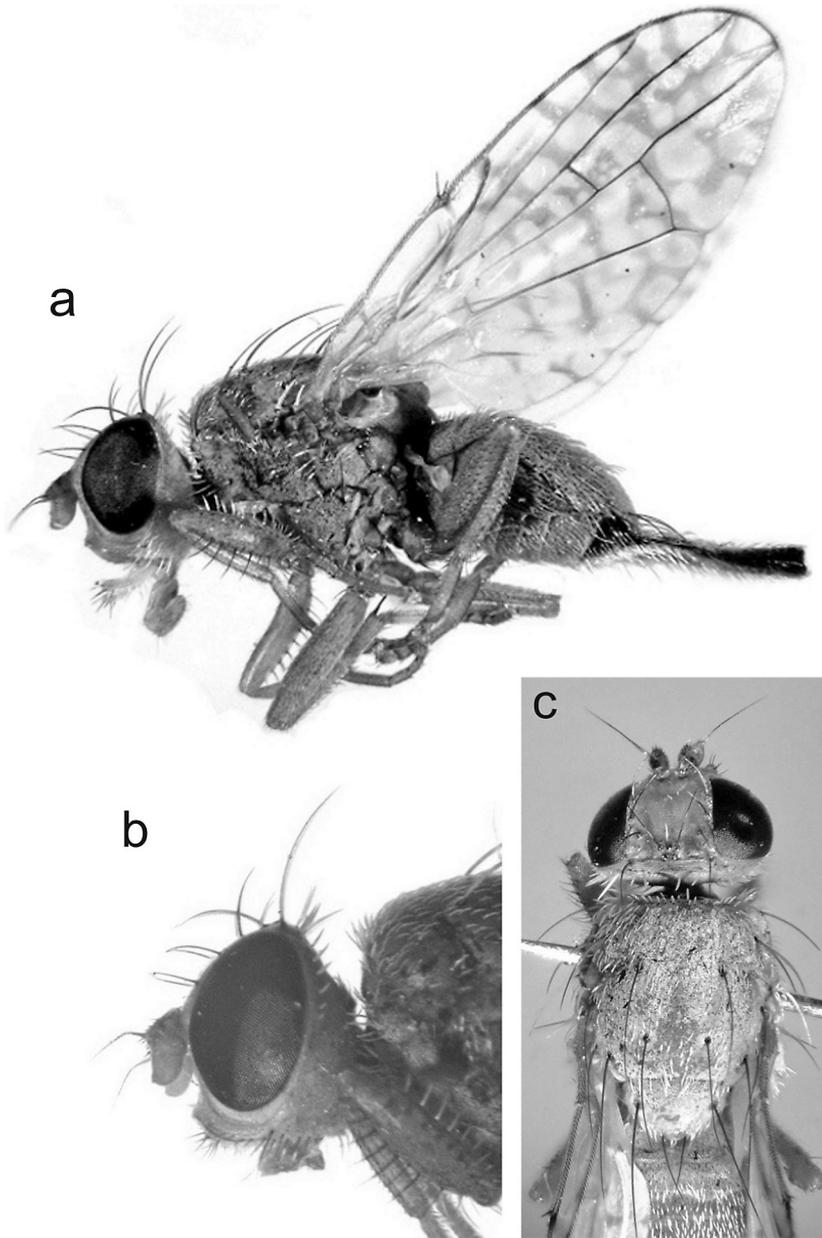


Fig. 1. *Tephritis nozarii* sp. n. – a. Female (Holotype), total view, left. – b. Male, head, left. – c. Female (Holotype), mesonotum.

Abdomen: Ground color black, very sparsely greyish microtrichose and whitish setulose. Hind margin of tergite 6 in female and tergite 5 in male with long brown setae. Male genitalia similar to other *Tephritis* species, phallus without spurs on preglans; glans (Fig. 3) very slender, mostly membranous. Oviscape shiny black with a few whitish setae at basal 1/3 dorsally and ventrally. Oviscape about as long as preceding 4 abdominal tergites. Aculeus moderately narrow, 6.5 times as

long as wide, apically rounded, without preapical steps, as in Figs. 2c–d. Spermathecae as in Fig. 2e, elongate oval, 3.7 times as long as wide.

Measurements: ♂: BL = 4.2–4.6 mm; WL = 4–4.3 mm; ♀: BL = 5.2–5.7; WL = 4.2–4.6 mm; DLO = 1.2–1.4 mm; VLO = 1.4–1.6 mm; AL = 1.6–1.7 mm.

Etymology. The species is named after Dr. Jamasb Nozari, in recognition of his valuable contribution into study of Iranian Lepidoptera.

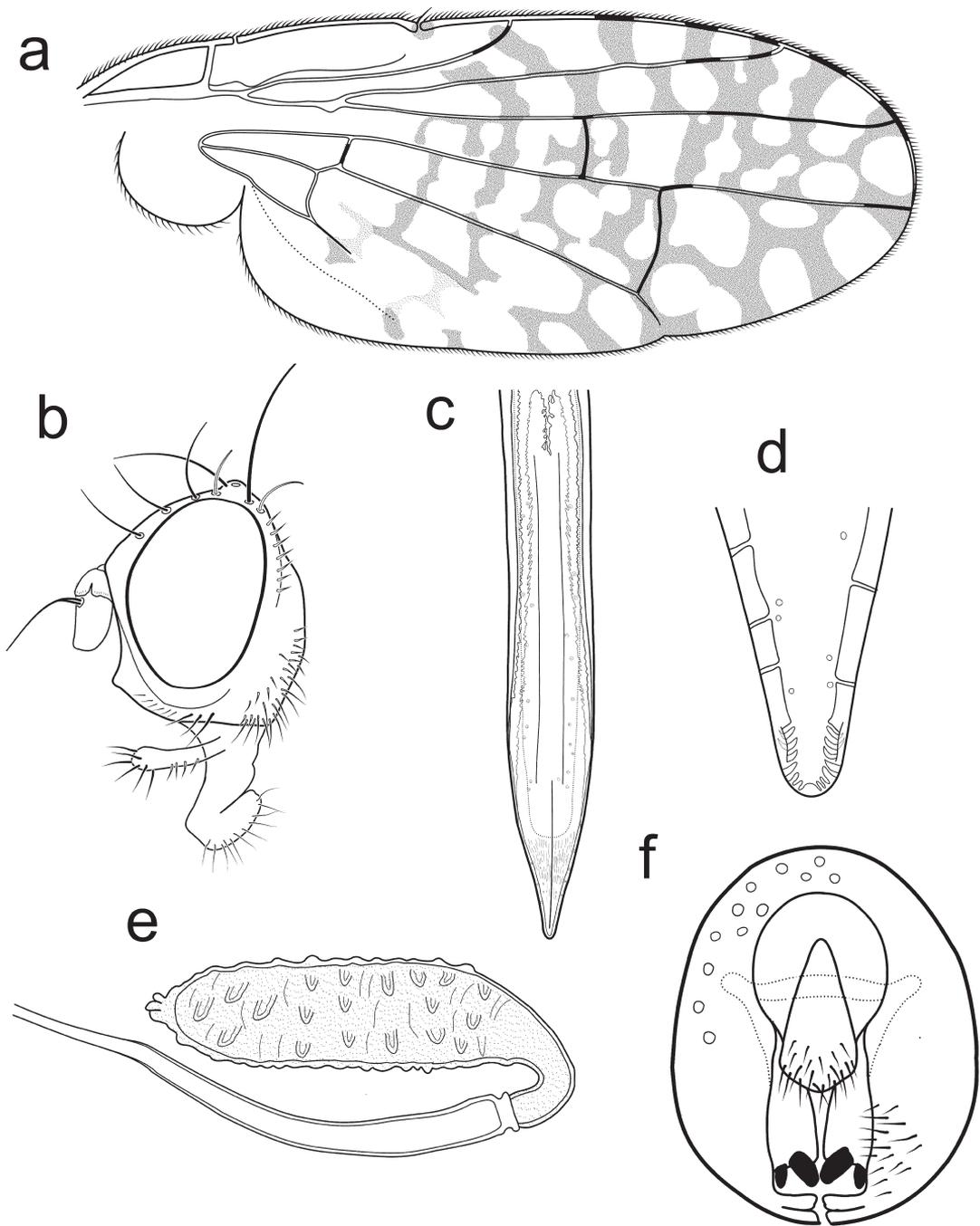


Fig. 2. *Tephritis nozarii* sp. n. – a. Wing pattern. – b. Head. – c. Aculeus. – d. Aculeus tip. – e. Spermathecae. – f. Epandrium.

4. Discussion

Tephritis nozarii sp. n. superficially resembles some species of the genus *Campiglossa* Rondani in having 3 subequal hyaline spots in the r_1 cell

(e.g., *C. contingens* Becker, *C. ignobilis* Loew) differing by that character from all known Palaearctic species of *Tephritis*. It, however, clearly belongs to the genus *Tephritis* based on the structure of phallus glans, bearing no sclerotized parts in its

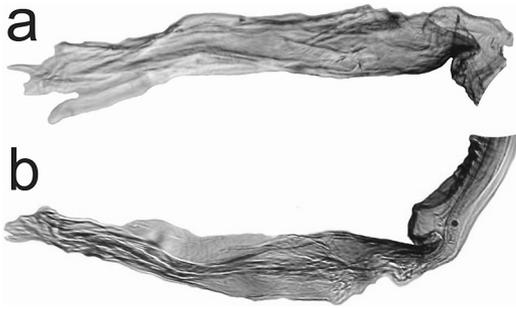


Fig. 3. Glans of *Tephritis nozarii* sp. n. — a. Ventral view. — b. Lateral view.

apical half (with complex sclerotized tubular structures in *Campiglossa* species).

The new species shares similar body and wing size and coloration (first of all, moderately long oviscapae with white setulae, aculeus apex without steps or incisions, and crossvein r-m surrounded with hyaline spots and first large hyaline spot in cell r_{4+5} as wide as cell and the host plant of the subtribe *Carduinae*) with the widespread European species *T. hyosciami* (Linnaeus, 1758) and *T. hendeliana* Hering, 1944, differing by wing apex with 2 entire dark rays and cell r_1 with 3 subequal hyaline spots (in *T. hyosciami* and *T. hendeliana* apex with 2 apical dark spots separated from dark wing pattern and cell r_1 with 2 subequal spots).

Among Middle East species of *Tephritis*, the new species is similar to *T. multiguttata* Becker, in its pale gray reticulate wing pattern, differing by 3 hyaline spots in r_1 cell (2 large hyaline spots in *T. multiguttata*), crossvein r-m with 4 hyaline spots aligned (in *T. multiguttata* entirely in dark field) and by the oviscapae as long as preceding 4 abdominal tergites (in *T. multiguttata* as long as preceding 2 abdominal tergites).

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