



***Trissolcus radjabii* n.sp. (Hymenoptera: Platygasteridae), an egg parasitoid of the shield bug, *Apodiphus amygdali* (Heteroptera: Pentatomidae) and the sunn pest, *Eurygaster integriceps* (Heteroptera: Scutelleridae)**

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Kozlov and Kononova (1983) classified 53 Palearctic species of the genus *Trissolcus* Ashmead into five groups. The presence of the hyperoccipital carina, convex frons, absence of notauli, and elongate postmarginal vein (longer than the stigmal vein) in the fore wing are characteristics delimiting the *gonopsidis*-group. These species differ from the *flavipes*-group only in the lack of notauli. Kozlov and Kononova placed three species in the *gonopsidis*-group: *T. mentha* Kozlov and Lê, *T. gonopsidis* (Watanabe), and *T. elasmuchae* (Watanabe). In a taxonomic study of the *Trissolcus* species of Korea and Japan, Ryu and Hirashima (1984) reported three other species with characteristics of the *gonopsidis*-group: *T. nigripedius* (Nakagawa), *T. itoi* Ryu and *T. yamagishi* Ryu. Most of these species are known only from Japan or Korea. *Trissolcus elasmuchae* has been observed in Ukraine and Russia as well as Japan, and *T. mentha* is known only from Uzbekistan. *Trissolcus antakyaensis* Doganlar was described recently as an egg parasitoid of the pentatomid *Rhaphigaster nebulosa* (Poda) from Turkey (Doganlar 2001). It, too, fits within this *gonopsidis*-group. The New World species of *Trissolcus* were divided into three groups (Johnson 1984, 1985a, 1985b); the *thyantae*, *basalis*, and *flavipes* groups of Johnson are roughly equivalent to the *simoni*, *semistriatus*, and *flavipes* groups of Kozlov and Kononova respectively. No species of *gonopsidis* and *oobius* groups of Kozlov and Kononova have been reported in New World fauna.

When looking for egg parasitoids of sunn pests in aestivational sites in cherry orchards in 1994–1996 using egg traps containing eggs of *Eurygaster integriceps* Puton (Heteroptera: Scutelleridae) or *Apodiphus amygdali* Germar (Heteroptera: Pentatomidae), specimens differing from known species were found by the senior author. These eggs were infested by a large species of *Trissolcus* somewhat different both morphologically and morphometrically from previous specimens reported as *T. mentha* Kozlov and Lê and *T. saakovi* Mayr (Iranipour *et al.* 1998).

Materials and methods

This work is based upon specimens deposited in the following collections: Hayk Mirzayans Insect Museum, Tehran, Iran¹; C.A. Triplehorn Insect Collection, Columbus, OH, U.S.A.² Morphological terminology follows Masner (1979, 1980), Johnson (1985a, 1985b), and Mikó *et al.* (2007). Addition terms: A1, A2, ... A11: antennomeres 1, 2, ... 11; claval formula: distribution of the large, multiporous basiconic sensilla on the underside of the apical antennomeres of the female, with the segment interval specified followed by the number of sensilla per segment (Bin 1981); T1, T2, ... T6: metasomal tergites 1, 2, ... 6. Images were produced using Cartograph extended-focus software. The individual images are archived at the image database at The Ohio State University (purl.oclc.org/NET/hymenoptera/specimage) and with MorphBank (www.morphbank.net). Life sciences identifiers (recognized by a string beginning urn:lsid) may be resolved at the URLs specified in the footnotes or at lsid.twdg.org. The numbers prefixed with “OSUC” are unique identifiers for individual specimens. All details on the data associated with these specimens may be accessed at purl.oclc.org/NET/hymenoptera/hol by entering the specimen identifier in the form.

1. <http://biocol.org/urn:lsid:biocol.org:col:35086>
2. <http://biocol.org/urn:lsid:biocol.org:col:1014>

***Trissolcus radjabii* Iranipour, n.sp.**

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urn:lsid:biosci.ohio-state.edu:osuc_concepts:244989

Figures 1–6³

Description

Female:

Body length 1.8–2.1 mm (n=14); body and coxae black (Fig. 2), radicle yellow, antenna reddish yellow except for dark brownish clava, femora dark except brownish distally, all tibiae and tarsi reddish yellow, wings transparent with light yellow veins.

Head: transverse in dorsal view, width 2.04–2.17 times length measured medially from frons to farthest posterior extension of occipital carina, 2.54–2.99 times length measured medially to nearest point of occipital carina (Fig. 1); hyperoccipital carina present, complete; occipital carina complete, crenulate dorsally; lateral ocellus separated from inner orbit by distance less than one ocellar diameter; vertex finely coriaceous, with setigerous punctures equal in size to cells of microsculpture; head in frontal view with height 1.30–1.40 times greatest width; frontal pit well-developed, nearly contiguous with anterior ocellus; frons swollen below eyes, frontal depression transversally carinate, with short median keel (Fig. 5); frons with weak arched to transverse striae immediately above depression, otherwise with coriaceous microsculpture and setigerous punctures as on vertex; orbital furrow absent; gena smooth, shining dorsad of mandible (Fig. 4), otherwise finely coriaceous with setigerous punctures; genal carina absent; radicle yellow, nearly concolorous with A1, not strikingly contrasting in color; A3 elongate, distinctly longer than A2; antennal clava composed of 6 closely articulated flagellomeres; claval formula A7–A11:2-2-2-1.

Mesosoma: mesoscutum coarsely reticulate rugose anteriorly (Fig. 3), longitudinally striate posteriorly; notauli, if present, very short, obscured amid longitudinal sculpture; mesoscutellum weakly rugose, with superimposed coriaceous microsculpture; metascutellum coarsely areolate dorsally, finely areolate ventrally; lower portion of lateral face of pronotum longitudinally rugulose; netrion indicated as smooth fusiform region along pronotal-mesopleural suture; mesopleural carina indicated only in dorsal extreme; ventral portion of mesepisternum smooth; lower metapleuron coarsely, irregularly areolate (Fig. 4); lower metapleuron glabrous; postmarginal vein of fore wing distinctly longer than stigmal vein.

Metasoma: T1 strongly transverse (Fig. 6), width 6.48–7.71 times medial length, longitudinally carinate, with numerous (8–10) lateral setae on each side, sublateral setae absent; T2 transverse, length 0.69–0.73 times greatest width; longitudinal striae extending from anterior edge over three-fourths of length of sclerite, with narrow smooth band apically, sparsely setose laterally; T3–T6 sparsely, finely punctulate.

Male: Body length 1.80–1.85 mm (n=2), legs and antenna obviously lighter in color than female, antenna yellowish, pedicel apically and all subsequent segments slightly darkened; femora reddish yellow, tibiae and tarsi yellowish; head less transverse in dorsal view, width 1.90 times greatest length, 2.3 times medial length; width of T1 5.8 times medial length; length of T2 0.77 times greatest width; striae on T2 congregated medially, not extending as far toward lateral margin of sclerite.

Diagnosis. These new specimens key out together with *T. mentha* and *T. gonopsidis* (Watanabe) in Kozlov and Kononova (1983), differing from *T. elasmuchae*, *T. nigripedius*, *T. yamagishii* and *T. itoi* in the presence of a continuous hyperoccipital carina. The frontal depression in *T. mentha* and the new species is posteriorly much deeper and its transverse sculpture much more restricted than in both *T. gonopsidis* and *T. antakyaensis* Doganlar. The mesoscutellar sculpture is the major difference between *T. mentha* and the new species: in *T. radjabii* the mesoscutellum is roughly sculptured, rugulose, with superimposed coriaceous microsculpture, while in *T. mentha* it is medially lustrous.

Etymology. This species is named in honor of Dr. Gholamreza Radjabi.

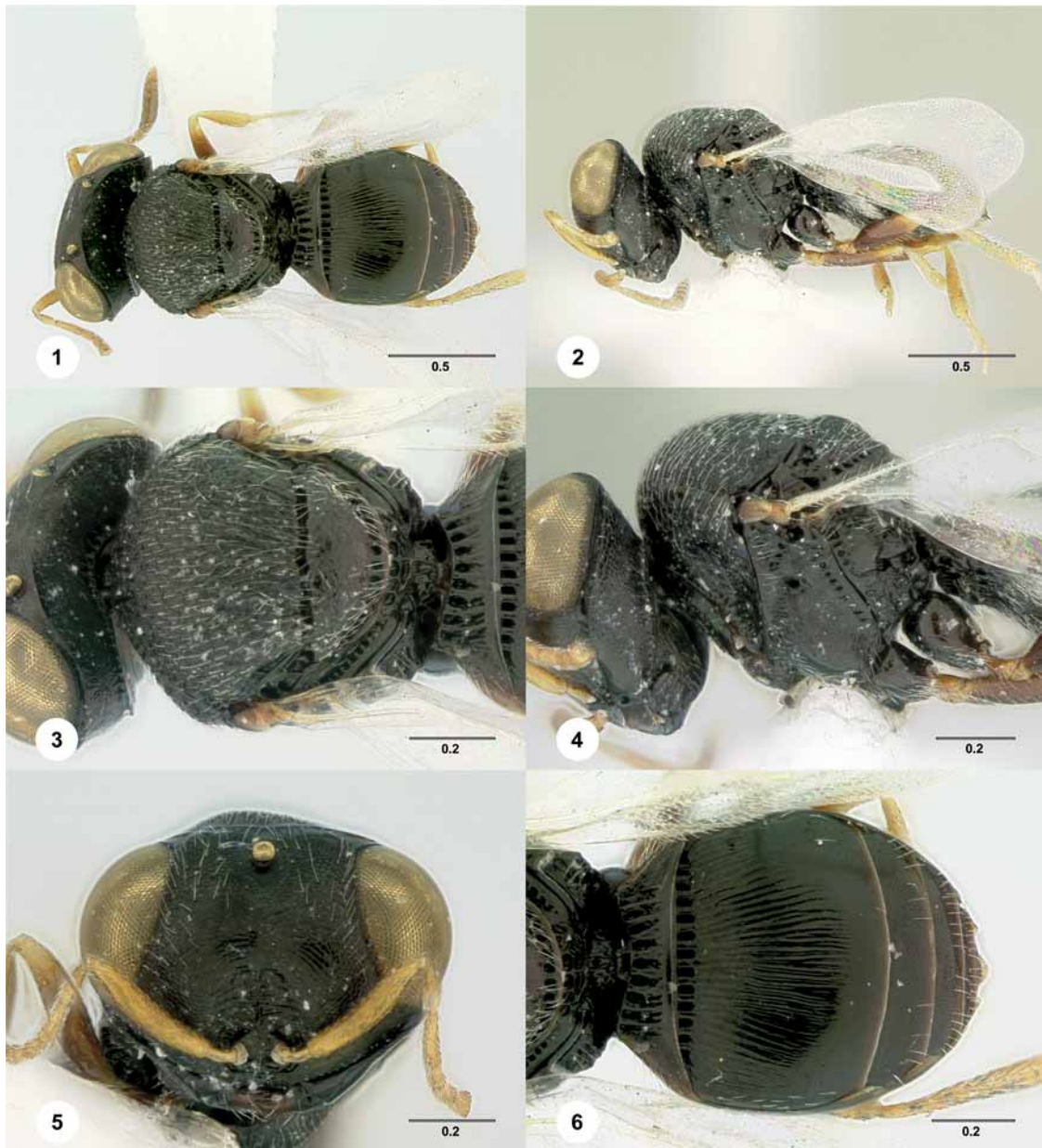
Material examined: Holotype female: **IRAN:** Karaj, 16.VIII.1995, S. Iranipour, ex eggs of *Apodiphus amygdali* Germar in shade trees (*Platanus*). Deposited in Hayk Mirzayans Insect Museum, Tehran, Iran. **Paratypes:** **IRAN:** 1 female, 2 males with same data as holotype (OSUC 259825, 259826). Fashand, 17.VII.2001, S. Iranipour, sweeping cherry trees, 2 females (collection of S. Iranipour, University of Tabriz). Rafsanjan, 6.VIII.1996, Hamid Hashemi Rad, ex eggs of *Apodiphus amygdali* on *Pistachio*, 1 male, 1 female (OSUC 259827–259837). Tabriz, University of Tabriz, 20.VI.2006, P. Lotfollahi, 4 females, 8 males (OSUC 259838–259849).

Additional specimens excluded from type series collected using *Eurygaster integriceps* egg traps in cherry orchards, Fashand, Iran, July–August, 1994 and 1995.

Discussion. This new species is a member of the *gonopsidis* species group as defined by Kozlov and Kononova (1983). The specimens reared from *Eurygaster* egg traps are significantly smaller than those of the type series. As a consequence, typical variation in body proportions is observed, with appendages and their components generally relatively shorter in smaller specimens than in large ones. Additionally, these specimens are lighter in color. These are

3. <http://www.morphbank.net/?id=476197>

excluded from the type series since the record of rearing from *Eurygaster integriceps* is not the result of a naturally laid egg mass, and, hence, may not be a natural host species.



FIGURES 1–6. *Trissolcus radjabii* sp. nov., paratype female (OSUC 259825). 1, dorsal habitus; 2, lateral habitus; 3, mesosoma, dorsal view; 4, mesosoma, lateral view; 5, head, anterior view; 6, metasoma, dorsal view. Scale bars in millimeters.

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4. <http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:pubs:131>
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 6. <http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:pubs:1030>
 7. <http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:pubs:655>
 8. <http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:pubs:656>
 9. <http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:pubs:364>
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 11. <http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:pubs:474>
 12. <http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:pubs:21300>
 13. <http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:pubs:558>