A NEW SPECIES OF MEGASTIGMUS (HYMENOPTERA: TORYMIDAE: MEGASTIGMINAE) FROM UŞAK, TURKEY

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ABSTRACT: In this paper a new parasitoid Megastigmus Dalman, 1820 (Hymenoptera: Chalcidoidea: Torymidae: Megastigminae) species, M. usakensis sp. nov., was described from Uşak, Turkey.

KEY WORDS: New species, Chalcidoidea, Uşak, Turkey

Megastigmus (Hymenoptera: Chalcidoidea: Torymidae) was described by Dalman (1820) as the subgenus Torymus Dalman with its type species being Pteromalus bipunctatus Swederus, 1795. Later, Megastigmus was recorded as a valid genus by several authors (Curtis, 1829; Walker, 1833; Dalla-Torre, 1898; Ashmead, 1900, 1904). Crosby (1913) designated its type species as P. bipunctatus. Boucek (1988) keyed out Megastigmus in the Subfamily Megastigminae, and provided the diagnostic characters of the genus, stated that the genus contains 44 species in Australia, 35 spp. from Holarctic region in America south only to Mexico, but about 3 spp. are present in the Old World in eastern and southern Africa, while South Asia has at least 15 spp., and 1 species is found on Fiji. Grissell (1999) listed 133 world species with 5 subspecies of Megastigmus including 9 species of Bootanomyia, and gave their synonyms, distributions and literature references, and stated that 19 keys to the species of Megastigmus were provided by several authors in the world. In the last two decades some more species of Megastigmus were described (Xu & He, 1995; Xu et al., 1998; Roques & Skrzypczynska, 2003; Grissell, 2006; Doğanlar & Hassan, 2010; Doğanlar et al., 2013; Doğanlar, 2015; Roques et al., 2016; Doğanlar et al., 2017). Noyes (2017) listed 154 world species of Megastigmus, 5 of them as unavailable name in current taxon, and gave their synonyms, distributions and literature lists.

Up to now, 8 species of Megastigmus have been recorded from Turkey by several works (Novicky, 1954; Hussey, 1957; Lessmann, 1962; Öncüer, 1991; Fabre et al., 1994; Roques et al., 1999; Gencer, 2003; Roques & Skrzypczynska, 2003; Auger-Rozenberg et al., 2006; Daneshvar, 2009; Ayberk & Cebeci, 2010; Doganlar & Doganlar, 2010; Stojanova, 2012). Recently, the specimen of Megastigmus sp. was obtained from pane trap in the orchard of mixed trees of apple, pear and cherry in Uşak, Turkey. It was sent to the first author for identification, and it was described as a new species for science.

MATERIAL AND METHOD

The type specimen of the new species was obtained from pane trap in the orchard of mixed trees of apple, pear and cherry in Uşak, Turkey.

The left antenna of the holotype was slide-mounted in Canada balsam. The holotype of the new species was deposited in Insect Museum of Biological Control Station, Yüreğir, Adana, Turkey (IMBC). Photographs of diagnostic characters of the new species were taken using Leica DM 500 microscopes with a digital Leica ICC 50 camera attached to it.

RESULTS AND DISCUSSION

**Megastigmus usakensis** sp. nov.

(Figs. 1a-h)

**Description of Female.** Length (body+ ovipositor): 1.88 + 0.5 mm. Colour: Body (Fig. 1a) yellow, except occiput, metasoma dorsally tan, ovipositor sheaths black and ovipositor brown. Wigs hyaline, veins white, except apical part of prestigma, tips of marginal vein, stigma and area blow stigma, as long as length of stigma, black; antennae three colorized, scape yellow in ¾ basally and testaceous apically, pedicel yellow, anelli, F4 and club white, F1-F3 pale testaceous, F5 testaceous, F6 and F7 black. Pilosity of body black, Legs almost white, except pretarsi black.

**Morphology:** Head (Figs. 1a-d) with fine transverse striae, face almost smooth. Antennae inserted slightly above lower ocular line. Relative measurements: head dorsally about twice as wide as long; in lateral view 1.32x as height as dorsal length; frons width 2.54x eye width in frontal view; POL 2x OOL=MOL, Odia. ½ OOL, eye 1.28x as long as width; malar space 0.46x as long as width; anterior margin of clypeus slightly incised. Antennae (Fig. 1a,e) clavate, flagellar segments F1-F4 longer than width, F1-F3 in same length, F1 2x, F2-F3 1.75x as long as width; F4 slightly wider and shorter than preceding segments, 1.33 × longer than width, F5-F7 distinctly wider than preceding segments, almost same length, F5 1.08x, F6 slightly transverse, 0.86x as long as width, F7 distinctly transverse, as long as width; combined length of flagellum with pedicellus slightly shorter than width of head (12:13) and 2.35x transverse diameter of eye. Scape with 2-3 rows of setae dorsally, nearly cylindrical, distinctly broader medially, with distinct, deep cavity in frontal side, 5x as long as width, and slightly longer than transverse diameter of eye. Pedicel 2.25x as long as width, 1.12x as long as anelli plus F1. Club 0.9x as long as 3 preceding segments combined, 2x as long as width, ventrally without micropilosity. Sensillae on flagellum long and sparse, with 2-3 longitudinal linear sensillae in a row.

Mesosoma (Fig. 1a) 1.62 × as long as mesoscutum width, and as wide as height; pronotum about 1.5 × as wide as long; mesonotum about 0.8x × as long as width, with fine transverse striae, 3 pairs of setae, along deep notauli; scutellum (Figs. 1g,f) as long as broad, with fine reticulation, frenal groove distinct, frenal groove almost smooth, 0.58x as long as scutellum, hind margin of scutellum distinctly carinate; scutellum with 2 pairs of setae on each side; axillae longitudinally striate, with 1 seta. Forewing (Fig. 1h) 2.36 × as long as broad, costal cell with one complete row and in apical half a second row of setae, speculum broad, closed below, basal and cubital veins with 5-6 hairs, basal cell almost bare, closed, with a row of minute setae in basal half. Stigma almost as long as width, petiolate, stigmal vein 1.2x as long as width. Relative measurements of forewing: costal cell 47: 6; parastigma 17, marginal vein 28, post marginal vein 28, stigmal vein 3, stigma (l: w) 8: 8.5, uncus 3. Hind wing 4.4 × as
long as broad. Hind coxae dorsally carinate, with 3-4 setae. Propodeum (Fig. 1g) 0.77 x as long as scutellum, about 0.68x as long as distance between inner edges of spiracles, median carina absent, plicae complete, finely reticulated, spiracles distinctly separated from posterior margin of metanotum, callus with 7-8 fine setae.

Metasoma (Fig. 1a) with distinct petiole, almost as long as mesosoma, broad, 2x as long as broad, its dorsal surface smooth. Ovipositor sheath 0.56 x as long as metasoma and 1.3x as long as hind tibia.

**Male:** Unknown.

**Material Examined:** HOLOTYPE female. TURKEY, Uşak, Bağkonak village, 38°44'47" N, 29°45'42" E, 29, IX. 2017, leg. E. Zengin, taken from pan trap, in the orchard mixed with apple, plum and pear trees. Type of the new species was deposited in Insect Museum of Biological Control Station, Yuiregir, Adana, Turkey (IMBC).

**Host:** Unknown.

**Distribution:** Turkey: Uşak.

**Remarks.** *Megastigmus usakensis* sp. nov. is a unique species in having colorized antennae, beside this character, it would be similar to *Megastigmus helinae* Roques & Copeland, 2016 and *Megastigmus smithi* Roques & Copeland, 2016 in having ovipositer sheaths much shorter (0.4–0.6x) than length metasoma but it differs from both of them in having body colour yellow without any black band on the body (in the both species with a narrow black band along anterior suture of pronotum or median rufous band extending from pronotum to scutellum and parts of gaster dark brown (Roques et al., 2016).

**LITERATURE CITED**


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Figure 1. M. usakensis sp. nov. female. a, body, in lateral view; b-d, head, in lateral view; c, in dorsal view; d, fronto-lateral view; e, antenna; f, scutellum; g, propodeum and petiole; h, forewing. (Scale bar: for a = 1.5 mm; for b-d = 0.44 mm; for e = 0.13 mm; for f, g= 0.53 mm).