

**TWO RECORDS NEW FOR THE TURKISH
ARANEOfAUNA: *Tmarus piochardi* (SIMON, 1866)
AND *Monaeses israeliensis* LEVY, 1973
(ARANEAE: THOMISIDAE)**

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ABSTRACT : In this study, characteristic features of *Tmarus piochardi* (Simon, 1866) and *Monaeses israeliensis* Levy, 1973 which are new records for the Turkish spider fauna are given together with their distributions in Turkey and the World.

KEY WORDS: *Tmarus*, *Monaeses*, Thomisidae, Araneae, Turkey, New records.

The members of Thomisidae have crab-like legs and are often brightly coloured. These kind of spiders usually live on flowers, and they are well camouflaged and ambush pollinating insects of considerable size. They make no web but females cover their eggs with a silken shelter, usually under leaves. Several species can change colour to a certain degree to match the petals surface colour (Foelix, 1982 and Roberts, 1995). About 165 genera and 2000 species have been identified in Thomisidae across the world. In *Tmarus* Simon, has a wide distribution with approximately 170 described species worldwide while in *Monaeses* Thorell 27 species are known (Platnick, 2006).

From Europe the following species are known in *Tmarus*: *Tmarus horvathi* Kulczynski, 1895, *T. piger* (Walckenaer, 1802), *T. piochardi* (Simon, 1866), *T. rimosus* Paik, 1973, *T. staintoni* (Cambridge, 1873), *T. stellio* Simon, 1875. Among these species *T. horvathi* and *T. rimosus* from Eastern Europe and Russia, *T. piger* is a cosmopolitan species and widespread across the whole of Europe and Russia, *T. piochardi* is distributed in the Mediterranean countries, *T. staintoni* from Western Europe and Italy, *T. stellio* from France, Austria and Eastern Europe are known (Canestrini & Pavesi, 1868; Kulczynski, 1903; Simon, 1932; Logunov, 1992; Blagoev, 2002; Blick *et al.*, 2004; Platnick 2006). Three species of *Tmarus* are known from Israel; *T. piochardi*, *T. yerohamus* Levy, 1973 and *T. hazevensis* Levy, 1973 (Levy, 1973).

In *Monaeses*, *M. paradoxus* (Lucas, 1846) is known from Europe, Africa and Azerbaijan while *M. israeliensis* Levy, 1973 known from the Middle East and Central Asia (Simon, 1932; Levy 1973; Platnick, 2006).

Until this study no record was given in *Tmarus* and *Monaeses* except an unidentified specimen of *Tmarus* was given in Karol, 1967 (Bayram, 2002; Topçu *et al.*, 2005).

This paper deals with the characteristic features and distributions of *Tmarus piochardi* and *Monaeses israeliensis* and adds two species to the spider fauna of Turkey.

MATERIALS AND METHOD

Specimens were collected from two different localities of Turkey: Southeast Anatolia (Diyarbakır, Çermik, 39°35' East-38°10' North) and Southwest Anatolia (Antalya, Serik, 31°07' East-36°55' North, **fig. 1**). The specimens were obtained from almond gardens, cornfields and meadows. The materials were placed into 70 % ethanol, carried to the zoological laboratory and identified with a SMZ800 Stereo microscope. The keys of Heimer & Nentwig, 1991; Roberts, 1995 and Tyschchenko, 1971 were used. The drawings were made by means of a camera lucida attached to the microscope. The specimens examined were stored in the Zoological Museum of Kırıkkale University.

RESULTS

Key for the genera

1. Carapace strongly convex, usually same length as width. Ocular area much elevated; anterior and posterior lateral eyes are on large separated tubercles and distinctly larger than median eyes, distance between anterior median eyes slightly shorter than that of posterior median eyes. Legs spinous, two anterior pairs almost of same length, but clearly longer than two posterior pairs, there are no scopulae or claw tuft on the legs, claws with distinct denticles. Opisthosoma often angular and with a posterior large tubercle dorsally or whole posterior part rather elevated..... ***Tmarus***

-. Carapace slightly high and distinctly longer than wide. Ocular area slightly elevated, eyes on tubercles clearly separated from each other, lateral eyes distinctly larger than median eyes, distance between anterior median eyes shorter than that of posterior median eyes and forms a trapezium. Legs tick and very long, two anterior pairs clearly longer than posterior pairs, claws with large, distinct denticles. Opisthosoma long and slender, dorsally flat, posterior part cone-shaped, very elongated, extending far beyond spinnerets ***Monaeses***

Tmarus piochardi* (Simon, 1866)Thomisus piochardi* Simon, 1866, Ann. Soc. ent. Fr., (4) 6: 284*Tmarus piochardi* Simon, 1875, Les Arachnides de France, Paris, 2: 261*Tmarus piochardi judaorum*- Strand, 1915, Arch. Naturg. Berlin, 81: 147*Tmarus piochardi* Simon, 1875, Levy, 1973, Isr. J. Zool., 116, f. 20-23.**Description**

Body yellowish brown with scattered dark round dots. Carapace rounded, the length and width of carapace are approximately same (**fig. 2A**). Radial bands are brown and white. There are brown spines on brown dots on the radial bands. In lateral view, carapace is strongly convex. In lateral view, ocular area is much elevated; the anterior and posterior lateral eyes are on large separated tubercles. The lateral eyes are distinctly larger than the median eyes. The distance between the anterior median eyes is slightly shorter than the distance between the posterior median eyes. Clypeus narrow. Chelicerae toothless. Labium and maxilla are longer than wide.

Sternum is oval and yellow in colour. Anterior of sternum is straight. Legs are spinous. Leg formula is 2-1- 4- 3. The anterior pairs are clearly longer than the posterior pairs. There are no scopulae or claw tuft on the legs. Tarsi are with two claws that with distinct denticles. Opisthosoma is rather angular at the lateral margins. It is longer than wide, and with a posterior tubercle at the dorsum (**fig. 2B**). Dorsal of opisthosoma is covered with brown and chalk-white mottles. There is a light brownish longitudinal and two or three brown transversal bands on the dorsum. Ventrums of opisthosoma with a dark longitudinal band, anterior of the band is darker.

Male

Measurements. Based on three males, means (n=3): total length of body 4.53 mm (range 4.4-4.7); carapace length 1.70 mm; carapace width 1.63 mm; carapace index 1.03; opisthosoma length 2.86; femur II length 3.26 mm; femur II width 0.33 mm; femoral index 9.87.

Palpus. Ventral tibial apophysis looks like a finger in shape, apically curved, thicker than the retro-lateral apophysis (**fig. 2C**). The retro-lateral apophysis black, basal part very broad, upper part of the apophysis heavy sclerotized and ended with a sharp point, ventral side deeply notched (**fig. 2D**).

Female

Measurements. Based on six females, means (n=6): total length of body 5.5 mm (range 4.5-6); carapace length 2.27 mm; carapace width 2.12 mm; carapace index 1.07; opisthosoma length 3.23 mm; femur II length 2.88 mm; femur II width 0.39 mm; femoral index 7.38.

Epigynum. The epigynum looks like a goblet. The upper part rounded,

base of this part pointed downward. Ratio of the holder width to goblet width is 1/2.8. The holder posteriorly narrowed, the sides sclerotized and black. There are double spots at anterior and posterior of epigynum (**fig. 2E**).

Material examined

Diyarbakır, Çermik Petrol (L1), 650 m (39°35′ East-38°10′ North), from almond trees (*Amygdalus* sp.), 05.VIII.2003, 3♂♂; 28.VII.2003, 2♀♀, 08.IX.2003, 3♀♀; Muğla, Datça (L2), 10 m (27°40′ East-36°45′ North), from an almond tree, 10.VIII.2004, 1♀.

Habitat and occurrence

Prefers the woody places, adult in summer. The specimens were collected from branches of almond trees in July, August and September.

Distribution

The Mediterranean countries, Yemen, India.

Monaeses israeliensis Levy 1973

Monaeses israeliensis Levy, 1973, Isr. J. Zool., 22:111, mf, f. 8-11.

Description

Prosoma reddish brown. Carapace slightly high and distinctly longer than wide (**fig. 3A**). Ocular area is slightly elevated. Eyes are on tubercles and clearly separated from each other. The lateral eyes are distinctly larger than the median eyes. The distance between the anterior median eyes shorter than that of the posterior median eyes. So, they form a trapezium. Legs yellow in colour, tick and very long. The first and second pairs clearly longer than the third and fourth pairs. The claws with large and distinct denticles. Opisthosoma pale yellowish grey. There is a light longitudinal band on the body. Also, venter of opisthosoma with a dark band along entire length. Opisthosoma is long and slender, dorsally flat. Posterior part of the opisthosoma is cone-shaped, very elongated and extending far beyond the spinnerets (**fig. 3B**).

Male

Measurements. Based on two males, means (n=2). Total length of body 6.5 mm (range 6.0-7.0), carapace length 2.1 mm, carapace width 1.4 mm, carapace index 1.49; opisthosoma length 4.4 mm; femur II length 3.1 mm, femur II width 0.28 mm, femoral index 11.07.

Palpus. Tibia with a ventral and retrolateral apophyses. The ventral apophysis is slightly curved, at lateral view the middle part is swollen, tip of the apophysis is terminating blunt. The retro-lateral apophysis is thick. The tip with three dents. The stem is stout, and there is a groove on the ventral side on the ventral view (**fig. 3C-D**).

Material examined

Antalya: Serik (L3), 40 m (31°7'East-36°55'North), from a cornfield, 15.VII.2005, 1♂; Beşkonak, Köprülü Kanyon National Park, 1200 m (31°20'East - 37°10'North), from a meadow, 22.V.2005, 1♂.

Habitat and occurrence

Prefers dense vegetations, adult in summer months. The specimens were collected from low branches of agricultural plants such as corn and wheat in a period of may-july. It catches prey by ambush among lower branches of these plants.

Distribution

Israel, Lebanon and Central Asia.

DISCUSSION

There are great morphological variations in *Tmarus piochardi* especially in the opisthosoma shape as seen in some other species. As it is known the most familiar character is a horn-shape structure in *T. piochardi*. Sizes of this structure vary according to the specimen size. In some specimens, the structure looks like a blunt horn while in some others it is much more evident. In the latter, in lateral view, the opisthosoma is as if forked at the posterior. Even the horn part is greater and longer than the other part.

In this study, sizes of the Anatolian specimens were compared with the European and Israeli specimens. While the mean of the total length (body, males) is 4.5 mm, it is 4 in European specimens, and 5 in the Israeli specimens. The length measurements of the females were also similar for the three populations. Also, carapace and femoral indexes of the males and females collected from Anatolia were found similar to that of European and Israeli specimens (Simon, 1932; Levy, 1973; Logunov, 1992).

As seen in *Tibellus* species, members of *Tmarus* stretch out their first and second legs in front, and take the colour of the branch for camouflage. For this reason like the body measurements colour is also changeable.

In comparison of *Monaeses israeliensis* collected from Turkey and Israel, the body length of the males was 6-7 mm in Anatolian specimens, and 4-6 mm in Israeli specimens. Also, the carapace and femoral indexes of the two population were similar (Levy, 1973). *M. israeliensis* was recorded from Lebanon, Israel and Central Asia so far. In Turkey, *M. israeliensis* was collected from Antalya that a southern city. This species appear as a Mediterranean spider. It can be encountered in the southern, southeastern and even eastern parts of Turkey.

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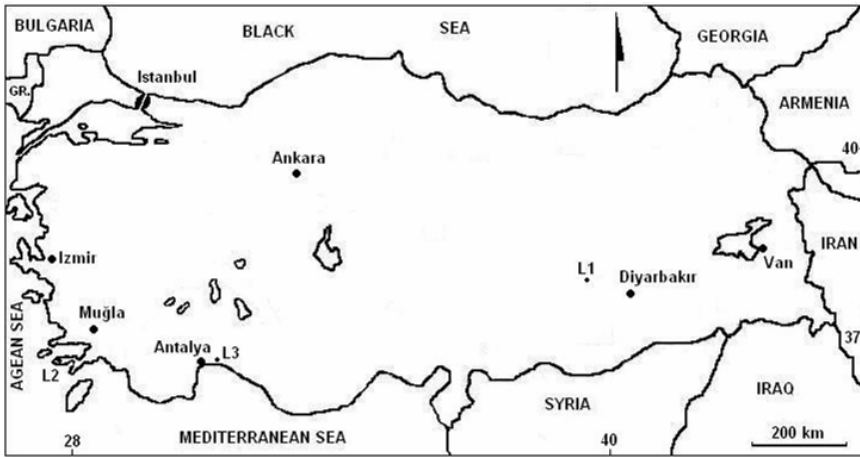


Fig. 1. The localities (L) where the spiders were collected in Turkey: *Tmarus piochardi* (Simon), L1, Çermik; L2, Datça; *Monaeses israeliensis* Levy, L3, Serik.

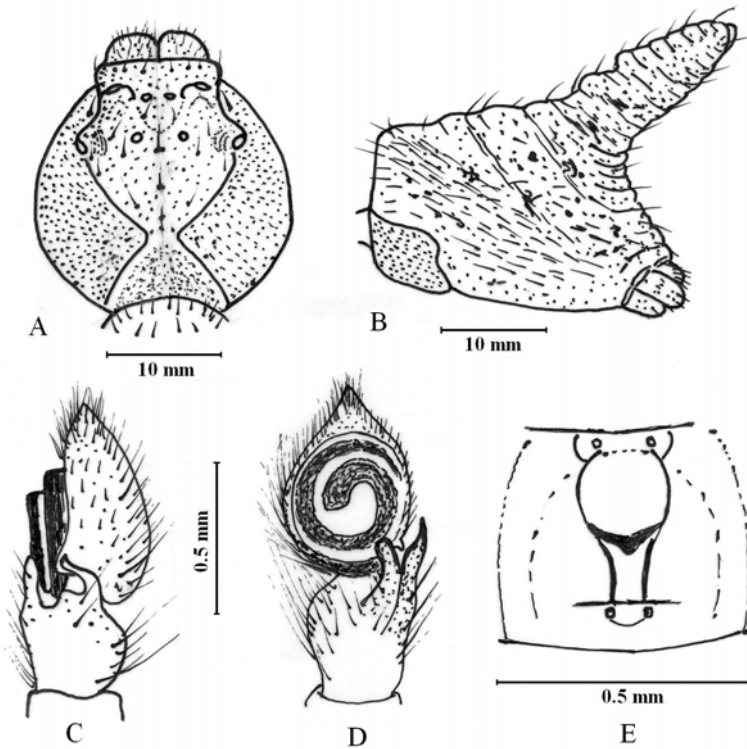


Fig. 2. *Tmarus piochardi*: Prosoma, female (Datça), dorsal view (A); Opisthosoma, female (Datça), lateral view (B); Male, left palpus (Çermik), lateral view (C); left palpus (Çermik), ventral view (D); Female (Çermik), epigyne, ventral view (E).

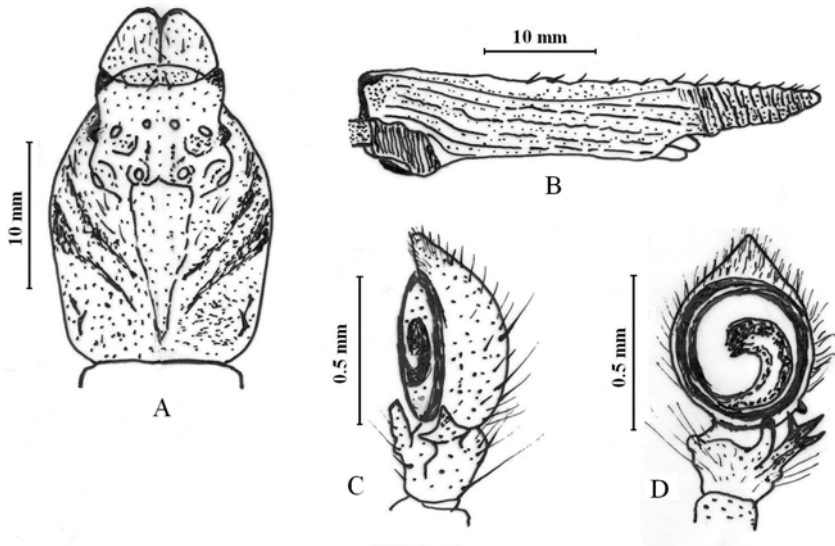


Fig. 3. *Monaeses israeliensis* (Serik): Prosoma, male, dorsal view (A); Opisthosoma, male, lateral view (B); Male, palpus, lateral view (C); palpus, ventral view (D).