

## Further faunistic notes on *Cozyptila* and *Xysticus* from Turkey (Araneae, Thomisidae)

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**Abstract:** Nine recently described or poorly known species of the thomisid genera *Cozyptila* Lehtinen & Marusik, 2005 and *Xysticus* C.L. Koch, 1835 are reported from Turkey. Five species, *Cozyptila blackwalli* (Simon, 1875), *C. thaleri* Marusik & Kovblyuk, 2005, *Xysticus bacurianensis* Mchedze, 1971, *X. thessalicoides* Wunderlich, 1995 and *X. xerodermus* Strand, 1913, are new records for the Turkish spider fauna. Two species, *X. bacurianensis* and *X. xerodermus* are illustrated and a distribution map is provided for the former. A few additional records are given for Greece and the Caucasian countries, of which *X. bacurianensis* is new for Azerbaijan.

**Key words:** Caucasus, crab spiders, faunistics, Minor Asia, new synonymy.

The thomisid fauna of Asia Minor is not yet fully known. According to the most recent checklist by TOPÇU et al. (2005), the Turkish thomisid fauna comprises 56 valid species, most of which are known from a single or just a few localities. Significant contributions to our knowledge of the Turkish Thomisidae were made by KAROL (1966a, 1966b, 1966c, 1966d, 1968), who recorded 18 species (five new to science), mostly from the vicinities of Ankara. Unfortunately, four of her new species are now regarded as invalid. Three *Xysticus* species (*X. sislîi* Karol, 1966; *X. turcicus* Karol, 1966; and *X. pelini* Karol, 1968) proved to be junior synonyms of *X. thessalicus* Simon, 1916 (see WUNDERLICH 1995: p. 752) and one (*X. jezequeli* Karol, 1966) was shown to be synonymous with *X. gymnocephalus* Strand, 1915 (ASSI 1986: p. 45). Furthermore, having examined the original description and a rather good figure of *Ozyptila ankarensis* Karol, 1966 described from a single ♂ (see KAROL 1966c: fig. 1, cf. UTOCHKIN 1960: fig. 12 and ROBERTS 1995: p. 166), we are of the opinion that this species is likely to be a junior synonym of *O. praticola* (C.L. Koch, 1837), a common Palaearctic species. A final decision has been postponed until the holotype of *O. ankarensis* can be found and re-examined.

The main aim of this short paper is to provide new faunistic data for nine thomisid species of the

genera *Cozyptila* Lehtinen & Marusik, 2005 and *Xysticus* C.L. Koch, 1835, of which five are new records for the Turkish spider fauna. The new data allow us to significantly clarify the distributions of the species in question.

Specimens for this study were borrowed from, or are distributed among the following museums: HECO= Hope Entomological Collection, Oxford, UK (Mr J. Hogan); IBPN= Institute for Biological Problems of the North FEB RAS, Magadan, Russia (Dr Y.M. Marusik); LNMC= Liverpool Museum, National Museums Liverpool, Liverpool, UK (Mr G. Night); MBCG= Museo Civico di Scienze Naturali "Enrico Gaffi", Bergamo, Italy (Dr P. Pantini); MMUM= Manchester Museum, University of Manchester, Manchester, UK (Dr D.V. Logunov); NHMW= Naturhistorisches Museum, Wien, Austria (Dr J. Gruber); NUAM= Arachnology Museum of the Niğde University, Niğde, Turkey (Dr A. Topçu); SMFM= Naturmuseum und Forschungsinstitut Senckenberg, Frankfurt am Main, Germany (Dr P. Jäger).

Complete reference lists for each species are not provided, as they can be obtained from PLATNICK (2006). Here, under the heading 'Identification', we refer only to one or two works that we consider most useful for the identification of the species.

*Cozyptila blackwalli* (Simon, 1875)

Identification: MARUSIK et al. (2005).

**Material examined:** Turkey: 1 ♂ 3 ♀ (NHMW), Kizilcahaman (40°28'N, 32°37'E), 1000-1200 m a.s.l., thicket of fruit trees, 27.-28.05.1967, leg. J. Gruber, F. Ressler & A. Radda.

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According to MARUSIK et al. (2005: map 1), this species is distributed in Europe. The locality of *C. blackwalli* in Turkey is its easternmost record and is a new record for the Turkish spider fauna.

***Cozyptila thaleri*** Marusik & Kovblyuk, 2005

Identification: MARUSIK et al. (2005).

**Material examined:** Turkey: 3 ♀ (NHMW), ca 12 km SSW of Adapazarı (40°45'N, 30°23'E), ca 100 m a.s.l., oak forest with *Carpinus*, *Tilia*, *Ligustrum*, *Crataegus*, etc., 14.06.1967, leg. J. Gruber, F. Ressler & A. Radda; 1 ♀ (NHMW), ca 15 km NE of Abantsee, Abant Mts., ca 900 m a.s.l., *Quercus-Fagus-Abies* forest, 25.05.1967, leg. J. Gruber, F. Ressler & A. Radda; 2 ♀ (NHMW), Tekketal, SW Akşehir (38°21'N, 31°24'E), 1100-1200 m a.s.l., pine forest with *Quercus coccifera*, *Corylus*, etc., 11.06.1967, leg. J. Gruber, F. Ressler & A. Radda.

This species was recently described from the Crimea (Ukraine) by MARUSIK et al. (2005: map 1). Thus, the occurrences of *C. thaleri* in Turkey represent the southernmost records of its distribution, in addition to being a new species record for the Turkish spider fauna.

It is also worth noting that together with two aforementioned species (*blackwalli* and *thaleri*) all three described *Cozyptila* species are now known from Turkey. The third species, *C. guseinovorum* Marusik & Kovblyuk, 2005, was reliably recorded from Hendek-Gumusova (41°21'N, 41°27'E) and Yamanlar Dağı Mt. (ca 38°33'N, 27°8'E) (see MARUSIK et al. 2005). The three other records by MARUSIK et al. (2005) were made from single immature females and are therefore not taken into account here.

***Xysticus bacurianensis*** Mcheidze, 1971

Identification: OVTSHARENKO (1979), present work (Figs 1-6).

**Material examined:** Turkey: 8 ♂ 12 ♀ 1 juv. ♂ (HECO), Trabzon, Zigana (40°36'52"N, 39°21'47"E), 2200 m a.s.l., under stones on herbs & short grass (herb hillside and top), 22.-24.08.1958, leg. G. Lampell.

**Comparative material:** Georgia: 3 ♂ 2 ♀ (IBPN), Lagodekhi Reserve (41°49'N, 46°16'E), 2800-2900 m a.s.l., 2.03.1982, leg. Y.M. Marusik. Azerbaijan: 1 ♀ (ZMUM), Gusary Distr., foothills of Bazardüzü (= Bazardüzü) Mts. (41°13'N, 47°51'E), 3000 m a.s.l., 9.08.2001, leg. E. Guseinov.

This is an inhabitant of the alpine belt of the Caucasian Mts., which has been known to date from only a single locality in Georgia (MCHEIDZE 1971, 1997) and the NW part of the Caucasus Major (OVT-

SHARENKO 1979). Our findings from Azerbaijan and Turkey are new records for these countries, and they significantly extend our knowledge of the distribution of this rare species (Fig. 7).

Amongst the Palaearctic species, *X. bacurianensis* stands alone due to the unique conformation of its copulatory organs in both sexes (Figs 1-6), especially of the embolus (Fig. 3). The most closely related species seem to be *X. embriki* Kolosváry, 1935 known from East Europe (KOLOSVÁRY 1935) to East Kazakhstan (MARUSIK & LOGUNOV 1995: fig. 40) and *X. gymnocephalus* Strand, 1915 from Minor Asia and the Levant (LEVY 1985: figs 162-164, ASSI 1986). Males of *X. bacurianensis* differ from those of both related species in having a massive embolus, which is twice as long as in the aforementioned species; it is strongly extended laterally and rests on the finger-shaped tutaculum (Figs 1, 3). The ♀ of *X. bacurianensis* has a strong transverse membranous duct of the spermathecae (Fig. 6), which is absent from this structure in *X. gymnocephalus*; the ♀ of *X. embriki* remains poorly known.

***Xysticus cristatus*** (Clerck, 1757)

Identification: AZARKINA & LOGUNOV (2001), JANTSCHER (2001).

**Material examined:** Turkey: 1 ♀ 3 juv. ♀ (HECO), Trabzon, Zigana (40°36'52"N, 39°21'47"E), 2200 m a.s.l., under stones on herbs & short grass (herb hillside and top), 22.08.1958, leg. G. Lampell.

This is a common Euro-Siberian temperate species (AZARKINA & LOGUNOV 2001, JANTSCHER 2001) previously recorded from Turkey (TOPÇU et al. 2005).

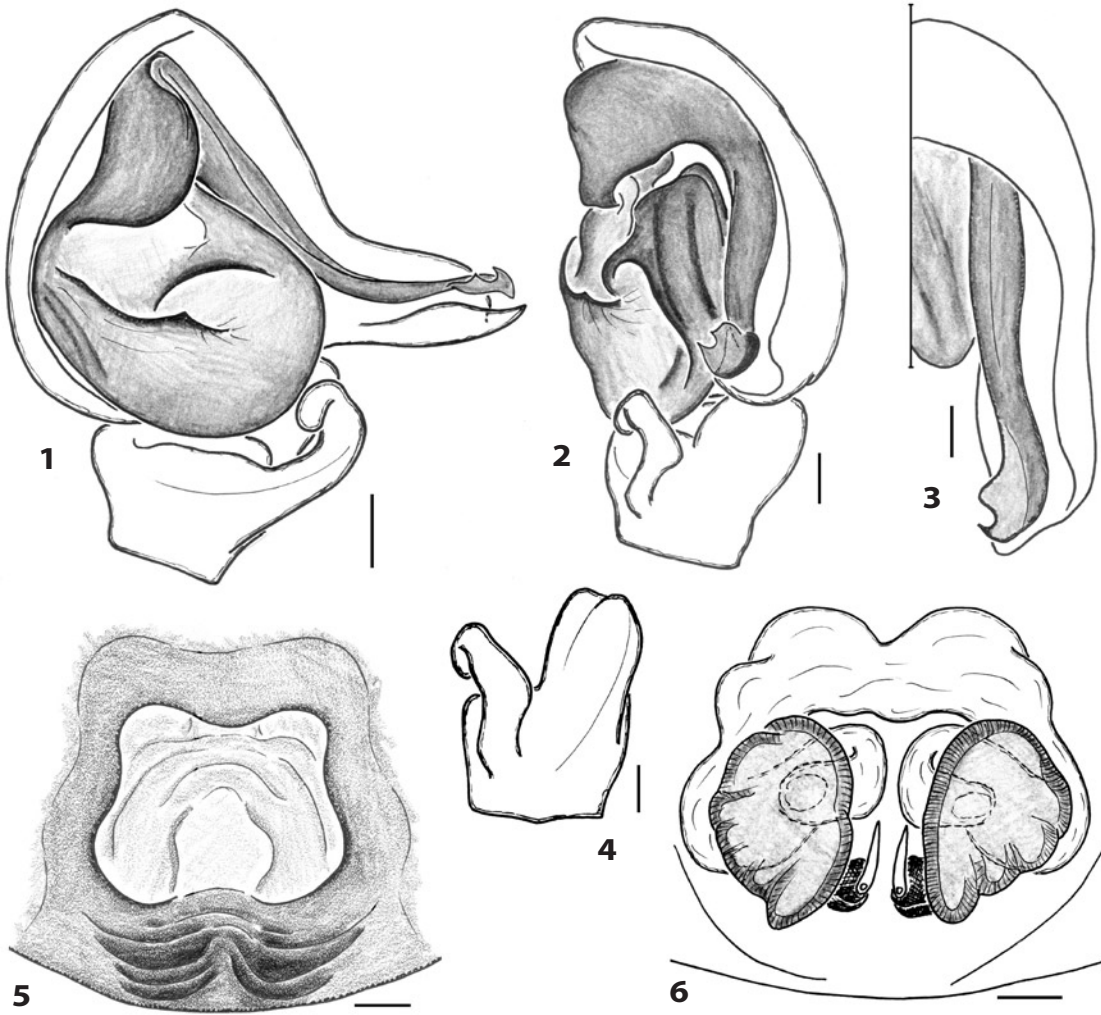
***Xysticus kochi*** Thorell, 1872

Identification: LEVY (1979, 1985).

**Material examined:** Turkey: 1 ♀ (NUAM), Çankırı Prov., Korgun Distr., Kiyısın (40°49'60"N, 33°37'0"E), under tree bark, 28.07.2005, leg. H. Demir; 1 ♀ (NUAM), Konya Prov., Yunak Distr., Beşikli (39°32'24"N, 34°22'15"E), under stones, 13.05.2005, leg. H. Demir; 1 ♀ (LNMC), Yozgat (40°01'N, 34°37'E), Bogazkale, Bashkent Motel, grassy hillside, *Populus* copse with *Ranunculus* dominant, 14.05.1994, leg. S. Judd & C. Felton; 1 ♀ (LNMC), Isparta, ca 4 km E of Eğridir (37°52'10"N, 30°50'57"E), 8.07.1992, leg. S. Judd; 1 ♂ (LNMC), Bolu, ca 21 km E of Akçakoca (41°06'27"N, 31°15'54"E), sparse mixed weeds on road slope, wet field with *Juncus* adjacent to stream, 18.05.1994, leg. S. Judd & C. Felton; 1 ♂ (LNMC), ca 7 km E of Küçükgezbeli,

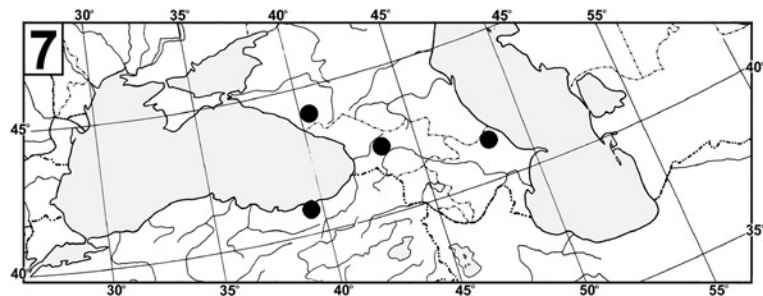
Adana (38°09'03"N, 36°07'27"E), road bank with grass and herbs, and adjacent wet areas, 13.05.1994, leg. S. Judd & C. Felton; 1 ♀ (LNMC), Konya, Sakyatan (37°50'25"N, 32°47'6"E), 10.07.1992, leg. S. Judd; 2 ♀

(LNMC), ca 12 km SW of Sarica, Kayseri (38°08'59"N, 35°22'44"E), herb-rich orchard with deep 'A' horizon of decomposing litter, 11.05.1994, leg. S. Judd & C. Felton; 2 ♀ (LNMC), ca 4 km S of Ahmetyeri, Sinop



**Figs 1-6:** The copulatory organs of *Xysticus bacurianensis* Mcheidze, 1971 from Turkey (Trabzon: Zigana): 1, male palp, ventral view; 2, ditto, retrolateral view; 3, embolus, dorsal view; 4, tibial apophysis, lateral view; 5, epigyne; 6, spermathecae. Scale bar 0.1 mm.

**Fig. 7:** Distribution of *Xysticus bacurianensis* Mcheidze, 1971. One dot may represent multiple adjacent localities.





(41°49'38"N, 35°05'24"E), freshwater swamp at side of river, 10.07.1995, leg. S. Judd & C. Felton; 1 ♂ (LNMC), Zonguldak, Amasra (41°44'42"N, 32°23'12"E), waste ground by flats, 18.05.1994, leg. S. Judd & C. Felton; 1 ♂ (LNMC), Nevşehir, Nevşehir-Urgup, 11.07.1992, leg. C. Felton; 1 ♀ (LNMC), Nevşehir, ca 5 km E of Urgup (38°37'53"N, 34°54'47"E), 12.07.1992, leg. C. Felton; 1 ♀ (LNMC), Kayseri (38°43'56"N, 35°29'7"E), 31 km south of Duvallı, rocky outcrop with *Euphorbia* sp. and mixed scrub, 15.06.1993, leg. S. Judd & C. Felton; 1 ♀ (HECO), Trabzon, Hamsikoy (40°41'14"N, 39°28'7"E), 1250 m a.s.l., beaten from blue flower patch on hillside, 23.08.1958, leg. G. Lampell.

**Comparative material:** Italy: 1 ♀ (MBCG), Emilia-Romagna, Piacenza, Bobbio (44°46'18"N, 9°23'11"E), 1.05.1957, leg. A. Valle.

*X. kochi* is a common Euro-Mediterranean-Central Asian species, previously recorded from Turkey (TOPÇU et al. 2005).

#### *Xysticus ninnii fusciventris* Crome, 1965

Identification: UTOCHKIN & SAVELYEVA (1995).

**Material examined:** Turkey: 1 ♀ (NUAM), Sivas Prov., Yıldızeli Distr., Şeren (40°58'N, 31°25'E), under tree bark, 22.07.2005, leg. H. Demir; 1 ♂ 1 ♀ (NUAM), Çankırı Prov., Şabanözü Distr., Hüyük (37°57'7"N, 31°35'45"E), under tree bark, 29.07.2005, leg. H. Demir; 4 ♂ (LNMC), Kayseri, Tahtalı Dağları, ca 8 km E of Bakırdağı (38°13'0"N, 35°47'60"E), 13.07.1992, leg. C. Felton; 4 ♂ 1 ♀ (LNMC), Konya, Kizilören (41°16'N, 33°1'E), 9.07.1992, leg. C. Felton.

This is a Euro-Central Asian species, distributed eastward as far as western Mongolia (UTOCHKIN & SAVELYEVA 1995: map 1). This species has previously been recorded from Turkey (TOPÇU et al. 2005: sub *X. ninnii*) and recently also from Iran (ONO & MARTENS 2004); both countries represent the southernmost limits of the species' distribution.

CROME (1965) thoroughly examined the European and Asian material of *X. ninnii* Thorell, 1872 and described a new subspecies (*X. n. fusciventris*), of which the type locality lies in Teberda (ca 43°32'N, 41°47'E), the North Caucasus, Russia. The Turkish specimens examined definitely belong to this subspecies, which according to UTOCHKIN & SAVELYEVA (1995) probably deserves separate species status. The European records of *X. ninnii* (see in PLATNICK 2006) need to be re-examined in order to clarify the taxonomic status and distribution of both taxa. This problem is beyond the scope of the current study.

#### *Xysticus thessalicoides* Wunderlich, 1995

Identification: WUNDERLICH (1995).

**Material examined:** Turkey: 1 ♂ (MMUM), Antalya Prov., Kalkan (36°15'N, 29°24'E), from village and local garrigue, 04.2003, leg. L. Cook; 2 ♀ (LNMC), ca 5 km E of Ballıdag Gecidi, Kastamonu (41°37'52"N, 33°23'12"E), 1267 m a.s.l., pine litter, *Senecio* dominant with *Malus*, 17.05.1994, leg. S. Judd & C. Felton; 5 ♀ (NHMW), ca 15 km NE of Lake Abant, near Bolu (Bolu: 40°44'22"N, 31°36'42"E), Abant Mts., 900-1200 m a.s.l., *Quercus-Fagus-Abies* forest, 26.05.1967, leg. J. Gruber, F. Ressler & A. Radda; 2 ♀ (HECO), Trabzon, Hamsikoy (40°41'14"N, 39°28'7"E), 1250 m a.s.l., under needle and leaf litter, 26.08.1958, leg. G. Lampell.

**Comparative material:** Greece: 1 ♂ (LNMC), Lesbos, Vatera (39°12'13"N, 26°10'53"E), Aphrodite hotel wall, 20.04.1997, leg. C. Felton; 1 ♂ (LNMC), Lesbos, Skala Kallonis (39°12'25"N, 26°13'13"E), beach and along river, 23.04.1997, leg. S. Judd.

This species was described from Greece (Crete, Santorin and Greek mainland) (see WUNDERLICH 1995). Thus, this is the first record outside Greece and a new record for the Turkish spider fauna; the records from Lesbos clarify the species' distribution in Greece.

#### *Xysticus thessalicus* Simon, 1916

Identification: WUNDERLICH (1995), AZARKINA & LOGUNOV (2001).

**Material examined:** Turkey: 1 ♂ 1 ♀ (NUAM), Konya Prov., Gencek (41°57'N, 34°17'E), under stones, 15.05.2005, leg. H. Demir; 1 ♂ (NUAM), Konya Prov., Doğanhisar (38°8'N, 31°40'E), near Değiştigin, under stones, 14.05.2005, leg. H. Demir; 1 ♀ (LNMC), İçel, ca 8.8 km N of Anamur (36°08'N, 32°51'E), hillside with scattered, mixed, low scrub and herbs (*Matricaria*, clover, thistle and *Thymus*), 7.05.1994, leg. C. Felton; 1 ♂ (LNMC), Yozgat (40°01'43"N, 34°37'21"E), Bogazkale, Bashkent Motel 14.05.1994, leg. S. Judd & C. Felton; 2 ♀ (LNMC), Silifke (36°22'40"N, 33°56'4"E), Mersin, sand dune system with scattered scrub up to 400 m from sea, 10.06.1993, leg. S. Judd & C. Felton.

**Comparative material:** Greece: 1 ♀ (LNMC), Lesbos, Skala Kallonis (39°12'25"N, 26°13'13"E), back of beach and along river, 23.04.1997, leg. S. Judd; 2 ♀ (LNMC), Lesbos, Vatera (39°012'13"N, 26°10'53"E), Aphrodite hotel wall, 20.04.1997, leg. C. Felton.

This is an East-Mediterranean species known from Greece, the Balkans (Croatia), Israel and Turkey (WUNDERLICH 1995). The new records clarify its distribution in Turkey and Greece.

*Xysticus xerodermus* Strand, 1913

Identification: LEVY (1976, 1985).

**Material examined:** Turkey: 1 ♀ (NUAM), Konya Prov., Seydişehir (37°25'N, 31°51'E), Rizebeli Pass, under stones, 15.05.2005, leg. H. Demir; 1 ♀ (LNMC), Yozgat (40°01'N, 34°37'E), Bogazkale, Bashkent Motel, grassy hillside, *Populus* copse with *Ranunculus* dominant, 14.05.1994, leg. S. Judd & C. Felton; 1 ♀ (LNMC), Yozgat (40°01'43"N, 34°37'21"E), Bogazkale, Bashkent Motel, 14.05.1994, leg. S. Judd & C. Felton.

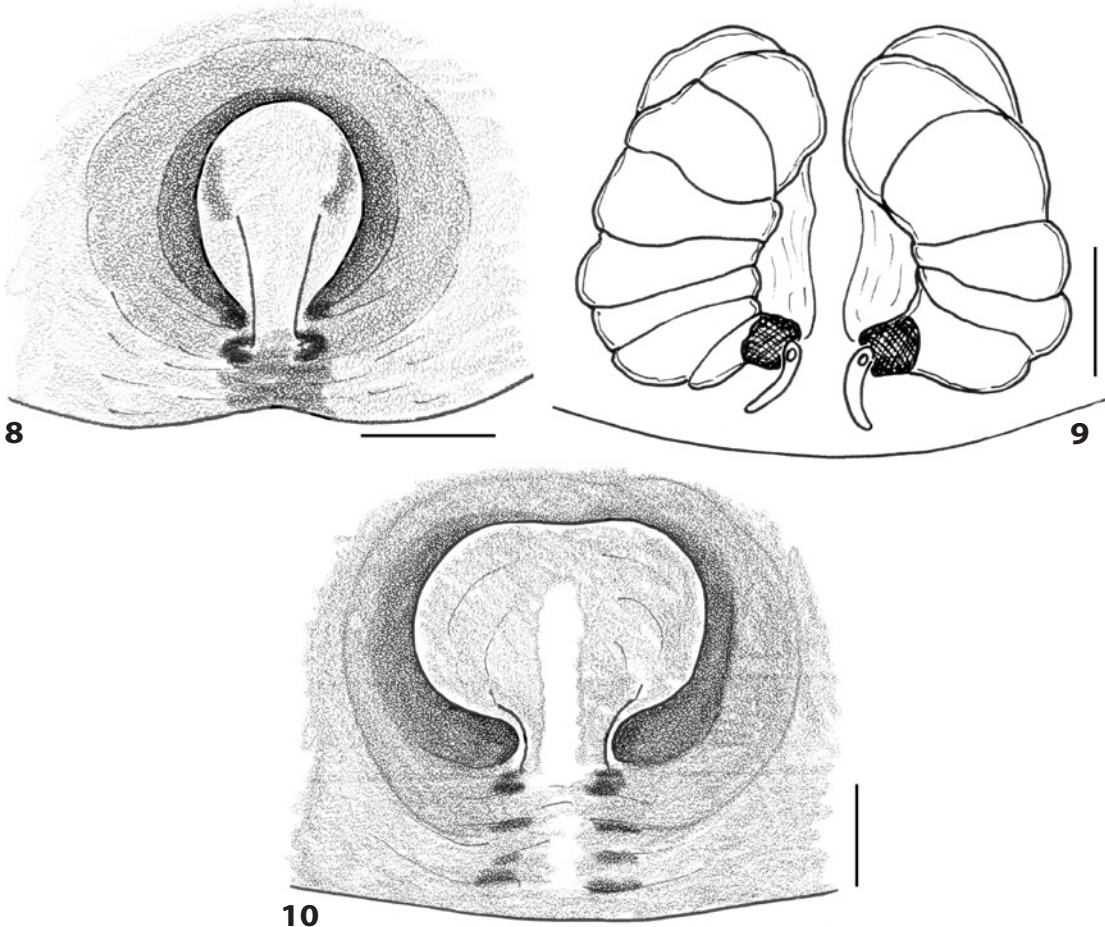
*X. xerodermus* is a poorly known East-Mediterranean species, to date reported only from Israel (LEVY 1985). Thus, it forms a new species record for the Turkish spider fauna.

We have identified this species on the basis of the publications of LEVY (1976, 1985) only. At least two types of females have been found, viz. one with a relatively narrow epigynal fossa (Fig. 8), another

with a wider one (Fig. 10). The latter is identical to the figure provided by LEVY (1985: fig. 156). *X. xerodermus* belongs to the *sabulosus* species group and seems to be closest to *X. kempeleni* Thorell, 1872 (sensu LOGUNOV in press), but the female's epigyne is smaller and the insemination ducts shorter and do not form a loop (Fig. 9; see also LEVY 1985: fig. 157). In any case, females in the *sabulosus* group are hard to distinguish from one another, and therefore males are required to confirm or reject our identification.

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**Figs 8-10:** The ♀ copulatory organs of *Xysticus xerodermus* Strand, 1913 from Turkey (8-9, Rizebeli Pass; 10, Yozgat): 8, 10, epigyne; 9, spermathecae. Scale bar 0.1 mm.

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