

RESEARCH ARTICLE

Spiders of Jordan: A preliminary Study

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Abstract

In this study, 67 genera within 27 families of spiders are listed, including 37 and 36 identified to the species and the generic levels respectively. A total of 33 species were recorded for the first time in Jordan.

Keywords: Araneae, Fauna, Taxonomy, New Records

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Received: 06.11.2020

Revision Requested: 09.11.2020

Last Revision Received: 09.12.2020

Accepted: 09.01.2021

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Citation: Shakhatreh, M. R., Amr, Z. S., &
Abu Baker, M. R. (2021). Spiders of Jordan:
A preliminary Study. *Turkish Journal of
Bioscience and Collections*, 5(1), 1-11.
<https://doi.org/10.26650/tjbc.2021822162>

Introduction

Our knowledge on the spiders of Jordan remains fragmentary. The earliest records of spiders from Palestine, the plains of the Jordan River in the west side and Syria was the comprehensive work of Pickard-Cambridge (1872). Pavesi (1895) reported on the collection of spiders made by Dr. E. Festa in Palestine and Lebanon. El-Hennawy (1987; 1991; 2006; 2011) recorded *Stegodyphus lineatus* (Latreille, 1817), *S. pacificus* Pocock, 1900, *Oecobius cellariorum* (Dugès, 1836) and *Latrodectus pallidus* O. Pickard-Cambridge, 1872 from Jordan.

Wunderlich (1995) described *Scytodes kinzelbachi* from Azraq, Jordan. Bosselaers (1999) described *Uroctea hashemitorum* from Wādī Ramm (Aqaba, Jordan). Bosmans (2009) reported *Zodarion lutipes* (O. Pickard-Cambridge, 1872) from ‘Ajlūn and Ash Shawbak castle, Jordan. Logunov (2015) recorded *Menemerus davidi* Prószyński and Wesołowska, 1999 from Wadi Azab (=Wādī al ‘Azab), N ‘Ammān, Jordan. Bosmans *et al.* (2018) recorded *Haplodrassus mediterraneus* Levy, 2004 from Sjhawbak castle (=Ash Shawbak) and El Alia airport (=Queen Alia Airport). *Hoplopholcus ceconii* Kulczyński, 1908 was collected from Bergesh Natural Reserve, Barkash

Cave (Huber, 2020) and Aharon *et al.* (2017) reported *Artema nephilit* Aharon, Huber & Gavish-Regev, 2017 from several localities in Jordan.

Within the Middle East, the spiders of Palestine were studied extensively with a total of 651 species (Zonstein & Marusik, 2013; Zonstein *et al.*, 2015), while 1129 species were recorded from Turkey (Danışman *et al.*, 2019), 54 species from 22 families in Iraq (Fomichev *et al.*, 2018) and 763 species from Iran (Zamani *et al.*, 2020). In Egypt, El-Hennawy (2017) listed 405 species within 41 families and 204 genera.

The present report is the first comprehensive attempt to document the spiders of Jordan.

Materials and Methods

Spider specimens were collected mainly by M. Shakhatrah, mostly from northern Jordan. Table 1 shows the localities from which the spiders were collected and their coordinates. The spiders were collected from the field by flipping stones, searching leaf litter and from inside houses by means of a hand aspirator or by a fine tweezer. Most specimens were photographed while alive using a Canon digital camera and were then preserved in 70% ethyl alcohol with labels indicating the date and locality. The specimens were deposited at the Entomology Museum, Faculty of Agriculture, the Jordan University, Amman. Identification of species and generic levels was based on Nentwig *et al.* (2020).

Table 1: Localities from which materials were collected.

Locality	N	E	Locality	N	E
'Ajlūn	32° 20' 02"	35° 45' 03"	Kitim	32° 26' 22"	35° 45' 53"
'Ammān	31° 57' 00"	35° 56' 00"	Kufr Jāyiz	32° 37' 11"	35° 49' 33"
'Irbīd	31° 12' 00"	35° 50' 00"	Mādabā	31° 43' 00"	35° 48' 00"
Ar Ramthā	32° 33' 33"	35° 50' 00"	Northern Azraq	31° 52' 57"	36° 49' 47"
As Salṭ	32° 02' 2"1	36° 00' 25 "	Petra	30° 19' 20"	35° 28' 46"
Az Zarqā'	32° 04' 00"	35° 43' 38"	Samā al Rousan	32° 38' 00"	35° 49' 00"
El Mazār ash Shamālī	32° 28' 21"	36° 05' 00"	Um Qeis	32° 39' 18"	35° 41' 01"
Fo'ara	32° 37' 02"	35° 47' 34"	Wādī 'Araba	29° 45' 00"	35° 02' 11"
Ḥātīm	32° 38' 43"	35° 46' 42"	Wādī Ramm	29° 41' 00"	35° 27' 00"
Irbīd, El Bārīḥa	32° 34' 19"	35° 50' 16"			

Results

Family Agelenidae

Agelena orientalis C.L. Koch, 1837 Fig. 1A and B

Material examined: ♂, 'Ammān, 24.8.2020. ♀, Samā al Rousan, June 2020.

Remarks: This species has a wide distribution extending

along the West and Central Palaearctic (Zonstein & Marusik, 2013; Danışman *et al.*, 2019). This species is a new record for the Jordan.

Lycosoides coarctata (Dufour, 1831) Fig. 1C and D

Material examined: ♂, 2.12.2018. ♀, 22.12.2018. 'Irbīd, El Bārīḥa.

Remarks: Known across the Mediterranean countries reaching as far as the Canary Islands (Zonstein & Marusik, 2013; Demir & Seyyar, 2017). This species is a new record for Jordan.

Tegenaria sp. Fig. 1E and F

Material examined: ♂, 'Irbīd, El Bārīḥa, 15.12.2018. ♂, 'Irbīd, El Bārīḥa, 4.10.2019. ♀, 'Irbīd, El Bārīḥa, 23.2.2019. ♀, 'Irbīd, El Bārīḥa, 27.2.2019. ♀, 'Irbīd, El Bārīḥa, 12.2.2020. ♀, 'Irbīd, El Bārīḥa, 9.3.2020. ♀, 'Irbīd, El Bārīḥa, 15.3.2020. ♀, 'Irbīd, El Bārīḥa, 15.4.2020.

Remarks: Three species belonging to this genus were reported from Palestine, namely, *Tegenaria angustipalpis*, *T. domestica* and *T. parietina* (Zonstein & Marusik, 2013).

Family Araneidae

Agalenatea redii (Scopoli, 1763)

Material examined: ♀, Fo'ara, 2020. ♀, El Mazār ash Shamālī, 2020.

Remarks: Known across Europe to as far as Eastern Kazakhstan (Zonstein & Marusik, 2013; Danışman *et al.*, 2019). This species is a new record for Jordan.

Araneus diadematus Clerck, 1757 Fig. 2C

Material examined: ♀, 'Ajlūn. December 2018. ♂, 'Irbīd, El Bārīḥa, 2019.

Remarks: Wide spread across of Europe and the non tropical parts of Asia and north Africa (Nentwig *et al.*, 2020). This species is a new record for Jordan.

Argiope lobata (Pallas, 1772) Fig. 2A and B
 Material examined: ♂ and ♀, Samā al Rousan, 11.7.2020.
 Remarks: A common species with a world-wide distribution (Nentwig *et al.*, 2020). This species is a new record for Jordan.

Argiope trifasciata (Forskål, 1775) Fig. 2D
 Material examined: ♀, 'Irbīd, no date.
 Remarks: Recorded from the Middle East and North Africa (Zonstein & Marusik, 2013). This species is a new record for Jordan.

***Cyclosa* sp.** Fig. 2E
 Material examined: 'Irbīd, El Bārīḥa, 27.9.2018. 'Irbīd, El Bārīḥa, 2.11.2019. Fo'ara, 2020.
 Remarks: Two species of this genus were recorded from Palestine, *Cyclosa deserticola* and *C. sierrae* (Zonstein & Marusik, 2013).

***Larinioides* sp.**
 Material examined: Az Zarqā', October 2018.
 Remarks: Two species are known from Palestine; *Larinioides cornutus* and *L. suspicax* (Zonstein & Marusik, 2013).

Neoscona adianta (Walckenaer, 1802) Fig. 3A
 Material examined: Fo'ara, no date.
 Remarks: It is distributed along the Palaearctic region (Zonstein & Marusik, 2013; Demir & Seyyar, 2017). This species is a new record for Jordan.

Neoscona subfusca (C.L. Koch, 1837) Fig. 3B
 Material examined: ♀, 'Irbīd, El Bārīḥa, 16.4.2020.
 Remarks: This species is known from the Palaearctic region and the old world (Zonstein & Marusik, 2013; Danişman *et al.*, 2019; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Family Cheiracanthiidae

***Cheiracanthium* sp.** Fig. 3F.
 Material examined: ♂, 'Irbīd, El Bārīḥa, April 2020. ♂, 'Irbīd, El Bārīḥa, May 2020. ♀, 'Irbīd, El Bārīḥa, 18.5.2020.
 Remarks: Five species of this genus (*Cheiracanthium annulipes* O. Pickard-Cambridge, 1872, *Cheiracanthium mildei* L. Koch, 1864, *Cheiracanthium pelagicum* (C.L. Koch, 1837), *Cheiracanthium rehobothense* Strand, 1915 and *Cheiracanthium strasseni* Strand, 1915) were recorded from Palestine (Zonstein & Marusik, 2013).



Figure 1. A. Male *Agelena orientalis*. B. Female *Agelena orientalis*. C. Female *Lycosoides coarctata*. D. Male *Lycosoides coarctata*. E. Female *Tegenaria* sp. F. Male *Tegenaria* sp.

Family Cithaeronidae

Cithaeron praedonius O. Pickard-Cambridge, 1872 Fig. 3C

Material examined: ♂, 'Irbīd, El Bārīḥa, 3.7.2020. 'Irbīd, El Bārīḥa, 4.4.2020. 'Irbīd, El Bārīḥa, 19.4.2020. 'Irbīd, El Bārīḥa, 20.4.2020. 'Irbīd, El Bārīḥa, 4.5.2020. 'Irbīd, El Bārīḥa, 18.5.2020.

Remarks: Reported from Libya to Malaysia and the Palaearctic region (Zonstein & Marusik, 2013; Danişman *et al.*, 2019). This species is a new record for Jordan.

Family Ctenidae

Anahita syriaca (O. Pickard-Cambridge, 1872) Fig. 3D
 Material examined: ♂, July 2019. ♀, 'Irbīd, El Bārīḥa, 1.4.2020. ♀, 'Irbīd, El Bārīḥa, 1.5.2020. ♀, 'Irbīd, El Bārīḥa, 23.5.2020.

Remarks: Known only from Palestine (O. Pickard-Cambridge, 1872). This is the first record to Jordan.

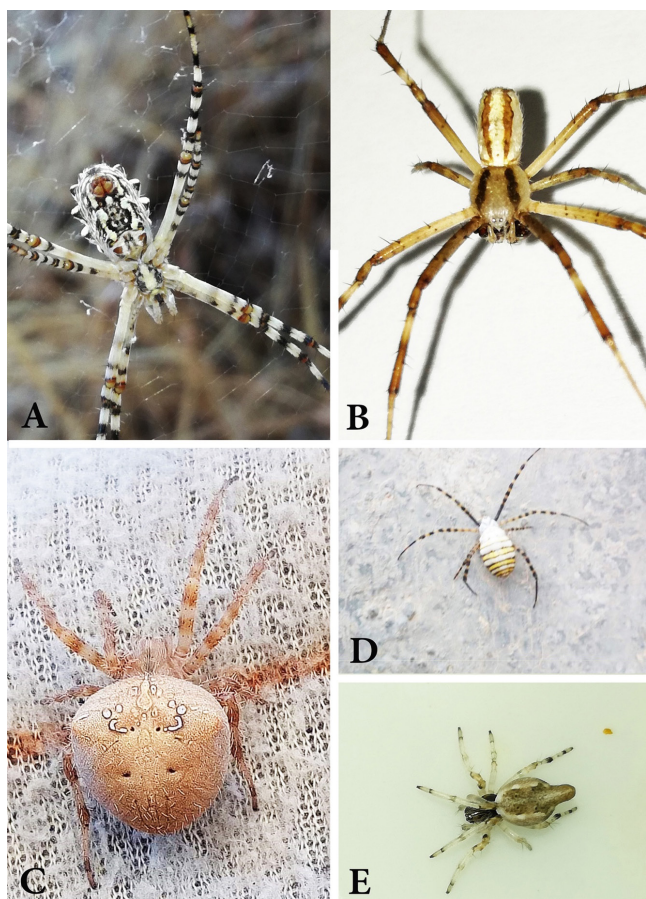


Figure 2. A. Female *Argiope lobata*. B. Male *Argiope lobata*. C. Female *Araneus diadematus*. D. Female *Argiope trifasciata*. E. *Cyclosa* sp.

Family Dysderidae

Dysdera sp. Fig. 3K

Material examined: Samā al Rousan March 2020. Samā al Rousan, 21.4.2019. Samā al Rousan, 22.8.2019. Samā al Rousan, 5.3.2020. Samā al Rousan, 15.3.2020.

Remarks: Several species are known from Palestine (*Dysdera* cf. *dentichelis* Simon, 1882, *Dysdera gemina* Deeleman-Reinhold, 1988, *Dysdera simoni* Deeleman-Reinhold, 1988, *Dysdera spinicrus* Simon, 1882, and *Dysdera westringi* O. Pickard-Cambridge, 1872) and Turkey, including endemics (Zonstein & Marusik, 2013; Danişman *et al.*, 2019).

Family Eresidae

Eresus sp. Fig. 3G

Material examined: ♀, ‘Ammān, 2018. ♀, Kitim, 2018. ♀, Ar Ramthā, 2019. ♀, Ar Ramthā, 2020. ♂, El Mazār ash Shamālī, 2020.

Remarks: The specimen is similar to *Eresus albopictus* Simon, 1873, however, it requires further examination.

Loureedia sp. Fig. 3H

Material examined: ♂, Northern Azraq, October 2019.
Remarks: This species may represent a new species. Further examination must reveal its identity.

Stegodyphus lineatus (Latreille, 1817) Fig. 3I and J

Material examined: ♀, ‘Ammān, No date. ♂, Northeastern Desert, October 2018.

Remarks: Previously recorded from Jordan (El-Hennawy, 1987). Known across the Mediterranean and Central Asia (Zonstein & Marusik, 2013; Danişman *et al.*, 2019).

Family Filistatidae

Filistata insidiatrix (Forsskål, 1775) Fig. 3E

Material examined: ♀, Um Qeis, 2019. ♀, ‘Irbīd, El Bārīḥa, 15.4.2020.

Remarks: The distribution of this species extends across the Mediterranean to Turkmenistan (Danişman *et al.*, 2019; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Family Gnaphosidae

Drassodes sp.

Material examined: 24 April 2019. Irbīd, El Bārīḥa. ♀, ‘Irbīd, El Bārīḥa, May 2019. ♂, ‘Irbīd, El Bārīḥa, May 2020. 4 May 2019. Irbīd, El Bārīḥa. 19 May 2020. Irbīd, El Bārīḥa.

Remarks: Seven species of this genus were recorded from Palestine (Zonstein & Marusik, 2013).

Pterotricha sp. Fig. 4A

Material examined: Samā al Rousan, 29.9.2019. Samā al Rousan, 3.3.2020. 3♀♀, Ḥātīm, 23.9.2020.

Remarks: Thirteen species of this genus were recorded from Palestine (Zonstein & Marusik, 2013). *Pterotricha dalmasi* Fage, 1929 was reported from, Ma’an, Jordan (Levy, 1995).

Setaphis sp. Fig. 4D

Material examined: ♀, ‘Irbīd, El Bārīḥa, 21.5.2019.

Remarks: The specimen in hand resembles *Setaphis carmeli* (O. Pickard-Cambridge, 1872), but requires further examination. *Setaphis carmeli* (O. Pickard-Cambridge, 1872) was recorded from As Salt (Pavesi, 1895).

Zelotes sp. Fig. 4B

Material examined: ♂, ‘Irbīd, El Bārīḥa, July 2019.

Remarks: Several species were recorded from Palestine (Zonstein & Marusik, 2013).

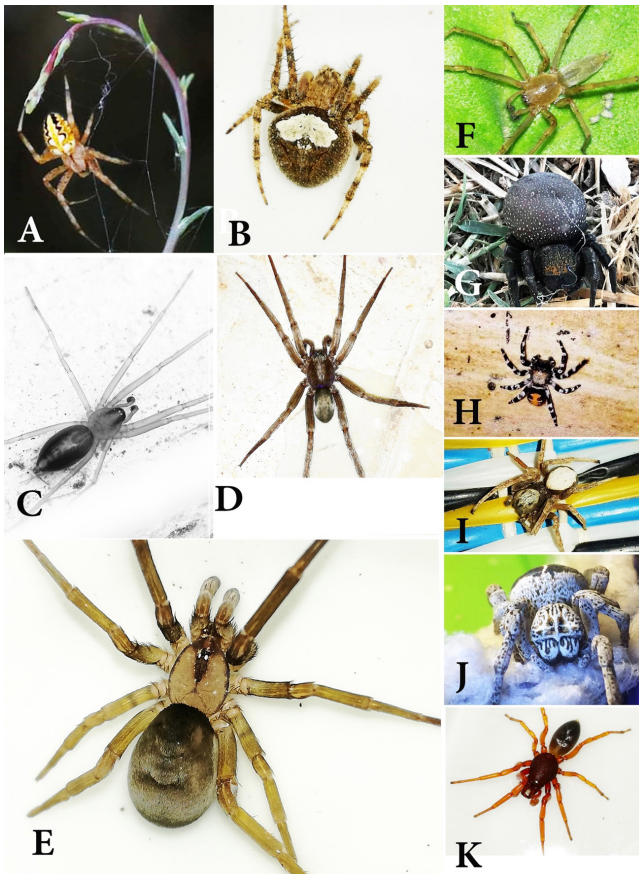


Figure 3. A. Female *Neoscona adianta*. B. Female *Neoscona subfusca*. C. Male *Cithaeron praedonius*. D. Male *Anahita syriaca*. E. Female *Filistata insidiatrix*. F. Female *Cheiracanthium* sp. G. Female *Eresus* sp. H. Male *Loureedia* sp. I. Male *Stegodyphus lineatus*. J. Female *Stegodyphus lineatus*. K. *Dysdera* sp.

Family Hersiliidae

Hersilia caudata Audouin, 1826 Fig. 4C

Material examined: ♀, 'Irbīd, El Bārīḥa, 14.5.2019. ♀, 'Irbīd, El Bārīḥa, 16.5.2019. ♀, 'Irbīd, El Bārīḥa, 9.6.2019. ♀, 'Irbīd, El Bārīḥa, 2.8.2008.

Remarks: Reported from West Africa to Palestine (Zonstein & Marusik, 2013). This species is a new record for Jordan.

Hersiliola sp. Fig. 4E

Material examined: ♀, Samā al Rousan, 29.9.2019. ♀, Samā al Rousan, 10.1.2020. ♀, Ḥātīm, 23.9.2020.

Remarks: Two species are known from Palestine, *Hersiliola macullulata* (Dufour, 1831) and *H. simoni* (O. Pickard-Cambridge, 1872).

Family Linyphiidae

Frontinellina frutetorum (C.L. Koch, 1834) Fig. 4F

Material examined: 2♀, 'Irbīd, El Bārīḥa, 3.4.2019.

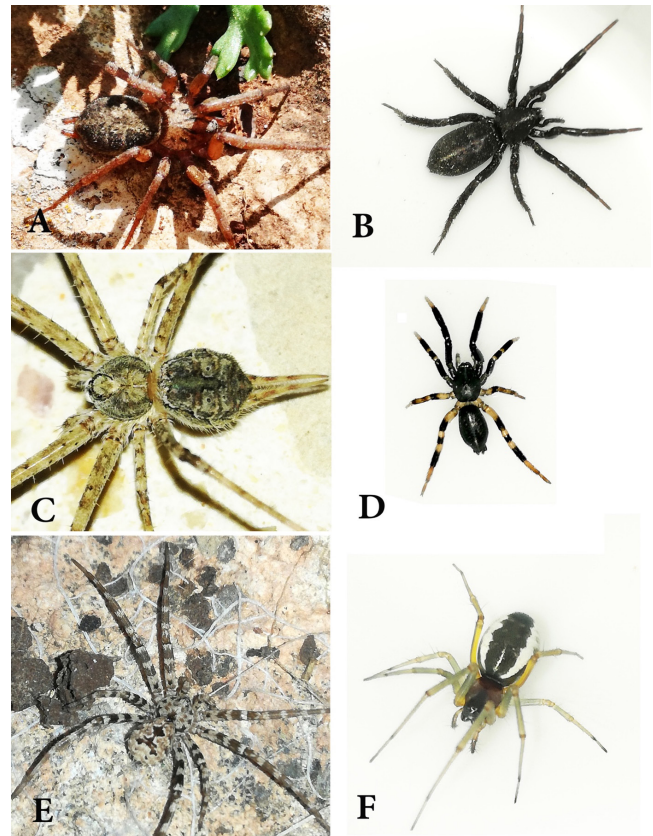


Figure 4. A. *Pterotricha* sp. B. Female *Zelotes* sp. C. Female *Hersilia caudata*. D. Female *Setaphis* sp. E. Female *Hersiliola* sp. F. Female *Frontinellina frutetorum*.

Remarks: This is a Western Palaearctic species (Zonstein & Marusik, 2013; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Family Lycosidae

Alopecosa albofasciata (Brullé, 1832) Fig. 5A

Material examined: ♂, 'Irbīd, El Bārīḥa, 5.3.2019. ♂, 'Irbīd, El Bārīḥa, 24.3.2020.

Remarks: This is a Western Palaearctic species with distribution extending throughout the Mediterranean to Central Asia (Zonstein & Marusik, 2013; Demir & Seyyar, 2017; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Lycosa sp. Fig. 5B

Material examined: 23.6.2018. Samā al Rousan. 29.9.2019. Samā al Rousan. 14.2.2020. Kufr Jāyiz.

Remarks: Several species were recorded from Palestine (Zonstein & Marusik, 2013).

Hogna radiata (Latreille, 1817) Fig. 5C

Material examined: 'Irbīd, El Bārīḥa, 4.6.2019. 'Irbīd, El

Bārīḥa, 12.5.2020.

Remarks: The distribution of this species extends across the Mediterranean to Central Asia, Central Europe to Central Africa (Zonstein & Marusik, 2013; Danişman *et al.*, 2019; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Pardosa cf. subsordidatula (Strand, 1915) Fig. 5D

Material examined: Samā al Rousan, June 2020. ♀♀, Ḥātim, 23.9.2020.

Remarks: Known from Jaffa, Palestine and considered endemic (Strand, 1915). This species is a new record for Jordan.

Family Oecobiidae

Oecobius sp. Fig. 5E

Material examined: 9.3.2020. ‘Irbīd, El Bārīḥa.

Remarks: Two species of this family were reported from Jordan, *Oecobius cellariorum* (Dugès, 1836) (El-Hennawy, 2011) and *Oecobius affinis* O. Pickard-Cambridge, 1872 (O. Pickard-Cambridge, 1872).

Uroctea limbata (C.L. Koch, 1843) Fig. 5H

Material examined: Samā al Rousan, 3.3.2020. Samā al Rousan, 5.3.2020. Samā al Rousan, 13.6. 2020.

Remarks: This is a Mediterranean species with a distribution extending across North Africa, Middle East to Central Asia (Nentwig *et al.*, 2020). This species is a new record for Jordan. Bosselaers (1999) described *Uroctea hashemitorum* Bosselaers, 1999 from Wādī Ramm, Jordan.

Uroctea sp. Fig. 5F

Material examined: ‘Irbīd, El Bārīḥa, 9.4.2019. ‘Irbīd, El Bārīḥa, 17.11.2020. ‘Irbīd, El Bārīḥa, 5.3.2020.

Remarks: Our specimen remarkably resembles the specimen depicted by Kunt *et al.* (2009) for *Uroctea thaleri* Rheims, Santos & van Harten, 2007.

Family Oxyopidae

Oxyopes sp.

Material examined: ♀, ‘Ammān, no date. ♀, As Salṭ, no date.

Remarks: *Oxyopes elifaz* Levy, 2007 was described from Wādī ‘Araba (Levy, 2007).

Peucetia sp. Fig. 6A

Material examined: ♀, Wādī Ramm, 2019. ♀, ‘Ammān, no date.

Remarks: Three species of this genus are known to occur in Palestine (Zonstein & Marusik, 2013).

Family Palpimanidae

Palpimanus sp. Fig. 6B

Material examined: ‘Irbīd, El Bārīḥa, 7.5.2019. Samā al Rousan, 8.7.2019.

Remarks: Five species were reported from Palestine (Zonstein & Marusik, 2013). Our specimens are similar to *Palpimanus gibbulus* Dufour, 1820, however, they require further examination.

Family Philodromidae

Thanatus sp. Fig. 6C

Material examined: ‘Irbīd, El Bārīḥa, 4.4.2020. ♀, Ḥātim, 23.9.2020.

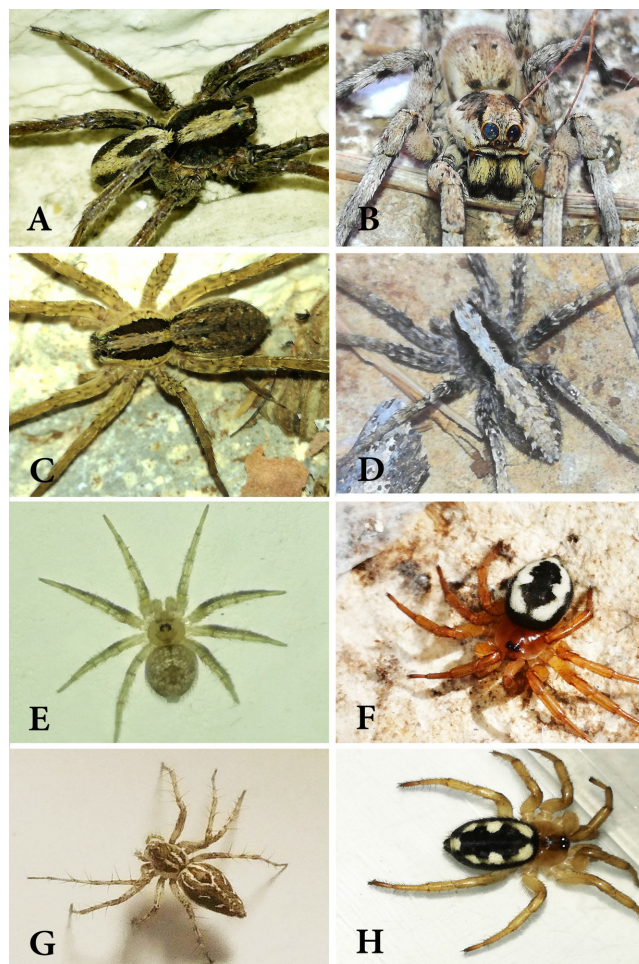


Figure 5. A. Male *Alopecosa albofasciata*. B. Female *Lycosa sp.* C. Female *Hogna radiata*. D. *Pardosa cf. subsordidatula*. E. Female *Oecobius sp.* F. *Uroctea sp.* G. Female *Oxyopes sp.* H. *Uroctea limbata*.

Remarks: Several species are known in Palestine (Zonstein & Marusik, 2013).

Family Pholcidae***Artema* sp.**

Material examined: 'Ammān, 2017.

Remarks: *Artema nephilit* was reported from several localities in Jordan, including Wādī 'Rāmm, Petra, Wādī al Ḥasā and Wādī Al-Mujib (Aharon *et al.*, 2017). It seems that *Artema atlanta* does not seem to occur in Palestine, and all previous records should be considered as *Artema nephilit* (Aharon *et al.*, 2017).

***Holocnemus pluchei* (Scopoli, 1763) Fig. 6D**

Material examined: Al Azraq, 2019. 'Ammān, 2017. 'Irbīd, El Bārīḥa, 3.4.2019.

Remarks: This is a Mediterranean species (Danışman *et al.*, 2019; Nentwig *et al.*, 2020). This is the first record to Jordan.

Family Salticidae***Aelurillus* sp. Fig. 6E**

Material examined: Samā al Rousan, 3.3.2020.

Remarks: Eleven species were recorded from Palestine (Zonstein & Marusik, 2013)

***Cyrba algerina* (Lucas, 1846) Fig. 6F**

Material examined: ♂, 'Irbīd, El Bārīḥa, 14.4.2020. ♂, 'Irbīd, El Bārīḥa, 11.5.2020. ♀, Sama Alrousan, 5.3.2020.

Remarks: This is a wide spread species with a distribution extending across the Mediterranean to Central Asia (Zonstein & Marusik, 2013; Nentwig *et al.*, 2020). This species is a new record for Jordan.

***Heliophanus* sp. Fig. 6G**

Material examined: ♀, 'Ammān, 2019.

Remarks: Eight species were recorded from Palestine (Zonstein & Marusik, 2013).

***Mogrus* sp.**

Material examined: Fo'ara, 2020.

Remarks: Three species were recorded from Palestine (Zonstein & Marusik, 2013).

***Philaeus chrysops* (Poda, 1761) Fig. 6I**

Material examined: ♂, 'Ammān, 24.8.2020.

Remarks: This is a Palaearctic species (Zonstein & Marusik, 2013; Nentwig *et al.*, 2020). This species is a new record for Jordan.

***Plexippus paykulli* (Audouin, 1826) Fig. 6J**

Material examined: 'Irbīd, El Bārīḥa, 25.4.2019. 'Irbīd,

El Bārīḥa, 3.5.2019. 'Irbīd, El Bārīḥa, 22.5.2019. 'Irbīd, El Bārīḥa, 22.4.2020. 'Irbīd, El Bārīḥa, 8.5.2020. 'Irbīd, El Bārīḥa, 29.6.2020.

Remarks: This is a wide spread species all over the world (Zonstein & Marusik, 2013). This species is a new record for Jordan.

***Pseudicius* sp. Fig. 6H**

Material examined: 'Irbīd, El Bārīḥa, 9.3.2020. 'Irbīd, El Bārīḥa, 9.4.2020.

Remarks: Seven species were recorded from Palestine (Zonstein & Marusik, 2013).

***Synageles dalmaticus* (Keyserling, 1863) Fig. 6K**

Material examined: 'Irbīd, El Bārīḥa, 15.4.2020. 'Irbīd, El Bārīḥa, 20.5. 2020.

Remarks: This is a Mediterranean species with records from Turkey and Palestine (Zonstein & Marusik, 2013; Danışman *et al.*, 2019). This species is a new record for Jordan.

***Thyene imperialis* (Rossi, 1846)**

Material examined: 'Irbīd, El Bārīḥa, 30.4.2019.

Remarks: This is an old world spider with a wide range of distribution (Danışman *et al.*, 2019; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Family Sparassidae***Cerbalus aravaensis* Levy, 2007 Fig. 7A**

Material examined: ♀, Wādī 'Araba, September 2019.

Remarks: Reported from West Wādī Sik, Rahma and Qatar area in Wādī 'Araba (Levy, 2007).

***Olios* sp. Figure 7B**

Material examined: ♀, Samā al Rousan, 2018.

Remarks: Zonstein & Marusik (2013) reported *Olios suavis* (O. Pickard-Cambridge, 1876) from Palestine.

***Eusparassus walckenaeri* (Audouin, 1826) Fig. 7C**

Material examined: ♂, 'Ammān, no date. ♀, Samā al Rousan, 29.9.2019. ♀, Wādī Ramm, September 2019. 3.3.2020. Samā al Rousan. 5.3.2020. Samā al Rousan. 25.5.2020. 'Irbīd, El Bārīḥa. Kufr Jāyiz, 5.3.2020.

Remarks: This species is known from the Eastern Mediterranean to Afghanistan as well as East Africa and the Seychelles Islands (Zonstein & Marusik, 2013; Danışman *et al.*, 2019). This species is a new record for Jordan.



Figure 6. A. Female *Peucetia* sp. B. *Palpimanus* sp. C. *Thanatus* sp. D. *Holocnemus pluchei*. E. *Aelurillus* sp. F. Male *Cyrba algerina*. G. Female *Heliophanus* sp. H, *Pseudicius* sp. I. *Philaeus chrysops*. J. *Plexippus paykulli*. K. *Synageles dalmaticus*.

***Micrommata* sp. Fig. 7D**

Material examined: Mādabā, February 2019.

Remarks: Two species were recorded from Palestine (Zonstein & Marusik, 2013).

Family Tetragnathidae

***Tetragnatha* sp. Fig. 7E**

Material examined: ♀, ‘Ammān, no date. az Zarqā’, no date.

Remarks: Two species are known from Palestine; *Tetragnatha minitabunda* O. Pickard-Cambridge 1872 and *T. nitens* (Audouin, 1826) (Zonstein & Marusik, 2013).

Family Theraphosidae

***Chaetopelma olivaceum* (C.L. Koch, 1841) Fig. 7F**

Material examined: As Salt, no date. Kitim, no date.

Remarks: Previously recorded from Ammān, Jordan (Guadanucci & Gallon, 2008; Gallon *et al.*, 2012). Known to occur in Cyprus, Turkey, Middle East, Egypt and Sudan (Danışman *et al.*, 2019; Nentwig *et al.*, 2020).

Family Theridiidae

***Enoplognatha* sp. Fig. 7J**

Material examined: ♀, Fo‘ara, 14.2.2020. ♀, Fo‘ara, 14.3.2020.

Remarks: Eight species belonging to this genus were reported from Palestine (Zonstein & Marusik, 2013).

***Euryopsis* sp.**

Material examined: ♂, ‘Irbīd, El Bārīḥa, 19.9.2019.

Remarks: Three species are known from Palestine (Zonstein & Marusik, 2013).

***Kochiura aulica* (C.L. Koch, 1838) Fig. 7G**

Material examined: ♀, ‘Irbīd, El Bārīḥa, 5.12.2018. ♀, ‘Irbīd, El Bārīḥa, 14.6.2019.

Remarks: Wide spread species from Canary and Cape Verde Islands, across the Mediterranean to Azerbaijan (Danışman *et al.*, 2019; Nentwig *et al.*, 2020). This species is a new record for Jordan.

***Latrodectus pallidus* O. Pickard-Cambridge, 1872 Fig. 7H**

Material examined: ♀, Mādabā, 5.9.2018.

Remarks: Previously reported from Jordan by El-Hennawy (2006). This species is of medical importance and has a wide range of distribution extending from Cape Verde Islands, Libya to Central Asia (Danışman *et al.*, 2019; Nentwig *et al.*, 2020).

***Steatoda albomaculata* (De Geer, 1778) Fig. 7L**

Material examined: ♀, 15.3.2020. Irbīd, El Bārīḥa.

Remarks: A wide spread species world-wide (Danışman *et al.*, 2019). This species is a new record for Jordan.

***Steatoda latifasciata* (Simon, 1873) Fig. 7I**

Material examined: ♀, Petra, 2019.

Remarks: This species was reported from the Palestinian side of the Jordan Valley, Dead Sea area (Zonstein & Marusik, 2013). This species is a new record for Jordan.

***Steatoda paykulliana* (Walckenaer, 1805) Fig. 7K**

Material examined: ♂ and ♀, Fo‘ara, 14.2.2020. ‘Irbīd, El Bārīḥa, 8.10.2019. ‘Irbīd, El Bārīḥa, 22.2.2019. ‘Irbīd, El Bārīḥa, 11.3.2019. ‘Irbīd, El Bārīḥa, 24.4.2019. ‘Irbīd, El Bārīḥa, 19.10.2019. ‘Irbīd, El Bārīḥa, 14.2.2020. ‘Irbīd, El Bārīḥa, 15.3.2020. ‘Irbīd, El Bārīḥa, 21.4.2020.

Remarks: Known from Europe, Mediterranean to Central Asia (Danışman *et al.*, 2019; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Steatoda triangulosa (Walckenaer, 1802) Fig. 8A

Material examined: ♂, 'Irbīd, El Bārīḥa, 25.1.2019. ♂, 'Irbīd, El Bārīḥa, 26.2.2019. ♂, 'Irbīd, El Bārīḥa, 10.3.2019. ♀, 'Ammān, no date.

Remarks: A wide spread species throughout the world (Danışman *et al.*, 2019; Nentwig *et al.*, 2020). This species is a new record for Jordan.

***Theridion* sp.** Fig. 8B

Material examined: ♂, 'Irbīd, El Bārīḥa, 14.3.2020. ♂, 'Irbīd, El Bārīḥa, 17.4.2020. ♀, 'Irbīd, El Bārīḥa, 13.4.2019. ♀, 'Irbīd, El Bārīḥa, 24.4.2019. ♀, 'Irbīd, El Bārīḥa, 2.3.2020. ♀, 'Irbīd, El Bārīḥa, 11.3.2020. ♀, 'Irbīd, El Bārīḥa, 15.3.2020. ♀, 'Irbīd, El Bārīḥa, 13.4.2020.

Remarks: This genus is represented by over 12 species in Palestine (Zonstein & Marusik, 2013).

Family Thomisidae***Ozyptila* sp.**

Material examined: Samā al Rousan, 23.6.2018.

Remarks: Six species were reported from Palestine (Zonstein & Marusik, 2013).

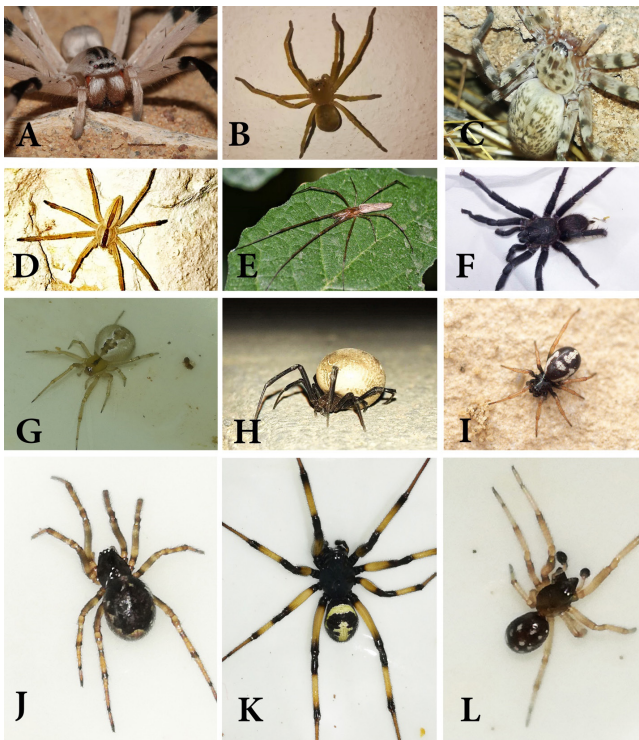


Figure 7. A. Female *Cerbalus aravaensis* (Photo by L. Pola). B. *Olios* sp. C. Female *Eusparassus walckenaeri*. D. *Micrommata* sp. E. Female *Tetragnatha* sp. F. *Chaetopelma olivaceum*. G. Female *Kochiura aulica*. H. Female *Latrodectus pallidus*. I. Female *Steatoda latifasciata*. J. Female *Enoplognatha* sp. K. Male *Steatoda paykulliana*, L. Male *Steatoda* cf. *albomaculata*.

Synema plorator (O. Pickard-Cambridge, 1872) Fig. 8D

Material examined: Fo'ara, no date.

Remarks: Reported from Palestine and Lebanon to Central Asia (Zonstein & Marusik, 2013). This species is a new record for Jordan.

Thomisus onustus Walckenaer, 1805 Fig. 8G

Material examined: 'Ammān, no date. Fo'ara, no date.

Remarks: This is a Palaearctic species and considered common (Zonstein & Marusik, 2013). This species is a new record for Jordan.

***Xysticus* sp.** Fig. 8I

Material examined: ♀, Petra, August 2019. ♀, Samā al Rousan, 3.3.2020. ♂, 'Samā al Rousan, 19.5.2020. ♀, Ḥātim, 23.9.2020.

Remarks: Seventeen species belonging to this genus were reported from Palestine (Zonstein & Marusik, 2013).

Family Titanocidae***Nurscia albomaculata*** (Lucas, 1846)

Material examined: Ar Ramthā, no date.

Remarks: This is a Western Palearctic with distribution extending from Iberian Peninsula to Tajikistan (Zonstein & Marusik, 2013; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Family Uloboridae***Uloborus* sp.** Fig. 8C

Material examined: 'Irbīd, El Bārīḥa, 17.4.2020.

Remarks: Two species are known from Palestine (Zonstein & Marusik, 2013).

Family Zodariidae***Lachesana* sp.**

Material examined: ♂, Kitim, 2019.

Remarks: Three species are known from Palestine, Syria and Saudi Arabia (Zonstein & Marusik, 2013).

***Pax* sp.** Fig. 8F

Material examined: ♀, Samā al Rousan, 5.3.2020.

Remarks: Five species belonging to this genus were reported from Palestine (Zonstein & Marusik, 2013). *Pax meadei* (O. Pickard-Cambridge, 1872) was collected from Wādī al Ḥasā, Jordan (Jocqué, 1991).

***Zodarion* sp.** Fig. 8E

Material examined: 'Irbīd, El Bārīḥa, 28.5.2019. 'Irbīd, El Bārīḥa, 24.7.2019. 'Irbīd, El Bārīḥa, 5.4.2020. 'Irbīd,

Table 2: Spiders previously recorded from Jordan.

Family	Species	Reference
Eresidae	<i>Stegodyphus lineatus</i> (Latreille, 1817)	El-Hennawy (1987)
	<i>Stegodyphus pacificus</i> Pocock, 1900	El-Hennawy (1991)
Gnaphosidae	<i>Haplodrassus mediterraneus</i> Levy, 2004	Bosmans <i>et al.</i> (2018)
	<i>Pterotricha dalmasi</i> Fage, 1929	Levy (1995)
Linyphiidae	<i>Alioranus pastoralis</i> (O. Pickard-Cambridge, 1872)	Tanasevitch (2011)
Oecobiidae	<i>Oecobius affinis</i> O. Pickard-Cambridge, 1872	Pickard-Cambridge (1872)
	<i>Oecobius cellariorum</i> (Dugès, 1836)	El-Hennawy (2011)
	<i>Uroctea hashemitorum</i> Bosselaers, 1999	Bosselaers (1999)
Oxyopidae	<i>Oxyopes elifaz</i> Levy, 2007	Levy (2007)
Pholcidae	<i>Artema nephilit</i> Aharon <i>et al.</i> , 2017	Aharon <i>et al.</i> (2017)
	<i>Hoplopholcus ceconii</i> Kulczyński, 1908	Huber (2020)
Salticidae	<i>Mogrus logunovi</i> Prószyński, 2000	Prószyński (2003)
	<i>Menemerus davidi</i> Prószyński and Wesołowska, 1999	Logunov (2015)
Scytodidae	<i>Scytodes kinzelbachi</i> Wunderlich, 1995	Wunderlich (1995)
Sicariidae	<i>Loxosceles rufescens</i> (Dufour, 1820)	Amr (1988)
Sparassidae	<i>Cerbalus aravaensis</i> Levy, 2007	Levy (2007)
Theridiidae	<i>Latrodectus pallidus</i> O. Pickard -Cambridge, 1872	El-Hennawy (2006)
Theraphosidae	<i>Chaetopelma olivaceum</i> (C.L. Koch, 1841)	Gallon <i>et al.</i> (2012)
Zodariidae	<i>Pax meadei</i> (O. Pickard-Cambridge, 1872)	Jocqué (1991)
	<i>Zodarion nitidum</i> (Audouin, 1826)	Levy (1992)
	<i>Zodarion lutipes</i> (O. Pickard -Cambridge, 1872)	Bosmans (2009)

El Bārīḥa, 19.4.2020. ‘Irbīd, El Bārīḥa, 15.5.2020. ‘Irbīd, El Bārīḥa, 30.7.2020.

Remarks: Nine species belonging to this genus were reported from Palestine (Zonstein & Marusik, 2013).

Family Zoropsidae

Zoropsis lutea (Thorell, 1875) Fig. 8H and K

Material examined: ♂, ‘Irbīd, El Bārīḥa, 5.12.2018. ♀, ‘Ammān, no date.

Remarks: Known from the Eastern Mediterranean to the Crimean Peninsula (Zonstein & Marusik, 2013; Nentwig *et al.*, 2020). This species is a new record for Jordan.

Discussion

The present study represents the first comprehensive attempt to explore the spider fauna of Jordan. This preliminary study is a start to collect further spider specimens from different habitats in Jordan. So far, 21 species within 13 families have been previously recorded (Table 2).

Certainly, the present number of recorded species (56 species) is far less than those recorded from the neighbouring countries (Zonstein & Marusik, 2013; Fomichev *et al.*, 2018; El-Hennawy, 2017; Zamani *et al.*, 2018; Danişman *et al.*, 2019); thus, requiring more intensive collecting spiders from Jordan.

Families Salticidae, Theridiidae and Araneidae included the highest number of recorded species and genera with

nine for the first two families and eight for the later. The other families included 1-4 species and genera.

Peer-review: Externally peer-reviewed.

Conflict of Interest: The authors declare that they have no conflicts of interest.

Author Contributions: Conception/Design of study: M.R.S., Z.S.A.; Data Analysis/ Interpretation: Z.S.A., M.A.A.B.; Drafting Manuscript: .S.A., M.A.A.B.; Critical Revision of Manuscript: M.R.S., Z.S.A.; Final Approval and Accountability: M.R.S., Z.S.A., M.A.A.B.; Technical or Material Support: M.R.S., Z.S.A., M.A.A.B.; Supervision: Z.S.A.

Acknowledgement: We wish to thank the reviewers for their outstanding efforts that improved the manuscript.

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