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A NEW RECORD AND A TAXONOMIC REVIEW WITH CHECKLIST OF WOLF SPIDERS (ARANEAE, LYCOSIDAE) FROM IRAQ

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A New Record and a Taxonomic Review with Checklist of Wolf Spiders (Araneae, Lycosidae) from Iraq. Al-Yacoub, G. A. A., Najim, S. A. — The material in the present study was collected from two agricultural regions in Thi-Qar and Basrah Provinces, southern Iraq. *Pardosa roscai* (Roewer, 1951) was recorded for the first time from Thi Qar Province in Iraq. A list of wolf spiders (Araneae, Lycosidae) from Iraq is presented. In addition, a map of the areas, with a taxonomic review and confirmation of five species of wolf spiders is given, with photographs of palp and epigyne of several species, which were not published in previous studies.

Key words: Araneae, Lycosidae, new record, Iraq, Thi-Qar.

Introduction

Wolf spiders (Lycosidae) currently include 2458 species in 129 genera worldwide. It is one of the most diverse groups of spiders (WSC, 2023). It is easily recognized by a three-row eye arrangement, males lacking the Retrolateral Tibial Apophysis, and females carrying the egg sac attached to the spinnerets (Dippenaar-Schoeman & Jocqué, 1997). The family is still studied very poorly in Iraq compared to neighboring countries: in Iran, there are 71 species; in Turkey, 91; and in Israel, 27 (Zamani et al., 2022 a; Danışman et al., 2023; Zonstein & Marusik, 2013). Zamani & El-Hennawy (2016) reported the presence of only 4 species of Lycosidae in a pre-



Fig. 1. Map of collection localities: Thi Qar, Ur district (red circle); Basrah, Qarmat Ali, Al Mashab (yellow star); Basrah, Qarmat Ali, Al Khait (green square).

liminary list of spiders in Iraq; after that Fomichev et al. (2018) added new records from this family and stated that the total number of species recorded in Iraq is nine. Al-Khazali (2020) recorded the genus *Hogna* for the first time in the country. Baker & Ali (2020) recorded *Pardosa amentata* (Clerck, 1757) from Karbala Province, while Najim & Al-Hadlag (2022) added three more species. Recently, Zamani & Marusik (2022) recorded *Evipa amitaii* from Najaf Province in the central Iraq.

In the current study, a new record was made for the country, and some materials were reviewed, in addition to providing a list of Lycosidae currently known from Iraq.

Material and Methods

Specimens were preserved in 70 % ethanol, photographed using Sony a7riv camera attached to Krüss stereomicroscope, then digital images were montaged using software (Helicon Focus™ 8.1.0). The map was prepared using SimpleMappr (Shorthouse, 2010) (fig. 1). Distribution information is from WSC (2023).

Depositories: BNHM — Basrah Natural History Museum, University of Basrah, Iraq.

Results

Family Lycosidae

Genus *Alopecosa* Simon, 1885

Alopecosa albofasciata (Brullé, 1832) (fig. 2)

Lugetti & Tongiorgi, 1969: 43, f. 12 A–F (♂, ♀).

Material examined. 1 ♀: Iraq: Thi Qar Province, Ur District, agricultural land, [31°01'42.5" N 46°18'07.1" E], 6.05.2022 (G. A. A. Al-Yacoub) (BNHM).

Distribution. Mediterranean to Central Asia.

Comment. In Iraq, this species was previously reported from Dohuk Province (Fomichev et al., 2018).

Genus *Arctosa* C. L. Koch, 1847

Arctosa tbilisiensis Mcheidze, 1946

Alderweireldt, 2002: 183, f. 1–5 (♂, ♀); Uyar & Dolejš (2017): 53, f. 2–4 (♂, ♀).

Material examined. 2 ♂: Iraq: Thi Qar Province, Ur District, agricultural land, [31°01'42.5" N 46°18'07.1" E], 7.05.2022 (G. A. A. Al-Yacoub) (BNHM); 1 ♂: Iraq: Basrah Province, Al Mashab, Qarmat Ali, agricultural land, [30°38'24.7" N 47°40'48.9" E], 10.04.2022 (S. A. Najim) (BNHM).

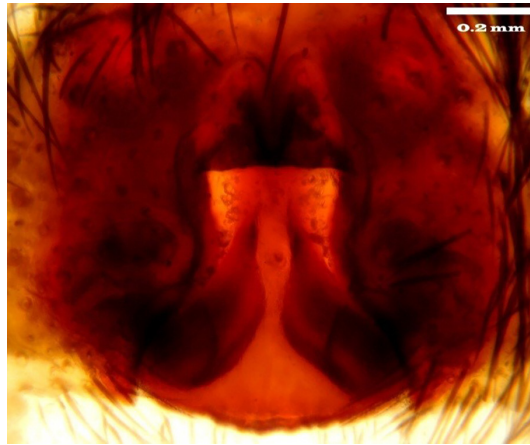


Fig. 2. Epigyne of *Alopecosa albofasciata* (Brullé, 1832). Scale bar 0.2 mm.

Distribution. Greece, Bulgaria, Turkey, Caucasus (Russia, Georgia, Azerbaijan), Iraq, Iran, Afghanistan.

Comment. In Iraq, only females were previously reported from Dohuk Province (Fomichev et al., 2018), and recently from Basrah Province (Najim & Al-Hadlag, 2022).

Genus *Evippa* Simon, 1882

Evippa amitaii Armiach Steinpress, Alderweireldt, Cohen, Chipman & Gavish-Regev, 2021 (fig. 3)

Armiach Steinpress et al., 2021: 104, f. 4A, 5A, 6A, 7A, 8A, 9, 10A, 11A, 12A–D, 13A, C (♂, ♀); *Evippa amitaii*: Zamani et al., 2022 b: 368, f. 37–55 (♂, ♀).

Material examined. 1 ♂: Iraq: Thi-Qar Province, Ur District, agricultural land, [31°01'42.5" N 46°18'07.1" E], 7.05.2022 (G. A. A. Al-Yacoub) (BNHM).

Distribution. Israel, Iraq, Iran.

Comment. In Iraq, this species was previously reported from Najaf Province (Zamani & Marusik, 2022).



Fig. 3. Epigyne of *Evippa amitaii* Armiach Steinpress, Alderweireldt, Cohen, Chipman & Gavish-Regev, 2021. Scale bar 0.2 mm.



Fig. 4. Pre-epigyne of *Hogna effera* (O. Pickard-Cambridge, 1872). Scale bar 0.2 mm.

Genus *Hogna* Simon, 1885

Hogna effera (O. Pickard-Cambridge, 1872) (fig. 4)

Marusik & Nadolny, 2020: 72, f. 14G (♀).

Material examined. 1 subadult: Iraq: Thi Qar Province, Ur District, agricultural land, [31°01'42.5" N 46°18'07.1" E], 7.05.2022 (G. A. A. Al-Yacoub) (BNHM).

Distribution. Cyprus, Turkey, Egypt, Israel, Lebanon, Syria, Yemen (Sokotra), Saudi Arabia, United Arab Emirates, Iraq, Iran.

Comment. In Iraq, this species was previously reported from Thi Qar Province (Al-Khazali, 2020), and recently from Najaf Province (Zamani & Marusik, 2022).

Genus *Pardosa* C. L. Koch, 1847

Pardosa roscai (Roewer, 1951) (fig. 5, A–C)

Bayram, Efil & Deltshv, 2009: 465, f. 1–5 (♂, ♀); Zamani & Mozaffarian, 2017: 13, f. 5 (♀); Lecigne, 2021: 32, f. 44 a–c (♀).

Material examined. 1♂: Iraq: Thi Qar Province, Ur District, agricultural land, [31°01'42.5" N 46°18'07.1" E], 7.05.2022 (G. A. A. Al-Yacoub) (BNHM).

Distribution. Bulgaria, Romania, Cyprus, Turkey, Iran.

Comment. The material examined represents a new record for Iraq.

Genus *Wadicosa* Zyuzin, 1985

Wadicosa fidelis (O. Pickard-Cambridge, 1872) (fig. 6)

Hepner & Paulus, 2009: 343, f. 20–22 (♂, ♀); Kronstedt & Zyuzin, 2009: 818, f. 1–20 (♂, ♀); Lu et al., 2016: 137, f. 9A–H, 10A–D, 11A–D, 12E–F (♂, ♀).

Material examined. 5♂, 3♀: 1♀: Iraq: Thi Qar Province, Ur District, agricultural land, [31°01'42.5" N 46°18'07.1" E], 7.05.2022 (G. A. A. Al-Yacoub) (BNHM); 2♂: Iraq: Basrah Province, Al Khait, Qarmat Ali, agricultural land, [30°36'24.3"N 47°42'58.9"E], 30.04.2022 (S. A. Najim) (BNHM).

Distribution. Macaronesia, North Africa, Southern Europe, Caucasus, Middle East, Central Asia, China, Japan, Pakistan, India, Bhutan, Bangladesh, Philippines, Indonesia (Sumatra).

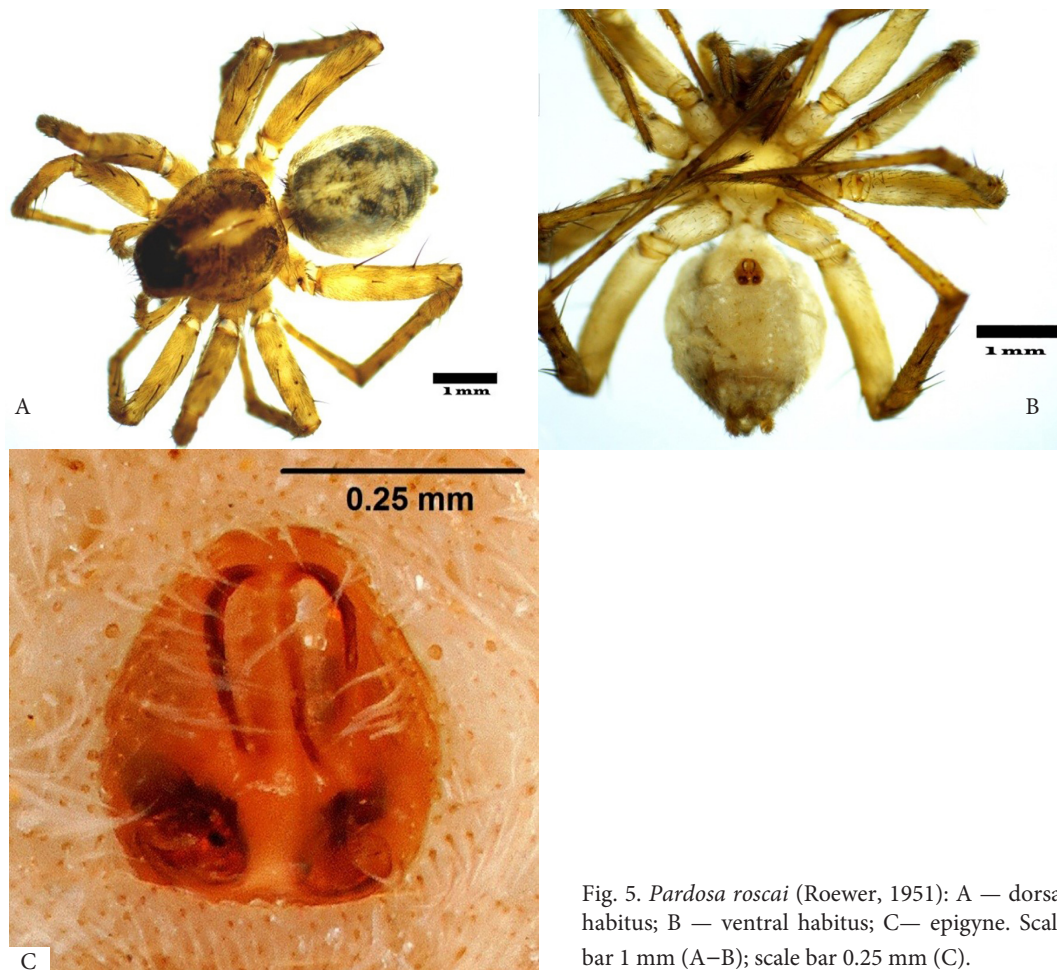


Fig. 5. *Pardosa roscai* (Roewer, 1951): A — dorsal habitus; B — ventral habitus; C— epigyne. Scale bar 1 mm (A–B); scale bar 0.25 mm (C).

Comment. In Iraq, this species was previously reported from Salahaddin Province (Reimoser, 1913), Baghdad, Karbala (Baker & Ali, 2020) and Basrah (Najim & Al-Hadlag 2022).



Fig. 6. Ventral palp of *Wadicosa fidelis* (O. Pickard-Cambridge, 1872). Scale bar 0.5 mm.

Discussion

As illustrated in table 1, a total of 17 species in 8 genera belong to Lycosidae were reported from Iraq, distributed in provinces of Dohuk, Baghdad, Salaheddin, Najaf, Karbala, Thi Qar, and Basrah (Reimoser, 1913; Fomichev et al., 2018; Najim, Seyyar & Demir, 2019;

Table 1. List of Lycosidae species currently known in Iraq

No.	Species	Previous and present records in Iraq	Distribution
1	<i>Acantholycosa lignaria</i> (Clerck, 1757)	Basrah (Najim & Al-Hadlag, 2022)	Europe, Russia (Europe to Far East), China
2	<i>Alopecosa albofasciata</i> (Brullé, 1832)	Dohuk (Fomichev et al., 2018), Basrah (Najim & Al-Hadlag, 2022), Thi Qar (present study)	Mediterranean to Central Asia
3	<i>Arctosa cinerea</i> (Fabricius, 1777)	Baghdad, Salaheddin (Reimoser, 1913)	Europe, North Africa, Congo, Caucasus, Russia (Europe to Far East), Middle East, Kazakhstan, China, Korea, Japan
4	<i>Arctosa leopardus</i> (Sundevall, 1833)	Basrah (Najim & Al-Hadlag, 2022)	Europe, Turkey, Caucasus, Russia (Europe to South Siberia), Iran, Central Asia
5	<i>Arctosa tbilisiensis</i> Mchedze, 1946	Dohuk (Fomichev et al., 2018), Basrah (Najim & Al-Hadlag, 2022), Thi Qar & Basrah (present study)	Greece, Bulgaria, Turkey, Caucasus (Russia, Georgia, Azerbaijan), Iraq, Iran, Afghanistan
6	<i>Evipa amitaii</i> Armiaich Steinpress, Alderweireldt, Cohen, Chipman & Gavish-Regev, 2021	Najaf (Zamani and Marusik, 2022), Thi Qar (present study)	Israel, Iraq, Iran
7	<i>Hippasa partita</i> (O. Pickard-Cambridge, 1876)	Basrah (Najim & Al-Hadlag, 2022) as <i>Hippasa cinerea</i> Simon, 1898	Africa
8	<i>Hippasa deserticola</i> Simon, 1889	Basrah (Najim, Seyyar & Demir, 2019)	Egypt, Saudi Arabia, Iraq, Iran, Uzbekistan, Turkmenistan, Tajikistan, Afghanistan, Pakistan, India, Bangladesh
9	<i>Hogna effera</i> (O. Pickard-Cambridge, 1872)	Thi Qar (Al-Khazali, 2020), Najaf (Zamani and Marusik, 2022) Thi Qar (present study)	Greece (Crete), Cyprus, Turkey, Egypt, Israel, Lebanon, Syria, Yemen (Sokotra), Saudi Arabia, United Arab Emirates, Iraq, Iran
10	<i>Pardosa aenigmatica</i> Tongiorgi, 1966	Dohuk (Fomichev et al., 2018)	Italy, Turkey, Azerbaijan, Israel, Iraq, Iran
11	<i>Pardosa amentata</i> (Clerck, 1757)	Karbala (Baker & Ali, 2020)	Europe, Turkey, Caucasus, Russia (Europe to South Siberia), Kazakhstan?
12	<i>Pardosa bifasciata</i> (C. L. Koch, 1834)	Basrah (Najim and Al-Hadlag, 2022)	Europe, Turkey, Caucasus, Russia (Europe to South Siberia), Kazakhstan, Nepal, China
13	<i>Pardosa cribrata</i> Simon, 1876	Dohuk (Fomichev et al., 2018)	Southern Europe, Algeria, Iraq
14	<i>Pardosa morosa</i> (L. Koch, 1870)	Dohuk (Fomichev et al., 2018)	Europe to Central Asia, Iraq, Iran
15	<i>Pardosa proxima</i> (C. L. Koch, 1847)	Baghdad, Thi Qar (Reimoser, 1913)	Macaronesia, northern Africa, Europe, Caucasus, Russia (Europe to Far East), Kazakhstan, Iran, Central Asia, China
16	<i>Pardosa roscai</i> (Roewer, 1951)	Thi Qar (present study)	Bulgaria, Romania, Cyprus, Turkey, Iran
17	<i>Wadicosa fidelis</i> (O. Pickard-Cambridge, 1872)	Salahaddin (Reimoser, 1913), Baghdad, Karbala (Baker & Ali, 2020), Basrah (Najim and Al-Hadlag, 2022), Thi Qar & Basrah (present study)	Macaronesia, North Africa, Southern Europe, Caucasus, Middle East, Central Asia, China, Japan, Pakistan, India, Bhutan, Bangladesh, Philippines, Indonesia

Al-Khazali, 2020; Baker & Ali, 2020; Zamani & Marusik, 2022; Najim & Al-Hadlag, 2022). The family is well studied in the neighboring countries: Iran, with 71 species (Zamani et al., 2022 a) and Turkey, with 91 species (Danışman et al., 2023). In current study, *Pardosa roscai* (Roewer, 1951) has been recorded for the first time for Iraq from Thi Qar Province in the south; it has been previously recorded in Turkey and Iran (Bayram et al., 2009; Zamani & Mozaffarian, 2017). There are some doubtful previous records, some of which are not recorded even in neighboring countries, and for which previous studies did not provide photographs of palp and epigyne, such as *Acantholycosa lignaria*, *Arctosa leopardus*, *Hippasa partita*, *Pardosa amentata* and *Pardosa bifasciata*. In the current study, three species (*Alopecosa albofasciata*, *Evipa amitaii* and *Wadicosa fidelis*) have been confirmed based on palp and epigyne photos, which were not imaged in previous records. It is expected that many new species of this family will be recorded in Iraq, which is characterized by different environmental areas including agricultural lands, deserts, and mountains.

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