New data on the wolf spiders of Iran (Aranei: Lycosidae)

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ABSTRACT. New faunistic records for 17 species of Lycosidae from Iran are presented. Ten species are recorded from the Iranian spider fauna for the first time: *Alopecosa cursor* (Hahn, 1831) (♀); *A. sigmorsa* (Thorell, 1875) (♀); “*Aulonia*” *kra-tochvili* Dunin, Buchar et Absolon, 1986 (♀); *Bogdocosa baskuntchakensis* Ponomarev et Belosludtsev, 2008 (♀); *Pardosa italica* Tongiorgi, 1966 (♀); *P. morosa* (L. Koch, 1870) (♀); *P. proxima* (C.L. Koch, 1847) (♀); *P. zonsteini* Ballarin, Marusik, Omelko et Koponen, 2012 (♀); *Trochosa hispanica* Simon, 1870; and *Wadicosa fidelis* (O. Pickard-Cambridge, 1872) (♀).

The wolf spiders (Lycosidae) of Iran are relatively poorly studied with respect to the faunistic and taxonomic data and there are few published works specifically devoted to this group [Marusik et al., 2012]. On the other hand, arachnologists who have worked on these spiders treat this family as a taxonomically difficult group. Moreover, some difficulties with the taxonomy of Iranian lycosids are due to Roewer’s work on the spiders of Iran published in 1955. Roewer [1955] in one of the most important works on the spider fauna of Iran, recorded 21 lycosid species belonging to 11 genera, of which 12 species were described as new species for the country. These species were not properly illustrated by him and their affinities with other species remain ambiguous. Therefore, commenting on an exact number of the lycosids occurring in Iran will only be possible provided a taxonomic revision and redescriptions of Roewer’s types has been undertaken. Based on Roewer’s paper and other published faunistic works on the Iranian spiders, the Lycosidae fauna includes at least 36 species in 14 genera [Roewer, 1955; Mozaffarian, Marusik, 2001; Ghavami, 2006, 2007; Ghahari, Marusik, 2009; Ballarin et al., 2012; Marusik et al., 2012].

In this study, we present data on new faunistic records for 17 spider species of the Lycosidae from various localities of Iran, particularly NE Iran, one of the least studied regions of the country. The studied lycosid collection has yielded 10 new species records for the spider fauna of Iran (see below).

Material and methods

All specimens were either hand-collected or collected by pit-fall traps. Specimens were examined by using Olympus SZH-10 stereo-microscope. All specimens are deposited in the Zoological Museum of Ferdowsi University of Mashhad (ZMFUM). Only selected references containing images of the recorded species are provided, for a complete set of taxonomic references see WSC [2015].
Results

Allohogna singoriensis (Laxmann, 1770)

Allohogna singoriensis: Marusik et al., 2003: 54–55, figs 42–46 (♂♂); Logunov, 2010: 241, figs 3, 10, 12–13, 20–21, 51 (♂). MATERIAL: IRAN, 1 ♂, Khorasan-e Razavi Prov., Fariman-Torbat-e Jam road, Ebdal Abad Vil. (35°23′07.65″N, 60°15′53.08″E), 1273 m a.s.l., 10.05.2013, S. Saneei; 1 ♂ sub., same prov., Torbat-e Heydariyah, Bazez Hoor Vil. (35°46′54.19″N, 59°22′25.20″E), 1322 m a.s,l., 7.06.2013, S. Saneei; 1 ♂ sub., same prov., Tous (36°28′49.93″N, 59°30′29.93″E), 1004 m a.s.l., 5.10.2012, O. Mirshamsi.

COMMENTS: Based on Marusik et al. [2003], Allohogna Rol., 1955 is a valid genus that was removed from the synonymy with Lycosa Latreille, 1814; a full diagnosis of the genus was given by Logunov [2010]. This species is distributed in the west and Central Palaearctic. In Iran, it has earlier been recorded from West and East Azerbajan, Mazandaran and Semnan provinces [Roever, 1955; Ghahari, Marusik, 2009; Ghahari, Tabari, 2012]. The records from Khorasan-e Razavi Province are the easternmost records of this species from Iran.

Alopecosa cursor (Hahn, 1831)

Alopecosa cursor: Roberts, 1998: 243, figs (♂♂); Almquist, 2005: 190, figs 192a–f (♂♂). MATERIAL: IRAN, 1 ♂, Khorasan-e Razavi Prov., Mashhad (36°18′01.87″N, 59°36′03.09″E), 982 m a.s.l., 9.05.2013, S. Saneei; 1 ♂, 1 ♂ sub., same prov., Mashhad (36°18′01.87″N, 59°36′03.09″E), 982 m a.s.l., 15–16.03.2013, M. Hatami & O. Mirshamsi.

COMMENTS: This species is known from entire Europe and Central Asia, eastward to Tibet [Marusik et al., 2003]. This species is new to Iran, with the records from Khorasan-e Razavi Province lying at the southernmost limit of the currently known species’ range.

Arctosa cinerea (Fabricius, 1777)


COMMENTS: This species has a Palaearctic distribution [WSC, 2015], and in Iran it was earlier recorded from East and West Azerbajan, Mazandaran and Central Palaearctic. In Iran, it was earlier recorded from West and East Azerbajan, Mazandaran and Semnan provinces [Roever, 1955; Ghahari, Marusik, 2009; Ghahari, Tabari, 2012]. The records from Khorasan-e Razavi Province is the first record of this species from the easternmost region of the country.

Arctosa stigmata (Thorell, 1875)


COMMENTS: This species has a trans-Palaearctic range and is known from France, Norway to Ukraine [Yoo et al., 2007], and in the east Palaearctic known from SW Siberia and China [Marusik, Buchar, 2004]. However, our identification should be considered provisional, as it is based on a single female. New record for Iran.

“Arctosa” tbilisienisis Mchedlez, 1946

Arctosa tbilisienisis: Alderweireldt, 2002: 183, figs 1–5 (♂♂). MATERIAL: 1 ♂, Khorasan-e Razavi Prov., Kalat road (36°28′40.20″N, 59°40′19.49″E), 1212 m a.s.l., 17.05.2013, S. Saneei; 1 ♂, 3 ♀♀ sub., 1 juv., Golestan Prov., Varsan Vil. (36°51′5.76″N, 54°19′38.64″E), 1419 m a.s.l., 8.05.2011, R. Kashefi; 5 ♂♂, 1 ♂, 1 juv., same prov., Agh Ghala (37°04′25.8″N, 54°28′9.2″E), 1509 m a.s.l., 5.05.2011, R. Kashefi; 1 ♂, 1 ♂ sub., 15 juv., same prov., Karim Abad (36°53′21″N, 54°24′21″E), 1393 m a.s.l., 2.09.2010, R. Kashefi; 2 ♂♂, 4 juv., same prov., Nochaman (36°46′6.18″N, 54°18′4.40″E), 1541 m a.s.l., 11.05.2011, R. Kashefi; 1 ♂ sub., same prov., Basir Abad (35°59′45″N, 54°07′24.1″E), 5.05.2011, R. Kashefi; 1 juv., same prov., Kafshgiri Vil, (36°47′30.9″N, 54°17′19.5″E), 11.05.2011, R. Kashefi; 8 ♂♂, 1 ♂, Northern Khorasan Prov., Esparasan, Chenar Sookhtie Vil. (37°05′21.17″N, 57°31′30.36″E), 1144 m a.s.l., 21–24.05.2010, E. Jamiili.

COMMENTS: This species has a Ponto-Caspian distribution, occurring on both sides of the Black Sea, with records from Georgia, Azerbaijan, Russia, Bulgaria, and Greece [Kunt et al., 2012]. Some authors argued that this species is not congeneric with the genotype Arctosa cinerea and should not be considered in the genus Arctosa [Marusik et al., 2003]. Hitherto, this species was recorded from Ilam Province [Mozaffarian et al., 2001]. The finding of this species from Khorasan-e Razavi Province is its first record in eastern regions of Iran and the easternmost locality of the whole range.

“Aulonia” kratochvili Dunin, Buchar et Absolon, 1986

Figs 1–3.

Aulonia kratochvili: Dunin, Buchar et Absolon, 1986: 28, figs 1–7 (♂♂). MATERIAL: 1 ♂, Golestan Prov., Sadegh Abad, Galikesh Vil. (36°16′19.20″N, 55°25′57.68″E), 1588 m a.s.l., 23.06.2013, S. Saneei; 1 ♂, same prov., Shamooshak Bala (36°46′87″N, 54°19′23.85″E), 1436 m a.s.l., 6.05.2011, R. Kashefi; 1 ♂, same prov., Salikandeh, 6.05.2011, R. Kashefi.
New records of Lycosidae from Iran

COMMENTS: According to the literature data [Fet, 1985; Dunin et al., 1986; Kronestedt, 1997; Mikhailov, 2013], this species is known from Greece to Turkmenistan. It is a new record for Iran, and its record from Golestan Province significantly extends the species’ range and lies in its southeastern limit. Marusik et al. [2003] assumed that due to the genitalic difference between A. kratochvili and the generotype, A. albimana (Walckenaer, 1805), this species should belong to another genus.

Bogdocosa baskuntchakensis Ponomarev et Belosludtsev, 2008

Figs 4–12.

Bogdocosa baskuntchakensis Ponomarev et al., 2008: 164, figs 1–6 (©).

MATERIAL: 2 ♂♂, 3 ♀♀, Northern Khorasan Prov., Espharaen, Chenar Sookhteh Vil., (37°05′21.17″N, 57°31′30.36″E), 1144 m a.s.l., 21.05.2010, E. Jamili; 2 ♀♀, same prov., Baba Hossein cemetery (36°55′34.84″N, 57°44′7.35″E), 1174 m a.s.l., 13.06.2010, E. Jamili; 2 ♂♂, 3 ♀♀, Khorasan-e Razavi Prov., Torbate Heydariyeh (35°16′27.9″N, 59°13′09.59″E), 1367 m a.s.l., 27.08.2012, S. Musavi; 2 ♀♀, same prov., Sarakhs, Dowlat Abad Vil. (61°08′00.30″N, 36°21′09.46″E), 643 m a.s.l., 15.09.2012, Z. Nikmgham.

COMMENTS: B. baskuntchakensis is the generotype of the monotypic genus. It was known from the type locality only in south Russia [Ponomarev et al., 2008]. New species for Iran, with its findings in northeast regions of Iran significantly extending the species’ and genus’ ranges southward.

Evippa luteipalpis Roewer, 1955


COMMENTS: This species was described from Kerman Province [Roewer, 1955]. The present record from Khorasan-e Razavi Province lies in the northernmost limit of its range. To confirm our identification,

Figs 1–3. Female of “Aulonia” kratochvili Dunin, Buchar et Absolon, 1986. 1 — habitus, dorsal view; 2 — ditto, ventral view; 3 — epigyne, ventral view.

the specimens were also compared to the figures of Roever’s types (courtesy of Yu.M. Marusik).

*Hogna radiata* (Latreille, 1817)

*Hogna radiata*: Fuhn, Niculescu-Burlacu, 1971: 195, figs 95a–e (♂♀); Brady, 2012: 205, figs 34–39, 45 (♂♀).

COMMENTS: This species is distributed from the western Mediterranean to Central Asia. In Iran, it has hitherto been recorded from Fars, Golestan, Mazandaran, and Tehran provinces [Mozaffarian, Marusik, 2001; Gahhari, Marusik, 2009; Gahhari, Tabari, 2012]. The record from Khorasan Province lies at the eastern limit of its range in the country.

**Pardosa italica** Tongiorgi, 1966

*Pardosa italica*: Tongiorgi, 1966: 201, figs 68–70 (♀); Marusik et al., 2013: 215, figs 135–138 (♂).

**MATERIAL:** 1 ♀, 1 ♂, Khorasan-e Razavi Prov., Mashhad-Torbat Heydariyeh road, Esalam Ghaile Vil. (35°52′35.71″N, 59°25′08.63″E), 1356 m a.s.l., 7.06.2013, S. Saneei; 2 ♀♂, 4 ♀♀, same prov., Sarakhs, Pole Khatoon (35°58′05.54″N, 61°07′43.70″E), 746 m a.s.l., 1.09.2012, Z. Nikmagham; 5 ♀♂, 5 ♀♀, same prov., Mashhad (36°18′01.87″N, 59°36′03.09″E), 1068 m a.s.l., 30.04.2013, S. Saneei; 4 ♀♂, 4 ♀♀, same prov., Tous (35°28′49.93″N, 59°30′29.93″E), 1004 m a.s.l., 29.3.2013, S. Saneei; 1 ♂, same prov., Mashhad-Torbat Heydariyeh road, Bazeh Hour Vil. (35°46′54.19″N, 59°22′25.20″E), 1322 m a.s.l., 7.06.2013, S. Saneei; 1 ♂, 1 ♂♂, same prov., Mashhad, Noghondar (36°21′16.15″N, 59°18′19.86″E), 1328 m a.s.l., 13.06.2013, S. Saneei; 3 ♀♂, Northern Khorasan Prov., Espahraen, Chenar Sookhte Vil. (37°05′21.17″N, 57°31′30.36″E), 1144 m a.s.l., 21.05.2010, E. Jamili; 1 ♂, same prov., near Espahraen (37°03′57.39″N, 57°31′27.39″E), 1148 m a.s.l., 24.05.2010, E. Jamili.

**COMMENTS:** This species is known from Europe and Central Asia [Marusik et al., 2013]. New record for Iran, lying at the southernmost limit of the species’ range.

**Pardosa morosa** (L. Koch, 1870)

*Pardosa morosa*: Tongiorgi, 1966: 311, figs 64–66 (♀). MATERIAL: 2 ♀♂, 3 ♂♂, Khorasan-e Razavi Prov., Kopet Dag Mountains (36°02′27.28″N, 60°56′24.69″E), 764 m a.s.l., 21.09.2012, Z. Nikmagham; 2 ♀♂, 3 ♂♂, same prov., Faruji (37°13′52.44″N, 58°13′08.00″E), 1109 m a.s.l., 19.04.2013, S. Saneei; 1 ♀, 5 ♀♀, same prov., Kalat road (35°28′40.20″N, 59°40′19.49″E), 1212 m a.s.l., 17.05.2013, S. Saneei; 2 ♀♂, 4 ♀♀, same prov., Mashhad-Torbat Heydariyeh road, Bazeh Hour Vil. (35°46′54.19″N, 59°22′25.20″E), 1322 m a.s.l., 7.06.2013, S. Saneei; 2 ♀♂, 2 ♀♀, Northern Khorasan Prov., Ardakan Vil. (37°07′43.24″N, 57°44′51.83″E), 1183 m a.s.l., 21.07.2010, E. Jamili; 2 ♀♀, same prov., near Espahraen (37°03′57.39″N, 57°31′27.39″E), 1148 m a.s.l., 24.05.2010, E. Jamili.

**COMMENTS:** This species is known from Europe to Central Asia [Marusik et al., 2003]. This is a new record for Iranian fauna, with Khorasan Province lying at the southeasternmost limit of the currently known species’ range.

**Pardosa proxima** (C.L. Koch, 1847)


**MATERIAL:** 2 ♀♂, 2 ♀♀, Khorasan-e Razavi Prov., Mashhad, Torogh (36°14′43.14″N, 59°56′52.66″E), 1332 m a.s.l., 3.04.2013, S. Saneei; 1 ♀, 2 ♀♀, same prov., Mashhad, Noghondar (36°21′26′15″N, 59°18′22.96″E), 1328 m a.s.l., 13.06.2013, S. Saneei; 1 ♂, 1 ♂♂, same prov., Sarakhs, Bazangan Lake (36°19′00.67″N, 60°29′00.79″E), 861 m a.s.l., 1.05.2012, Z. Nikmagham; 1 ♀♀, same prov., Mashhad (36°18′01.87″N, 59°36′03.09″E), 1068 m a.s.l., 30.04.2013, S. Saneei; 2 ♀♀, same prov., Kalat (35°28′40.20″N, 59°40′19.49″E), 1212 m a.s.l., 17.05.2013, S. Saneei.

**COMMENTS:** This species is known from the Mediterranean to Tajikistan [Buchar, Dolansky, 2010; Marusik et al., 2003]. New records for Iran, lying at the southeasternmost limits of the species’ range.
Figs 8–12. Male of *Bogdocosa baskuntchakensis* Ponomarev et Belosludtsev, 2008. 8 — habitus, dorsal view; 9 — ditto, ventral view; 10 — palp, prolateral views; 11 — ventral view; 12 — retrolateral view.

Рис. 8–12. Семец *Bogdocosa baskuntchakensis* Ponomarev et Belosludtsev, 2008. 8 — габитус, вид сверху; 9 — тоже, вид снизу; 10 — пальпа, вид спереди-латерально; 11 — тоже, вид вентрально; 12 — тоже, вид сзади-латерально.
Wadicosa fidelis (O. Pickard-Cambridge, 1872)


COMMENTS: This is the most widespread species of the genus Wadicosa Zyuzin, 1985, occurring from Europe to Japan [Buchar, 1980; Marusik, Guseinov, 2003]. However, Kronestedt & Zyuzin [2009] considered the species a complex of more than one species and limited W. fidelis (s. str.) to the Mediterranean only. The studied specimens from north-eastern Iran fit well with the illustrations by Marusik et al. [2003]. New record for Iran.

Discussion

Based on the data presented above, 17 lycosid species have been recorded from Iran, of which 10 species are new records for Iran. Among the recorded genera, the genus Pardosa with the seven recorded species shows a highest species diversity in north-eastern Iran. However, due to the lack of comprehensive systematic studies specifically devoted to the wolf spiders of Iran, it is difficult to assess a true species diversity of the Iranian Lycosidae. Considering the data presented in this study and the previously recorded species (see above in the ‘Introduction’), the Iranian lycosid fauna consists of less species than many smaller neighbouring countries, for instance, such as Azerbaijan with 68 species in 14 genera [Marusik et al., 2013]. Systematic investigations of the spider fauna in much of central, eastern, and southern regions of the Iranian Plateau and the Zagros Mountains have not been conducted and systematic pit-fall trapping was rarely used by former researchers. Therefore, it is safe to assume that many more species of Lycosidae will be found in Iran in the following studies.

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