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Spiders (Arachnida: Araneae) from Misallatah Nature Reserve and National Park, Libya, with First Record of Five Species

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Abstract

This study reports on a collection of spiders from Misallatah Nature Reserve and National Park (MNRNP), north western Libya, including five species recorded for the first time in the country. 75 spider samples (13 adult males, 20 adult females, 42 juveniles), comprising 12 families (Agelenidae; Araneidae; Dysderidae; Gnaphosidae; Lycosidae; Palpimanidae; Pisauridae; Philodromidae; Pholcidae; Salticidae; Thomisidae; Zodariidae), 13 genera (*Lycosoides* Lucas, 1846; *Argiope* Audouin, 1826; *Dysdera* Latreille, 1804; *Nomisia* Dalmas, 1921; *Hogna* Simon, 1885; *Palpimanus* Dufour, 1820; *Holocnemus* Simon, 1873; *Aelurillus* Simon, 1885; *Menemerus* Simon, 1868; *Plexippus* C. L. Koch, 1846; *Phlegra* Simon, 1876; *Bassaniodes* Pocock, 1903; *Zodarion* Walckenaer, 1826) and 13 species (*Argiope lobata* Pallas, 1772; *Dysdera crocata* C. L. Koch, 1838; *Nomisia recepta* Pavesi, 1880; *Palpimanus gibbulus* Dufour, 1820; *Holocnemus pluchei* Scopoli, 1763; *Plexippus paykulli* Audouin, 1826;

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Bassaniodes lalandei Audouin, 1826; *Zodarion pileolonotatum* Denis, 1935; *Lycosoides flavomaculata* Lucas, 1846; *Hogna effera* O. Pickard-Cambridge, 1872; *Aelurillus blandus* Simon, 1871; *Menemerus taeniatus* L. Koch, 1867; *Phlegra yaelae* Prószyński, 1998) were collected; the last five species are first records in Libya.

***Keywords*:** Small collection; Araneae; MNRNP; Libya.

Libya'daki Misallatah Doğa Koruma Alanı ve Milli Parkı'ndan Örümcekler (Arachnida: Araneae), Beş Yeni Tür Kaydı

Öz

Bu çalışma, Libya'nın kuzeybatısındaki Misallatah Doğa Koruma Alanı ve Milli Parkı'ndan (MNRNP) toplanan örümcek örnekleri hakkında bilgi vermektedir; bu örnekler arasında ülkede ilk kez kaydedilen beş tür de bulunmaktadır. 75 örümcek örneği (13 yetişkin erkek, 20 yetişkin dişi, 42 ergin altı) toplanmıştır. Toplanan örneklerinden 12 familya (Agelenidae; Araneidae; Dysderidae; Gnaphosidae; Lycosidae; Palpimanidae; Pisauridae; Philodromidae; Pholcidae; Salticidae; Thomisidae; Zodariidae), 13 cins (*Lycosoides* Lucas, 1846; *Argiope* Audouin, 1826; *Dysdera* Latreille, 1804; *Nomisia* Dalmas, 1921; *Hogna* Simon, 1885; *Palpimanus* Dufour, 1820; *Holocnemus* Simon, 1873; *Aelurillus* Simon, 1885; *Menemerus* Simon, 1868; *Plexippus* C. L. Koch, 1846; *Phlegra* Simon, 1876; *Bassaniodes* Pocock, 1903; *Zodarion* Walckenaer, 1826) ve 13 tür (*Argiope lobata* Pallas, 1772; *Dysdera crocata* C. L. Koch, 1838; *Nomisia recepta* Pavesi, 1880; *Palpimanus gibbulus* Dufour, 1820; *Holocnemus pluchei* Scopoli, 1763; *Plexippus paykulli* Audouin, 1826; *Bassaniodes lalandei* Audouin, 1826; *Zodarion pileolonotatum* Denis, 1935; *Lycosoides flavomaculata* Lucas, 1846; *Hogna effera* O. Pickard-Cambridge, 1872; *Aelurillus blandus* Simon, 1871; *Menemerus taeniatus* L. Koch, 1867; *Phlegra yaelae* Prószyński, 1998) tespit edilmiştir; son beş tür Libya'da ilk kez kaydedilmiştir.

***Anahtar Kelimeler*:** Küçük koleksiyon; Araneae; MNRNP; Libya.

1. Introduction

Although Libya has a comparatively large surface area (the 4th largest African country and 15th among all countries in the world), with four major bio-geographic ecoregions (coastline, mountains, semi-desert and Sahara) [1, 2], it has the lowest number of recorded species of spiders (352) compared to other North African or south European countries: Morocco (611), Algeria (899), Tunisia (396), Egypt (396), Portugal (898), Spain (1434), France (1603), Italy (1585), Greece (1224) and Türkiye (1555); this apparent low diversity is likely to be influenced by limited sampling efforts and historical research gaps, rather than reflecting true faunal impoverishment.

These 352 spider species belong to 72 genera and 39 families known from the country [3]; most recorded/ discovered species have been reported in the recent years [1, 4-13]. The aim of the present study was to compile a preliminary checklist of spider species in Misallatah Nature Reserve and National Park (MNRNP), Libya, with first record of five species.

2. Materials and Methods

2.1. Sampling location

Misallatah Nature Reserve and National Park (MNRNP) (also called Ashaafean Biosphere Reserve) (Fig. 1) is one of the most significant protected areas in Libya, situated approximately 87 kilometres southeast of Tripoli (13°50'45"E and 13°48'45"E -32°37'15"N and 32°35'30"N) [14]; it is located in the northeast part of the Nafusa Mountain, on the rim of the Sahara desert, covering about 83,060 ha of Mediterranean biogeographic mountainous uplands, supporting dry woodlands and steppe grasslands in the North and extremely dry southern regions in the Sahara desert; this park has long been a refuge for wide range of rare and/or threatened species (such as aromatic and medicinal plants and faunal species), listed on the IUCN Red List. Protected by governmental decree since late 1970s, MNRNP was categorized as a national park and nature reserve in 1998, and in 2021, the International Coordinating Council of UNESCO's Man and the Biosphere Program (MAB-ICC) designated Ashaafean Park as a Biosphere Reserve, the first in Libya to date; in the majority of the biosphere reserves, about 65,000 people rely on traditional sustainable farming, wood harvesting, and beekeeping for their livelihood. Olives and oil from the area are renowned for their quality [15].

2.2. Sample preparation and imaging

The spider specimens were gathered from two locations within Ashaafean Park using manual sample collection on January 3rd and May 10th, 2025; the specimens were preserved separately in plastic vials containing 75% ethanol and 5% glycerine (to keep specimens pliable and prevent complete desiccation if the ethanol evaporates). The samples were deposited in the Zoology Department Laboratory, Faculty of Science, Tripoli University for later examination and identification. The materials were examined using a dissecting microscope (EZ4) and identified and verified using the online taxonomic databases of Araneae Europe [3] and the World Spider Catalog [16]. This study did not include vertebrate animals or protected species, and no ethical approval was required.

Images of the copulatory organs and habitus were photographed using a macro camera on a mounted mobile device (Xiaomi 14 Ultra). Image editing and measurements were accomplished

using ImageJ image processing and analysis software program (V 1.54). For the new recorded species, their distribution ranges were modified after World Spider Catalog [16].

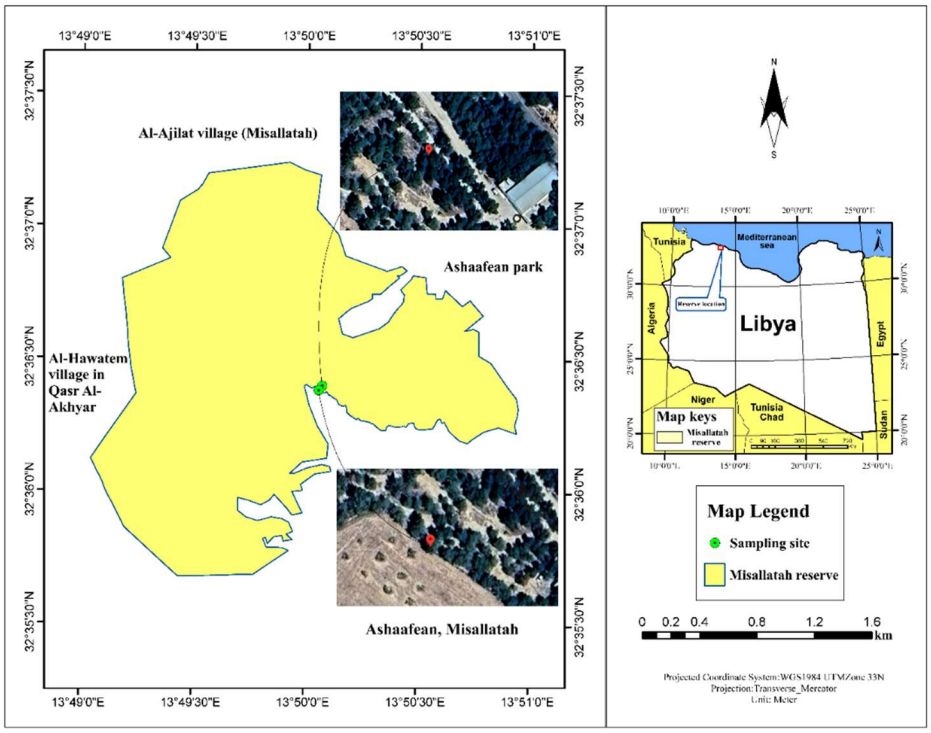


Figure 1: Sampling location map of the studied area in Misallatah Reserve and National Park (MNRNP), northern west of Libya

3. Results and Discussion

A total number of 75 spider specimens (13 adult males, 20 adult females, 42 juveniles), comprising 12 families, 13 genera and 13 species, were collected.

Family **Agelenidae** C. L. Koch, 1837

Genus ***Lycosoides*** Lucas, 1846

Comments. *Lycosoides* is a well-known genus generally in the southern Palearctic but particularly in Mediterranean/ southern west Palearctic (the Maghreb region), with 15 species (seven species discovered in last 3 years), each of which recorded at least in one Maghreb country (11 in Morocco, 8 in Algeria, 5 in Tunisia and 1 in Libya) [3]. Diagnostic characters are presented in [10]

Lycosoides flavomaculata Lucas, 1846 (type species) (Fig. 2 and Fig. 3 A-D)

Material examined. 4 ♂, 12 ♀, 16 juveniles.

Description. Male: Cephalothorax yellowish brown red, blackish eye region. Hooked chelicerae, with three denticles on the retromargin and two on the promargin. Sternum with darker margins. Palp has distinctive patellar apophysis, which is large, curved, and concave on the inside.

Female: Similar to male; large epigyne, with posterior portion extending over cavity, which is extended laterally.

Distribution. Spain, Morocco, Algeria, Tunisia, Malta, Italy (Sicily) [16]; records from Türkiye and the Balkans were removed in accordance with [10], which also mentioned that records from Corsica, France and Bulgaria where either moreover, based on [17] and [18] were either unacceptable or questionable, respectively.

Comments. This species is considered type species of the genus *Lycosoides* [16] and only the second species of this genus to be recorded from Libya (after *Lycosoides coarctata* Dufour, 1831).

Figure 2: Female (left) and Male (right) of ***Lycosoides flavomaculata*** Lucas, 1846 (habitus, dorsal view). Scale bars = 2 mm

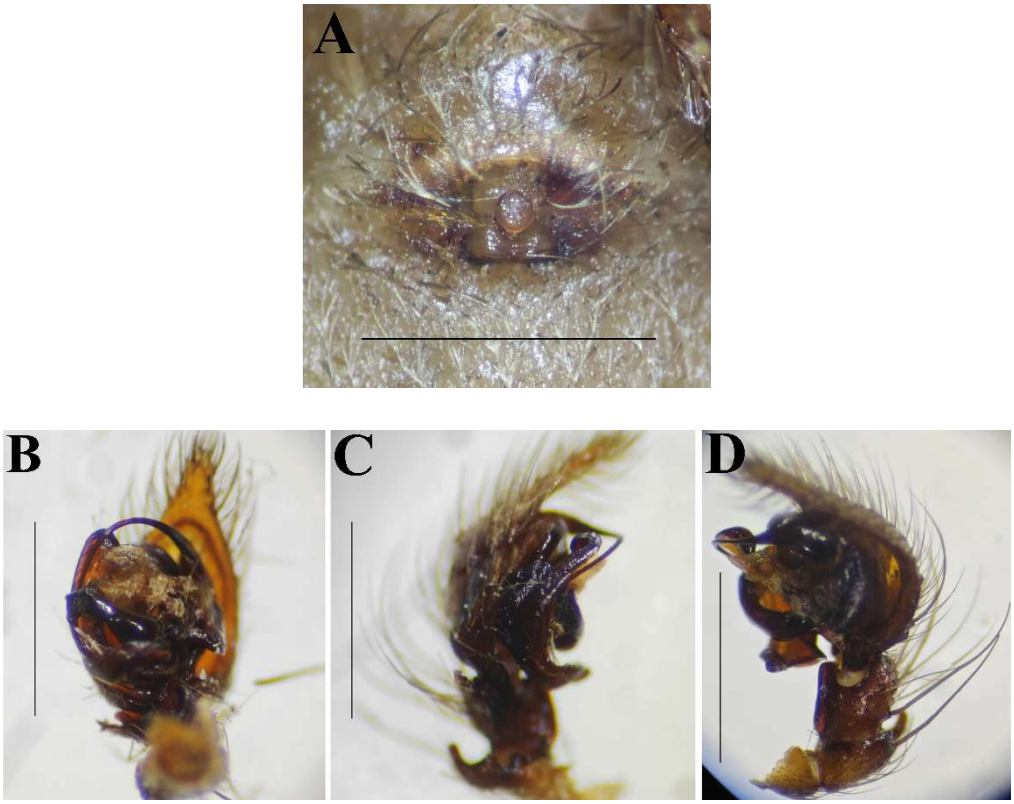


Figure 3: ***Lycosoides flavomaculata*** Lucas, 1846. A- Female epigyne; B-D Male right pedipalp, B- ventral view, C- retrolateral view, D- prolateral view. Scale bars = 1 mm

Family **Araneidae** Clerck, 1757

Genus ***Argiope*** Audouin, 1826

Comments. Another well-known and studied taxon (third-largest family and seventh largest genus) [16]; although this genus has 89 species, only five species recorded in European and North African regions, three of them in Libya [3].

Argiope lobata Pallas, 1772 (type species)

Material examined. 2 juveniles.

Distribution. Southern Europe, Central Asia, China, Northern Africa, South Africa, Tanzania, Middle East, Pakistan, India and Myanmar [16].

Comments. Regarding Libya, it was recorded from several regions along Libyan coastal areas, and even in Sawknah (Saharan desert oasis in the heart of Libyan desert), and Al Kufra (another Saharan oasis in Southeastern Libya) [13]. *Argiope lobata* is the type species of this genus [16].

Family **Dysderidae** C. L. Koch, 1838

Genus ***Dysdera*** Latreille, 1804

Comments. With 664 species belonging to 24 genera, Dysderidae constitutes 17th most diverse spider family in 138 families; with 336 species, *Dysdera* Latreille, 1804 is the most diverse of these genera [16]. Unlike other Maghreb countries which have at least two recorded genera of Dysderidae, Libya only have the genus *Dysdera* with seven recorded species so far [3].

Dysdera crocata C. L. Koch, 1838

Material examined. 1 ♂, 1 ♀, 1 juvenile.

Description. For description of both sexes see: [19].

Distribution. Azores, Europe, Türkiye, Northern Africa, Caucasus, Iraq, Central Asia. Introduced to North America, Chile, Brazil, St. Helena, South Africa, Australia, New Zealand and Hawaii [16].

Comments. While *Dysdera crocata* C.L. Koch, 1838, appears distributed almost worldwide, the other 663 species from 24 genera of Dysderidae are currently known, primarily in the Western Palaearctic [20]. Can be found in gardens, dunes, marshes, and forests; moreover, this species was observed under logs, moss, stones, rubbish and in moist cellars, quarries and caves as well [3]. Humans may be bitten by *Dysdera crocata;* although the bite is of negligible medical importance, it can be moderately painful with a median time of 40 minutes. In one third of patients, the pain is characterized as severe; the bite can cause some local irritation and redness [21].

Family **Gnaphosidae** Banks, 1892

Genus ***Nomisia*** Dalmas, 1921

Comments. Ground spiders are the sixth most diverse spider family with about 2500 described species from 153 genera; *Nomisia* is relatively small genus (40 species) [16], with 19 species recorded in Europe and/or North Africa [3].

Nomisia recepta Pavesi, 1880

Material examined. 1 ♂, 1 ♀, 3 juveniles.

Description. Bright yellow-orange to yellow-gold body; cephalothorax with darker edged curved lines and lateral spots; sternum dark-edged; abdomen rather pale, showing a very clear and defined pattern, with flanks being more or less dark, speckled with light spots; spinnerets light colored; ocular group much narrower, with its two lines close to each other; anterior median eyes smaller than the lateral ones. Legs similar; pedipalp characterized by tiny embolus, its bifurcate end (pointed crest at each end) and the rounded shape of the retrolateral tibial apophysis; wide epigyneal margins at posterior end

Distribution. Algeria, Tunisia, Libya, Egypt, Albania, Malta, Cyprus, Italy (mainland, Sardinia, Sicily) [16].

Comments. This is the first record of the species from Libya since the record of Caporiacco in 1936 from two locations in Ghat district southern west Libya [22]

Family **Lycosidae** Sundevall, 1833

Genus ***Hogna*** Simon, 1885

Comments. Lycosidae is the fifth most diverse spider family in the world (2505 species, 139 genera); within Lycosidae, *Hogna* Simon, 1885 (233 species) is the second most diverse genus (after *Pardosa* C. L. Koch,1847) with nearly worldwide distribution [23].

Hogna effera O. Pickard-Cambridge, 1872 (Fig. 4 and Fig. 5 A-C)

Material examined. 1 ♂, 9 juveniles.

Description Based on re-examination of *Hogna effera* lectotype male by Logunov [24], the base of median apophysis in the pedipalp is very narrow (about twice as narrow as that of *Hogna ferox* Lucas, 1838; the septal pedicel is visibly constricted in its posterior half; the specimen is faded; the light yellow carapace has a pattern of thick recumbent hairs, including two broad longitudinal brown stripes, a large white stripe between them and two broad white marginal bands; long distinct brown fovea; pale yellow clypeus; bright yellow sternum, thickly covered in white hairs; labium, endites, abdominal venter, book-lung covers, spinnerets, legs (except metatarsus), and palps are all light yellow; chelicerae yellowish brown; abdomen: sides yellow grey, and dorsum yellow grey with a yellow heart mark bordered by brown lines; pedipalp bulbs brown.

Distribution. Greece (including Crete) [24], Cyprus, Türkiye, Egypt, Israel, Lebanon, Syria, Yemen, (Sokotra), Saudia Arabia, United Arab Emirates, Iraq, Iran [16]

Comments. This is the first record of *Hogna effera* in Libya and the second in Africa, following the record from Egypt by El-Hennawy [25]. Many early and recent records of *Hogna* species: *Hogna ferox* (Lucas, 1838) from Iran [26] and *Hogna radiate* (Latreille, 1817) from Iraq [27] were previously incorrect records that have been reassigned to *Hogna effera* [28].

Figure 4: Male of ***Hogna effera*** O. Pickard-Cambridge, 1872 (habitus, dorsal view). Scale bar = 5 mm

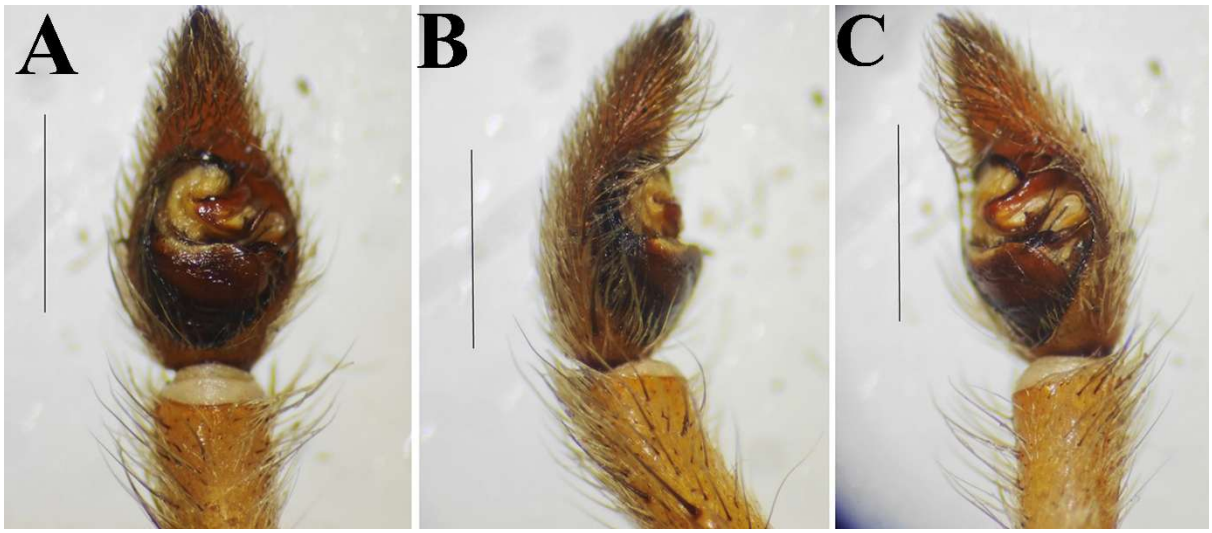


Figure 5: ***Hogna effera*** O. Pickard-Cambridge, 1872. Male right pedipalp A- ventral view, B- retrolateral view, C- prolateral view. Scale bars = 1 mm

Family **Palpimanidae** Thorell, 1869

Genus ***Palpimanus*** Dufour, 1820

Comments. A relatively small family with 20 genera and 182 species (3 genera and 12 species in Europe and North Africa); *Palpimanus* is the second most diverse genus (43 species) after *Otiothops* Macleay, 1839 (47 species) [16]. Regarding Europe and North Africa, *Palpimanus* is the most diverse genus with 10 recorded species so far [3, 16].

Palpimanus gibbulus Dufour, 1820

Material examined. 2 ♂, 1 juvenile.

Description. Carapace suboval in shape, anteriorly truncated; rounded cephalic region, gently slopes towards thoracic area; fovea conspicuous, covered by stiff epidermis; Eight eyes in two rows; posterior eye row straight or recurved; posterior median eyes typically closer to each other than to the posterior laterals; anterior median eyes the largest of all eyes; abdomen oval; with sclerotized ring-shaped scutum; anterior legs (pair 1) enlarged, stronger than the other leg pairs; unequally sized tarsal claws, with very small anterior tarsal claws.

Distribution. Mediterranean [16].

Comments. Being the type species of the genus *Palpimanus* [16], it is the only species of the genus that was recorded in Libya, and it was recorded in many sites in Libya including Ashaafean park [3, 13]. Members of this species have unique highly-developed stridulatory organs; these organs produce sounds by file and scraper devices, with the pars striden (file) on the outer face of the chelicera and the plectrum (scraper) on the femur of the pedipalp. Produced by both sexes and audible to humans only at very short distance, these organs function to defend spiders from predators and intraspecific communication during courtship and mating [29, 30, 31]. These spiders are nocturnal and hunt other spiders actively on the ground or those hiding in shelters; they hide throughout the day in undergrowth or beneath stones in a silken shelter, because they do not construct webs [29].

Family **Pisauridae** Simon, 1890

Material examined. 1 juvenile.

Comments. Another small family with 45 genera and 235 species (only 3 genera and 7 species in Europe and North Africa); only one species was recorded in Benghazi, northern east Libya (*Pisaura mirabilis* Clerk, 1757) [13]. It was not possible to identify the only juvenile specimen of this family to the genus and/or species levels.

Family **Philodromidae** Thorell, 1869

Material examined. 2 juveniles.

Comments. Relatively more diverse spider family with 30 genera and 531 species (7 genera and 126 species in Europe and North Africa), of which 4 genera and 17 species are recorded in Libya [3]. Due to the presence of only two juvenile specimens, we could not identify specimens to the genus or species levels.

Family **Pholcidae** C. L. Koch, 1850

Genus ***Holocnemus*** Simon, 1873

Comments. With 97 genera and 2049 species, Pholcidae stands out as the 8th most diverse spider family [16]; however, only 77 species (16 genera) established in Europe and North Africa, with 5 species (4 genera) recorded in Libya, two of them belong to the genus *Holocnemus* [3].

Holocnemus pluchei Scopoli, 1763 (type species)

Material examined. 1 ♂, 1 ♀.

Description. Males and females characterized by conspicuously enlarged pedipalps, distinctive abdominal pattern, striking yellow-white cross banded legs, and wide deep thoracic fovea; this species is the sole species of its genus with global distribution

Distribution. Europe, Türkiye, North Africa, Caucasus, Middle East, Introduced to USA, Argentina, Japan, Australia [16].

Comments. Being the type species of the genus *Holocnemus* [16], it is a cave-dwelling spider (troglophile species), capable of maintaining a stable subterranean population (eutroglophile) or choose to live in subterranean habitats, but requires the surface (epigean habitats) for some biological functions (subtroglophile) [32]. The last records of this species from Libya were reported in Tripoli and Southern Tibesti mountains by Simon in 1908 [33] and Denis in 1947 [34] respectively.

Family **Salticidae** Blackwall, 1841

Genus ***Aelurillus*** Simon, 1885

Comments. Salticidae is the most species diverse family within the order Araneae, with 691 valid genera and 6852 valid species described globally [16]; however, with 62 genera and 453 species,

it is still the 4th most diverse spider family in Europe and North Africa, after Linyphiidae Blackwall, 1859 (222, 1383), Gnaphosidae Banks, 1892 (52, 607) and Dysderidae C. L. Koch, 1837 (23, 540) [3]. Moreover, this family constitutes the 2nd most diverse family in Libya (32, 54) after Gnaphosidae (23, 60). *Aelurillus* is a species rich genus with 74 described species worldwide [16], three of them recorded in Southern and Eastern Libya [13].

Aelurillus blandus Simon, 1871 (Fig. 6 and Fig. 7 A-D)

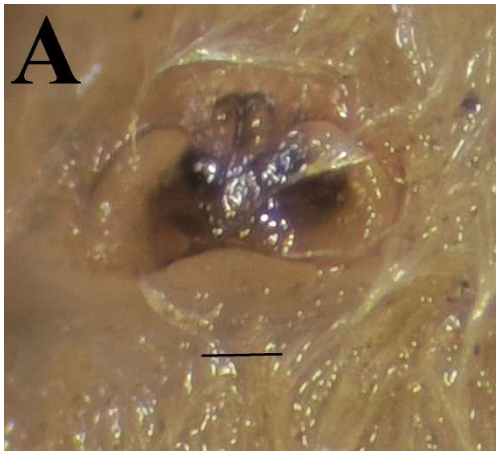
Material examined. 1 ♂, 1 ♀.

Description. For description of male and female see references [35] and [36], respectively.

Distribution. Portugal, Spain, Greece, Cyprus, Morocco [16].

Comments. This is the first record of *Aelurillus blandus* in Libya, and the first record of this genus in Western Libya.

Figure 6: Female (left) and male (right) of ***Aelurillus blandus*** Simon, 1871 (habitus, dorsal view). Scale bar = 2 mm



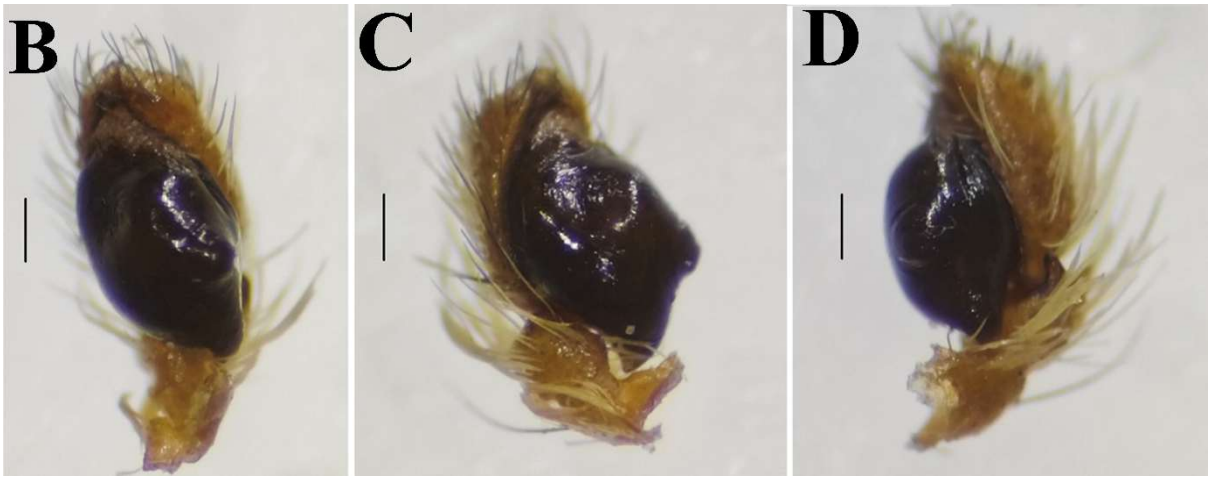


Figure 7: ***Aelurillus blandus*** Simon, 1871. A- Female epigyne; B-D Male right pedipalp, B- ventral view, C- retrolateral view, D- prolateral view. Scale bars = 0.1 mm

Genus ***Menemerus*** Simon, 1868

Comments. A species rich genus with 63 described species globally (13 in Europe and North Africa); three species of this genus were recorded in Libya [3].

Menemerus taeniatus L. Koch, 1867 (Fig. 8 and Fig. 9)

Material examined. 1 ♀.

Description. For description of female see references [37] and [38].

Distribution. Mediterranean to Caucasus. Introduced to Argentina [16].

Comments. This is the first record of this species in Libya, and the second in Africa following Algeria [39].

Figure 8: Female of ***Menemerus taeniatus*** L. Koch, 1867 (habitus, dorsal view). Scale bar = 2 mm

Figure 9: ***Menemerus taeniatus*** L. Koch, 1867. Female epigyne. Scale bar = 1 mm

Genus ***Plexippus*** C. L. Koch, 1846

Comments. A small genus with 41 described species worldwide [16], and six species reported in Europe and North Africa [3].

Plexippus paykulli Audouin, 1826 (type species)

Material examined. 1 ♂, 1 ♀.

Description. For description of male and female see reference [40].

Distribution. Africa. Introduced to both Americas, Europe, Middle East, Iran, Pakistan, India, Nepal, southern Asia, Australia, Pacific Is. [16].

Comments. *Plexippus paykulli* is the type species of its genus [16] and together with *Plexippus clemens* O. Pickard-Cambridge, 1872 are the only two species of this genus reported from Libya; both were previously recorded from different regions of Libya, with *Plexippus clemens* reported from Al Jaghbub in Eastern region, and *Plexippus paykulli* reported from Eastern coast (Benghazi, Port Bardia), Eastern desert (Kufra, Jalu), Southwestern desert (Fezzan), Western coast (Tripoli, Tajoura, Al Seysheyya, Qaser Khiar, Msallata) [13, 16]. *Plexippus paykulli* is of African origin but was introduced at least once to Europe (alien species) [3].

Genus ***Phlegra*** Simon, 1876

Comments. A species abundant genus of 76 described species distributed globally [16], with 18 species reported in Europe and North Africa [3].

Phlegra yaelae Prószyński, 1998 (Fig. 10 and Fig. 11 A-C)

Material examined. 1 ♂.

Description. For male description, see references [41] and [42].

Distribution. Tunisia, Italy (Sicily), Israel, Iran [16].

Comments. Elkrew and others reported 3 specimens of *Phlegra* Simon, 1876 in Ashaafean park and other areas in Western Libya (Msallata, Alalus, Ain Zara, Ghanimah, Al Mayah [13].

Figure 10: ***Phlegra yaelae*** Prószyński, 1998. Male right pedipalp A- ventral view, B- retrolateral view, C- prolateral view. Scale bars = 1 mm

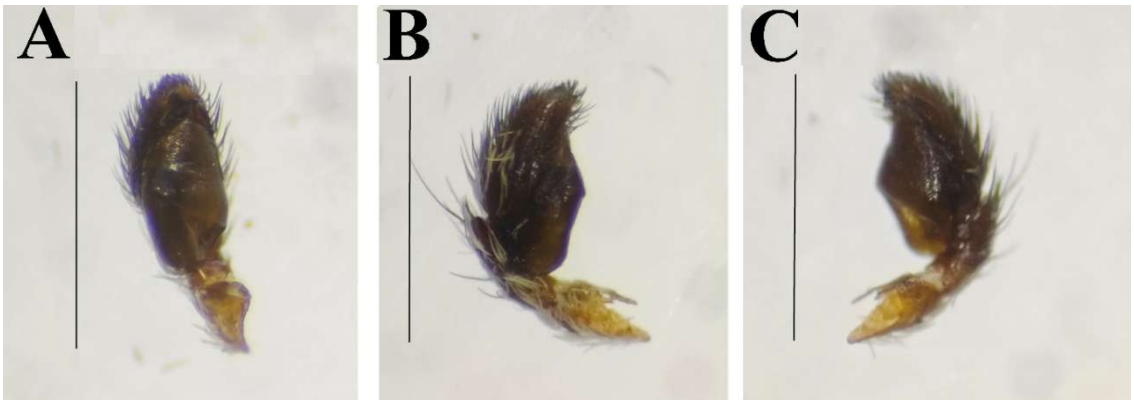


Figure 11: ***Phlegra yaelae*** Prószyński, 1998. Male right pedipalp A- ventral view, B- retrolateral view, C- prolateral view. Scale bars = 1 mm

Family **Thomisidae** Sundevall, 1833

Genus ***Bassaniodes*** Pocock, 1903

Comments. Thomisidae is the seventh most diverse spider family, currently including 2186 species in 171 genera [16], but with only 238 species and 21 genera in Europe and North Africa [3]; *Bassaniodes* is a small genus with 41 species distributed globally (23 species in Europe and North Africa). Libya has a total number of 24 species and 11 genera of the family Thomisidae, with 5 species belonging to *Bassaniodes* [3].

Bassaniodes lalandei Audouin, 1826

Material examined. 1 ♂, 4 juveniles.

Description. The adult male was described in reference [43].

Distribution. Mediterranean, Azerbaijan [16].

Comments. Elkrew and others documented the record of *Bassaniodes lalndei* under the former species name *Xysticus lalandei* Audouin, 1826 in different sites of Eastern and South Eastern Libya (Derna, Al Hawari, Jalu, Awjilah, Kufra) about 90 years ago; consequently, this is the first record of the species from Western Libya and the first since 1936 [13].

Family **Zodariidae** Thorell, 1881

Genus ***Zodarion*** Walckenaer, 1826

Comments. Zodariidae is a diverse spider family with 1319 extant described species in 90 genera [16], of which only 9 genera and 190 species are reported in Europe and North Africa [3]. With 172 described species (156 in Europe and North Africa), *Zodarion* is the second species rich genus of Zodariidae; regarding Libya, 9 Zodariid species were recorded, mostly from Eastern regions, with 7 species belonging to *Zodarion* [13].

Zodarion pileolonotatum Denis, 1935

Material examined. 1 ♀, 1 juvenile.

Description. The adult female was described in reference [44]

Distribution. Libya [16].

Comments. The species, considered as endemic species to Libya, was first discovered and described by Denis in 1935 [44] as part of his exploratory trip to Siwa Oasis, which was then part of the Libyan state; Jacques Denis published the findings of his expedition in 1947 [34]. Moreover, the first discovery of this species in Siwa Oasis was also reported by El-Hennawy [25]

in a revised checklist of Egyptian spider fauna; therefore, our record represents the first report of *Zodarion pileolonotatum* in present day Libya.

The discovery of five new national records from a comparatively small sampling effort, emphasizes the underexplored nature of Libyan spider fauna. The great majority of previous records were in eastern and coastal regions; this suggests that western mountainous and desert habitats remain inadequately surveyed. Targeted and seasonal sampling using various collection methods (pitfall traps, sweeping, leaf litter extraction) would significantly increase the known species richness in Libya.

4. Conclusion

Based on the results of this work, there are 356 spider species of 72 genera and 39 families of spiders known from Libya. Although Libya is the 4th largest African country with a total surface area of more than 1.7 million km^2, its total known spider fauna remains poorly known in comparison to other northern African or southern European countries: Morocco (≈ 618), Algeria (900), Tunisia (≈ 400), Egypt (≈ 398), Portugal (≈ 904), Spain (≈ 1440), France (≈ 1601), Italy (≈ 1586), Greece (≈ 1221) and Türkiye (≈ 1565) [3, 16]. This low diversity of spider fauna in Libya is likely to be attributed to limited taxonomic efforts, funding constraints and political instability. However, more in-depth investigations might reveal more varied spider fauna in this country, especially in locations previously not easily accessible to foreign researchers (such as isolated water springs, water caves and dry caves)

4. Conflict of interest statement

The authors state that they have no known competing financial interests or personal connections that could have appeared to influence the research work reported in this manuscript.

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References

[1] Khbaish, H.S., Elmareme, H.M., Etriieki, A.M., *Morphological features and distribution of Loureedia jerbae (El-Hennawy, 2005) (Araneae: Eresidae) in Libya*, African Journal of Advanced Pure and Applied Sciences (AJAPAS), 3(2), 96-101, 2024.

[2] Mahklouf, M.H., Etayeb, K.S., *Biodiversity in Libya*, in Global Biodiversity. Apple Academic Press, 113-132pp. 2018.

[3] Nentwig, W., Blick, T., Bosmans, R., Kropf, C., Stäubli, A., *Spiders of Europe*. Version 02.2026. Online at https://www.araneae.nmbe.ch, accessed on 04.02.2026, 2026, https://doi.org/10.24436/1.

[4] Logunov, D.V., *Taxonomic-faunistic notes on the jumping spiders of the Mediterranean (Aranei: Salticidae)*, Arthropoda Selecta, 24(1), 33-85, 2015.

[5] Chatzaki, M., Russell-Smith, A., *New species and new records of ground spiders (Araneae: Gnaphosidae) from Cyprus*, Zootaxa, 4329(3), 237(255), 2017.

[6] Bosmans, R., Kherbouche-Abrous, O., Benhalima, S., Hervé, C., *The genus Haplodrassus Chamberlin, 1922 in the Mediterranean and the Maghreb in particular (Araneae: Gnaphosidae)*, Zootaxa, 4451(1), 1-67, 2018.

[7] Bosmans, R., Hervé, C*., Less is more: eight new synonyms in Mediterranean spiders (Araneae), with a new Pelecopsis species from Tunisia (Linyphiidae),* Arachnologische Mitteilungen: Arachnology Letters, 61(1), 58-64, 2021.

[8] Alioua, Y., Bosmans, R., Kherbouche, O., Bissati, S., *Distribution of the genus Larinia in the Maghreb, with the first record of Larinia chloris in Algeria (Araneae: Araneidae),* Arachnologische Mitteilungen, Arachnology Letters, 59(1), 1-4, 2020.

[9] Alioua, Y., Bosmans, R., *Poecilochroa senilis (O. Pickard-Cambridge, 1872) (Araneae: Gnaphosidae) recorded for the first time in Algeria and Morocco, with the proposition of a new synonym*, Serket, 17(2), 121, 2020.

[10] Bosmans, R., Lecigne, S., Benhalima, S., Abrous-Kherbouche, O., *The genus Lycosoides Lucas, 1846 in the Maghreb region, with the description of five new species (Araneae: Agelenidae)*, Arachnology, 9(2), 316-340, 2022.

[11] Dupérré, N., *New light on some historical type specimens in relation to the South American spider (Araneae) fauna*, New Zealand Journal of Zoology, 50(1), 118-277, 2023.

[12] Etriieki, A.M.O., Elmareme, H.M.A., Alfiteesi, F.M.A., *The first record of the spider Segestria florentina (Rossi, 1790) (Araneae: Segestriidae) in Libya*, Serket, 20(2), 131-135, 2024.

[13] Elkrew, H., Hamza, A., Ghana, S., Shaibi, T., Swehli, A.I., Elmareme, H., Ahmad, A., *Checklist of the spiders (Araneae) of Libya*, Pakistan Journal of Life & Social Sciences, 22(2), 19346-19369, 2024.

[14] Elkahwage, I.E., & Jdeidi, T.B., *Survey of the wild mammalian species in Misallatah Nature Reserve and National Park (MNRNP).* Attie Memorie Dell'ente Fauna Siciliana, 12, 101-112, 2018.

[15] UNESCO., *Ashaafean Biosphere Reserve designated as Libya's first biosphere reserve*, [Online]. Available: https://www.unesco.org/en/mab/ashaafean (accessed Feb. 6, 2026), 2026.

[16] World Spider Catalog. Version 27. Natural History Museum Bern, online at http://wsc.nmbe.ch, accessed on 04.02.2026, 2026, doi: 10.24436/2,

[17] Simon, E., *Les arachnides de France, tome 4, contenant la famille des Drassidae. Paris*, France: Roret, 1878.

[18] Drensky, P., *Katalog der echten Spinnen (Araneae) der Balkanhalbinsel*, Spisanié na Beulgarskata Akademia na Naoukite, 32, 1-223, 1936.

[19] De Luna, M., García-Barrios, R., García-Barrios, R., *New state records of the woodlouse spider Dysdera crocata C. L. Koch, 1838 (Araneae: Dysderidae) in Mexico*, Revista Chilena de Entomología, 48(2), 329-334, 2022.

[20] Kunt, K., Yağmur, E., Özkütük., R.S., *Dysdera jaegeri Bellvert Dimitrov, 2024 (Araneae, Dysderidae): A new record for spider fauna of Türkiye*, Directorate National Botanical Garden of Turkiye, 9-13, 2024.

[21] Vetter, R.S., Isbister, G.K., *Verified bites by the woodlouse spider, Dysdera crocata,* Toxicon, 47(7), 826-829, 2006.

[22] di Caporiacco, L., *Aracnidi fezzanesi raccolti dal Prof. G. Scortecci nel 1934 - XII (Missione della R. Società Geografica)*, Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano, 75, 67-94, 1936.

[23] Matsunaga, J.N., Howarth, F.G., Kumashiro, B.R., *New state records and additions to the alien terrestrial arthropod fauna in the Hawaiian Islands*, Proceedings of the Hawaiian Entomological Society, 51(1), 1-71. 2019.

[24] Logunov, D.V., *On three species of Hogna Simon, 1885 (Aranei: Lycosidae) from the Near East and Central Asia*, Arthropoda Selecta, 29(3), 349-360, 2020.

[25] El-Hennawy, H.K., *A list of Egyptian spiders (revised in 2017)*, Serket, 15(4), 167-183, 2017.

[26] Marusik, Y.M., Nadolny, A.A., *On the identity of Trochosa hispanica (Araneae, Lycosidae), with notes on the synonymy of West Palaearctic 'Trochosa' species*, Zootaxa, 4859(1), 2020.

[27] Al-Khazali, A.M., *Genus Hogna Simon, 1885 (Araneae: Lycosidae), a new record to the spider fauna of Iraq*, Serket, 17(2), 101, 2020.

[28] Zamani, A., Dimitrov, D., Weiss, I., Alimohammadi, S., Rafiei-Jahed, R., Esyunin, S. L., Moradmand, M., Chatzaki, M., Marusik, Y. M., *New data on the spider fauna of Iran (Arachnida: Araneae), Part VII*, Arachnology, 18(6), 569-591, 2020.

[29] Tiwari, A., Singh, G., Singh, R., *Biodiversity of some poorly known families of spiders (Araneomorphae: Araneae: Arachnida) in India*, Journal of Global Biosciences, 10(1), 8352-8371, 2021.

[30] Dippenaar-Schoeman, A., Haddad, C., Foord, S., Lotz, L., *The Palpimanidae of South Africa*, South African National Survey of Arachnida Photo Identification Guide, version 1, 1-25, 2020.

[31] Uhl, G., Schmitt, M., *Stridulation in Palpimanus gibbulus Dufour (Araneae: Palpimanidae)*, Revue suisse de zoologie, 2, 649-666, 1996.

[32] Mammola, S., Cardoso, P., Ribera, C., Pavlek, M., Isaia, M., *A synthesis on cave-dwelling spiders in Europe*, Journal of Zoological Systematics and Evolutionary Research, 56(3), 301-316, 2018.

[33] Simon, E., *Etude sur les arachnides recueillis par M. le Dr Klaptocz en Tripolitaine*, Zoologische Jahrbücher, Abteilung für Systematik, Geographie und Biologie der Tiere, 26, 419-438, 1908.

[34] Denis, J., *Results of the Armstrong College expedition to Siwa Oasis (Libyan desert), 1935. Spiders [Araneae]*, Bulletin de la Société Fouad 1er d'Entomologie, 31, 17-103, 1947.

[35] Azarkina, G., *New and poorly known species of the genus Aelurillus Simon, 1884 from Central Asia, Asia Minor and the eastern Mediterranean (Araneae: Salticidae)*, Bulletin of the British Arachnological Society, 12, 249-263, 2002.

[36] Metzner, H., *Die Springspinnen (Araneae, Salticidae) Griechenlands*, Andrias, 14, 1-279, 1999.

[37] Jiménez-Valverde, A., López-Colón, J.I., *Primera cita de Menemerus taeniatus (L. Koch, 1867) (Araneae: Salticidae) para España*, Revista Ibérica de Aracnología, 7, 176-176, 2003.

[38] Wesołowska, W., *A revision of the spider genus Menemerus in Africa [Araneae: Salticidae],* Genus, Int. J. Invertebrate Taxonomy, 10(2), 251-253, 1999. Available: http://agro.icm.edu.pl/agro/element/bwmeta1.element.agro-article-b1e3cb6c-1671-4c89-a73f-6ce9da5c94e3

[39] Benhacene, R., Adjami, Y., Hadjeb, A., Kermiche, K., Ouakid, M., *Bibliographic checklist of the Algerian spider fauna (Araneae)*, Zootaxa, 5352, 301-357, 2023.

[40] Mousaid, M., Bouihouline, H., *Plexippus C. L. Koch, 1846: a new genus for the Moroccan araneofauna (Araneae: Salticidae)*, Serket, 20(1), 11, 2023.

[41] Prószyński, J., *Salticidae (Araneae) of the Levant*, Annales Zoologici, Warszawa, 53, 1-180, 2003.

[42] Azarkina, G., *New and poorly known Palaearctic species of the genus Phlegra Simon, 1876 (Araneae, Salticidae)*, Revue Arachnologique, 14(6), 73-108, 2003.

[43] Levy, G., *New thomisid and philodromid spiders (Araneae) from southern Israel*, Bulletin of the British Arachnological Society, 11(5), 185-190, 1999.

[44] Denis, J., *Sur deux araignées de Cyrénaique*, Annali del Museo Civico di Storia Naturale di Genova, 57, 100-104, 1935.