A historical collection of Greek spiders (Arachnida: Araneae) in the National Museum of the Czech Republic

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A historical collection of Greek spiders (Arachnida: Araneae) in the National Museum of the Czech Republic

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Abstract. Greek spiders in the historical collection of the National Museum of the Czech Republic in Prague (NMPC) were mainly collected during expeditions organized by the NMPC before World War II. Some younger specimens are present in collections of the Czech arachnologists František Miller and Jan Buchar. The material was collected at 23 localities and includes 247 identifiable specimens from 74 species. Spiders were identified (or revised) according to current arachnological knowledge and thereafter databased. Among them, *Leviellus stroemi* (Thorell, 1870) is recorded for the first time from Greece.

Keywords: Crete, expeditions, faunistics, Greece, *Leviellus stroemi*, new records, Peloponnese, zoological collection

Zusammenfassung. Eine historische Sammlung der Spinnen Griechenlands (Arachnida: Araneae) im Nationalmuseum der Tschechischen Republik. Die historische Sammlung griechischer Spinnen des Nationalmuseums der Tschechischen Republik in Prag (NMPC) wurde maßgeblich während Expeditionen des NMPC vor dem Zweiten Weltkrieg gesammelt. Einige jüngere Exemplare sind auch in den Sammlungen der tschechischen Arachnologen František Miller und Jan Buchar vorhanden. Das Material stammt von 23 Standorten und umfasst 247 identifizierbare Exemplare von 74 Arten. Die Spinnen wurden nach aktuellem Wissenstand bearbeitet und digital erfasst. Bemerkenswert ist vor allem *Leviellus stroemi* (Thorell, 1870), die zum ersten Mal für Griechenland dokumentiert werden konnte.

One of the scientific roles of museums all over the world is keeping material for future generations and publishing checklists or catalogues of their collections. These collections, and data obtained from them, not only have faunistic and biogeographic value, but they also enable comparison with current conditions, and evaluation of change (e.g. climate changes, impact of human activity on the biotopes etc.) that has occurred since (e.g. Buchar 1997, Ewers-Saucedo et al. 2021, Gilgado et al. 2022, Punčochář 2021, 2022). Especially historical natural history collections might thus be very useful in nature protection and conservation (e.g. Drew 2011, Kitchener 1997, Suarez & Tsutsui 2004).

The National Museum of the Czech Republic in Prague (NMPC) has already published catalogues of various non-type zoological material (e.g. Dolejš 2016, Dolejš & Vaňousová 2015, Jirousková et al. 2011, Mlíkovský et al. 2013, Subchev et al. 2017, Zamani et al. 2017, 2022). The present paper continues this work by providing information about spiders collected during expeditions to Greece in the 1920s and 1930s. The spider fauna of Greece was reviewed by Bosmans & Chatzaki (2005), summarizing data on 856 species from 49 families. Today, 1192 species from 50 families are known from Greece (Nentwig et al. 2023).

The collection of historical Greek spiders housed in the NMPC contains material from three distinct periods. The oldest originates from zoological expeditions organized by the NMPC before World War II (Štěpánek 1934, 1936, 1944, Štěpánek et al. 2016). Spiders were collected by the herpetologist Otakar Štěpánek (1903–1995), the entomologist Josef Mařan (1905–1978), and a volunteer, and later curator of invertebrates, Karel Táborský (1906–1988). They were collecting in western Greece – Ioannina, Katarraktis – and the island of Corfu (1927), in the Parnas Mts. and the Peloponnese (1935), Crete (1934–1936, 1938), northern Greece – Nausa cave (1937) – and the island of Gavdos (1938). Further material, consisting of only five specimens, comes from the collection of the Czech arachnologist František Miller (1902–1983). The youngest samples of wolf spiders (Lycosidae) from Greece were collected by another Czech arachnologist, Jan Buchar (1932–2015), in Thessaly, Thrace, Peloponnesus, Rhodes, etc. As he had already published the results of his collections (Buchar 2001, 2009, Buchar & Dolanský 2011, Buchar & Thaler 2002, Thaler et al. 2000), I do not treat his material further in this contribution. The aim of the present work is to provide historical, but unpublished, faunistic data on Greek spiders.

Material and methods

Specimens were collected at 23 localities (Tab. 1) and are kept in 80% ethanol. All material was identified in 2019 by the author (unless otherwise stated, namely in species difficult to identify) using Buchar et al. (2006), Isaia et al. (2018), Komnenov (2014), Levy (1985), Marusik et al. (2018), Nentwig et al. (2023), Oger (2022), Růžička (2018), Stäubli (2022) and Wunderlich (1995). Nomenclature follows the WSC (2022). After being identified, all material was databased in the internal database of the NMPC (the database will gradually become available online from 2024). Families and species are sorted alphabetically. The data are arranged as follows: locality number – number and sex of specimens. Photos of selected specimens (mostly those difficult to identify or those that have been rarely illustrated) were made using an Olympus SZX12 stereomicroscope equipped with an Olympus E-510 camera. Abbreviations: J = juvenile, sad = subadult. Juvenile specimens that were possible to identify to genus/family level only were omitted from this work.

Results

Agelenidae

Eratigena agrestis (Walckenaer, 1802): 4a – 1 ♀
Histopona strinatii (Brignoli, 1976): 23 – 1 ♀ (Fig. 1)
Maimuna cretica (Kulczyński, 1903): 18a – 2 ♀♀; 19 – 1 ♀

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Tab. 1: Names of the localities where the spiders were collected. If there are several collecting days or periods within the locality, they are distinguished by small letters. GPS coordinates and elevations cannot be provided as concrete collecting places are mostly unknown

Locality number	English name	Greek name	Area	Date	Leg.
1	Corfu (town)	Κέρκυρα	Corfu	a) 9. Apr. 1927; b) 10. Apr. 1927	?
2	Triklino	Τρικλινο	Corfu	10. Apr. 1927	?
3	Preveza	Πρέβεζα	western Greece	12. Apr. 1927	?
4	Ioannina	Ιωάννινα	western Greece	a) 13. Apr. 1927; b) 15. Apr. 1927	?
5	Katarraktis	Καταρράκτης	western Greece	22. Apr. 1927	?
6	Idi	Ιδι	Crete	1934	J. Mařan & O. Štěpánek
7	Anogia	Ανώγεια	Crete	May 1935	O. Štěpánek
8	Iraklio	Ηράκλειο	Crete	a) May 1935; b) 20. May 1936	O. Štěpánek
9	Taygetos	Ταΰγέτος	Peloponnese	a) 18. May 1935; b) 19. May 1935; c) 24. May 1935	J. Mařan & O. Štěpánek
10	Kalamata	Καλαμάτα	Peloponnese	20. May 1935	J. Mařan & O. Štěpánek
11	Parnas	Παρνασσός	south-eastern Greece	a) 29. May 1935; b) 31. May 1935; c) 2. Jun. 1935; d) 5. Jun. 1935	J. Mařan & O. Štěpánek
12	Anogia	Ανώγεια	Crete	May 1936	O. Štěpánek
13	Agios Nikolaos	Άγιος Νικόλαος	Crete	1936	O. Štěpánek
14	Psiloritis Mt. (2456 m)	Ψηλορείτης Βουνά	Crete	1936	O. Štěpánek
15	Nausa Cave	Νάουσα σπήλαιο	northern Greece	a) 28. Apr. 1937; b) 22. May 1937; c) May 1937	K. Táborský
16	Dia	Δία	Crete	3. May 1938	K. Táborský
17	Knossos	Κνωσός	Crete	5. May 1938	O. Štěpánek & K. Táborský
18	Askyfou (Lefka Ori)	Ασκύφου (Λευκά Όρη)	Crete	a) 12. May 1938; b) 12.–13. May 1938	K. Táborský
19	Askyfou	Ασκύφου	Crete	14. May 1938	O. Štěpánek
20	Gavdos	Γαύδος	Crete	a) 15.–20. May 1938; b) 16.–17. May 1938; c) 27. May 1938	K. Táborský
21	Lake Kournas	Λίμνη Κουρνά	Crete	24. May 1938	K. Táborský
22	Ampelakia	Αμπελάκια	?	19. Jun. 1938	K. Táborský
23	Kastria Cave	Καστριά	Peloponnese	1966	F. Miller

Maimuna vestita (C. L. Koch, 1841): 4a – 2 ♀♀
Tegenaria parietina (Fourcroy, 1785): 15c – 1 ♀; 20a – 1 ♀; 20b – 1 ♀

Amaurobiidae
Amaurobius strandi Charitonov, 1937: 4b – 1 ♀ (Fig. 2a-c); 7 – 3 JJ

Araneidae
Aculepeira armida (Audouin, 1826): 8a – 1 ♀; 11b – 1 sad♀; 11c – 1 ♀
Agalenatea redii (Scopoli, 1763): 4a – 1 ♂, 2 ♀♀, 1 J; 11b – 1 ♀
Araneus angulatus Clerck, 1757: 6 – 3 ♀♀
Araniella cucurbitina (Clerck, 1757): 11d – 1 ♀
Cyrtophora citricola (Forsskål, 1775): 7 – 1 ♀
Larinioides suspicax (O. Pickard-Cambridge, 1876): 4a – 1 ♂, 2 ♀♀, 6 JJ; 4b – 1 ♀, 2 sad♂♂
Leviellus stroemi (Thorell, 1870): 4a – 3 ♀♀ (Fig. 3a-b)
Mangora acalypha (Walckenaer, 1802): 8a – 1 ♀

Ctenizidae
Cyrtocarenum grajum (C. L. Koch, 1836): 4b – 1 ♀

Dictynidae
Dictyna arundinacea (Linnaeus, 1758): 3 – 2 ♀♀

Dysderidae
Dysdera lata-group: 11a – 1 ♀; 12 – 1 ♂; 17 – 1 ♀; 20a – 1 sad♂ (det. M. Řezáč)
Dysdera ninnii-group: 1b – 1 ♀ (Fig. 4a), 1 J; 10 – 1 J (Fig. 4b) (det. M. Řezáč)
Dysdera punctata-group: 2 – 1 ♀ (Fig. 5); 4b – 1 ♂ (det. M. Řezáč)
Note. Identification of highly endemic species of this group is very problematic at the above-mentioned sites (M. Řezáč, pers. comm.). Therefore, only species groups are provided.

Eresidae
Eresus walckenaeri Brullé, 1832: 9b – 1 ♀; 9c – 1 ♂; 20a – 1 ♂
Stegodyphus lineatus (Latreille, 1817): 13 – 1 ♀

Gnaphosidae
Aphantaulax trifasciata (O. Pickard-Cambridge, 1872): 8a – 1 ♂
Drassodes lapidosus (Walckenaer, 1802): 10 – 1 ♀

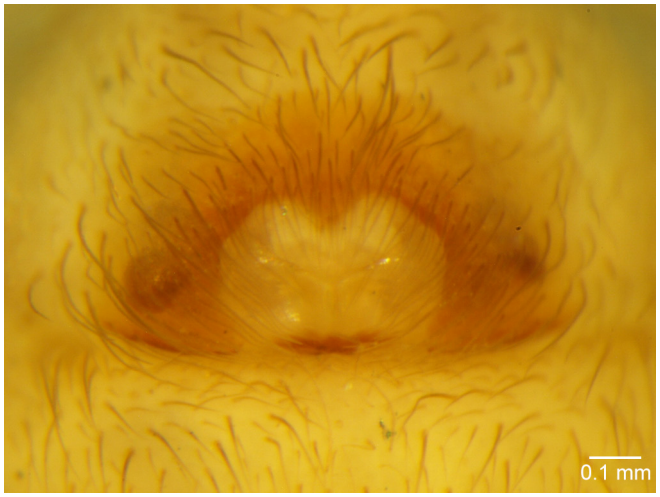

Fig. 1: *Histopona strinatii*, female from the Kastria Cave, epigyne

Haplodrassus signifer (C. L. Koch, 1839): 4b – 1 ♀, 2 JJ
Nomisia excerpta (O. Pickard-Cambridge, 1872): 18b – 1 ♀, 1 J
Pterotricha lentiginosa (C. L. Koch, 1837): 7 – 2 ♀♀; 18b – 1 ♀
Zelotes cingarus (O. Pickard-Cambridge, 1874): 1b – 1 ♀ (Fig. 6a); 3 – 1 ♀ (Fig. 6b); 4b – 1 ♀ (det. J. Dolanský)

Linyphiidae
Porrhomma convexum (Westring, 1851): 15c – 2 ♂♂, 5 ♀♀, 1 J
Prinerigone vagans (Audouin, 1826): 21 – 1 ♀

Lycosidae
Alopecosa albofasciata (Brullé, 1832): 1b – 1 sad♀; 2 – 1 ♀; 4a – 1 J
Alopecosa pentheri (Nosek, 1905): 4a – 1 ♀
Arctosa similis Schenkel, 1938: 20a – 1 ♀ (Fig. 7)
Hogna radiata (Latreille, 1817): 12 – 1 J; 18b – 1 J
Lycosa praegrandis C. L. Koch, 1836: 4a – 2 sad♀♀; 4b – 1 sad♀; 9a – 1 ♀; 10 – 1 sad♀; 11a – 1 sad♀; 11c – 1 sad♀; 20a – 1 sad♀; 20b – 1 sad♂, 7 sad♀♀; 20c – 1 sad♀
Pardosa prativaga (L. Koch, 1870): 3 – 1 ♂
Pardosa proxima (C. L. Koch, 1847): 3 – 1 ♂
Trochosa ruricola (De Geer, 1778): 4b – 1 ♂, 1 ♀, 1 J

Nemesiidae
Brachythele cf. *icterica* (C. L. Koch, 1838): 11c – 1 ♀ (det. V. Opatova)
Nemesia sp.: 4a – 1 ♂; 4b – 1 ♂
Note. The *Nemesia* males could belong to *Nemesia daedali* Decae, 1995, but unfortunately the original detailed description (Decae 1995) is based only on the female and in the supplementary article (Decae 2012), only the bulbus was redrawn, thus preventing precise identification. This species has been described from Crete, so given how endemic these spiders are, it would be better to keep it conservatively as *Nemesia* sp. (V. Opatova, in litt.)

Nesticidae
Nesticus cellulanus (Clerck, 1757): 15a – 1 J; 15b – 3 ♀♀, 4 JJ; 15c – 14 ♀♀, 6 JJ

Oecobiidae
Uroctea durandi (Latreille, 1809): 4b – 1 J

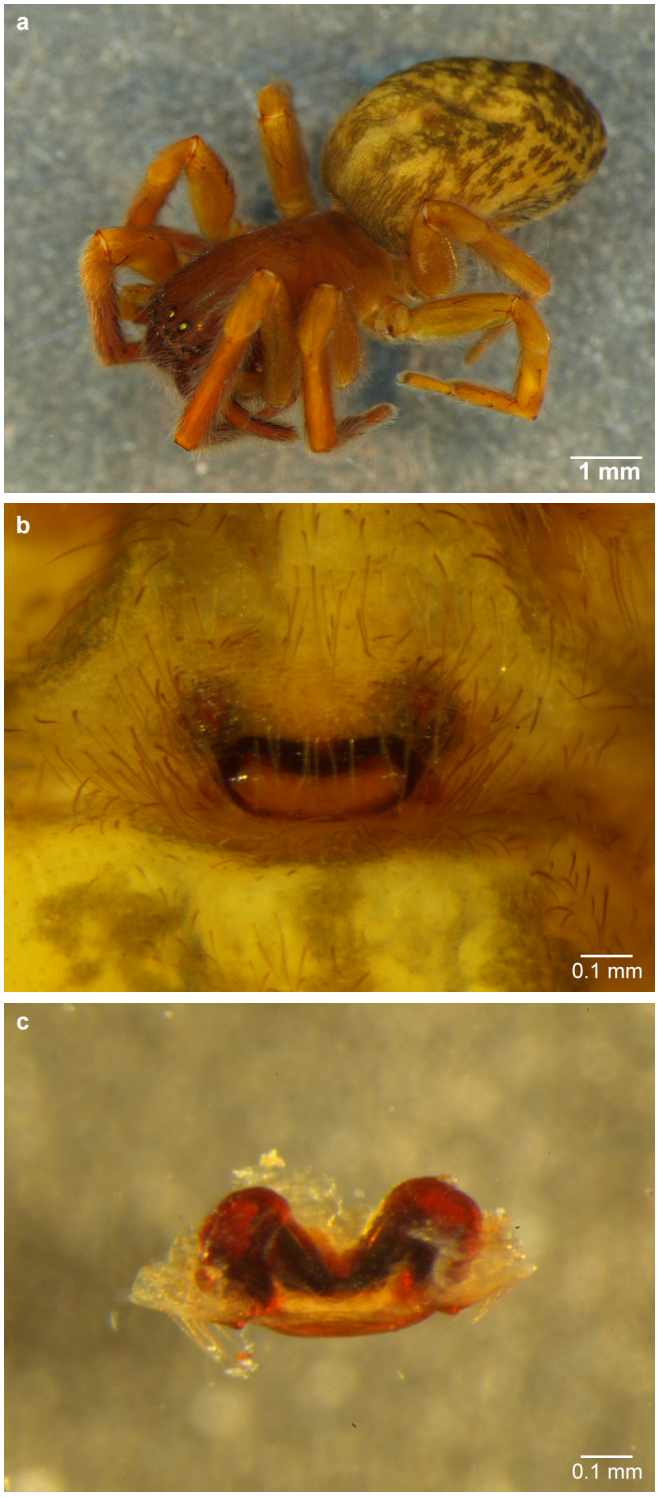

Fig. 2: *Amaurobius strandi*, female from Ioannina. **a.** habitus; **b.** epigyne; **c.** vulva

Oxyopidae
Oxyopes lineatus Latreille, 1806: 22 – 1 ♂

Palpimanidae
Palpimanus gibbulus Dufour, 1820: 9c – 1 ♀
Palpimanus orientalis Kulczyński, 1909: 1b – 1 ♀; 3 – 1 ♂; 7 – 2 ♀♀

Philodromidae
Philodromus margaritatus (Clerck, 1757): 9a – 1 ♀
Thanatus vulgaris Simon, 1870: 20a – 1 ♀

Fig. 3: *Leviellus stroemi*, species new to Greece, female from Ioannina. **a.** habitus; **b.** epigyne

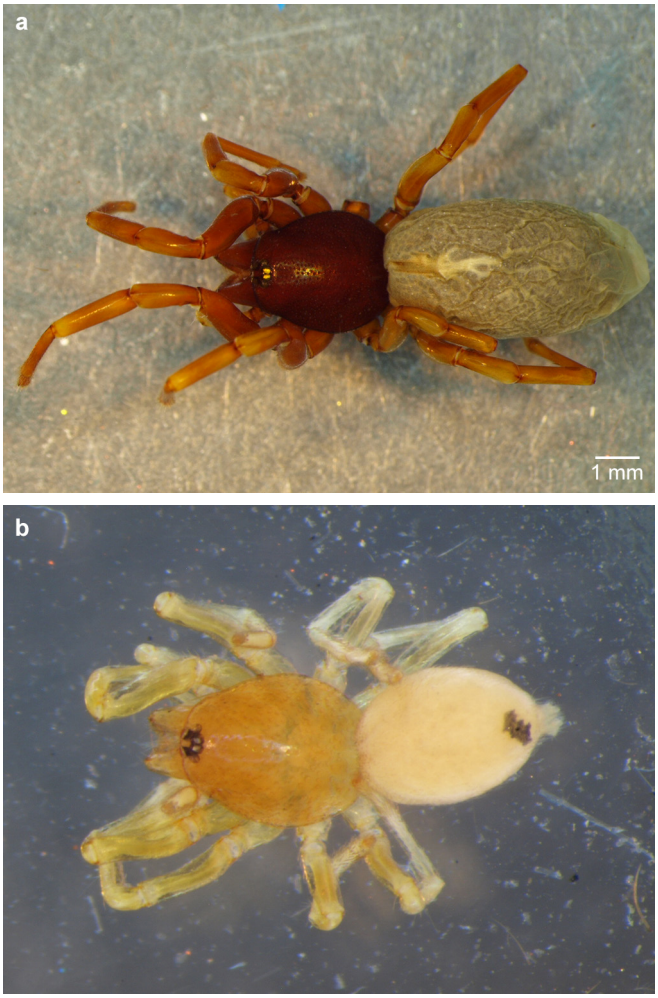

Fig. 4: *Dysdera ninnii*-group. **a.** female from Corfu; **b.** juvenile from Kalamata

Pholcidae
Holocnemus pluchei (Scopoli, 1763): 4a – 3 ♂♂

Salticidae
Euophrys sulphurea (L. Koch, 1867): 7 – 1 ♀
Evarcha jucunda (Lucas, 1846): 14 – 1 ♂
Heliophanus equester L. Koch, 1867: 8b – 1 ♀
Heliophanus lineiventris Simon, 1868: 4b – 1 ♂
Heliophanus melinus L. Koch, 1867: 11d – 1 ♀
Menemerus semilimbatus (Hahn, 1829): 4a – 1 ♂, 2 sad♀♀; 12 – 1 ♀
Philaeus chrysops (Poda, 1761): 4a – 2 ♂♂, 1 ♀; 10 – 1 ♂; 11d – 2 ♂♂; 21 – 1 ♀
Salticus propinquus Lucas, 1846: 4a – 1 ♂

Scytodidae
Scytodes thoracica (Latreille, 1802): 1b – 1 ♀

Selenopidae
Selenops radiatus Latreille, 1819: 16 – 1 J

Sicariidae
Loxosceles rufescens (Dufour, 1820): 1a – 1 ♀; 1b – 1 ♀; 10 – 1 sad♂; 12 – 1 J; 20 – 1 ♀

Sparassidae
Eusparassus walckenaeri (Audouin, 1826): 10 – 2 JJ; 19 – 1 sad♂; 20a – 1 sad♂, 1 sad♀

Tetragnathidae
Meta bourneti Simon, 1922: 15b – 1 J; 15c – 5 ♀♀, 11 JJ
Meta menardi (Latreille, 1804): 23 – 1 ♀ (det. F. Miller)
Metellina merianae (Scopoli, 1763): 9c – 1 ♂; 15b – 1 ♀, 2 JJ; 15c – 1 ♂, 2 ♀♀, 3 JJ
Tetragnatha montana Simon, 1874: 3 – 2 ♀♀, 5 JJ; 9c – 2 ♂♂, 1 ♀

Theridiidae
Asagena phalerata (Panzer, 1801): 4a – 2 ♂♂
Crustulina scabripes Simon, 1881: 1b – 1 ♀; 11d – 1 ♀
Phycosoma inornatum (O. Pickard-Cambridge, 1861): 15b – 1 ♀
Steatoda paykulliana (Walckenaer, 1806): 4a – 3 ♀♀; 4b – 1 ♂, 3 ♀♀, 1 J

Thomisidae
Bassaniodes cf. *tenebrosus* (Šilhavý, 1944): 7 – 1 ♀ (Fig. 8a-b); 18b – 1 ♀
Runcinia grammica (C. L. Koch, 1837): 8a – 1 sad♂
Synema plorator (O. Pickard-Cambridge, 1872): 8a – 1 ♀
Thomisus onustus Walckenaer, 1805: 4a – 1 J; 8a – 1 J
Xysticus acerbus Thorell, 1872: 4a – 3 ♀♀

Fig. 5: *Dysdera punctata*-group, female from Corfu

Fig. 7: *Arctosa similis*, female from Gavdos, epigyne

Xysticus cristatus (Clerck, 1757): 19 – 1 ♀
Xysticus thessalicus Simon, 1916: 4a – 2 ♂♂, 1 sad♂; 9c – 1 ♀ (Fig. 9a-b) (det. J. Dolanský)

Comments

This nearly century-old material revealed a presence of 74 species, or better said taxa, as some of them were identified only to species-group level. The most important discovery was *Leviellus stroemi*. This species is recorded here for the first time in Greece. The finding of this species confirms the general importance of revisions of historical collections. Other good examples of useful data obtained from such collections could include locating a bat, *Pipistrellus nathusii* (Keyserling & Blasius, 1839), in the collection of Natural History Museum of Crete, Irakleio, confirming thereafter its presence in Crete and its southernmost distribution margin (Benda et al.

Fig. 6: *Zelotes cingarus*, female. **a.** habitus (Corfu); **b.** epigyne (Preveza)

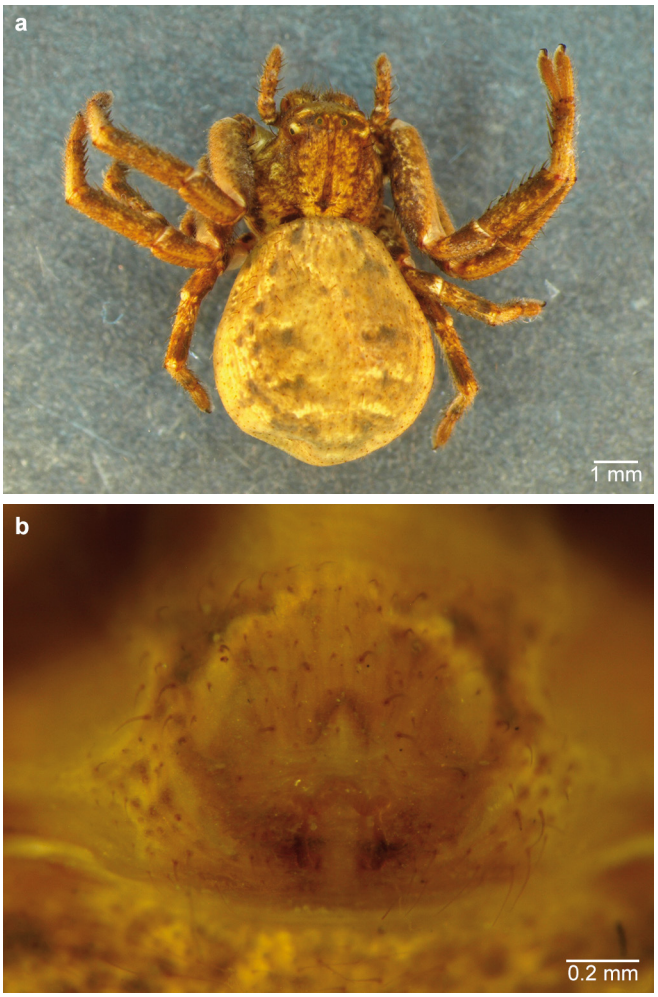

Fig. 8: *Bassaniodes* cf. *tenebrosus*, female from Anogia. **a.** habitus; **b.** epigyne

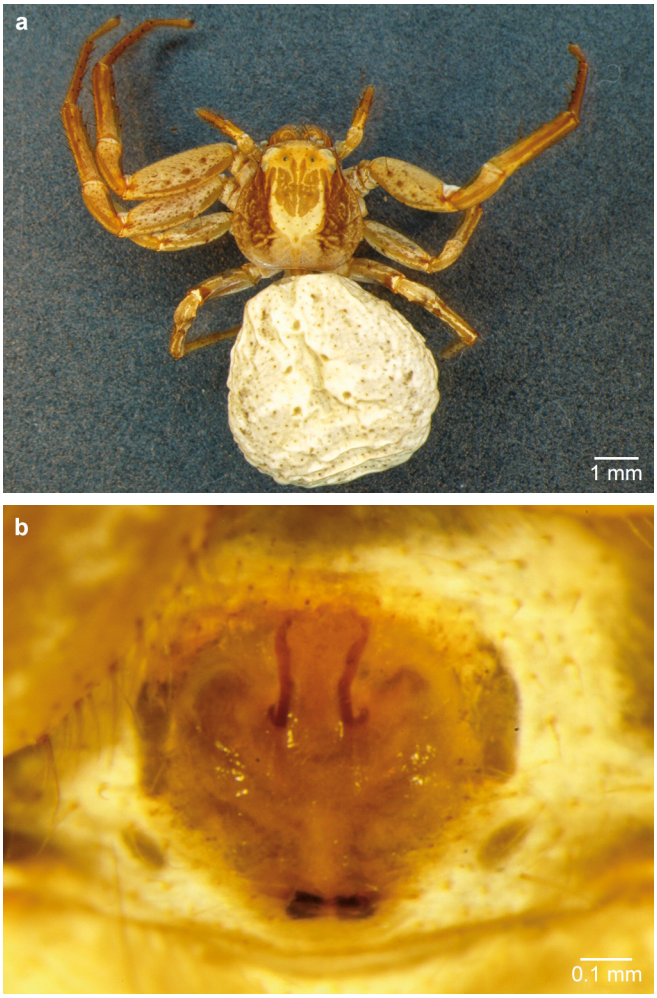

Fig. 9: *Xysticus thessalicus*, female from Taygetos. **a.** habitus; **b.** epigyne

2009); or locating a bird, *Numenius tenuirostris* Vieillot, 1817, in the collection of the NMPC, now apparently an extinct species in Poland (Mlíkovský 2007).

The species composition of the spiders reflects the collecting method, general collecting effort and timing of the expeditions. As these were organized primarily for collecting vertebrates (reptiles) and insects during spring, and spiders were thus only collected as a "by-product", only a restricted number of spider groups are represented. First, relatively large-bodied species that are unmissable and easy to collect during the day (e.g. large araneids, lycosids, sparassids or gnaphosids). Second, species that were collected by commonly used entomological collecting methods, e.g. sweeping (spiders dwelling on grass and shrubs, e.g. salticids, thomisids, linyphiids). Third, cave species that, despite their smaller size, were not overlooked during a presumably detailed investigation of these specific areas (e.g. nesticids or a blind *Troglohyphantes* juvenile from the Nausa Cave, that was, however, along with other unidentifiable juveniles, excluded from the text). On the other hand, species inhabiting other biotopes (e.g. the ground or canopies), night-active species (that could have been collected by pitfall traps or by hand during the night) or species occurring in autumn are largely underrepresented. Despite this "methodological bias", the sampled species still contribute to the faunistics of Greece and again underline the importance of natural history collections.

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