

CONTRIBUTION TO THE KNOWLEDGE OF THE PORTUGUESE SPIDER (ARACHNIDA: ARANEAE) FAUNA: SEVEN NEW ADDITIONS TO THE PORTUGUESE CHECKLIST

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Abstract: Several collections of arthropod samples revealed the existence of 7 new spider species to the Portuguese continental territory. These are: *Singa hamata* (Clerck, 1757), *Zelotes criniger* Denis, 1937, *Philodromus bistigma* Simon, 1870, *Marpissa nivoyi* (Lucas, 1846), *Theridiosoma gemmosum* (L. Koch, 1877), *Zodarium costablancae* Bosmans, 1994 and *Zora parallela* Simon, 1878. The data on the species' enlarged distribution is presented, along with collecting methods and drawings of the species copulatory structures.

Key words: Araneae, Portugal, checklist.

Contribución al conocimiento de las arañas portuguesas (Arachnida: Araneae): siete nuevas adiciones a la checklist de Portugal.

Resumen: Varias colecciones de trampas para artrópodos han revelado la existencia de siete nuevas especies para la fauna de Portugal continental. Ellas son: *Singa hamata* (Clerck, 1757), *Zelotes criniger* Denis, 1937, *Philodromus bistigma* Simon, 1870, *Marpissa nivoyi* (Lucas, 1846), *Theridiosoma gemmosum* (L. Koch, 1877), *Zodarium costablancae* Bosmans, 1994 y *Zora parallela* Simon, 1878. Se presentan también los datos de distribución general de las especies, los métodos de captura empleados y la ilustración de los órganos copuladores.

Palabras clave: Araneae, Portugal, checklist.

Introduction

The Portuguese spider fauna is still poorly known. Only two persons dedicated themselves to spiders before the 1990's; Amélia Bacelar started to build a checklist (Bacelar, 1927a, 1927b, 1928, 1933, 1935, 1936, 1940) and this work was continued later by António de Barros Machado (Machado, 1937, 1941, 1949), who not only added known species to the list, but also described new spider species. Since then, there was no relevant arachnological work in Portugal; apart from occasional reports like those in Alderweireldt & Bosmans, 2001, Silva, 2004 or Gouveia, 2004, the only intensive sampling studies were made by Pedro Cardoso (1998a, 2004, Cardoso *et al.*, 2007, (in press), 2008b, Pekár & Cardoso, 2005, Pekár *et al.*, 2003). This author has compiled all available data in an online checklist (Cardoso, 2008). This work is an attempt to provide more information to that checklist. Species naming is according to Platnick (2008).

Results

Family Araneidae

Singa hamata (Clerck, 1757) (Fig. 1)

MATERIAL: 5 males and 1 female, 10.IV.2006, sweep netting; 1 female, 3.V.2006, sweep netting; 1 male, 17.V.2006, sweep netting; 1 male, 24.V.2006, sweep netting; 2 females, 2.VII.2006, sweep netting; 19 males and 46 females, 11.V.2008, direct hand collecting, sweep netting and tree beating. All specimens are held in the author's personal collection. All specimens were found at the Paúl de Arzila Natural Reserve (UTM coordinates 29TNE38), near a small river. **DISTRIBUTION:** The species has a widespread distribution throughout the palearctic region. It was cited 5 times from Spain (Morano & Cardoso, 2008) but it was the first time to

be collected in Portugal. Its presence was, therefore, expected.

COMMENTS: The vast majority of the specimens observed were close to a river, which goes in agreement with the habitat description on the popular field guide by Roberts (1995), where it is found on "low vegetation in damp habitats..."

Family Gnaphosidae

Zelotes criniger Denis, 1937 (Fig. 2)

MATERIAL: 1 male, 28.V.2008, pitfall trap, Nisa (29SPD17), olive culture. The specimen is held in the IMAR-Coimbra Interdisciplinary Center spider collection. **DISTRIBUTION:** This species was only cited twice: from Algeria (Denis, 1937) and Italy (Di Franco, 1987). This greatly enlarges the known distribution of this species to the west, which makes it likely to occur in other countries of the Mediterranean region.

Family Philodromidae

Philodromus bistigma Simon, 1870 (Fig. 3)

MATERIAL: 12 males and 1 female, Spring 2004, modified Schoenly trap for the capture of fauna associated with carrion; 1 male and 1 female, 2.VI.2005, direct hand collecting. All specimens are held in the author's personal collection. All specimens were found at the Botanical Garden of Coimbra, Coimbra (UTM coordinates 29TNE45), in a mixed woodland.

DISTRIBUTION: The species has a widespread distribution throughout the mediterranean basin (Muster *et al.*, 2007) and its presence in Portugal was expected. It is also the first record in the Iberian Peninsula (Urones, 1995).

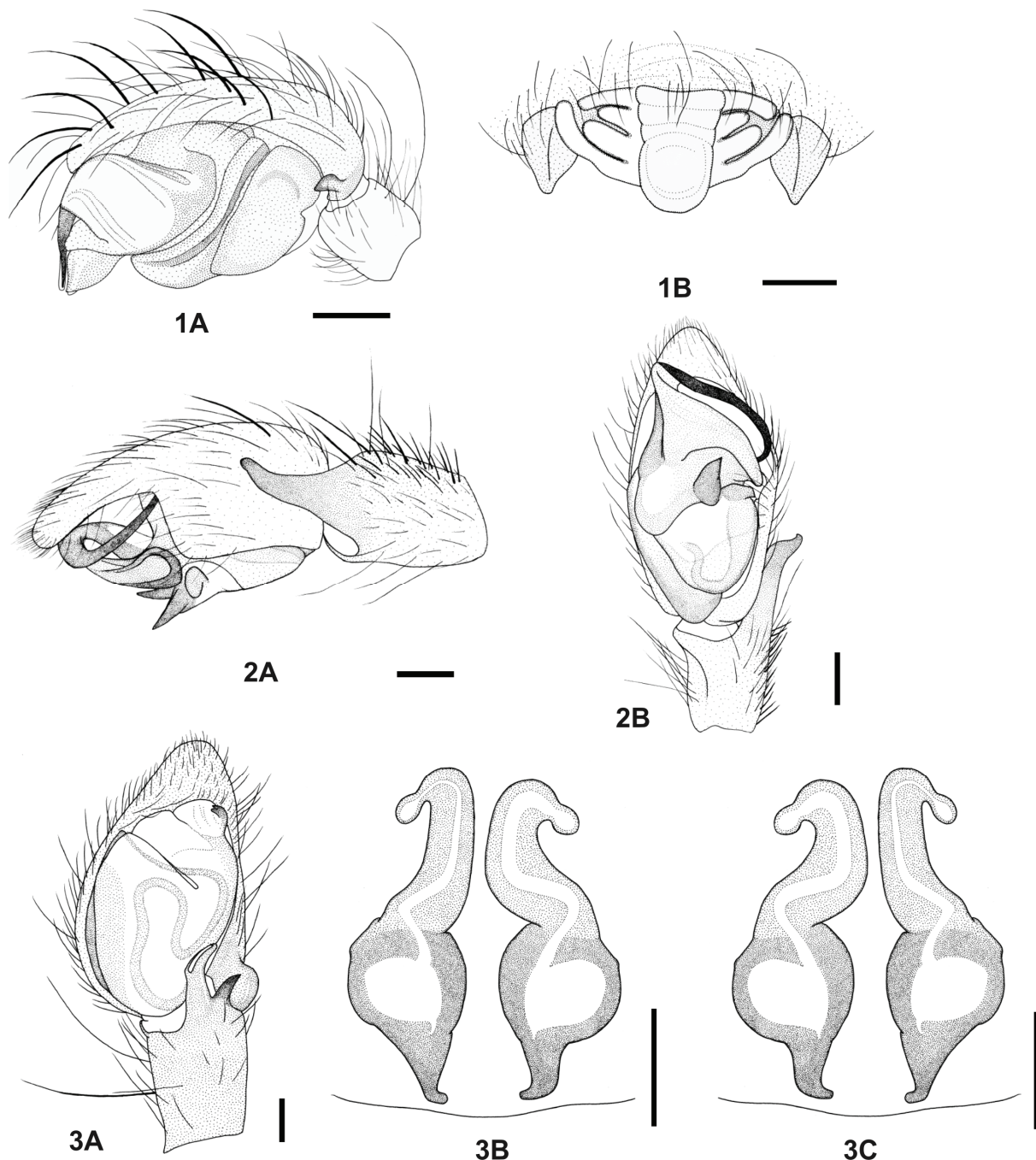


Fig. 1. *Singa hamata*; A: left palp, retrolateral; B: epigynum, ventral (scale bars: 0,18 mm). **Fig. 2.** *Zelotes criniger*; A: left palp, retrolateral; B: left male palp, ventral (scale bars: 0,1 mm). **Fig. 3.** *Philodromus bistigma*; A: left male palp, ventral; B: epigynum, ventral (hairs omitted); C: vulva, dorsal (scale bars: 0,1 mm).

COMMENTS: In the paper from Muster (Muster *et al.*, 2007) the ventral branch of the tibial apophysis (commonly abbreviated as VTA) is depicted with a blunt rounded tip (page 48, figure 10) which is different from the picture presented on the same publication (page 58, picture 46), which shows a clearly sharpen VTA; all the male specimens analyzed had a sharpen VTA. It is possible that there could be a mistake on the previously referred publication, in what refers to the male palp VTA. Females matched to the drawings and pictures on the same publication, with some degree of variation in the shape of the copulatory ducts. Regarding the abdominal pattern, the pair of two white patches in the posterior half characteristic of the species is present, as well as the smaller white spots along the flanks; some degree of varia-

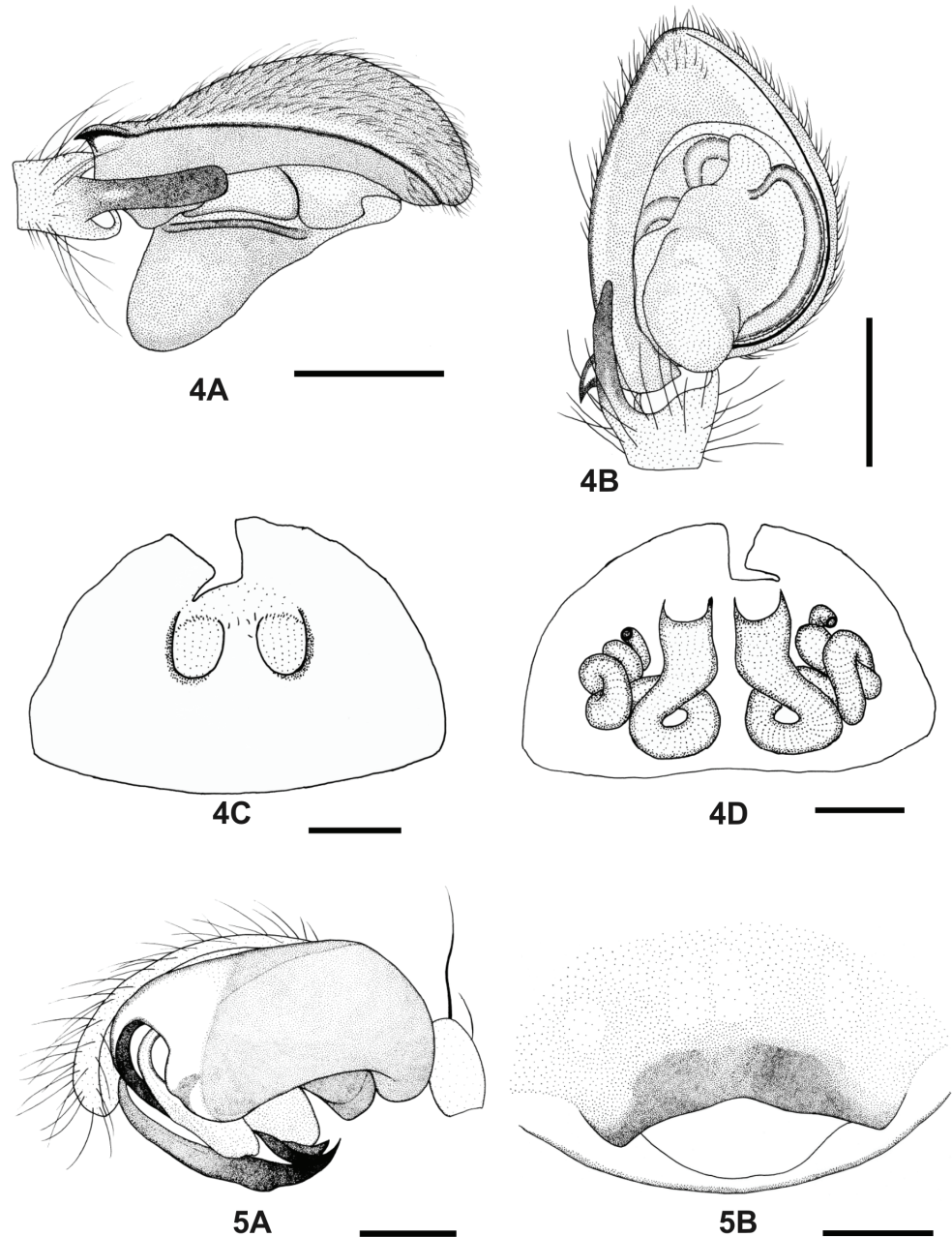
tion is present in some darker males, in which the white spots along the flanks are barely visible and the white patches are smaller than usual.

Family Salticidae

Marpissa nivoyi (Lucas, 1846) (Fig. 4)

MATERIAL: 1 male, 6.XI.2005, direct hand collecting; 2 females, 20.XI.2005, sweep netting; 1 male, 18.XII.2005, sweep netting; 2 females, 10.IV.2006, sweep netting; 1 female, 24.V.2006, sweep netting; 1 males, 11.V.2008, sweep netting. All specimens are held in the author's personal collection. All specimens were found at the Paúl de Arzila Natural Reserve (UTM coordinates 29TNE38), near a small river.

Fig. 4. *Marpissa nivoyi*; A: left male palp, retrolateral; B: left male palp, ventral (scale bars: 0,25 mm); C: epigynum, ventral; D: vulva, dorsal (scale bars: 0,09 mm). **Fig. 5.** *Theridiosoma gemmosum*; A: left male palp, retrolateral (scale bar: 0,18 mm); B: epigynum, ventral (scale bar: 0,045 mm).



DISTRIBUTION: The species has a widespread distribution throughout the palearctic region. However, it is not a common species in the Iberian Peninsula, since it was only caught once from Spain (Morano & Cardoso, 2008).

COMMENTS: Roberts (1995) stated that this species is present in marshy areas and this finding confirms that statement.

Family Theridiosomatidae

Theridiosoma gemmosum (L. Koch, 1877) (Fig. 5)

MATERIAL: 1 male, 25.IV.2006, sweep netting; 1 female, 03.V.2006, sweep netting; 1 female, 17.V.2006, sweep netting; 3 males and 1 female, 11.V.2008, sweep netting. All specimens are held in the author's personal collection. All specimens were found at the Paúl de Arzila Natural Reserve (UTM coordinates 29TNE38), near a small river. **DISTRIBUTION:** The species has a nearly holarctic distribution (Platnick, 2008) so its occurrence in Portugal is not surprising.

COMMENTS: In Roberts's (1995) it is said that the spider is

found in low vegetation in damp habitats, and this finding supports that statement.

Family Zodariidae

Zodarion costablancae Bosmans, 1994 (Fig. 6)

MATERIAL: 3 males, 31.V.2006, pitfall trap, held in Stano Pekár's personal collection, oak forest; 17 males and 6 females, 28.V.2008, pitfall trap, meadow, held in the author's personal collection. All specimens were found at the Paúl de Arzila Natural Reserve (UTM coordinates 29TNE38).

DISTRIBUTION: The distribution of this species now extends to the West, since it was only known from 4 localities in Eastern Spain (Bosmans, 1994). This finding came as a surprise since this species wasn't expected to be found, especially if we consider that the species considered the closest to *Z. costablancae*, *Z. machadoi* Denis, 1939, has a type locality much closer to the Paúl de Arzila Natural Reserve (Vila do Conde, Oporto district) than that of *Z. costablancae* (Elche, Alicante).

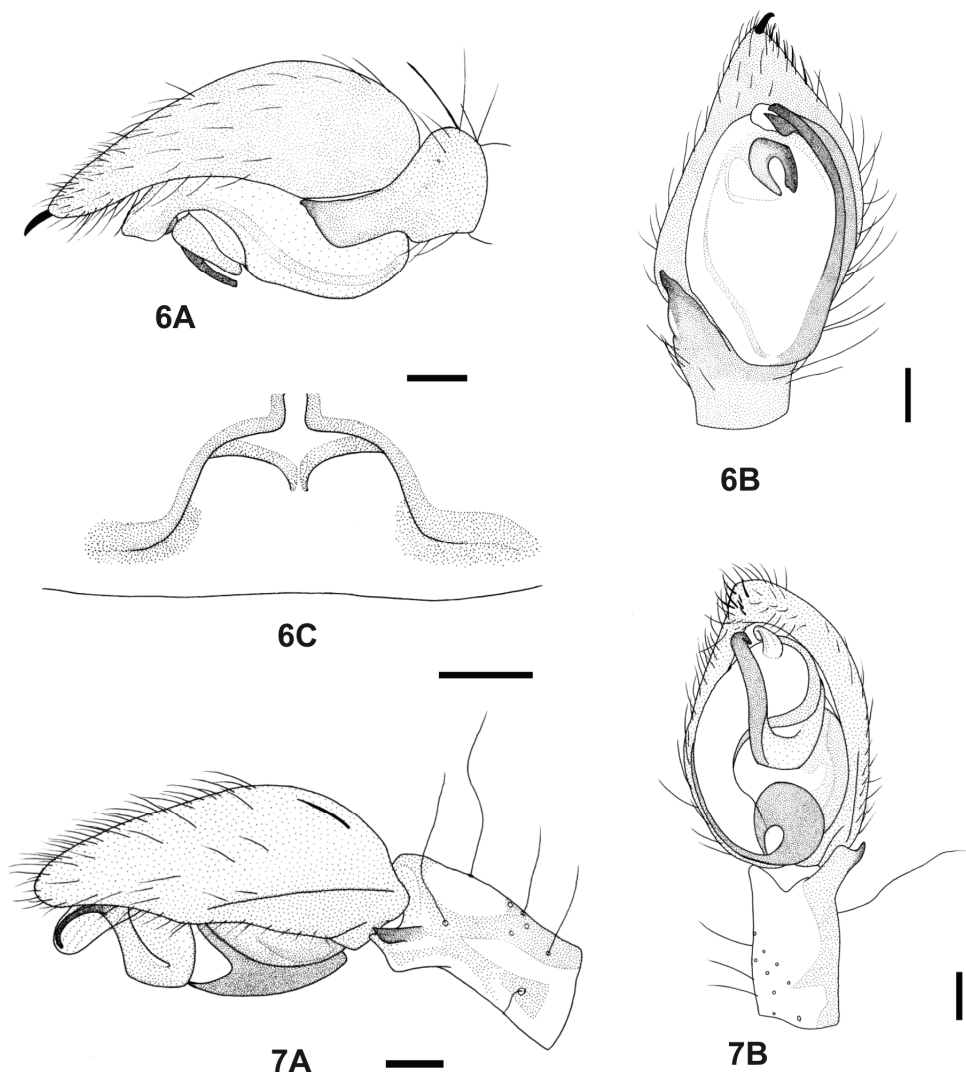


Fig. 6. *Zodarion costablancae*; A: left male palp, retrolateral; B: male palp, retrolateral; C: epigynum, ventral (hairs omitted) (scale bars: 0,1 mm).

Fig. 7. *Zora parallela*; A: left male palp, retrolateral; B: male palp, ventral (scale bars: 0,1 mm).

Family Zoridae

Zora parallela Simon, 1878 (Fig. 7)

MATERIAL: 1 male, 4.IV.2008, direct hand collecting, meadow. Found near the Paúl de Arzila Natural Reserve (UTM coordinates 29TNE38). The specimen is held in the author's personal collection.

DISTRIBUTION: According to Platnick (2008) this species is found throughout Europe and Russia; however, it is not a common species in the Iberian Peninsula (Urones, 2005; Morano & Cardoso, 2008) since only 3 records are set, being 1 one of them from Simon and the other 2 from very close sites. This extends to the west the known distribution of this species.

COMMENTS: The distinctive dorsal pattern of the species matches that depicted by Urones (2005); however, the same author omitted the translucent conductor in the male palp, structure which is represented in figures 7A and 7B.

Acknowledgements

The author would like to thank to: Sérgio Henriques, Harith Morgadinho and Rui Carvalho for all the help while collecting at the Paúl de Arzila Natural Reserve; to Lino Nossa, who allowed us to sample in the previously referred site; to Ana Cristina Rufino and

Catarina Prado e Castro for allowing me to access their Masters thesis samples; to Stano Pekár for the identification of *Z. costablancae* and comments on earlier versions of this manuscript; and finally, to Pedro Cardoso, for the comments and review of the manuscript.

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