

New records of spiders (Araneae) from Portugal

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Abstract. Data about spiders collected in Portugal are presented. Two new species are described, *Scotophaeus dolanskyi* **spec. nov.** (Gnaphosidae) and *Apostenus crespoides* **spec. nov.** (Liocranidae). Three species are recorded for the first time in Portugal: *Dysdera lata* Wider, 1834 (Dysderidae), *Scotophaeus validus* (Lucas, 1846) and *Euophrys nigripalpis* Simon, 1937 (Salticidae). Illustrations of two rarely illustrated species are also presented: *Nigma hortensis* (Simon, 1870) (Dictynidae) and *Canariphantes zonatus* (Simon, 1884) (Linyphiidae).

Keywords: *Apostenus*, *Euophrys*, Gnaphosidae, Liocranidae, new species, *Nigma*, *Scotophaeus*, taxonomy

Zusammenfassung. Neue Spinnennachweise (Araneae) aus Portugal. Es werden Daten von Spinnenaufsammlungen aus Portugal vorgestellt. Zwei neue Arten werden beschrieben, *Scotophaeus dolanskyi* **spec. nov.** (Gnaphosidae) und *Apostenus crespoides* **spec. nov.** (Liocranidae). Drei Arten werden erstmals für Portugal nachgewiesen, *Dysdera lata* Wider, 1834 (Dysderidae), *Scotophaeus validus* (Lucas, 1846) und *Euophrys nigripalpis* Simon, 1937 (Salticidae). Abbildungen zweier weiterer seltener Arten werden präsentiert, *Nigma hortensis* (Simon, 1870) (Dictynidae) und *Canariphantes zonatus* (Simon, 1884) (Linyphiidae).

The spider fauna of Portugal currently includes 812 species (Nentwig et al. 2017) and is still incompletely known. This study deals with a small sample of spiders from mainland Portugal collected by the author, additional small samples were made available by Jan Dolanský from the East Bohemian Museum in Pardubice, Czech Republic and Jorge Alexandre Mota de Almeida from the University of Coimbra, Portugal. Among the combined material (133 species, 239 specimens – see Supplementary File 1) two species are new to science and three others new to Portugal. The aim of this study is to describe the new species, to present details of species recorded in Portugal for the first time and to provide illustrations of two rarely illustrated species.

Material and methods

Spiders were collected by hand, by shaking vegetation or by brushing stones above a tray. Illustrations were created from photos of selected features using a Leica Wild M10 stereomicroscope fitted with a Leica DFC425 digital camera or a Leica 205 stereomicroscope fitted with a Leica DFC450 digital camera. The microscopes were connected to computers with Leica Application Suite software, Zerene Stacker software and the vector graphics editor Inkscape.

The following abbreviations are used in the text:

- AER = anterior eye row
- ALE = anterior lateral eyes
- AME = anterior median eyes
- CJL = collection Jørgen Lissner
- NHMD = Natural History Museum of Denmark
- PER = posterior eye row
- PLE = posterior lateral eyes
- PME = posterior median eyes.

Taxonomy

Nigma hortensis (Simon, 1870) (Dictynidae) (Figs 1-2)

Dictyna hortensis Simon 1870: 296 (without figures)

Previous records from Portugal were compiled by Morano et al. (2014)

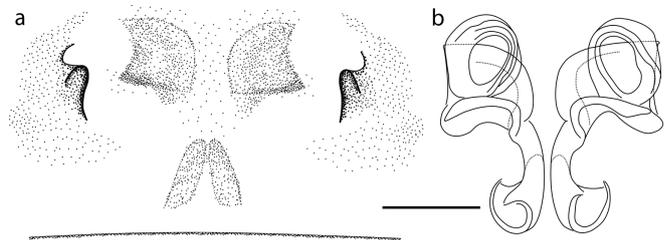


Fig. 1: *Nigma hortensis* (Simon, 1870): **a.** epigyne in ventral view (hairs removed); **b.** vulva in ventral view. Scale bar 0.1 mm

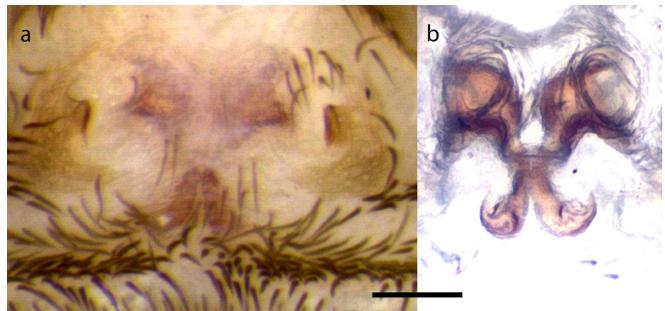


Fig. 2: *Nigma hortensis* (Simon, 1870), photos: **a.** epigyne in ventral view (hairs removed); **b.** vulva in ventral view. Scale bar 0.1 mm

Material examined. PORTUGAL, Viseu, Silgueiros, Póvoa Dão (N40°32'56", W7°56'37"), mixed forest with clearings (230 m), 29.IV.2007, 1 ♀ leg. Jorge Mota Almeida (CJL-4241).

Comments. The species is known from Portugal, Spain, France, Italy and Algeria (Nentwig et al. 2017). The male palp has been depicted by Barrientos & Ferrández (1982), Simon (1914) and Wunderlich (2011), but apparently the epigyne was never illustrated. The female here is matched with *N. hortensis* as it is similar to photos of the epigyne made available by Oger (2017). This site presents photos of the male palp, female epigyne and vulva from a male and a female collected together. The lateral plates are much reduced compared to those of *Nigma puella* (Simon, 1870), notched and widely separated (Figs 1a, 2a). They are practically invisible unless the dense clothing of hairs in the epigynal area is scraped off. In the illustrated specimen parts of the vulva is visible through the integument (Fig. 2a). The vulva is illustrated in Fig. 1b

based on the photo in Fig. 2b. The copulatory openings are only clearly visible in a detached epigyne/vulva.

***Dysdera lata* Reuss, 1834** (Dysderidae)

Dysdera lata Reuss 1834: 196 (without figures)

Material examined. PORTUGAL, Lisbon, Santa Maria Maior, near Castelo de São Jorge (N38°42'53", W9°8'3.4"), lot with weeds and bushes (60 m), 12.III.2014, 1 juvenile ♂ (matured in captivity around Oct. 10, 2014), leg. Jørgen Lissner (CJL-9913).

Comments. New to Portugal. A juvenile male was found in a vacant lot adjacent to Castelo de São Jorge in the centre of Lisbon. It matured in captivity. According to Kovblyuk et al. (2008) *D. lata* differs from the closely related *D. westringi* O. Pickard-Cambridge, 1872 by having the flattened bulbus furnished with 3-7 teeth (*D. westringi* has no teeth on it). The hitherto westernmost locality for *D. lata* was Majorca (Bosmans et al. in press) but the new record from the present study extends the known range about 1000 km to the west. The identification was confirmed by Miquel Arnedo, University of Barcelona, Spain.

***Scotophaeus dolanskyi* Lissner spec. nov.**

(Gnaphosidae) (Figs 3-5)

Etymology. The species is dedicated to the collector of the species, the outstanding arachnologist, Jan Dolanský, with whom I am very honoured to collaborate with.

Type material. PORTUGAL: Beja, Moura, Sobral da Adiça (N37°58'40", W7°17'39"), holotype ♂, forest steppe/maquis (350 m), 27.III.2013 (specimen matured in captivity Aug. 22, 2013), Jan Dolanský leg., CJL-9049, deposited at NHMD.

Diagnosis. The three-pointed tibial apophysis readily separates the new species from other European *Scotophaeus* species for which males are known. It is possible that the new species is the unknown male of either *S. retusus* (Simon, 1878), *S. aculeatus* Simon, 1914, *S. brolemanni* Simon, 1914 or *S. fabrisae* Caporiacco, 1950. Only the former species has been recorded in Portugal while the three latter are known from France or Italy. Since this a poorly known genus the differences of the new species to other European and Macaronesian species are elaborated in the comments section.

Description of male

Measurements (n=1), body length 5.9, carapace length 2.7, width 2.1.



Fig. 3: *Scotophaeus dolanskyi* Lissner spec. nov. Habitus of male. Inset: close-up of eye configuration

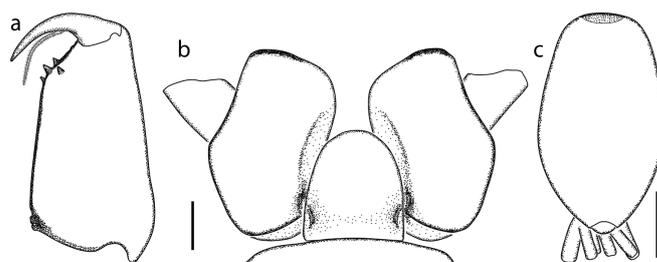


Fig. 4: *Scotophaeus dolanskyi* Lissner spec. nov.: a. right chelicera in posterior view showing positions of teeth on pro- and retromargin; b. mouthparts; c. opisthosoma in dorsal view showing extent of the scutum. Scale bars a., b. 0.2 mm; c. 1 mm

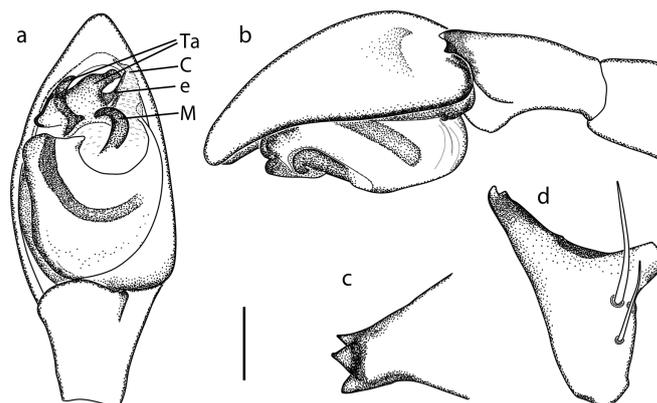


Fig. 5: *Scotophaeus dolanskyi* Lissner spec. nov. a. left male palp in ventral view; b. same in retrolateral view; c. apex of male palp tibial apophysis in retrolateral (viewed slightly from above); d. same in dorsal view. Scale bars a., b. 0.25 mm; c. 0.2 mm; d. 0.1 mm. Ta = Terminal apophysis with two hook-like projections, C = conductor, e = embolus, M = median apophysis

Colour. General appearance as in Fig. 3. Carapace yellow brown, not darkened at margins, densely covered with simple hairs appearing whitish in flash photography of live specimen (Fig. 3), but greyish-brown in alcohol preserved specimen.

Prosoma. Fovea distinct. Eye group relatively compact for a *Scotophaeus* (Fig. 3, inset). Median eyes larger than laterals, AME largest (0.17) and distinctly ringed with black. PME (0.14) slightly oblique, PLE (0.14), ALE (0.15). PER strongly procurved as seen in dorsal view, AER slightly recurved and not as wide as PER. Height of clypeus equal to half the diameter of an anterior median eye. Edge of clypeus with a row of strong setae. Maxillae narrowed at middle, converging in front of labium, lateral sides concave in anterior half (Fig. 4b). Labium spatulate, slightly longer than wide. Chelicerae with three discrete teeth on promargin and one on retromargin (Fig. 4a). A modified plumose seta, slightly swollen corresponding to type (b) in Murphy (2007, p. 30), emerges from near the base of the fang (Fig. 4a). Leg formula IV-I-II-III. Legs spinose. Scopulae rather weakly developed, very similar to those of *S. blackwalli*.

Opisthosoma. Elliptical, covered with mousy grey pubescence. Scutum short, hardly reaching dorsum of opisthosoma (Fig. 4c). Brachiate setae appear completely absent, including on the rim of the anterior lateral spinnerets, but here with a slightly swollen plumose seta corresponding to type (b) in Murphy (2007).

Male palp. With a short tibial apophysis, the tip has three pointed processes when seen in retrolateral view and slightly from above (Figs. 5b-d). Only basal part of the retrolateral tibial apophysis is visible in ventral view (Fig. 5a). Palpal bulb

with a hooked median apophysis. Terminal apophysis consists of a large sclerite with two hook-like outgrowths. Embolus appears to arise from a broadened base, becoming thin and straight toward apex. The embolus is nearly hidden by a membranous conductor in ventral view, in retrolateral view it is invisible.

Comments. The new species belongs to the *Echemus* group of gnaphosid genera due to a plain-coloured opisthosoma and presence of a scutum in the male. Among the *Echemus* group genera it fits best within *Scotophaeus* Simon, 1893. This genus is characterized by a procurved PER, a palp with a hook-like median apophysis and without a broadened embolar base, endites narrowed in the middle and concave retrolaterally, a sternum with short sclerotized extensions to and between the coxae and absence of brachiate setae (Almquist 2006, Murphy 2007, Platnick & Shadab 1977). The new species meets these requirements except for the embolar base which appears broadened and for the reduced sclerotized extensions to the middle of the coxa, only the ones between the coxae are distinct. The species may need transfer to another genus, but this should await description of the female. The broadened embolar base, the indistinct sclerotized extensions to the coxae, the compact eye group and the presence of a long seta originating near base of the fang may prevent this species from being encompassed by *Scotophaeus*.

Conspicuity with the following species can be excluded based solely on the shape of the tibial apophysis and extent of scutum. *Scotophaeus blackwalli* (Thorell, 1871), *S. blackwalli isabellinus* (Simon, 1873), *S. scutulatus* (L. Koch, 1866) and *S. nanoides* Wunderlich, 2011 possess a single pointed tibial apophysis, as opposed to the three-pointed one in the new species. Regarding other European species, the tibial apophysis also differs from that of *S. musculus* (Simon, 1878) the latter having parallel sides and terminating in a small, sharp point curved at the apex like a crochet hook (Simon 1914: fig. 269, Schenkel 1938: fig. 1). *Scotophaeus musculus* is known from Madeira and France (World Spider Catalog 2017), but also mainland Portugal (Silva 2017) and the Selvagens Islands (= Savage Islands) (Crespo et al. 2009). *Scotophaeus validus* (Lucas, 1846) is widely distributed in the Mediterranean region. This species has a single pointed tibial apophysis and quite different palp structures according to illustrations in Simon (1914). Also the scutum of the male covers nearly the anterior half of the opisthosoma in this species (Simon 1914), much longer than in the male described here. *Scotophaeus westringi* Simon, 1914 is known from France only (World Spider Catalog 2017), the male has a different, single pointed tibial apophysis (Simon 1914). The new species also differs from the four species known to occur in the Macaronesian archipelagos by the shape of the tibial apophysis or the extent of the abdominal scutum. *Scotophaeus bifidus* Schmidt & Krause, 1994 is known from the Cape Verde Island of Sal has a distinct Y-shaped bifurcate tibial apophysis (Schmidt & Krause 1994), *S. insularis* Berland, 1936 and *S. jacksoni* Berland, 1936 are also known from the Cape Verde Islands, males of both species with a single-pointed tibial apophysis (Berland 1936). *Scotophaeus hierro* Schmidt, 1977 known from the Canary Islands has a very long scutum (Schmidt 1977), while that of the new species described here is very short. The genus holds several additional but poorly described species some of which only known from females (World Spider Catalog 2017).

***Scotophaeus validus* (Lucas, 1846) (Gnaphosidae)** (Figs 6–8)
Drassus validus Lucas 1846: 213, pl. 12, f. 10.

Material examined. PORTUGAL: Beja, Moura, Sobral da Adiça (N37°58'40", W7°17'39"), 1 ♀, forest steppe/maquis (350 m), 27.III.2013, Jan Dolanský leg., CJL-8794; SPAIN: Majorca, La Palma, Castillo de San Carlos (N39°32'47", W2°37'17"), 1 ♀, pine grove, 16 m a.s.l., 29.IV.2014, J. Lissner leg., CJL-9872.

Comments. *Scotophaeus validus* is known from Southern Europe, Morocco and Algeria (World Spider Catalog 2017), but is new to Portugal. Illustrations and photographs of the epigyne and vulva are presented in Figs. 6–8 and are compared to a specimen from Majorca. The epigyne of the Portuguese specimen is larger and more strongly sclerotized than that of the Majorcan specimen. The vulva has spermathecae bearing terminal bulbs (Fig. 8) characteristic of *Scotophaeus* females (Platnick & Shadab 1977). The build of the vulva and epi-

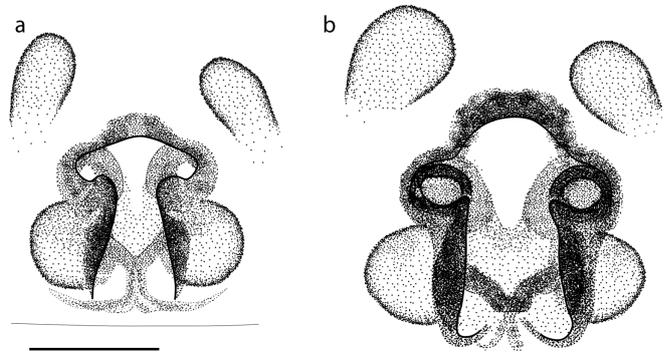


Fig. 6: *Scotophaeus validus* (Lucas, 1846). **a.** epigyne in ventral view (specimen from Majorca); **b.** specimen from Portugal. Scale bar 0.2 mm

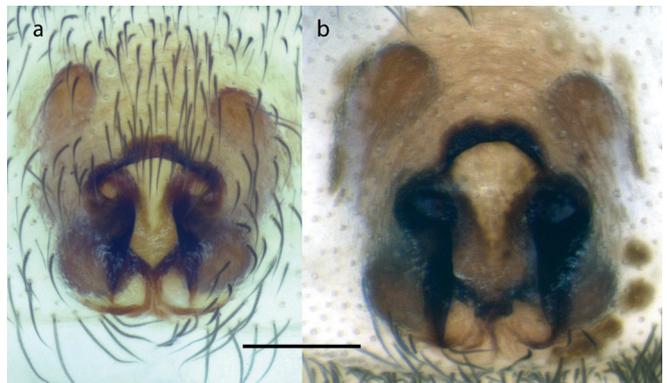


Fig. 7: *Scotophaeus validus* (Lucas, 1846). **a.** epigyne in ventral view (specimen from Majorca); **b.** specimen from Portugal. Scale bar 0.2 mm

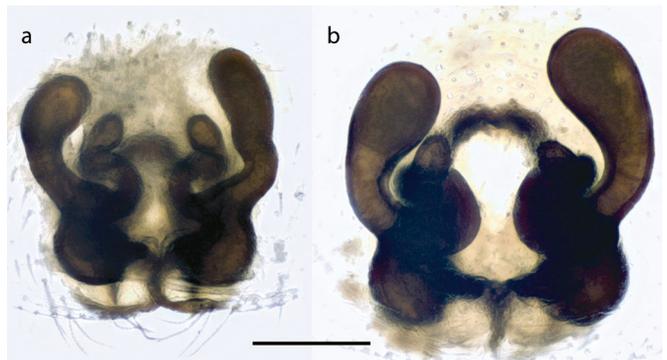


Fig. 8: *Scotophaeus validus* (Lucas, 1846), vulva in dorsal view. **a.** specimen from Majorca; **b.** specimen from Portugal. Scale bar 0.2 mm

gyne are nearly the same for the Portuguese and Majorcan specimens with the proportion of the structures showing only minor variation, also in dark parts of the vulva with dense sclerotizations not well presented in Fig. 8. Further images of *S. validus* epigynes are available from Oger (2017), also showing variation in the depth of sclerotization and minor variation in proportions. As a female belonging to this species was found at the same locality as the male of *S. dolanskyi* sp. n. described above, potential conspecificity was carefully considered and the two specimens were compared side by side. They differ in the configuration of eyes, being more compact in *S. dolanskyi* sp. n. Relative to *S. validus*, *S. dolanskyi* sp. n. has a distinctly less elongate sternum, distinctly shorter maxillae compared to their width (in *S. validus* they are nearly twice as long as wide, compare to fig. 4b), cheliceral dentation (only two, relatively smaller promarginal teeth are present in *S. validus*, none on the retromargin), indistinct extensions to the coxae, and more spinose legs. Also, two species with similar epigynes would not be expected to possess very different male palps.

Apostenus crespoides Lissner spec. nov. (Liocranidae)

(Figs 9–11)

Etymology. The species is named in honour of Luís Carlos da Fonseca Crespo in recognition of his work with Iberian and Macaronesian spiders.

Type material. PORTUGAL: Setúbal, Arrábida near Azeitão (N38°30'53", W8°59'42"), holotype ♀, rocky limestone steppe/maquis (195 m), 8.III.2014, Jørgen Lissner leg., CJL-9645, deposited at NHMD.

DNA Barcoding. The specimen was barcoded with a sequence of 658 bp obtained from the cytochrome *c* oxidase region (Barcode of Life Data System, Process ID: GRE-AR057-17; Sample ID: NHMD-JL-9645). Public barcode data for comparison are at present only available from one congener, *A. fuscus* Westring, 1851, which is not a particularly close relative with similarity % ranging from 93.5 % to 94.0 % (The Barcode of Life Data Systems 2017).

Diagnosis. The new species most closely resembles *Apostenus humilis* Simon 1932 and *A. maroccanus* Bosmans, 1999 based on build of the epigyne/vulva. Both species possess a median septum according to illustrations in Bosmans (1999) and Bosselaers (2009); such a septum was not observable for *A. crespoides* sp. n. *Apostenus algericus* Bosmans, 1999 is only known from the male, but is closely related to its other north African congener as judged by their fairly similar male palps, thus it

could be expected that the female of this species also possesses a septum.

Description of female

Measurements (n=1), body length 3.32, carapace length 1.19, width 0.95.

Colour. When alive this is a bright reddish-orange species with distinct abdominal chevrons and with indistinct leg annulations (Fig 9). Margin of carapace not darkened. Carapace with transparent hairs, in posterior half also some blackish ones. Dorsum of opisthosoma with scattered whitish hairs (Fig. 9), the whiteness augmented by flash photography and they may just be transparent hairs positioned at an angle reflecting flashlight. Dorsum, sides and venter with transparent hairs of various lengths and thicknesses, the thicker ones slightly swollen and plumose similar to hairs depicted in Ubick & Vetter (2005, f. 17). Colours of carapace and legs fade to yellow-brown in alcohol except for the dark-brown fovea, the very faint brown reticulations and the annulations of the legs becoming indiscernible. The darker parts of the opisthosoma including the chevrons remain brown, but the transverse orange bands lose their orange colour and become pale. Remaining description of colours refer to alcohol preserved specimen. Chelicerae and sternum yellow-brown. All eyes ringed with black. Tibiae, metatarsi and tarsi slightly darker than coxae, trochanter and femora. Venter of opisthosoma with a pale median band.

Prosoma. Carapace smooth with a narrow, protruding head. Eyes in a compact group and of normal size. PME separated by a little more than half a diameter, the sockets of the remaining eyes touching. Eyes of PER equal in size, larger than the AME but smaller than ALE. Eye sizes (lenses): AME 0.047, ALE 0.077, PME 0.064, PLE 0.061; interdistances: AME-AME 0.028, AME-ALE 0.016, PME-PME 0.069, PME-PL 0.053, ALE-PL 0.060, width of eye rows: AER 0.284, PER 0.353. Clypeus low about 0.5 the diameter of an AME. Labium shaped like a triangle with rounded corners, more than 1.5 times wider than long, slightly less than half the length of the endites. The latter are rectangular with rounded corners, about 1.5 times longer than wide. Cheliceral promargin with three minute, discrete teeth, retromargin with two small discrete teeth. Sternum scutiform, projecting between coxae IV.

Opisthosoma. Elongate oval, with four chevrons, densely covered with hairs, however those of the dorsum all fallen off in alcohol-preserved specimen, the hairs clearly visible in photo of live specimen (Fig. 9). Spinnerets are obscured by dense hairs, but seem similar to those of *A. californicus* which are well described and complemented with SEM images in Ubick & Vetter (2005).

Legs. Femur I-II with two macrosetae in dorsal midline, III-IV with three. Femur I with additional strong prolateral mac-



Fig. 9: *Apostenus crespoides* Lissner spec. nov. Habitus of female

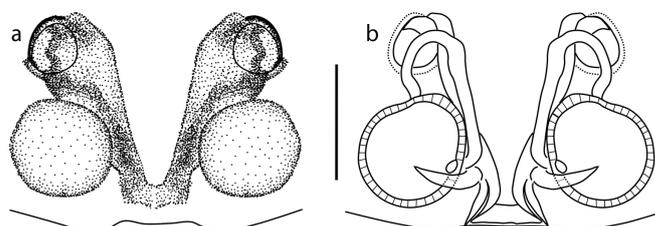


Fig. 10: *Apostenus crespoides* Lissner spec. nov. a. Epigyne in ventral view; b. vulva in dorsal view. Scale bar 0.1 mm

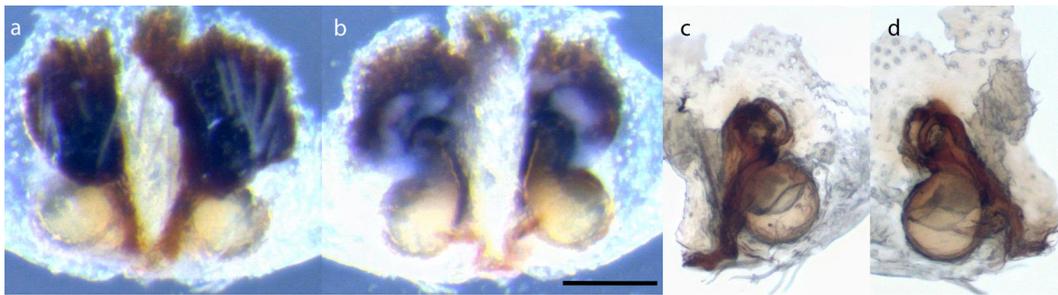


Fig. 11: *Apostenus crespoi* Lissner **spec. nov.** **a.**, **c.** epigyne in ventral view; **b.**, **d.** vulva in dorsal view. **a.**, **b.** with copulatory openings clogged by exudates obscuring anterior parts; **c.** one half-side of cleaned epigyne; **d.** one half-side of cleaned vulva. Scale bar 0.1 mm

rosetae and two ventral macrosetae one of which is strong and light brown, second is thinner and black. Femur III and IV also with an additional prolateral macroseta in distal position and two ventral-prolateral macrosetae, also in distal positions. Patella I and II without macrosetae, III and IV each with a dorsal macroseta in distal position. Tibia I and II with five pairs of ventral macrosetae, Mt I and II with three pairs. Leg measurements (coxa, femur, patella, tibia, metatarsus, tarsus): Leg I: 3.6 (0.32 + 0.92 + 0.49 + 0.73 + 0.62 + 0.48), Leg II: 3.4 (0.30 + 0.84 + 0.47 + 0.74 + 0.62 + 0.51), Leg III: 3.5 (0.39 + 0.83 + 0.41 + 0.66 + 0.68 + 0.54), Leg IV: 4.9 (0.29 + 1.10 + 0.52 + 0.99 + 0.99 + 0.97). Leg formula 4132, legs I-III subequal in length.

Epigyne/vulva. Epigyne without a septum, essentially an endogyne (Figs 10-11). The only external sclerotizations are the rather weakly sclerotized linings of the small copulatory openings which are circular- semicircular, and set apart anteriorly (cleaned epigyne of Fig. 10, in Fig. 11a the anterior part of the epigyne is obscured by exudates and the copulatory openings are not discernible). Remaining parts of the genitalia are below the integument. Thus the epigynal lobe found in most *Apostenus* species is absent. The median area is covered only by transparent cuticle not different from the cuticle outside the epigynal area, thus there is no epigynal plate (Fig. 11a, b, grey areas of detached epigyne/vulva in fig. 11c, d are artefacts caused by folded cuticle and loose hairs). The two halves of the vulva form a 'V' and are only bridged posteriorly by a thin bar which is interpreted not to be a part of the vulva. As a result of this weak structure, the two halves of the vulva broke apart during digestion in KOH and handling. As is typical for *Apostenus* the copulatory openings were clogged by hard secretions concealing much of the structures (Figs. 11a, b) however, these plugs became detached during digestion so that the details of the anterior parts became visible (Figs. 11c, d).

Ecology. The specimen was found under a stone on limestone grassland with bush encroachment interpreted as abandoned pasture.

Comments. The species is assigned to *Apostenus* Westring, 1851 due to the recurved PER and leg spination with tibiae I and II having five pairs of ventral macrosetae and metatarsi I and II having three pairs. There are 12 extant, primarily Palearctic, *Apostenus* species described according to the World Spider Catalog (2017), three of which are known from mainland Europe (Nentwig et al. 2017), four from the Canary Islands, and two from northern Africa (Bosmans 1999). The four Canarian *Apostenus* species (*A. gomerensis* Wunderlich, 1992, *A. grancanariensis* Wunderlich, 1992, *A. annulipes* Wunderlich, 1987 and *A. palmensis* Wunderlich, 1992) and the European mainland species (*A. fuscus* and *A. ochraceus*

Hadjissarantos, 1940) all possess a more or less distinct sclerotized median epigynal lobe. Two further Nearctic species, *A. ducati* Bennett, Copley & Copley, 2013 and *A. californicus* Ubick & Vetter, 2005 likewise differ from *A. crespoi* sp. n. by possessing a distinct median epigynal lobe (Bennett et al. 2013, Ubick & Vetter 2005). The twelfth species of the genus, *A. annulipes* Caporiacco, 1935, is known from Karakorum, Central Mongolia and possesses an epigyne with a parallel-sided median septum according to the sketch in Caporiacco (1935), absent in the species described here. Thus the epigyne of *A. crespoi* n. sp. is rather unusual for *Apostenus* by lacking both a septum and a sclerotized epigynal lobe. The epigyne and vulva were examined carefully under both a stereomicroscope and compound microscope at various magnifications and light intensities but no slits or depressions in the integument or sclerotizations of a median plate/lobe were observable.

Canariphantes zonatus (Simon, 1884) (Linyphiidae) (Fig. 14)

Leptyphantes zonatus Simon 1884: 322, f. 91

Records from Portugal are listed at the Iberian Spider Catalogue (Morano et al. 2014).



Fig. 12: *Euophrys nigripalpis* Simon, 1937, male

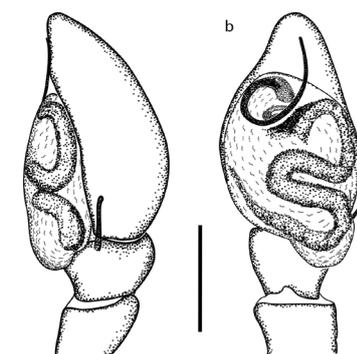


Fig. 13: *Euophrys nigripalpis* Simon, 1937. **a.** male palp in retrolateral view; **b.** same in ventral view. Scale bar 0.2 mm



Fig. 14: *Canariphantes zonatus* (Simon, 1884). **a.** drawing of epigyne in ventral view; **b.** photo of detached epigyne with vulva partly visible; **c.** photo of epigyne in ventral view

Material examined. PORTUGAL: Évora, North of the town Évora along Roman aqueduct (N38°37'6", W7°57'36"), 1♀, among grass and weeds in pastures, 320 m a.s.l., 4.III.2015, Jørgen Lissner leg., CJL-11766.

Comments. This species is widespread in the Western Mediterranean (World Spider Catalog 2017). An illustration and photo of the epigyne in ventral view is presented here as well as a photo of a detached epigyne with some parts of the underlying vulva visible (Fig. 14).

***Euophrys nigripalpis* Simon, 1937 (Salticidae)** (Figs 12–13)

Euophrys nigripalpis Simon 1937: 1181, 1253

(without figures)

Material examined. PORTUGAL: Beja, Moura, Sobral da Adiça (N37°58'40", W7°17'39"), 2♂, forest steppe/maquis, 350 m a.s.l., 27.III.2013, Jan Dolanský leg., CJL-8789; Faro, Loulé, Fonte da Taipa (Querença) (N37°12'25", W7°56'14"), 2♂, habitat not recorded, 220 m a.s.l., 31.III.2013, Jan Dolanský leg., CJL-8758.

Comments. This species has been recorded in France and Corsica and is new to Portugal. The clypeus of the male is pumpkin orange (Fig. 12). Illustrations and photos of the male palp are presented here (Fig. 13). The retrolateral tibial apophysis is rather thin, not much thicker than the hairs covering the cymbium and is visible also in ventral view (Fig. 13b). The tip of the apophysis is slightly swollen, bent inwards and upwards. Photographs of both the epigyne and palps are only available on the internet (Oger 2017, Prószyński 2017) and are not published yet.

Discussion

The new records presented above represent five species recorded from Portugal for the first time, two of which are also new to science. This increases the total number of species cited from Portugal to 817.

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- Supplementary File 1:** Supplement_Lissner_Portugal_spiders.xls, Excel spreadsheet with all spider records from Portugal in the collection of the author.