

PHILODROMUS PINETORUM MUSTER, 2009 (ARANEAE: PHILODROMIDAE), NEW TO THE IBERIAN SPIDER FAUNA

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Abstract: *Philodromus pinetorum* Muster, 2009 is recorded for the first time from Portugal. The revision of material from the António de Barros Machado spider collection supports the removal of *Philodromus poecilus* (Thorell, 1872) from the Iberian and Portuguese checklists. Drawings of the genitalic features of *P. pinetorum* are presented.

Key words: Araneae, Philodromidae, checklist, taxonomy, Iberian Peninsula, Portugal.

Philodromus pinetorum Muster, 2009 (Araneae: Philodromidae), nuevo para la fauna de arañas ibérica

Resumen: *Philodromus pinetorum* Muster, 2009 es citado por primera vez de Portugal. La revisión de material de la colección de António de Barros Machado apoya la eliminación de *Philodromus poecilus* (Thorell, 1872) de la lista de especies de arañas ibéricas. Se presentan dibujos de las estructuras copuladoras de *P. pinetorum*.

Palabras claves: Araneae, Philodromidae, lista de especies, taxonomía, Península Ibérica, Portugal.

Introduction

One of the outputs of the doctoral and post-doctoral thesis of Pedro Cardoso (Cardoso, 2004, 2009; Cardoso *et al.*, 2008a, 2008b, 2009) was the Portuguese Spider Catalogue (Cardoso, 2011). This useful synthesis, which was just recently expanded into the Iberian Spider Catalogue (Cardoso & Morano, 2010; Morano & Cardoso, 2011), presents a count of 777 species for the Portuguese continental territory.

Perhaps one of the most serious problems with such catalogues regards to species that were cited in the past by early arachnologists and that were never found again since the original citation. Several reasons may contribute to this: the lack of knowledge of the supra-regional fauna led to misidentifications by these authors, the depository of cited specimens is uncertain, or the labelling is too incomplete and we cannot find the original and exact location where the species were recorded for the first time. Cardoso has taken the time of each record in consideration in the latest version of its Catalogue, through a colour gradient (Cardoso, 2011), and although by itself this does not give a measure of the reliability of the records, can point out at least some erroneous species records.

In some cases, we can re-encounter a species that was lastly cited more than one hundred years ago. For example, the present author and colleagues found the species *Hypomma cornutum* (Blackwall, 1833) in 2008 in the district of Coimbra, during a semi-quantitative sampling protocol (Crespo *et al.*, 2009; Bosmans *et al.*, 2009). This species only had one previous citation from 1893 by Bertkau (compiled afterwards by Bacelar, 1928), from the same district. Still, some species citations from decades ago may be actually misidentifications. Unfortunately, there are great impediments to correct these eventual misidentifications. For example, material gathered by Amélia Bacelar was destroyed in the fire in the Natural History Museum of Lisbon in 1978, and the Machado collection, or at least part of it, has been changing from hands to hands in the past decades until it has recently found a depository in NHM Lisbon.

While the first author was collaborating in a field work concerning macrofungi, its attention was brought upon some *Philodromus* specimens present in the bark of some pine trees. Some adults were taken and later determined to *P. pinetorum*, just described in 2009 in another revision of the genus by Muster (2009). The genitalia of these specimens clearly fit the description of *P. pinetorum*, as the female's epigynum has two anteriorly diverging grooves and a median septum surrounded by a pair of slit-like orifices and the male shows the bifid RTA. No other species of the subgenus *Artanes* Thorell, 1870, shows this characteristic combination (Muster, 2009; Muster & van Keer, 2010).

Considering the remarks of Muster (2009) on the confusion that was created by early scholars around the identity of *P. poecilus* (Thorell, 1872), it was suspected the previous records of this species in Portugal could as well be misidentifications of *P. pinetorum*. The historical records of *P. poecilus* are reported by Cardoso in its Catalogue (2011). Of these five records, only those of Machado could be checked because, as stated previously, the fire in the Natural History Museum of Lisbon destroyed Bacelar's collection.

Material and methods

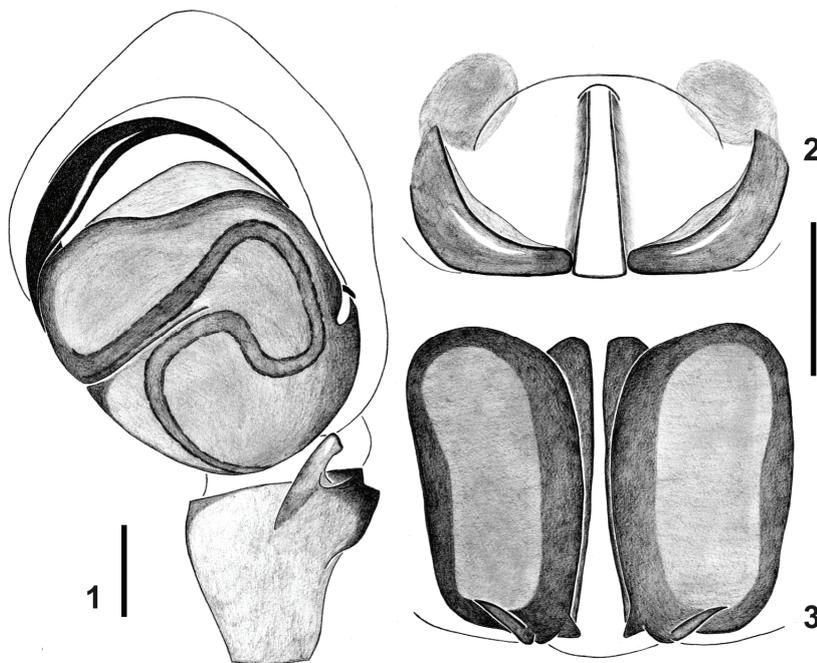
Specimens of *P. pinetorum* were collected with the help of a forceps. On the laboratory, they were observed using a ZEISS Stemi 2000 microscope. The epigynum of the female was dissected using a thin needle and forceps and put into methyl salicylate for a clear view of the vulva structure.

Collections **CBM** - António de Barros Machado collection, deposited in the National Museum of Natural History of Lisbon. **CPC** - Luís Crespo personal collection

Results

***Philodromus pinetorum* Muster, 2009** Fig. 1-3.

MATERIAL EXAMINED: 2 males and 1 female, 24.IV.2010, Póvoa



◀**Fig. 1-3:** *Philodromus pinetorum*. Male and female from Póvoa Dão: **1.** ventral aspect of pedipalp, scale bar = 0.2 mm; **2.** ventral aspect of epigynum; **3.** dorsal aspect of vulva, scale bars = 0.1 mm.

Dão, Viseu county, Viseu district, UTM 29TNE88 (10x10km, datum WGS84), deposited in CPC, collected in the bark of *Pinus pinea*; CBM tube 919, 1 female, 16.IX.1941, Serra de Montejunto, Alenquer county, Lisbon district, misidentified as *Philodromus poecilus*. CBM tube 1748, 5 *Philodromus* juveniles, 5.IX.1944, Joane, Vila Nova de Famalicão county, Porto district, identified as *P. poecilus*. **DISTRIBUTION:** The enigmatic disjunct pattern in the eastern Mediterranean and southern France (Muster, 2009) now sorts out to an apparent Holomediterranean distribution, although information on the Maghreb areas of the Mediterranean are lacking.

Discussion

Some structures of the genital organs of the Portuguese specimens differ slightly from specimens from the terra typica in Turkey as described by Muster (2009). In females, the epigynum is wider, with the chitinized arch above the median septum also wider than the one described by Muster (2009: 160, fig. 25a versus Fig. 2). The frequent misidentification of *P. pinetorum* under the name of *P. poecilus* (Muster, 2009) seems to have occurred in Portuguese material as well, and even juveniles were identified to species level. The authors suppose that Machado followed Simon's diagnosis and attributed the wrong name to specimens of *P. pinetorum*, just like it happened with Miller (1971; see Muster, 2009). After identification of the material from CBM tube 919 as belonging to *P. pinetorum* and excluding the material from tube 1748 composed of juveniles, we are left with 3 Iberian records of *P. poecilus* by Bacelar (1940). While we are tempted to assume that these could also be records of *P. pinetorum*, the fact is that this material is supposed to be lost. Henceforth, the authors suggest to remove *P. poecilus* from the Portuguese and Iberian Spider Catalogues and to add *P. pinetorum*, with the new record and the adult female collected by Machado.

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Bibliography

- BACELAR, A. 1928. Aracnídeos Portugêses III. *Bull. Soc. Portug. Sci. nat.*, **10**: 169-203.
- BACELAR, A. 1940. Aracnídeos Portugêses VI (continuação do inventário dos Aracnídeos). *Bull. Soc. Portug. Sci. nat.*, **13**: 99-110.
- BOSMANS, R., P. CARDOSO & L.C. CRESPO 2009. A review of the linyphiid spiders of Portugal, with the description of six new species (Araneae: Linyphiidae). *Zootaxa*, **2473**: 1-67.
- CARDOSO, P. 2004. *The use of arachnids (class Arachnida) in biodiversity assessment and monitoring of natural areas*. PhD thesis. 160 pp.
- CARDOSO, P. 2009. Standardization and optimization of arthropod inventories – the case of Iberian spiders. *Biodiversity and Conservation*, doi: 10.1007/s10531-009-9690-7.
- CARDOSO, P. 2011. Portugal spider catalogue (v3.0). Available online at <http://www.ennor.org/catalogue.php>
- CARDOSO, P. & E. MORANO 2010. The Iberian spider checklist. *Zootaxa*, **2495**: 1-52.
- CRESPO, L., P. CARDOSO, R. CARVALHO, S. HENRIQUES & A.C. RUFINO 2009. Spiders (Arachnida: Araneae) from the Paúl de Arzila Natural Reserve (Portugal). *Boletín de la Sociedad Entomológica Aragonesa*, **44**: 305-313.
- CARDOSO, P., C. GASPAS, L.C. PEREIRA, I. SILVA, S.S. HENRIQUES, R. R. SILVA & P. SOUSA 2008a. Assessing spider species richness and composition in Mediterranean cork oak forests. *Acta Oecologica*, **33**: 114-127.
- CARDOSO, P., N. SCHARFF, C. GASPAS, S. S. HENRIQUES, R. CARVALHO, P. H. CASTRO, J. B. SCHMIDT, I. SILVA, T. SZÜTS, A. CASTRO & L. C. CRESPO 2008b. Rapid biodiversity assessment of spiders (Araneae) using semi-quantitative sampling: a case study in a Mediterranean forest. *Insect Conservation and Diversity*, **1**: 71-84.
- CARDOSO, P., S.S. HENRIQUES, C. GASPAS, L.C. CRESPO, R. CARVALHO, J.B. SCHMIDT, P. SOUSA & T. SZÜTS 2009. Species richness and composition assessment of spiders in a Mediterranean scrubland. *Journal of Insect Conservation*, **13**: 45-55.
- MORANO, E. & P. CARDOSO 2011. *Iberian spider catalogue* (v2.0). Available online at <http://www.ennor.org/iberia>
- MUSTER, C. 2009. Phylogenetic relationships within Philodromidae, with a taxonomic revision of *Philodromus* subgenus *Artanes* in the western Palearctic (Arachnida: Araneae). *Invertebrate Systematics*, **23**: 135-169.
- MUSTER, C. & J. VAN KEER 2010. A new species of *Philodromus* (*Artanes*) from Macedonia, Greece (Araneae: Philodromidae). *Zootaxa*, **2495**: 65-68.