

SPIDERS (ARACHNIDA: ARANEAE) FROM THE SELVAGENS ISLANDS (PORTUGAL): ADDITIONS TO THE CURRENT KNOWLEDGE

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Abstract: A large collection of spiders from Selvagem Grande (Selvagens Islands, Portugal) was gathered to analyze the community response to a vegetation recovery experiment. The presence of several species in this small archipelago is confirmed and nine additions to its spider fauna are reported: *Filistata insidiatrix* (Forsk., 1775), *Leptodrassex hylaestomachi* Berland, 1934, *Urozelotes rusticus* (L. Koch, 1872), *Zimirina lepida* (Blackwall, 1859), *Meioneta* cf. *canariensis* (Wunderlich, 1987), *Synaphris* cf. *saphrynis* Lopardo, Hormiga & Melic, 2007, *Steatoda nobilis* (Thorell, 1875), *Thomisus onustus* Walckenaer, 1805 and *Xysticus lanzarotensis* (Wunderlich, 1992). The archipelago currently comprises 43 species.

Key words: Araneae, faunistics, Selvagens Islands, Portugal.

Spiders (Arachnida: Araneae) de las islas Selvagens (Portugal): aportaciones al conocimiento actual

Resumen: Se colectó un gran número de arañas en Selvagem Grande (islas Selvagens, Portugal) con el fin de analizar la respuesta de la comunidad a un experimento de regeneración de la vegetación. Se confirma la presencia de varias especies en este pequeño archipiélago, y se aportan nueve novedades a su fauna de arañas: *Filistata insidiatrix* (Forsk., 1775), *Leptodrassex hylaestomachi* Berland, 1934, *Urozelotes rusticus* (L. Koch, 1872), *Zimirina lepida* (Blackwall, 1859), *Meioneta* cf. *canariensis* (Wunderlich, 1987), *Synaphris* cf. *saphrynis* Lopardo, Hormiga & Melic, 2007, *Steatoda nobilis* (Thorell, 1875), *Thomisus onustus* Walckenaer, 1805 y *Xysticus lanzarotensis* (Wunderlich, 1992). Actualmente se conocen 43 especies del archipiélago.

Palabras clave: Araneae, faunística, islas Selvagens, Portugal.

Introduction

The Selvagens Islands comprise a small group of islands and islets situated about 300 km south of Madeira Island and 180 km north of the Canary Islands. They begun emerging 27 m.y. BP. However, at least Selvagem Grande had three eruptive cycles, at 24–26 m.y., 8–12 m.y. and 3–4 m.y. (Geldmacher *et al.*, 2001) and its current fauna may have originated after this last eruption, being the previous faunas extirpated by submergence of the island. The Selvagem Grande is also the largest island of the archipelago with about 245 ha and a maximum altitude of 153 m; it is mostly dominated by a semi-desertic habitat. All collected specimens come from this island. The remainder islets are the Selvagem Pequena, Ilhéu de Fora, Ilhéu Comprido and Ilhéus do Norte.

The spider community of the Selvagens Islands is far from being well known. Previous works are reduced to early expeditions that provided material for Blackwall (1864), Kulczynski (1899) and Simon (1912), however much of the material from these expeditions is supposed to be lost and some species were identified using juveniles, which provides doubtful records. A more thorough approach was followed by Denis (1963). A preliminary checklist of 33 species was compiled by Wunderlich (1992) who, additionally to listing the citations by the previous authors, analyzed some specimens collected by Rambla in 1978. Wunderlich (1992) erroneously cited 4 endemic species to the Selvagens but we know now that two were synonyms of other species

(*Dysdera wollastoni* sensu Kulczynski, 1899 is now known as *Dysdera nesiotes* Simon, 1907, and *Scotognapha bewickei* Denis, 1963, is now known as *Scotognapha paivai* (Blackwall, 1864)); a third endemic species was added when this same author described *Oecobius selvagensis* Wunderlich, 1995. More recently, a compilation of all previously published literature was made by Cardoso & Crespo (2008), in which material from the work now presented was included.

Material

The invasive plant *Nicotiana glauca* was removed from the Selvagem Grande during the three years (2000 – 2002). In order to perceive the community changes with this removal, spiders were captured using pitfall traps, hand collecting (along transects and inside 1 m² delimited squares) and vegetation beating from 2002 to 2005. Different collectors at different seasons have done all methods in a non-standardized way. Although such collection did not allow understanding compositional differences before and after the experiment, it provided the material now presented.

Half of the obtained material and the taxonomic and most faunistic additions are deposited in the National Museum of Natural History of Denmark, Zoological Museum (ZMUC) while the other half of the material is deposited at the Municipal Museum of Funchal (MMF).

A JEOL JSM840A scanning electron microscope at ZMUC was used to obtain SEM pictures. Specimens were transferred to absolute ethanol, went through a critical-point drying process and then glued to round aluminium rivets. Finally, they were coated with Platinum-Palladium for examination in the SEM.

All species nomenclature was made according to Platnick's World Spider Catalogue (2009).

Results

Family Agelenidae C.L. Koch, 1837 (1 species)

Tegenaria pagana C.L. Koch, 1840

MATERIAL: 28.11.2003, 2 males and 5 females, hand collecting (cave of Cabeço do Inferno). 1 male and 3 females were deposited at the ZMUC and 1 male and 2 females were deposited at the MMF.

REMARKS: Previously cited from Selvagem Grande by Denis (1963).

Family Dysderidae C.L. Koch, 1837 (1 species)

Dysdera nesiotes Simon, 1907

MATERIAL: 25.05.2004, 3 males and 1 female, hand collecting; 24.03.2004, 1 female, hand collecting; 24.03.2004, 1 male, pitfall trap; 24.03.2004, 1 male and 2 females, transect sampling; 2.03.2005, 1 female, transect sampling; 9.03.2005, 4 males and 1 female, pitfall trap; 9.03.2005, 1 female, square sampling; 12.03.2005, 1 female, square sampling; 15.03.2005, 1 male, pitfall trap; 5 males and 4 females are deposited in the ZMUC while the other adults are deposited at the MMF.

REMARKS: Wunderlich (1992) considered two species of *Dysdera* as being present in the Selvagens Islands, *D. wollastoni* Blackwall, 1864 and *D. crocata* C.L. Koch, 1839. Denis (1963) considered the first to be a junior synonym of the second after a revision of type material deposited in the Oxford University Museum from J.A.L. Cooke. Moreover, the specimens analyzed by Denis were composed of juvenile specimens. Wunderlich nevertheless maintained the species in his 1992 checklist, but with the note of a doubtful record. The presence of *Dysdera crocata* in the Selvagem Grande was not confirmed by these new samples and a citation based on juvenile specimens (Denis, 1963) is therefore dubious and we consider that *D. crocata* (or its synonym *D. wollastoni* Blackwall, 1864) is not present in the island (Cardoso & Crespo, 2008). However, some adult specimens of *D. nesiotes* were captured. This species was misidentified by Kulczynski (1899) as *D. wollastoni*, but in fact he identified what Simon described as *D. nesiotes* on 1883 from the Canary Islands. Denis (1963) reported the misidentification and recent studies by Arnedo *et al.* (2000) support this conclusion.

Family Filistatidae Ausserer, 1867 (1 species)

Filistata insidiatrix (Forsk., 1775) (Fig. 1)

MATERIAL: 6.06.2004, 1 male, hand collecting. This male is deposited at the ZMUC.

REMARKS: First record of this species at the Selvagens Islands. This is not surprising if we take into account its wide distribution.

Family Gnaphosidae Pocock, 1898 (7 species)

Drassodes lutescens (C.L. Koch, 1839)

MATERIAL: 18.02.2002, 1 female, square sampling; 17.03.2003, 1 female, square sampling; 18.03.2003, 1 female, square sampling; 19.03.2003, 1 female, square sampling; 20.03.2003, 2 females, square sampling; 4.03.2004, 1 female, pitfall trap; 19.03.2004, 1 male, square sampling; 20.03.2004, 1 female, square sampling; 23.03.2004, 1 female, square sampling; 4.03.2005, 6 females, square sampling; 5.03.2005, 2 females, square sampling; 7.03.2005, 2 males and 1 female, square sampling; 9.03.2005, 2 males, pitfall trap;

9.03.2005, 2 females, square sampling; 10.03.2005, 2 females, pitfall trap; 10.03.2005, 2 females, square sampling; 12.03.2005, 1 female, square sampling; 15.03.2005, 2 males and 2 females, pitfall trap; 18.03.2005, 1 female, transect sampling; 27.04.2005, 1 male, transect sampling. 6 males and 15 females are deposited at the ZMUC and 6 males and 14 females are deposited at the MMF.

REMARKS: Previously cited by Kulczynski (1899).

Haplodrassus dalmatensis (L. Koch, 1866)

MATERIAL: 18.02.2002, 5 males and 5 females, square sampling; 22.02.2002, 1 male and 1 female, square sampling; 16.03.2003, 4 males and 4 females, square sampling; 17.03.2003, 6 males and 9 females, square sampling; 18.03.2003, 2 males and 5 females, square sampling; 19.03.2003, 1 male, square sampling; 19.03.2003, 1 male, transect sampling; 20.03.2003, 2 females, square sampling; 21.03.2003, 1 female, transect sampling; 22.03.2003, 1 male and 1 female, square sampling; 18.03.2004, 1 male, square sampling; 19.03.2004, 1 male and 5 females, square sampling; 23.03.2004, 2 males and 3 females, square sampling; 24.03.2004, 2 females, transect sampling; 26.03.2004, 1 female, transect sampling; 2.03.2005, 1 male, transect sampling; 4.03.2005, 5 males and 5 females, square sampling; 5.03.2005, 12 males and 5 females, square sampling; 7.03.2005, 7 males and 6 females, square sampling; 9.03.2005, 2 males, pitfall trap; 9.03.2005, 2 males and 3 females, square sampling; 10.03.2005, 5 males, pitfall trap; 10.03.2005, 2 females, square sampling; 15.03.2005, 5 males and 2 females, pitfall trap; 27.04.2005, 1 male, transect sampling. 35 males and 35 females were deposited at the ZMUC and 35 males and 34 females were deposited at the MMF.

REMARKS: Previously cited from the island by Denis (1962).

Leptodrassex hylaestomachi Berland, 1934 (Fig. 2)

MATERIAL: 18.03.2003, 1 female, square sampling; 22.04.2004, 1 female, hand collecting. Both females are deposited at the ZMUC.

REMARKS: First record of this species for the Selvagens. Until now thought to be endemic to the Canary Islands.

Scotognapha paivai (Blackwall, 1864)

MATERIAL: 18.03.2003, 1 female, square sampling; 24.03.2004, 2 males, pitfall trap; 2.03.2005, 1 female, transect sampling. 1 female and both males are deposited at the ZMUC and 1 female is deposited at the MMF.

REMARKS: This endemic species was described by Blackwall (1864). Afterwards, it was cited again by Denis (1963) and neither of these collections had males; therefore, this is the first time males are captured (description in a forthcoming work). The epigynum of both females is according to previous descriptions (Platnick *et al.* 2001; Denis, 1963). A rather striking sexual dimorphism was observed in these specimens; males are dwarves, measuring about 3 mm, when compared to the 10 mm of females.

Scotophaeus musculus (Simon, 1878)

MATERIAL: 19.03.2003, 1 female, square sampling; 22.03.2003, 2 males, square sampling; 23.03.2004, 1 male and 2 females, square sampling; 24.03.2004, 1 female, transect sampling; 29.03.2004, 1 male, pitfall trap; 9.03.2005, 1 male, pitfall trap. 3 males and 2 females were deposited at the ZMUC and 2 males and 2 females were deposited at the MMF.

REMARKS: Cited for the Selvagens by Denis (1963).

Setaphis sp.

MATERIAL: 22.03.2004, 1 female, transect sampling; 5.03.2005, 1 male and 1 female, square sampling; 9.03.2005, 1 female, pitfall trap. All specimens are deposited at the ZMUC.

REMARKS: The authors believe this is a new species, to be described in a forthcoming work.

Urozelotes rusticus (L. Koch, 1872) (Fig. 3)

MATERIAL: 3.06.2004, 2 males and 2 females, hand collecting. One couple is deposited at the ZMUC and the other at the MMF.

REMARKS: First record of this species from the Selvagens, however, it is not surprising given its cosmopolitan distribution.

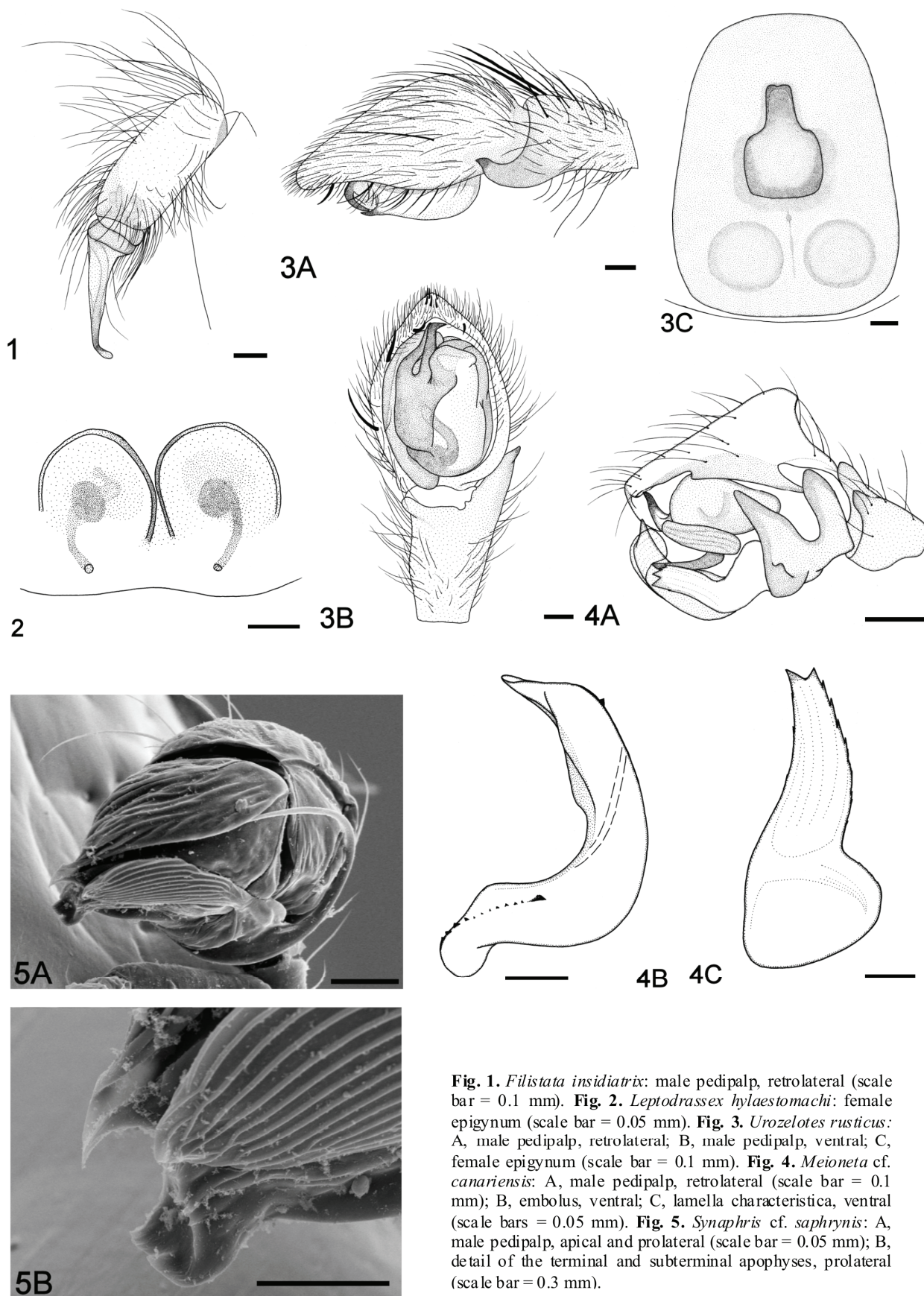


Fig. 1. *Filistata insidiatrix*: male pedipalp, retrolateral (scale bar = 0.1 mm). **Fig. 2.** *Leptodrassex hylaestomachi*: female epigynum (scale bar = 0.05 mm). **Fig. 3.** *Urozelotes rusticus*: A, male pedipalp, retrolateral; B, male pedipalp, ventral; C, female epigynum (scale bar = 0.1 mm). **Fig. 4.** *Meioneta* cf. *canariensis*: A, male pedipalp, retrolateral (scale bar = 0.1 mm); B, embolus, ventral; C, lamella characteristica, ventral (scale bars = 0.05 mm). **Fig. 5.** *Synaphris* cf. *saphrynis*: A, male pedipalp, apical and prolateral (scale bar = 0.05 mm); B, detail of the terminal and subterminal apophyses, prolateral (scale bar = 0.3 mm).

Family Linyphiidae Blackwall, 1859 (1 species)

***Meioneta* cf. *canariensis* (Wunderlich, 1987) (Fig. 4)**

MATERIAL: 27.02.2004, 1 female, vegetation beating; 24.03.2004, 1 male, pitfall trap; 29.03.2004, 2 males, pitfall trap; 21.04.2004, 1

female, hand collecting; 04.03.2005, 2 females, square sampling; 07.03.2005, 3 females, square sampling; 10.03.2005, 1 male and 6 females, square sampling; 15.03.2005, 2 males and 1 female, pitfall trap; 18.03.2005, 1 female, transect sampling. All specimens are deposited at the ZMUC.

REMARKS: This species male morphology appears to be similar enough to that described by Wunderlich (1987) but some degree of variation is present in the lamella characteristic, which ends terminally with a single tip in the referred publication, while the available specimens have a lamella with a bifid tip. The embolus and palpal tibia appears to be similar to the ones described by the author. No clear conclusion can be drawn from the female genitalia so the authors, although cautiously, assign these specimens to this species.

Oecobiidae Blackwall, 1862 (1 species)

***Oecobius navus* Blackwall, 1859**

MATERIAL: 22.02.2002, 1 male, square sampling, deposited at the ZMUC.

REMARKS: Cited by Wunderlich (1992), after revising specimens from Rambla's collection.

Family Oonopidae Simon, 1890 (1 species)

(genus and species undetermined)

MATERIAL: 21.04.2004, 1 female, hand collecting; 22.04.2004, 4 females, hand collecting. All specimens are deposited at the ZMUC. REMARKS: This is the first time a member of the Oonopidae is found at the Selvagens. Most the specimens lack many of the legs and some are broken from the pedicel, however they all are morphologically identical and all are females. The checklist made by Wunderlich of Macaronesian oonopid spiders (Wunderlich, 1992: 83) consists of 6 species. This species clearly is none of the described, as it does not show the characters of any of those genera (Barrientos, unpublished data). It is certainly new for the Macaronesian archipelagos.

Family Philodromidae Thorell, 1870 (1 species)

***Philodromus punctiger* O. Pickard-Cambridge, 1908**

MATERIAL: 10.03.2005, 1 female, square sampling, deposited at the ZMUC.

REMARKS: Cited by Wunderlich (1992), after revising specimens from Rambla's collection.

Family Pholcidae C.L. Koch, 1850 (1 species)

***Spermophorides selvagensis* Wunderlich, 1992**

MATERIAL: 21.04.2004, 2 males and 2 females, hand collecting. A couple is deposited at the MMF and the other at the ZMUC.

REMARKS: Material from this species was first reported by Denis (1963) but he misidentified it as *Spermophora senoculata* (Dugès, 1836). Wunderlich, after revising the material from Denis, described it as a new species (1992). This species is endemic to the Selvagens Islands.

Family Prodidomidae Simon, 1884 (1 species)

***Zimirina lepida* (Blackwall, 1859)**

MATERIAL: 6.06.2004, 2 females, hand collecting; 12.03.2005, 1 male, square sampling. A couple is deposited at the ZMUC and 1 female is deposited at the MMF.

REMARKS: First cited for the Selvagens by Wunderlich (1992), after revising material from Denis (1963), who misidentified the species as *Zodariion*. This is the first time a male of this species is captured (description in forthcoming work). Females match previous descriptions (Blackwall, 1859; Wunderlich, 1987).

Family Salticidae Blackwall, 1841 (5 species)

***Aelurillus lucasi* (Roewer, 1951)**

MATERIAL: 18.02.2002, 1 male and 2 females, square sampling; 22.02.2002, 1 female, square sampling; 4.03.2004, 2 males, pitfall trap; 6.06.2004, 1 male, hand collecting. 2 males and 2 females are deposited at the ZMUC and 2 males and 1 female are deposited at the MMF.

REMARKS: Cited by Denis (1963), although he identified it with the synonym of *A. annulipes* (Lucas, 1838).

***Chalcoscirtus cf. sublestus* (Blackwall, 1867)**

MATERIAL: 19.03.2003, 1 female, transect sampling; 21.03.2003, 1 female, transect sampling; 22.04.2004, 1 female, hand collecting. All specimens are deposited at the ZMUC.

REMARKS: The descriptions by which this species was identified lack information on the copulatory structures (Blackwall, 1867; Kulczynski, 1899, 1905). A redescription of this species is recommended in order to clarify its taxonomic status and to provide better tools for its identification.

***Macaroeris moebi* (Bosénberg, 1895)**

MATERIAL: 25.05.2004, 2 males, hand collecting, deposited at the ZMUC.

REMARKS: Previously cited by Wunderlich (1992).

***Pellenes nigrociliatus* (L. Koch, 1875)**

MATERIAL: 21.04.2004, 1 female, hand collecting, deposited at the ZMUC.

REMARKS: Previously cited by Wunderlich (1992).

***Salticus mutabilis* Lucas, 1846 (Fig. 5)**

MATERIAL: 25.05.2004, 2 females, hand collecting, deposited at the ZMUC.

REMARKS: First record of the species for the Selvagens Islands.

Family Scytodidae Blackwall, 1864 (1 species)

***Scytodes velutina* Heineken & Lowe, 1832**

MATERIAL: 18.02.2002, 1 female, square sampling; 20.03.2003, 1 male, square sampling; 02.06.2004, 1 female, hand collecting. 1 male and 1 female are deposited at the ZMUC. 1 female is deposited in the MMF.

REMARKS: Previously cited by Denis (1963).

Family Segestriidae Simon, 1893 (1 species)

***Ariadna* sp.**

MATERIAL: 18.02.2002, 4 females, square sampling; 22.02.2002, 6 females, square sampling; 18.03.2003, 1 female, square sampling; 19.03.2003, 1 female, square sampling; 20.03.2004, 1 female, square sampling; 24.03.2004, 1 female, transect sampling; 02.06.2004, 1 female, hand collecting; 09.03.2005, 2 females, square sampling; 27.04.2005, 2 females, transect sampling. 10 females are deposited at the ZMUC while 9 are deposited at the MMF.

REMARKS: Kulczynski described the species *Ariadna portisancti* (1899) from the island of Porto Santo in the Madeira archipelago. Later, Simon (1912) and Denis (1963) found the species at the Selvagem Grande; we are cautious in attributing a precise identification to the newly collected specimens, however, because there are no detailed descriptions of female seminal receptacle (except for *A. insidiatrix* Audouin, 1826, see Brignoli, 1976), and due to the fact that an apparently endemic species is known from the Canary Islands, *A. canariensis* Wunderlich, 1995. Wunderlich (1992) cited the species *A. spinipes* (Lucas, 1846) but the latter was synonymized with the Mediterranean species *A. insidiatrix* Audouin, 1826. Unfortunately, no males were found.

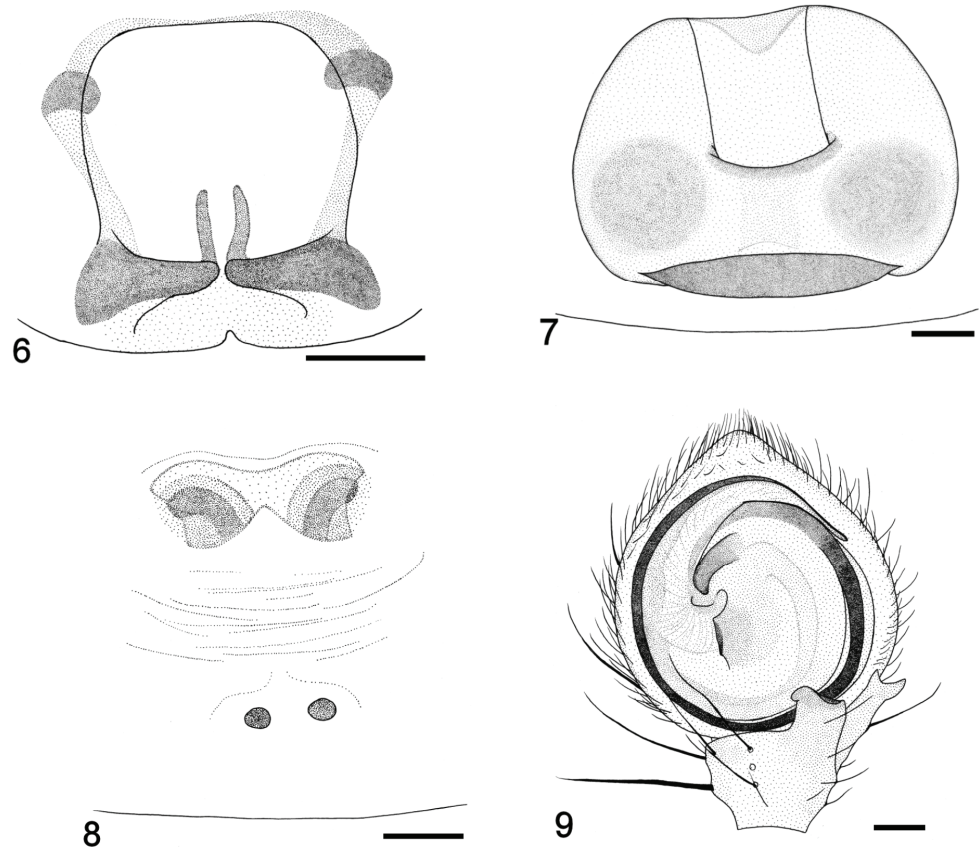
Family Sicariidae Keyserling, 1880 (1 species)

***Loxosceles rufescens* (Dufour, 1820)**

MATERIAL: 28.11.2003, 1 male and 1 female, hand collecting (cave of Cabeço do Inferno); 16.03.2003, 1 female, square sampling; 24.05.2004, 1 male and 1 female, hand collecting; 02.03.2005, 1 male and 1 female, transect sampling. 2 males and 2 females are deposited at the ZMUC and 1 male and 2 females are deposited at the MMF.

REMARKS: Previously cited by Denis (1963).

Fig. 6. *Salticus mutabilis*: female epigynum (scale bar = 0.1 mm). **Fig. 7.** *Steatoda nobilis*: female epigynum (scale bar = 0.1 mm). **Fig. 8.** *Thomisus onustus*: female epigynum (scale bar = 0.1 mm). **Fig. 9.** *Xysticus lanzarotensis*: palp, ventral (scale bar = 0.125 mm).



Family Synsphyridae Wunderlich, 1986 (1 species)

***Synsphyris cf. saphrynis* Lopardo, Hormiga & Melic, 2007 (Fig. 6)**
 MATERIAL: 18.03.2003, 2 males and 2 females, square sampling; 12.03.2005, 1 female, square sampling. All specimens are deposited at the ZMUC.

REMARKS: The species was recently described and only known from Toledo, near Madrid, Spain. Males appear to correspond to the diagnosis provided in this species' description. If confirmed, this is the first time females of this species are captured. Occurrence of the species in the Selvagens was not expected, and it raises some questions regarding this species' biogeography: is the species native to both the Selvagens and the Iberian Peninsula? Is it an introduction from the mainland to the islands? Furthermore, Wunderlich (1987) described three species from the Canary Islands but their taxonomic status is still to be confirmed with more thorough observations.

Family Theridiidae Sundevall, 1833 (4 species)

***Enoplognatha sattleri* (Bosénberg, 1895)**

MATERIAL: 18.02.2002, 13 females, square sampling; 17.03.2003, 3 females, square sampling; 19.03.2003, 3 females, square sampling; 19.03.2003, 1 female, transect sampling; 22.03.2003, 1 female, square sampling; 20.03.2004, 2 females, square sampling; 22.03.2004, 3 females, square sampling; 23.03.2004, 2 females, square sampling; 26.03.2004, 1 female, transect sampling; 22.04.2004, 1 female, hand collecting; 03.03.2005, 3 females, transect sampling; 04.03.2005, 2 females, square sampling; 07.03.2005, 7 females, square sampling; 09.03.2005, 11 females, square sampling; 10.03.2005, 6 females, square sampling; 12.03.2005, 4 females, square sampling. 32 females were deposited at the ZMUC and 31 females were deposited at the MMF.
 REMARKS: Cited by Wunderlich (1992), after revising specimens from Rambla's collection.

***Paidiscura orotavensis* (Schmidt, 1968)**

MATERIAL: 28.02.2004, 2 males and 2 females, vegetation beating; 7.03.2004, 1 female, vegetation beating. 1 male and 2 females were deposited at the ZMUC and 1 male and 1 female were deposited at the MMF.

REMARKS: Cited by Wunderlich (1992), after revising specimens from Rambla's collection.

***Steatoda grossa* (C.L. Koch, 1838)**

MATERIAL: 16.03.2003, 1 male, square sampling; 28.11.2003, 2 males and 4 females, hand collecting (cave of Cabeço do Inferno); 3.04.2004, 1 male, pitfall trap; 25.05.2004, 1 male, hand collecting. 3 males and 2 females were deposited at the ZMUC and 2 males and 2 females were deposited at the MMF.

REMARKS: Cited from the Selvagens by Kulczynski (1899), Simon (1912) and Denis (1963).

***Steatoda nobilis* (Thorell, 1875) (Fig. 7)**

MATERIAL: 6.06.2004, 1 female, hand collecting, deposited at the ZMUC.

REMARKS: This is the first record of the species from the Selvagens, but it is not unexpected since this species is believed to be native to the Canary Islands (Roberts, 1995).

Family Thomisidae Sundevall, 1833 (3 species)

***Ozyptila atlantica* Denis, 1963**

MATERIAL: 7.03.2004, 1 female, vegetation beating; 18.03.2004, 1 female, square sampling; 6.06.2004, 1 female, hand collecting; 12.03.2005, 1 female, square sampling. 2 females are deposited at the ZMUC and 2 females are deposited at the MMF.

REMARKS: Previously cited by Denis (1963).

***Thomisus onustus* Walckenaer, 1805 (Fig. 8)**

MATERIAL: 20.05.2004, 1 female, hand collecting, deposited at the ZMUC.

REMARKS: First record of the species from the Selvagens. Its pre-

sence was however already confirmed for the Canary Islands (Wunderlich, 1992).

Xysticus lanzarotensis (Wunderlich, 1992) (Fig. 9)

MATERIAL: 18.02.2002, 1 male, square sampling, deposited at the ZMUC.

REMARKS: First record of this species for the Selvagens. The species was only known from the Eastern Canary Islands.

Discussion

These nine additions to the Selvagens arachnofauna raise the number of spider species of these islands to 43. Unfortunately, this material was caught using minimum sampling effort and more exhaustive collecting at these islands should clarify the real number of species present. In addition, nothing is known of the other islets that compose this small archipelago, along with Selvagem Grande, and it is known, for instance, that a species of beetle (*Deucalion oceanicum* Wollaston, 1854), is a strict endemic to the minute islet of Ilhéu de Fora (Boeiro *et al.*, 2008). This species of Cerambycidae is however endangered and the causes for its status are thought to be unmanageable (Martín *et al.*, subm.), related with the disappearance of its plant host, the spurge *Euphorbia anachoreta*. This is an indication that the fauna of this archipelago is under severe threat. Given that spiders have been found to be more sensitive to environmental change and human-induced disturbance than many other taxa in different Macaronesian Islands (Cardoso *et al.*, 2007, subm.) it is possible that many species are in a delicate situation in those islets without our knowledge.

Total endemics account up to 40% of the total known spider species and apparent introductions reach 33% (Fig. 10). It is noteworthy that only a single endemic species is shared exclusively with the Madeira archipelago, when compared to the nine species known only from the Selvagens and the Canary Islands. This does however seem logic considering the distances between the Selvagens and both archipelagos, with the distance to Madeira being almost the double the distance to the Canary Islands. In fact, the single representatives of *Dysdera* and *Spermophorides* in the Selvagens have their closest relatives in the Eastern Canary Islands, reinforcing the obviously strong connections between both archipelagos.

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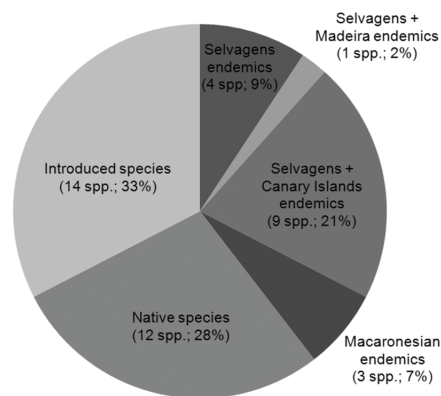


Fig. 10. Distribution of the 43 spider species reported to the Selvagens according to their origins.

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