

***Ossinissa justoi* (Wunderlich, 1992)**

Wunderlich, J. 1992. Die Spinnen-Fauna der Makaronesischen Inseln. Taxonomie, Ökologie, Biogeographie und Evolution. Beitr. Araneol. 1: 1-619.

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108. *Spermophorides justoi* n.gen. n.sp. (Abb. 207-209)

Material: El Hierro, cueva (= Höhle) Don Justo, 2♀ 1subad.♂ GIET/A.L. MEDINA leg. 18.IV. 1984, 1♀ (Holotypus) ULT no. H-DJ-27, 1subad.♂ ULT no. H-DJ-27 a), 1♀ SJW; 2♀ A.L. MEDINA leg. 17.XI. 1985, 1♀ ULT no. H-DJ-167, 1♀ SMF.

Diagnose (♀; ad. ♂ unbekannt): 6 stark reduzierte Augen, vor diesen ein schwarzer Fleck (Abb.207), sonst Körper und Beine bleich gelb. Geschlechtsfeld (Abb.208-209) weit vorstehend, hinten mit stumpfem "Knöpfchen", ohne Grübchen oder frei beobachtbare "Schildchen".

Beschreibung:

Maße (♀ in mm): Gesamt-Länge 2.4-2.8, Prosoma: Länge und Breite 0.75-0.85, Bein I: Femur 4.7, Patella 0.4, Tibia 5.0, Metatarsus 6.5, Tarsus 1.4, Tibia II 2.2, Tibia III 2.4, Tibia IV 3.5. Prosoma gelb, dorsal hinter den Augen schwach verdunkelt, vor den

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6 stark reduzierten 6 Augen mit einem schwarzen Fleck (Abb.207) variabler Größe. Umrisse der Linsen gelegentlich undeutlich, ihr Durchmesser etwa 0.035mm; die hinteren Augen sind um etwa 4 Durchmesser getrennt. - Beine gelb, ungeringelt, lang und dünn. - Opisthosoma gelb (ohne Zeichnung), hochgewölbt.

Beziehungen: Ohne Kenntnis des ad. ♂ kann ich keine nahe verwandte Art nennen.

Verbreitung: El Hierro (Höhle Don Justo).

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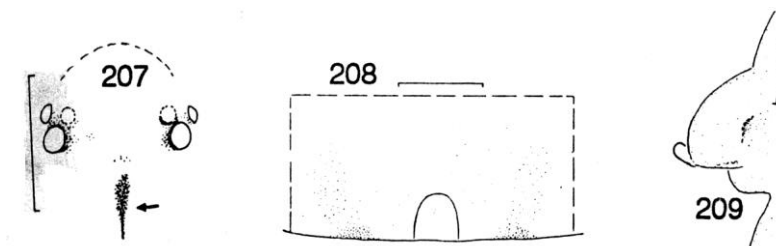


Fig.207-209: *Spermophorides justoi* n.sp., ♀, 207) eyes, 208-209) genital area ventral and lateral; M in fig.207) 0.2, 208-209) 0.1.

Dimitrov, D., Ribera, C. 2005. Description of *Ossinissa*, a new pholcid genus from the Canary Islands (Araneae: Pholcidae). Zootaxa 982: 1-13.

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Ossinissa new genus

Type species. — *Spermophorides justoi* Wunderlich 1992

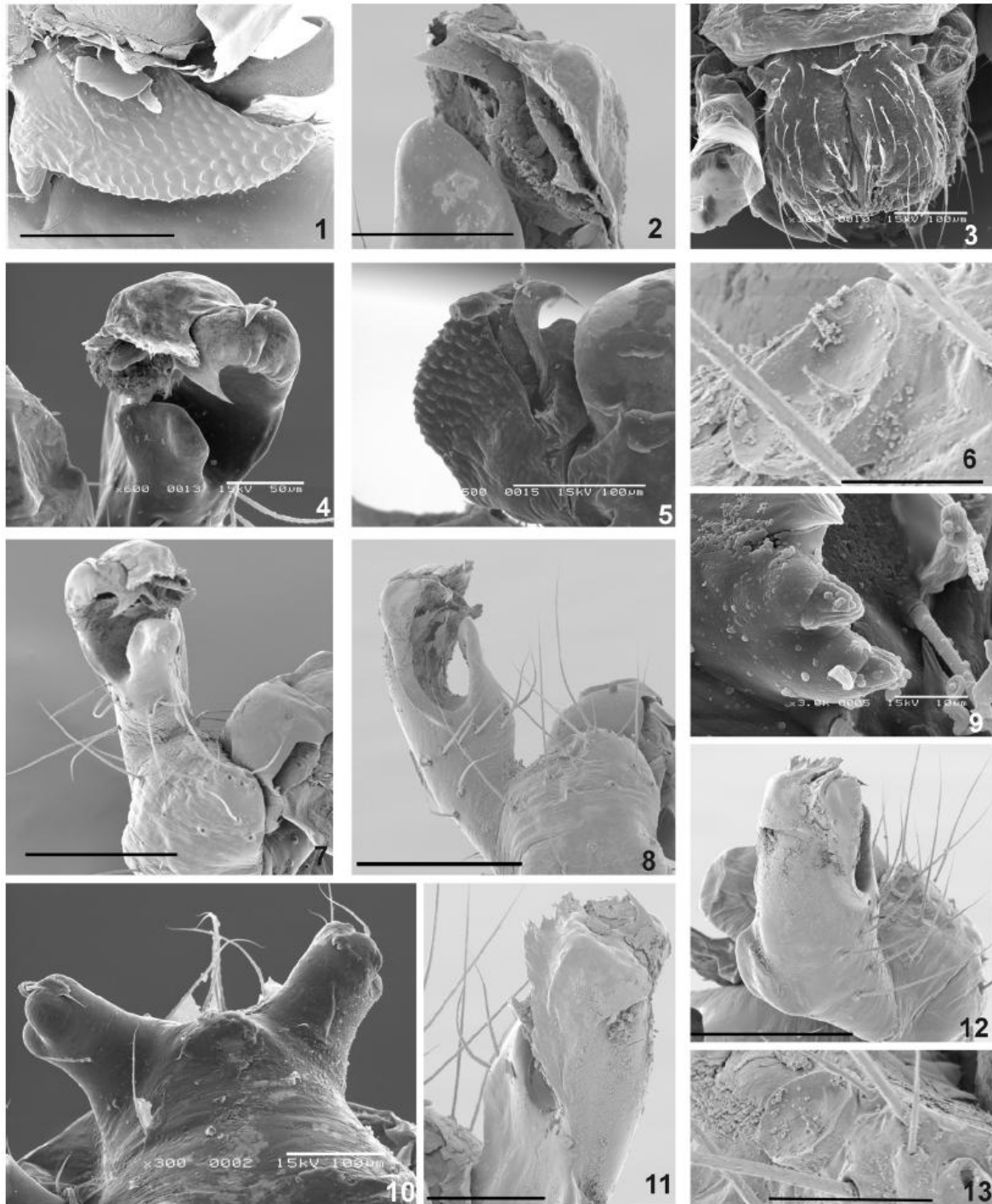
Etymology. — The generic name honors Ossinissa, the last king of El Hierro Island before its conquest by the Norman Jean de Bethencourt at the beginning of the 15th century. Gender is masculine.

Diagnosis. — The opisthosoma is cylindrical in males and oval in females (Fig. 25). Prosoma and habitus as in Figs. 21–22. Ocular area elevated and placed close to the center of the prosoma. Distinguished from closely related genera (*Pholcus*, *Micropholcus*, *Leptopholcus* and *Spermophora*) by the shape of the prosoma (Fig. 21) and the morphology of the procurus with characteristic dorso-retrolateral apophysis and concave shape. A useful character for identification purposes is the shape of the tarsal organ (Figs. 6, 13), which in *Ossinissa* new genus is flat (sensu Huber 2000, 2003), while in all closely related genera it is capsulated. Although the small size and the globular shape of the female opisthosoma may lead to some confusion with *Spermophora* or *Spermophorides*, *Ossinissa* new genus can be easily distinguished by the presence of a well-developed uncus (Figs. 1, 5, 14, 20), the structure of the procurus (Fig. 24) and the presence of eight eyes. Additionally, the absence of the “bump” of the epigynum in *Ossinissa* new genus clearly separates this genus from *Spermophorides*, and the lack of pockets in the vulva is a useful trait when differentiating from *Spermophora*.

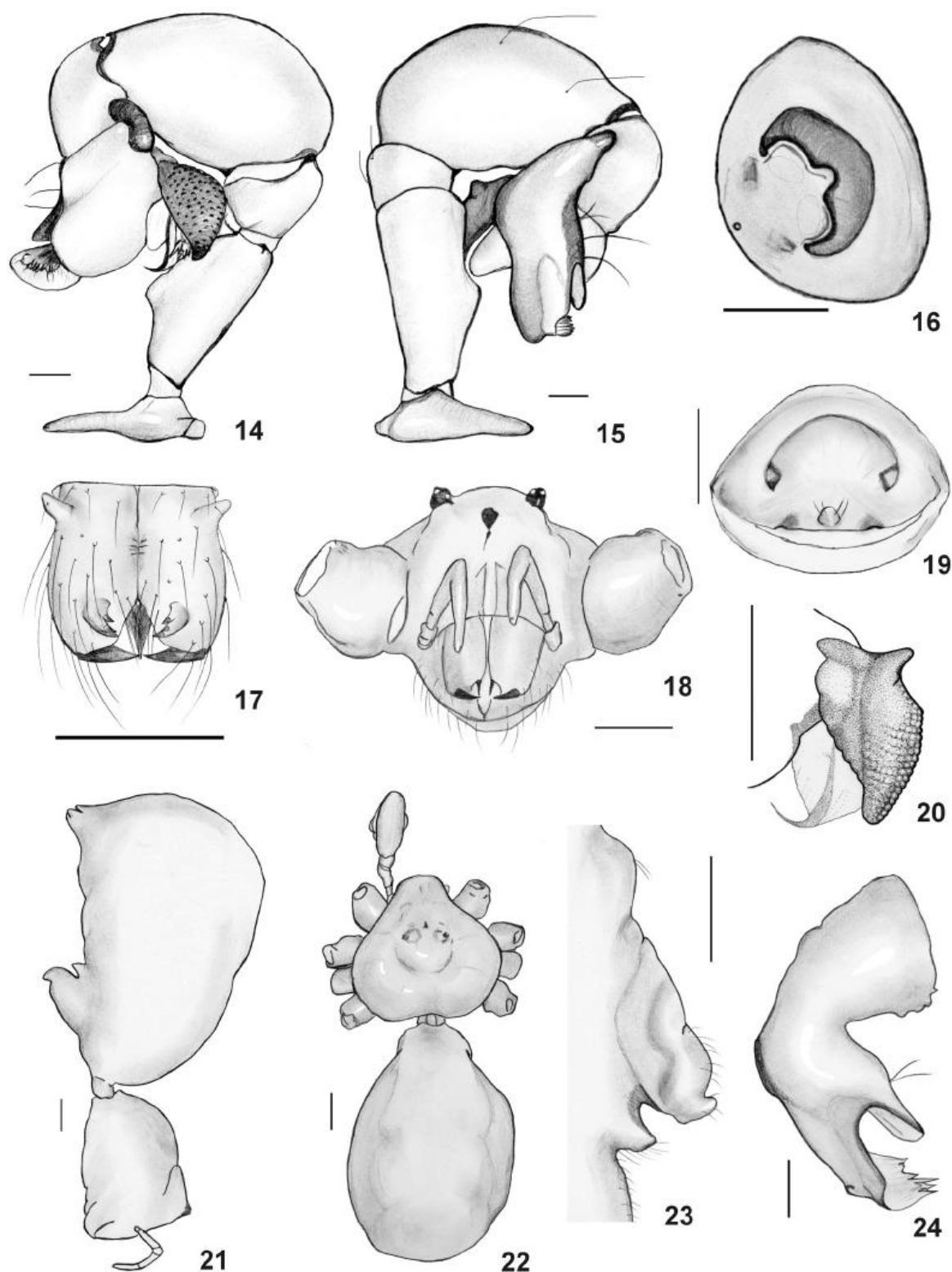
The most important characters that distinguish *Ossinissa* new genus from small-sized *Pholcus* species are: the cavity of the procurus; the dorso-retrolateral apophysis of the procurus, and the shape of the tarsal organ. The absence of a heavily sclerotized structure around the pore plates in the female genitalia of *Ossinissa* new genus is also a good diagnostic character.

Description. — Ochre-yellowish pholcids. Total body length in males slightly smaller than in females. Prosoma shape as in Fig. 21. The ocular area moderately elevated and situated roughly in the center of the prosoma. Eight eyes. In the type species, eyes are reduced, especially the AME. The arrangements of the eyes as in most eight-eyed pholcids; ALE, PME and PLE grouped in two triads placed on the lateral margins of the ocular area. Lateral triads are placed on two short cylindrical outgrowths. AME situated between the triads on the frontal side of the ocular area. Ocular area surrounded by a slight depression of the prosoma. Male chelicerae (Figs. 3, 17) with distal apophyses (Fig. 9) carrying modified hairs (sensu Huber 2000) and proximolateral apophyses. In females, chelicerae bear no apophyses. Male palpal trochanter with retrolateral process, femur cylindrical with ventral bulge. Procurus robust and narrower at the base (Fig. 24), with a cavity open toward the bulb. Distally, procurus with well developed dorso-retrolateral apophysis. Genital bulb with three projections: uncus (Fig. 20), appendix and embolus. Embolus with membranous structure. Leg formula 1423. Legs and body covered with short hairs. Opisthosoma almost cylindrical in males and globular in females. Spinnerets (Figs. 26–29)

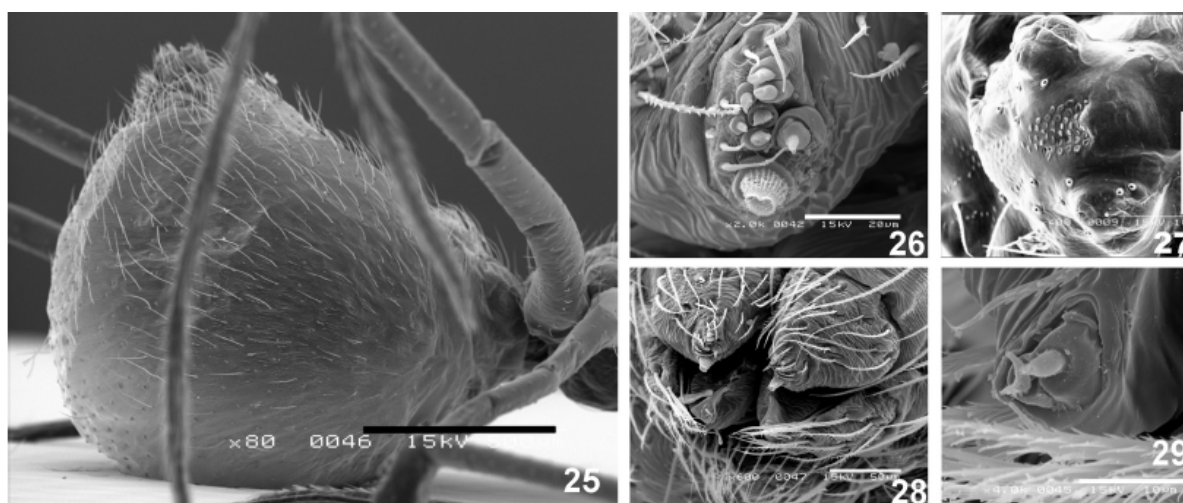
situated ventrally close to the end of the opisthosoma. Epigynum elevated. Vulva with heavily sclerotized valve ridge.



FIGURES 1–13. *Ossinissa justoi* new combination, male. 1. Uncus, retrolateral; 2. Apex of the procursus, retrolateral; 3. Chelicerae, frontal; 4. Procursus, retrolateral; 5. Uncus, dorso-retrolateral; 6. Tarsal organ, lateral; 7. Palp, dorso-retrolateral; 8. Palp with procursus, dorsal; 9. Distal apophyses of the chelicerae, fronto-lateral; 10. Ocular area, frontal; 11. Procursus, ventral; 12. Male palp, prolateral; 13. Tarsal organ, fronto-lateral. Scale bars: 1–5, 10–11: 100 μ m; 7–8, 12: 200 μ m; 4: 50 μ m; 13: 40 μ m; 6: 20 μ m; 9: 10 μ m.



FIGURES 14–24. *Ossinissa justoi* new combination, male (14–15, 17, 20, 22, 24), female (16, 18–19, 21, 23). 14. Male palp, retrolateral; 15. Male palp, prolateral; 16. Vulva, dorsal; 17. Male chelicerae, frontal; 18. Female prosoma, lateral; 19. Epigynum, ventral; 20. Uncus, retrolateral; 21. Female body, lateral; 22. Male body, dorsal; 23. Epigynum, lateral; 24. Procursus, dorsal. Scale bars: 0.2 mm.



FIGURES 25–29. *Ossinissa justoi* new combination, female. 25. Opisthosoma, lateral; 26. Anterior lateral spinnerets, ventral; 27. Ocular area, dorsal; 28. Spinnerets, ventral; 29. Posterior median spinnerets, ventral. Scale bars: 25: 500 μ m; 26: 20 μ m; 27: 100 μ m; 29: 10 μ m; 28: 50 μ m.

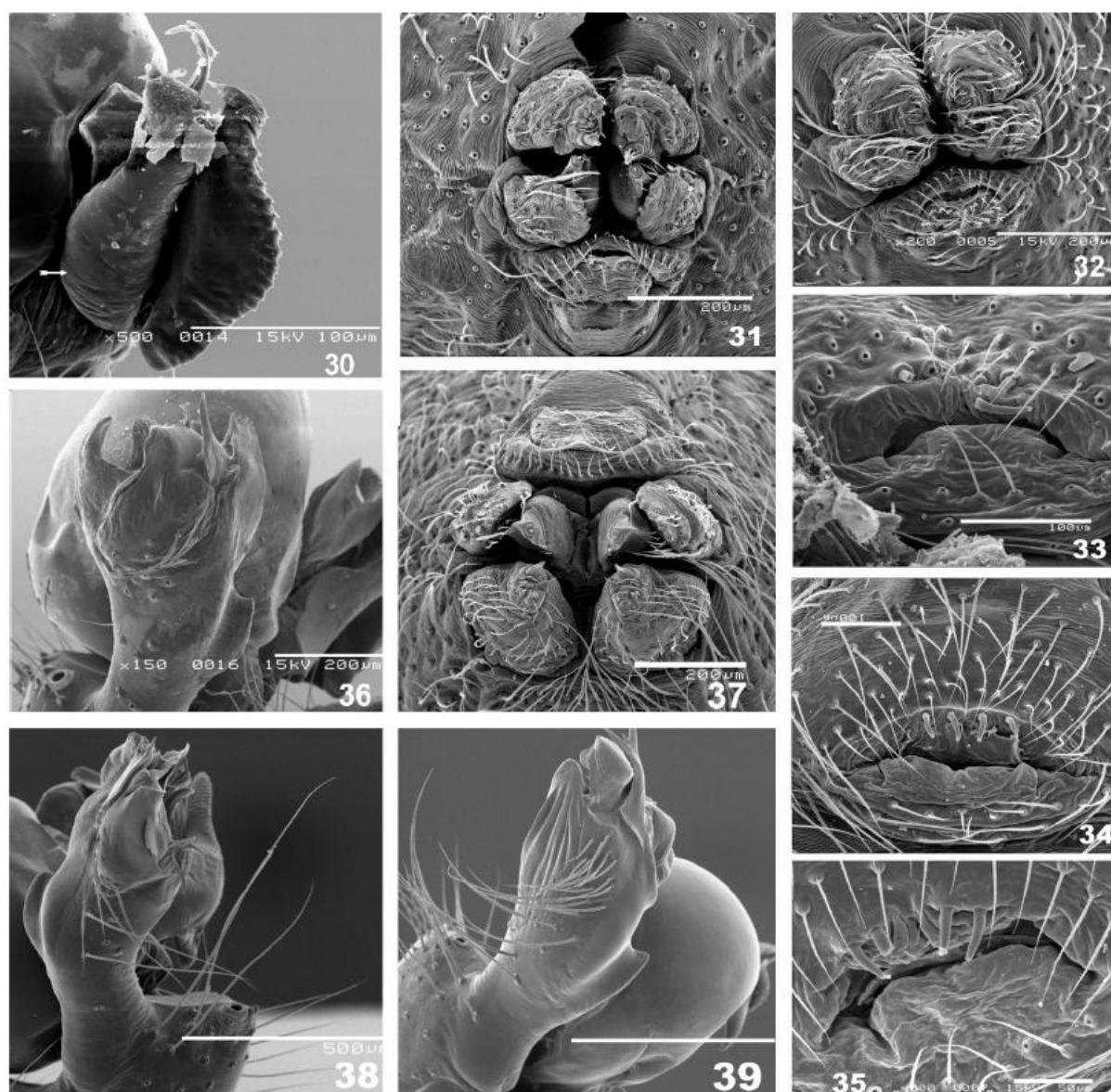
Generic relationships. — This genus shares several synapomorphies with the members of the genus *Pholcus*. The most important of these is the presence of a well-developed uncus. Similarities can be observed in the general structure of the male palp (the shape of femur, tibia and trochanter). The distribution of the eyes is also similar to that in *Pholcus*. However, despite these similarities, the structure of the procursus in *Ossinissa* new genus differs greatly; the tarsal organ is flat while that in *Pholcus* is capsulated; the chelicerae do not have frontal prominences and the morphology of the female vulva is distinct.

Although *O. justoi* was placed initially in *Spermophorides*, it does not share any character with the members of this genus except for the globular shape of the female opisthosoma.

Relationships were examined by means of a cladistic analysis. The data matrix used for the analysis is listed in Appendix 1. The matrix was based on Huber 2003 but was modified as follows:

- 1 Several taxa were deleted, mainly New World genera and ninetines, which would not have contributed to the determination of *Ossinissa* new genus and its close relatives.
- 2 *O. justoi* and some *Pholcus* species from the Canary Islands were added (*P. fuerteventurensis*, *P. ornatus* and *P. gomeræ*).
- 3 One character was added: 60 – shape of the opisthosoma; 0 – cylindrical, 1 – elevated (the opisthosoma does not present regular height). When the opisthosoma was elevated in one of the two sexes, the species was coded as 1. (Note that the total number of characters is 61 but they are numbered starting from 0).

Using a previously published matrix from which several non-related taxa were deleted resulted in a high number of non-informative characters.



FIGURES 30–39. *Ossinissa justoi* new combination, male. Bulbal projections (arrow indicates embolus), dorso-prolateral. Figures 31, 33, 38. *Pholcus ornatus*, male: 31. Spinnerets, ventral; 33. Gonopore, ventral; 38. Male palp, prolateral. Figures 32, 35–36. *Pholcus fuerteventurensis*, male: 32. Spinnerets, ventral; 35. Gonopore, ventral; 36. Male palp, prolateral. Figures 34, 37, 39. *Pholcus gomerae*, male: 34. Gonopore, ventral; 37. Spinnerets, ventral; 39. Male palp, ventro-prolateral. Scale bars: 30, 33–34: 100µm; 31–32, 36–37, 39: 200µm; 38: 500µm; 35: 50µm.

Running NONA with hold 10000 and mult*1000 gave as a result 81 most parsimonious trees with 94 steps. The strict consensus of these trees is given in Appendix II. In addition, the stability of the clades was estimated by calculating the bootstrap and jackknife support using NONA. In all trees generated by the analysis, *Ossinissa* new genus is placed in a clade formed by *Micropholcus*, *Pholcus* and *Leptopholcus*. In this group *Micropholcus* occupies in most of the cases a basal position, and *Ossinissa* new genus is recognized as the closest relative of *Pholcus*. In all cladograms *Pholcus* appears to be paraphyletic with

respect to *Leptopholcus* and this is supported by both bootstrap and jackknife. This could be one more evidence for the possible synonymy of *Pholcus* and *Leptopholcus* (Brignoli, 1980; Huber, 2001).

The application of implied weighting with Pee-Wee (algorithm that resolves character conflict in favor of characters that present less homoplasy) with K from 1–6 produced the same result as NONA.

The placement of *Ossinissa* new genus outside *Pholcus* in all of the analyses, and the fact that the clade *Pholcus* + *Leptopholcus* appears in all cladograms and is supported by bootstrap and jackknife, upholds the existence of *Ossinissa* new genus as separate genus. Although these results suggest that *Leptopholcus* is a synonym of *Pholcus*, this would need further investigation.

In summary, we conclude that *Ossinissa* new genus is closely related with the genera in the *Pholcus* group: *Pholcus*, *Micropholcus* and *Leptopholcus*.

Distribution. – The distribution of this genus is restricted. The Cueva de Don Justo and the Cueva de los Pocitos on El Hierro Island are the only two locations where it has ever been reported.

Included species. – Currently, this genus includes only one species, *Ossinissa justoi* new combination.

***Ossinissa justoi* (Wunderlich 1992) new combination**

Figs. 1–29

Spermophorides justoi Wunderlich 1992: 329, figs. 207–209

Material examined. — **Canary Islands, El Hierro: Cueva de Don Justo:** 2 female paratypes, 18 April 1984 (SMF 39763, 37193). 1 male, 1 female, 15 April 1984, J. L. Martin (CCRUB 3517-140, 3518-140); 2 females from the same locality, 6 November 1992, C. Ribera (CCRUB 3519-140, 3520-140); 2 females, 14 September 2000, GIET (Grupo de Investigaciones Espeleológicas de Tenerife) (CCRUB 4557-171); 4 females, 1 juvenile, 27 November 2000, GIET (CCRUB 4558-171, 4559-171); 2 females, 29 January 2000, GIET (CCRUB 4560-171); 1 male, 1 female, 6 October 2000, GIET (CCRUB 4563-171, 4561-171); 4 females, 1 sub adult male, 1 juvenile, 31 January 2000, GIET (CCRUB 4562-171). **Canary Islands, El Hierro: Cueva de los Pocitos:** 2 females, 25 September 2000, GIET (CCRUB 4554-171); 1 female, 8 October 2000, GIET (CCRUB 4555-171); 1 female, 15 October 2000, GIET (CCRUB 4556-171).

Diagnosis. — This species is the only member of *Ossinissa* new genus known at present. Consequently, diagnosis is difficult. However, on the basis of our knowledge on pholcid taxonomy, we can say that this species is characterized by the shape of the apophyses of the procurus; the shape of the uncus and the shape of the appendix of the genital bulb. The most important character of the female is the shape of the valval ridge and the position of the two pore plates in the vulva.

Measurements. — Male: Prosoma 0.73 wide, 0.74 long; opisthosoma 0.83 wide, 1.22 long, maximum height 0.50; total body length 1.96. Leg I: 15.0 (femur 4.2 + patella 0.2 + tibia 4.4 + metatarsus 5.1 + tarsus 1.1); leg II: 10.8 (2.9 + 0.2 + 2.9 + 3.8 + 1.0); leg III: tarsus and metatarsus missing (2.4 + 0.2 + 2.2); leg IV: 12.0 (3.4 + 0.2 + 2.9 + 4.6 + 0.9). Palp: 2.8 (femur 0.7 + patella 0.4 + tibia 1.1 + tarsus 0.6), procursus 1.0. Female: Prosoma 0.73 wide, 0.83 long; opisthosoma 1.47 wide, 1.81 long, maximum height 1.47; total body length 2.64. Leg I: 18.1 (femur 4.9 + patella 0.3 + tibia 4.9 + metatarsus 6.3 + tarsus 1.7); leg II: 12.3 (3.5 + 0.3 + 3.2 + 4.2 + 1.1); leg III: 9.5 (2.7 + 0.3 + 2.3 + 3.4 + 0.8); leg IV: 13.8 (4.1 + 0.3 + 3.8 + 4.6 + 1.0). Palp 1.2 (femur 0.5 + patella 0.1 + tibia 0.3 + tarsus 0.3).

Description of the male. — Prosoma pale yellow, well-marked fovea and almost undistinguishable junction between head and thoracic region. Ocular area (Fig. 10) elevated and close to the center of prosoma. Eight eyes surrounded by area with darker pigmentation. ALE, PME and PLE on two cylindrical stems. All eyes strongly reduced, especially AME. A bunch of long hairs placed between the stems. Sternum yellowish. Chelicerae brownish (Figs. 3, 17), with dark distal apophyses. Proximolateral apophyses smaller close to the end of the clypeus. Distal apophyses cylindrical, apically with three small darker modified hairs (Fig. 9). Legs long, slightly darker. Palp as in Figs. 7–8, 12, 14 and 16, trochanter with long retrolateral apophysis, femur cylindrical with ventral bulge bearing a small keel. Procursus characteristic (Figs. 2, 4, 11, 24), robust, brown. Distal part of the procurus about two times wider than its base. Procurus concave the genital bulb. In the last third, an elliptical incision defines a dorso-retrolateral apophysis. Apophysis short, fingerlike and with smooth limits. Procurus terminates with irregularly serrated membrane. Area just beneath the dorsal incision semi-transparent and thinner than rest of procurus. Procurus located dorsally, with few thick and relatively short hairs. Uncus (Figs. 1, 5, 20) well developed. Shape of the uncus and its granulation are characteristic and very useful for diagnosis. Embolus as in Fig. 30. Opisthosoma cylindrical with same color as prosoma. Spinnerets as in Figs. 26–29.

Re-description of the female. — All characters as in male except: chelicerae without apophyses and with a lighter pigmentation. Arrangement and size of eyes as in male but stems of lateral triads much shorter (Fig. 18). Hairs between the stems with regular size. Opisthosoma globular and higher than in male. Epigynum (Figs. 19, 23) elevated. Ventrally epigynum with tiny, almost transparent, triangular plate. Plate of epigynum with two dark zones laterally. Some parts of the vulva can be observed externally. Vulva as in Fig. 16.

Distribution. — Only known form in the Cueva de Don Justo and Cueva de los Pocitos, El Hierro Island, Canary Islands, Spain.

Biogeographic comments

The presence of this cave-dwelling species on El Hierro, the youngest island in the archi-

pelago, raises questions about the colonization of the Canaries by this animal. This situation is not unique, since on the same island similar cases have been reported (see Oromí & Izquierdo 1994). A good example is the genus *Collartida* (Heteroptera, Reduviidae, Eme-sinae). The first member of this genus reported in the Canary Islands was *C. anophthalma* (Español & Ribes 1983), which was also found in the Don Justo Cave. Later, another species, *C. tanausu*, was described from a cave on La Palma, the second youngest island (Ribes *et al.* 1998). These two cavernicolous species of Heteroptera are exceptional cases of adaptation to the hypogean environment in this insect group (Maldonado 1994). Again, La Palma and El Hierro are the only islands in the archipelago where the genera *Cixius* (Hemiptera, Cixiidae) and *Meenoplus* (Hemiptera, Meenoplidae) are present, with several species on each island, all troglobites (Hoch & Asche 1993).

A similar distribution pattern is observed for the spider genus *Trogloneta* (Mysmenidae). The troglobite species from this genus in the Canaries (undescribed material) was collected from caves on the two youngest islands, El Hierro and La Palma.

There are two hypotheses to explain the distribution of *Ossinissa* new genus. The first is that this genus colonized El Hierro directly from the continent. Although possible, the probability of this happening more than once in distinct groups is very low. The second hypothesis is that this genus had a much wider distribution in the archipelago in the past, but became extinct in the older islands. This extinction could have been a result of increasing competition with other species. The succession of distinct animal communities and the changes in the environment could account for the extinction of *Ossinissa* new genus in the older islands.

Huber, B. A. 2011. Revision and cladistic analysis of *Pholcus* and closely related taxa (Araneae, Pholcidae). Bonner zool. Monographien 58: 1-510.

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Macaronesian *Pholcus* and *Ossinissa* Dimitrov & Ribera, 2005

Macaronesian *Pholcus*: Dimitrov & Ribera 2007: 103-109. Dimitrov *et al.* 2008: 602-610.

Ossinissa Dimitrov & Ribera 2005a: 3-8.

Notes. Macaronesian *Pholcus* have been revised and analyzed cladistically in two recent papers by Dimitrov and coauthors (Dimitrov & Ribera 2007, Dimitrov *et al.* 2008). The analyses suggest that a majority of the 26 known Macaronesian species form a monophylum. Within this monophylum, Dimitrov *et al.* (2008) recognized four clades that are largely congruent with geographic areas: a Madeiran clade, a Western clade (El Hierro, La Gomera), a Central clade (Gran Canaria), and an Eastern clade (eastern-most Canaries and islets north of Lanzarote).

Three further Macaronesian species did not fit into any of these clades. Two of them were considered to belong to *Pholcus* (*Ph. corniger*, *Ph. baldiosensis*); for the third species, a new genus was created by Dimitrov & Ribera (2005a): *Ossinissa justoi* (Wunderlich, 1992). While the assignment of the former species to *Pholcus* appears well supported, the genus *Ossinissa* is problematic. Three characters were used to justify the new genus. Of these, two refer to the shape of the procursus, a structure that is species-specific and extremely variable even among species groups in the core group of *Pholcus*. The third character is an exposed tarsal organ, while *Pholcus* and close relatives usually have a capsulate tarsal organ. Two new observations cast some doubt on the strength of this character: (1) female *Ossinissa justoi* have capsulate tarsal organs (a fact not mentioned by Dimitrov & Ribera 2005a); (2) very low male (but not female) tarsal organ rims have evolved independently in a number of taxa: within *Buitinga* (*B. kadogo* Huber, 2003), within *Pholcus* (*Ph. tahai* n. sp.; Fig. 686), within *Panjange* (*Pa. iban* n. sp., Fig. 481), and within *Calapnita* (*C. phyllicola*, Fig. 180).

However, the present cladistic analysis does neither convincingly resolve the position of *Ossinissa justoi*. The species is placed outside the core group of *Pholcus* due to the absence of proximal frontal modifications on the male chelicerae and a weakly sclerotized epigynum. It seems thus unjustified to synonymize *Ossinissa* with *Pholcus* based on current knowledge, but further analysis is necessary, also regarding its relationship with the two unplaced Macaronesian *Pholcus* species (*Ph. corniger*, *Ph. baldiosensis*). Unfortunately, none of the three species was included in the molecular analysis of Dimitrov *et al.* (2008).