

## New records of spider species from the Canary Islands (Araneae)

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doi: 10.30963/aramit5511

**Abstract:** *Leptodrassus albidus* and *Setaphis carmeli* are reported for the first time for the Canary Islands, on the islands of Tenerife and Gran Canaria, respectively. Also, another 13 species representing first records for some of the individual Canarian major islands are reported. Habitats of collected specimens are described and global distribution of the species is provided.

**Keywords:** biodiversity, distribution, Macaronesia

**Zusammenfassung. Neue Spinnennachweise von den Kanarischen Inseln (Araneae).** *Leptodrassus albidus* und *Setaphis carmeli* werden erstmals für die Kanaren, von Teneriffa bzw. Gran Canaria, gemeldet. Weitere 13 Arten wurden neu für einzelne der größeren Inseln der Kanaren erfasst. Die Lebensräume der Funde werden beschrieben und die weltweite Verbreitung der Arten besprochen.

The Canary Islands are an archipelago of volcanic origin located off northwest Africa, comprising seven major islands: El Hierro, La Palma, La Gomera, Tenerife, Gran Canaria, Fuerteventura and Lanzarote. Their contrasting topography and large temperature and humidity gradients provide major opportunities for speciation in spiders (Carvalho & Cardoso 2010), thus compensating their relatively low richness compared to the African and European continents for a very high level of endemism (Cardoso et al. 2010). To date there are 513 spider species recorded, most of them endemisms (65 %) and only 17 introduced (3 %) (Gobierno de Tenerife 2017). The highest richness is reached on the island of Tenerife (278 species) while Lanzarote, with 98 species, harbours the lowest number of spider species (Fig. 1). Some of the factors that influence spider biodiversity on each island are habitat heterogeneity, geological age, distance to the continent, area and elevation (Cardoso et al. 2010, Real et al. 1999).

Several studies have focused on the spider biodiversity from the Canary Islands, both at taxonomic (e.g., Dimitrov & Ribera 2007, Lissner 2017, Planas & Ribera 2015, Wunderlich 1987, 1992, 2011), faunistic (e.g., Hepner & Paulus 2009, Hernández-Teixidor et al. 2011, Macías-Hernández et al. 2016) and genetic levels (e.g., Dimitrov et al. 2008, Macías-Hernández et al. 2010, 2013, Opatova & Arnedo 2014). Most of them have been carried out within the families Dysderidae and Pholcidae, which had experienced a huge adaptive radiation leading to several endemic species (Arnedo et al. 2001, Dimitrov et al. 2008). However, the real distribution of many species is underestimated, especially in islands and habitats that have been poorly sampled. In this article the known distribution of fifteen species is extended, reporting nine first records for Gran Canaria, four for Tenerife, and three for Fuerteventura (one of them also shared with Gran Canaria). Moreover, *Leptodrassus albidus* Simon, 1914 and *Setaphis carmeli* (O. Pickard-Cambridge, 1872) are reported for the first time for the Canary Islands.

### Material and methods

All specimens were collected by direct sampling and identified by the author from December 2016 to August 2017, except when another collector is specified, and all are stored in absolute

ethanol in the author's personal collection. Murphy (2007), Nentwig et al. (2017), Platnick & Murphy (1996) and Wunderlich (1992) were used as resources to identify the species. Global distribution data were taken from the World Spider Catalog (2017) while current distribution data in the Canary Islands were taken from the Canary Biodiversity DataBase (Gobierno de Canarias 2017). The latter was also consulted to obtain information about insular and local (50 × 50 m squares) spider biodiversity. This tool is the most updated information since the last published check-list (Arechavaleta et al. 2010).

### Results

#### Family Araneidae

*Agalenatea redii* (Scopoli, 1763)

**Determination.** Nentwig et al. (2017).

Gran Canaria: Tenteniguada (Valsequillo), 27.975834°N/-15.528912°W, 1010 m, 28.XII.2016, 1 ♀; Inagua (Tejeda), 27.932508°N/-15.672725°W, 1060 m, 30.XII.2016, 1 ♀; Montaña de Tara (Telde), 28.003147°N/-15.431478°W, 250 m, 10.III.2017, 1 ♀; Valsendero (Valleseco), 28.031515°N/-15.600947°W, 1220 m, 11.IV.2017, 1 ♀; Camino de Las Retamillas (Moya), 28.039958°N/-15.606447°W, 1375 m, 11.IV.2017, 1 ♀; Montaña Las Palmas (Telde), 27.998172°N/-15.454362°W, 530 m, 10.IV.2017, 1 ♀.

Fuerteventura: Corral de Esquey (Betancuria), 28.449499°N/-14.031692°W, 290 m, 28.V.2017, 2 ♀♀, Ruymán Cedrés leg. Individuals were found on dry grass and shrubs.

**Distribution.** Europe, Turkey, Central Asia to China. New to Gran Canaria and Fuerteventura.

*Argiope lobata* (Pallas, 1772)

**Determination.** Nentwig et al. (2017).

Gran Canaria: Inagua (Tejeda), 27.932508°N/-15.672725°W, 1060 m, 30.XII.2016, 1 ♀.

The collected specimen was found in a web on dry grass.

**Distribution.** Southern Europe to Central Asia and China, northern Africa, South Africa, Israel, India, from Myanmar to New Caledonia and northern Australia. New to Gran Canaria.

*Argiope trifasciata* (Forsskål, 1775)

**Determination.** Nentwig et al. (2017).

Fuerteventura: Puerto Lajas (Puerto del Rosario), 28.538297°N/-13.841662°W, 15 m, 27.V.2017, 1 ♀, R. Cedrés leg.; Antigua, 28.423899°N/-14.023818°W, 580 m, 11.VIII.2017, 1 ♀.

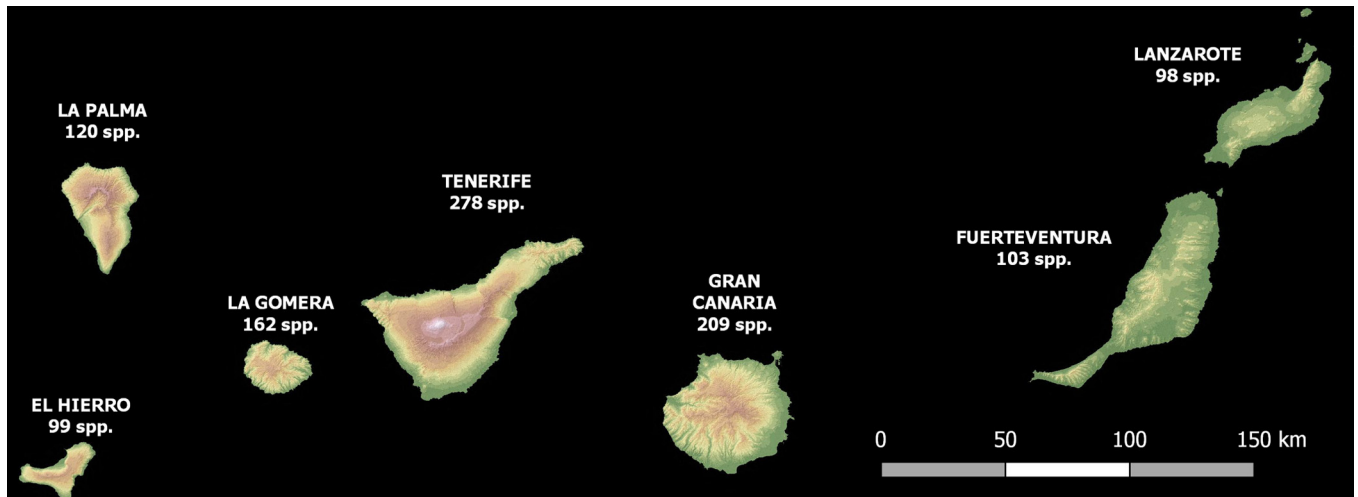


Fig. 1: Map showing the different islands in the Canary archipelago and the number of spider species harboured by each one (GRAFCAN 2017)

Individuals were found in webs on *Launaea arborescens*.

**Distribution.** North, Central and South America. Introduced to Africa, Portugal, Israel, China, Japan, Australia (Tasmania) and Pacific islands. New to Fuerteventura.

### Gnaphosidae

*Leptodrasus albidus* Simon, 1914 (Fig. 2)

**Determination.** Murphy (2007).

Tenerife: San Roque (San Cristóbal de La Laguna), 28.487826°N/-16.308622°W, 610 m, 1.V.2017, 1 ♀.

The specimen was collected under a rock in a *Pinus radiata* plantation. It can be easily distinguished from *Leptodrassex hylaestomachi* Berland, 1934 in having the median cavity of the epigyne covered by a long hood that is lacking in the genus *Leptodrassex*. This species is the first report of the genus *Leptodrasus* for the Canary Islands.

**Global distribution.** Spain to Crete, Turkey, Israel, Azores. New to the Canary Islands.

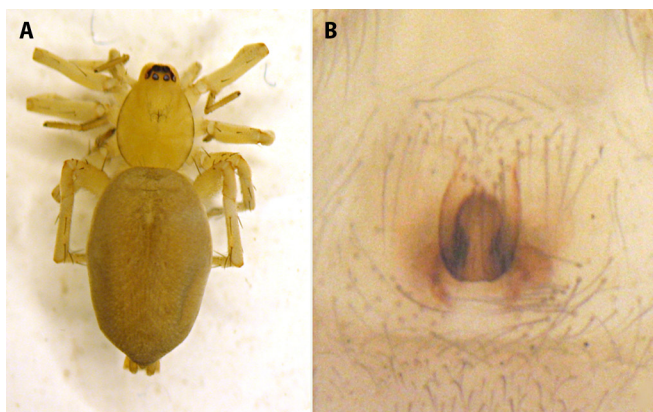


Fig. 2: *Leptodrasus albidus*. A. Habitus of female, dorsal view. B. Epigyne, ventral view

*Setaphis carmeli* (O. Pickard-Cambridge, 1872) (Fig. 3)

**Determination.** Platnick & Murphy (1996).

Gran Canaria: Caldera de los Marteles (Valsequillo), 27.958469°N/-15.535192°W, 1460 m, 8.IV.2017, 2 ♀♀; 21.V.2017, 2 ♀♀.

This species was found under rocks in an abandoned crop field. Several juveniles were also observed. Its dark coloura-

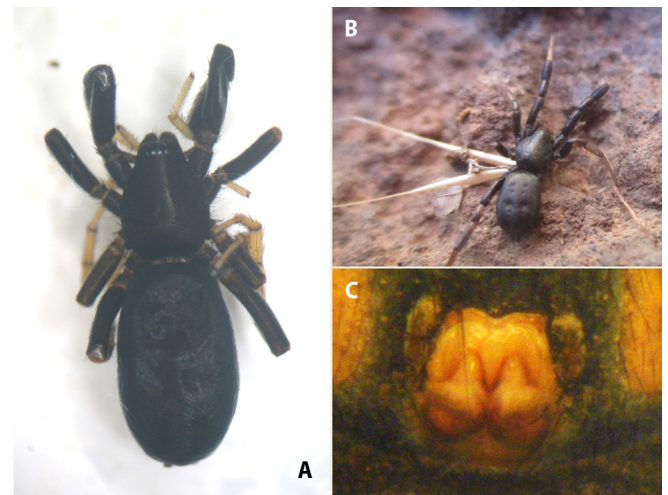


Fig. 3: *Setaphis carmeli*. A, B. Habitus of female, dorsal view. C. Epigynum, ventral view

tion and bicoloured legs makes this species easy to distinguish from the Canary endemisms of the genus *Setaphis*, which are usually light brown.

**Global distribution.** Mediterranean. New to the Canary Islands.

*Trachyzelotes lyonneti* (Audouin, 1826)

**Determination.** Nentwig et al. (2017).

Gran Canaria: Caldera de los Marteles (Valsequillo), 27.958469°N/-15.535192°W, 1460 m, 21.V.2017, 3 ♀♀ 1 ♂; Tenteniguada (Valsequillo), 27.975834°N/-15.528912°W, 1010 m, 21.V.2017, 1 ♀.

Specimens were collected under rocks in abandoned crop fields covered by grasses.

**Global distribution.** Macaronesia, Mediterranean to Central Asia. Introduced to USA, Mexico, Peru and Brazil. New to Gran Canaria.

**Tab. 1:** Summary of the new records provided in this article. Previously known distributions are marked with an "X", while new records are indicated with asterisks (\*). H: El Hierro, P: La Palma, G: La Gomera, T: Tenerife, C: Gran Canaria, F: Fuerteventura, L: Lanzarote.

Taxa	H	P	G	T	C	F	L
Araneidae							
<i>Agalenatea redii</i> (Scopoli, 1763)		X	X	X	*	*	X
<i>Argiope lobata</i> (Pallas, 1772)	X			X	*		
<i>Argiope trifasciata</i> (Forsskål, 1775)		X	X	X	X	*	X
Gnaphosidae							
<i>Leptodrassus albidus</i> Simon, 1914				*			
<i>Setaphis carmeli</i> (O. Pickard-Cambridge, 1872)					*		
<i>Setaphis wunderlichi</i> Platnick & Murphy, 1996	X	X	X	*			
<i>Trachyzelotes lyonneti</i> (Audouin, 1826)				X	*		
Mimetidae							
<i>Ero flammeola</i> Simon, 1881		X		X	*		
Salticidae							
<i>Pellenes nigrociliatus</i> (L. Koch, 1875)			X	X	*		
<i>Phlegra bresnieri</i> (Lucas, 1846)				*	X		
<i>Thyene imperialis</i> (Rossi, 1846)				X	X	*	
Tetragnathidae							
<i>Meta minima</i> Denis, 1953	X	X	X	X	*		
Theridiidae							
<i>Simitidion lacuna</i> Wunderlich, 1992		X		*			
<i>Steatoda latifasciata</i> (Simon, 1873)					*	X	X
<i>Theridion melanurum</i> Hahn, 1831				X	*		

### Mimetidae

*Ero flammeola* Simon, 1881

**Determination.** Nentwig et al. (2017).

Gran Canaria: Tenteniguada (Valsequillo), 27.975834°N/-15.528912°W, 1010 m, 15.IV.2017, 1 ♀.

The individual was collected on a wall of a rural house.

**Global distribution.** Portugal to Corfu, Turkey, Israel, Canary Islands. New to Gran Canaria.

### Salticidae

*Pellenes nigrociliatus* (L. Koch, 1875)

**Determination.** Nentwig et al. (2017).

Gran Canaria: Tenteniguada (Valsequillo), 27.975834°N/-15.528912°W, 1010 m, 15.IV.2017, 1 ♂.

The specimen was found on a wall.

**Global distribution.** Canary Is., Europe, Turkey, Israel, Caucasus, Russia to Central Asia, China. New to Gran Canaria.

*Phlegra bresnieri* (Lucas, 1846)

**Determination.** Nentwig et al. (2017).

Tenerife: Los Rodeos (San Cristóbal de La Laguna), 28.471603°N/-16.347847°W, 680 m, 7.III.2017, 1 ♀, Javier García leg.

It was collected under a rock in a crop field.

**Global distribution.** Southern Europe, Northern Africa to Turkey, Azerbaijan, Iran. New to Tenerife.

*Thyene imperialis* (Rossi, 1846)

**Determination.** Nentwig et al. (2017).

Fuerteventura: Puerto de Morro Jable (Pájara), 28.049671°N/-14.357968°W, 5 m, 14.VIII.2017, 1 ♂, 1 ♀.

Both individuals were found on leaves of *Euphorbia balsamifera*.

Global distribution: Southern Europe, North and East Africa, Near East to Central Asia and China, India, Indonesia. New to Fuerteventura.

### Tetragnathidae

*Meta minima* Denis, 1953

**Determination.** Wunderlich (1992).

Gran Canaria: Barranco Oscuro (Moya), 28.064128°N/-15.594920°W, 830 m, 26.XII.2016, 1 ♀; Mina de Las Peñas (Valsequillo), 27.970742°N/-15.529152°W, 1125 m, 29.VII.2017, 2 ♀♀.

This species was found at the entrance of water mines.

**Global distribution.** Canary Islands. New to Gran Canaria.

### Theridiidae

*Simitidion lacuna* Wunderlich, 1992

**Determination.** Nentwig et al. (2017).

Tenerife: Mesa Mota (Tegueste), 28.508157°N/-16.317333°W, 730 m, 21.I.2017, 1 juvenile; Camino de Jardina (San Cristóbal de La Laguna), 28.523834°N/-16.284326°W, 22.IV.2017, 1 ♀.

Two specimens were found beating *Erica arborea*.

**Global distribution.** Canary Islands, Spain, North Africa, Israel. New to Tenerife.

*Steatoda latifasciata* (Simon, 1873)

**Determination.** Nentwig et al. (2017).

Gran Canaria: Montaña de Tara (Telde), 28.003147°N/-15.431478°W, 250 m, 27.XII.2016, 2 ♀♀.

The collected specimens were found under rocks in a *Euphorbia lamarckii* scrub.

**Global distribution.** Canary Islands to Israel. New to Gran Canaria.

*Theridion melanurum* Hahn, 1831

**Determination.** Nentwig et al. (2017).

Gran Canaria: Tenteniguada (Valsequillo), 27.975834°N/-15.528912°W, 980 m, 8.I.2017, 2 ♂♂; El Brezal (Santa María de Guía), 28.107158°N/-15.601551°W, 630 m, 07.IV.2017, 1 ♀.

Specimens in Tenteniguada were collected beating *Pinus canariensis*.

**Global distribution.** Europe to Siberia, Macaronesia, North Africa, Middle East. Introduced to USA. New to Gran Canaria.

A summary of the new records is provided in Table 1.

## Discussion

Thirteen new island records as well as two new species records for the Canary arachnofauna have been detected, thus increasing the spider biodiversity of the archipelago to 515 species. Both *Setaphis carmeli* and *Leptodrassus albidus* are widely distributed along the Mediterranean basin. However, it is not possible for the author to conclude if these species were introduced, have colonized the Canary archipelago recently or have been overlooked in past surveys. A molecular phylogeographic study would be necessary to discern between those three main hypotheses. The spider assemblage in some habitats of the Canary Islands is still underestimated, it is the laurel forest areas where spider richness reaches its maximum; indeed, the two 50 × 50 m quadrats with higher richness are located in the laurel forests of Anaga in Tenerife (62 species) and Garajonay in La Gomera (70 species) (Gobierno de Canarias 2017). However, there are still many localities without any recorded species, especially in the eastern islands. Wunderlich (2011) claimed that the spider fauna of several unknown parts of the Canary Islands is not well studied and that an unknown number of species are still waiting for their discovery. Thus, arachnological studies should be developed in order to have a better knowledge of the real diversity and distribution of the Canary spider assemblage.

## Acknowledgements

I would like to thank Javier García, Ruymán Cedrés and Yudith García for the material provided. I am very grateful to Dr. Pedro Oromí for his help during the elaboration of the manuscript. Also, I would like to thank Jørgen Lissner and an anonymous reviewer for their useful comments that improved the quality of the manuscript.

## References

- Arechavaleta M, Rodríguez S, Zurita N & García A 2010 Lista de especies silvestres de Canarias. Hongos, plantas y animales terrestres. Gobierno de Canarias, Santa Cruz de Tenerife. 579 pp.
- Arnedo MA, Oromí P & Ribera C 2001 Radiation of the spider genus *Dysdera* (Aranea, Dysderidae) in the Canary Islands: Cladistic assessment based on multiple data sets. – *Cladistics* 17: 313-353 – doi: [10.1111/j.1096-0031.2001.tb00129.x](https://doi.org/10.1111/j.1096-0031.2001.tb00129.x)
- Cardoso P, Arnedo M, Triantis KA & Borges PAV 2010 Drivers of diversity in Macaronesian spiders and the role of species extinctions. – *Journal of Biogeography* 37: 1034-1046 – doi: [10.1111/j.1365-2699.2009.02264.x](https://doi.org/10.1111/j.1365-2699.2009.02264.x)
- Carvalho JC & Cardoso P 2010 Drivers of beta diversity in Macaronesian spiders in relation to dispersal ability. – *Journal of Biogeography* 41: 1859-1870 – doi: [10.1111/jbi.12348](https://doi.org/10.1111/jbi.12348)
- Dimitrov D, Arnedo M & Ribera C 2008 Colonization and diversification of the spider genus *Pholcus* Walckenaer, 1805 (Araneae, Pholcidae) in the Macaronesian archipelagos: Evidence

- for long-term occupancy yet rapid recent speciation. – *Molecular Phylogenetics and Evolution* 48: 596-614 – doi: [10.1016/j.ympev.2008.04.027](https://doi.org/10.1016/j.ympev.2008.04.027)
- Dimitrov D & Ribera C 2007 The genus *Pholcus* (Araneae, Pholcidae) in the Canary Islands. – *Zoological Journal of the Linnean Society* 151: 59-114 – doi: [10.1111/j.1096-3642.2007.00316.x](https://doi.org/10.1111/j.1096-3642.2007.00316.x)
- Gobierno de Canarias 2017 Banco de datos de biodiversidad de Canarias. – Internet: <http://www.biodiversidadcanarias.es> (26.IX.2017)
- GRAFSCAN 2017 Infraestructuras de Datos Espaciales de Canarias. – Internet: <http://www.idecanarias.es> (26.IX.2017)
- Hepner M & Paulus HF 2009 Contributions on the wolf spider fauna (Araneae, Lycosidae) of Gran Canaria (Spain). – *Bulletin of the British Arachnological Society* 14: 339-346 – doi: [10.13156/arac.2009.14.8.339](https://doi.org/10.13156/arac.2009.14.8.339)
- Hernández-Teixidor D, Castro-Urgal R, Txasko N, Macías-Hernández N & Oromí P 2011 Fauna de arácnidos del malpais de La Rasca (Tenerife, Islas Canarias). – *Vieraea* 39: 77-95
- Lissner J 2017 Description of the unknown male of *Ozyptila tenerifensis* (Araneae: Thomisidae). – *Arachnologische Mitteilungen* 53: 50-52 – doi: [10.5431/aramit5308](https://doi.org/10.5431/aramit5308)
- Macías-Hernández N, Oromí P & Arnedo M 2010 Integrative taxonomy uncovers hidden species diversity in woodlouse hunter spiders (Araneae, Dysderidae) endemic to the Macaronesian archipelagos. – *Systematics and Biodiversity* 8: 531-553 – doi: [10.1080/14772000.2010.535865](https://doi.org/10.1080/14772000.2010.535865)
- Macías-Hernández N, Bidegaray-Batista L, Emerson BC, Oromí P & Arnedo M 2013 The imprint of geologic history on within-island diversification of woodlouse-hunter spiders (Araneae, Dysderidae) in the Canary Islands. – *Journal of Heredity* 104: 341-356 – doi: [10.1093/jhered/est008](https://doi.org/10.1093/jhered/est008)
- Macías-Hernández N, de la Cruz López S, Roca-Cusachs M, Oromí P & Arnedo M 2016 A geographical distribution database of the genus *Dysdera* in the Canary Islands (Araneae, Dysderidae). – *ZooKeys* 625: 11-23 – doi: [10.3897/zookeys.625.9847](https://doi.org/10.3897/zookeys.625.9847) and [10.5061/dryad.t63mn](https://doi.org/10.5061/dryad.t63mn) (data files)
- Murphy JA 2007 Gnaphosid genera of the world. British Arachnological Society, Dorchester. 605 pp.
- Nentwig W, Blick T, Gloor D, Hänggi A & Kropf C 2017 araneae – Spiders of Europe – Internet: <http://www.araneae.unibe.ch> (26.IX.2017) – doi: [10.24436/1](https://doi.org/10.24436/1)
- Opatova V & Arnedo M 2014 Spiders on a hot volcanic roof: colonisation pathways and phylogeography of the Canary Islands endemic trap-door spider *Titanidiops canariensis* (Araneae, Idiopidae). – *PLoS ONE* 9 (12, e115078): 1-31 – doi: [10.1371/journal.pone.0115078](https://doi.org/10.1371/journal.pone.0115078)
- Planas E & Ribera C 2015 Description of six new species of *Loxosceles* (Araneae: Sicariidae) endemic to the Canary Islands and the utility of DNA barcoding for their fast and accurate identification. – *Zoological Journal of the Linnean Society* 174: 47-73 – doi: [10.1111/zoj.12226](https://doi.org/10.1111/zoj.12226)
- Platnick NI & Murphy JA 1996 A review of the zelotine ground spider genus *Setaphis* (Araneae, Gnaphosidae). – *American Museum Novitates* 3162: 1-23
- Real R, Olivero J, Guerrero JC, Vargas JM & Márquez AL 1999 Contrastación de hipótesis explicativas de la distribución de la diversidad específica de arañas (Arachnida, Araneae) en las Islas Canarias. – *Boletín de la Sociedad Entomológica Aragonesa* 26: 573-581
- World Spider Catalog 2017 World spider catalog, version 18.5. Natural History Museum, Bern. – Internet: <http://wsc.nmbe.ch> – doi: [10.24436/2](https://doi.org/10.24436/2) (26.IX.2017)
- Wunderlich J 1987 Die Spinnen der Kanarischen Inseln und Madeiras. Adaptive Radiation, Biogeographie, Revisionen und Neubeschreibungen. Triops, Langen/Germany. 435 pp.
- Wunderlich J 1992 Die Spinnen-Fauna der Makaronesischen Inseln. Taxonomie, Ökologie, Biogeographie und Evolution. – *Beiträge zur Araneologie* 1: 1-619
- Wunderlich J 2011 Extant and fossil spiders (Araneae). – *Beiträge zur Araneologie* 6: 1-640