

New occurrences of the Mediterranean black widow *Latrodectus tredecimguttatus* (Rossi, 1790) in Peninsular Spain with first records for five provinces (Araneae, Theridiidae)

Filippo CECCOLINI

SHNB



SOCIETAT D'HISTÒRIA
NATURAL DE LES BALEARS

Ceccolini, F. 2024. New occurrences of the Mediterranean black widow *Latrodectus tredecimguttatus* (Rossi, 1790) in Peninsular Spain with first records for five provinces (Araneae, Theridiidae). *Boll. Soc. Hist. Nat. Balears*, 67: 157-164. ISSN 0212-260X. e-ISSN 2444-8192. Palma.

New occurrence records of the Mediterranean black widow *Latrodectus tredecimguttatus* (Rossi, 1790) are quoted for Peninsular Spain. The first records for the provinces of Girona, Càceres, Castellón, Granada, and Huelva are given.

Keywords: faunistics; Spain; Girona; Càceres; Castellón; Granada; Huelva.

NOVES DADES DE PRESENCIA DE LA VÍDUA NEGRA MEDITERRÀNIA *LATRODECTUS TREDECIMGUTTATUS* (ROSSI, 1790) A L'ESPANYA PENINSULAR AMB PRIMERES CITES A CINC PROVÍNCIES (ARANEAE, THERIDIIDAE). Es donen nous registres d'ocurrència de la vídua negra mediterrània *Latrodectus tredecimguttatus* (Rossi, 1790) per a l'Espanya peninsular. Es donen els primers registres de les províncies de Girona, Càceres, Castelló, Granada i Huelva.

Paraules clau: faunística; Espanya; Girona; Càceres; Castelló de la Plana; Granada; Huelva.

Filippo CECCOLINI Via Europa 16/A, I-52016 Rassina (Arezzo), Italy. Email: ceccolinif@virgilio.it; <https://orcid.org/0000-0002-1476-914X>

Recepció del manuscrit: 1-12-2024; revisió acceptada: 9-12-2024; publicació online: 9-12-2024.

Introduction

The knowledge of the spider fauna of Iberian Peninsula has recently improved when the first Iberian checklist was published by Cardoso and Morano (2010), and then with an online catalogue continuously updated by de Biurrun *et al.* (2022). However, the knowledge about the distribution of several spider still needs to

be implemented, even for some common and impressive species.

One of these is the Mediterranean black widow, *Latrodectus tredecimguttatus* (Rossi, 1790). It is one of the two species of the genus *Latrodectus* in Iberian Peninsula (Melic, 2000) and it is one of the few Iberian spiders that can be dangerous to humans, being able to cause latrodectism with its poison (see Fusto *et*

al., 2020) which contains the neurotoxin α -latrotoxin which has neurological effects in humans (Bildik *et al.*, 2021). This theridiid has a wide range from the Iberian Peninsula to southeastern Europe and Central Asia (WCS, 2024) and although its distribution in Spain is quite well known—as summerized in de Biurrun *et al.* (2022)—there are still some knowledge gaps due to a lack of records. Currently in Spain, in addition to Balears—in Menorca (Wunderlich, 2017; Febrer and Barrientos, 2022)—and Canary Islands (Lucas, 1838; Simon, 1833, 1889; Wunderlich, 1987, 1991; Schmidt, 1990; Lotz, 1994; Melic, 2000; Wunderlich, 2017), *L. tredecimguttatus* is known in Alicante (Barrientos *et al.*, 2023), Almería (Vanuytven *et al.*, 1994; Melic, 2000), Badajoz (Mora-Rubio and Pérez-Bote, 2018), Barcelona (Dufour, 1820; Graells, 1842; Pérez Acosta, 1923), Cuenca (Simon, 1900), Cádiz (Melic, 2000; Sánchez, 2003; Rojas and Rojas, 2016), Guadalajara (Pinilla-Rosa, 2021), Huesca (Navás, 1904; Melic, 2000), La Rioja (Melic *et al.*, 2006), Madrid (Ferrández *et al.*, 2006), Murcia (Melic, 2000), Navarra (Melic *et al.*, 2006), Pontevedra (Franganillo, 1910, 1925; Martínez Sabarís, 2017), Tarragona (Dufour, 1820, Graells, 1834, 1842), Teruel (Melic, 2000), Toledo (Melic, 2000), Valencia (Calatayud-Mascarell *et al.*, 2024), and Zaragoza (Melic, 2000).

The present contribution gives several new records of this spider in Peninsular Spain, adding some new provinces in which *L. tredecimguttatus* is known.

Material and method

All material examined consists of photographed specimens from the

websites iNaturalist (IN) or observation.org (OB). All listed records were confirmed by the author. *Latrodectus tredecimguttatus* is recognizable through photo thanks peculiar features (Nentwig *et al.*, 2024). Its coloration pattern is black with opisthosoma dorsally with 3 longitudinal series of red in female or more whitish in male blotches—sometimes these blotches are absent and the opisthosoma is entirely black—even if in subadults specimens the outlines of the red spots are white. Only photos in which the specimens have these features were well visible are selected (many records of theridiids entirely black were not be used due to the risk of misidentification through photo with other similar species, like in case of eventual specimens of *Steatoda paykulliana* (Walckenaer, 1806) without the characteristic band around the front).

For each site, the following information is given: locality, coordinates, date of collecting, number of specimens, photographer, source. Geographical coordinates are in decimal degrees (datum WGS84). The uncertainty (in meters) of data is indicated according to the point-radius method (Wieczorek *et al.*, 2004).

Material examined

Aragon: Huesca, Berbegal, 41.9778°N 0.0296°E (un. not recorded), 21.VI.2018, 1 specimen, photo by Alfonso Pascual García (OB) (<https://observation.org/observation/302973936/>); *idem*, 41.9646°N -0.0293°E (un. not recorded), 2.VII.2019, 1 specimen, photo by Alfonso Pascual García (OB) (<https://observation.org/observation/302990678/>); Alcolea de Cinca, 41.7214°N 0.1150°E (un. not recorded), 9.VI.2014, 1 specimen, photo by Ramon M. Batlle Artigues (OB) (<https://observation.org/observation/30294582>)

7/); Teruel, Calamocha, 40.9185° -1.3563°E (un. not recorded), 29.VI.2019, 1 specimen, photo by José-Antonio Sánchez Sancho (OB) (<https://observation.org/observation/302984855/>).



Fig. 1. Female of *Latrodectus tredecimguttatus* from the surroundings of Rabós, Girona (photo by Sergi Castro Rodríguez).

Fig. 1. *Femella de* *Latrodectus tredecimguttatus dels voltants de Rabós, Girona (foto de Sergi Castro Rodríguez).*

Catalunya: Girona, near Rabós, 42.38939°N 3.03008° E (un. = 2330 m), 30.VI.2022, 2 specimens (one in Fig. 1), photos by Sergi Castro Rodriguez (IN) (<https://www.inaturalist.org/observations/124306995>); Barcelona: Sant Vicenç de Castellet, 41.66815°N 1.86462°E (un. = 1140 m), 1.V.2023, 1 specimen, photo by Claudia Fernández (IN) (<https://www.inaturalist.org/observations/158770897>); *idem*, 41.66604°N 1.85338°E (un. = 815 m), 30.IV.2023, 1 specimen, photo by Claudia Fernández (IN) (<https://www.inaturalist.org/observations/158160465>); *idem*, 41.66546°N 1.85449°E (un. = 815 m), 1 specimen, photo by Claudia Fernández (IN) (<https://www.inaturalist.org/observations/161583089>); *idem*, 41.65713°N 1.84171°E (un. = 1060 m), 15.VI.2024, 1 specimen, photo by Claudia Fernández (IN)

(<https://www.inaturalist.org/observations/222892072>); *idem*, 41.65193 1.84715°E (un = 362 m), 5.V.2024, 1 specimen, photo by Claudia Fernández (IN) (<https://www.inaturalist.org/observations/213663341>); *idem*, 41.65507°N 1.84831°E (un. = 529 m), 1 specimen, photo by Claudia Fernández (IN) (<https://www.inaturalist.org/observations/218108591>); Vacarisses, 41.6064°N 1.9195°E (un. not recorded), 8.IX.2018, 2 specimens (male and female in courtship behaviour), photo by Óscar Méndez Almansa (OB) (<https://observation.org/observation/302980735/>); *idem*, 22.VII.2018, 2 specimens (male and female mating), photo by Óscar Méndez Almansa (OB) (<https://observation.org/observation/302980734/>); *idem*, 23.VI.2018, 1 specimen, photo by Óscar Méndez Almansa (OB) (<https://observation.org/observation/302980727/>); *idem*, 41.6052°N 1.8686°E (un. not recorded), 23.VI.2018, 1 specimen, photo by Marcel Nadal Calderón (OB) (<https://observation.org/observation/302978716/>); *idem*, 41.59632°N 1.92224°E (un. = 2030 m), 13.III.2021, 1 specimen, photo by Óscar Méndez Almansa (IN) (<https://www.inaturalist.org/observations/80762407>); Monistrol de Montserrat, 41.60572°N 1.86310°E (un. = 61 m), 23.VI.2018, 1 specimen, photo by Óscar Méndez Almansa (IN) (<https://www.inaturalist.org/observations/80716508>); El Bruc, 41.5799°N 1.7802°E (un. not recorded), 18.V.2011, 1 specimen, photo by Óscar Méndez Almansa (OB) (<https://observation.org/observation/302883828/>).

Navarra: Bardenas Reales, 42.06960°N - 1.35149° (un. = 13 m), 3.VII.2021, 1 specimen, photo by “avaldeon” (IN) (<https://www.inaturalist.org/observations/85731869>).

Aragon: Zaragoza, San Mateo de Gállego, 41.7900°N -0.7416°E (un. not recorded), 25.V.2014, 1 specimen, photo by Patxi Establés Recasens (OB) (<https://observation.org/observation/302945316/>); Zaragoza, 41.7672°N -0.7278°E (un. not

recorded), 12.VI.2010, 1 specimen, photo by Henri Bourrut Lacouture Bastier (OB) (<https://observation.org/observation/302855774/>); Perdiguera, 41.7537°N -0.6317°E (un. not recorded), 16.VI.2009, 1 specimen, photo by Constantino Escuer Murillo (OB) (<https://observation.org/observation/302848485/>); Alfajarín, 41.6750°N -0.5988°E (un. not recorded), 3.VI.2009, 1 specimen, photo by Manuel Lorenzo Castillo (OB) (<https://observation.org/observation/302842741/>); Farlete, 41.70635°N -0.58332°E (un. = 31 m), 26.V.2023, 1 specimen, photo by Enrique Pelayo (IN) (<https://www.inaturalist.org/observations/163829681>); *idem*, 41.6657°N -0.5815°E (un. not recorded), 5.V.2012, 1 specimen, photo by Benito Campo (OB) (<https://observation.org/observation/302908401/>); Monegrillo, 41.6411°N -0.4160°E (un. not recorded), 2.VII.2010, 1 specimen, photo by Óscar Méndez Almansa (OB) (<https://observation.org/observation/302856442/>).

Comunidad Autónoma de Madrid:

Madrid, Santa María de la Alameda, 40.6160°N -4.1645°E (un. not recorded), 3.VIII.2018, 1 specimen, photo by David Cabanillas Roldán (<https://observation.org/observation/302991144/>).

Castilla-La Mancha: Cuenca, San Clemente, 39.4010°N -2.5038°E (un. = 9 m), 29.IV.2023, 1 specimen, photo by Juan Manuel Casanova Valladolid (OB) (<https://observation.org/observation/269961843/>); El Provencio, 39.3889°N -2.5460°E (un. not recorded), 9.VII.2012, 1 specimen, photo by Juan Manuel Casanova Valladolid (OB) (<https://observation.org/observation/302914005/>).

Extremadura: Cáceres, Trujillo, 39.5041°N -5.8715°E (un. not recorded), 15.VI.2016, 1 specimen, photo by Carlos Bravo Bravo (OB) (<https://observation.org/observation/302961568/>).

Valencia: Castellón, Villores, 40.6757°N -0.2004°E (un. not recorded), 22.VI.2014, 1 specimen, photo by Martí P. Gisbert (OB)

(<https://observation.org/observation/302946818/>); Forcall, 40.6597°N -0.2290°E (un. not recorded), 22.VI.2014, 1 specimen, photo by Marcel Nadal Calderón (OB) (<https://observation.org/observation/302946912/>); *idem*, 40.6580°N -0.2285°E (un. not recorded), 22.VI.2014, 1 specimen, photo by José Antonio Sánchez Sancho (OB) (<https://observation.org/observation/302946276/>); *idem*, 40.6446°N -0.2004°E (un. not recorded), 22.VI.2014, 1 specimen, photo by Sonia Chaves Pérez (OB) (<https://observation.org/observation/302946297/>); *idem*, 40.6306°N -0.1868°E (un. not recorded), 22.VI.2014, 1 specimen, photo by Josep Torras Crespiera (OB) (<https://observation.org/observation/302947172/>); Cincorres, 40.5456°N -0.2077°E (un. not recorded), 16.VII.2022, 1 specimen, photo by Fani Martínez Ripoll (OB) (<https://observation.org/observation/303013073/>); Portell de Morella, 40.53339°N -0.26259°E (un. = 590 m), 25.V.2006, 1 specimen, photo by “petyr_bcn” (IN) (<https://www.inaturalist.org/observations/40143818>); *idem*, 40.5216°N -0.2815°E (un. not recorded), 9.VIII.2013, photo by Jacint Cerdà (OB) (<https://observation.org/observation/302935087/>); *idem*, 40.5126°N -0.2587°E (un. not recorded), 25.VI.2014, 1 specimen, photo by Xavier Gil Ayarzagüena (OB) (<https://observation.org/observation/302956041/>); *idem*, 40.5056°N -0.2656°E (un. not recorded), 6.VII.2014, 1 specimen, photo by Martí P. Gisbert (OB) (<https://observation.org/observation/302946844/>); Villafranca del Cid, 40.4579°N -0.2255°E (un. not recorded), 12.VIII.2013, 2 specimens (male and female in courtship behaviour), photo by <https://observation.org/observation/302935239/>); Santa Magdalena de Pulpis, 40.3439°N -0.3215°E (un. not recorded), 26.VI.2021, 1 specimen, photo by Francisco Arnau Esbri (OB) (<https://observation.org/observation/303004155/>); Valencia, Ayora, 39.0597°N -1.0572°E (un. not recorded), 8.VII.2020, 1 specimen, photo by Fernando Camuñas Mohinelo (OB)

(<https://observation.org/observation/302994843/>); Alicante, Villena, 38.6301°N -0.8703°E (un. not recorded), 12.X.2012, 1 specimen, photo by David Molina Molina (OB) (<https://observation.org/observation/302920072/>).



Fig. 2. Female of *Latrodectus tredecimguttatus* from Carthagène, Murcia (photo by Laurent Bouvin).

Fig. 2. *Femella de Latrodectus tredecimguttatus de Carthagène, Múrcia (foto de Laurent Bouvin).*

Murcia: Murcia, Murcia, Carrascoy y el Valle, 37.9299°N -1.1034°E (un. not recorded), 7.VII.2016, 1 specimen, photo by Francisco Javier López Espinosa (OB) (<https://observation.org/observation/302971067/>); Carthagène, 37.60643°N -1.06011°E (un. not recorded), 15.VI.2022, 1 specimen (Fig. 2), photo by Laurent Bouvin (IN) (<https://www.inaturalist.org/observations/121876896>); Mazarrón, 37.5727°N -1.3638°E (un. not recorded), 30.IV.2011, 1 specimen, photo by Jose Carrillo Lopez (OB) (<https://observation.org/observation/302875495/>); Lorca, 37.5442°N -1.6303°E (un. not recorded), 5.V.2012, 1 specimen, photo by Jose Carrillo Lopez (OB) (<https://observation.org/observation/302907897/>); *idem*, 37.5429°N -1.6260°E (un. not recorded), 10.VI.2012, 1 specimen, photo by Jose Carrillo López (OB) (<https://observation.org/observation/302917222/>); 37.5394°N -1.6280°E (un. not recorded), 22.VII.2012, 1 specimen, photo by Jose Carrillo López (OB)

(<https://observation.org/observation/302920734/>); Águilas, 37.4226°N -1.5683°E (un. not recorded), 31.III.2012, 1 specimen, photo by Jose Carrillo Lopez (OB) (<https://observation.org/observation/302904776/>); *idem*, 37.4240°N -1.5571°E (un. not recorded), 14.V.2011, 1 specimen, photo by Jose Carrillo Lopez (OB) (<https://observation.org/observation/302878210/>).

Andalusia: Almería, Mojácar, La Parata, 37.11952°N -1.83771°E (un. = 193 m), 26.VII.2021, 1 specimen, photo by “dianax” (IN) (<https://www.inaturalist.org/observations/88681620>); Tabernas, 37.0850°N -2.3055°E (un. not recorded), 19.XI.2015, 1 specimen, photo by “faluke” (OB) (<https://observation.org/observation/302958327/>); *idem*, 37.03902°N -2.41617°E (un. not recorded), 3.II.2023, 1 specimen, photo by “faluke” (IN) (<https://www.inaturalist.org/observations/147954028>); Almería, Camino de la Goleta, 36.8364°N -2.4373°E (un. = 5 m), 1.VI.2021, 1 specimen, photo by Chema Méndez (OB) (<https://observation.org/observation/215584707/>); *idem*, 36.8187°N -2.4253°E (un. not recorded), 19.II.2019, 5 specimens (juvenile) and 1 cocoon, photo by “faluke” (OB) (<https://observation.org/observation/302979808/>); Vicar, 36.8168°N -2.6624°E (un. not recorded), 2.III.2019, at least 17 specimens (juveniles), photo by “faluke” (OB) (<https://observation.org/observation/302980003/>); Adra, 36.7899°N -3.1003°E (un. not recorded), 6.VI.2012, 1 specimen, photo by “faluke” (OB) (<https://observation.org/observation/302911775/>); El Ejido, Punta Entinas-Sabinar, 36.6923°N -2.7021°E (un. not recorded), 6.V.2019, 1 specimen, at least 17 specimens (juveniles), (<https://observation.org/observation/302982057/>); Níjar, 36.8496°N -2.2336°E (un. not recorded), 9.XII.2018, at least 17 specimens (1 female and 16 juveniles), photo by “faluke” (OB) (<https://observation.org/observation/302978698/>); *idem*, 36.74999°N -2.12235° E (un. = 61

m), 22.XI.2012, about 75 specimens (juveniles), photo by “faluke” (IN) (<https://www.inaturalist.org/observations/138403987>); near Los Moras, 36.78298°N - 3.11773°E (un. = 15 m), 7.VII.2012, 1 specimen, photo by “faluke” (IN) (<https://www.inaturalist.org/observations/138403717>); Granada, Castelléjar, 37.7161°N - 2.6423°E (un. = 5 m), 11.X.2024, 1 specimen, photo by “Ldesa” (OB) (<https://observation.org/observation/331980576/>); Pórtugos, 36.9728°N -3.3232°E (un. = 3 m), 2.VII.2022, 1 specimen, photo by Roy Kleukers (OB) (<https://observation.org/observation/247862108/>); Turón, 36.8373°N -3.1012°E (un. = not recorded), 7.VII.2012, 1 specimen, photo by “faluke” (OB) (<https://observation.org/observation/302913892/>); Cadiz, Rota, 36.67188°N -6.40254°E (un. = 563 m), 1.V.2016, 1 specimen, photo by Antonio J. Pizarro Méndez (IN) (<https://www.inaturalist.org/observations/7874864>); Vejer de la Frontera, 36.2073°N -6.0548°E (un. not recorded), 1.VII.2011, 1 specimen, photo by Enrique Hernández (OB) (<https://observation.org/observation/302887049/>); La Línea de la Concepción, 36.1677°N - 5.3515°E (un. = 5 m), 1.VII.2019, 1 specimen, photo by Rafael Cerpa (OB)

(<https://observation.org/observation/175569536/>); Tarifa, Bolonia, 36.0899°N -5.7623°E (un. not recorded), 9.VI.2011, 1 specimen, photo by Daniel Rojas Pichardo (OB) (<https://observation.org/observation/302949214/>); Huelva, Lagunas Peridunares de Doñana, 37.0611°N -6.4454°E (un. not recorded), 12.V.2022, 1 specimen, photo by Javier Calzada (OB) (<https://observation.org/observation/241271439/>).

Discussion

Many new records of *L. tredecimguttatus* are added in the Peninsular Spain, allowing to better define the distribution of this spider in this country. In particular, in addition to providing new data for provinces (Barcelona, Cuenca, and Tarragona) where records available in the literature dated back more than a century, the occurrence of this spider is reported for the first time in five provinces: Girona, Cáceres, Castellón, Granada, Huelva. The updated distribution of *L. tredecimguttatus* in the Peninsular Spain (Fig. 3).

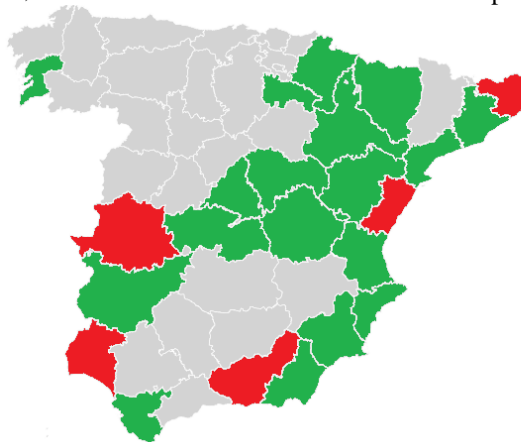


Fig. 3. Update distribution of *Latrodectus tredecimguttatus* in Peninsular Spain. Green = regions where the species known; red = regions with no records; grey = regions with no records.

Fig. 3. Actualització de la distribució de *Latrodectus tredecimguttatus* a l'Espanya peninsular. Verd = regions on es coneix l'espècie; vermell = regions amb registres nous; gris = regions sense registres.

Although it is an impressive and medically important species, the knowledge of the distribution of *L. tredecimguttatus* still needs to be better specified in Spanish territory and further studies will be needed to give satisfactory information on the diffusion of this spider in Spain.

Acknowledgements

I would like to thank all the photographers who uploaded observations on the web.

References

- Barrientos, J.A., Hernández-Corral, J. and García-Teba, J.P. 2023. Arañas (Arachnida: Araneae) del Parque Natural del Carrascal de la Font Roja (Alicante, España). *Revista Ibérica de Aracnología*, 42: 167-188.
- Bildik, F., Çomruk, B., Yüksek, B., Aslaner, M.A. and Türkeş, T. 2021. Mediterranean black widow spider (*Latrodectus tredecimguttatus*) poisoning in a metropolitan city in Turkey. *Journal of Emergency Medicine Case Reports*, 12 (2): 48-51.
- Cardoso, P. and Morano, E. 2010. The Iberian spider checklist (Araneae). *Zootaxa*, 2495 (1), 1-52.
- Calatayud-Mascarell, A., Domènech, M., Selfa, J. and Arnedo, M.A. 2024. The arachnofauna of the Valencian coastal dunes (eastern Iberian Peninsula): checklist and new records for Spain and Europe. *Arachnology*, 19 (7): 955-961. <https://doi.org/10.13156/arac.2024.19.7.955>
- de Biurrun, G., Prieto, C. and Baquero, E. 2022. ArachnoMap, una herramienta para difundir el conocimiento del taxón Araneae en la Península Ibérica y Baleares. *Revista Ibérica de Aracnología*, 40: 2-3. [last update online 17 August 2024].
- Dufour, L. 1820. Description de six arachnides nouvelles. *Annales Générales des Sciences Physiques*, 4: 355-369.
- Febrer, J.B. and Barrientos, J.A. 2022. Ocho primeras citas de arañas (Araneae) para Menorca (Islas Baleares, España). *Revista Ibérica de Aracnología*, 40: 137-144.
- Ferrández, M.A., Morano, E., Fernández de Céspedes, H. and Camargo, M. 2006. Catálogo de las Arañas (Araneae) de la Comunidad de Madrid. *Graellsia*, 62: 53-90.
- Franganillo, P. 1910. Arañas de la desembocadura del Miño. *Broteria*, 9: 5-22.
- Franganillo, P. 1925. Contribución al estudio de la geografía aracnológica de la Península ibérica. *Boletín de la Sociedad Entomológica Española*, 8: 31-40.
- Fusto, G., Bennardo, L., Del Duca, E., Mazzuca, D., Tamburi, F., Patruno, C. and Nisticò, S.P. 2020. Spider bites of medical significance in the Mediterranean area: misdiagnosis, clinical features and management. *Journal of Venomous Animals and Toxins including Tropical Diseases*, 26: e20190100 [11 pp.] <https://doi.org/10.1590/1678-9199-JVATITD-2019-0100>
- Graells, M.P. 1834. Sur les mfaits du Theridion Malmignatte. *Annales de la Société Entomologique Française*, 3: 26-28
- Graells, M.P. 1842. Notice sur divers faits qui confirment la propriété venimeuse du *Latrodectus malmignathus*, Walckenaer. *Annales de la Société Entomologique Française*, 11: 205-219.
- Lotz, L.N. 1994. Revision of the genus *Latrodectus* (Araneae: Theridiidae) in Africa. *Navorsing van die Nasionale Museum Bloemfontein*, 10 (1): 1-60.
- Lucas, H. 1838. Arachnida. In: Webb P.B. and Berthelot S. (eds). *Histoire naturelle des Iles Canaries*, 2: 19-52.
- Martínez Sabaris, E. 2017. Arañas dos concellos de Sanxenxo e O Grove. *A Mobella*, 22 (2016-2017): 5-30.

- Melic, A. 2000. El género *Latrodectus* Walckenaer, 1805 en la Península Ibérica (Araneae: Theridiidae). *Revista Ibérica de Aracnología*, 1: 13-30.
- Melic, A., Baquero, E. and Jordana, R. 2006. Sobre la aparente extinción atlántica de la araña viuda negra y primer registro de la especie para Navarra y La Rioja (Araneae: Theridiidae: *Latrodectus*). *Boletín de la Sociedad Entomológica Aragonesa*, 39: 402-403.
- Mora-Rubio, C. and Pérez-Bote, J.L. 2018. Primera cita de *Latrodectus tredecimguttatus* (Rossi, 1790) (Araneae, Theridiidae) de Extremadura (suroeste de la Península Ibérica). *Revista Ibérica de Aracnología*, 33: 111-112.
- Navás, L. 1904. Excursion de la Sociedad aragonesa de Ciencias naturales a la Sierra de Guara, en Julio de 1903. *Boletín de la Sociedad Aragonesa de Ciencias Naturales*, 3: 201.
- Nentwig, W., Blick, T., Bosmans, R., Hänggi, A., Kropf, C. and Stäubli, A. 2024. *Spiders of Europe. Version november.2024*. - Available from: <https://www.araneae.nmbe.ch> [accessed on 22 November 2024]. <https://doi.org/10.24436/1>
- Pérez Acosta, F. 1923. Los Arácnidos de Cataluña. Catálogo sistemático-crítico. *Treballs de la Institució Catalana d'Història Natural*, 6: 9-72.
- Pinilla-Rosa, M. 2021. Aportaciones al conocimiento aracnológico (Araneae) de las provincias de Madrid y Guadalajara (España). *Revista Ibérica de Aracnología*, 38: 205-208.
- Rojas, D. and Rojas, M.A. 2016. Aportación a la distribución de *Latrodectus tredecimguttatus* (Rossi, 1790) en Cádiz (Sur de España) (Araneae, Theridiidae). *Boletín de la Sociedad Andaluza de Entomología*, 26: 55-57.
- Sánchez, I. 2003. Catálogo preliminar de los Araneae de la provincia de Cádiz. *Revista de la Sociedad Gaditana de Historia Natural*, 3: 199-216.
- Schmidt, G. 1990. Zur Spinnenfauna der Kanaren, Madeiras und der Azoren. *Stuttgarter Beiträge zur Naturkunde, Serie A*, 451: 1-46.
- Simon, E. 1833. Matériaux pour servir à la faune arachnologique des îles de l'Océan Atlantique (Azores, Madère, Salvages, Canaries, Cap. Vert, Saint-Helène et Bermudas). *Annales de la Société entomologique de France*, (6) 3: 259-314.
- Simon, E. 1889. Liste des Arachnides recueillies aux Iles Canaries en 1888 par le Dr. Verneau. *Bulletin de la Société zoologique de France*, 14: 300-304.
- Simon, E. 1900. Liste de Arachnides recueillies à Uclés (Espagne) par le P.J. Pantel. *Bulletin de la Société Entomologique de France*, 3: 44-45
- Vanuytven, H., Van Keer, J. and Poot, P. 1994. Kogelspinnen verzameld in Zuid-Europa door P. Poot (Araneae: Theridiidae). *Nieuwsbrief van de Belgische Arachnologische Vereniging*, 9: 1-19.
- Wieczorek, J., Guo, Q. and Hijmans, R.J. 2004. The point-radius method for georeferencing locality descriptions and calculating associated uncertainty. *International Journal of Geographical Information Science*, 18 (8), 745-767. <https://doi.org/10.1080/13658810412331280211>
- WORLD SPIDER CATALOG—WSC 2024. *World spider catalog, version 21.5*. Natural History Museum Bern. Available from: <http://wsc.nmbe.ch> [Accessed on 27 November 2024]. doi: 10.24436/2
- Wunderlich, J. 1987. *Die Spinnen der Kanarischen Inseln und Madeiras. Taxonomy and Ecology. I*. Triops. IV + 436 pp.
- Wunderlich, J. 1991. Die Spinnen-Fauna der Makaronesischen Inseln. Taxonomie, Ökologie, Biogeographie und Evolution. *Beiträge zur Araneologie*, 1: 1-619.
- Wunderlich, J. 2017. Descriptions, notes and synonyms of some mainly Mediterranean and Macaronesian spiders (Araneae) of various families. *Beiträge zur Araneologie*, 10: 298-326.