

Contribution to the knowledge of terrestrial isopods of the Macaronesia region, with the description of three new species

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ABSTRACT

The Macaronesia region, in the east Atlantic Ocean off the northwest coast of Africa, consists of five oceanic archipelagos and is known for its high levels of endemism. However, its terrestrial isopod fauna has received very uneven attention. In this study, we document five species newly recorded from the Macaronesia archipelagos: *Ctenorillo atlanticus* and *Littorophiloscia culebrae* in Cabo Verde; *Porcellionides cingendus* and *Styloniscus spinosus* in both the Azores and Madeira, and *Trichorhina tomentosa* in Madeira. Additionally, three new species are described: *Miktoniscus atlanticus* Cifuentes and Da Silva n. sp., and *Trichoniscus furnaensis* Cifuentes and Da Silva n. sp. from the Azores, and *Soteriscus caboverdiensis* Cifuentes and Da Silva n. sp. from Cabo Verde. This study also reports the first record of *Armadilloniscus candidus* on mainland Portugal. We compiled and updated the list of terrestrial isopod species recorded from the Macaronesia region to 120, with 60 endemic species, of which 71 belong to genera of Atlantic origin, including 46 endemic species. Furthermore, 34 species belong to genera of Mediterranean origin, of which eight are endemic, 14 species of tropical origin, of which six are endemic, and one species is of alpine origin. These patterns suggest this fauna shares a closer affinity with the Atlantic and Mediterranean faunas of Europe and North Africa than with the tropical fauna of Africa. The terrestrial isopod fauna of the Macaronesia region currently comprises 37 species in the Azores (three endemic), 16 species in Cabo Verde (four endemic), 63 species in the Canary Islands (28 endemic), 63 species in Madeira (25 endemic), and only three species are known from the Selvagens Islands.

KEYWORDS

Atlantic archipelagos, Cabo Verde, Portugal, Spain, woodlice



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INTRODUCTION

The Macaronesia region comprises five North Atlantic archipelagos: Azores, Cabo Verde, Canary Islands, Madeira, and Selvagens Islands. These archipelagos have volcanic origins and are isolated from the mainland and each other (Hontoria et al., 2012; Desiderato et al., 2019; García-Talavera, 1999; Castro et al., 2022). Due to their oceanic origin, these archipelagos have never been connected to the mainland. However, it is known that several volcanic seamounts located between the African continent, Canary Islands, Selvagens Islands, and Madeira, currently less than 100 meters below sea level, are at least 67 million years old (Geldmacher et al., 2001), and may have formed a chain of islands, facilitating the stepping-stone dispersal of terrestrial species between these archipelagos and Africa (García-Talavera, 1999). The Macaronesia region is ideal for island ecology and evolution research due to its unique geological layout of 40 islands and islets over 1 km², with varying geological ages, climates, topography, vegetation, and isolation (Florencio et al., 2021). The climate is mostly oceanic in the Azores, Mediterranean in the Canary Islands, Madeira, and the Selvagens Islands, and arid and warm in Cabo Verde. However, the wide variation in size, climate, latitude, and altitude among the different islands allows for a great diversity of habitats, from humid forests in the Azores, Madeira, and the western Canary Islands (El Hierro, La Palma, La Gomera, Tenerife, Gran Canaria), to vegetation adapted to arid conditions due to low rainfall in Cabo Verde, the eastern Canary Islands (Fuerteventura, Lanzarote, La Graciosa, and the associated islets), and Madeira (Desertas Islands and Porto Santo) (Hontoria et al., 2012; García-Talavera, 1999; Florencio et al., 2021). The isolation from any mainland ranges from 96 km between Fuerteventura (Canary Islands) and Morocco (Africa) to over 1,800 km between Flores (Azores) and mainland Portugal (Europe).

There is extensive information on numerous taxonomic groups from many of these islands, with high levels of endemism described, particularly in terrestrial taxa (Florencio et al., 2021). However, knowledge across the different archipelagos is uneven, and the knowledge regarding terrestrial isopod fauna (Oniscidea) is no exception. This study aims to update the current knowledge of terrestrial isopods in the

Macaronesia region, describe three new species, and discuss their relationships with closely related species.

MATERIAL AND METHODS

Most specimens studied in this work were collected by hand through direct searches by the authors in suitable microhabitats for various Oniscidea species, including litter, beneath tree bark, dead trunks, and rocks (Cifuentes and Da Silva, 2023a; 2023b; 2023c). Larger specimens are preserved in 96% ethanol, while smaller specimens (less than 5 mm) are preserved in 70% ethanol due to the difficulty in dissecting intact pieces necessary for accurate taxonomic assignment. Specimens were identified based on morphological characters. Non-permanent glass slide preparations were made using water as the mounting medium to avoid altering the morphology of the studied structures (Cifuentes and Da Silva, 2024). These structures were later stored in small Eppendorf tubes together with their respective specimens. To represent the position of the lateral noduli, the b/c and d/c ratios on the pereonites were calculated following Vandel (1960a), where: b is the distance from the nodule to the posterior edge of the pereonite; c, the pereonite width; and d, the distance from the nodule to the lateral edge. The b/c and d/c ratios, known as Vandel coordinates, were then multiplied by 100 for graphical representation. Spine terminology for the genus *Miktoniscus* Kesselyák, 1930, follows Vandel (1960a) and Schultz (1976). Several figures were included to facilitate identification and comparison of the studied species. Images were captured using a Gundlach stereomicroscope equipped with a 12 MP digital camera (C2CMOS), and edited with the free graphic editor software, Inkscape (<https://inkscape.org/>). The describers of the new species are J. Cifuentes and L.P. Da Silva.

Sampling took place between October 13 and 20, 2023, in Santiago and Sal Islands (Cabo Verde); between November 23 and 25, 2023, and June 1 to 6, 2024, in São Miguel Island (Azores); and between July 5 and 11, 2024, in Madeira and Porto Santo Islands (Madeira) (Fig. 1). In addition, specimens deposited in the Museo Nacional de Ciencias de Madrid (MNCN) from the study region were also analyzed, along with some specimens from the University of La Laguna

(UN La Laguna) and the Instituto de Productos Naturales y Agrobiología of the Spanish National Research Council (INPA-CSIC). Field codes for specimens collected in Cabo Verde start with OCV, specimens from São Miguel with ASM, and specimens from Madeira with OM. The specimens from Azores and Madeira are deposited at Centro de Investigação em Biodiversidade e Recursos Genéticos (CIBIO), University of Porto, while those from Cabo Verde are housed at the Natural History Museum of Cabo Verde. Exceptions are noted for specimens held in

the collection of the first author (JC) and at the Museo Nacional de Ciencias de Madrid (MNCN). Coordinates were recorded for all collected specimens. For the specimens not collected by the authors, and deposited at the MNCN, UN La Laguna and INPA-CSIC, coordinates were obtained by searching on Google Maps (<https://www.google.com/maps/>) using the available label data. The map of sampled locations was created using the Free and Open Source QGIS Desktop 3.22.2. Several figures were included to aid in the identification of the studied species.

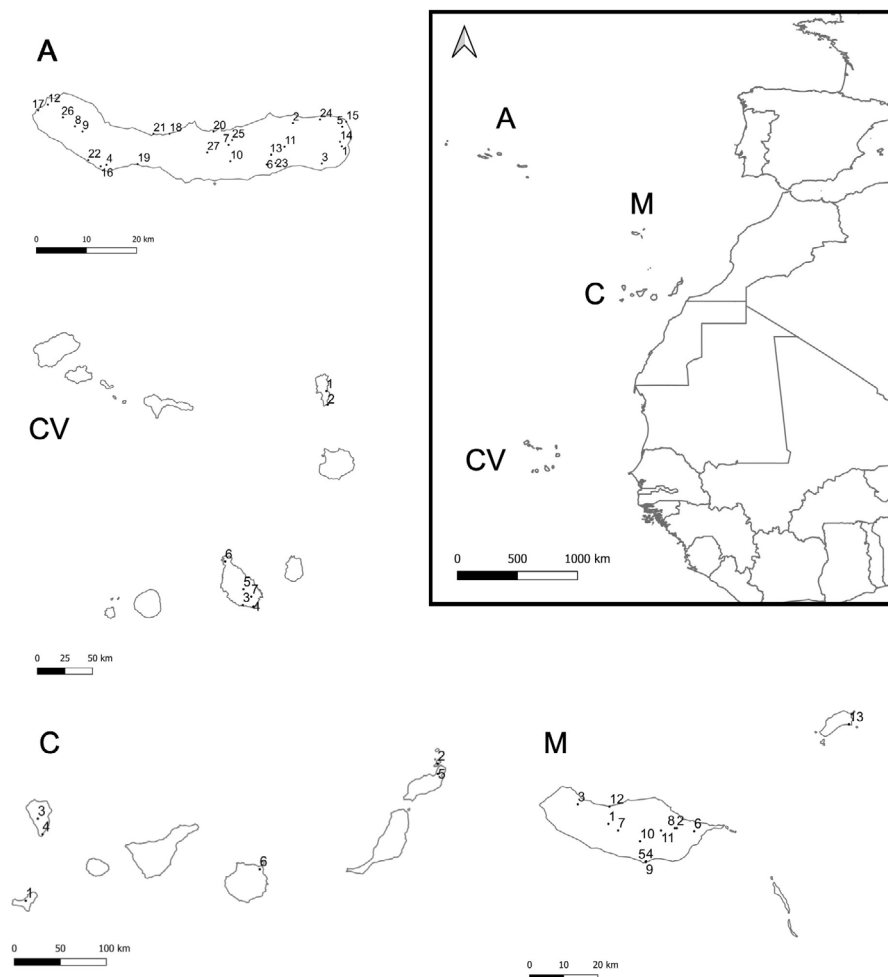


Figure 1. Location of the three archipelagos along the west coasts of Africa and Europe. Azores (A), only São Miguel Island was sampled, with numbers corresponding to sampled locations: 1, Água Retorta; 2, Cascata da Ribeira dos Caldeirões; 3, Faial da Terra; 4, Gruta do Carvão; 5, Jardim Botânico da Ribeira do Guilherme; 6, Lagoa das Furnas; 7, Lagoa de São Brás; 8, Lagoa do Canario; 9, Lagoa do Carvão; 10, Lagoa do Congro; 11, Miradouro do Salto do Cavalo; 12, Mosteiros; 13, near Terra Nostra hotel, Furnas; 14, Nordeste; 15, Piscina Natural Da Boca De Ribeira; 16, Ponta Delgada; 17, Ponta do Escalvado; 18, Praia de Santa Barbara; 19, Praia do Pópulo; 20, Praia dos Moinhos; 21, Rabo de Peixe; 22, Relva; 23, Ribeira Quente; 24, Santo António de Nordestinho; 25, São Brás; 26, Sete Cidades; 27, Vale das Lombadas; 28. Cabo Verde (CV), with specimens from Santiago and Sal islands: 1, Murdeira; 2, Santa Maria; 3, Cidade Velha; 4, Praia; 5, São Jorge dos Orgãos; 6, Tarrafal; 7, Veneza, São Domingos. Canary Islands (C), with specimens from La Graciosa, La Palma and Gran Canaria islands: 1, Frontera; 2, La Graciosa; 3, El Paso; 4, Los Arenales; 5, Haría, Bco. Elvira Sánchez; 6, Las Palmas. Madeira (M), with specimens from Madeira and Porto Santo islands: 1, Bico da Cana; 2, Caminho dos Lamaceiros; 3, Fanal; 4, Funchal; 5, Funchal Marine Biological Station; 6, Furnas do Cavalum; 7, Lombo do Moleiro; 8, Posto Florestal dos Lamaceiros; 9, Praia do Gorgulho, Funchal; 10, Ribeira da Lapa; 11, Ribeiro Frio; 12, São Vicente; 13, beach East of the port.

SYSTEMATICS

Family Armadillidae Brandt, 1831

Genus *Ctenorillo* Verhoeff, 1942a*Ctenorillo atlanticus*

Cifuentes and Da Silva, 2023b

(Fig. 2A)

Material examined. 12 males (OCV24a), Cabo Verde, Sal, Murdeira, 16°40'35"N 22°56'07"W, 19 Oct 2023, coll. L.P. Da Silva; 9 females (OCV24b), same data as preceding; 1 male (OCV02a), Cabo Verde, Santiago, Cidade Velha, 14°54'58"N 23°36'16"W, 13 Oct 2023, coll. L.P. Da Silva; 3 females (OCV02b), same data as preceding; 2 males (OCV04a), same data as preceding; 12 females (OCV04b), same data as preceding; 1 female (OCV31), Cabo Verde, Santiago, Tarrafal, 15°16'53"N 23°45'04"W, 20 Oct 2023, coll. L.P. Da Silva; 2 males (OCV32a) Cabo Verde, Santiago, Tarrafal, 15°16'42"N 23°45'04"W, 20 Oct 2023, coll. L.P. Da Silva; 1 female (OCV32b), same data as preceding.

Remarks. Described from the Democratic Republic of São Tomé and Príncipe (Cifuentes and Da Silva, 2023b), volcanic islands located approximately 4,000 km from Cabo Verde. This is the first record in Cabo Verde where it is most likely introduced.

Genus *Cubaris* Brandt, 1833*Cubaris murina* Brandt, 1833

(Fig. 2B)

Material examined. 1 male (OCV19a), Cabo Verde, Santiago, São Jorge dos Orgãos, 15°02'55"N 23°36'02"W, 16 Oct 2023, coll. L.P. Da Silva; 3 males (OCV19b), same data as preceding; 6 females, 2 mancae (OCV19c), same data as preceding.

Remarks. Pantropical species, recorded in Africa, America, Australia, Brazil, India, New Zealand (Van Name, 1936; Schmalfuss, 2003), and Democratic Republic of São Tomé and Príncipe (Cifuentes and Da Silva, 2023b). In the Republic of Cabo Verde, it was previously cited by Paulian De Félice (1946), Vandel (1954a), and Schmalfuss (1982).

Genus *Venezillo* Verhoeff, 1928*Venezillo trifolium* (Dollfus, 1890)

(Fig. 2C)

Material examined. 1 male (JC976 [ex. OCV08]), Cabo Verde, Santiago, Veneza, São Domingos, 14°59'08"N 23°32'02"W, 13 Oct 2023, coll. L.P. Da Silva; 1 female (OCV10), same data as preceding.

Remarks. Endemic to Cabo Verde, cited by Dollfus (1890; 1899b), Budde-Lund (1904), Paulian De Félice (1946), Vandel (1954a), and Schmalfuss (1982).

Family Armadillidiidae Brandt, 1833

Genus *Armadillidium*

Brandt in Brandt and Ratzburg, 1831

Armadillidium vulgare (Latreille, 1804)

(Fig. 2D)

Material examined. 2 females (ASM01), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'42"N 25°41'59"W, 23 Nov 2023, coll. L.P. Da Silva; 3 females (ASM06), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'45"N 25°39'49"W, 23 Nov 2023, coll. L.P. Da Silva; 2 females (ASM07), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'47"N 25°40'13"W, 23 Nov 2023, coll. L.P. Da Silva; 1 female (OM006), Portugal, Madeira Archipelago, Madeira Island, Praia do Gorgulho, 32°38'12"N 16°56'07"W, 5 Jul 2024, coll. L.P. Da Silva; 1 female (OM028), Portugal, Madeira Archipelago, Madeira Island, São Vicente, 32°48'31"N 17°02'52"W, 6 Jul 2024, coll. L.P. Da Silva; 1 female, 3 immatures (MNCN 20.04/12171), Spain, Canary Islands, La Palma, El Paso, 18 Jun 1999, coll. T. Domingo-Quero; 1 female (MNCN 20.04/12170), Spain, Canary Islands, La Palma, El Paso, 20 Sep 1999, coll. A. Sánchez-Ruiz; 1 female (MNCN 20.04/12193), Spain, Canary Islands, La Palma, El Paso, 27 Mar 2000, coll. T. Domingo-Quero; 4 males, 2 female (MNCN 20.04/12187), Spain, Canary Islands, La Palma, El Paso, 1 May 2000, coll. T. Domingo-Quero; 1 male (MNCN 20.04/12189), same data as preceding; 1 female (MNCN 20.04/12169), Spain, Canary Islands, La Palma, El Paso, 16 Jan 2001, coll. T. Domingo-Quero; 1 female (MNCN 20.04/12165), Spain, Canary Islands, La Palma, El

Paso, 22 Jan 2001, coll. T. Domingo-Quero; 1 female (MNCN 20.04/12184), Spain, Canary Islands, La Palma, El Paso, 25 Jan 2001, coll. T. Domingo-Quero; 2 males, 1 female (MNCN 20.04/12163), Spain, Canary Islands, La Palma, El Paso, 6 Feb 2001, coll. T. Domingo-Quero; 1 male (MNCN 20.04/12185), Spain, Canary Islands, La Palma, El Paso, 11 Mar 2001, coll. T. Domingo-Quero; 1 female (MNCN 20.04/12194), same data as preceding; 1 female (MNCN 20.04/12181), Spain, Canary Islands, La Palma, El Paso, 23 Mar 2001, coll. T. Domingo-Quero and A. García-Valdecasas; 1 female (MNCN 20.04/12176), Spain, Canary Islands, La Palma, El Paso, 23 Mar 2001, coll. T. Domingo-Quero; 1 male, 1 female (MNCN 20.04/12179), Spain, Canary Islands, La Palma, El Paso, 26 Mar 2001, coll. A. Sánchez-Ruiz and T. Domingo-Quero; 1 male, 1 female (MNCN 20.04/12164), same data as preceding; 2 males, 5 females, 12 immatures (MNCN 20.04/12198), Spain, Canary Islands, La Palma, El Paso, 26 Mar 2001, coll. A. Sánchez-Ruiz; 2 specimens (MNCN 20.04/12186), Spain, Canary Islands, La Palma, El Paso, 30 Mar 2001, coll. A. Sánchez-Ruiz; 1 male, 1 female (MNCN 20.04/12173), Spain, Canary Islands, La Palma, El Paso, 12 May 2001, coll. T. Domingo-Quero; 6 immatures (MNCN 20.04/12191), Spain, Canary Islands, La Palma, El Paso, 23 Jun 2001, coll. T. Domingo-Quero; 2 females (MNCN 20.04/12197), Spain, Canary Islands, La Palma, El Paso, 10 Aug 2001, coll. T. Domingo-Quero.

Remarks. Species from the Mediterranean region and introduced to other parts of the world (Schmalfuss, 2003). It was cited from Azores (Morelet, 1860; Dollfus, 1889b; Dollfus in Norman, 1899; Paulian De Félice, 1946; Vandel, 1956a; 1968; Schmölzer, 1971; Taiti, 2010), Cabo Verde (Paulian De Félice, 1946), Canary Islands (Dollfus, 1889b; 1893; 1898; Ferrer Galdiano, 1923; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1954b; Schmölzer, 1971; Dalens, 1984; Hoese, 1984b; Rodríguez Santana, 1996; Arechavaleta et al., 1999; Arndt and Mattern, 2005; López and Taiti, 2010), and Madeira (Budde-Lund, 1885; Dollfus, 1889b; Norman, 1899; Paulian De Félice, 1939b; 1946; Arcangeli, 1958; Vandel, 1960b; Schmölzer, 1971; Hoese, 1978; Taiti, 2010).

Genus *Eluma* Budde-Lund, 1885

Eluma caelata (Miers, 1878)

(Fig. 2E)

Material examined. 1 female (ASM22), Portugal, Azores, São Miguel, Lagoa do Canario, 37°50'07"N 25°45'31"W, 24 Nov 2023, coll. L.P. Da Silva; 1 female (ASM27), Portugal, Azores, São Miguel, Mosteiros, 37°50'08"N 25°49'11"W, 24 Nov 2023, coll. L.P. Da Silva; 1 female (OM043), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'12"N 17°03'05"W, 8 Jul 2024, coll. L.P. Da Silva; 1 male (OM026), Portugal, Madeira Archipelago, Madeira Island, Fanal, 32°48'34"N 17°08'40"W, 6 Jul 2024, coll. L.P. Da Silva; 1 male (OM027a), same data as preceding; 3 females (OM027b), same data as preceding; 1 female (OM036), Portugal, Madeira Archipelago, Madeira Island, Ribeiro Frio, 32°44'02"N 16°53'14"W, 7 Jul 2024, coll. L.P. Da Silva.

Remarks. It occurs from northwest Africa to the British Isles and is introduced in other parts of the world (Schmalfuss, 2003). It was cited from Azores (Dollfus, 1889a, 1889b; Paulian De Félice, 1946; Vandel, 1956a; 1968; Ashmole et al., 1996; Taiti, 2010), Canary Islands (Dollfus, 1889b; 1893; Ferrer Galdiano, 1923; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1954b; 1956a; Schmölzer, 1971; Dalens, 1984; Hoese, 1984b; Rodríguez Santana, 1996; Arechavaleta et al., 1999; Macias et al., 2004; Arndt and Mattern, 2005; López and Taiti, 2010; Jorge et al., 2016; Fernández-Palacios et al., 2018), and Madeira (Budde-Lund, 1885; Dollfus, 1889b; Norman, 1899; Paulian De Félice, 1939b; 1946; Vandel, 1956a; 1960b; Arcangeli, 1958; Schmölzer, 1971; Hoese, 1978; Borges et al., 2008; Taiti, 2010; Hughes, 2024).

Family Detonidae Budde-Lund, 1904

Genus *Armadilloniscus* Uljanin, 1875

Armadilloniscus candidus Budde-Lund, 1885

(Figs. 2F, 3)

Material examined. 3 females (ASM75), Portugal, Azores, São Miguel, Praia do Pópulo, 37°45'00"N

25°37'02"W, 6 Jun 2024, coll. L.P. Da Silva; 1 female (JC1203 [ex. ASM75]), same data as preceding; 4 females (ASM76), same data as preceding; 1 female (LPS890), Portugal, Faro, Praia dos Rebolinhos, 37°21'19"N 8°55'15"W, 21 Mar 2023, coll. L.P. Da Silva; 2 females (LPS891), same data as preceding; 3 males (LPS892a), same data as preceding; 1 male (LPS892b), same data as preceding; 6 females (LPS892c), same data as preceding.

Remarks. Dollfus (1889a) described *Armadilloniscus tuberculatus* Dollfus, 1889a, based on a single female collected in Capellas (São Miguel, Azores). Later, Vandel (1956a; 1962), after studying Dollfus's (1889a) specimen, determined that it was a juvenile of *An. candidus*. Additionally, Norman (1899) reported *An. tuberculatus* from Gorgulho, near Funchal (Madeira), but this is likely a misidentification, as *Armadilloniscus ellipticus* (Harger, 1878) is known to occur at that locality, as discussed below. *Armadilloniscus ellipticus* has been reported from the Azores in Faial, Pico, Santa Maria, São Miguel, and Terceira by Arcangeli (1958), Vandel (1956a; 1960b; 1968), and Taiti (2010); and from Madeira in Funchal by Arcangeli (1958), Vandel (1960b; 1962; 1968), and Borges et al. (2008).

Vandel (1962) provided a table to distinguish *Armadilloniscus litoralis* Budde-Lund, 1885 [= *An. ellipticus* (Schmalfuss, 2003)], from *An. candidus*. This table highlights differences in the shape of the median lobe, the frontal line, the cephalon ornamentation, and the outer margin of the uropod protopod. Although we did not collect *An. ellipticus* during the present study in the Macaronesia archipelagos, we examined specimens from mainland Portugal, 3 females (LPS924), Portugal, Setubal, Seixal, 38°39'18"N 9°27'40"W, 16 May 2024, coll. L.P. Da Silva, and Cádiz, southern Spain (JC198; Cifuentes, 2021a), as well as the 13 specimens of *An. candidus* from southern Portugal mentioned above. These specimens allowed us to compare the two species. Our analysis of *An. candidus* and *An. ellipticus* confirmed the differences noted by Vandel (1962) regarding the ornamentation of the cephalon, although the other differences he described were less clear. Vandel (1962) also described *An. candidus* as having a white coloration with a very

faint pigment network visible only under a binocular microscope. The lack of pigmentation has also been noted by Garcia and Robla (2021) as a characteristic of *An. candidus* that distinguishes it from *An. ellipticus*. In contrast, some of our specimens from the Azores and mainland Portugal have a brownish-violet coloration, with very prominent muscle insertions (Fig. 2F). Vandel (1962) indicates differences in integument ornamentation between these species. In *An. ellipticus*, each pereonite has one pair of very prominent submedian tubercles and 3 to 5 elongated tubercles along the sides, whereas in *An. candidus*, there are 4 or 5 pairs of tubercles on each pereonite. In our specimens, the tubercles are very faint or poorly defined, especially on the posterior half, and can also be elongated in both species. Garcia and Robla (2021) indicate that the most reliable distinguishing characteristic between the two species is the first two pairs of male pleopods (Taiti and Ferrara, 1996; Garcia and Robla, 2021). However, differences are also observed in the other pleopods, when comparing *An. candidus* (Fig. 3) and *An. ellipticus* (Fig. 4). The ornamentation of the integument also differs between the two species. In *An. ellipticus*, the granules are small and conical, whereas in *An. candidus*, they are elongated, following the anterior-posterior axis. The presence of *An. candidus*, a halophilic species (Vandel, 1962), in Praia dos Rebolinhos, Faro, in southern Portugal, is the first record of this species on mainland Portugal. Furthermore, this finding helps to clarify the dispersal route of this species from its colonies in the Mediterranean (Algeria, France, Italy, Malta, and Tunisia) (Budde-Lund, 1885; Verhoeff, 1918; Vandel, 1962; Taiti and Ferrara, 1996; Schmalfuss, 2003; Messina et al., 2012; Séchet and Noël, 2015; De Matthaeis et al., 2019), towards Villaviciosa (Asturias, Spain) in the northern Iberian Peninsula (Garcia and Robla, 2021) and Saint-Jean-de-Luz (Pyrénées-Atlantiques) on the southern Atlantic coast of France (Cherpitel et al., 2019). This dispersal may have occurred naturally, as in many other species of halophilic isopods, along the coastline (Vandel, 1946; 1960). However, its presence in Azores (Dollfus, 1889a; Vandel, 1956a, 1962) is more likely the result of human-mediated introduction.

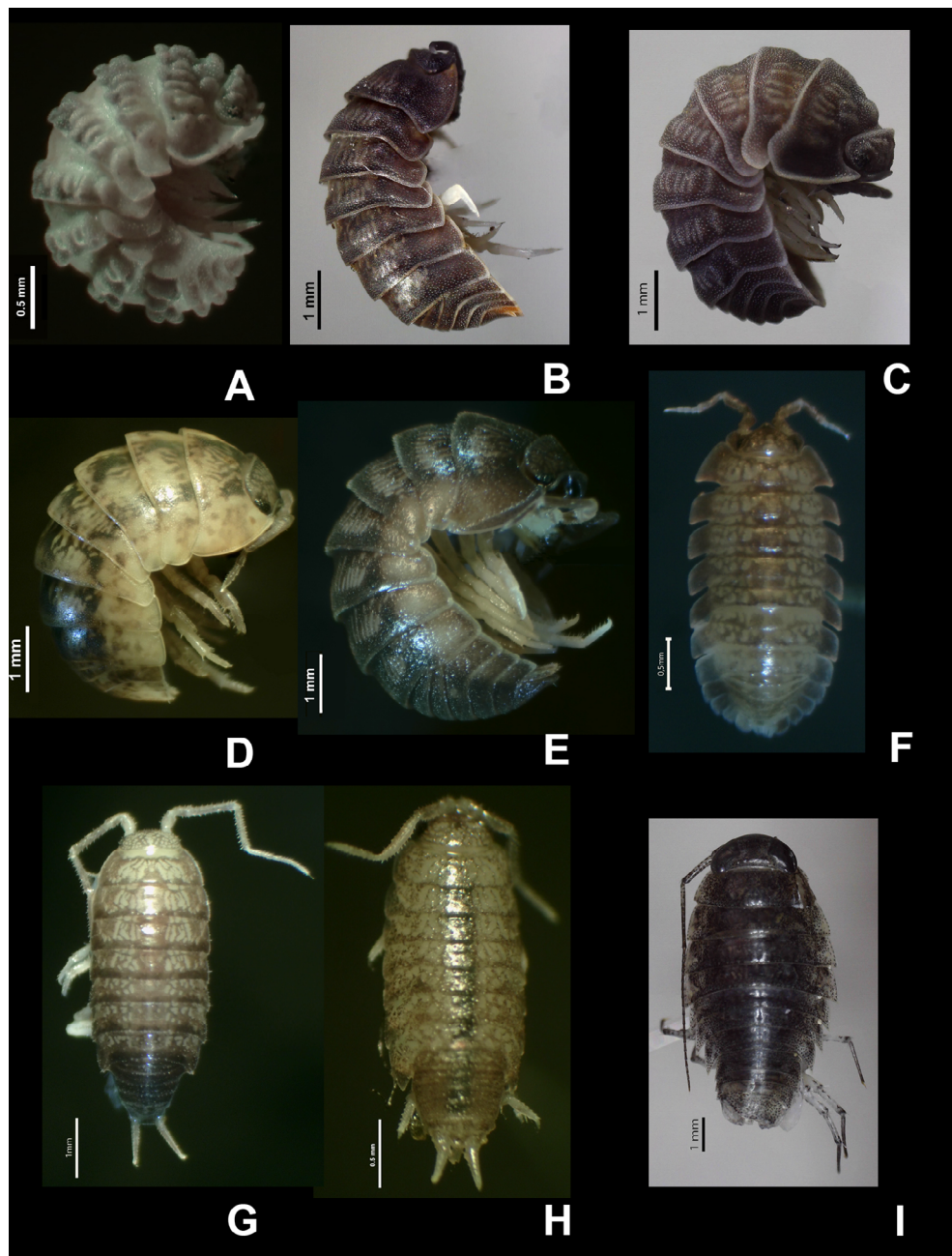


Figure 2. Habitus. **A**, *Ctenorillo atlanticus* (OCV31); **B**, *Cubaris murina* (OCV19a); **C**, *Venezillo trifolium* (OCV10); **D**, *Armadillidium vulgare* (ASM06); **E**, *Eluma caelata* (ASM22); **F**, *Armadilloniscus candidus* (ASM75); **G**, *Halophiloscia couchii* (OM062b); **H**, *Littorophiloscia culebrae* (OCV15b); **I**, *Ligia gracilipes* (OCV27b). Scale bars: **A**, **F**, 0.5 mm; **B–E**, **G–I**, 1 mm.

Family Halophilosciidae Verhoeff, 1908a

Genus *Halophiloscia* Verhoeff, 1908a

Halophiloscia couchii (Kinahan, 1858)

(Fig. 2G)

Material examined. 1 female (ASM42), Portugal, Azores, São Miguel, Piscina Natural da Boca de Ribeira, 37°50'43"N 25°08'49"W, 2 Jun 2024, coll. L.P.

Da Silva; 2 females (ASM43), same data as preceding; 1 male (ASM74), Portugal, Azores, São Miguel, Praia do Pópulo, 37°45'00"N 25°37'02"W, 6 Jun 2024, coll. L.P. Da Silva; 1 female (OM060), Portugal, Madeira Archipelago, Porto Santo, beach east of the port, 33°03'46"N 16°18'19"W, 9 Jul 2024, coll. L.P. Da Silva; 7 males (OM061a), same data as preceding; 13 females (OM061b), same data as preceding; 1 male (OM062a), Portugal, Madeira Archipelago, Porto Santo, beach

east of the port, 33°03'46"N 16°18'22"W, 9 Jul 2024, coll. L.P. Da Silva; 4 females (OM062b), same data as preceding; 1 female (OM009), Portugal, Madeira Archipelago, Madeira Island, Praia do Gorgulho, 32°38'12"N 16°56'07"W, 6 Jul 2024, coll. L.P. Da Silva.

Remarks. In the Macaronesia region, this species has been reported from the Azores, specifically from Faial, Flores, Graciosa, Santa Maria, São Miguel and Terceira (Dollfus, 1889b; 1889c; Paulian De Félice, 1946; Vandel, 1956a, 1960b, 1968; Schmölzer, 1971; Taiti, 2010). In Cabo Verde, Vandel (1954a) reported *Hl. couchii* with some uncertainty, likely based on a reference by Dollfus (1899, p. 251): “Par contre, *Tylos*, *Armadillo* et *Philoscia couchii*, trouvés au Sénégal et au Cap Vert.” This sentence could suggest that all three species were found in Cabo Verde. However, Dollfus himself (1899, p. 256) later specifies Senegal as the only locality for *Philoscia couchii*, indicating Vandel’s (1954a, 1956a, 1962) citation of *Hl. couchii* for the archipelago cannot be considered valid. In Madeira it has been reported from Funchal, Ponta de São Lourenço, Porto Novo, São Vicente and Porto Santo Island (Arcangeli, 1958; Vandel, 1960b; 1968; Schmölzer, 1971). In Canary Islands, it had been recorded from El Hierro, Fuerteventura, Gran Canaria, La Gomera, La Graciosa, Lanzarote, La Palma, Montaña Clara and Tenerife (Dollfus, 1889b; 1893; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1956a; 1958; Schmölzer, 1971; Dalens, 1984; Rodríguez Santana and Barrientos, 1993c; García et al., 1995; Rodríguez Santana, 1996; Macías et al., 2004; Taiti and López, 2008; López and Taiti, 2010; Fernández-Palacios et al., 2018). In their work on the Halophilosciidae of the Canary Islands, Taiti and López (2008) described two new species: *Halophiloscia microphthalma* Taiti and López, 2008 from La Palma, and *Halophiloscia rodriguezi* Taiti and López, 2008 from El Hierro, La Gomera, La Palma, and Tenerife. The authors reassigned several previous records of *Hl. couchii* in the Canary Islands to one of these two new species, or *Halophiloscia canariensis* Dalens, 1973, indicating that the remaining records should be re-evaluated. According to Taiti and López (2008), López and Taiti (2010), and Bidegaray-Batista et al. (2015), *Hl.*

couchii is currently known only from Gran Canaria and Tenerife in the Canary Islands, where it is considered a recent introduction (Bidegaray-Batista et al., 2015).

Genus *Littorophiloscia* Hatch, 1947

Littorophiloscia culebrae (Moore, 1901)

(Fig. 2H)

Material examined. 1 male (OCV12c), Cabo Verde, Santiago, Cidade Velha, 14°54'52"N 23°36'17"W, 14 Oct 2023, coll. L.P. Da Silva; 3 females (OCV14), Cabo Verde, Santiago, Praia, 14°54'16"N 23°31'16"W, 15 Oct 2023, coll. L.P. Da Silva; 1 male (OCV15a), Cabo Verde, Santiago, Praia, 14°54'17"N 23°31'17"W, 15 Oct 2023, coll. L.P. Da Silva; 5 males (OCV15b), same data as preceding; 2 males (JC979 [ex. OCV15b]), same data as preceding; 15 females (OCV15c), same data as preceding.

Remarks. Circumtropical species (Schmalfuss, 2003) previously cited from the Canary Islands (Rodríguez Santana and Barrientos, 1993c; Taiti and López, 2008; López and Taiti, 2010). It is recorded for the first time from Cabo Verde.

Family Ligiidae Leach, 1814

Genus *Ligia* Fabricius, 1798

Ligia gracilipes Budde-Lund, 1885

(Fig. 2I)

Material examined. 1 male (JC980 [ex. OCV26a]), Cabo Verde, Sal, Santa Maria, 16°35'43"N 22°53'41"W, 19 Oct 2023, coll. L.P. Da Silva; 3 females, 6 immatures (OCV26b), same data as preceding; 1 male (OCV27a), same data as preceding; 2 females, 1 immature (OCV27b), same data as preceding.

Remarks. The shape of the male pleopods, particularly endopod II, which ends in a slender, pointed tip, allows one to distinguish *Lg. gracilipes* from *Ligia italica* Fabricius, 1798 and *Ligia oceanica* (Linnaeus, 1767). Found from Cabo Verde to Congo (Dollfus, 1899; Vandel, 1960a). In Cabo Verde, it has been cited by Dollfus (1899), Vandel (1960a) and Schmalfuss (1982).

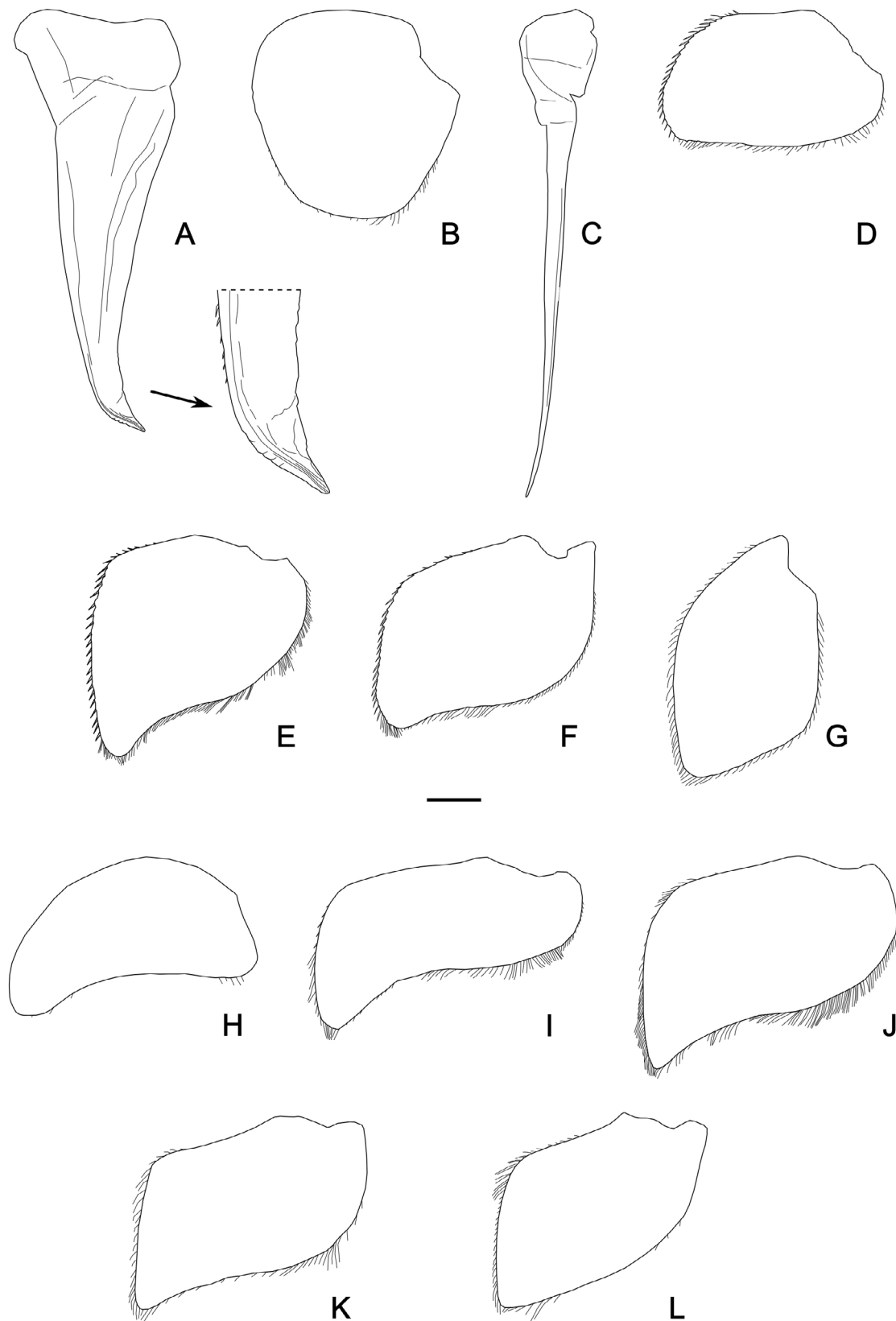


Figure 3. *Armadilloniscus candidus*, male (LPS892b). **A**, Endopod of pleopod I; **B**, exopod of pleopod I; **C**, endopod of pleopod II; **D**, exopod of pleopod II; **E**, exopod of pleopod III; **F**, exopod of pleopod IV; **G**, exopod of pleopod V. *Armadilloniscus candidus*, female (LPS892c). **H**, Exopod of pleopod I; **I**, exopod of pleopod II; **J**, exopod of pleopod III; **K**, exopod of pleopod IV; **L**, exopod of pleopod V. Scale bars: **A–L**, 0.1 mm.

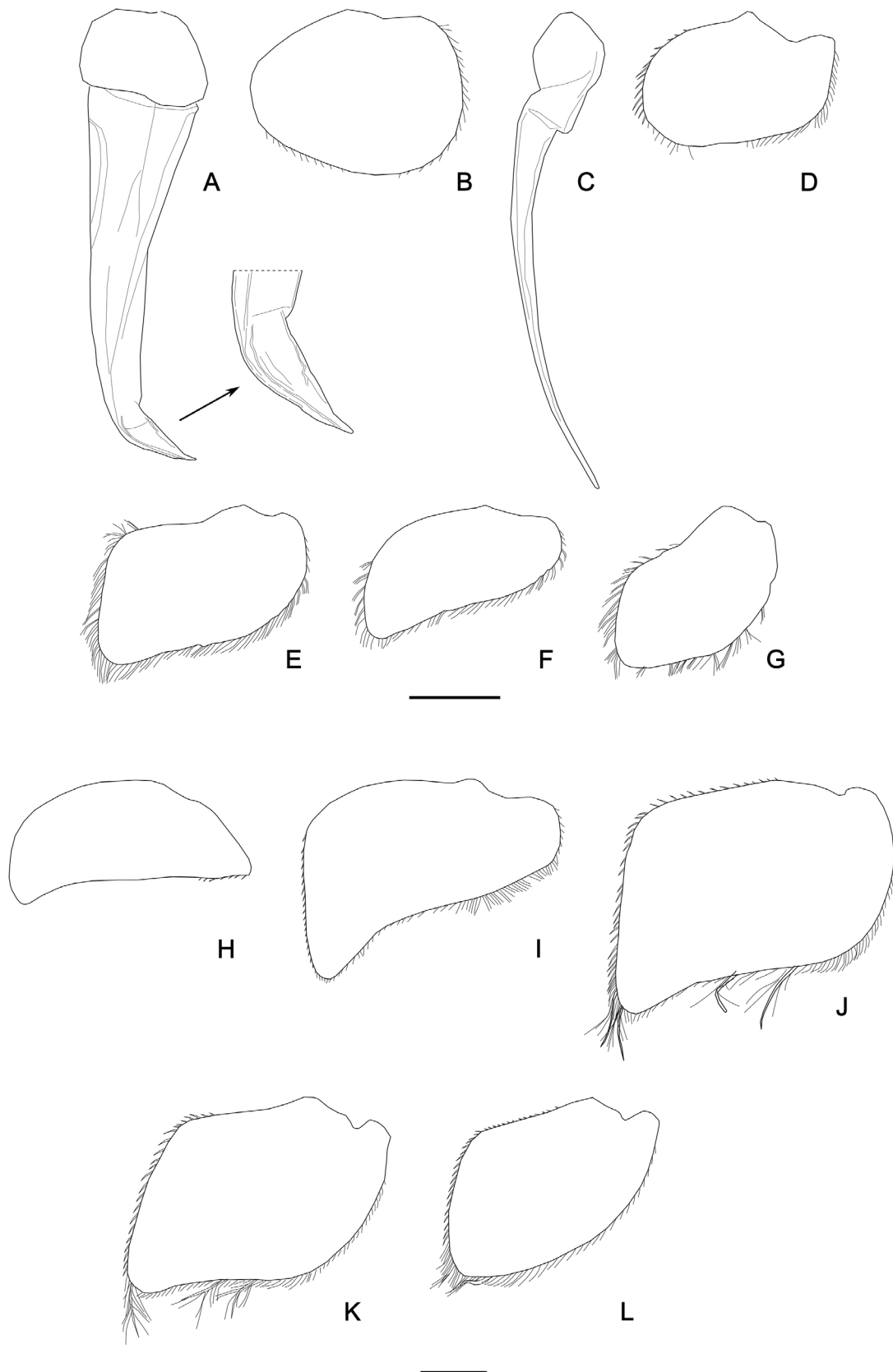


Figure 4. *Armadilloniscus ellipticus*, male (JC198). **A**, Endopod of pleopod I; **B**, exopod of pleopod I; **C**, endopod of pleopod II; **D**, exopod of pleopod II; **E**, exopod of pleopod III; **F**, exopod of pleopod IV; **G**, exopod of pleopod V. *Armadilloniscus ellipticus*, female (LPS924). **H**, Exopod of pleopod I; **I**, exopod of pleopod II; **J**, exopod of pleopod III; **K**, exopod of pleopod IV; **L**, exopod of pleopod V. Scale bars: **A–L**, 0.1 mm.

***Ligia italica* Fabricius, 1798**

(Fig. 5A)

Material examined. 2 females (ASM44), Portugal, Azores, São Miguel, Piscina Natural da Boca de Ribeira, 37°50'43"N 25°08'49"W, 2 Jun 2024, coll. L.P. Da Silva; 2 males (ASM17a), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'21"N 25°40'02"W, 23 Nov 2023, coll. L.P. Da Silva; 2 females (ASM17b), same data as preceding; 1 female (ASM77), Portugal, Azores, São Miguel, Praia do Pópulo, 37°44'60"N 25°37'02"W, 6 Jun 2024, coll. L.P. Da Silva; 1 male (ASM29), Portugal, Azores, São Miguel, Rabo de Peixe, 37°49'05"N 25°34'52"W, 24 Nov 2023, coll. L.P. Da Silva; 1 female (OM001), Portugal, Madeira Archipelago, Madeira Island, Praia do Gorgulho, 32°38'11"N 16°56'05"W, 5 Jul 2024, coll. L.P. Da Silva; 3 females (OM002), same data as preceding; 1 female (OM005), Portugal, Madeira Archipelago, Madeira Island, Praia do Gorgulho, 32°38'12"N 16°56'07"W, 5 Jul 2024, coll. L.P. Da Silva.

Remarks. Found in the circum-Mediterranean region and the Atlantic archipelagos. It has been cited from the Azores (Dollfus, 1889b; 1889c; Paulian De Félice, 1946; Vandel, 1956a; 1968; Schmölzer, 1971; Ashmole et al., 1996; Taiti, 2010), the Canary Islands (Dollfus, 1889b; 1893; Koelbel, 1892; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1956a; Schmölzer, 1971; Dalens, 1984; Hoese, 1984b; Macias et al., 2004; López and Taiti, 2010; Ramírez and Riera, 2013; Fernández-Palacios et al., 2018), and Madeira (Dollfus, 1889b; Norman, 1899; Paulian De Félice, 1939b; 1946; Vandel, 1956a; 1960b; Arcangeli, 1958; Schmölzer, 1971; Borges et al., 2008; Taiti, 2010). Vandel (1954a) mentioned it with some doubts from Cabo Verde because he did not examine males, but later (Vandel, 1956a; 1960a) indicated that it could be found on these islands. At present, its presence in the archipelago is considered uncertain.

Family Oniscidae Latreille, 1802**Genus *Oniscus* Linnaeus, 1758*****Oniscus asellus* Linnaeus, 1758**

(Fig. 5B)

Material examined. 1 female (ASM54), Portugal, Azores, São Miguel, Faial da Terra, 37°45'04"N

25°12'09"W, 3 Jun 2024, coll. L.P. Da Silva; 2 females (ASM56a), same data as preceding; 1 female (ASM67), Portugal, Azores, São Miguel, Furnas, near Terra Nostra hotel, 37°46'14"N 25°18'57"W, 4 Jun 2024, coll. L.P. Da Silva; 1 female (ASM63), Portugal, Azores, São Miguel, Lagoa do Congo, 37°45'20"N 25°24'30"W, 4 Jun 2024, coll. L.P. Da Silva; 1 male (ASM33a), Portugal, Azores, São Miguel, Miradouro do Salto do Cavalo, 37°47'21"N 25°17'10"W, 25 Nov 2023, coll. L.P. Da Silva; 1 female (ASM33b), same data as preceding; 1 female (ASM28), Portugal, Azores, São Miguel, Mosteiros, 37°53'08"N 25°49'11"W, 24 Nov 2023, coll. L.P. Da Silva; 1 male (ASM41), Portugal, Azores, São Miguel, Piscina Natural da Boca de Ribeira, 37°50'42"N 25°08'50"W, 2 Jun 2024, coll. L.P. Da Silva; 8 females (ASM59), Portugal, Azores, São Miguel, Ribeira Quente, 37°45'06"N 25°18'24"W, 3 Jun 2024, coll. L.P. Da Silva; 1 female (ASM14), Portugal, Azores, São Miguel, Nordeste, 37°48'00"N 25°09'39"W, 23 Nov 2023, coll. L.P. Da Silva; 1 female (ASM39), Portugal, Azores, São Miguel, Nordeste, 37°49'53"N 25°08'42"W, 1 Jun 2024, coll. L.P. Da Silva; 1 female (ASM15), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'40"N 25°40'03"W, 23 Nov 2023, coll. L.P. Da Silva; 1 female (OM042c), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'14"N 17°03'04"W, 8 Jul 2024, coll. L.P. Da Silva; 1 female (OM070), Portugal, Madeira Archipelago, Madeira Island, Caminho dos Lamaceiros, 32°44'27"N 16°50'20"W, 10 Jul 2024, coll. L.P. Da Silva; 1 male (OM071), same data as preceding; 1 female (OM073), Portugal, Madeira Archipelago, Madeira Island, Caminho dos Lamaceiros, 32°44'28"N 16°50'19"W, 10 Jul 2024, coll. L.P. Da Silva; 1 male (OM024), Portugal, Madeira Archipelago, Madeira Island, Fanal, 32°48'32"N 17°08'38"W, 6 Jul 2024, coll. L.P. Da Silva; 5 females (OM025), same data as preceding; 2 females (OM014), Portugal, Madeira Archipelago, Madeira Island, Lombo do Moleiro, 32°44'02"N 17°01'15"W, 6 Jul 2024, coll. L.P. Da Silva; 1 female (OM015), same data as preceding; 1 female (OM076), Portugal, Madeira Archipelago, Madeira Island, Posto Florestal dos Lamaceiros, 32°44'23"N 16°50'50"W, 10 Jul 2024, coll. L.P. Da Silva; 1 female (OM004), Portugal, Madeira Archipelago, Madeira Island, Ribeira da Lapa, 32°41'58"N 16°57'10"W, 5 Jul 2024, coll. L.P. Da Silva; 2 females (OM035), Portugal,

Madeira Archipelago, Madeira Island, Ribeiro Frio, 32°44'01"N 16°53'14"W, 5 Jul 2024, coll. L.P. Da Silva.

Remarks. The species is of Atlantic origin (Vandel, 1960b) and has spread throughout Western Europe and was introduced into other parts of the world (Schmalfuss, 2003). It was reported from Azores (Morelet, 1860; Budde-Lund, 1885; Dollfus, 1889a; 1889b; Paulian De Félice, 1946; Vandel, 1956a; 1968; Ashmole et al., 1996; Schmalfuss, 2003; Taiti, 2010) and Madeira (Vandel, 1960b; Schmölzer, 1971; Hoese, 1978; Schmalfuss, 2003; Borges et al., 2008; Taiti, 2010).

Family Platyarthridae Verhoeff, 1949

Genus *Niambia* Budde-Lund, 1904

***Niambia squamata* (Budde-Lund, 1885)**

(Fig. 5C)

Material examined. 2 males (OCV25a), Cabo Verde, Sal, Murdeira, 16°40'35"N 22°56'07"W, 19 Oct 2023, coll. L.P. Da Silva; 1 female (OCV25b), same data as preceding.

Remarks. Known from Angola, Ivory Coast, Nigeria, Democratic Republic of São Tomé and Príncipe, Senegal, and Zaire (Schmalfuss, 2003; Cifuentes and Da Silva, 2023b), and is considered introduced in Brazil (Schmalfuss, 2003). It was previously cited from Cabo Verde (Schmalfuss, 1982).

Genus *Trichorhina* Budde-Lund, 1908

***Trichorhina tomentosa* (Budde-Lund, 1893)**

(Fig. 5D)

Material examined. 1 female (OM031), Portugal, Madeira Archipelago, Madeira Island, Praia do Gorgulho, 32°38'13"N 16°56'08"W, 7 Jul 2024, coll. L.P. Da Silva; 2 females (OM032), same data as preceding; 4 females (OM33a), same data as preceding; 1 female (OM33b), same data as preceding; 1 male (JC1199 [ex. OM079a]), Portugal, Madeira Archipelago, Madeira Island, Praia do Gorgulho, 32°38'13"N 16°56'08"W, 11 Jul 2024, coll. L.P. Da Silva; 3 females, 4 immatures (OM079b), same data as preceding.

Remarks. Tropical species introduced worldwide, with its use as food for terrarium animals further facilitating its spread (Schmalfuss, 2003; Cifuentes et al., 2022). It was only recorded from the Macaronesia region from São Miguel in the Azores (Vandel, 1968; Taiti, 2010). It is recorded for the first time from Madeira.

Family Porcellionidae Brandt, 1831

Genus *Acaeroplastes* Verhoeff, 1918

***Acaeroplastes melanurus* (Budde-Lund, 1885)**

(Fig. 5E)

Material examined. 1 female (ASM11), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'46"N 25°40'19"W, 23 Nov 2023, coll. L.P. Da Silva; 1 male (ASM08), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'48"N 25°40'14"W, 23 Nov 2023, coll. L.P. Da Silva; 2 males (ASM12a), same data as preceding; 1 female (ASM12b), same data as preceding.

Remarks. Species from the Western Mediterranean and present in Azores (Dollfus, 1889a; 1899; Paulian de Félice, 1946; Vandel, 1956a; 1968; Schmalfuss, 2003; Taiti, 2010).

Genus *Agabiformius* Verhoeff, 1908b

***Agabiformius lentus* (Budde-Lund, 1885)**

(Fig. 5F)

Material examined. 1 female (OM008), Portugal, Madeira Archipelago, Madeira Island, Marine Biological Station, 32°38'12"N 16°56'08"W, 5 Jul 2024, coll. L.P. Da Silva; 1 female (OM080a), Portugal, Madeira Archipelago, Madeira Island, Praia do Gorgulho, 32°38'13"N 16°56'10"W, 11 Jul 2024, coll. L.P. Da Silva; 1 female (OM080b), same data as preceding.

Remarks. Species native to the Mediterranean region and introduced into other parts of the world (Schmalfuss, 2003). In the Macaronesia region, it is known from São Miguel in Azores; El Hierro, Fuerteventura, Gran Canaria, La Gomera, and La Palma in the Canary Islands, as well as from Funchal

in Madeira (Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1954b; 1960b; 1968; Dalens, 1984; Hoese, 1984b; Arndt and Mattern, 2005; Borges et al., 2008; López and Taiti, 2010; Taiti, 2010).

Genus *Porcellio* Latreille, 1804

***Porcellio atlantidum* Paulian de Félice, 1939b** (Fig. 5G)

Material examined. 1 male (OM019), Portugal, Madeira Archipelago, Madeira Island, Fanal, 32°48'54"N 17°08'46"W, 6 Jul 2024, coll. L.P. Da Silva; 2 females (OM022), Portugal, Madeira Archipelago, Madeira Island, Fanal, 32°48'53"N 17°08'45"W, 6 Jul 2024, coll. L.P. Da Silva; 1 female (JC1194 [ex. OM022]), same data as preceding; 1 female (OM023a), Portugal, Madeira Archipelago, Madeira Island, Fanal, 32°48'51"N 17°08'58"W, 6 Jul 2024, coll. L.P. Da Silva; 1 male (OM023b), same data as preceding; 1 male (JC1195 [ex. OM023b]), same data as preceding; 1 female (OM023c), same data as preceding.

Remarks. Species is endemic to Madeira and has been reported from Caldeirão do Inferno, Caldeirão Verde, Chão dos Pessegueiros, Encumeada to Pico Ruivo, Fajã de Nogueira, Quedas, Quemadas, Rabaçal, Ribeira da Janela, and Fanal (road), Ribeiro Frio, São Antonio da Serra, São Jorge to Levada de Casinhas (road), and São Vicente (Paulian De Félice, 1939b; 1946; Arcangeli, 1958; Schmölzer, 1971; Vandel, 1960b; Borges et al., 2008).

***Porcellio cadenati* Vandel, 1954a** (Fig. 5H)

Material examined. 1 male (OCV20a), Cabo Verde, Sal, Murdeira, 16°42'26"N 22°54'17"W, 17 Oct 2023, coll. L.P. Da Silva; 2 males (OCV20b), same data as preceding; 1 male (JC978 [ex. OCV20b]), same data as preceding; 1 female (OCV20c), same data as preceding; 1 female (OCV22), Cabo Verde, Sal, Murdeira, 16°42'25"N 22°54'16"W, 17 Oct 2023, coll. L.P. Da Silva; 1 male (OCV23), same data as preceding.

Remarks. Endemic to Cabo Verde, recorded on Sal Island by Vandel (1954a) and Schmalzfuss (1982).

***Porcellio cataractae* Vandel, 1960** (Fig. 5I)

Material examined. 1 female (OM040), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'14"N 17°03'04"W, 8 Jul 2024, coll. L.P. Da Silva; 1 male (OM041a), same data as preceding; 1 female (OM041b), same data as preceding; 1 male (OM042a), same data as preceding; 5 females (OM042b), same data as preceding; 1 female (OM044), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'12"N 17°03'04"W, 8 Jul 2024, coll. L.P. Da Silva; 1 male (OM045a), same data as preceding; 2 females (OM045b), same data as preceding; 1 female (OM049), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'17"N 17°03'10"W, 8 Jul 2024, coll. L.P. Da Silva; 1 male (OM050), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'19"N 17°03'11"W, 8 Jul 2024, coll. L.P. Da Silva; 1 male (OM052), same data as preceding; 1 male (OM053), same data as preceding; 1 female (OM054), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'20"N 17°03'12"W, 8 Jul 2024, coll. L.P. Da Silva; 1 male (JC1197 [ex. OM057a]), same data as preceding; 2 females (OM057b), same data as preceding; 1 female (JC1198 [ex. OM057b]), same data as preceding.

Remarks. Species is endemic to Madeira and has been reported from Caldeirão Verde, Encumeada, Pico Ruivo, Ponta Delgada, Quemadas, Ribeira de Santa Luzia, São Jorge, São Jorge to Levada de Casinhas (road), and São Vicente (Vandel, 1960b).

***Porcellio dilatatus* Brandt, 1833** (Fig. 6A)

Material examined. 1 male (ASM65a), Portugal, Azores, São Miguel, Furnas, near Terra Nostra hotel, 37°46'14"N 25°18'57"W, 04 Jun 2024, coll. L.P. Da Silva; 1 female (ASM65b), same data as preceding; 1 male (ASM04), Portugal, Azores, São Miguel, Ponta

Delgada, 37°44'43" N 25°41'59" W, 23 Nov 2023, coll. L.P. Da Silva; 1 female (ASM13), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'47" N 25°40'13" W, 23 Nov 2023, coll. L.P. Da Silva; 1 female (ASM32), Portugal, Azores, São Miguel, Praia de Santa Barbara, 37°49'01" N 25°32'49" W, 24 Nov 2023, coll. L.P. Da Silva;

Remarks. Considered native to Western Europe and introduced in other parts of the world (Schmalfuss, 2003). It was cited from Azores (Morelet, 1860; Dollfus, 1889a; 1889b; Paulian De Félice, 1946; Vandel, 1956a; 1968; Taiti, 2010) and from Madeira (Dollfus, 1889b; Norman, 1899; Paulian De Félice, 1946; Arcangeli, 1958; Vandel, 1960b; Borges et al., 2008; Taiti, 2010).

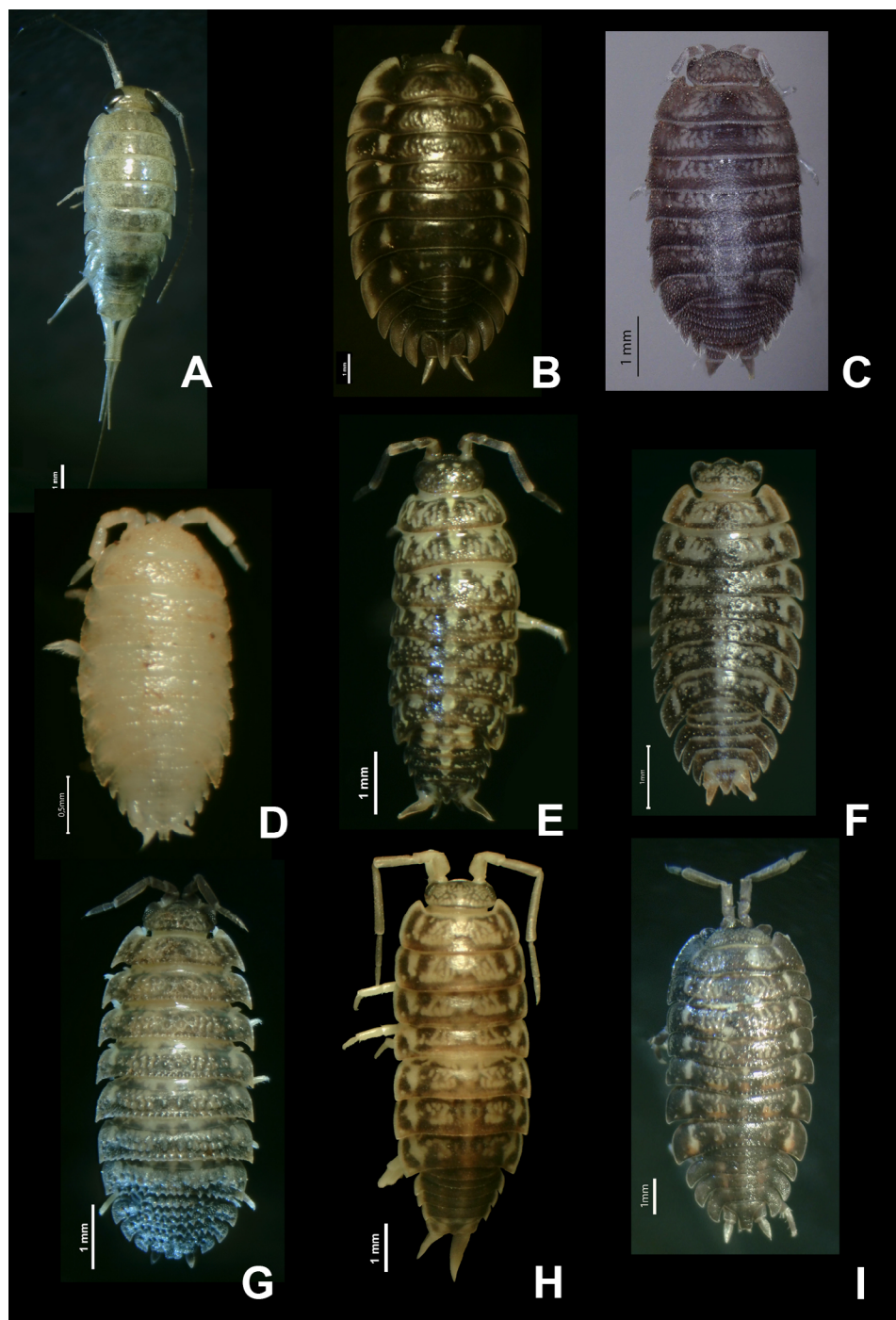


Figure 5. Habitus. **A**, *Ligia italica* (ASM17b); **B**, *Oniscus asellus* (ASM33a); **C**, *Niambia squamata* (OCV25b); **D**, *Trichorhina tomentosa* (OM079a); **E**, *Acaeroplastes melanurus* (ASM12a); **F**, *Agabiformius lentus* (OM080a); **G**, *Porcellio atlantidum* (OM019); **L**, *Porcellio cadenati* (OCV20a); **I**, *Porcellio cataractae* (OM045a). Scale bars: **A**, **C**, **E–I**, 1 mm; **B**, **D**, 0.5 mm.

***Porcellio laevis* Latreille, 1804**

(Fig. 6B)

Material examined. 2 females (ASM24), Portugal, Azores, São Miguel, Ponta do Escalvado, 37°52'16"N 25°50'28"W, 24 Nov 2023, coll. L.P. Da Silva; 1 male (ASM25a), same data as preceding; 1 female (ASM25b), same data as preceding.

Remarks. Recorded from Europe and North Africa and considered introduced in other parts of the world (Schmalfuss, 2003). It was cited from the Azores (Morelet, 1860; Dollfus, 1889a, 1889b; Vandel, 1956a; Taiti, 2010), Cabo Verde (Dollfus, 1890; 1897; Paulian De Félice, 1938; 1946; Schmalfuss, 1982), Canary Islands (Dollfus, 1889b; 1893; 1898; Koelbel, 1892; Kraepelin, 1895; Ferrer Galdiano, 1923; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1954b; Schmölzer, 1971; Dalens, 1984; Hoese, 1984a; 1984b; Rodríguez Santana and Vicente, 1992a; López and Taiti, 2010) and Madeira (Budde-Lund, 1885; Norman, 1899; Paulian De Félice, 1939b; 1946; Arcangeli, 1958; Vandel, 1960b; Schmölzer, 1971; Hoese, 1978; Taiti, 2010).

***Porcellio lamellatus* Budde-Lund, 1885**

(Fig. 6C)

Material examined. 1 male (ASM30), Portugal, Azores, São Miguel, Praia de Santa Barbara, 37°49'04"N 25°32'41"W, 24 Nov 2023, coll. L.P. Da Silva; 3 males (ASM31), Portugal, Azores, São Miguel, Praia de Santa Barbara, 37°49'03"N 25°32'45"W, 24 Nov 2023, coll. L.P. Da Silva; 1 female (OM030), Portugal, Madeira Archipelago, Madeira Island, São Vicente, 32°48'32"N 17°02'54"W, 6 Jul 2024, coll. L.P. Da Silva.

Remarks. Reported from the Mediterranean coasts to the Black Sea and the islands of Macaronesia, and considered to be introduced in other parts of the world according to Schmalfuss (2003). It was cited from Azores (Dollfus, 1889b; 1889c; Paulian De Félice, 1946; Vandel, 1956a; 1968; Schmölzer, 1971; Ashmole et al., 1996; Taiti, 2010), Cabo Verde (Vandel, 1954a; 1956a; Schmalfuss, 1982), Canary Islands (Dollfus, 1893; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1956a; Schmölzer, 1971; Dalens, 1984; Hoese,

1984b; López and Taiti, 2010; Fernández-Palacios et al., 2018), Madeira (Arcangeli, 1934b; 1958; Vandel, 1956a; 1960b; Schmölzer, 1971; Borges et al., 2008; Taiti, 2010), and from Selvagens Islands (Arcangeli, 1934b; 1958; Vandel, 1956a; Hoese, 1984b).

***Porcellio ovalis* Dollfus, 1893**

Material examined. 1 female (MNCN 20.04/7548), Spain, Canary Islands, Las Palmas.

Remarks. Endemic to the Canary Islands, exclusively known from the island of Gran Canaria (Dollfus, 1893; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1954b; Schmölzer, 1971; Dalens, 1984; Hoese, 1984b; 1985; López and Taiti, 2010).

***Porcellio scaber* Latreille, 1804**

(Fig. 6D)

Material examined. 12 females (ASM61), Portugal, Azores, São Miguel, Lagoa das Furnas, 37°45'04"N 25°19'39"W, 3 Jun 2024, coll. L.P. Da Silva; 2 males (ASM72), Portugal, Azores, São Miguel, São Brás, 37°48'16"N 25°24'13"W, 5 Jun 2024, coll. L.P. Da Silva; 1 female (ASM37), Portugal, Azores, São Miguel, Nordeste, 37°49'53"N 25°08'42"W, 1 Jun 2024, coll. L.P. Da Silva; 2 females (ASM38), same data as preceding; 1 male (ASM68), Portugal, Azores, São Miguel, Vale das Lombadas, 37°46'33"N 25°27'36"W, 5 Jun 2024, coll. L.P. Da Silva.

Remarks. This species is widely reported across Europe and has been introduced to other parts of the world (Schmalfuss, 2003). In the Macaronesia region, it has been recorded from Azores, Canary Islands, and Madeira (Dollfus, 1889b; 1893; Koelbel, 1892; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1954b; 1956a; 1968; Schmölzer, 1971; Dalens, 1984; Martín et al., 1985; López and Taiti, 2010; Taiti, 2010).

***Porcellio spinipes* Dollfus, 1893**

Material examined. 2 males (MNCN 20.04/7956), Spain, Canary Islands, La Graciosa, coll. Alluand.

Remarks. Only known from Canary Islands (Dollfus, 1893; Arcangeli, 1930; Paulian De Félice,

1946; Rodríguez Santana and Vicente, 1992a; Macias et al., 2004; López and Taiti, 2010; Fernández-Palacios et al., 2018).

Genus *Porcellionides* Miers, 1878

Porcellionides cingendus (Kinahan, 1857)

(Fig. 6E)

Material examined. 1 female (ASM60), Portugal, Azores, São Miguel, Lagoa das Furnas, 37°44'58"N 25°19'34"W, 3 Jun 2024, coll. L.P. Da Silva; 1 female (ASM62), Portugal, Azores, São Miguel, Lagoa das Furnas, 37°44'03"N 25°19'39"W, 3 Jun 2024, coll. L.P. Da Silva; 5 females (OM059), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'24"N 17°03'33"W, 8 Jul 2024, coll. L.P. Da Silva; 1 male (OM063), Portugal, Madeira Archipelago, Madeira Island, Funchal, 32°41'10"N 16°54'55"W, 10 Jul 2024, coll. L.P. Da Silva; 2 males (OM064a), same data as preceding; 4 females (OM064b), same data as preceding; 1 male (OM065a), same data as preceding; 2 females (OM065b), same data as preceding; 1 male (OM066), same data as preceding; 1 female (OM067), same data as preceding; 1 male (OM010), Portugal, Madeira Archipelago, Madeira Island, Lombo do Moleiro, 32°44'02"N 17°01'15"W, 6 Jul 2024, coll. L.P. Da Silva; 1 female (OM034), Portugal, Madeira Archipelago, Madeira Island, Ribeiro Frio, 32°44'01"N 16°53'16"W, 7 Jul 2024, coll. L.P. Da Silva.

Remarks. According to Vandel (1946), it is a species with an Atlantic distribution, having been reported from Spain, France, England, Ireland, and Portugal (Vandel, 1946; Schmalzfuss, 2003; Cifuentes and Da Silva, 2024). It is reported for the first time from the Azores and from Madeira.

Porcellionides pruinosus (Brandt, 1833)

(Fig. 6F)

Material examined. 1 immature (ASM09), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'48"N 25°40'15"W, 23 Nov 2023, coll. L.P. Da Silva; 1 male (ASM010), same data as preceding; 1 male (ASM16), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'38"N 25°40'02"W, 23 Nov 2023, coll. L.P. Da Silva; 1 male (ASM18), Portugal, Azores, São Miguel,

Ponta Delgada, 37°44'23"N 25°39'44"W, 23 Nov 2023, coll. L.P. Da Silva; 1 female (OCV21), Cabo Verde, Sal, Murdeira, 16°42'25"N 22°54'16"W, 17 Oct 2023, coll. L.P. Da Silva; 1 male (OCV05a), Cabo Verde, Santiago, Cidade Velha, 14°54'58"N 23°36'16"W, 13 Oct 2023, coll. L.P. Da Silva; 3 males (OCV06a), same data as preceding; 1 female (OCV06b), same data as preceding; 2 females (OCV16), Cabo Verde, Santiago, São Jorge dos Orgãos, 15°02'54"N 23°36'02"W, 16 Oct 2023, coll. L.P. Da Silva; 1 male (OCV18), Cabo Verde, Santiago, São Jorge dos Orgãos, 15°02'56"N 23°36'04"W, 16 Oct 2023, coll. L.P. Da Silva; 2 females (OCV30), Cabo Verde, Santiago, Tarrafal, 15°16'50"N 23°45'08"W, 20 Oct 2023, coll. L.P. Da Silva; 1 female (MNCN 20.04/12196), Spain, Canary Islands, La Palma, El Paso, 25 Sep 1999, coll. T. Domingo-Quero; 1 female (MNCN 20.04/12195), Spain, Canary Islands, La Palma, El Paso, 9 Feb 2000, coll. T. Domingo-Quero; 6 females (MNCN 20.04/12174), Spain, Canary Islands, La Palma, El Paso, 26 Jun 2001, coll. T. Domingo-Quero; 2 males, 1 female (MNCN 20.04/12162), Spain, Canary Islands, La Palma, El Paso, 19 Oct 2000, coll. T. Domingo-Quero; 1 female (MNCN 20.04/12188), Spain, Canary Islands, La Palma, El Paso, 22 Jan 2001, coll. T. Domingo-Quero; 2 females (MNCN 20.04/12175), Spain, Canary Islands, La Palma, El Paso, 23 Mar 2001, coll. T. Domingo-Quero; 1 female (MNCN 20.04/12183), same data as preceding; 1 female (MNCN 20.04/12178), Spain, Canary Islands, La Palma, El Paso, 23 Mar 2001, coll. A. Sánchez-Ruiz; 1 female (MNCN 20.04/12206), Spain, Canary Islands, La Palma, El Paso, 26 Mar 2001, coll. A. Sánchez-Ruiz and T. Domingo-Quero; 1 female (MNCN 20.04/12180), same data as preceding; 1 female (MNCN 20.04/12199), Spain, Canary Islands, La Palma, El Paso, 26 Mar 2001, coll. A. Sánchez-Ruiz; 1 specimen (MNCN 20.04/12192), Spain, Canary Islands, La Palma, El Paso, 30 Mar 2001, coll. A. Sánchez-Ruiz; 1 male (MNCN 20.04/12204), Spain, Canary Islands, La Palma, El Paso, 1 May 2000, coll. T. Domingo-Quero; 2 females (MNCN 20.04/12166), same data as preceding; 1 female (MNCN 20.04/12182), Spain, Canary Islands, La Palma, El Paso, 21 Jun 2001, coll. T. Domingo-Quero; 1 female (MNCN 20.04/12172), Spain, Canary Islands, La Palma, Los Arenales, 22 Feb 2000, coll.

Rafael G.B.; 1 male (OM007), Portugal, Madeira Archipelago, Madeira Island, Marine Biological Station, 32°38'12"N 16°56'08"W, 5 Jul 2024, coll. L.P. Da Silva; 1 female (OM029), Portugal, Madeira Archipelago, Madeira Island, São Vicente, 32°48'31"N 17°02'52"W, 6 Jul 2024, coll. L.P. Da Silva.

Remarks. Species of Mediterranean origin, considered to be introduced in other parts of the world (Schmalfuss, 2003). It was cited from Azores (Dollfus, 1889a; 1889b; Paulian De Félice, 1946; Vandel, 1956a; Schmölzer, 1971; Ashmole et al., 1996; Taiti, 2010), Cabo Verde (Dollfus, 1897; 1899; Paulian De Félice, 1946; Schmalfuss, 1982), Canary Islands (Dollfus, 1898; 1893; 1898; Ferrer Galdiano, 1923; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Vandel, 1954b; Schmölzer, 1971; Dalens, 1984; Hoese, 1984b; Cruz, 1991; López and Taiti, 2010), and Madeira (Paulian De Félice, 1939b; 1946; Arcangeli, 1958; Vandel, 1960b; Schmölzer, 1971; Hoese, 1978; Taiti, 2010).

***Porcellionides sexfasciatus* (Budde-Lund, 1885)**
(Fig. 6G)

Material examined. 1 female (ASM02), Portugal, Azores, São Miguel, Ponta Delgada, 37°44'42"N 25°41'59"W, 23 Nov 2023, coll. L.P. Da Silva; 2 males (ASM03), same data as preceding; 1 female (ASM05), same data as preceding; 1 female (ASM19), Portugal, Azores, São Miguel, Relva, 37°45'33"N 25°43'39"W, 24 Nov 2023, coll. L.P. Da Silva; 2 females (MNCN 20.04/12168), Spain, Canary Islands, La Palma, El Paso, 27 Mar 2001, coll. A. Sánchez-Ruiz and T. Domingo-Quero; 1 male (OM003), Portugal, Madeira Archipelago, Madeira Island, Funchal, 32°38'17"N 16°56'02"W, 5 Jul 2024, coll. L.P. Da Silva; 1 male (OM068), Portugal, Madeira Archipelago, Madeira Island, Funchal, 32°40'32"N 16°55'07"W, 10 Jul 2024, coll. L.P. Da Silva.

Remarks. Species of Mediterranean origin introduced in other parts of the world (Schmalfuss, 2003). It was cited from Azores (Dollfus, 1889a; Paulian De Félice, 1946; Vandel, 1956a; 1968; Schmölzer, 1971), Cabo Verde (Paulian De Félice, 1946; Schmalfuss, 1982), Canary Islands (Dollfus, 1893; 1898; Ferrer Galdiano, 1923; Arcangeli, 1930; 1934b; 1958; Paulian De Félice, 1946; Vandel, 1954b;

Schmölzer, 1971; Dalens, 1984; Hoese, 1984b; Martín et al., 1985; Rodríguez Santana, 1996; López and Taiti, 2010), Madeira (Budde-Lund, 1885; Norman, 1899; Paulian De Félice, 1946; Arcangeli, 1958; Vandel, 1960b; Schmölzer, 1971; Hoese, 1978; Taiti 2010; Hughes, 2024), and Selvagens Islands (Arcangeli, 1934b; 1958).

Genus *Soteriscus* Taiti and Rossano, 2015

***Soteriscus bremondi* (Vandel, 1960b)**
(Fig. 6H)

Material examined. 1 female (OM038), Portugal, Madeira Archipelago, Madeira Island, Furnas do Cavalum, 32°43'57"N 16°47'01"W, 7 Jul 2024, coll. L.P. Da Silva.

Remarks. Species endemic of Madeira, previously known only from Caldeirão Verde (Vandel, 1960b) and Furnas do Cavalum (Hughes, 2024).

***Soteriscus disimilis* (Rodríguez Santana, 1990)**
(Fig. 6I)

Material examined. 3 males and 1 female (UN La Laguna-42558), Spain, Canary Islands, Lanzarote, Haría, Bco. Elvira Sánchez, 28 Nov 2005, GIET leg., R. Orihuela-Rivero det.

Remarks. Species endemic to the Canary Islands, where it has been reported from Fuerteventura, Lanzarote, and Lobos (Rodríguez Santana, 1990; López and Taiti, 2010; Fernández-Palacios et al., 2018).

***Soteriscus stricticauda* (Dollfus, 1893)**
(Fig. 6J)

Material examined. 1 male (INPA-CSIC-42553), Spain, Canary Islands, El Hierro, Frontera, 23 June 2011, P. Oromí leg., R. Orihuela-Rivero det.

Remarks. Species reported from El Hierro, Gran Canaria, La Gomera, La Palma, and Tenerife in the Canary Islands (Dollfus, 1893; 1898; Vandel, 1954b; Arcangeli, 1930; 1958; Paulian De Félice, 1946; Schmölzer, 1971; Dalens, 1984; Hoese, 1984b; Arndt and Mattern, 2005; López and Taiti, 2010), and from Santa Luzia in Madeira (Arcangeli, 1958).

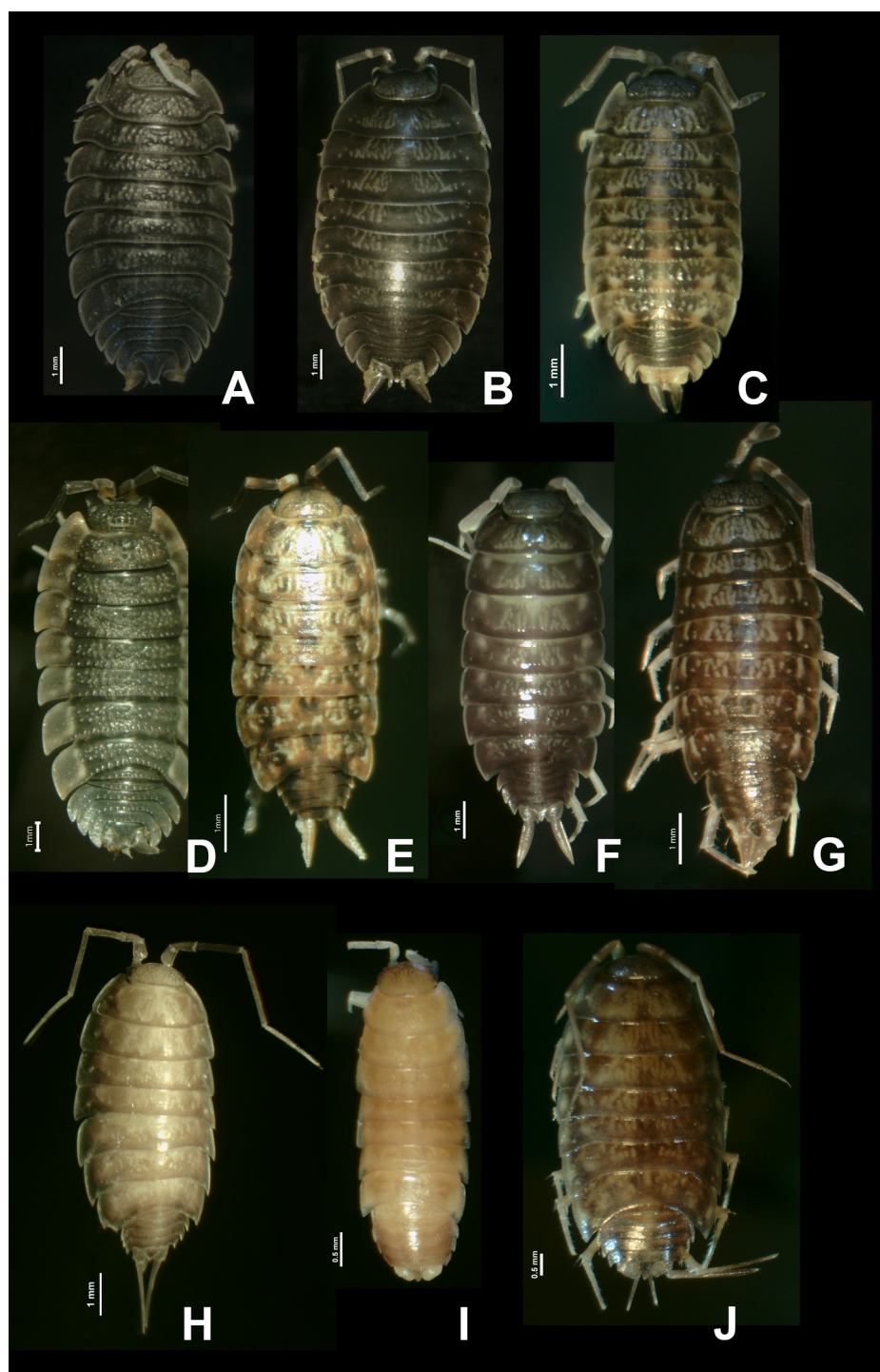


Figure 6. Habitus. **A**, *Porcellio dilatatus* (ASM32); **B**, *Porcellio laevis* (ASM24); **C**, *Porcellio lamellatus* (ASM31); **D**, *Porcellio scaber* (ASM38); **E**, *Porcellionides cingendus* (OM059); **F**, *Porcellionides pruinosus* (ASM18); **G**, *Porcellionides sexfasciatus* (ASM03); **H**, *Soteriscus bremondi* (OM038); **I**, *Soteriscus disimilis* (UN La Laguna-42558); **J**, *Soteriscus stricticauda* (INPA-CSIC-42553). Scale bars: **A–H**, 1 mm; **I–J**, 0.5 mm.

Soteriscus caboverdiensis
Cifuentes and Da Silva n. sp.
 (Figs. 7–11)

Zoobank: urn:lsid:zoobank.org:act:751D0436-323B-4757-9930-9182760D2233

Type material. Holotype: Male (MNCN 20.04/21277 [ex. OCV01b]), Cabo Verde, Santiago, Praia, 14°54'09"N 23°31'06"W, 13 Oct 2023, coll. L.P. Da Silva. — Paratypes: 1 female (OCV05b), Cabo Verde, Santiago, Cidade Velha, 14°54'58"N

23°36'16"W, 13 Oct 2023, coll. L.P. Da Silva; 2 males (OCV12a), Cabo Verde, Santiago, Cidade Velha, 14°54'52"N 23°36'17"W, 14 Oct 2023, coll. L.P. Da Silva; 1 male (MNCN 20.04/21279 [ex. OCV12a]), same data as preceding; 2 females (OCV12b), same data as preceding; 1 female (MNCN 20.04/21279 [ex. OCV12b]), same data as preceding; 1 male (OCV01a), same data as holotype; 2 males (OCV01b), same data as holotype; 1 male (JC1192 [ex. OCV01b]), same data as holotype; 6 females (OCV01c), same data as holotype; 1 female (MNCN 20.04/21278 [ex. OCV01c]), same data as holotype; JC1193 [ex. OCV01c]), same data as holotype; 3 males (OCV13a), Cabo Verde, Santiago, Praia, 14°54'23"N 23°31'32"W, 15 Oct 2023, coll. L.P. Da Silva; 2 females (OCV13b), same data as preceding; 1 female (OCV17), Cabo Verde, Santiago, São Jorge dos Orgãos, 15°02'54"N 23°36'01"W, 16 Oct 2023, coll. L.P. Da Silva; 1 female (OCV28), Cabo Verde, Santiago, Tarrafal, 15°16'49"N 23°45'11"W, 20 Oct 2023, coll. L.P. Da Silva; 3 females (OCV29), Cabo Verde, Santiago, Tarrafal, 15°16'50"N 23°45'09"W, 20 Oct 2023, coll. L.P. Da Silva; 4 females (OCV07), Cabo Verde, Santiago, Veneza, São Domingos, 14°59'08"N 23°32'02"W, 13 Oct 2023, coll. L.P. Da Silva; 3 females (OCV09), same data as preceding.

Diagnosis. Marked sexual dichromatism. Smooth body without scales. Very reduced glandular fields. Cephalon without supra-antennal line, small middle and lateral lobes. Pereon with posterior edge of tergites I to III rounded. Pleon retracted in relation to pereon. Very short telson barely surpassing uropod basipods. Uropods with endopods much longer than telson and short, conical exopods. In males, pereopods I to III with brush-like setae on merus and carpus; pereopod VII without special characters; exopod of pleopod I with triangular posterior-internal tip with rounded end.

Description. Maximum observed size: female: 7.5 mm, 8 mm including uropods. Male: 5 mm, 5.8 mm including uropods.

Coloration: Specimens with very marked sexual dichromatism. Males (Fig. 7A) brown with large areas of light yellowish-brown on pereon, with very pronounced muscle insertions; cephalon and pleon

darker, telson, uropods, and antennae yellowish. Females (Fig. 7B) dark brownish-purple, with very pronounced muscle insertions; white-yellowish first two segments of the antennae, other segments brownish-purple, fifth segment tip depigmented; light uropods.

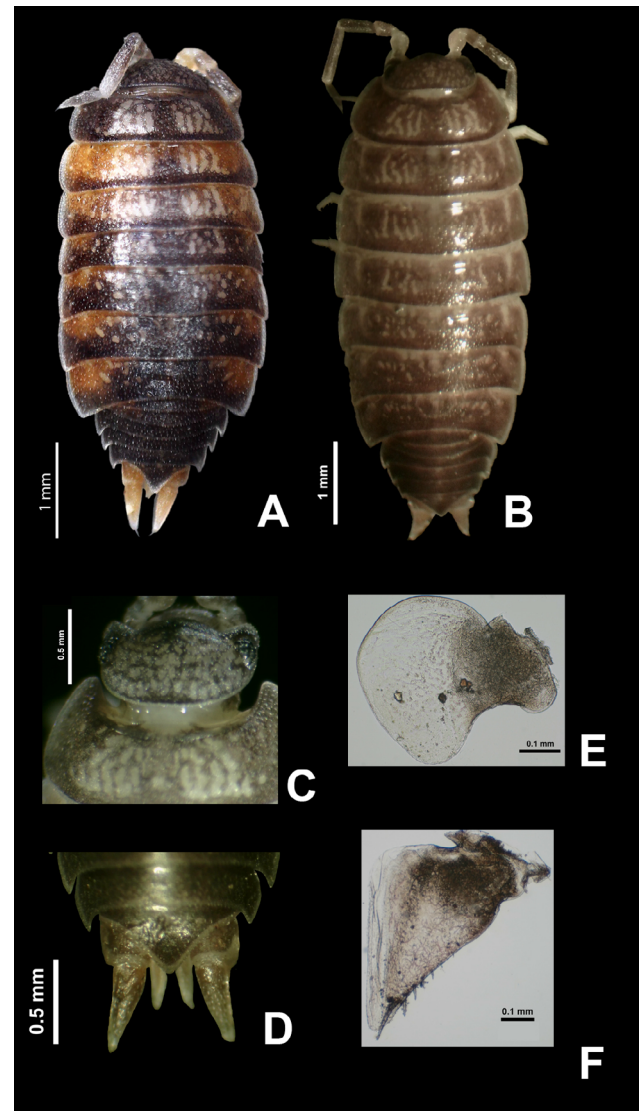


Figure 7. *Soteriscus caboverdiensis* Cifuentes and Da Silva n. sp. **A**, Habitus, male (OCV01b); **B**, habitus, female (OCV12b); **C**, cephalon (OCV28); **D**, telson and uropods (OCV12b); **E**, male exopod of pleopod I (OCV01a); **F**, male exopod of pleopod II (OCV01a). Scale bars: **A–B**, 1 mm; **C–D**, 0.5 mm; **E–F**, 0.01 mm.

Integumentary characters: Smooth body, without granulations or small cuticular scales, but with overlapping scales (Fig. 7A, B). Highly reduced glandular fields, two glandular pores on pereonite I near anterior angle, and three or four scattered pores in glandular fields of remaining pereonites within lateral

groove. No tergal glandular pores present. Triangular setae-scales (Fig. 8A), with wide central branch. Noduli laterales in small depigmented areas; on first pereonites, located in middle area and near lateral edge, shifting posteriorly on other pereonites but still very close to lateral edge, as in Fig. 8B.

Somatic characters: Ocular apparatus formed by 12 ommatidia. Cephalon (Fig. 7C, D) lacks supra-antennal line; middle lobe small and rounded-triangular; lateral lobes small. Pereon (Fig. 7A, B) with posterior edge rounded from pereonite I to III, from pereonite IV to VII with small posterior-lateral tip; pleuroepimera with narrow lateral groove; tergites without transverse impression. Pleon retracted in relation to pereon (Fig. 7A, B). Telson (Figs. 7A, B, D; 8C) very short, barely surpassing uropod basipods, with almost non-existent base, separated from tip by slightly convex sides, very wide and triangular tip.

Appendages: Antennula (Fig. 8D) with three segments, second very short, third with 8 small aesthetascs at tip. Short antennae (Fig. 7A, B) barely surpassing pereonite II posterior edge. Uropods

(Figs. 7A, B, D; 8C, E) with posterior edge of basipods straight and transverse; endopods much longer than telson, oval-shaped and flattened; short and conical exopods in both sexes. Mandibles (Fig. 9A, B) with molar penicil dichotomized; left mandible with 2 free penicils, right mandible, with 1+2 free penicils. Maxillule (Fig. 9C) with 9 teeth on outer ramus, two short and thick penicils on inner ramus. Maxilla (Fig. 9D) bilobed with setae at tip. Maxilliped as in Fig. 9E.

Sexual characters: Very marked sexual dichromatism. Male pereopods I to III (Fig. 10A) with setae brushes on merus and carpus, denser on carpus, decreasing density from pereopod I to III. Pereopod VII (Fig. 10B) lacks distinctive characters. Male pleopod I (Fig. 11A, B) with slightly outward-curved endopod; exopod wider than long, triangular posterior-internal tip with rounded tip and concave tracheal field. Male pleopod II (Fig. 11C, D) with endopod slightly longer than exopod; exopod triangular, with indentation, similar to exopods III to V (Fig. 11E–G), and those of the female (Fig. 11H–L).

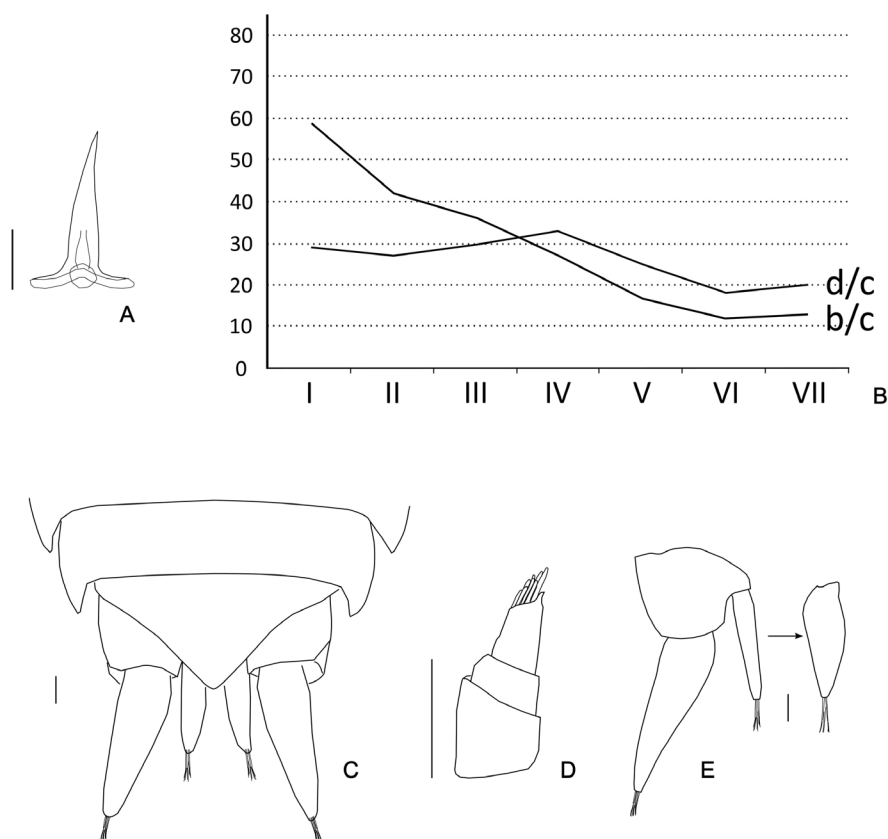


Figure 8. *Soteriscus caboverdiensis* Cifuentes and Da Silva n. sp. **A**, Scale-setae (OCV05b); **B**, noduli laterales (OCV01a); **C**, telson and uropods (OCV12b); **D**, Antennula (OCV28); **E**, Uropods, bottom view (OCV09). Scale bars: **A**, 0.01 mm; **C**, 0.5 mm; **D–E**, 0.1 mm.

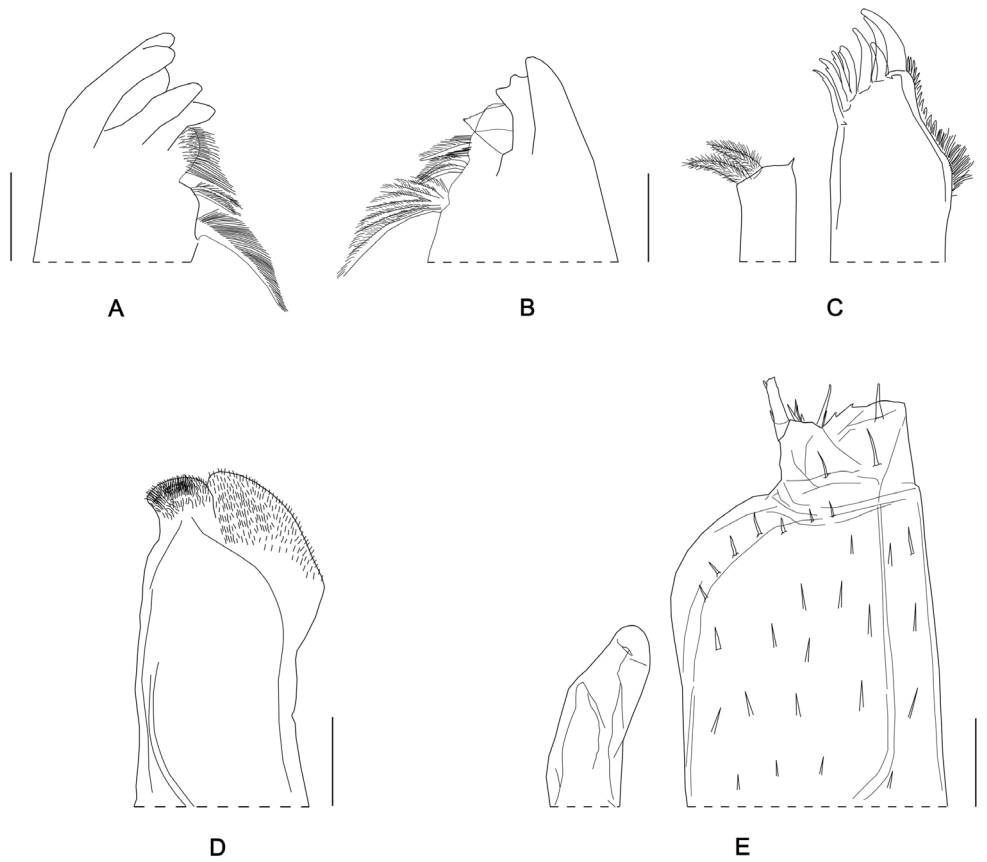


Figure 9. *Soteriscus caboverdiensis* Cifuentes and Da Silva n. sp. (OCV01c). **A**, Left mandible; **B**, right mandible; **C**, maxillule; **D**, maxilla; **E**, Maxilliped. Scale bars: **A–E**, 0.1 mm.

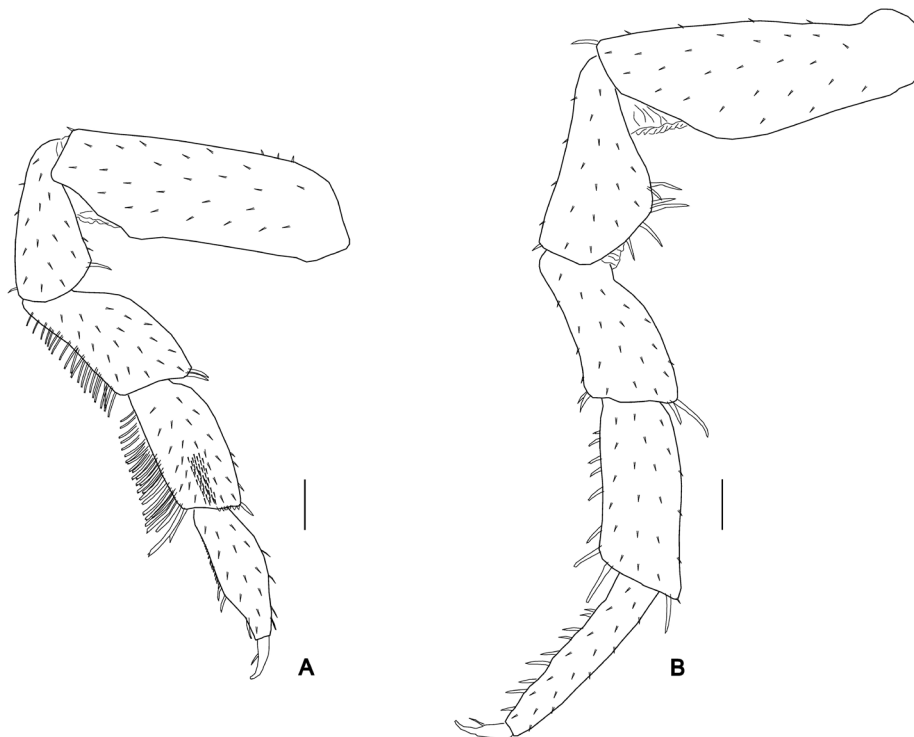


Figure 10. *Soteriscus caboverdiensis* Cifuentes and Da Silva n. sp. (OCV01a). **A**, Male pereopod I; **B**, male pereopod VII. Scale bars: **A–B**, 0.1 mm.

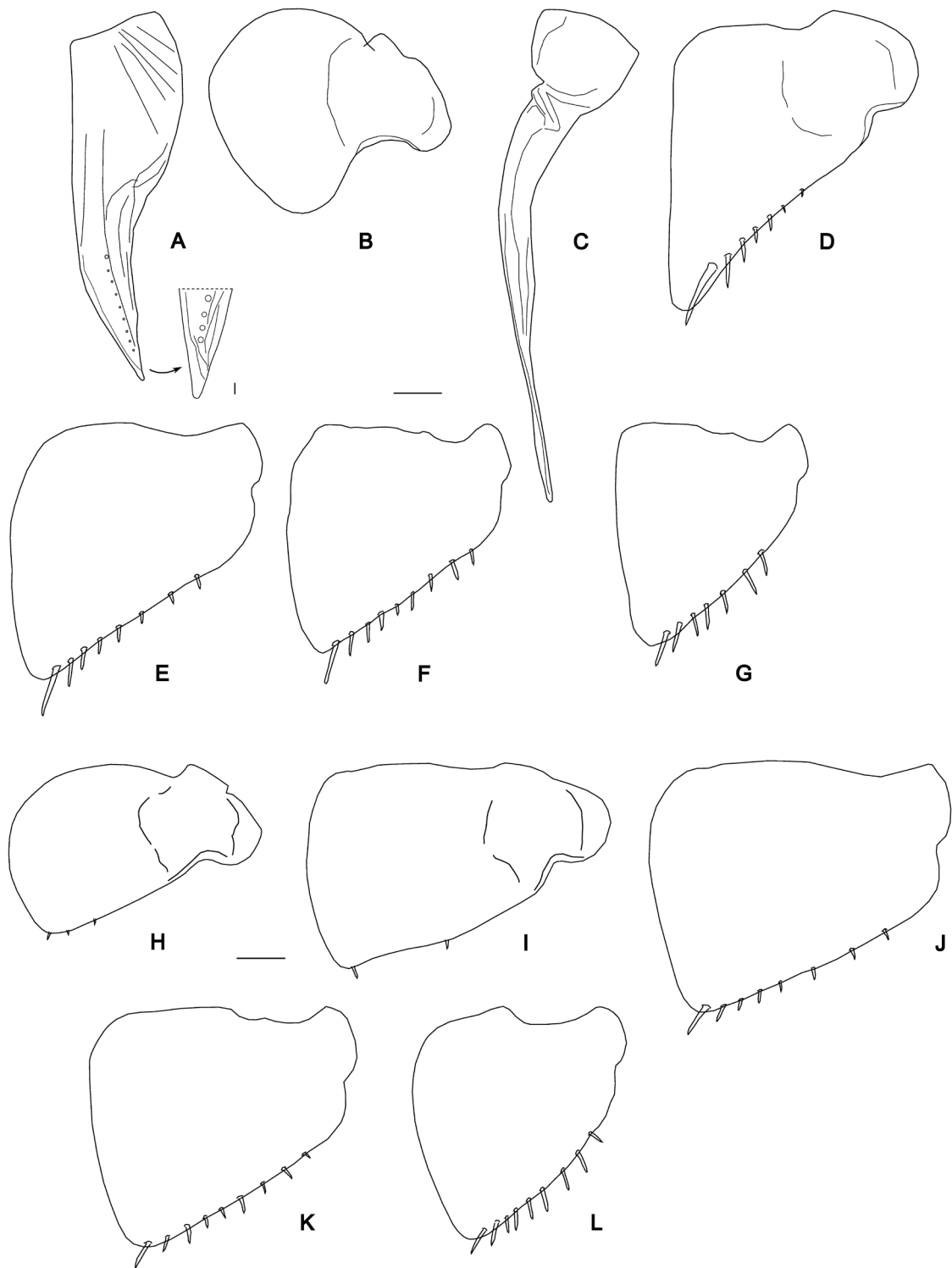


Figure 11. *Soteriscus caboverdiensis* Cifuentes and Da Silva n. sp., male (OCV01a). **A**, Endopod of pleopod I; **B**, exopod of pleopod I; **C**, endopod of pleopod II; **D**, exopod of pleopod II; **E**, exopod of pleopod III; **F**, exopod of pleopod IV; **G**, exopod of pleopod V. *Soteriscus caboverdiensis* Cifuentes and Da Silva n. sp., female (OCV05b). **H**, Exopod of pleopod I; **I**, exopod of pleopod II; **J**, exopod of pleopod III; **K**, exopod of pleopod IV; **L**, exopod of pleopod V. Scale bars: A–L, 0.1 mm.

Etymology. The specific epithet refers to the archipelago, Cabo Verde, where the species was discovered.

Ecology. *Soteriscus caboverdiensis* n. sp. is an epigeal species. It was found across Santiago Island, extending from beaches to the central mountain region. The species was discovered beneath rocks across various habitats, including agricultural fields, urbanized areas, and natural landscapes.

Remarks. Vandel (1956b) established the subgenus *Soteriscus* within the genus *Metoponorthus* Budde-Lund, 1879 for his species *Metoponorthus* (*Soteriscus*) *gaditanus* Vandel, 1956b. Currently, the genus *Metoponorthus* is considered a synonym of *Porcellionides* (see Schmalfuss, 2003; Boyko et al., 2025). Vandel and Matsakis (1959) considered it appropriate to elevate *Soteriscus* to the genus level, which was adopted in later publications by Vandel (1960b) and Schmalfuss (2003). Taiti and Rossano (2015) pointed out that Vandel and Matsakis (1959) or later publications had not formally designated a type species for the genus, so they designated *Metoponorthus* (*Soteriscus*) *gaditanus* as the type species and established the genus *Soteriscus* Taiti and Rossano, 2015. The species described by Vandel is now referred to as *Soteriscus gaditanus* (Vandel, 1956b).

Vandel (1956b; 1960) defined the genus with the following characteristics: generally smooth and shiny integuments with overlapping scales but no pruinosity or small scales; large, prominent lateral noduli arranged in two groups, pereonites I to IV and V to VII; pleuroepimera with or without a lateral groove delimiting the glandular field; pleuroepimeral and tergal glandular pores present or absent depending on the species; cephalon with a straight frontal line and no median lobe; lateral lobes small or very small, not projecting forward except in *Soteriscus porcellioniformis* (Vandel, 1960), supra-antennal line is well visible, faint, or absent depending on species; pereonites without a transverse impression; pleon weakly retracted or not in relation to the pereon; well-developed neopleurons; triangular telson with a short tip and curved sides; long or fusiform uropods depending on species; and in males, anterior pereopods have a carpal brush in most species.

Soteriscus caboverdiensis n. sp. has most of these characters, except the cephalon median line forms a small protrusion or rounded triangular median lobe. This is broadly rounded in *So. bremondi* and *Soteriscus jandiensis* Cifuentes and Prieto, 2023, less pronounced in *So. disimilis* and *So. stricticauda* (Dollfus, 1893), and very small in *Soteriscus fuscovariiegatus* (Lucas, 1849). The species also has small lateral lobes that do not extend beyond the median lobe, whereas in *So. fuscovariiegatus* and *So. porcellioniformis* these lobes are more developed. Another distinguishing trait is the shape and length of the uropod exopods, which are shorter than in other species of the genus, except possibly *So. fuscovariiegatus* and *Soteriscus mateui* (Vandel, 1957a). However, this may be due to the small size of the specimens studied. Based on these characteristics, we consider *So. caboverdiensis* n. sp. to belong within the genus *Soteriscus*. This genus comprises 18 species (Cifuentes and Prieto, 2023; Boyko et al., 2025), which can be divided into three groups based on various morphological criteria (Vandel, 1960b). Although these traits have proven useful for species comparison, without phylogenetic analyses, this classification remains hypothetical and should be interpreted cautiously. One of these three groups is the North African group, with five species characterized by a large number of pores in the glandular fields on pleuroepimera, an elongated exopod of the uropod, and the male exopod of pleopod I with a very elongated inner tip, except in *Soteriscus virescens* (Budde-Lund, 1885). This group includes *So. fuscovariiegatus* from Algeria (Lucas, 1849; Verhoeff, 1917, 1918), and Spain (Ceuta) (Schmölzer, 1971), *So. gaditanus* (Vandel, 1956b), from Spain, particularly the province of Cádiz (Vandel, 1956b; Garcia and Rojas, 2021) and Ceuta (Schmölzer, 1971), and from Morocco (Vandel, 1956b; Schmölzer, 1971; Achouri et al., 2008a; 2008b), *Soteriscus gibbosus* Taiti and Rossano, 2015, *Soteriscus laouensis* Taiti and Rossano, 2015, and *So. virescens*, which are only known from Morocco (Budde-Lund, 1885; Taiti and Rossano, 2015). Another group, with another five species, is the Madeiran group, characterized by their representatives lacking glandular fields or pores, an elongated exopod of the uropod, and the male exopod of pleopod I with a triangular posterior-internal tip and a laterally situated tracheal field. The species in this

group are *So. bremondi*, *Soteriscus fructuosi* (Vandel, 1960b), *So. porcellioniformis*, *Soteriscus relictus* (Vandel, 1960b), and *Soteriscus wollastoni* (Paulian de Félice, 1939b), all from the Madeira archipelago (Paulian De Félice, 1939b; 1946; Arcangeli, 1958; Vandel, 1960b; Schmölzer, 1971; Borges et al., 2008; Hughes, 2024). The last group is the Atlantic group, with the remaining eight species. They are distinguished by a reduced number of pores in the glandular fields on the pleuroepimera, an elongated exopod of the uropod, except in *So. mateui*, and a broadly rounded posterior-internal tip on the male exopod of pleopod I. This group has three species present in Madeira: *Soteriscus brumdocantoi* (Vandel, 1960b), *Soteriscus desertarum* (Vandel, 1960b), and *Soteriscus madeirae* (Arcangeli, 1958), which is also present in Morocco (Arcangeli, 1958; Vandel, 1960b; Schmölzer, 1971). There are four species from the Canary Islands: *So. disimilis*, *So. stricticauda*, *Soteriscus trilineatus* (Rodríguez and Vicente, 1992), and *S. jandiensis* (see Dollfus, 1893; Paulian De Félice, 1946; Vandel, 1954b; Schmölzer, 1971; Rodríguez Santana, 1990; Rodríguez Santana and Vicente, 1992b; Cifuentes and Prieto, 2023). Finally, *So. mateui* is only known from the Cabo Verde archipelago (Vandel, 1957a; see also Cifuentes and Prieto, 2023).

The new species described in this work, *So. caboverdiensis* n. sp., belongs to the Atlantic group. Within this group, three species, *So. brumdocantoi*, *So. desertarum*, and *So. madeirae* have an indentation in the tracheal field on the male exopod of pleopod I, which is absent in the rest of the group, including the new species. In four species, the exopod of the uropod is elongated, and the male exopod of pleopod I lacks a posterior-internal tip, as in *So. disimilis*, or is very small as in *So. stricticauda*, *So. trilineatus*, and *So. jandiensis*. However, in *So. caboverdiensis* n. sp. the exopod of the uropod is small, and the male exopod of pleopod I presents a large posterior-internal tip. Finally, in *So. mateui*, the exopod of the uropod is short, the male exopod of pleopod I has a poorly developed and truncated posterior-internal tip, it lacks lateral lobes on the cephalon, and the tergites exhibit numerous glandular pores among the setae-scales. In *So. caboverdiensis* n. sp., the male exopod of pleopod I has a large and triangular posterior-internal tip, the lateral lobes of the cephalon are small but clearly

visible, and the tergites lack glandular pores among the setae-scales.

Family Rhyscotidae Budde-Lund, 1904

Genus *Rhyscotoides*

Schmalfuss and Ferrara, 1978

Rhyscotoides silvestrii Arcangeli, 1949

(Fig. 12A)

Material examined. 2 males (OCV11a), Cabo Verde, Santiago, Cidade Velha, 14°54'50"N 23°35'42"W, 14 Oct 2023, coll. L.P. Da Silva; 1 male (JC977 [ex. OCV11a]), same data as preceding; 2 females (OCV11b), same data as preceding.

Remarks. Known from Angola, Senegal, and Zaire according to Schmalfuss (2003), and from Cabo Verde (Schmalfuss, 1982).

Family Styloniscidae Vandel, 1952

Genus *Styloniscus* Dana, 1853

Styloniscus spinosus (Patience, 1907)

(Fig. 12B)

Material examined. 1 female (ASM51), Portugal, Azores, São Miguel, Água Retorta, 37°47'24"N 25°09'25"W, 3 Jun 2024, coll. L.P. Da Silva; 1 female (ASM55f), Portugal, Azores, São Miguel, Faial da Terra, 37°45'04"N 25°12'09"W, 3 Jun 2024, coll. L.P. Da Silva; 1 male (ASM49a), Portugal, Azores, São Miguel, Jardim Botânico da Ribeira do Guilherme, 37°50'02"N 25°09'21"W, 3 Jun 2024, coll. L.P. Da Silva; 2 females (ASM49b), same data as preceding; 2 males (ASM69a), Portugal, Azores, São Miguel, Lagoa de São Brás, 37°47'36"N 25°24'43"W, 5 Jun 2024, coll. L.P. Da Silva; 1 female (ASM69b), same data as preceding; 1 female (ASM70), same data as preceding; 1 female (ASM71), same data as preceding; 1 male (ASM21a), Portugal, Azores, São Miguel, Lagoa do Canario, 37°50'07"N 25°45'30"W, 24 Nov 2023, coll. L.P. Da Silva; 2 females (ASM21b), same data as preceding; 2 females (ASM20), Portugal, Azores, São Miguel, Lagoa do Carvão, 37°49'24"N 25°44'28"W, 24 Nov 2023, coll. L.P. Da Silva; 4 females, 7 immatures (ASM64), Portugal, Azores, São Miguel, Lagoa do Congro, 37°45'19"N 25°24'31"W,

4 Jun 2024, coll. L.P. Da Silva; 1 male (ASM40a), Portugal, Azores, São Miguel, Piscina Natural da Boca de Ribeira, 37°50'41"N 25°08'50"W, 2 Jun 2024, coll. L.P. Da Silva; 1 male (JC1200 [ex. ASM40a]), same data as preceding; 3 females, 1 immature (ASM40b), same data as preceding; 1 female (ASM50), Portugal, Azores, São Miguel, Piscina Natural da Boca de Ribeira, 37°50'37"N 25°08'52"W, 3 Jun 2024, coll. L.P. Da Silva; 1 male (ASM46a), Portugal, Azores, São Miguel, Santo António de Nordestinho, 37°51'00"N 25°12'23"W, 2 Jun 2024, coll. L.P. Da Silva; 1 female (ASM46b), same data as preceding; 1 female (ASM47), same data as preceding; 5 females (ASM58), Portugal, Azores, São Miguel, Ribeira Quente, 37°45'06"N 25°18'24"W, 3 Jun 2024, coll. L.P. Da Silva; 1 female (OM046), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'12"N 17°03'03"W, 8 Jul 2024, coll. L.P. Da Silva; 1 female (OM047), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'17"N 17°03'09"W, 8 Jul 2024, coll. L.P. Da Silva; 5 females (OM048), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'17"N 17°03'10"W, 8 Jul 2024, coll. L.P. Da Silva; 1 female (OM051), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'19"N 17°03'12"W, 8 Jul 2024, coll. L.P. Da Silva; 1 female (OM055), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'21"N 17°03'12"W, 8 Jul 2024, coll. L.P. Da Silva; 2 females (OM058), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'38"N 17°03'28"W, 8 Jul 2024, coll. L.P. Da Silva; 1 male (OM069a), Portugal, Madeira Archipelago, Madeira Island, Caminho dos Lamaceiros, 32°44'27"N 16°50'19"W, 10 Jul 2024, coll. L.P. Da Silva; 2 female (OM069b), same data as preceding; 1 female (OM072), same data as preceding; 1 female (OM011), Portugal, Madeira Archipelago, Madeira Island, Lombo do Moleiro, 32°44'02"N 17°01'15"W, 6 Jul 2024, coll. L.P. Da Silva; 1 female (OM012), same data as preceding; 1 female (OM013), same data as preceding; 2 female, 5 immatures (OM016), same data as preceding; 1 female (OM017), same data as preceding; 3 females (OM018), same data as preceding; 14 females (OM074a), Portugal, Madeira Archipelago, Madeira Island, Posto Florestal dos Lamaceiros, 32°44'28"N 16°50'41"W, 10 Jul 2024, coll. L.P. Da Silva; 1 male (OM074b), same data as preceding; 1 female (OM075), Portugal, Madeira

Archipelago, Madeira Island, Posto Florestal dos Lamaceiros, 32°44'23"N 16°50'50"W, 10 Jul 2024, coll. L.P. Da Silva; 7 females (OM077), Portugal, Madeira Archipelago, Madeira Island, Posto Florestal dos Lamaceiros, 32°44'22"N 16°50'50"W, 10 Jul 2024, coll. L.P. Da Silva; 3 females (OM078), Portugal, Madeira Archipelago, Madeira Island, Posto Florestal dos Lamaceiros, 32°44'23"N 16°50'50"W, 10 Jul 2024, coll. L.P. Da Silva.

Remarks. Described by Patience (1907) from a greenhouse in Glasgow (Scotland), and is currently known from Brazil, Great Britain (greenhouses), Hawaii, Madagascar, Mauritius, mainland Portugal, and La Réunion (Vandel, 1952; Edney, 1953; Ferrara and Taiti, 1979; Taiti and Howarth, 1996; Schmalfuss, 2003; Campos-Filho et al., 2017; Cifuentes et al., 2025). It is recorded for the first time from the Azores and Madeira.

Family Trichoniscidae Sars, 1899

Genus *Androniscus* Verhoeff, 1908c

***Androniscus dentiger* Verhoeff, 1908c (Fig. 12C)**

Material examined. 1 male (ASM34), Portugal, Azores, São Miguel, Gruta do Carvão, 37°44'53"N 25°41'14"W, 1 Jun 2024, coll. L.P. Da Silva; 1 female (ASM35), same data as preceding; 1 male (ASM36a), same data as preceding; 1 female (ASM36b), same data as preceding.

Remarks. It is found in Europe and North Africa and has been introduced to other parts of the world (Schmalfuss, 2003). Within the Macaronesia region, it has been reported from the Azores, namely Faial and São Miguel (Vandel, 1968; Taiti, 2010).

Genus *Haplophthalmus* Schöbl, 1860

***Haplophthalmus danicus* Budde-Lund in Meinert, 1880 (Fig. 12D)**

Material examined. 1 male (ASM48), Portugal, Azores, São Miguel, Cascata da Ribeira dos Caldeirões, 37°50'30"N 25°16'02"W, 2 Jun 2024, coll. L.P. Da Silva; 3 males (ASM52a), Portugal, Azores, São

Miguel, Faial da Terra, 37°45'04"N 25°12'09"W, 3 Jun 2024, coll. L.P. Da Silva; 13 females (ASM52b), same data as preceding; 1 female (ASM56b), same data as preceding; 2 males (ASM26a), Portugal, Azores, São Miguel, Mosteiros, 37°53'02"N 25°49'10"W, 24 Nov 2023, coll. L.P. Da Silva; 6 females (ASM26b), same data as preceding; 1 female (ASM73), Portugal, Azores, São Miguel, Praia dos Moinhos, 37°49'24"N 25°26'44"W, 5 Jun 2024, coll. L.P. Da Silva; 1 male (ASM45a), Portugal, Azores, São Miguel, Santo António de Nordestinho, 37°51'00"N 25°12'23"W, 2 Jun 2024, coll. L.P. Da Silva; 1 male (ASM45b), same data as preceding; 1 female (ASM23), Portugal,

Azores, São Miguel, Sete Cidades, 37°51'17"N 25°47'05"W, 24 Nov 2023, coll. L.P. Da Silva.

Remarks. Native to Europe and introduced into other parts of the world (Schmalfuss, 2003). It was cited from Azores (Dollfus, 1889a; 1889b; 1889c; Paulian De Félice, 1946; Vandel, 1956a; 1968; Taiti, 2010), Canary Islands (Vandel, 1954b; 1956a; Arcangeli, 1958; Schmölzer, 1971; Dalens, 1984; Hoese, 1984b; Arechavaleta et al., 1999; Arndt and Mattern, 2005; López and Taiti, 2010), and Madeira (Paulian De Félice, 1938; 1946; Vandel, 1956a; 1960b; Arcangeli, 1958; Schmölzer, 1971; Taiti, 2010).

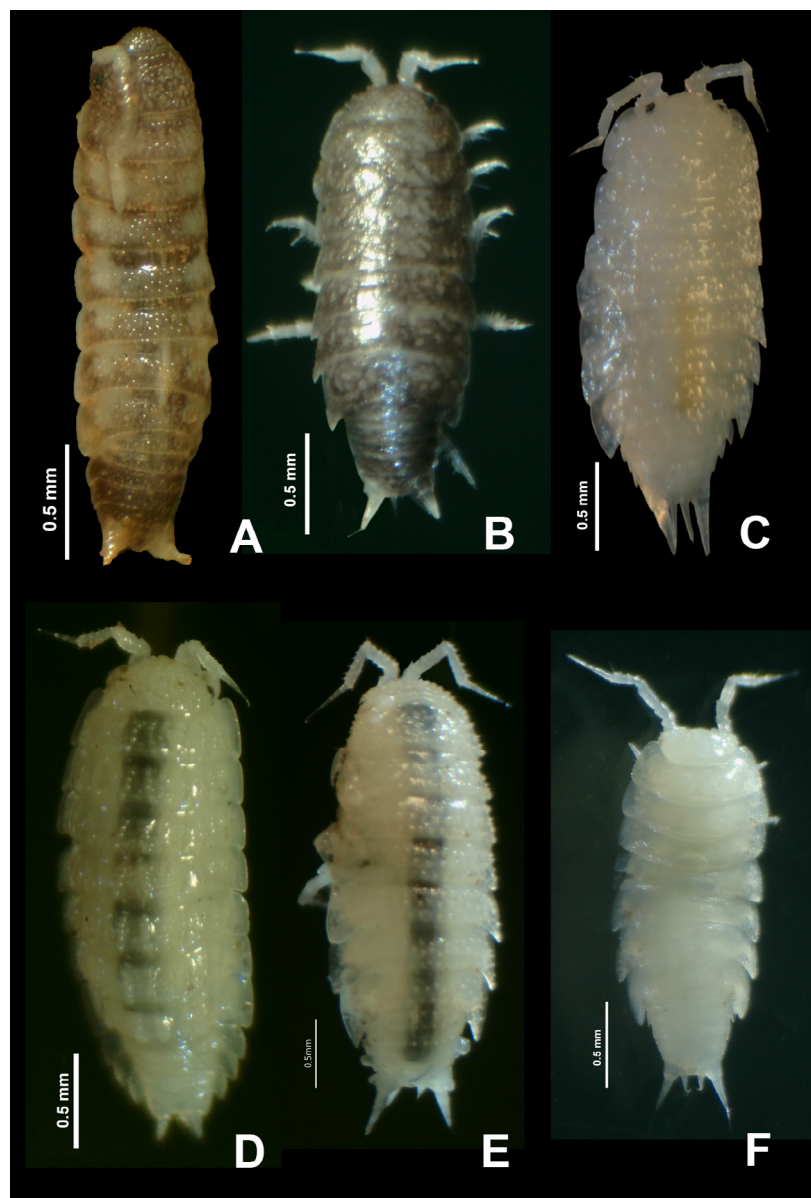


Figure 12. Habitus: **A**, *Rhyscotoides silvestrii* (OCV11a); **B**, *Styloniscus spinosus* (OM017); **C**, *Androniscus dentiger* (ASM34); **D**, *Haplophthalmus danicus* (ASM26b); **E**, *Miktoniscus arcangelii* (OM039b); **F**, *Trichoniscus bassoti* (OM039a). Scale bars: **A–F**, 0.5 mm.

Genus *Miktoniscus* Kesselyák, 1930***Miktoniscus arcangelii* Vandel, 1960b**

(Fig. 12E)

Material examined. 1 female (OM056), Portugal, Madeira Archipelago, Madeira Island, Bico da Cana, 32°45'21"N 17°03'12"W, 8 Jul 2024, coll. L.P. Da Silva; 2 males (OM039b), Portugal, Madeira Archipelago, Madeira Island, Furnas do Cavalum, 32°43'57"N 16°47'01"W, 7 Jul 2024, coll. L.P. Da Silva; 1 male (JC1196) [ex. OM039b]), same data as preceding; 2 females (OM039c), same data as preceding.

Remarks. Species endemic to Madeira, previously recorded from Pico Ruivo and Rabaçal (Vandel, 1960b).

Miktoniscus atlanticus**Cifuentes and Da Silva n. sp.**

(Figs. 13–15)

Zoobank: urn:lsid:zoobank.org:act:BF5E6C2A-4F56-4565-B273-D47B2EB69F04

Type material. Holotype: Male (MNCN 20.04/21275 [ex. ASM55d]), Portugal, Azores, São Miguel, Faial da Terra, 37°45'04"N 25°12'09"W, 3 Jun 2024, coll. L.P. Da Silva. Paratypes: 1 female (ASM53), same data as holotype; 1 female (JC1201 [ex. ASM53]), same data as holotype; 1 male (ASM55a), same data as holotype; 1 male (ASM55b), same data as holotype; 1 female (ASM55c), same data as holotype; 1 male (ASM55d), same data as holotype; 1 male (JC1202 [ex. ASM55d]), same data as holotype; 1 female (ASM55e), same data as holotype; 1 female (ASM56c), same data as holotype; 1 female (MNCN 20.04/21276 [ex. ASM57]), Portugal, Azores, São Miguel, Ribeira Quente, 37°45'08"N 25°18'23"W, 3 Jun 2024, coll. L.P. Da Silva.

Diagnosis. Ocular apparatus with single ocellus. Dorsal integument with scales containing palm-like reinforcements and prominent spinous granulations. Left mandible with two free penicils, right mandible with one. Antennae short, with segments with strong spines, flagellum with four segments. In males, pereopod I without sexual differentiation, pereopod VII very distinct from females. Pleopod I, endopod with striated and curved tip, exopod with large rounded

basal internal projection, smaller external projection near base and long, triangular and curved outward posterior-internal tip. Pleopod II, endopod very long and sharp pointed tip, exopod trapezoidal with broad, triangular and rounded posterior-internal tip.

Description. Maximum observed size: female: 3.5 mm; male: 2.8 mm.

Coloration: Faint brown-violet coloration (Fig. 13A); cephalon with lateral coloration; pereon with large white area from muscle insertions, interrupted by dark central line of digestive tract. Faintly colored spot on both sides of muscle insertions in anterior tergite zone, separated by wide clear band from colored pleuroepimera zone; pleon with similar pattern to pereon; pleon and antennae almost white.

Integumentary characters: Dorsal integument with scales containing palm-like reinforcements and prominent spinous granulations formed by scale-setae surrounded by large circular scales (Figs. 13A; 14A, B); granulations arranged in five transverse rows on cephalon, three rows on pereonites I to VI, two rows pereonite VII, and one row on pleonites I to III.

Somatic characters: Ocular apparatus with single black ocellus (Figs. 13A; 14A). Body very elongated relative to width (Figs. 13A; 14A). Posterior margin of pereonites I to III rounded, from IV to VII with gradually increasing posterior tip. Telson trapezoidal with slightly curved sides and slightly concave posterior margin directed downward.

Appendages: Left mandible with two free penicils, right with one (Fig. 14C, D). Maxillula with three free penicils on inner endite and eight teeth on outer endite (Fig. 14E). Maxilla and maxilliped as in Fig. 14F, G. Antennula with three segments, second very short, third with five long setae and lateral spine (Fig. 14H). Short antennae (Fig. 14I), barely extending beyond cephalon posterior margin, segments with strong spines, flagellum with four segments and two groups of long setae located at tip of second and third segments.

Sexual characters: Pereopod I without sexual differentiation. Pereopod VII with strong sexual differentiation (Figs. 13B; 15A); ischium recurved, with convex sternal margin; merus very wide with small β and $\sigma\tau_2$ spines; $\sigma\tau_1$ spine long; β_1 spine inserted directly on segment between $\sigma\tau_2$ and $\sigma\tau_1$ spines, α ramus very thick and recurved; carpus very

wide, a2 spine inserted like a1 and a2 directly on segment, without carpal lobe; a3 spine inserted on carpal lobe; St spine as thick as a1, a2 and a3 spines, curving towards distal margin of segment, nearly parallel to axis. Pleopod I endopod ending in striated tip (Figs. 13C; 15B), curved inward with rounded tip; exopod with large rounded extension at internal

basal area (Figs. 13D; 15C), internal margin curved, external margin sinuous, with large extension near base; posterior-internal tip long, triangular, curved outward, with rounded tip. Pleopod II endopod very long, with thin, very sharp tip (Fig. 15D); exopod trapezoidal with triangular posterior-internal tip (Figs. 13E; 15E), wide, with rounded end.

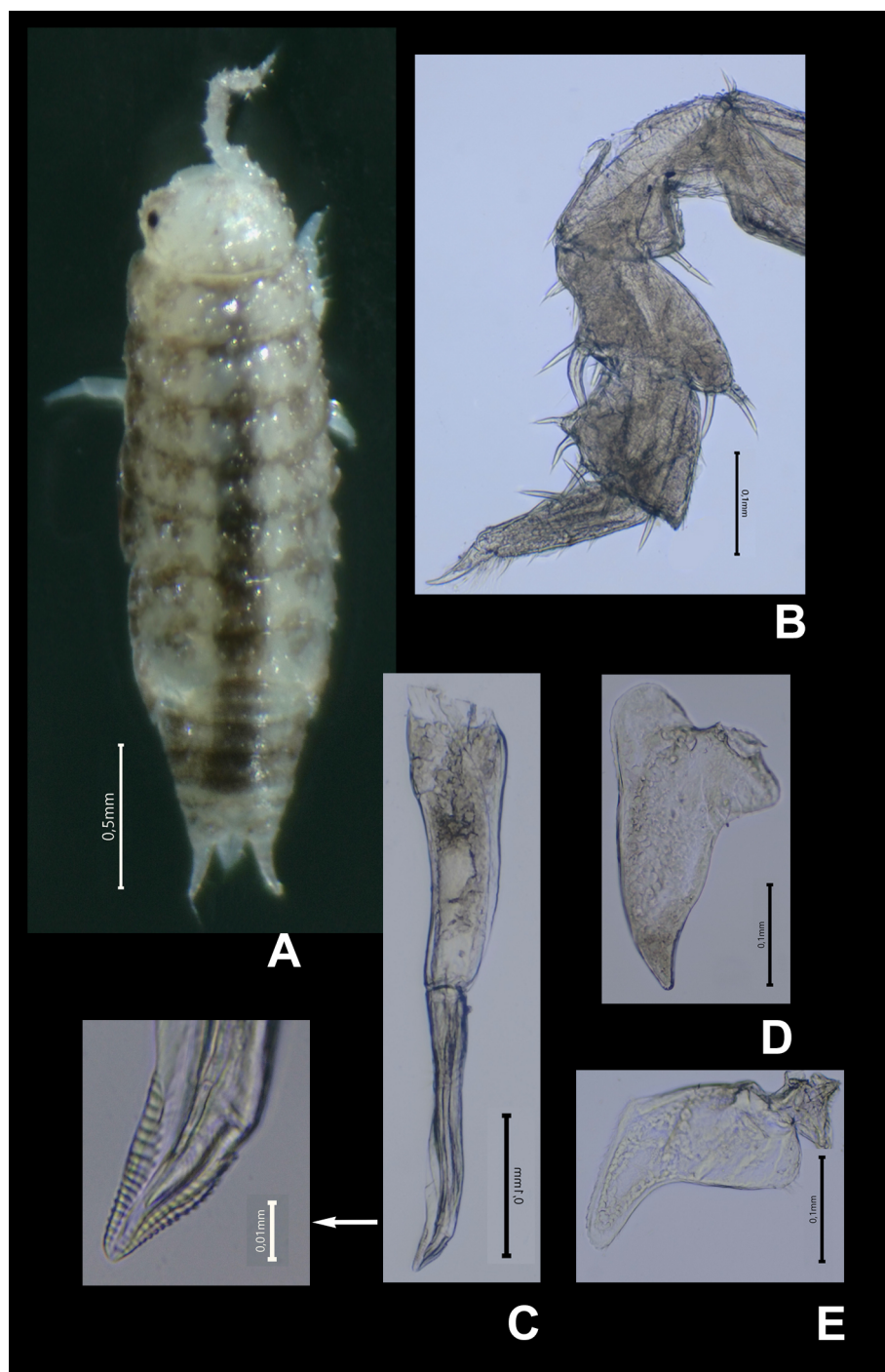


Figure 13. *Miktoniscus atlanticus* Cifuentes and Da Silva n. sp., male (ASM55a). **A**, Habitus; **B**, pereopod VII; **C**, endopod of pleopod I; **D**, exopod of pleopod I; **E**, exopod of pleopod II. Scale bars: **A**, 0.5 mm; **B–E**, 0.1 mm.

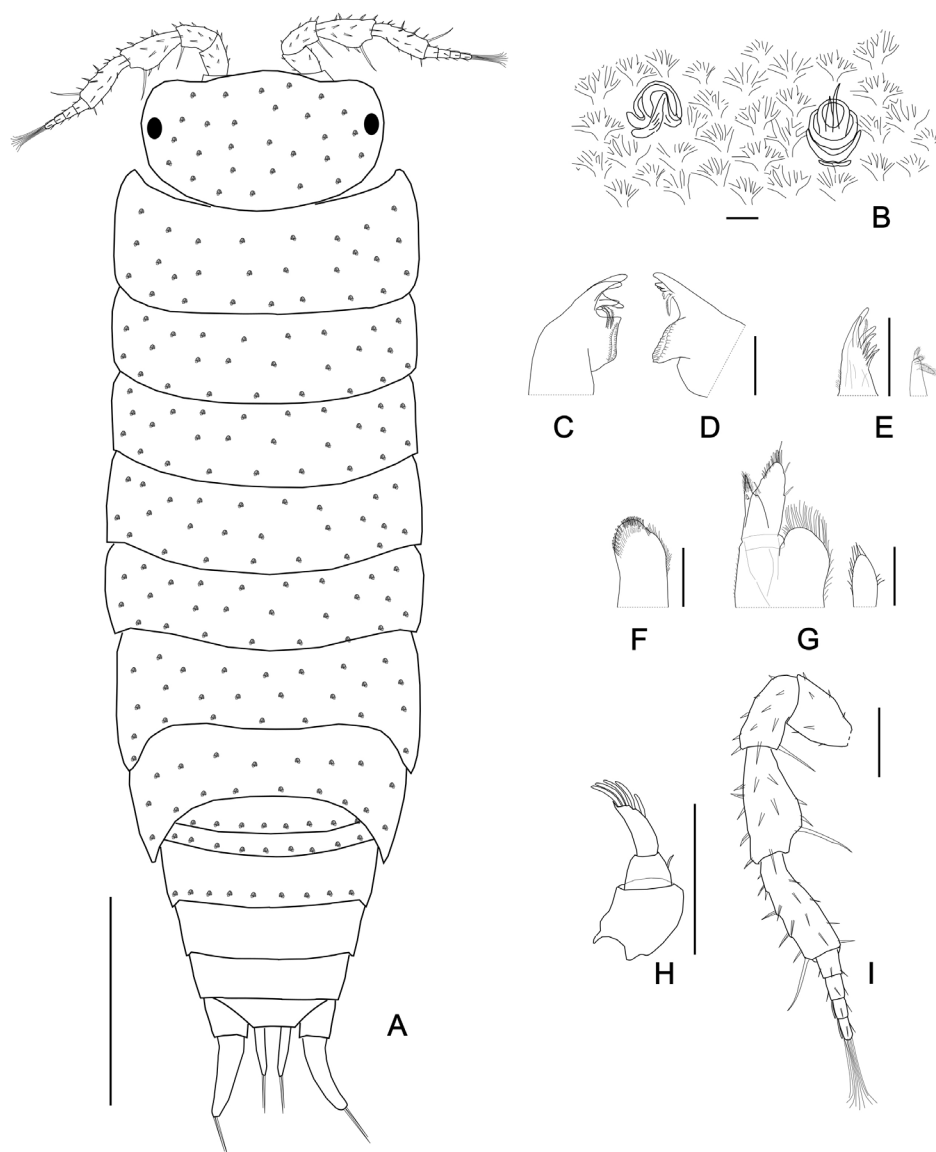


Figure 14. *Miktoniscus atlanticus* Cifuentes and Da Silva n. sp., male (ASM55a). **A**, Habitus; **B**, scale-setae; **C**, left mandible; **D**, right mandible; **E**, maxillule; **F**, maxilla; **G**, maxilliped; **H**, antennula; **I**, antennae. Scale bars: **A**, 0.5 mm; **B**, 0.01 mm; **C–I**, 0.1 mm.

Etymology. The specific epithet refers to the Atlantic Ocean, which surrounds the island where this species was discovered.

Ecology. *Miktoniscus atlanticus* n. sp. is an epigeal species. Most specimens were found beneath dead wood and on very moist soil. In Faial da Terra, where most individuals were observed and collected, they were concentrated in a single pile of fallen trunks. Additional specimens were discovered between the bark of decaying trunks and within the rotting wood itself.

Remarks. This genus is characterized by an ocular apparatus consisting of a large black ocellus (except

in *Miktoniscus racovitzai* Vandel, 1950); an elongated body with parallel sides, a pleon retracted relative to the pereon, and very small neopleurons folded toward the ventral side; the dorsal integument surface with spinous granulations; the left mandible with two free penicils and the right mandible with one; sexual differentiation in male pereopods restricted to the seventh pair, primarily involving the chaetotaxy of the merus and carpus; in male pleopods I and II, triangular exopods with a more or less developed posterior-internal side and a rounded or pointed tip; and the endopod of pleopod II consisting of two segments, with the distal segment being longer than the basal (Vandel, 1946; 1960b).

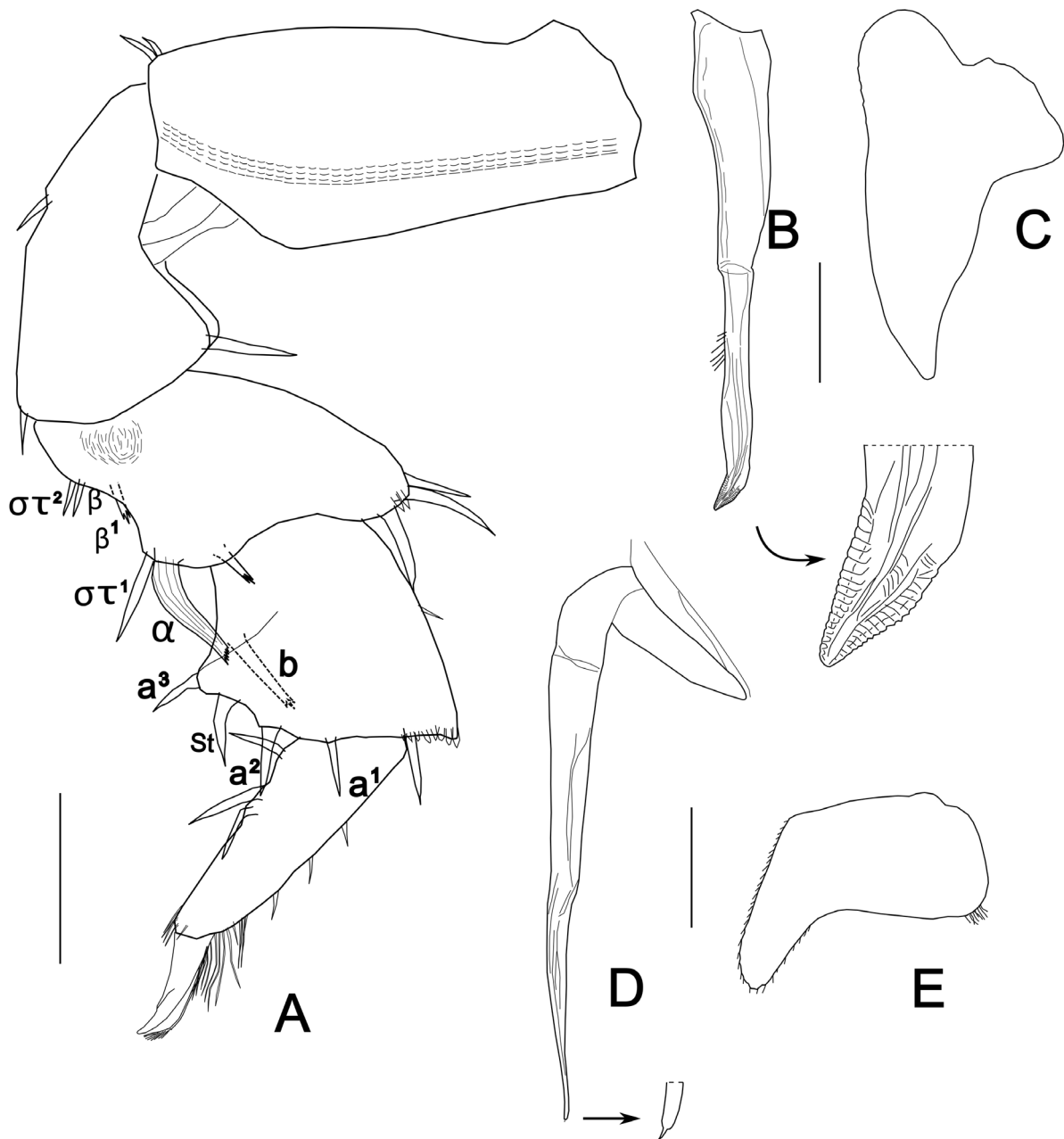


Figure 15. *Miktoniscus atlanticus* Cifuentes and Da Silva n. sp., male (ASM55a). **A**, Pereopod VII; **B**, endopod of pleopod I; **C**, exopod of pleopod I; **D**, endopod of pleopod II; **E**, exopod of pleopod II. Scale bars: **A–E**, 0.1 mm.

The genus *Miktoniscus* currently comprises 16 species (Boyko et al., 2025), which can be grouped into three categories based on their known distribution (Vandel, 1960b). Although this grouping helps organize and compare species, it remains speculative without biogeographic or phylogenetic analyses. The Alpine group includes *Miktoniscus melitensis* Caruso and Lombardo, 1982, found in Italy and Malta (Caruso and Lombardo, 1982; Caruso et al., 1987), *Miktoniscus patrizii* Brian, 1950, known from Italy (Schmölzer,

1965; Vandel, 1965; Argano et al., 1982; 1995; Schmalfuss, 2003), and *Miktoniscus vandeli* Bonnefoy, 1945, found in Spain and France (Vandel, 1946; 1949; 1960a; 1965; Schmölzer, 1965; 1971; Schmalfuss, 2003). The American group consists of six species present in North America, *Miktoniscus barri* Vandel, 1965, *Miktoniscus mammothensis* Muchmore, 1964, *Miktoniscus morganensis* Schultz, 1976, *M. racovitzae*, *Miktoniscus spinosus* (Say, 1818), and one species in Brazil, *Miktoniscus medcofi* Van Name, 1940 (Vandel,

1933; 1946; 1949; 1950; 1965; Van Name, 1936; 1940; Muchmore, 1957; 1964; Schultz, 1962; 1976; 2002; Leistikow and Wägele, 1999; Schmalfuss, 2003). The Atlantic group includes the remaining seven species, *M. arcangelii*, from Madeira (Vandel, 1960b; 1965); *Miktoniscus bisetosus* Vandel, 1946, from Spain and Portugal (Vandel, 1946; 1949; 1960b; 1965; Schmölzer, 1955; 1965; 1971; Schmalfuss, 2003); *Miktoniscus chavesi* (Dollfus, 1889a), from the Azores, and Madeira (Dollfus, 1889a; 1889b; Carl, 1908; Paulian De Félice, 1946; Vandel, 1946; 1949; 1956a; 1960b; 1968; Arcangeli, 1958; Schmölzer, 1965, 1971; Schmalfuss, 2003; Borges et al., 2008; Taiti, 2010); *Miktoniscus deharvengi* Dalens, 1976, from Spain (Dalens, 1976); *Miktoniscus linearis* (Patience, 1908), known from a few greenhouses in England and Germany (Patience, 1908; Kesselyák, 1930; Vandel, 1933; 1946; 1949; 1957a; 1965; Gruner, 1966; Harding and Sutton, 1985; Schmalfuss, 2003), North America (Schultz, 1964), and the record from Madeira reported by Borges et al. (2008) could not be confirmed; *Miktoniscus longispina* Reboleira and Taiti in Reboleira et al. 2015, from Portugal (Reboleira et al., 2015); and *Miktoniscus patiencei* Vandel, 1946, from Scotland, France, England, Ireland, and tentatively Madeira (Vandel, 1946; 1949; 1960a; 1960b; 1965; Schmölzer, 1965; Oliver and Sutton, 1982; Harding and Sutton, 1985; Schmalfuss, 2003). The species described in this work, *M. atlanticus* n. sp., should also be included in the Atlantic group.

The main characters used to distinguish species, as highlighted by Vandel (1946; 1965) and Schultz (1976), include integument ornamentation, the morphology of male pleopods I and II, and the chaetotaxy of the male merus and carpus of pereopod VII. Different authors used various letters to differentiate the spines, and even Vandel applied inconsistent terminology across his works on this genus (Vandel, 1946; 1960b; 1965). Therefore, the nomenclature has been standardized following Vandel (1960b) and Schultz (1976). Accordingly, the spines labeled as x and y of Vandel (1946) and Schmölzer (1965) have been referred to as α and St, respectively. The α spine on the male merus is straight and relatively long, oriented either transversely at an angle close to 90°, at 45°, or even parallel to the axis of the segment in species from the Alpine group (*M. melitensis*, *M. patrizii*, and *M. vandeli*), the American group (*M.*

barri, *M. mammothensis*, *M. medcofi*, *M. morganensis*, *M. racovitzai*, and *M. spinosus*), and certain species from the Atlantic group (*M. arcangelii*, *M. linearis*, and *M. patiencei*). Conversely, in other species of the genus, all belonging to the Atlantic group, the α spine on the male merus is curved and lies more or less parallel to the segment axis, as observed in *M. bisetosus*, *M. chavesi*, *M. deharvengi*, *M. longispina*, and *M. atlanticus* n. sp. (Figs. 13B; 15A). In *M. bisetosus*, *M. chavesi*, and *M. deharvengi*, the male exopod of pleopod I has a long, rectangular posterior-internal side with a rounded tip. Conversely, in *M. atlanticus* n. sp., this structure is triangular and curved outward (Figs. 13D; 15C). In the male of *M. longispina*, the ischium has a prominent spine, which gives the species its name. Additionally, the St spine on the carpus is straight and long, the pleopod I exopod is triangular with straight internal and external edges, and the exopod II is triangular with a long, narrow, triangular posterior-external side. In contrast, in the male of *M. atlanticus* n. sp. (Figs. 13B; 15A), the ischium has a very small spine that does not stand out from the rest of the segment. The St spine on the carpus is small and curved. The pleopod I exopod is triangular (Figs. 13D; 15C), with a convex internal edge and a sinuous, concave external edge near the base. The exopod II is trapezoidal, with a wide, triangular posterior-external side (Figs. 13E; 15E).

Genus *Trichoniscus* Brandt, 1833

Trichoniscus bassoti Vandel, 1960b (Fig. 12F)

Material examined. 1 female (OM037), Portugal, Madeira Archipelago, Madeira Island, Furnas do Cavalum, 32°43'57"N 16°47'05"W, 7 Jul 2024, coll. L.P. Da Silva; 1 male (OM039a), Portugal, Madeira Archipelago, Madeira Island, Furnas do Cavalum, 32°43'57"N 16°47'01"W, 7 Jul 2024, coll. L.P. Da Silva.

Remarks. This species is known from its type locality, Furnas do Cavalum in Madeira (Vandel, 1960b), and from the islands of La Palma and Tenerife in Canary Islands (Dalens, 1984; Oromí et al., 1990; García et al., 1995; Rodríguez Santana, 1996; Arechavaleta et al., 1999; López and Taiti, 2010; Oromí and Socorro, 2021; Oromí et al., 2021).

Trichoniscus furnaensis
Cifuentes and Da Silva n. sp.

(Figs. 16–18)

Zoobank: urn:lsid:zoobank.org:act:1078DAC2-22B0-440F-84DA-A1161DA7A3BA

Type material. Holotype: Male (MNCN 20.04/21281 [ex. ASM66]), Portugal, Azores, São Miguel, Furnas, near Terra Nostra hotel, 37°46'14"N 25°18'57"W, 4 Jun 2024, coll. L.P. Da Silva.

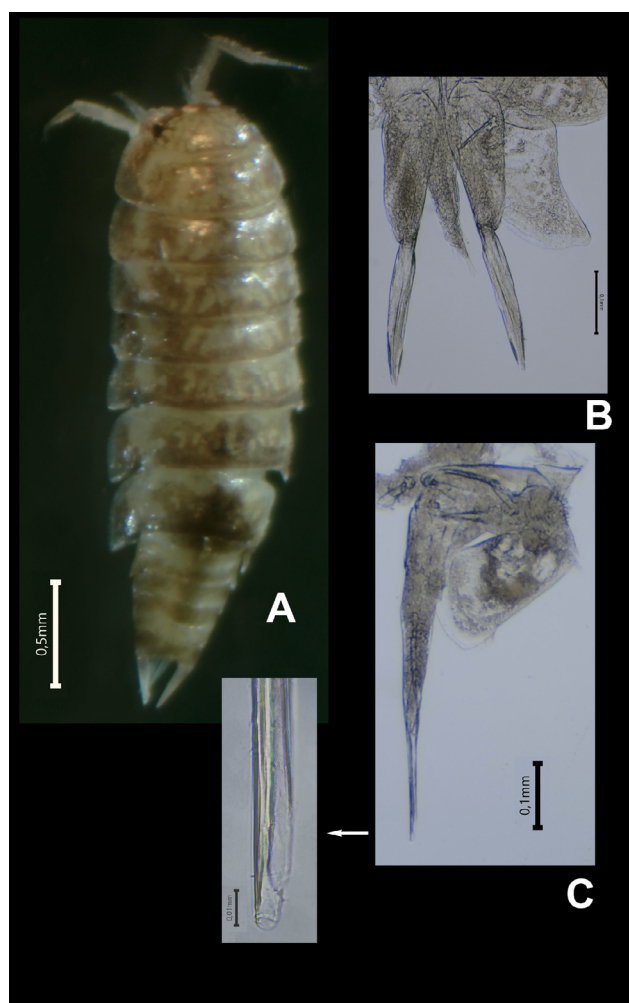


Figure 16. *Trichoniscus furnaensis* Cifuentes and Da Silva n. sp., male (ASM66). A, Habitus; B, endopod and exopod of pleopod I; C, endopod and exopod of pleopod II. Scale bars: A, 0.5 mm; B, C, 0.1 mm.

Diagnosis. Elongated body with parallel sides. Cephalon with large lateral lobes. Ocular apparatus with three ommatidia in triangle. Dorsal integument

with very fine granulations and short, thick setae. Antenna flagellum with four segments. Male pleopod I, endopod with striated, rounded tip, exopod triangular, projection near external base, rounded tip curved outward, with setae group. Male pleopod II, endopod ends in a thin, cylindrical, hollow tip.

Description. Maximum observed size: 3.2 mm.

Coloration: Light brown-violet, with very prominent muscle insertions on cephalon and pereon; clear line separates dark epimera from lighter pereonite; pleon with large, depigmented areas (Fig. 16A).

Integumentary characters: Dorsal integument with very fine granulations, smoothing toward posterior region, with few short, thick setae (Fig. 16A).

Somatic characters: Ocular apparatus with three ommatidia in triangle within black pigmented area (Figs. 16A; 17A). Cephalon with large, rectangular lateral lobes, strongly divergent. Elongated body with parallel sides of pereon. Posterior margin of pereonites I and II rounded, pereonite III almost straight, and from pereonite IV to VII with gradually increasing posterior tip. Telson trapezoidal with curved sides and slightly concave posterior margin.

Appendages: Antennula with three segments, second shorter, third with group of long setae. Short antennae (Fig. 17B) not extending beyond posterior margin of pereonite II; segments 3 to 5 with strong geminated spines; flagellum with four segments, with group of long aesthetascs on second and third. Uropods with conical, short endopods and exopods (Fig. 17C).

Sexual characters: Pereopods without sexual differentiation. Genital apophysis ending in rounded tip with long cilia (Fig. 18A). Pleopod I endopod with thick distal segment that narrows near tip, ending in striated, rounded tip (Figs. 16B; 18B); exopod triangular with rounded protrusion near base on external side, tip rounded and curved outward, with group of setae near tip (Figs. 16B, 18C). Pleopod II endopod very long, gradually tapering to slender, cylindrical, hollow tip (Figs. 16C, 18D); exopod trapezoidal (Figs. 16C; 18E). Pleopods III to V as in Fig. 18F–H.

Etymology. The specific epithet refers to the species' type locality, Furnas.

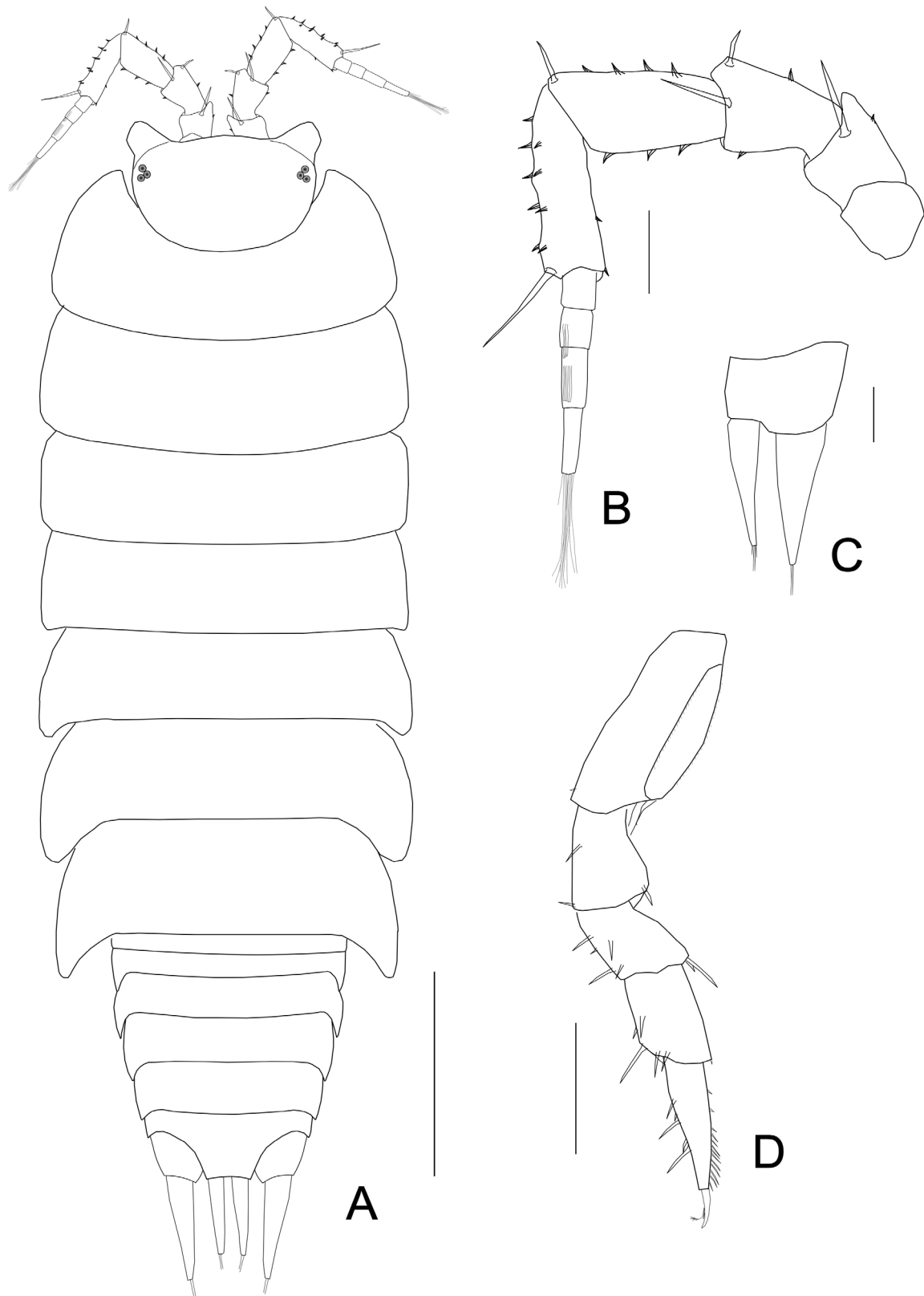


Figure 17. *Trichoniscus furnaensis* Cifuentes and Da Silva n. sp., male (ASM66). **A**, Habitus; **B**, antennae; **C**, uropods; **D**, pereopod VII. Scale bars: **A**, 0.5 mm; **B–D**, 0.1 mm.

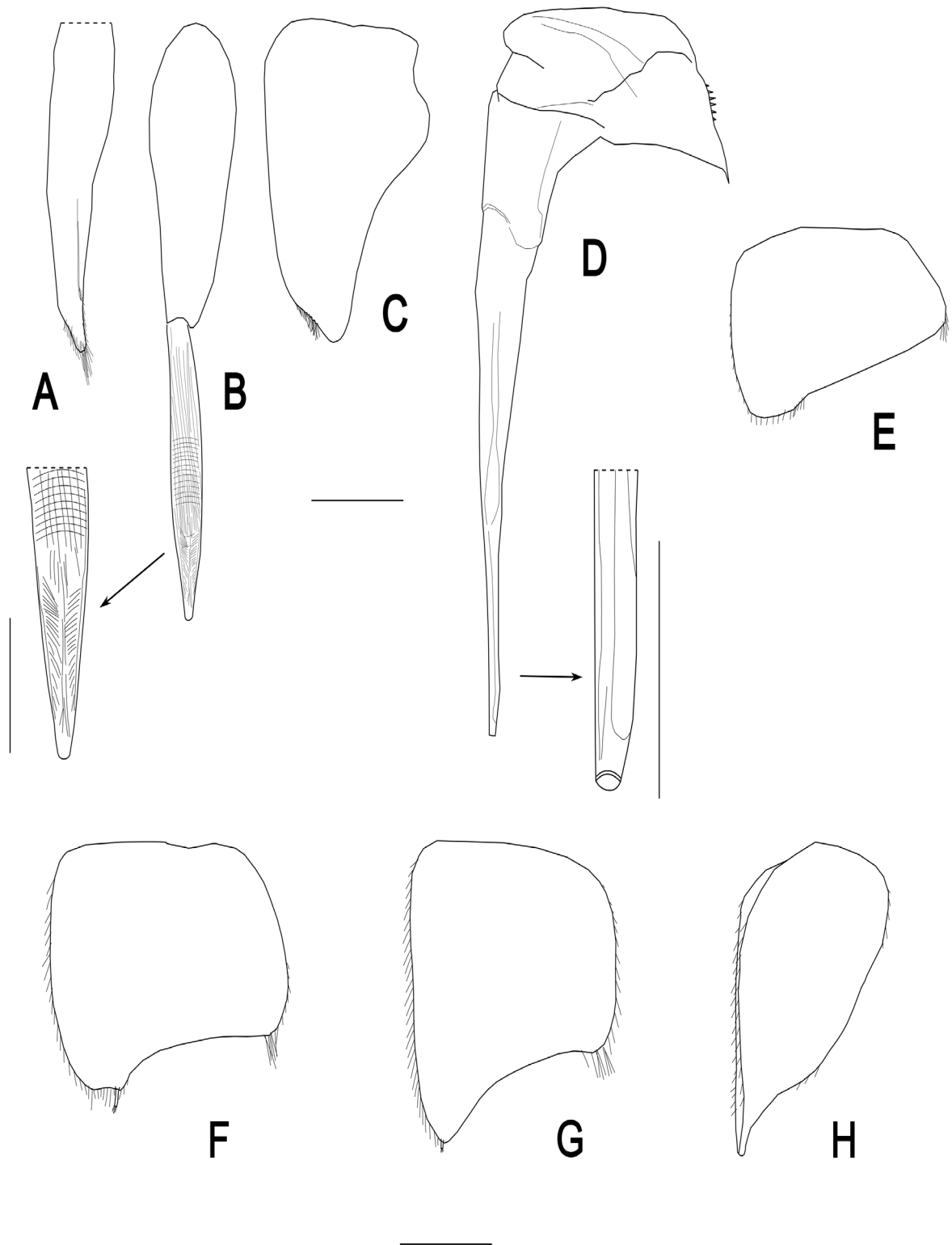


Figure 18. *Trichoniscus furnaensis* Cifuentes and Da Silva n. sp., male (ASM66). **A**, Genital apophysis; **B**, endopod of pleopod I; **C**, exopod of pleopod I; **D**, endopod of pleopod II; **E**, exopod of pleopod II; **F**, exopod of pleopod III; **G**, exopod of pleopod IV; **H**, exopod of pleopod V. Scale bars: **A–H**, 0.1 mm.

Ecology. *Trichoniscus furnaensis* n. sp. is an epigeal species. It was collected in the moist area between a wooden board and the pavement surrounding an abandoned house.

Remarks. The genus *Trichoniscus*, with 105 species, including one fossil, is the most diverse in the family Trichoniscidae (see Boyko et al., 2025). Most species of this genus are found in Europe, particularly in the Mediterranean region, with a few in Western Asia, North Africa, and North America, such as the introduced species *Trichoniscus pusillus* Brandt, 1833, and *Trichoniscus pygmaeus* G.O. Sars, 1898, that also occur in Cuba, Hawaii, and Mexico (Schmalfuss, 2003). Species differentiation within this genus depends on the presence of glandular-piliferous organs in males of certain species and, more importantly, on the morphology of the first two pairs of male pleopods (Vandel, 1951b; 1960a). However, these structures are often very similar across species, making their distinction challenging.

In the Macaronesia region, four species are known: *Tn. bassoti*, reported from Madeira by Vandel (1960b) and from the Canary Islands (Tenerife) by Dalens (1984); *Trichoniscus provisorius* Racovitza, 1908, reported from the Azores by Vandel (1956a; Taiti, 2010); *Tn. pusillus*, reported from the Azores (Dollfus, 1889a; 1889b; 1889c; Paulian de Félice, 1946; Vandel, 1956a; 1968; Ashmole et al., 1996; Taiti, 2010) and Madeira (Vandel, 1960b); and *Tn. pygmaeus*, reported from Azores, Canary Islands, and Madeira (Vandel 1960b; 1968; Schmalfuss, 2003; Arndt and Mattern, 2005; López and Taiti, 2010; Taiti, 2010). All four species have a triangular exopod of the first male pleopod, with a pointed tip in *Tn. bassoti*, and a rounded tip with setae on the outer margin in the other three. In contrast, in *Tn. furnaensis* n. sp., the tip curves outward and has setae on the inner margin and the endopod of the male pleopod II does not end in a sharp point but forms a cylindrical tube.

Two other species, *Trichoniscus gachassini* (Giard, 1899) and *Trichoniscus verhoeffi* Dahl, 1919, share similarities in the shape of the exopod of the male pleopod I with *Tn. furnaensis* n. sp. *Trichoniscus*

gachassini is a species from the mountainous region of Djurdjura in northern Algeria, exclusively collected in caves, at their entrances and in snow holes (“trous à neige”) (Giard, 1899; Racovitza, 1908; Vandel, 1955). Giard (1899), did not describe the species, which he named *Titanethes gachassini*, and only noted some differences compared to *Titanethes albus* (Koch, 1841). The species was later described by Racovitza (1908), who noted its oval body, much narrower in the anterior and posterior regions than in the middle pereon, short lateral lobes on the cephalon, and in specimens with eyes, an ocular apparatus formed by three ommatidia arranged in a line. Additionally, he mentioned the long uropods, and in males, the endopod of pleopod I has a thin tip, while the endopod of pleopod II has a sharp tip. Vandel (1955) classified *Tn. gachassini* as a subspecies of *Tn. pusillus*, noting that it differs from *Tn. pusillus provisorius* (now *Tn. provisorius*) in the male exopod of pleopod I, which has only a few setae and barely noticeable indentations. These setae and indentations are found on the outer margin near the pleopod tip in *Tn. provisorius* and *Tn. pusillus*. *Trichoniscus furnaensis* n. sp., although seeming similar to *Tn. gachassini*, differs in its elongated body with parallel sides, large lateral lobes on the cephalon, and an ocular apparatus formed by three ommatidia arranged in a triangle. The uropods are short, and in males, the endopod of pleopod I ends in a lanceolate tip. The exopod of pleopod I has a group of long setae near the tip on the inner face, and the endopod of pleopod II ends in a hollow cylindrical tube. *Trichoniscus verhoeffi* is a species from northern Italy (Schmalfuss, 2003). Although the illustrations by Dahl (1919) and Verhoeff (1931) of this species are schematic, both the illustrations and the characters mentioned by Verhoeff (1931), such as the tapered tip of the male endopod of pleopod II, allow it to be easily distinguished from *Tn. furnaensis* n. sp.

Other species cited in the Macaronesia archipelagos

In addition to the species mentioned above, other species have been reported from the islands comprising Macaronesia, these include (Tab. 1).

Table 1. List of species from the Macaronesia region. E indicates endemic species; O indicates the potential origin based on the known distribution of genera: Al = Alpine; At = Atlantic; M = Mediterranean; T = Tropical. Archipelagos arranged from north to south: AZ = Azores; MA = Madeira; SE = Selvagens Islands; CA = Canary Islands; CV = Cabo Verde. A indicates species analysed in this study; A* indicates new archipelago records. B = bibliographic references. Species in bold indicate newly described species.

	E	O	AZ	MA	SE	CA	CV
Armadillidae							
<i>Armadillo officinalis</i> Dumeril, 1816		M				B	
<i>Ctenorillo atlanticus</i> Cifuentes and Da Silva, 2023b		T					A*
<i>Ctenorillo ausseli</i> (Dollfus, 1893)	E	T				B	
<i>Cubaris murina</i> Brandt, 1833		T					A/B
<i>Venezillo canariensis</i> (Dollfus, 1893)	E	T				B	
<i>Venezillo fillolae</i> Rodríguez Santana and Barrientos, 1993b	E	T				B	
<i>Venezillo tenerifensis</i> Dalens, 1984	E	T				B	
<i>Venezillo trifolium</i> (Dollfus, 1890)	E	T					A/B
Armadillidiidae							
<i>Armadillidium album</i> Dollfus, 1887		M	B	B		B	
<i>Armadillidium amicum</i> Rodríguez Santana and Vicente, 1993	E	M	B				
<i>Armadillidium assimile</i> Budde-Lund, 1885		M	B	B			
<i>Armadillidium granulatum</i> Brandt, 1833		M	B	B			
<i>Armadillidium tigris</i> Budde-Lund, 1885	E	M		B			
<i>Armadillidium vulgare</i> (Latreille, 1804)		M	A/B	B		A/B	B
<i>Eluma caelata</i> (Miers, 1878)		At	A/B	A/B		B	
Detonidae							
<i>Armadilloniscus candidus</i> Budde-Lund, 1885		M	A/B				
<i>Armadilloniscus ellipticus</i> (Harger, 1878)		M	B	B			
Halophilosciidae							
<i>Halophiloscia canariensis</i> Dalens, 1973	E	M				B	
<i>Halophiloscia couchii</i> (Kinahan, 1858)		M	A/B	A/B		B	
<i>Halophiloscia microphthalmia</i> Taiti and Lopez, 2008	E	M				B	
<i>Halophiloscia rodriguezi</i> Taiti and Lopez, 2008	E	M				B	
<i>Littorophiloscia culebrae</i> (Moore, 1901)		T				B	A*
<i>Stenophiloscia glarearum</i> Verhoeff, 1908		At				B	
Ligiidae							
<i>Ligia gracilipes</i> Budde-Lund, 1885		At					A/B
<i>Ligia italica</i> Fabricius, 1798		At	A/B	A/B		B	
<i>Ligia exotica</i> Roux, 1828		At				B	
Oniscidae							
<i>Oniscus asellus</i> Linnaeus, 1758		At	A/B	A/B			
<i>Oniscidea incertae sedis</i>							
<i>Buchnerillo litoralis</i> Verhoeff, 1942		M		B			
Philosciidae							
<i>Chaetophiloscia guernei</i> (Dollfus in de Guerne, 1887)		M	B				
<i>Chaetophiloscia sicula</i> Verhoeff, 1908		M				B	
<i>Ctenoscia minima</i> (Dollfus, 1892)		At				B	
Platyarthridae							
<i>Niambia squamata</i> (Budde-Lund, 1885)		T					A/B
<i>Platyarthrus aiasensis</i> Legrand, 1954		M		B		B	
<i>Platyarthrus caudatus</i> Aubert and Dollfus, 1890		M				B	
<i>Platyarthrus maderensis</i> Vandel, 1960	E	M		B			
<i>Platyarthrus parisii</i> Arcangeli, 1930		M		B		B	
<i>Platyarthrus schoblii</i> Budde-Lund, 1885		M	B	B		B	

Table 1. Cont.

	E	O	AZ	MA	SE	CA	CV
<i>Trichorhina anophthalma</i> Arcangeli, 1935		T				B	
<i>Trichorhina hoestlandti</i> Vandel, 1960	E	T		B			
<i>Trichorhina tomentosa</i> (Budde-Lund, 1893)		T	B	A*			
Porcellionidae							
<i>Acaeroplastes melanurus</i> (Budde-Lund, 1885)		M	A/B	B			
<i>Agabiformius lentus</i> (Budde-Lund, 1885)		M	B	A/B		B	
<i>Atlantidium barretoii</i> Arcangeli, 1936a	E	At		B			
<i>Atlantidium mateui</i> Vandel, 1957	E	At		B			
<i>Atlantidium secundum</i> Arcangeli, 1936b	E	At		B			
<i>Leptotrichus leptotrichoides</i> (Arcangeli, 1942)		M		B	B	B	
<i>Leptotrichus panzerii</i> (Audouin, 1826)		M	B	B		B	B
<i>Porcellio aguerensis</i> Orihuela-Rivero, Balibrea; Nogueras, López and Oromí, 2025	E	At				B	
<i>Porcellio alluaudi</i> Dollfus, 1893		At				B	
<i>Porcellio anagae</i> Hoese, 1985	E	At				B	
<i>Porcellio ancaram</i> Rodríguez and Vicente, 1992a	E	At				B	
<i>Porcellio atlantidum</i> Paulian de Félice, 1939b	E	At		A/B			
<i>Porcellio babilonus</i> Rodríguez and Barrientos, 1993a	E	At				B	
<i>Porcellio cadenati</i> Vandel, 1954a	E	At					A/B
<i>Porcellio calderensis</i> Vandel, 1954b	E	At		B		B	
<i>Porcellio canariensis</i> Dollfus, 1893	E	At				B	
<i>Porcellio cataractae</i> Vandel, 1960b	E	At		A/B			
<i>Porcellio centralis</i> Vandel, 1954b	E	At				B	
<i>Porcellio dilatatus</i> Brandt, 1831		At	A/B	B			
<i>Porcellio eserensis</i> Rodríguez and Vicente, 1992c	E	At				B	
<i>Porcellio ferroi</i> Paulian de Félice, 1939b	E	At		B			
<i>Porcellio garciai</i> Hughes, 2024	E	At		B			
<i>Porcellio gruneri</i> Hoese, 1978		At		B			
<i>Porcellio laevis</i> Latreille, 1804		At	A/B	B		B	B
<i>Porcellio laevisimus</i> Dollfus, 1898		At	B			B	
<i>Porcellio lamellatus</i> Budde-Lund, 1885		At	A/B	B	B	B	B
<i>Porcellio maculipes</i> Budde-Lund, 1885	E	At		B			
<i>Porcellio martini</i> Dalens, 1984	E	At				B	
<i>Porcellio medinae</i> Rodríguez and Barrientos, 1993a	E	At				B	
<i>Porcellio meridionalis</i> Vandel, 1954b	E	At				B	
<i>Porcellio normani</i> (Dollfus, 1899)	E	At		B			
<i>Porcellio ombionis</i> Vandel, 1954b	E	At				B	
<i>Porcellio ovalis</i> Dollfus, 1893	E	At				A/B	
<i>Porcellio palmae</i> Hoese, 1985	E	At				B	
<i>Porcellio scaber</i> Latreille, 1804		At	A/B	B		B	
<i>Porcellio scitus</i> Budde-Lund, 1885	E	At		B			
<i>Porcellio septentrionalis</i> Vandel, 1954b	E	At				B	
<i>Porcellio spinipes</i> Dollfus, 1893	E	At				A/B	
<i>Porcellio strinatii</i> Vandel, 1960	E	At				B	
<i>Porcellio studienstiftus</i> Hoese, 1985	E	At				B	
<i>Porcellio xavieri</i> Arcangeli, 1958	E	At		B			
<i>Porcellio zarcoi</i> Vandel, 1960b	E	At		B			
<i>Porcellionides cingendus</i> (Kinahan, 1857)		M	A*	A*			
<i>Porcellionides mateui</i> (Vandel, 1954b)	E	M				B	

Table 1. Cont.

	E	O	AZ	MA	SE	CA	CV
<i>Porcellionides pruinosus</i> (Brandt, 1833)		M	A/B	A/B		A/B	A/B
<i>Porcellionides sexfasciatus</i> (Budde-Lund, 1885)		M	A/B	A/B	B	A/B	B
<i>Soteriscus bremondi</i> (Vandel, 1960b)	E	At		A/B			
<i>Soteriscus brumdocantoi</i> (Vandel, 1960b)	E	At		B			
<i>Soteriscus caboverdiensis</i> Cifuentes and Da Silva n. sp.	E	At					A
<i>Soteriscus desertarum</i> (Vandel, 1960b)	E	At		B			
<i>Soteriscus disimilis</i> (Rodríguez Santana, 1990)	E	At				A/B	
<i>Soteriscus fructuosi</i> (Vandel, 1960b)	E	At		B			
<i>Soteriscus jandiensis</i> Cifuentes and Prieto, 2023	E	At				B	
<i>Soteriscus madeirae</i> (Arcangeli, 1958)	E	At		B			
<i>Soteriscus mateui</i> (Vandel, 1957a)		At					B
<i>Soteriscus porcellioniformis</i> (Vandel, 1960b)	E	At		B			
<i>Soteriscus relictus</i> (Vandel, 1960b)	E	At		B			
<i>Soteriscus stricticauda</i> (Dollfus, 1893)		At		B		A/B	
<i>Soteriscus trilineatus</i> (Rodríguez and Vicente, 1992b)	E	At				B	
<i>Soteriscus wollastoni</i> (Paulian de Félice, 1939b)	E	At		B			
Rhyscotidae							
<i>Rhyscotoides silvestrii</i> Arcangeli, 1949		T					A/B
Stenoniscidae							
<i>Stenoniscus carinatus</i> Silvestri, 1897		At				B	
<i>Stenoniscus pleonalis</i> Aubert and Dollfus, 1890		At		B			
Styloniscidae							
<i>Cordioniscus stebbingi</i> (Patience, 1907)		At	B				
<i>Styloniscus spinosus</i> (Patience, 1907)		T	A*	A*			
Trichoniscidae							
<i>Androniscus dentiger</i> Verhoeff, 1908		At	A/B				
<i>Haplophthalmus danicus</i> Budde-Lund in Meinert, 1880		At	A/B	B		B	
<i>Haplophthalmus mengii</i> (Zaddach, 1844)		At	B			B	
<i>Miktoniscus arcangelii</i> Vandel, 1960b	E	At		A/B			
<i>Miktoniscus atlanticus</i> Cifuentes and Da Silva n. sp.	E	At	A				
<i>Miktoniscus chavesi</i> (Dollfus, 1889)		At	B	B			
<i>Miktoniscus patiencei</i> Vandel, 1946		At		B			
<i>Trichoniscus bassoti</i> Vandel, 1960b		M		A/B		B	
<i>Trichoniscus furnaensis</i> Cifuentes and Da Silva n. sp.	E	M	A				
<i>Trichoniscus provisorius</i> Racovitza, 1908		M	B				
<i>Trichoniscus pusillus</i> Brandt, 1833		M	B	B			
<i>Trichoniscus pygmaeus</i> Sars, 1899		M	B	B		B	
Tylidae							
<i>Tylos europaeus</i> Arcangeli, 1938		At	B	B		B	
<i>Tylos madeirae</i> Arcangeli, 1938	E	At		B			
<i>Tylos ponticus</i> Grebnitzky, 1873		At		B		B	
Total			AZ	MA	SE	CA	CV
	AZ		37	27	2	18	6
	MA			63	3	23	6
	SE				3	3	2
	CA					63	7
	CV						16

Table 1. Cont.

	E	O	AZ	MA	SE	CA	CV
Al			1	–	–	–	–
At			15	41	2	39	6
M			19	19	1	18	4
T			2	3	–	6	6

Azores — Family Armadillidiidae Brandt, 1833: *Armadillidium album* Dollfus, 1887; *Armadillidium amicum* Rodríguez and Vicente, 1993; *Armadillidium assimile* Budde-Lund, 1885; *Armadillidium granulatum* Brandt, 1833; *Armadillidium sulcatum* H Milne Edwards, 1840. Family Philosciidae Kinahan, 1857: *Chaetophiloscia guernei* (Dollfus in de Guerne, 1887). Family Platyarthridae Verhoeff, 1949: *Platyarthrus schoblii* Budde-Lund, 1885. Family Porcellionidae Brandt, 1831: *Leptotrichus panzerii* (Audouin, 1826); *Porcellio laevis* Dollfus, 1898; *Porcellio variabilis* Lucas, 1849. Family Styloniscidae Vandel, 1952: *Cordioniscus stebbingi* (Patience, 1907). Family Trichoniscidae G.O. Sars, 1899: *Haplophthalmus mengii* (Zaddach, 1844); *Trichoniscus insularis* Dollfus, 1889b. Family Tylidae Dana, 1852: *Tylos europaeus* Arcangeli, 1938; *Tylos latreillii* Audouin, 1826 (Morelet, 1860; Dollfus, 1889b; Paulian De Félice, 1946; Vandel, 1956a; 1966; 1968; Arcangeli, 1958; Schmölzer, 1971; Rodríguez and Vicente, 1993; Ashmole et al., 1996; Schmalfuss, 2003; Taiti, 2010).

Cabo Verde — Family Porcellionidae Brandt, 1831: *Le. panzerii*. Family Tylidae Dana, 1852: *Tylos armadillo* Latreille, 1829; *Ty. europaeus* (see Dollfus, 1899; Paulian De Félice, 1946; Vandel, 1954a; 1956a; Schmalfuss, 1982; Schmalfuss and Vergara, 2000).

Canary Islands — Family Armadillidae Brandt, 1831: *Armadillo officinalis* Dumeril, 1816; *Ctenorillo ausseli* (Dollfus, 1893); *Venezillo canariensis* (Dollfus, 1893); *Venezillo fillolae* Rodríguez and Barrientos, 1993b; *Venezillo tenerifensis* Dalens, 1984. Family Armadillidiidae Brandt, 1833: *Ad. album*; *Ad. granulatum*. Family Halophilosciidae Verhoeff, 1908a: *Hl. canariensis*; *Hl. microphthalma*; *Hl. rodriguezi*; *Stenophiloscia glarearum* Verhoeff, 1908. Family Ligiidae Leach, 1814: *Ligia exotica* Roux, 1828; *Lg. oceanica*. Family Philosciidae Kinahan, 1857: *Chaetophiloscia sicala* Verhoeff, 1908a; *Ctenoscia minima* (Dollfus, 1892). Family Platyarthridae Verhoeff, 1949: *Platyarthrus aiasensis* Legrand, 1954; *Platyarthrus caudatus* Aubert and

Dollfus, 1890; *Platyarthrus parisii* Arcangeli, 1930; *Pl. schoblii*; *Trichorhina anophthalma* Arcangeli, 1935. Family Porcellionidae Brandt, 1831; *Leptotrichus leptotrichoides* (Arcangeli, 1942); *Le. panzerii*; *Porcellio aguerensis* Orihuela-Rivero et al., 2025; *Porcellio albinus* Budde-Lund, 1885; *Porcellio alluaudi* Dollfus, 1893; *Porcellio anagae* Hoese, 1985; *Porcellio ancarrarum* Rodríguez and Vicente, 1992; *Porcellio babilonus* Rodríguez and Barrientos, 1993a; *Porcellio calderensis* Vandel, 1954b; *Porcellio canariensis* Dollfus, 1893; *Porcellio centralis* Vandel, 1954b; *Porcellio eserensis* Rodríguez and Vicente, 1992; *Po. laevis*; *Porcellio martini* Dalens, 1984; *Porcellio medinae* Rodríguez and Barrientos, 1993a; *Porcellio meridionalis* Vandel, 1954b; *Porcellio ombrionis* Vandel, 1954b; *Porcellio palmae* Hoese, 1985; *Porcellio septentrionalis* Vandel, 1954b; *Porcellio simulator* Budde-Lund, 1885; *Porcellio strinatii* Vandel, 1960c; *Porcellio studienstiftius* Hoese, 1895; *Porcellionides mateui* Vandel, 1954b; *Soteriscus gomerae* (Schmölzer, 1971); *Soteriscus jandiensis* Cifuentes and Prieto, 2023; *So. mateui*; *So. trilineatus*. Family Stenoniscidae Budde-Lund, 1904: *Stenoniscus carinatus* Silvestri, 1897. Family Trichoniscidae G.O. Sars, 1899: *Hp. mengii*; *Miktoniscus canariensis* Schmölzer, 1971. Family Tylidae Dana, 1852: *Ty. europaeus*; *Tylos ponticus* Grebnitzky, 1873 (Dollfus 1893; 1898; Ferrer Galdiano, 1923; Arcangeli, 1924; 1930; 1934b; Paulian De Félice, 1946; Vandel, 1951a; 1954b; 1956a; 1957c; 1960c; 1968; Arcangeli, 1958; Caruso, 1970; Schmölzer, 1971; Dalens, 1973; 1984; Hoese, 1984b; 1985; Hernández et al., 1986; Martín and Oromí, 1986; Rodríguez and Vicente, 1992a; 1992b; 1992c; Rodríguez and Barrientos, 1993a; 1993b; 1993c; Rodríguez Santana, 1996; Arechavaleta et al., 1998; 1999; Zimmer and Topp, 1999; Schmalfuss, 2003; Macias et al., 2004; Arndt and Mattern, 2005; Taiti and López, 2008; López and Taiti, 2010; Ramírez and Riera, 2013; Fernández-Palacios et al., 2018; Moro et al., 2018; Oromí and Socorro, 2021; Oromí et al., 2021; Cifuentes and Prieto, 2023; Orihuela-Rivero et al., 2025).

Madeira — Family Armadillidiidae Brandt, 1833: *Ad. album*; *Ad. assimile*; *Ad. granulatum*; *Armadillidium tigris* Budde-Lund, 1885. Family Oniscidea incertae sedis: *Buchnerillo litoralis* Verhoeff, 1942b. Family Platyarthridae Verhoeff, 1949: *Platyarthrus aiasensis* Legrand, 1954; *Platyarthrus maderensis* Vandel, 1960b; *Pl. parisii*; *Pl. schoblii*; *Trichorhina hoestlandti* Vandel, 1960b. Family Porcellionidae Brandt, 1831: *Atlantidium barreto* Arcangeli, 1936a; *Atlantidium mateui* Vandel, 1957b; *Atlantidium secundum* Arcangeli, 1936b; *Le. leptotrichoides*; *Le. panzerii*; *Lucasius myrmecophilus* (Lucas, 1853); *Lucasius scitus* Budde-Lund, 1885; *Po. calderensis*; *Porcellio ferroi* Paulian de Félice, 1939b; *Porcellio garciai* Hughes, 2024; *Porcellio gruneri* Hoesé, 1978; *Porcellio maculipes* Budde-Lund, 1885; *Porcellio normani* (Dollfus in Norman, 1899); *Porcellio scitus* Budde-Lund, 1885; *Porcellio xavieri* Arcangeli, 1958; *Porcellio zarcoi* Vandel, 1960b; *So. brumdocantoi*; *So. desertarum*; *So. madeirae*. Family Stenoniscidae Budde-Lund, 1904: *Stenoniscus pleonalis* Aubert and Dollfus, 1890. Family Tylidae Dana, 1852: *Ty. europaeus*; *Tylos madeirae* Arcangeli, 1938; *Ty. ponticus* (see Budde-Lund, 1885; Dollfus, 1889b; Norman, 1899; Arcangeli, 1936a; 1938; 1958; Paulian De Félice, 1939b; 1946; Vandel, 1956a; 1960b; Schmölzer, 1971; Hoesé, 1978; Schmalfuss and Vergara, 2000; Schmalfuss, 2003; Borges et al., 2008; Hughes, 2024).

Doubtful species in the Macaronesia archipelagos

Family Armadillidiidae Brandt, 1833

Armadillidium granulatum Brandt, 1833

Remarks. Schmölzer (1971) lists the presence of this species in the Canary Islands in a summary table (p. 119) of terrestrial isopods from North Africa; however, in the main text, he only refers to the locality of Al Hoceima, which is in Morocco.

Armadillidium sulcatum

H. Milne Edwards, 1840

Remarks. This species was reported from the Azores by Morelet (1860), but this record was considered erroneous by Dollfus (1889b), and therefore it is not included in the list of Macaronesian species.

Armadillidium tigris Budde-Lund, 1885

Remarks. This species has only been reported from Madeira by Budde-Lund (1885), and this record has been repeated by later authors (Dollfus, 1889b; Norman, 1899; Arcangeli, 1958; Borges et al., 2008). The brief description provided by Budde-Lund (1885), which was common practice at the time, has likely made species identification difficult. Only a revision of the type specimen could clarify its validity.

Family Ligiidae Leach, 1814

Ligia oceanica (Linnaeus, 1767)

Remarks. It was reported from Las Palmas in the Canary Islands by Ramírez and Riera (2013), but this record corresponds to *Ligia exotica* Roux, 1828, according to Moro et al. (2018).

Family Porcellionidae Brandt, 1831

Lucasius myrmecophilus (Lucas, 1853)

Remarks. Borges et al. (2008) reported this species from Madeira; however, Lucas (1853) did not describe this species in his work, so this is undoubtedly an error, likely referring instead to *Lucasius myrmecophilus* Kinahan, 1859. According to Schmalfuss (2003), this species is known from Algeria, Spain, and Morocco, but it has not been reported from Madeira.

Lucasius scitus Budde-Lund, 1885

Remarks. Borges et al. (2008) reported this species from Madeira, but according to Schmalfuss (2003) and Boyko et al. (2025), it is a synonym of *Porcellio scitus* Budde-Lund, 1885.

Porcellio albinus Budde-Lund, 1885

Remarks. This species has been reported from the Canary Islands, specifically from Fuerteventura, La Graciosa, La Gomera, Lanzarote, and Lobos (Arcangeli, 1958; Dalens, 1984; Schmölzer, 1971). However, Hoesé (1984b) and Rodríguez Santana and Vicente (1992a) consider that *Po. albinus* does not occur in the Canary Islands, and that these records refer to *Po. spinipes*.

***Porcellio simulator* Budde-Lund, 1885**

Remarks. Native to Algeria and Tunisia (Schmalfuss, 2003). Arcangeli (1934b) described the subspecies *Porcellio simulator sublaevis* Arcangeli, 1934b, based on a female specimen from Montaña de Fuego (Lanzarote) in the Canary Islands. Rodríguez Santana and Vicente (1992a) considered this subspecies to be a synonym of *Porcellio alluaudi* Dollfus, 1893. Schmalfuss (2003) also questioned its subspecific identity, and the taxon has not been cited or included in the catalog by López and Taiti (2010). Therefore, we consider the presence of this species in the Canary Islands to be doubtful.

***Porcellio variabilis* Lucas, 1849**

Remarks. This species is found in Algeria, Morocco, and Tunisia (Lucas, 1849; Paulian De Félice, 1939a; Medini-Bouaziz and Charfi-Cheikhrouha, 1998; Schmalfuss, 2003; Medini-Bouaziz et al., 2006; Khemaissia et al., 2012, 2016, 2017). It was reported from the Azores by Morelet (1860), although Dollfus (1889b) suggested that the specimen was probably *Pn. sexfasciatus*. Therefore, the species is not included in the list of Macaronesian species.

***Soteriscus gomerae* (Schmölzer, 1971)**

Remarks. As Schmölzer (1971) and his subsequent publications lack a description of this species, Boyko et al. (2025) consider it a nomen nudum.

Family Trichoniscidae Sars, 1899***Miktoniscus canariensis* Schmölzer, 1971**

Remarks. As Schmölzer (1971) and his subsequent publications lack a description of this species, Boyko et al. (2025) consider it a nomen nudum.

***Trichoniscus insularis* Dollfus, 1889b**

Remarks. Species cited from Azores by Dollfus (1889b) and Paulian De Félice (1946). However, Schmalfuss (2003) and Boyko et al. (2025) consider it nomen dubium. Vandel (1956a, 1960b) suggests that although the type specimen of *Tn. insularis* was lost, this species is likely a synonym of *Miktoniscus chavesi* (Dollfus, 1889a). In the original description

by Dollfus (1889a), he notes that the cephalon and pereon have strong and conical granulations, the eyes are simple, and the antenna flagellum has four segments. Later, Dollfus (1889b) describes *Tn. insularis* and indicates that the body shows stronger granulations on the cephalon and the anterior region of the pereon compared to the posterior region. He also describes the eyes as small, though not simple, and the antenna flagellum as having three segments. Additionally, Dollfus (1889b) says that the two species differ in body shape, being broader in *Tn. insularis* and narrower in *M. chavesi*, and the antenna flagellum, with three segments in *Tn. insularis* and four in *M. chavesi*. In the Azores, *Sl. spinosus* is relatively common and it has a body that is wide relative to its length, granulations on the cephalon and pereon that soften towards the posterior region, an ocular apparatus with three ommatidia, and the antenna flagellum with three segments. These characters align more closely with the description of *Tn. insularis* than with *M. chavesi*, suggesting that *Sl. spinosus* might be a synonym of *Tn. insularis*. However, the brevity of the original description of *Tn. insularis* and, above all, the absence of the type specimen, as Vandel (1956a, 1960b) already indicated, prevent this synonym from being conclusively established.

Family Tylidae Dana, 1852***Tylos armadillo* Latreille, 1829**

Remarks. Dollfus (1899) mentioned this species for Cabo Verde. However, Schmalfuss and Vergara (2000) consider this the same species as *Ty. ponticus* or *Ty. europaeus*. Later Schmalfuss (2003) and Boyko et al. (2025) consider *Ty. armadillo* as nomen dubium.

***Tylos latreillii* Audouin, 1826**

Remarks. Paulian de Félice (1946) cited this species from Azores and Canary Islands. Vandel (1954a) mentioned it from Cabo Verde, probably considering the record of *Ty. armadillo* by Dollfus (1899) as *Ty. latreillii*. However, the description of *Ty. latreillii* does not allow differentiation from *T. ponticus* or *Ty. europaeus* according to Schmalfuss and Vergara (2000). It is also considered nomen dubium by Schmalfuss (2003) and Boyko et al. (2025).

DISCUSSION

The Macaronesia region terrestrial isopod fauna has received very uneven attention from carcinologists. Currently, 120 species are known from the Macaronesia archipelagos, and this study presents new data on 39 of them (Tab. 1). Additionally, the presence of *An. candidus* at Praia dos Rebolinhos, in southern Portugal, is the first record of this species on mainland Portugal.

The isopod fauna of Madeira archipelago is best represented in studies led by 16 authors (Budde-Lund, 1885; Dollfus, 1889b; Norman, 1899; Arcangeli, 1936a; 1938; 1958; Paulian de Félice, 1938; 1939b; 1946; Vandel, 1956a; 1960b; 1968; Schmölzer, 1971; Hoese, 1978; Oromí et al., 1990; 2021; Schmalfuss and Vergara, 2000; Schmalfuss, 2003; Borges et al., 2008; Taiti, 2010; Reboleira et al., 2011; Reboleira, 2012; Hughes, 2024). This study presents new data for 15 species, three reported for the first time from Madeira: *Pn. cingendus*, *Sl. spinosus*, and *Tr. tomentosa*. As a result, 63 species are now known from Madeira, including 25 endemic species. The most diverse family is Porcellionidae with 33 species, comprising 15 species from the genus *Porcellio* and nine from the genus *Soteriscus*, followed by the family Trichoniscidae with seven species, and Armadillidiidae with six species (Tab. 1).

The isopod fauna of Azores archipelago has been the subject of studies led by 14 authors (Morelet, 1860; Budde-Lund, 1885; Dollfus, 1889a; 1889b; 1889c; Norman, 1899; Carl, 1908; Paulian De Félice, 1946; Vandel, 1956a; 1962; 1966; 1968; Arcangeli, 1958; Schmölzer, 1971; Rodríguez Santana and Vicente, 1993; Ashmole et al., 1996; Schmalfuss, 2003; Borges et al., 2008; Taiti, 2010). This study presents new data for 19 species, including two new species: *M. atlanticus* n. sp. and *Tn. furnaensis* n. sp., and the first records of *Pn. cingendus* and *Sl. spinosus*. Consequently, the current list of terrestrial isopods includes 37 species, with only *Ad. amicorum* and the two new species described in this work, being endemic to the Azores (Tab. 1). The family Porcellionidae is the most diverse, with 11 species, followed by Trichoniscidae with nine species, and Armadillidiidae with five species.

The Cabo Verde archipelago has only been referenced by six authors (Dollfus, 1890; 1897; 1899; Budde-Lund, 1904; Paulian De Félice, 1938; 1946;

Vandel, 1954a; 1956a; 1957a; 1960a; Arcangeli, 1958; Schmalfuss, 1982; Schmalfuss and Vergara, 2000). Three species are added to this archipelago in this study: *Ct. atlanticus*, *Li. culebrae*, and *So. caboverdiensis* n. sp. Of the original 16 species, belonging to eight families, four are endemic (Tab. 1). The most diverse family is Porcellionidae with eight species, followed by Armadillidae with three species.

The Canary Islands it is by far the most studied archipelago. Their terrestrial isopod fauna was studied by many authors (Dollfus, 1889b; 1893; 1898; Koelbel, 1892; Kraepelin, 1895; Norman, 1899; Arcangeli, 1930; 1934a; 1934b; 1958; Paulian De Félice, 1938; 1939b; 1946; Vandel, 1954a; 1954b; 1956a; 1957c; 1960b; 1960c; 1966; 1968; Schmölzer, 1971; Dalens, 1973; 1977; 1984; Hoese, 1978; 1984a; 1984b; 1985; Schmalfuss, 1982; Martín et al., 1985; Hernández et al., 1986; Martín and Oromí, 1986; Oromí et al., 1990; 2021; Rodríguez Santana, 1990; 1996; Rodríguez Santana and Vicente, 1992a; 1992b; 1992c; 1993; Rodríguez Santana and Barrientos, 1993a; 1993b; 1993c; García et al., 1995; Ashmole et al., 1996; Arechavaleta et al., 1998; 1999; Zimmer and Topp, 1999; Schmalfuss and Vergara, 2000; Schmalfuss, 2003; Macias et al., 2004; Arndt and Mattern, 2005; Taiti and López, 2008; López and Taiti, 2010; Ramírez and Riera, 2013; Jorge et al., 2016; Fernández-Palacios et al., 2018; Moro et al., 2018; Oromí and Socorro, 2021; Cifuentes and Prieto, 2023; Orihuela-Rivero et al., 2025). The list of terrestrial isopods in the Canary Islands comprises 63 species, belonging to 10 families, with 28 endemic species. This study did not yield any new records. The most diverse family is Porcellionidae with 33 species, including 23 *Porcellio* and four *Soteriscus* species, followed by the family Halophilosciidae with six species, Armadillidae with five species, and Trichoniscidae with four species (Tab. 1).

In Selvagens Islands, the least studied archipelago, only three species of terrestrial isopods were recorded, all from the family Porcellionidae (Arcangeli, 1934b; Vandel, 1956a; Dalens, 1977; Tab. 1).

Overall, the Macaronesia archipelagos have now 120 species of terrestrial isopods recorded, 60 (50%) are endemic to a single archipelago. Located nearly 1,000 km from Madeira, the Azores share 27 species with this archipelago, which represent 73% of the

Azorean isopod fauna but only 43% of Madeira's isopod fauna. With the Canary Islands, 1,400 km away, the Azores share 18 species, accounting for 49% of their known fauna but only 29% of the isopod fauna in the Canary Islands. With Cabo Verde, nearly 2,500 km away, the Azores share just six species, which represent 16% of their fauna and 38% of Cabo Verde's isopod fauna. The Canary Islands and Madeira have 63 recorded isopod species. Despite being approximately 500 km apart, these two archipelagos share only 23 species, representing 37% of the isopod species in the Canary Islands and Madeira. These

data suggest a closer similarity in terrestrial isopod fauna between the Azores and Madeira than between either of these two archipelagos and Cabo Verde or the Canary Islands. This similarity is likely driven by both environmental factors, such as higher rainfall in these islands, and historical factors, including greater connectivity over time, which facilitated the dispersal of numerous species linked to human activities. Cabo Verde has recorded 16 isopod species, six of which are also found in the Azores, as previously mentioned, six with Madeira (2000 km away), and seven with the Canary Islands, located 1,600 km away (Fig. 19).

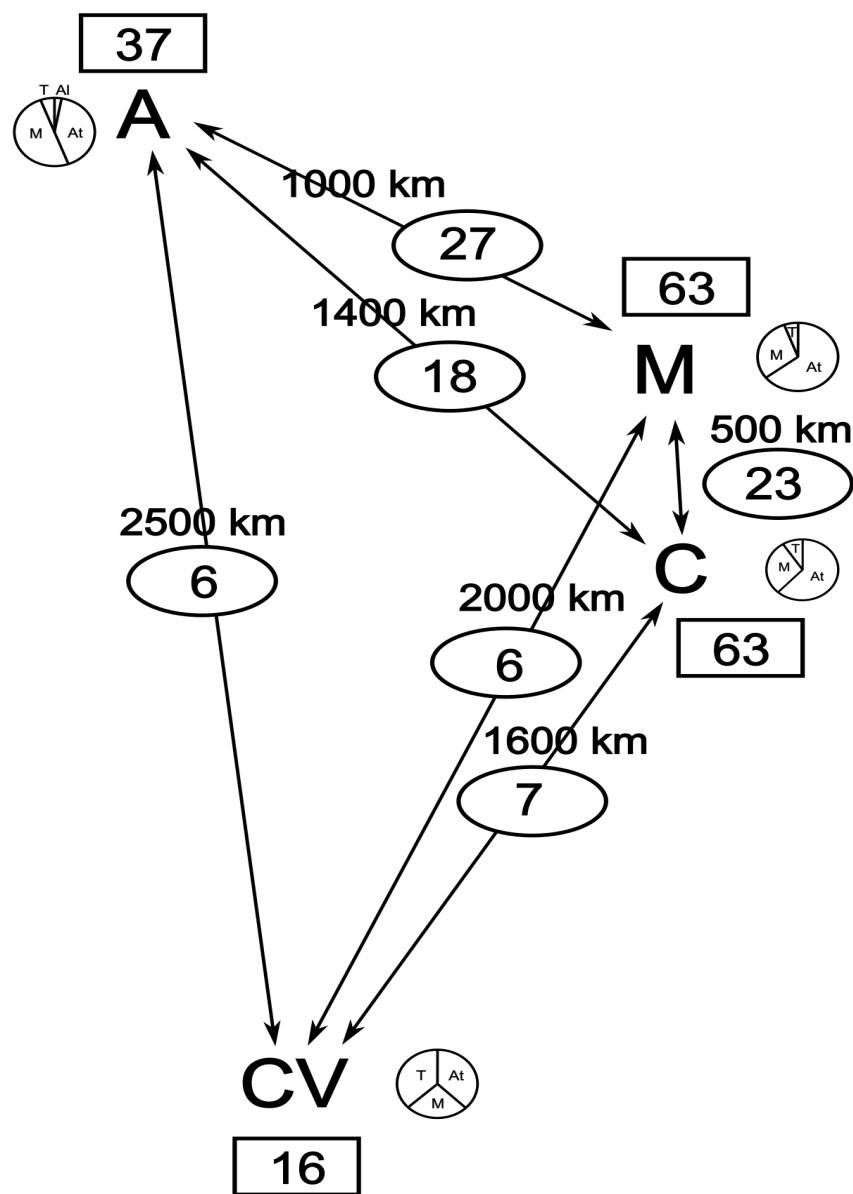


Figure 19. Macaronesia archipelagos (A = Azores, CV = Cabo Verde, C = Canary Islands, M = Madeira). Rectangles indicate the number of species, ovals the number of shared species, and pie charts the percentages of potential origin of species based on the known distribution of genera (Al = Alpine; At = Atlantic; M = Mediterranean; T = Tropical).

In the Gulf of Guinea, where the other archipelagos on the eastern Atlantic are located, previous studies indicated that the known fauna of isopods from Cameroon consists of 57 species, 18 of which have been cited from Bioko Island and 6 from Annobón Island, both part of Equatorial Guinea, and 17 from São Tomé Island, part of the Democratic Republic of São Tomé and Príncipe (Cifuentes, 2021b; Cifuentes and Da Silva, 2023b). These territories have 79 species compared to the 120 found in the Macaronesia archipelagos. Of these, only the widespread *Pn. pruinus* is found in the Macaronesia region (Azores, Cabo Verde, Canary Islands, Madeira) and the Gulf of Guinea (Annobón in the Republic of Equatorial Guinea, Cameroon, and Democratic Republic of São Tomé and Príncipe). Three other species are found in Cabo Verde and Democratic Republic of São Tomé and Príncipe: *Ct. atlanticus*, *Cu. murina*, and *N. squamata*; and finally, *Lg. gracilipes* is found in Cabo Verde, Bioko, and Cameroon. Thus, Cabo Verde shares five of its 16 known species with the islands of the Gulf of Guinea, over 3,600 km away, but only six with Azores and Madeira and seven with the Canary Islands of the Macaronesia archipelagos, which are between 1,600 and 2,500 km apart (Fig. 19).

The current knowledge of many terrestrial isopod species does not allow for the precise determination of their origin. However, by considering the known distribution ranges of species within each genus, it is possible to cautiously infer their potential origin (Schmalfuss, 2003). This approach enables us to identify potential colonization routes for the species present in the Macaronesia archipelagos. Thus, out of the 120 species (Fig. 19; Tab. 1), 71 (59%), are associated with genera of Atlantic origin: 14 in the Azores, representing 38% of their isopod inventory; 37 in the Canary Islands (59%); and 38 in Madeira (60%). Another 34 species (28%) belong to genera of Mediterranean origin: 20 in the Azores (54%), 20 in the Canary Islands (32%), and 22 in Madeira (35%). Fourteen species (12%) have a tropical origin: two in the Azores (5%), six in the Canary Islands (10%), and three in Madeira (5%). In contrast, the southernmost archipelago, Cabo Verde, hosts six species of Atlantic origin (38%), four of Mediterranean origin (25%), and six species of tropical origin (38%). The sole remaining species, *Ac. dentiger*, is considered to have

an Alpine origin, as suggested by Vandel (1960a). This indicates a considerably greater similarity of terrestrial isopods in the Macaronesia region with the Atlantic and Mediterranean fauna of Europe and North Africa than with the tropical African fauna.

According to García Talavera (1999), the Macaronesia islands have experienced major climatic fluctuations over time, including periods of intense erosion, shifts in wind and ocean current patterns, sea level oscillations, and corresponding changes in island altitude and extent due to glaciation, volcanic activity, and large-scale landslides. Additional disturbances, such as fires, including those caused by human activity, such as the one that devastated Madeira after its colonization in the 15th century, have also had lasting impacts. All these factors have shaped these insular ecosystems (García Talavera, 1999). The terrestrial isopod fauna of the Macaronesia region includes endemic species with proportions varying by archipelago. In the Azores, only three of the 37 known terrestrial isopod species are endemic (8%), in Madeira, 25 of 63 (40%), in Selvagens Islands, none of the three recorded species are endemic, in Canary Islands, 28 of 63 (44%), and Cabo Verde, 4 of 16 (25%). The family Porcellionidae has the highest number of endemic species in the Macaronesia region, with 43 out of 60 recorded species. Within this family, the genus *Porcellio* is particularly noteworthy, with 27 endemic species out of 35 known from the region: 17 in Canary Islands, nine in Madeira, and one in Cabo Verde. Interestingly, North Africa (Algeria, Morocco, and Tunisia) hosts 52 species of *Porcellio* (Budde-Lund, 1885; Dollfus, 1896; Arcangeli, 1958; Cruz, 1991; Schmalfuss, 2003), and 48 are known from the Ibero-Balearic region (based on our own compilation). However, only three species (*Po. alluaudi*, *Po. dilatatus*, and *Po. lamellatus*) are shared between the Macaronesia region and North Africa, and only four (*Po. dilatatus*, *Po. laevis*, *Po. lamellatus*, and *Po. scaber*) occur both in the Macaronesia region and the Ibero-Balearic area. This limited overlap suggests that *Porcellio* species may have limited colonization capacity. The genus *Soteriscus* is also well represented in the Macaronesia region, with 14 of its 19 known species occurring here, 13 of which are endemic: eight in Madeira, three in the Canary Islands, and two in Cabo Verde. *Porcellionides* is the third genus in this family, with 4 species in the region. Among them,

only *Pn. mateui* is endemic to the Canary Islands. *Porcellionides pruinosus* and *Pn. sexfasciatus* occur in the Macaronesia region, the Ibero-Balearic region, and North Africa, and have been introduced to other parts of the world (Budde-Lund, 1885; Vandel, 1946; Schmalfuss, 2003; Cifuentes and Da Silva, 2024). *Porcellionides cingendus* is restricted to the Macaronesia region and the Ibero-Balearic area. The other families with endemic species in the Macaronesia region are: Trichoniscidae (3 endemics/12 species), Platyarthridae (2/9), Armadillidae (5/8), Armadillidiidae (2/7), Halophilosciidae (3/6), and Tylidae (1/3) (Tab. 1).

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ADDITIONAL INFORMATION AND DECLARATIONS

Author Contributions

Conceptualization and Design: JC, LPS. Performed research: JC, LPS. Acquisition of data: JC, SF, LPS. Analysis and interpretation of data: JC, LPS. Preparation of figures/tables/maps: JC, LPS. Writing – original draft: JC, LPS. Writing – critical review and editing: JC, SF, LPS.

Consent for publication

All authors declare that they have reviewed the manuscript's content and consented to submit the document.

Competing interests

The authors declare no competing interest.

Data availability

All study data are included in the article.

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