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Oniscidea of Liguria (north-western Italy), with the description of a new species (Malacostraca: Isopoda)

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SUMMARY

Terrestrial isopods (Isopoda: Oniscidea) are a diverse and ecologically important taxon, yet knowledge of their diversity in Italy remains uneven. Liguria, a small but biogeographically complex region of north-western Italy, had long lacked a synthesis of its oniscidean fauna despite the numerous studies carried out in early 20th-century. Here we provide a comprehensive assessment of Ligurian terrestrial isopod fauna based on a critical review of historical literature and examination of material preserved in museum collections or collected during recent field surveys. A total of 109 species in 38 genera and 18 families are recorded, representing more than one quarter of all terrestrial isopods known from Italy. *Armadillidium genuaense* **n. sp.** is described, and figures of several poorly described species are provided. *Haplophthalmus portofinensis*, *Cylisticus ligurinus*, and *Armadillidium albigauni* are considered junior synonyms of *H. mengii*, *C. annulicornis*, and *A. gestroi*, respectively. Three families and seven genera are recorded for the first time in Liguria, and three species—*Trichoniscus darwini*, *T. nicaeensis* and *Caeroplastes porphyrivagus*—represent new records for Italy. At the same time, five previously cited species could not be confirmed, and one is treated as *species inquirenda*. Chorological analysis underscores Liguria's role

as a biogeographic crossroad, with nearly half of the fauna belonging to Alpine or Apennine categories. A high level of endemism is observed, with 15 species restricted to the administrative region and 27 to the broader Ligurian geographic area. Persistent taxonomic uncertainties in some genera underscore the necessity of further revisions. By providing the first comprehensive assessment of the Oniscidean fauna from Liguria, this study establishes a necessary baseline for future research in the region.

INTRODUCTION

Terrestrial isopods (Malacostraca, Isopoda, Oniscidea) are a highly diverse group that represents a key component of soil biodiversity. The suborder Oniscidea Latreille, 1802, is the largest and the only fully terrestrial among the 12 suborders of Isopoda (Sfenthourakis et al. 2020; Boyko et al. 2025). To date, more than 4,100 species of Oniscidea have been described worldwide, belonging to 568 genera and 39 or 40 families (also considering the recently defined family Thrakosphaeridae Giurginca, 2025), although this number is certainly underestimated and is expected to increase further (Sfenthourakis & Taiti 2015, Boyko et al. 2025, Gongalsky et al. 2025). Their distribution spans all zoogeographic regions, with the highest species richness occurring at mid-latitudes, particularly in tropical and Mediterranean-type ecosystems (Sfenthourakis & Taiti 2015). Over evolutionary time, they have colonized almost all terrestrial habitats—from coastal zones to deserts, tropical and temperate forests, and grasslands—with the only exceptions being polar regions and very high altitudes (>4800 m a.s.l.) (Taiti 2018, Sfenthourakis et al. 2020). Their adaptive radiation, together with their relatively reduced dispersal ability, makes them a particularly interesting model for studying biogeographic patterns.

Italy, one of the most biodiverse countries in the Mediterranean Basin, currently hosts 386 species of Oniscidea, approximately 60% of which are endemic (Taiti 2021). Nevertheless, despite more than 150 years of research on the Italian oniscidean fauna, only a few regions have been relatively well studied, such as Sardinia (Taiti & Argano 2011, and references therein) and Tuscany (Ferrara & Taiti 1978, Taiti & Ferrara 1980, 1989, 1995, Taiti & Montesanto 2018, 2025). However, even in these comparatively well-surveyed regions, the number of known species is steadily increasing. For example, in Sardinia, 92 species were recorded in 2011 (Taiti & Argano 2011), whereas 115 are currently known, 28 of which are new to science and still awaiting formal descriptions (unpublished data).

Liguria, located in the north-western part of Italy, with its 5418 km² is one of the country's smallest regions. It is bordered by the Ligurian Sea to the south and traversed by two prominent mountain ranges: the Ligurian Alps in the west and the Ligurian Apennines in the east. These form a continuous mountain chain across the region, connecting the Maritime Alps and the Tuscan-Emilian Apennines. Despite its modest size, Liguria boasts significant biodiversity, encompassing a wide array of environments ranging from coastal and dry Mediterranean habitats to meso-thermophilic deciduous forests and montane and Alpine ecosystems. Additionally, the region hosts more than 2,000 caves (Gestionale Speleologico Ligure: https://www.catastogrotte.net).

Rather extensive research on Ligurian terrestrial isopods was conducted during the first half of the 20th century, with significant contributions from Arcangeli (1910, 1914, 1921, 1931, 1932, 1935, 1936, 1938, 1948a, 1948b, 1954), Brian (1899, 1914a,b, 1927, 1930, 1936, 1938, 1940, 1948a, 1948b, 1950, 1951a, 1951b, 1953, 1954, 1958, 1963), and Verhoeff (1902, 1907a, 1907b, 1908a, 1908b, 1908c, 1908d, 1908e, 1910, 1917, 1918, 1919, 1928, 1930a, 1930b, 1931, 1936). Several other studies, primarily focused on cave-dwelling species, were published in the same period (Bensa 1900, Tua 1900, Strouhal 1927, Sanfilippo et al. 1943, Franciscolo 1948, 1950, 1951, 1952, 1955, 1962, Coddè 1949, Ascenso 1950, Sanfilippo 1950, 1956, Conci 1952, Conci & Franceschi 1953, Baggini 1961).

Since the 1970s, studies on Ligurian terrestrial isopods have markedly declined (Bonzano & Amelio 1977, Bonzano 1986, Bologna & Vigna Taglianti 1984, Ferrara & Taiti 1985, Cobolli-Sbordoni et al. 1997). Despite the abundance of earlier research, considerable uncertainty persists regarding the systematics and taxonomy of several Ligurian species. This is largely attributable to the inadequacy of the original descriptions and the absence of subsequent, comprehensive taxonomic revisions. Only in recent years has research on the oniscidean fauna of Liguria resumed, involving the

examination of large amounts of unidentified material housed in scientific collections, together with the collection of new specimens. The first contribution, which includes the description of five new species, has already been published (Gardini & Taiti 2023).

Here, we present the first comprehensive study of the terrestrial isopod fauna of Liguria, offering new records for the region and the Italian territory. Moreover, Armadillidium genuaense n. sp. is described, new synonymies are proposed, and figures of some poorly known species are provided. Finally, a distribution map of each species within the region is given, along with some biogeographical observations.

MATERIAL AND METHODS

For this study, Liguria was considered within its administrative boundaries. Families are listed according to the current taxonomic order (Schmidt 2008, Boyko et al. 2025), and within each family, genera and species are arranged alphabetically. Both bibliographic and newly acquired data were considered to compile the systematic account. The latter were derived from unstudied material deposited in the scientific collections of several museums and from new specimens collected during recent samplings. In some cases, previously studied materials were re-examined (as specified in "Material examined" or "Type material examined").

For each species, a critical synonymic list of bibliographic references concerning Liguria is provided in chronological order, followed by the examined material and previous records, arranged by administrative provinces from west to east (Imperia, Savona, Genova, La Spezia). Only original citations and those based on re-examination of previously cited material were considered. All bibliographic records reported as "Genus sp." without tentative identification at the species level were ignored. The only exceptions are the genera of particular interest, for which the indication of the localities where one of their species was collected may be useful as a reference for future surveys. The general distribution, ecology, and remarks for each species are provided. If no references are specified in the Distribution section of each species, the information has been derived from either Schmalfuss (2003) or Boyko et al. (2025). In some cases, figures representing the main diagnostic characters of the species are included in the text. Some groups of species still have a very confusing taxonomy; therefore, open questions have been left to be resolved in the future by appropriate revisions. Finally, a summary table listing all species along with the source of the data (bibliographic and/or examined material), their chorotype, and their ecology is provided.

Newly collected specimens were stored in 75% ethanol, and identification was based on morphological characters. Dissected specimens were mounted on slides and illustrated using a camera lucida mounted on Wild M5 and M20 microscopes. Figures were digitally drawn following the method described by Montesanto (2015, 2016).

To illustrate species distributions within the administrative borders of Liguria, a 5 × 5 km grid covering the region was generated and populated with georeferenced species occurrence records using QGIS 3.24.0 (QGIS Development Team 2022). When multiple records occurred within the same grid cell, a single symbol was used to represent them. All maps incorporate both literature records and the examined material. The final layouts were edited using Adobe Illustrator CS6 and Adobe Photoshop CS6. The distribution maps are provided in the Appendix and are numbered separately from the figures in the text.

The names and catalogue numbers of the caves mentioned in the text correspond to those reported on the website of the Ligurian Speleological Cadastre (Gestionale Speleologico Ligure. Available online: https://www.catastogrotte.net).

The studied material is deposited in the following institutions and collections, which are referred to in the text by their abbreviations:

MCCI: Museo Civico di Storia Naturale di Carmagnola, Italy.

MSNG: Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy.

MSNV: Museo di Storia Naturale, Verona, Italy.

MZUF: Museo di Storia Naturale, Sezione di Zoologia "La Specola", University of Florence, Italy.

ZMUC: Zoological Museum University of Copenhagen, Denmark.

ZSM: Zoologische Staatssammlung München, Germany.

When no institution is specified, the material is deposited in the private collection of P. Gardini.

RESULTS

Systematic account

Family Ligiidae Leach, 1814

Genus *Ligia* Fabricius, 1798

Ligia italica Fabricius, 1798

Fig. A1

Ligia italica; Tua 1900:13. Verhoeff 1936: 159.

MATERIAL EXAMINED

Genova: 3♀♀, Genova Quinto al Mare, 18.IX.2018, P. Gardini leg.; 1♀, 2 juvs., Riva Trigoso, Sestri Levante, pebble beach, 08.III.2026, P. Gardini leg.

La Spezia: 2♀♀, Riomaggiore, 9.VII.1977, M. Daccordi leg. (MZUF); 1♀, Corniglia, 5.II.1978, G. Gardini & G. Ratto leg. (MZUF); 1♀, Isola del Tino, Portovenere, 4.VII.1989, R. Poggi leg. (MSNG).

PREVIOUS RECORDS

Savona: Noli (Verhoeff 1936).

La Spezia: Tinetto Island (Tua 1900).

DISTRIBUTION

Mediterranean, Black Sea and Spanish Atlantic coasts, archipelagos of Macaronesia and Cape Verde.

ECOLOGY

Halophilous species, typical of tidal environments of rocky coasts.

REMARKS

The low number of records is undoubtedly due to the fact that it is a common species and is therefore often overlooked by collectors. It is probably present along most of the regional coastline.

Family Tylidae Dana, 1852

Genus *Helleria* Ebner, 1868

Helleria brevicornis Ebner, 1868

Fig. A1

Syspastus brevicornis; Budde-Lund 1885: 280. Verhoeff 1910: 143.

PREVIOUS RECORDS

Imperia: Mt Nero near Ospedaletti (Verhoeff 1910).

Genova: Genova (Budde-Lund 1885).

DISTRIBUTION

Provence, Corsica, Sardinia, islands of Capraia, Elba and Pianosa (Tuscan Archipelago), and continental Tuscany (Mt Massoncello) (Vandel 1960).

ECOLOGY

Humicolous species, it can be found in the leaf litter of woodlands and forests from the sea level up to 1200 m in Corsica (Vandel 1960).

REMARKS

The Ligurian records for this species are uncertain. Despite numerous surveys, including in the localities reported by Budde-Lund (1885) and Verhoeff (1910), no specimens of this species have been found. As it is a large isopod that lives in environments that are generally heavily beaten by collectors, it is highly likely that the Ligurian populations have become extinct. According to Vandel (1960), these were the results of occasional introductions.

Genus *Tylos* Audouin, 1826

Tylos ponticus Grebnitzky, 1873

Fig. A1

?*Tyols Latreillei* (sic!); Tua 1900: 13.

PREVIOUS RECORDS

Savona: Borgio Marina (Tua 1900).

DISTRIBUTION

Mediterranean and Black Sea coasts, Atlantic coast of north-western Africa from Morocco to Dakar, Madeira and the Canary Islands.

ECOLOGY

Halophilous species, typical of the supralittoral zone of medium-coarse sandy or pebbly shores (Montesanto et al. 2014).

REMARKS

Tylos latreillii Audouin, 1826 is presently a *nomen dubium* and it can be either a senior synonym of *Tylos europaeus* Arcangeli, 1938, *Tylos ponticus* (see Taiti & Ferrara 1996 and Schmalfuss & Vergara 2000) or even *Tylos exiguus* Stebbing, 1910, since it was originally recorded from Egypt (see Taiti & Ferrara 2004; Hurtado et al. 2014). The presence of only coarse sandy beaches along the stretch of the Ligurian coast where the species was collected suggests that the record by Tua may refer to *T. ponticus*, which prefers this type of environment to the fine sandy beaches favored by *T. europaeus* (Montesanto et al. 2014). However, despite several searches on several suitable beaches in the region, no new specimens have been collected to confirm or disprove this hypothesis. Further research is

necessary to assess the presence of the species in the region.

Family Trichoniscidae G. O. Sars, 1899

Subfamily Trichoniscinae G. O. Sars, 1899

Genus *Alpioniscus* Racovitza, 1908

Alpioniscus feneriensis (Parona, 1880)

Fig. A2

Titanethes feneriensis; Brian 1899: 210 (partim: Grotta della Giacheira 3 Li/IM). Bensa 1900: 31 (partim: Grotta della Giacheira 3 Li/IM). Calandri 1972: 11. Bonzano & Amelio 1977: 16.

Alpioniscus dispersus; Franciscolo 1955: 180.

Alpioniscus feneriensis; Bologna & Vigna Taglianti 1984: 79, 83, 87, 139. Bonzano 1986: 37.

MATERIAL EXAMINED

Imperia: 3♂♂, 1♀, Grotta della Giacheira LI3, Pigna, IX and XII.1882, G. B. Spagnolo leg. – identified by Brian as "*Titanethes feneriensis* Parona, 1880" (MSNG); 1♂, 6♀♀, same cave, X and XI.1882, same collector (MSNG); 4♂♂, 4♀♀, Tana degli Strassasacchi LI1176, Rocchetta Nervina, 610 m a.s.l., 13.XII.2015, A. Marletta leg. (MZUF); 2♀♀, Tana del Ruglio LI19, Pigna, 720 m a.s.l., 31.I.2016, A. Marletta leg. (MZUF); 1♂, 9♀♀, 2 juvs., Grotta dei Surgentin LI1169, Pigna, 760 m a.s.l., 17.I.2016, A. Marletta leg. (MZUF); 2♂♂, 4♀♀, same cave, 28.XI.2021, A. Pastorelli leg.

PREVIOUS RECORDS

Imperia: Grotta della Giacheira LI3, Pigna (Brian 1899, Bensa 1900, Calandri 1972, Bonzano & Amelio 1977, Bologna & Vigna Taglianti 1984, Bonzano 1986). Tana degli Strassasacchi LI1176, Rocchetta Nervina; Tana del Ruglio LI19, Pigna; Sgarbu du Ventu LI619, Pieve di Teco (Bologna & Vigna Taglianti 1984). Pozzo del Monte Comune LI667, Pigna (Bonzano 1986).

DISTRIBUTION

South-western Alps (Ligurian, Maritime and Provence Alps) and north-western Alps (Graian and Pennine Alps) (Vandel 1960, Séchet & Noël 2015, Lana et al. 2021).

ECOLOGY

Cavernicolous species.

REMARKS

Brian (1899) initially mentioned *Titanethes feneriensis* from localities distributed throughout Liguria and even Tuscany. In a later note (Brian 1914a), the author acknowledged the error and argued that the specimens previously identified as *T. feneriensis* should be referred to as *Androniscus dentiger* Verhoeff, 1908. Following the re-examination of the specimens studied and identified by Brian and deposited at the Natural History Museum Giacomo Doria (Genova), we can say with certainty that the only secure locality among those reported by Brian (1899) for *Alpioniscus feneriensis* is Grotta della Giacheira LI3 in the Ligurian Alps, where the species has been collected many other times. Brian (1899) also mentioned this species for the Grotta Superiore del Monte Ceppo, probably in the Ligurian Alps but its exact location was not possible to be traced. The re-examination of the specimen collected in this cave (1 poorly preserved female, collected on 13.II.1896 by A. Dodero) did not allow us to confirm it as *A. feneriensis*; therefore, it was not considered a safe record. All other citations of this species from the provinces of Savona, Genova, and La Spezia are referred to as *A. dentiger* or *Spelaeonethes mancinii* (Brian, 1913) (see below).

Genus *Androniscus* Arcangeli, 1938

Androniscus dentiger Verhoeff, 1908

Fig. A2

Titanethes feneriensis; Brian 1899: 212 (partim: see Remarks).

Trichoniscus roseus; Bensa 1900: 107.

Androniscus (Dentigeroniscus) dentiger Verhoeff 1908a: 143, Fig. 10. Brian 1963: 7.

Trichoniscus (Androniscus) dentiger; Brian 1914a: 38, Figs. 1-16.

Androniscus dentiger; Verhoeff 1932: 375; 1936: 137, 142, 162. Brian 1914b: 12; 1938: 179-180, Fig. 5. Sanfilippo et al. 1943: 312, 317. Cappello 1948: 14. Franciscolo 1948: 52; 1950: 115; 1955: 121. Sanfilippo 1950: 50. Bonzano 1986: 37.

MATERIAL EXAMINED

Savona: 1♂, Tana do Mortou LI102, Spotorno, unknown date and collector (MSNG); 3♂♂, 2♀♀, Grotta del Garbetto LI60, Ellera, 2.VIII.1898, R. Gestro leg. – identified by Brian as "*Titanethes minutus*" (MSNG); 2♂♂, Arma de Faie LI141, Albisola Superiore, 2.IX.1919, F. Capra leg. (MSNG); 1♂, 2♀♀, Corona, Stella, 13.IV.1980, G. Gardini & S. Zoia leg. (MZUF).

Genova: 1♂, Grotta di Pozz'acqua LI64, Mt Fasce, Genova, 16.XI.1897, A. Dodero leg. – identified by

Brian as "*Titanethes feneriensis* Parona, 1880" (MSNG); 4♂♂, 6♀♀, Tann-a do Brigidun LI128, Genova Sestri Ponente, 24.II.1900, R. Gestro & G. Mantero leg. (MSNG); 1♂, 1♀, same locality, 9.II.1908, G. Mantero leg. (MSNG); 1♂, Tann-a da Reixe LI132, Carsi, Valbrevenna, 875 m a.s.l., 29.VI.1914, Figini leg. (MSNG); 5♂♂, 6♀♀, 1 juv., Grotta Superiore della Dragonara LI336, Genova Righi, VII.1914, A. Andreini leg. (MSNG); 1♀, same locality, 1934, A. Festa leg. (MSNG); 1♂, Mt Creto, Genova, VIII.1914, A. Andreini leg. (MSNG); 6♂♂, 5♀♀, Tann-a de Fate LI17, Creto, Genova, IX.1914, A. Andreini leg. (MSNG); 1♂, 2♀♀, same locality, 30.X.1971, leg. G. Gardini (MSNG); 1♂, 1♀, Grotta Inferiore di Iso LI120, Isoverde, Campomorone, 7.IV.1935, A. Festa leg. (MSNG); 1♂, 1♀, Grotta di Iso LI12, same locality, 242 m a.s.l., 29.X.1974, S. Zoia leg. (MZUF); 2♂♂, 2♀♀, Grotta Superiore di Iso LI119, same locality, 9.XI.1974, L. Briganti, L. Cassulo & S. Zoia leg. (MZUF); 1♂, Grotta della Volpe LI264, Bargagli, 23.XI.1969, A. Vigna leg.; 2♂♂, 2♀♀, Grotta del Monte Gazzo LI401, Genova, 26.X.1974, L. Briganti leg. (MZUF); 1♂, same cave and locality, 11.III.1975, L. Briganti leg.; 1♂, top of Mt di Portofino, 15.III.1977, G. Parodi leg. (MZUF); 2♂♂, 2♀♀, Mt Antola E slope, 1200 m a.s.l., 30.VIII.1981, A. Torchia & S. Zoia leg. (MZUF); 1♂, Pertuzo do Paolin LI8, Genova Apparizione, 615 m a.s.l., 10.IV.1983, C. Bonzano leg. (MZUF); 2♀♀, Gola di Sisa, Montoggio, 22.V.2020, G. Gardini, P. Gardini & C. Giusto leg.; 1♀, Carpi, Montoggio, 15.V.2021, M. Bodon leg.

La Spezia: 2♂♂, Grotta Fada LI230, Ameglia, 28.XI.1967, A. Vigna & V. Cottarelli leg.; 4♂♂, 9♀♀, 2 juvs., Grotta di Bocca Lupara LI74, La Spezia, 5.III.1969, P. Brignoli & A. Vigna leg.; 1♂, 1♀, mouth of Fiume Magra, 5.III.1977, G. Parodi & A. Torchia leg. (MZUF).

PREVIOUS RECORDS

Savona: Grotta del Garbetto LI60, Stella (Brian 1899, Franciscolo 1955). Arma de Faie LI141, Albisola Superiore (Franciscolo 1955). Arma de Fate LI33, Finale Ligure (Brian 1914a). Albissola; Finalborgo (Verhoeff 1936).

Genova: Grotta Tre Tane LI9, Campomorone; Grotta del Drago LI10, Campomorone; Tann-a de Fate LI17, Creto; Grotta di Pozz'acqua LI64, Genova Quarto (Brian 1899). Tana do Balou LI11, Campomorone (Brian 1899, Bensa 1900). Tann-a da Dragunea LI6, Genova (Brian 1899, Bensa 1900, Sanfilippo et al. 1943, Sanfilippo 1950). Tann-a de Turbi LI61, Ceranesi; Grotta della Tanella LI62, Genova Creto (Brian 1914b). Santa Margherita Ligure (Verhoeff 1908a, 1936). Portofino; Pegli; Voltri; Pontedecimo; Rossiglione; Mele (Verhoeff 1936). Ronco Scrivia (Verhoeff 1932, 1936). Pertuzo do Paolin LI8, Genova (Brian 1938, Bonzano 1986). Tann-a do Brigidun LI128 (Sanfilippo et al. 1943). Tann-a de Strie LI130, Rapallo (Cappello 1948, Franciscolo 1948). Grotta di Iso LI12, Campomorone; Voragine del Buran LI14, Campomorone; Tann-a da Scaggia LI15, Bargagli; Grotta del Buran LI109, Campomorone; Grotta Superiore di Iso LI119; Grotta Inferiore di Iso LI120; Antro dell'Eremita LI121, Camogli; Grotta di Cavassola LI125, Genova Prato; Forra del Castelluccio LI126, Genova; Grotta Valdettaro LI129, Rapallo; Tann-a da Reixe LI132; Tann-a do Scindichetto LI169, Genova Nervi; Roman aqueduct; east tunnel of the Camogli aqueduct; S. Giulia artificial cave (Sanfilippo 1950). Grotta del Verde LI13, Campomorone (Franciscolo 1950). Pozzetto della Stalattite LI320, Genova (Brian 1963).

La Spezia: Grotta di Fabiano LI68, La Spezia; Grotta dell'Acqua Santa LI71, La Spezia; Grotta di Bocca Lupara LI74 (Bensa 1900).

DISTRIBUTION

Central-southern Europe and parts of North Africa. Introduced to North America.

ECOLOGY

Humicolous species inhabiting humid environments, sometimes found in caves. It is also commonly found in anthropogenic habitats.

REMARKS

According to Brian (1914b), the specimens mentioned as *Trichoniscus roseus* C. Koch, 1838 and *Titanethes feneriensis* in Brian (1899) and Bensa (1900) actually refer to *Androniscus dentiger*. The re-examination of the material studied by Brian (1899) allowed us to confirm that only some of the specimens from Grotta di Pozz'acqua LI64 and Tann-a da Dragunea LI6 (in the same tubes there were also some specimens of *Spelaeonethes mancinii*), together with those from Grotta del Garbetto LI60 (see material examined) correspond to *A. dentiger*. Those from Tann-a da Reixe LI132 and from all the caves in the province of La Spezia mentioned by Brian (1899) correspond instead to *S. mancinii* and not to *A. dentiger* (see below). It was not possible to re-examine the material cited by the

same author for Grotta Tre Tane LI9, Grotta del Drago LI10 and Tana do Balou LI11 as it has been lost (Brian 1899: 211). However, this species was extensively collected in these caves, as reported by later authors (see Franciscolo 1950 and Sanfilippo 1950), thus making Brian's (1899) citation plausible. Therefore, we regarded these records as safe.

Genus *Finaloniscus* Brian, 1951

Finaloniscus franciscoloi (Brian, 1951)

Fig. A2

Marioniscus Franciscoloi Brian 1951b: 22, Figs. 1-11.

Finaloniscus Franciscoloi; Franciscolo 1955: 121.

Finaloniscus franciscoloi; Vandel 1953: 371, Fig. 2. Bologna & Vigna Taglianti 1984: 181.

PREVIOUS RECORDS

Savona: Arma de Fate LI33, Finale Ligure (Brian 1951b, Franciscolo 1955). Finalpia; Rio Ponci near Verzi (Brian 1951b). Arma do Sanguineo LI96; Tana do Mortou LI102, Spotorno (Franciscolo 1955). Arma de Arene Candide LI34, Finale Ligure (Bologna & Vigna Taglianti 1984).

DISTRIBUTION

Liguria, Corsica (Taiti & Ferrara 1996), Tuscany (Taiti & Ferrara 1995) and Sicily (Caruso et al. 1987).

ECOLOGY

Subterranean species, collected mainly (but not only) in caves.

REMARKS

According to Taiti & Ferrara (1996), *Finaloniscus berberensis* Vandel, 1959, known from Algeria and Morocco, is probably synonymous with *Finaloniscus franciscoloi*. If this proves to be true after re-examining the type material or new material from the type locality, the range of this species would be much wider.

Genus *Spelaeonethes* Verhoeff, 1932

Spelaeonethes mancinii (Brian, 1913)

Fig. A2

Titanethes feneriensis; Brian 1899: 210 (partim: see Remarks).

Trichoniscus mancinii; Brian 1927: 172.

Spelaeonethes mancinii; Arcangeli 1938: 9, Figs. 7, 10. Brian 1950: 10; 1958: 25-30, 1 map. Sanfilippo 1950: 51. Paoletti 1981: 223.

Spelaeonetes mancinii (sic); Sanfilippo et al. 1950: 312.

MATERIAL EXAMINED

Genova: 2♂♂, 1♀, Grotta del Monte Gazzo LI401, Genova Sestri Ponente, 19.X.1884, G. Caneva leg. (MSNG); 1♂, Tann-a da Dragunea LI6, Genova Righi, 10.II.1888, R. Barberi leg. – identified by Brian as "*Titanethes* sp. *feneriensis*?" (MSNG); 1♂, 5♀♀, Grotta di Pozz'acqua LI64, Mt Fasce, Genova Quarto, 16.II.1897, A. Dodero leg. – identified by Brian as "*Titanethes feneriensis* Parona, 1880" (MSNG); 1♂, Tann-a da Reixe LI132, Carsi, Valbrevenna, 875 m a.s.l., VII.1886, G. Caneva leg. – identified by Brian as "*T. feneriensis*" (MSNG); 1♂, same locality, 29.VI.1914, Figini leg. (MSNG); 2♂♂, 2♀♀, same locality, 9.VIII.1991, R. Poggi leg. (MSNG) 2♂♂, Grotta Superiore della Dragonara LI336, Genova Righi, VII.1914, A. Andreini leg. (MSNG); 7♂♂, 20♀♀, Grotta del Monte Gazzo LI401, Genova Sestri Ponente, 11.I.1975, L. Briganti leg.; 6♂♂, 7♀♀, 1 juv., Viganengo, Bargagli, 19.IV.1978, S. Zoia leg. (MZUF); 1♂, 3♀♀, E slope Mt Antola, 1200 m a.s.l., 30.VIII.1981, A. Torchia & S. Zoia leg. (MZUF); 1♂, Tann-a da Suja LI5, Mt Fasce, Genova Bavari, 20.XI.1993, S. Taiti & S. Zoia leg. (MZUF); 1♂, 1♀, Gola di Sisa, Montoggio, at the base of a rock wall, 22.V.2020, G. Gardini, P. Gardini & C. Giusto leg.; 1♂, Tann-a da Dragunea LI6, Genova Righi, 13.XII.2020, P. Gardini leg.; 2♂♂, 4♀♀, Bargone mines, Casarza Ligure, 270 m a.s.l., 15.VI and 27.VII.2025, A. Pastorelli leg.

La Spezia: 1♂, Grotta di Bocca Lupara LI74, La Spezia, VIII.1891, A. Dodero leg. – identified by Brian as "*T. feneriensis*" (MSNG); 1♂, 1♀, same locality, I.1898, C. Caselli leg. - identified by Brian as "*T. feneriensis*" (MSNG); 1♂, 1♀, same locality, 12.II.1896, R. Gestro leg. - identified by Brian as "*T. feneriensis*" (MSNG); 1♂, same locality, 21.XI.1966, A. Vigna leg.; 1♂, 2♀♀, same locality, 5.III.1969, A. Vigna leg.; 1♂, 2♀♀, Grotta di Cassana LI65, Borghetto di Vara, 180 m a.s.l., VIII.1891, A. Dodero leg. - identified by Brian as "*T. feneriensis*" (MSNG); 1♂, 3♀, same locality, 23 and 28.XI.1967, A. Vigna leg.; 1♀, same locality, 27.IX.1986, N. Sanfilippo leg. (MSNG); 2♂♂, Grotta Grande di Pignone LI36, Pignone, 25.XI.1965, A. Vigna leg.; 1♂, Grotta Fada LI230, Ameglia, 28.XI.1967, V. Cottarelli leg.; 1♂, Grotta

del Ginepro LI66, Faggiona, Pignone, 5.III.1969, A. Vigna leg.; 1♂, 1♀, unregistered artificial cavity, Mt Muzzerone, Portovenere, 3.IV.2022, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Genova: Grotta di Pozz'acqua LI64, Genova Quarto (Brian 1899). Tann-a da Dragunea LI6, Genova Righi (Brian 1899, Sanfilippo 1950, Brian 1958). Tann-a da Reixe LI132, Valbrevenna (Brian 1899, 1950, 1958, Sanfilippo 1950, Paoletti 1981). Mt Fasce, Genova (Brian 1927). Tann-a do Brigidun LI128 (Sanfilippo et al. 1943, Brian 1958). Tann-a de Fate LI17, Genova Creto (Sanfilippo 1950, Brian 1958). Tann-a da Scaggia LI15, Bargagli; Grotta Valdettaro LI129, Rapallo (Brian 1958, Paoletti 1981) Tann-a de Strie LI130, Rapallo (Cappello 1948, Brian 1958, Paoletti 1981).

La Spezia: Grotta di Cassana LI65, Borghetto Vara (Brian 1958). Grotta di Bocca Lupara LI74, La Spezia (Brian 1899, 1958). Grotta della Madonna LI1, La Spezia; Grotta dell'Acqua Santa LI71, La Spezia (Brian 1950, 1958). Tann-a de Strie LI147, Maissana; Caverna della Taggia LI79, La Spezia; I Grotteschi LI175, La Spezia; Grotta Fada LI230, Ameglia (Brian 1958).

DISTRIBUTION

Eastern Liguria and central-northern Tuscany (Taiti & Ferrara 1995).

ECOLOGY

Subterranean species, commonly found in caves but also under deeply embedded rocks.

REMARKS

The re-examination of the specimens cited by Brian (1899) as *Titanethes feneriensis* and later as *Androniscus dentiger* (Brian 1914a, b) showed that this material from Grotta di Pozz'acqua LI64, Tann-a da Dragunea LI6, Tann-a da Reixe LI132, Grotta di Cassana LI65 and Grotta di Bocca Lupara LI74 belongs to *Spelaeonethes mancinii*.

Genus *Trichoniscus* Brandt, 1833

Trichoniscus darwini Vandel, 1938

Fig. A3

MATERIAL EXAMINED

Imperia: 1♂, 1♀, Bosco di Rezzo, Rezzo, beech forest 19.VI.1977, F. Giusti leg. (MZUF); 2♂♂, 10♀♀, Passo del Ronco, Seborga, chestnut forest, 540 m a.s.l., 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.; 2♂♂, 10♀♀, same locality, 31.III.2024, P. Gardini leg.

Savona: 2♂♂, 7♀♀, Salto del Lupo, Toirano, 320 m a.s.l., 28.XII.2023, P. Gardini & C. Bonifazio leg.

DISTRIBUTION

South-eastern France (Vandel 1960, Séchet & Noël 2015) and Italian Maritime and Ligurian Alps. New records for Italy.

ECOLOGY

Humicolous species. According to Vandel (1960) it is not a montane species.

REMARKS

Trichoniscus darwini is mainly characterized by the presence of a single median gland-piliferous organ (GPO) on the anterior margin of the first male pereonite and two pairs of GPOs on the lateral margins of the first two male pleonites (Vandel 1960).

This species was previously known only from the French Alps and the southern Jura (Vandel 1960, Séchet & Noël 2015). Its discovery in the Ligurian Alps represents an extension of its known distribution, although this finding is not unexpected, as Vandel (1960) had already hypothesized its occurrence in this region.

Trichoniscus fragilis Racovitza, 1908

Fig. A3

MATERIAL EXAMINED

Savona: 1♂, 4♀♀, Grotta della Galleria di Bergeggi LI31, Bergeggi, 20.VI.1935, A Brian leg. (MSNG).

Genova: 3♂♂, 2♀♀, Riva Trigoso, Sestri Levante, rocky coastal cliff with *Crithmum maritimum* L., 08.III.2026, P. Gardini leg.

DISTRIBUTION

Atlantic and Mediterranean coasts of France, Algeria, Balearic Islands, Corsica, Sardinia, Liguria, Tuscany and southern Italy.

ECOLOGY

A mainly halophilous species that can also be found in caves (see Taiti & Ferrara 1996 and Taiti & Argano 2011).

REMARKS

Despite being the first occurrence of *Trichoniscus fragilis* from Liguria, its presence is not surprising, as it has been recorded from several French localities close to the Ligurian border (Vandel 1960) and from

Tuscany (Ferrara & Taiti 1978, Taiti & Ferrara 1980). It is probably more widespread in the region.

Trichoniscus cf. *fragilis* Racovitza, 1908

Fig. A3

MATERIAL EXAMINED

Savona: 10♀♀, Capo Noli, 3.IV.1977, S. Zoia leg. (MZUF).

Genova: 1♀, Genova Nervi, rocky cliffside, 12.XII.2016, G. Gardini leg.

REMARKS

These specimens probably belong to the previous species, but the absence of males does not allow a safe identification.

Trichoniscus nicaeensis Legrand, 1953

Fig. A3

MATERIAL EXAMINED

Imperia: 1♂, Passo del Cornà, Villatella, Ventimiglia, 1046 m a.s.l., 11.V.2019, P. Gardini leg.

DISTRIBUTION

South-eastern France (Alpes-Maritimes) (Vandel 1960) and north-western Italy (Liguria and Piedmont).

ECOLOGY

Humicolous species.

REMARKS

Trichoniscus nicaeensis is characterized by the presence of a median GPO on the anterior part of the male cephalon, similar to that of *Trichoniscus sulcatus* Verhoeff, 1917, and *Trichoniscus circuliger* Verhoeff, 1931, but smaller (Vandel 1960, Taiti & Montesanto 2025).

This species was previously known only from a valley near Nice (see Vandel 1960, Séchet & Noël 2015). The record from Liguria, along with an unpublished record from Piedmont (Cuneo province), constitutes the first from Italy, and extends the known distribution range of the species eastward.

Trichoniscus provisorius Racovitza, 1908

Fig. A4

Trichoniscus noricus sturanus; Verhoeff 1932: 375; 1936: 142, 161.

Trichoniscus noricus; Verhoeff 1936: 137, 141.

Spiloniscus noricus sassonus (sic); Franciscolo 1949: 52.

Trichoniscus (*Spiloniscus*) *provisorius*; Sanfilippo 1950: 50. Conci & Franceschini 1953: 47. Franciscolo 1955: 122.

Trichoniscus (Spiloniscus) noricus sassonus (sic); Franciscolo 1955: 102.

Trichoniscus noricus prope var. *sassonus* (sic); Franciscolo 1955: 122.

Trichoniscus pusillus; Bologna & Vigna Taglianti 1984: 152, 167, 169.

Trichoniscus pusillus provisorius; Bonzano 1986: 37.

MATERIAL EXAMINED

Imperia: 2♂♂, 1♀, Bevera, Ventimiglia, riparian environment, 25.VI.2018, M. Zinni leg.; 1♂, Pozzetto delle Ciappe LI1542, Mt Corma, Pigna, 25.I.2020, A. Pastorelli leg.; 1♂, 1♀, Pozzetto di Logambon LI1165, Mt Toraggio, Pigna, 10.IV.2022, A. Pastorelli leg.

Savona: 3♂♂, 2♀♀, 1 juv., Varazze, holm oak forest, 28.III.1978, G. Gardini & S. Zoia leg. (MZUF); 4♂♂, Millesimo, 550 m a.s.l., 29.X.1980, G. Gardini & S. Zoia leg. (MZUF); 1♂, 1 juv., Martina Olba, Urbe, 484 m a.s.l., 22.VI.1981, C. Giusto leg. (MZUF); many ♂♂ ♀♀, Varazze, 29.IV-29.V-30.VI-8.X-17.XII.1981, G. Gardini, R. Rizzerio leg. (MSNG); 2♂♂, 4♀♀, Murialdo, 19.VIII.1982, C. Torti, S. Zoia leg. (MZUF); 3♂♂, Mt Carmo, Loano, 1600 m a.s.l., 11.IX.1982, S. Zoia leg. (MZUF); 1♂, 1♀, Mt S. Giorgio, Le Meugge, Altare, 750 m a.s.l., 6.X.1982, M. E. Franciscolo leg. (MSNG); 5♂♂, 2♀♀, 1 juv., Mallare, Eremita, 600 m a.s.l., 18.VII.2000, A. Bordoni leg. (MZUF); 6♂♂, 3♀♀, Finale Ligure, 28.XII.2009, S. Cianfanelli & M. Calcagno leg. (MZUF); 3♂♂, 5♀♀, Spotorno, Mt Mao, holm oak forest, 400 m a.s.l., 10.IV.2017, G. Gardini, A. Trotta & C. Giusto leg.; 1♂, 1♀, Calizzano, Colle del Melogno, beech forest, 1100 m a.s.l., 24.V.2018, G. Gardini & P. Gardini leg.; 2♂♂, 1♀, Magliolo, Canova, mixed forest, 730 m a.s.l., 24.V.2018, G. Gardini & P. Gardini leg.; many ♂♂ ♀♀, Martina Olba, Urbe, 500 m a.s.l., 24.VI.2018, G. Gardini, P. Gardini & C. Giusto leg.

Genova: 1♂, Arenzano, cane thicket by the sea, 28.III.1976, G. Gardini & S. Zoia leg. (MZUF); 6♀♀, same locality, near train station, 3.III.1977, G. Parodi leg. (MZUF); 4♂♂, 4♀♀, same locality, 13.XI.1977, G. Gardini & G. Parodi leg. (MZUF); many ♂♂ ♀♀, same locality, cane thicket,

18.III.1978, G. Gardini & S. Zoia leg., (MZUF); many ♂♂ ♀♀, same locality, 22.II.1980, G. Gardini, C. Torti & S. Zoia (MZUF); 1♂, 2♀♀, N slope Mt Collere, Fontanigorda, between 900 and 1000 m a.s.l., 25.VII.1977, S. Zoia leg. (MZUF); many ♂♂ ♀♀, same locality, beech forest, 1100 m a.s.l., 17.VIII.1980, G. Gardini & S. Zoia leg. (MZUF); 6♂♂, 2♀♀, same locality, 5.VII.1982, C. Torti & S. Zoia leg. (MSNG); 1♂, 1♀, Mt della Cavalla, Rovegno, 2.VIII.1977, S. Zoia leg. (MZUF); 3♂♂, 1♀, same locality, 1300 m a.s.l., 7.VIII.1980, G. Gardini & S. Zoia leg. (MZUF); 1♂, 2♀♀, Rezzoaglio, Val d'Aveto, 6.VIII.1977, S. Zoia leg. (MZUF); 3♂♂, 6♀♀, 1 juv., same locality, 5.VII-22.VIII.1978, S. Zoia leg. (MZUF); 2♀♀, Genova Prato, 10.III.1978, S. Zoia leg. (MZUF); 2♂♂, 2♀♀, S. Colombano Certènoli, chestnut woods, 13.III.1978, G. Gardini & S. Zoia leg. (MZUF); 6♂♂, 7♀♀, 1 juv., Bertigaro, Borzonasca, 22.VII.1980, G. Gardini & S. Zoia leg. (MZUF); 4♂♂, 5♀♀, Piandifieno, Ne, 31.VIII.1980, L. Briganti & S. Zoia leg. (MZUF); many ♂♂ ♀♀, Mt Portofino 600 m a.s.l., 15.XI.1981, G. Gardini leg. (MZUF); many ♂♂ ♀♀, N slope Mt. Becco, Pannesi, Lumarzo, 16.I.1983, S. Zoia leg. (MSNG); 1♂, Pertuzo do Paolin LI8, Genova Apparizione, 615 m a.s.l., 10.IV.1983, C. Bonzano leg. (MZUF); 1♂, 1♀, Ognio, Neirone, hornbeam and chestnut woods, 380 m a.s.l., 17.III.1985, S. Zoia leg. (MSNV); 1♂, slopes of Mt Baraccone, Altare, chestnut woods, 250 m a.s.l., 14.III.1986, S. Zoia leg. (MSNV); many ♂♂ ♀♀, Arenzano "Pineta", 22.VI.1986, G. Gardini leg. (MSNV); 2♂♂, 3♀♀, Genova Bavari, 14.II.1993, G. Gardini leg. (MSNG); 11♂♂, 5♀♀, along Rio Lerca, Lerca, Cogoleto, under *Quercus ilex* L., 15.XI.1995, G. Gardini leg. (MSNG); 2♂, Gattorna, Moconesi, 21.IX.1997, M. B. Invernici leg. (MSNG); 1♂, 2♀♀, S slope Mt. Moro, Genova Quinto al Mare, oak forest, 300 m a.s.l., 23.IV.2000, G. Gardini leg. (MSNG); 2♂♂, 3♀♀, same locality, 100 m a.s.l., 27.I.2002, G. Gardini leg. (MSNG); 3♂♂, 5♀♀, same locality, 20.III.2002, leg. G. Gardini (MSNG); many ♂♂ ♀♀, same locality, 150 m a.s.l., 20.II.2003, G. Gardini leg. (MSNG); 5♂♂, 4♀♀, same locality, under *Arbutus unedo* L., 120 m a.s.l., 15.XI.2016, G. Gardini leg.; 5♂♂, 4♀♀, same locality, 12.XII.2016, G. Gardini & A. Trotta leg.; 1♂, 4♀♀, same locality, under *Erica* sp. and *Quercus* sp., 18.III.2019, M. Zinni leg.; 7♂♂, 7♀♀, same locality, under *A. unedo* and *Quercus* sp., 200 m a.s.l., 27.IV.2020, P. Gardini leg.; 1♂, 3♀♀, Forte Diamante, Genova, 8.VI.2017, G. Gardini leg.; many ♂♂♀♀, Giardini O. Balduzzi, Genova, 24.IV.2017, M. Zinni leg.; 4♂♂, 2♀♀, 1 juv., Grotta del Monte Gazzo LI401, Genova Sestri Ponente, 1.VI.2019, M. Ferrand leg.; 2♂♂, 6♀♀, 1 juv., Gola di Sisa, Montoggio, 760 m a.s.l., mixed forest, 22.V.2020, G. Gardini, P. Gardini & C. Giusto leg.; 27♂♂, 15♀♀, 5 juvs., SE slopes Mt Carmo, Gorreto, beech forest, 1400 m a.s.l., 2.VII.2020, P. Gardini leg.; 74 ♂♂ ♀♀, W slope Mt Moro, Genova Quinto al Mare, 100 m a.s.l., 17.XI.2023, G. Gardini leg.

La Spezia: many ♂♂ ♀♀, Ameglia, 3.III.1980, S. Zoia leg. (MZUF); 1♂, 2♀♀, Cinque Terre, Manarola, 28.XII.1980, S. Taiti leg. (MZUF); 2♂♂, 2♀♀, Palmaria Island, Portovenere, 11.VIII.1981, L. Briganti & S. Zoia leg. (MZUF); 2♂♂, 2♀♀, Cassana, Borghetto di Vara, 30.X.1982, L. Briganti & S. Zoia leg. (MZUF); 2♂♂, Tellaro, Lerici, 5.X.2019, S. Cianfanelli leg; 3♂♂, 7♀♀, Mt Muzzerone, Portovenere, 264 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Imperia: Bordighera (Verhoeff 1936).

Savona: Ferrania; Finalborgo (Verhoeff 1936). Tana Rimilegni LI163, Bardineto (Franciscolo 1949, 1955, Bologna & Vigna Taglianti 1984). Tana della Taragnina LI105, Balestrino; Tana di Spéttari LI183, Balestrino (Bologna & Vigna Taglianti 1984). Arma do Principàa LI26, Finale Ligure (Franciscolo 1955).

Genova: Genova Pontedecimo; Genova Voltri (Verhoeff 1936). Ronco Scrivia (Verhoeff 1932, 1936). Grotta del Verde LI13, Campomorone (Sanfilippo 1950). Pertuzo do Paolin LI8, Genova (Bonzano 1986).

La Spezia: La Spezia (Verhoeff 1936). Grotta Grande di Pignone LI36 (Conci & Franceschini 1953).

DISTRIBUTION

Widespread in most of Europe and also present in North Africa and Lebanon. Introduced to Azores, Hawaii and North America.

ECOLOGY

Humicolous species.

REMARKS

The morphological differences between *Trichoniscus provisorius* and *Trichoniscus noricus* Verhoeff, 1917 are weak and unclear, and it is very likely that the two species have been widely confused throughout Europe (see Gregory et al. 2009). According to Vandel (1960), the subspecies *T.*

noricus sturanus Verhoeff, 1917, described from Tenda and Saint-Dalmas (Alpes-Maritime)—localities where Verhoeff (1936) also collected the nominal subspecies—corresponds perfectly with *T. provisorius*. Following this author's opinion and considering that the material we examined fits quite well with *T. provisorius*, we regard the citations of *T. noricus* from Liguria as referable to *T. provisorius*, which appears to be widely distributed in this region and the surrounding areas. However, a taxonomic revision on a broad geographic scale of the entire *Trichoniscus pusillus* complex, to which these two species belong, is undoubtedly necessary to draw more precise conclusions.

Trichoniscus simplicifrons Verhoeff, 1901

Fig. A3

MATERIAL EXAMINED

Savona: 10♂♂, 7♀♀, 5 juvs., Vara, Urbe, under *Fagus sylvatica* L., 700 m a.s.l., 30.IX.1992, C. Giusto leg. (MSNG).

Genova: 1♂, E slope Mt Carmo, Passo della Maddalena, 1400 m a.s.l., 11.IX.1980, S. Zoia leg. (MZUF).

La Spezia: 9♂♂, 10♀♀, SE slopes Mt Gottero, Sesta Godano, 1030 m a.s.l., 11.IX.1985, S. Zoia, C. Torti & A. Rey leg.

DISTRIBUTION

Northern and central Apennines, eastern Italy, Bosnia-Herzegovina and Montenegro.

ECOLOGY

Humicolous species.

Trichoniscus sujensis Brian, 1927

Fig. A3

Spiloniscus sp. (*Spiloniscus provvisorius* Rac.?); Brian 1914b: 12.

Trichoniscus (*Spiloniscus*) *provisorius* var. *sujensis*; Brian 1927: 181; 1930: 285. Sanfilippo 1950: 50.

Trichoniscus provisorius sujensis Brian 1963: 2, Fig. 1

Trichoniscus sujensis; Cobolli et al. 1997: 464.

MATERIAL EXAMINED

Genova: 6♂♂, 12♀♀, Tann-a da Suja LI5, Genova Bavari, 30.VIII.1936, F. Capra leg. (MSNG); 1♂, 1♀, 1 juv., same locality, 20.XI.1993, S. Taiti & S. Zoia leg. (MZUF); 1♂, same locality, 7.VI.2017, G. Gardini leg.; 3♂♂, 3♀♀, Tann-a da Scaggia LI15, Viganego, Bargagli, 390 m a.s.l., 20.IX.2018, G. Gardini & P. Gardini leg.

PREVIOUS RECORDS

Genova: Tann-a da Suja LI5, Bargagli (Brian 1914b, 1927, Cobolli et al. 1997). Pertuzo do Canté LI7 (Grotta del Campetto); Grotta del Monte Gazzo LI401, Genova (Brian 1914b). Tann-a da Scaggia LI15, Bargagli (Sanfilippo 1950). Tann-a da Vulpe LI264, Bargagli (Brian 1963).

DISTRIBUTION

Endemic to Liguria, known only from a few caves near Genova (Sanfilippo 1950; Brian 1963).

ECOLOGY

Cavernicolous species.

REMARKS

This species has long been considered a subspecies of *Trichoniscus provisorius* Racovitza, 1908, but its validity as a separate species was confirmed by Cobolli Sbordoni et al. (1997), based on the high level of genetic divergence from several other subspecies/populations of *T. provisorius*. Taiti & Ferrara (1995) considered *Trichoniscus sujensis* a separate species.

Trichoniscus voltai Arcangeli, 1948

Fig. A3

Trichoniscus Voltai; Coddè 1949: 72. Brian 1950: 10. Franciscolo 1955: 51, 94.

Androniscus dentiger; Ascenso 1950: 78.

Spiloniscus provisorius; Ascenso 1950: 78.

Trichoniscus (Spiloniscus) Voltai; Franciscolo 1955: 122

Trichoniscus (Spiloniscus) Voltai var. *minor*; Franciscolo 1955: 122.

?*Trichoniscus* sp. prope *Voltai*; Franciscolo 1955: 76, 122

?*Trichoniscus* sp. cfr. *Voltai*; Bologna & Vigna Taglianti 1984: 101, 136

MATERIAL EXAMINED

Imperia: 4♂♂ ♀♀ juvs., Mt Saccarello, Monesi, 1800 m a.s.l., 7.VII.1987, S. Vanni leg. (MZUF); 1♂, Glori dam tunnel n.c., Glori, Molini di Triora, 07.II.2026, A. Pastorelli leg.

PREVIOUS RECORDS

Imperia: Grotta Grande di Creppo LI389, Triora; Cantine del Molino Calandri artif. cavity, Dolcedo (Bologna & Vigna Taglianti 1984).

Savona: Grotta di S. Antonino LI30, Finale Ligure (Brian 1950, Ascenso 1950, Franciscolo 1955). Grotta di Verzi LI91, Loano (Coddè 1949, Brian 1950). Arma do Buio LI27, Finale Ligure; Arma de Fate LI33, Finale Ligure; Tana Lubea LI47, Toirano; Tana do Scovéro LI86, Castelbianco; Tana di Spéttari LI183, Balestrino (Franciscolo 1955).

DISTRIBUTION

Endemic to the Maritime and Ligurian Alps, both on the French and Italian side (Vandel 1960).

ECOLOGY

Subterranean species, mainly found in caves but also in edaphic environments.

REMARKS

The material mentioned in Ascenso (1950) as *Androniscus dentiger* and *Spiloniscus provisorius* for Grotta di S. Antonino LI30 was later correctly re-determined by A. Brian, as reported in Franciscolo (1955) and Bologna & Vigna Taglianti (1984). Many localities, especially those in the province of Savona, must be verified.

Trichoniscus zangherii Arcangeli, 1952

Fig. A3

MATERIAL EXAMINED

Genova: 2♂♂, 1♀, Libiola, Sestri Levante, holm oak forest, 80 m a.s.l., 18.III.1984, S. Zoia leg. (MZUF); 2♂♂, 1♀, Ponte di Lagoscuro, Ne, 270 m a.s.l., 29.III.2009, S. Cianfanelli et al. leg. (MZUF).

La Spezia: 1♂, Maissana, 29.IV.1982, S. Zoia leg. (MZUF).

DISTRIBUTION

Northern and central Apennines (Manicastri & Taiti 1994).

ECOLOGY

Humicolous species.

REMARKS

This species was previously known only from San Marino, the provinces of Forlì (Romagna), and Pesaro (Marche) (Manicastri & Taiti 1994) and from Tuscany (unpublished data). Arcangeli (1952) also included female specimens from Gargano (Apulia) in the typical series, but these probably belong to *Trichoniscus simplicifrons* (see Manicastri & Taiti 1994). These are the first records from Liguria.

Trichoniscus sp.

MATERIAL EXAMINED

Imperia: 1♂, 2♀♀, Grotta dei Surgentin LI1169, Pigna, 760 m a.s.l., 17.I.2016, A. Marletta leg. (MZUF).

ECOLOGY

Cavernicolous species.

REMARKS

This is likely to represent a species new to science. However, the few available specimens, including only one juvenile male, do not allow for a precise identification.

Subfamily Haplophthalminae Verhoeff, 1908

Genus *Cyphotendana* Séchet & Noël, 2015

Cyphotendana ligurina Verhoeff, 1936

Fig. A5

Cyphotendana ligurina Verhoeff 1936: 98, Figs. 9-14. Bologna & Vigna Taglianti 1984: 178, 218.

MATERIAL EXAMINED

Imperia: 2 juvs., Rezzo, 18.VI.1979, F. Giusti leg. (MZUF).

Savona: many ♂♂♀♀, Isallo, Magliolo, mixed woods on limestone, 15.XI.1981, C. Giusto & S. Zoia leg. (MZUF); 1♂, 2♀, E slope Mt Ravinet, Loano, 900 m a.s.l., 10.IV.1977, S. Zoia leg. (MZUF); 1♂, slope Mt Carmo, Loano, 900 m a.s.l., 11.III.1979, Briganti & Benedetti leg. (MZUF); 2♂♂, 1♀, Melogno forest, Calizzano, 900 m a.s.l., 9.X.1979, S. Zoia leg. (MZUF); 13♂♂, 14♀♀, Martina Olba, Urbe, beech forest, 500 m a.s.l., 18.VIII.1980/22.VI.1981/12.IV.1982, C. Giusto leg. (MZUF);1♂, 4♀♀, same locality, 24.VI.2018, G. Gardini, P. Gardini & C. Giusto leg.; 7♀♀, entrance of Tana del Pecetto LI569, Magliolo, 30.IX.1973, G. Gardini leg.; 20 ♂♂ ♀♀ juvs., same cave and locality, 18.V.1981, Bruzzone et al. leg. (MZUF); 2♂♂, 1♀, 1 juv. Colle del Melogno 900 m a.s.l., beech forest, 13.II.1984, G. Gardini, R. Rizzerio & S. Zoia leg. (MZUF); 1♂, same locality, 1040 m a.s.l., 28.IX.2008, R. Poggi leg. (MSNG); 1♂, 3♀♀, 3 juvs., Vara, Urbe, beech forest, 700 m a.s.l., 30.IX.1992, C. Giusto leg. (MSNG); 2♂♂, Lago del Lajone, Mt Beigua, cane thicket, 1000 m a.s.l., 10.X.2004, R. Poggi leg. (MSNG).

Genova: 20 ♂♂ ♀♀ e juvs., Mt Alpesisa, Creto, 11.I.1976, G. Gardini leg. (MZUF); 2♂♂, Val d'Aveto, Rezzoaglio, 6.VIII.1977, S. Zoia leg. (MZUF); 8♂♂, 10♀♀, same locality, 5.VII-6.VIII-22.VIII.1978, S. Zoia leg. (MZUF).

PREVIOUS RECORDS

Savona: Ferrania; Cairo Montenotte (Verhoeff 1936). Tana del Pecetto LI569 (Bologna & Vigna Taglianti 1984).

DISTRIBUTION

Ligurian Alps, Ligurian and Tuscan-Emilian Apennines (Taiti & Ferrara 1989).

ECOLOGY

Humicolous species with endogean tendencies. It is sometimes found in caves.

Genus *Haplophthalmus* Schoebl, 1860

Haplophthalmus apuanus Verhoeff, 1908

Fig. A6

Haplophthalmus apuanus Verhoeff 1908c: 193.

MATERIAL EXAMINED

Genova: 1♂, 4♀♀, Crocetta d'Orero, Serra Riccò, under *Alnus* sp., 5.II.1982, R. Poggi leg.

Previous records

Savona: Bergeggi (Verhoeff 1908c).

DISTRIBUTION

South-eastern France, Liguria and north-western Tuscany (Massa and Viareggio) (Vandel 1960).

ECOLOGY

Humicolous species.

Haplophthalmus danicus Budde-Lund, 1885

Fig. A6

Haplophthalmus danicus; Verhoeff 1932: 376; 1936: 137, 162.

MATERIAL EXAMINED

Savona: many ♂♂ ♀♀ juvs., Varazze, holm oak forest, 19.II.1978/28.III.1978, G. Gardini & S. Zoia leg. (MZUF); 1♂, 1 juv., same locality, 29.IV.1981, G. Gardini & R. Rizzerio leg. (MZUF).

Genova: 1♀, Peschiera, Arenzano, 6.XI.1977, G. Gardini & G. Parodi leg. (MZUF); many ♂♂ ♀♀ juvs., Arenzano, 22.II.1980, G. Gardini, C. Torti & S. Zoia leg. (MZUF).

PREVIOUS RECORDS

Genova: Portofino (Verhoeff 1936). Genova Nervi (Verhoeff 1932, 1936).

DISTRIBUTION

Europe, North Africa and western Asia. Introduced to North America and South Africa.

ECOLOGY

Humicolous species, often synanthropic.

Haplophthalmus ligurinus Verhoeff, 1930

Figs. 1, A6

Haplophthalmus ligurinus Verhoeff 1930b: 19, Fig. 84.

MATERIAL EXAMINED

Savona: 2♂♂, 1♀♀, Gazzo, Erli, chestnut forest, 500 m a.s.l., 6.VI.1980, G. Gardini, Torchia & S. Zoia leg. (MZUF).

PREVIOUS RECORDS

Imperia: Bordighera (Verhoeff 1930b).

DISTRIBUTION

Liguria and Tuscany (Taiti & Ferrara 1995).

ECOLOGY

Humicolous species.

REMARKS

Verhoeff (1930b) described *Haplophthalmus ligurinus* from Bordighera, primarily based on tergal ornamentation, but without specifying the number or sex of the examined specimens. Subsequently, the same author (Verhoeff 1931) identified specimens collected in Tuscany (Mount Massoncello and Mount Argentario) under the same name. Ferrara and Taiti (1978) and Taiti and Ferrara (1980), following Verhoeff's opinion, used the same name for specimens from southern Tuscany and redescribed the species, providing illustrations of male characters. Examination of specimens from Erli (Liguria), definitively identified as *H. ligurinus* based on the tergal ornamentation described by Verhoeff (1930:19, Fig. 84), indicates that the southern Tuscan specimens are not conspecific with this species, based on both different ornamentation and male characters (Taiti et al. unpublished). Figures illustrating the main characters of *H. ligurinus* based on the specimens from Erli are provided (Fig. 1).

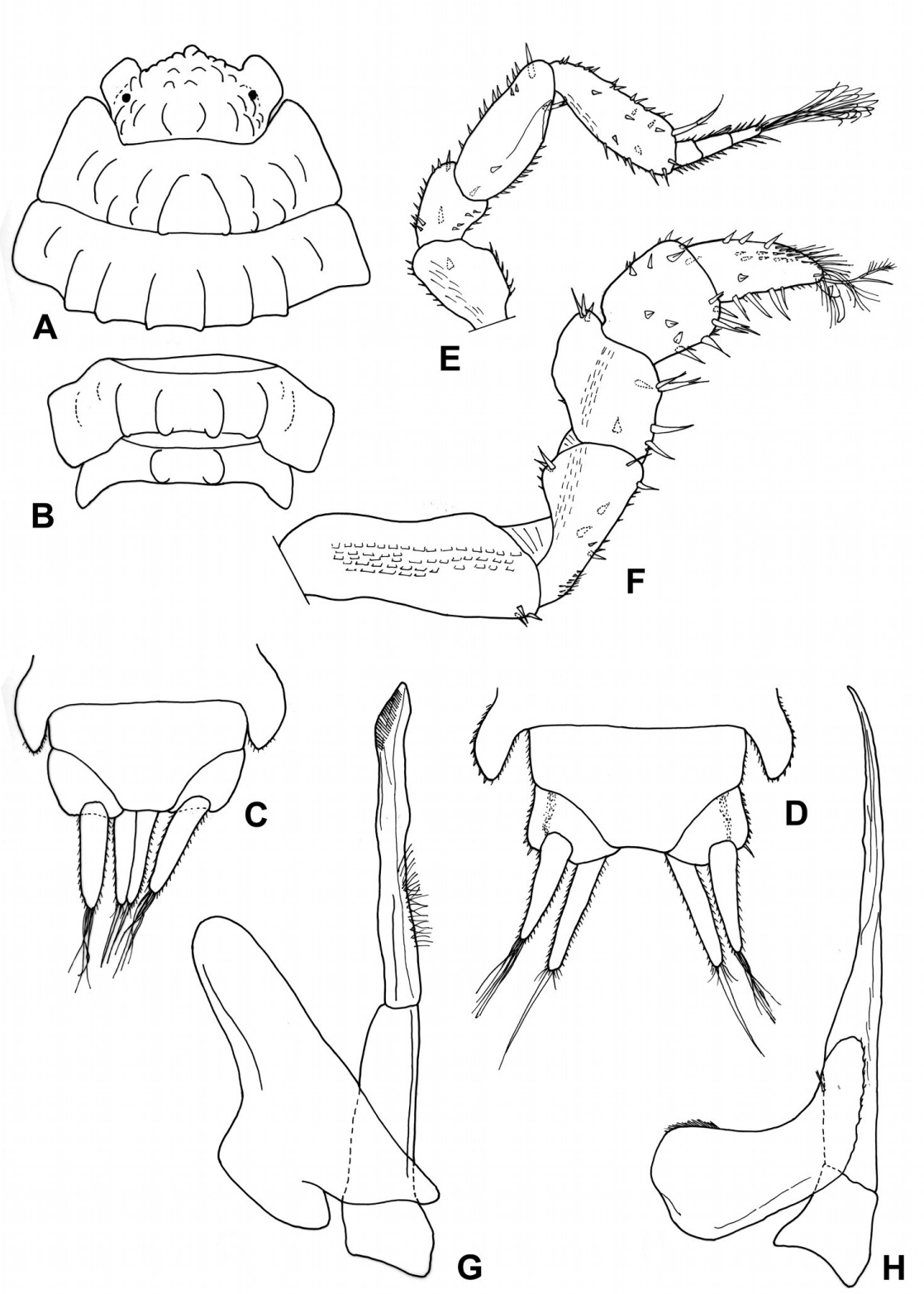

Figure 1. *Haplophthalmus ligurinus*, ♀ (A-C) and ♂ (D-H) from Erli (SV, Liguria). (**A**) Cephalon, pereonites 1 and 2, dorsal view; (**B**) pereonite 7 and pleonite 1, dorsal view; (**C**) female pleonite 5, pleotelson and uropods, dorsal view; (**D**) male pleonite 5, pleotelson and uropods, dorsal view; (**E**) antenna; (**F**) male pereopod 7; (**G**) male pleopod 1; (**H**) male pleopod 2.

Haplophthalmus mengii (Zaddach, 1844)

Fig. A7

Haplophthalmus portofinensis; Verhoeff 1908c: 192 (**n. syn**).

Haplophthalmus Mengi (sic); Brian 1936: 26.

Haplophthalmus Mengii; Brian 1938: 190.

Haplophthalmus Perezi; Brian 1950: 10. Conci 1952: 9. Franciscolo 1951: 47; 1955: 119.

?Haplophthalmus Mengei Franciscoloi Brian 1950: 7, Figs. 8-9, 11-13.

Haplophthalmus Mengei; Sanfilippo 1950: 51.

MATERIAL EXAMINED

Savona: 2♂♂, Tana del Castellazzo n.c., Biestro, Pallare, 4.II.2020, V. Balestra leg.

Genova: 1♀ mounted on slide, Portofino, date unknown, K. W. Verhoeff leg – identified by Verhoeff (1908c) as *H. portofinensis* (ZSM); 1♂, Peschiera, Arenzano, 13.XI.1977, G. Gardini & G. Parodi leg. (MZUF); 2♂♂, S. Colombano Certènoli, chestnut forest 13.III.1978, G. Gardini & S. Zoia leg. (MZUF); 3♂♂, 4♀♀, Portofino, hornbeam forest, 600 m a.s.l., 15.XI.1981, G. Gardini leg. (MZUF); 1♂, Mt Portofino, Portofino, 500 m a.s.l., 19.V.1982, R. Poggi leg. (MSNG); 1♂, 1♀, Ruta, Camogli, 250 m a.s.l., 24.I.1984, C. Giusto leg. (MSNV).

La Spezia: 1♂, 1♀, Ameglia, 3.III.1980, S. Zoia leg. (MZUF); 1♂, 1♀, Termine di Roverano, Borghetto Vara, 240 m a.s.l., 22.III.2009, R. Poggi leg.

PREVIOUS RECORDS

Savona: Arma de Arene Candide LI34, Finale Ligure (Brian 1936, 1938, 1950, Conci 1952, Franciscolo 1955). Arma Pollera LI24, Finale Ligure (Brian 1950, Franciscolo 1951, 1955). Pozzo delle Cento Corde LI137, Borgio Verezzi; Arma Inferiore do Principà LI171, Finale Ligure; Arma della Rocca di Perti LI98 (Franciscolo 1955).

Genova: Tann-a da Reixe LI132, Valbrevenna (Sanfilippo 1950).

La Spezia: Tann-a de Strie LI147, Maissana (Brian 1950).

DISTRIBUTION

Widespread in Europe.

ECOLOGY

Humicolous species, sometimes present in caves.

REMARKS

Haplophthalmus mengii has long been confused with *Haplophthalmus montivagus* Verhoeff, 1941 (e.g., Vandel 1960), making it difficult to determine which species past authors were referring to in their studies. Because it was not possible to re-examine all the material, we currently consider the old records of this species as valid, albeit with some degree of uncertainty. Nonetheless, *H. mengii* appears to be more common than *H. montivagus* in Liguria (see the materials examined for the latter species). The subspecies *H. mengii franciscoloi* Brian, 1950, based on the figures provided by the author, is likely to belong to a different species. However, because we have not been able to examine the type series or new material from the type locality, we cannot reach a definitive conclusion. *Haplophthalmus portofinensis* was described by Verhoeff (1908c) based solely on the tergal ridges of two female specimens, which are very similar to those of *Haplophthalmus mengii* and *Haplophthalmus montivagus*. In his revision of the Haplophthalminae, Arcangeli (1923) did not provide any additional details but repeated Verhoeff's (1908c) description. The re-examination of Verhoeff's type material (one female mounted on a slide) preserved at the Zoologische Staatssammlung München, Germany, along with the examination of new specimens collected from the type locality of this species (Portofino), allowed us to propose *Haplophthalmus portofinensis* Verhoeff, 1908 as a junior subjective synonym of *Haplophthalmus mengii* (Zaddach, 1844) (**n. syn.**).

Haplophthalmus monticellii Arcangeli, 1922

Fig. A7

MATERIAL EXAMINED

Savona: 2♂♂, 1♀, Martina Olba, Urbe, 484 m a.s.l., 22.VI.1981, C. Giusto leg. (MZUF).

Genova: 8♂♂, 17♀♀, 1 juv., Val d'Aveto, Rezzoaglio, 6.VIII.1977, S. Zoia leg. (MZUF); many ♂♂ ♀♀, Val d'Aveto, Rezzoaglio, 5.VII-22.VIII.1978, leg. S. Zoia (MZUF); many ♂♂ ♀♀, along Rio Lerca, Lerca, Cogoleto, under *Q. ilex*, 15.XI.1995, G. Gardini leg. (MSNG).

La Spezia: 21♂♂, 16♀♀, 2 juvs., Montemarcello, Ameglia, 28.XI.1977, S. Zoia leg. (MZUF); 8♂♂, 29♀♀, 1 juv., Ameglia, 3.III.1980, S. Zoia leg. (MZUF); 6♂♂, 8♀♀, Cassana, Borghetto di Vara, 200 m a.s.l., 2.XI.1980, G. Gardini, S. Zoia & R. Rizzerio leg. (MZUF); many ♂♂ ♀♀, same locality, 30.X.1982, L. Briganti & S. Zoia leg. (MZUF); many ♂♂ ♀♀, Palmaria Island, Portovenere, 2.VIII.1981, L. Briganti & S. Zoia leg. (MZUF); 3♂♂, 3♀♀, same

locality, 30.V.1989, R. Poggi leg. (MSNG); 12, 9, Mt Murlo, Ameglia, mixed woods, 320 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.

DISTRIBUTION

Northern, central and southern Italy (Liguria, Tuscany, Romagna, Lazio, Abruzzo, Campania and Apulia) (Manicastri & Taiti 1994 and unpublished data).

ECOLOGY

Humicolous species.

REMARKS

Until now, the northernmost known limit for this species was the Apennine Mountains in northern Tuscany (Taiti & Ferrara 1989). Our findings significantly extend the known distribution range of the species to the northwest.

Haplophthalmus montivagus Verhoeff, 1941

Fig. A7

MATERIAL EXAMINED

Genova: 2♂♂, 8♀♀, S. Martino hospital's garden, Genova, 18.V.2015, M. Zinni leg.

DISTRIBUTION

Widespread in Europe.

ECOLOGY

Humicolous species.

REMARKS

As mentioned above, *Haplophthalmus montivagus* has long been confused with *Haplophthalmus mengii.* There are no bibliographic records of this species for Liguria, although it is possible that some attributed to *H. mengii* may actually refer to this species. Based on our collections, *H. montivagus* is less common than *H. mengii* in this region.

Haplophthalmus provincialis Legrand & Vandel, 1950

Figs. 2, A6

MATERIAL EXAMINED

Savona: 2♂♂, 1♀, Varazze, 28.III.1978, G. Gardini & S. Zoia leg. (MZUF); 11♂♂, 7♀♀, 3 juvs., same locality, 29.IV-29.V-17.XII.1981, G. Gardini & R. Rizzerio leg. (MSNG); 9♂♂, 11♀♀, 8 juvs., Celle Ligure, mixed woods, 200 m a.s.l., 14.II.2020, P. Gardini leg.; 1♀, Dego, alnetum, 400 m a.s.l., 21.V.2021, R. Poggi leg.

Genova: 20♂♂ ♀♀ juvs., S. Colombano Certènoli, chestnut woods, 13.III.1978, G. Gardini & S. Zoia leg. (MZUF); 1♂, 1♀, Arenzano, cane thicket by the sea, 28.III.1978, G. Gardini & S. Zoia leg. (MZUF); 50♂♂ ♀♀ juvs., Bertigaro, Borzonasca, hornbeam woods, 22.VII.1980, G. Gardini & S. Zoia leg. (MZUF); 20♂♂ ♀♀ juvs., Isoverde, Campomorone, 2.XI.1980, D. Antichi & S. Zoia leg. (MZUF); 5♂♂, 4♀♀, Il Pellegrino, Rapallo, 250 m a.s.l., 26.XII.1981, C. Giusto leg. (MZUF); 3♀♀, Semorile, Zoagli, hornbeam woods, 7.III.1982, S. Zoia leg. (MZUF); 14♂♂, 11♀♀, Genova Quezzi, 11.IV.1984, G. Gardini leg.; 1♂, W slope Mt Ruta, Camogli, 310 m a.s.l., 5.XI.1998, G. Gardini leg. (MSNG); 2♂♂, S slope Mt Moro, Genova Quinto al Mare, oak woods, 300 m a.s.l., 23.IV.2000, G. Gardini leg. (MSNG); 8♂♂, 8♀♀, same locality, 100 m a.s.l., 27.I.2002, G. Gardini leg. (MSNG); 2♂♂, 3♀♀, same locality, 150 m a.s.l., 20.II.2003, G. Gardini leg. (MSNG); 1♂, 4♀♀, Colle Caprile, Uscio, 450 m a.s.l., 22.V.2006, R. Poggi leg. (MSNG); 1♂, SE slope Mt Carmo, Gorreto, beech forest, 1400 m a.s.l., 23.VII.2008, R. Poggi leg. (MSNG); 6♂♂, 9♀♀, same locality, 15.XI.2016, G. Gardini leg.; 2♂♂, Forte Diamante W slope, Genova, 8.VI.2017, G. Gardini leg.; 4♂♂, 1♀, 1 juv., same locality, under *Erica* sp. and *Quercus* sp., 18.III.2019, M. Zinni leg.,; 2♀♀, Grotta del Monte Gazzo LI401, Genova Sestri Ponente, 1.VI.2019, M. Ferrand leg.

La Spezia: 5♂♂, 1♀, Punta Mesco, Levanto, holm oak woods, 18.III.1975, G. Gardini leg. (MZUF); many ♂♂ ♀♀, Ameglia, 3.III.1980, S. Zoia leg. (MZUF); 2♂♂, 4♀♀, Punta Palma, Vernazza, 1.III.1981, D. Antichi, A. Torchia & S. Zoia leg. (MZUF); 20♂♂ ♀♀ juvs., Le Grazie, Portovenere, 5.XII.1982, L. Ansaldo & S. Zoia leg. (MZUF); 1♂, 4♀♀, Montemarcello, Ameglia, 3.IV.2022, P. Gardini & C. Giusto leg.

DISTRIBUTION

South-eastern France, Liguria and north-western Tuscany (Vandel 1960 and unpublished data).

ECOLOGY

Humicolous species.

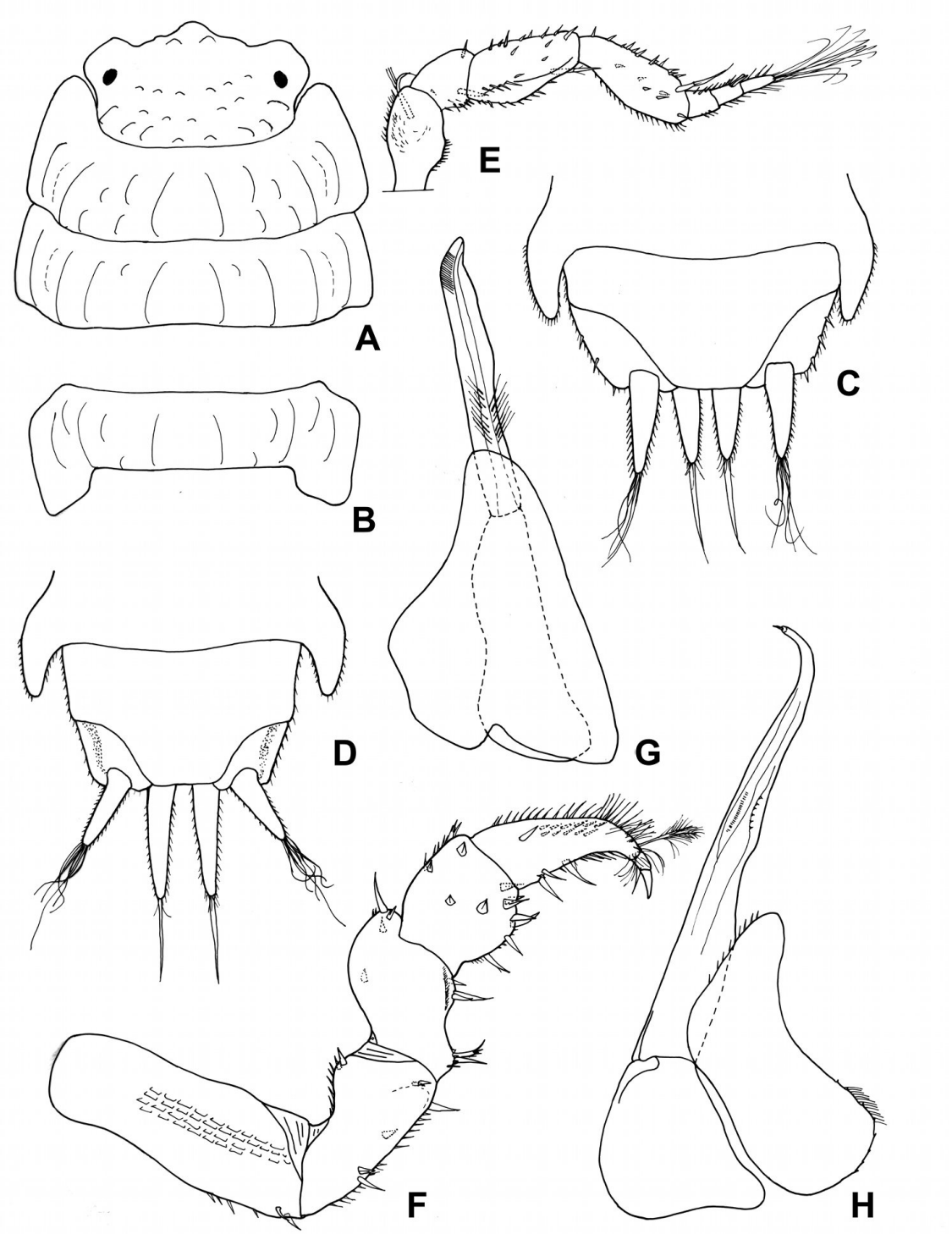

Figure 2. *Haplophthalmus provincialis*, ♀ (A-C) and ♂ (D-H) from Porneta (MS, Tuscany). (**A**) Cephalon, pereonites 1 and 2, dorsal view; (**B**) pereonite 7, dorsal view; (**C**) female pleonite 5, pleotelson and uropods, dorsal view; (**D**) male pleonite 5, pleotelson and uropods, dorsal view; (**E**) antenna; (**F**) male pereopod 7; (**G**) male pleopod 1; (**H**) male pleopod 2.

REMARKS

The examined specimens closely matched *Haplophthalmus provincialis* in both tergal ornamentation and male pereopod 7 and pleopod 1. Only the male pleopod 2 endopod showed a slight difference, with the apical part bent inward rather

than straight. This species was previously known only from the Bouches-du-Rhône, Var, and Alpes-Maritimes departments in southeastern France. It is divided into three subspecies (*H. provincialis provincialis* Legrand and Vandel, 1950; *H. provincialis korsakovi* Legrand and Vandel, 1950; and *H. provincialis transfixus* Legrand and Vandel, 1950), but their validity is highly debatable. Here, figures of a male specimen from Porneta (Massa Province, Tuscany), which matches the examined specimens from Liguria, are provided (Fig. 2).

Genus *Leucocyphoniscus* Verhoeff, 1900

Leucocyphoniscus sp.

Fig. A5

MATERIAL EXAMINED

Savona: 1♀, Tana du Praé LI1239, Castelvecchio di Rocca Barbena, 6.I.2020, A. Pastorelli leg.

ECOLOGY

Cavernicolous.

REMARKS

The absence of males prevents proper species-level identification. However, we report it here because this is the first record of the genus fromLiguria.

Genus *Moserius* Strouhal, 1940

Moserius percoi Strouhal, 1940

Fig. A5

Moserius percoi var. *ribaldonei* Brian 1963: 4, Figs. 2-4.

PREVIOUS RECORDS

Genova: Antro dell'Eremita LI121, Portofino (Brian 1963).

DISTRIBUTION

Liguria, Tuscany and Slovenia (Taiti & Ferrara 1995, Taiti & Montesanto 2018).

ECOLOGY

Cavernicolous species.

REMARKS

Moserius percoi was described by Strouhal (1940) based on a single female specimen from the Belinca Jama cave near Storje (Slovenia). Brian (1963) described the variety *M. p. ribaldonei* solely on the basis of the smaller size of a single female specimen, which makes the description of this new form essentially unjustified. Taiti & Ferrara (1995) examined numerous specimens collected from several caves in Tuscany and provided comprehensive illustrations of the species, including male characters. However, since the authors were unable to examine specimens from the type locality and the original description by Strouhal (1940) lacked male characters, they left some doubts regarding species identification. Here, we accept the identification proposed by Brian (1963) as valid; however, examining new material will be necessary to resolve uncertainties about the distribution of this genus in Liguria.

Genus *Sanfilippia* Brian, 1948

Sanfilippia concii Brian, 1948

Fig. A5

Sanfilippia Concii Brian 1948b: 122, Figs. 1-2; 1963: 4. Sanfilippo 1950: 51.

PREVIOUS RECORDS

Genova: Tann-a da Scaggia LI15, Bargagli (Brian 1948b, Sanfilippo 1950). Tann-a da Vulpe LI264 (Brian 1963).

DISTRIBUTION

Endemic to Liguria, known only from two caves near Genova (Sanfilippo 1950, Brian 1963).

ECOLOGY

Cavernicolous species.

REMARKS

Despite several visits to the two caves, no further specimens of this species were collected. Nonetheless, based on the description and figures provided by Brian (1948), this monotypic genus appears to be valid, as it is clearly distinct from *Leucocyphoniscus* by having the pereonites and the third pleonite with a single, well-developed longitudinal median rib.

Family Buddelundiellidae Verhoeff, 1930

REMARKS

Following Tabacaru and Giurginca (2019, 2024) and Gardini and Taiti (2023), we consider Buddelundiellidae as a distinct family within Synocheta, rather than as a subfamily of Trichoniscidae as previously proposed by Schmalfuss (1981). However, the systematic position of *Buddelundiella* Silvestri, 1897 and the genera considered to be related—*Borutzkyella* (Tabacaru, 1993) and *Pseudobuddelundiella* Borutzky, 1967—

remains uncertain and requires further investigation, possibly integrating morphological and genetic data.

Genus *Buddelundiella* Silvestri, 1897

Buddelundiella armata Silvestri, 1897

Fig. A8

MATERIAL EXAMINED

Imperia: 1♀, Arma Cornarea LI252, Cosio d'Arroscia, 1038 m a.s.l., 1.II.12017, V. Balestra & E. Lana leg. (MZUF).

Savona: 1♀, Tana du Russu LI418, Pallare, 500 m a.s.l., 17.VI.2020, V. Balestra & E. Lana leg.

DISTRIBUTION

Endemic to the Ligurian Alps (Liguria and Piedmont regions) (Tabacaru 1971).

ECOLOGY

Generally found in caves, but not exclusively.

REMARKS

This species is very close to *Buddelundiella zimmeri* Verhoeff, 1930, from which it differs only in having pereonite 7 with 1 + 1 instead of 2 + 2 well-developed tubercles. The taxonomy of the genus *Buddelundiella* is based almost exclusively on tergal ornamentation. A comprehensive and thorough revision of the genus is necessary.

Buddelundiella biancheriae Brian, 1954

Fig. A8

Buddelundiella Biancheriae Brian 1954: 24, Figs. 1-17, 20, 22. Franciscolo 1955: 65, 120. Sanfilippo 1956: 157, 171.

PREVIOUS RECORDS

Savona: Garbu de Cunche LI93, Giustenice (Brian 1954, Franciscolo 1955, Sanfilippo 1956).

DISTRIBUTION

Known only from this single cave in Liguria (Tabacaru 1971).

ECOLOGY

Cavernicolous species.

REMARKS

Based on the figures provided by Brian (1954), *Buddelundiella biancheriae* is likely a junior synonym of *Buddelundiella armata* or *Buddelundiella zimmeri*. However, the absence of material for examination does not allow us to confirm this hypothesis.

Buddelundiella borgensis Verhoeff, 1936

Fig. A8

Buddelundiella borgensis; Brian 1951a: 1, Figs. 2-6, 9. Franciscolo 1955: 120.

PREVIOUS RECORDS

Imperia: Tana Cornarea LI252, Cosio d'Arroscia (Franciscolo 1955).

Savona: Grotta di Verzi LI91, Loano (Brian 1951a, Franciscolo 1955).

DISTRIBUTION

Endemic to the South-Western Alps (Piedmont and Liguria regions) (Tabacaru 1971).

ECOLOGY

Cavernicolous species.

Buddelundiella caprae Brian, 1936

Fig. A8

Buddelundiella Caprae Brian 1936: 22, Figs. 1-24; 1948a: 11-13, Figs. 1-2.

Buddelundiella Caprai (sic); Brian 1950: 11. Ascenso 1950: 80. Conci 1952: 9. Franciscolo 1951: 47; 1955: 57, 68, 120.

Buddelundiella caprae; Coddè 1949: 71.

Buddelundiella caprai (sic); Bologna & Vigna Taglianti 1984: 181, 186, 201. Bonzano 1986: 38; 1988: 45.

MATERIAL EXAMINED

Savona: 1 juv., Caverna delle Arene Candide LI34, Finale Ligure, 25.IX.1967, A. Vigna leg. (MZUF); 2♂♂, 4♀♀, Grotta Valdemino LI160, Borgio Verezzi, 30 m a.s.l., 22.X-14.XI.1983, 14.IV.1985, C. Bonzano leg. (MZUF); 1♂, 1♀, same locality, 18.III.2021, V. Balestra leg.

PREVIOUS RECORDS

Savona: Caverna delle Arene Candide LI34, Finale Ligure (Brian 1936, 1950, Conci 1952). Grotta Staricco LI136, Borgio Verezzi (Brian 1948a, Coddè 1949). Grotta della Cava del Martinetto LI155, Finale Ligure; Arma do Principà LI26, Finale Ligure (Brian 1950, Franciscolo 1955). Arma Pollera LI24, Finale Ligure (Brian 1950, Franciscolo 1951, 1955, Bologna & Vigna Taglianti 1984). Grotta di Verzi LI91, Loano (Coddè 1949, Brian 1950, Franciscolo 1955). Arma della Rocca di Perti LI98; Arma do Sanguineo LI96; Tana do Mortou LI102, Spotorno (Franciscolo 1955). Grotta di Sant'Antonino LI30, Finale Ligure (Ascenso 1950, Brian 1950,

Franciscolo 1955, Bologna & Vigna Taglianti 1984). Grotta Valdemino LI160 (Bonzano 1986, 1988).

DISTRIBUTION

Endemic to western Liguria (Tabacaru 1971).

ECOLOGY

Cavernicolous species.

Buddelundiella cataractae Verhoeff, 1930

Fig. A8

Buddelundiella cataractae; Brian 1950: 11. Sanfilippo 1950: 52.

MATERIAL EXAMINED

Imperia: 5♂♂, 2 juvs., Passo del Cornà, Ventimiglia, holm oak woods, 1046 m a.s.l., 11.V.2019, G. Gardini & P. Gardini leg.; 2♂♂, 3♀♀, before Passo del Ronco, Seborga, chestnut and oak woods, 540 m a.s.l., 13.V.2019, G. Gardini & P. Gardini leg.

Savona: 1♀, Isallo, Magliolo, mixed woods on limestone, 15.XI.1981, C. Giusto & S. Zoia leg. (MZUF); 1♀, Mt Carmo slope, Loano, 900 m a.s.l., 11.III.1979, Briganti & Benedetti leg. (MZUF); 1♂, 1♀, Colle del Melogno, 1000 m a.s.l., 19.IV.1981, L. Briganti & S. Zoia leg. (MSNG); 1♂, same locality, 29.V.1986, G. Gardini & R. Rizzerio leg. (MSNV); 1♂, NW slope Mt Baraccone, Altare, 500 m a.s.l., 24.X.1985, G. Gardini, S. Zoia & A. Rey leg. (MSNG); 1♀, Vara, Urbe, beech forest, 700 m a.s.l., 30.IX.1992, C. Giusto leg. (MSNG).

Genova: 1♂, 5♀♀, Val d'Aveto, Rezzoaglio, 22.VIII.1978, S. Zoia leg. (MZUF); 9♂♂, 8♀♀, Isoverde, Campomorone, 2.XI.1980, D. Antichi & S. Zoia leg. (MZUF); 1♂, Mt Portofino, hornbeam woods, 600 m a.s.l., 15.XI.1981, G. Gardini leg. (MZUF); 1 juv., Mt Chiappozzo, Ne, 28.III.1989, S. Zoia leg. (MSNG); 9♀♀, Genova Bavari, 14.II.1993, G. Gardini leg. (MSNG); 78♂♂♀♀, Gola di Sisa, Montoggio, 785 m a.s.l., 22.V.2020, G. & P Gardini & C. Giusto leg.

La Spezia: 4♂♂, 12♀♀, Ameglia, 3.III.1980, S. Zoia leg. (MZUF); many ♂♂♀♀, Liciorno, Maissana, 29.IV.1982, S. Zoia leg. (MZUF); 38♂♂♀♀, SE slopes Mt Gottaro, 1030 m a.s.l., 11.IX.1985, S. Zoia, C. Torti & A. Rey leg. (MSNV); 1♂, 3♀♀, Termine di Roverano, Borghetto di Vara, 240 m a.s.l., 22.III.2009, R. Poggi leg. (MSNG).

PREVIOUS RECORDS

Genova: Tann-a da Reixe LI132, Valbrevenna (Brian 1950, Sanfilippo 1950).

DISTRIBUTION

Widespread in Europe as far as the Caucasus.

ECOLOGY

Humicolous species, often synanthropic.

Buddelundiella franciscoliana Brian, 1953

Fig. A8

Buddelundiella franciscoliana Brian 1953: 28-31, Figs. 1-9.

PREVIOUS RECORDS

Imperia: Tana Cornarea LI252, Cosio d'Arroscia (Brian 1953).

DISTRIBUTION

Endemic to the Ligurian Alps (known also from Grotta dell'Orso PI118, Piedmont) (Brian 1953).

ECOLOGY

Cavernicolous species

REMARKS

Based on the figures provided by Brian (1953), *Buddelundiella franciscoliana* appears to be very similar to *Buddelundiella zimmeri*, which has a relatively wide distribution across the southwestern Piedmont and southeastern France, but has not yet been recorded in Liguria. However, we were unable to examine any specimens of *B. franciscoliana*; therefore, we cannot draw more definitive conclusions.

Buddelundiella sanfilippoi Brian, 1951

Fig. A8

Buddelundiella Sanfilippoi Brian 1951a: 4, Figs. 1, 8; 1954: 28, Figs. 23-30

PREVIOUS RECORDS

La Spezia: Grotta della Taggia LI79, La Spezia (Brian 1951a, 1954).

DISTRIBUTION

Endemic to Northern Apennines (Liguria and Tuscany) (Taiti & Ferrara 1995).

ECOLOGY

Cavernicolous species.

Buddelundiella zoiai Gardini & Taiti, 2023

Fig. A8

Buddelundiella zoiai Gardini & Taiti 2023: 2-7, Figs. 1-3, 16.

PREVIOUS RECORDS

Savona: Murialdo; Colle del Melogno, Calizzano; Passo del Faiallo, Urbe; Martina Olba; Dego (Gardini & Taiti 2023).

DISTRIBUTION

North-western Italy (Liguria and Piedmont; see Gardini & Taiti 2023).

ECOLOGY

Humicolous species.

Buddelundiella sp.

Buddelundiella sp.; Bologna & Vigna Taglianti 1984: 117, 179, 181

PREVIOUS RECORDS

Imperia: Tana Cornarea LI252, Cosio d'Arroscia (Bologna & Vigna Taglianti 1984).

Savona: Grotta Valdemino LI160, Loano; Grotta del Murgantin LI765, Magliolo; Tana dell'Ermellino LI767, Magliolo (Bologna & Vigna Taglianti 1984).

REMARKS

We were unable to locate this material for re-examination. Nevertheless, given the particular interest of this genus, we chose to retain these records, as we consider them useful for guiding future research.

Oniscidea *Incertae sedis*

Genus *Buchnerillo* Verhoeff, 1943

REMARKS

The systematic position of *Buchnerillo* remains uncertain. The genus was originally placed in the section Synocheta, family Buddelundiellidae by Verhoeff (1942) and Vandel (1945), under the name *Lereboulletia* n. gen. Later, Vandel (1960) synonymized *Buchnerillo* with *Lereboulletia* and established a new subfamily, Buchnerilloninae, within Buddelundiellidae to accommodate it. However, Taiti and Ferrara (1991, 1996) treated *Buchnerillo* as belonging to an "undetermined family." Tabacaru (1993) argued that based on mouthpart morphology and the presence of more than three ommatidia in the eyes, *Buchnerillo* is not related to *Buddelundiella* or any other member of Synocheta. This view was later supported by Schmalfuss (2003), who suggested placing the genus in the family Detonidae, section Crinocheta, based on characters such as the number of ommatidia, and the structure of the antennula, antenna, maxillula, and pereopods. Subsequent studies have noted that the taxonomic position of this genus remains uncertain and requires molecular analysis for clarification (Taiti 2014, Taiti et al. 2018). Although Taiti et al. (2018) proposed a possible affinity between *Buchnerillo* and the family Olibrinidae, no definitive conclusions have been reached. Therefore, we maintain the genus as *incertae sedis*. Currently, *Buchnerillo* includes four species: *Buchnerillo litoralis* (see below), *Buchnerillo oceanicus* Ferrara, 1974, *Buchnerillo neotropicalis* Taiti, Montesanto & Vargas, 2018, and *Buchnerillo atlanticus* Garcia & Robla, 2022 (see Taiti 2014, Taiti et al. 2018, Garcia & Robla 2022 for detailed distributions).

Buchnerillo litoralis Verhoeff, 1943

Fig. A9

MATERIAL EXAMINED

Imperia: 1♂, Cipressa, 13.IV.2017, M. Zinni leg.; 2♂♂, 1♀, Punta de Barbantò beach, Ventimiglia, Mortola Inferiore, banquettes of *Posidonia oceanica* (L.) Delile, 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

DISTRIBUTION

Western Mediterranean coasts (from Italy to Spain), the Atlantic coast of Portugal, and Madeira. The record from Florida is very doubtful (Taiti et al. 2018).

ECOLOGY

Halophilous species, limited to the tidal zone.

Family Detonidae Budde-Lund, 1904

Genus *Armadilloniscus* Uljanin, 1875

Armadilloniscus candidus Budde-Lund, 1885

Fig. A10

MATERIAL EXAMINED

Imperia: 6♂♂, 24♀♀, Capo Mortola, Ventimiglia, pebble beach, 10.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

DISTRIBUTION

Western Mediterranean coasts and the Azores.

ECOLOGY

Halophilous species, typically found under pebbles or among debris deposited by the sea.

Armadilloniscus ellipticus (Harger, 1878)

Fig. A10

Armadilloniscus dalmatinus schoblii; Verhoeff 1936: 159.

MATERIAL EXAMINED

Imperia: 3♂♂, 16♀♀, Villa Hanbury, Mortola, Ventimiglia, 9.I.1975, G. Gardini leg. (MZUF).

PREVIOUS RECORDS

Savona: Noli (Verhoeff 1936).

DISTRIBUTION

Mediterranean and Black Sea coasts, Atlantic coasts of North America, Azores, Madeira, Madagascar, Malaysia, Hong Kong, Korea, Japan, Hawaiian Islands.

ECOLOGY

Halophilous species, typically found under pebbles or among debris deposited by the sea.

Family Stenoniscidae Budde-Lund, 1904

Genus *Stenoniscus* Aubert & Dollfus, 1890

Stenoniscus carinatus Silvestri, 1897

Fig. A9

MATERIAL EXAMINED

Imperia: 53 ♂♂♀♀, Punta de Barbantò beach, Mortola Inferiore, Ventimiglia, banquettes of *P. oceanica*, 13.V.2019, P. Gardini & C. Giusto leg.

DISTRIBUTION

Coasts of Portugal, Morocco (Rif), Spain, France, Italy and Croatia.

ECOLOGY

Halophilous species.

Family Oniscidae Latreille, 1802

Genus *Sardoniscus* Arcangeli, 1939

Sardoniscus marmoratus Gardini & Taiti, 2023

Fig. A11

Sardoniscus marmoratus Gardini & Taiti 2023: 7, Figs. 4-6, 16.

MATERIAL EXAMINED

Genova: 1♂, Bargone mines, Casarza Ligure, 950 m a.s.l., 27.VII.2025, A. Pastorelli leg.

PREVIOUS RECORDS

Genova: Tann-a da Scaggia LI15, Bargagli; Pertuzo do Paolin LI8, Genova Apparizione; Pertuzo do Canté LI7, Genova; Mt Fasce and Mt Moro, Genova; Tann-a da Dragunea LI6, Genova Righi; Gola di Sisa, Montoggio (Gardini & Taiti 2023).

DISTRIBUTION

Endemic to Northern Apennines (Liguria and Tuscany; see Gardini & Taiti 2023).

ECOLOGY

Humicolous species, sometimes found at cave entrances.

Sardoniscus verhoeffi (Ferrara & Taiti, 1978)

Fig. A11

?*Tiroloscia pygmaea*; Verhoeff 1932: 375; 1936: 161.

MATERIAL EXAMINED

Genova: 2♂♂, Rapallo, I.1941, G.C. Doria leg. (MSNG); 1♂, 1♀, Punta Manara, Sestri Levante, 27.II.1977, L. Cassulo, G. Gardini & S. Zoia leg. (MZUF); 1♂, same locality, holm oak woods, 23.II.1993, G. Gardini leg. (MSNG); 1♂, 1♀, same locality, 8.V.2018, P. Gardini leg.; 1♂, E slope Mt Moro, Genova Quinto al Mare, 12.XII.2016, G. Gardini & A. Trotta leg.; 74 ♂♂♀♀, Giardini O. Balduzzi, Genova, 24.IV.2017, M. Zinni leg.; 2♂♂, 3♀♀, 1 juv., Nostra Signora delle Grazie sanctuary, Chiavari, 10.XI.2017, P. Gardini leg.; 1♀, along Rio Piazza, Vallenzona, deciduous forest, 5.I.2021, M. Bodon leg.

La Spezia: 2♀♀, Manarola, Cinque Terre, 28.XII.1980, S. Taiti leg. (MZUF); 6♂, 7♀, Corniglia, Cinque Terre, 1.III.1981, D. Antichi, A. Torchia & S. Zoia leg. (MZUF); 2♂♂, 9♀♀, same locality, 10.V.1981, S. Zoia leg. (MZUF) 1♀, Punta Palma, Vernazza, 1.III.1981, D. Antichi, A. Torchia & S. Zoia leg. (MZUF); 3♂♂, 9♀♀, Mt Muzzerone, Portovenere, 264 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.; 1♂, Pitone, Portovenere, under *Q. ilex*, 320 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Genova: Ronco Scrivia (Verhoeff 1932, 1936).

DISTRIBUTION

Endemic to Northern and Central Apennines (Taiti & Ferrara 1989, 1995). Confirmed records from Liguria, Tuscany, Marche, and Lazio.

ECOLOGY

Humicolous species, occasionally found in anthropogenic habitats such as urban parks.

REMARKS

Tiroloscia pygmaea (Budde-Lund, 1885) is currently accepted as *Sardoniscus pygmaeus* (Budde-Lund, 1885), a species that does not occur in the Liguria region. Therefore, the records of this taxon reported by Verhoeff (1932, 1936) must refer to a different species of the same genus. Considering the known distributions of *Sardoniscus marmoratus* and *Sardoniscus verhoeffi*, it is most likely that it corresponds to the latter.

Family Halophilosciidae Verhoeff, 1908

Genus *Halophiloscia* Verhoeff, 1908

Halophiloscia couchii (Kinahan, 1858)

Fig. A12

Halophiloscia adriatica rupium; Verhoeff 1936: 111.

Halophiloscia couchii; Brian 1963: 9, Figs. 5-6.

MATERIAL EXAMINED

Imperia: 2♂♂, Punta de Barbantò beach, Mortola Inferiore, Ventimiglia, banquettes of *P. oceanica*, 13.V.2019, P. Gardini & C. Giusto leg.

Genova: 5♂♂, 5♀♀, 5 juvs., Genova Nervi, 18.IX.2018, P. Gardini leg.; 1♂, 4♀♀, Genova Crevari, 31.III.2021, P. Gardini leg.; 3♂♂, 1♀, 1 juv., Riva Trigoso, Sestri Levante, pebble beach, 08.III.2026, P. Gardini leg.

PREVIOUS RECORDS

Imperia: Imperia Oneglia (Verhoeff 1936).

Genova: Grotta Cristo degli Abissi LI346, Camogli-S.Fruttuoso (Brian 1963).

DISTRIBUTION

Widespread along the Mediterranean and Black Sea coasts, as well as the Atlantic coasts from Dakar (Senegal) to the British Isles, and present in the archipelagos of Cape Verde, Canary Islands, Madeira, and Azores. Introduced to North and South America, St. Helena, Hawaii, and Australia.

ECOLOGY

Halophilous species, commonly found under stones and plant debris stranded along the seashore.

Halophiloscia hirsuta Verhoeff, 1928

Fig. A12

Halophiloscia hirsuta Verhoeff 1928: 132, Figs. 35-36. Arcangeli 1948a: 480.

MATERIAL EXAMINED

Imperia: 2♂♂, 2♀♀, Capo Mortola, Ventimiglia, 10.V.2019, pebble beach, 10.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

Genova: 2♂♂, 10♀♀, 4 juvs., Genova Nervi, rocky cliffside, 18.IX.2018, P. Gardini leg.; 4♂♂, 5♀♀, same locality and collector, 9.III.2019; 2♂♂, 6♀♀, Punta Nave, Genova Vesima, 31.III.2021, P. Gardini leg.; 3♂♂, 2♀♀, Riva Trigoso, Sestri Levante, pebble beach, 08.III.2026, P. Gardini leg.

PREVIOUS RECORDS

Savona: Vado Ligure (Verhoeff 1928).

DISTRIBUTION

Coasts of the northern Mediterranean, from France to Greece.

ECOLOGY

Halophilous species, but unlike its congeners, it is more often found in habitats behind the supralittoral zone.

Halophiloscia tyrrhena Verhoeff, 1928

Fig. A12

Halophiloscia tyrrhena Verhoeff 1928: 131,132, Fig. 26; 1936: 159. Arcangeli 1948a: 479,480.

MATERIAL EXAMINED

Imperia: 4♀♀, Capo Mortola, Ventimiglia, pebble beach, 10.V.2019, G. Gardini, P. Gardini & C. Giusto leg.; 5♂♂, 1♀, Punta de Barbantò beach, Mortola Inferiore, Ventimiglia, banquettes of *P. oceanica*, 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

Genova: 3♂♂, 1 juv., Riva Trigoso, Sestri Levante, pebble beach, 08.III.2026, P. Gardini leg.

PREVIOUS RECORDS

Imperia: Sanremo (Verhoeff 1928).

Savona: Vado Ligure (Arcangeli 1948a). Noli (Verhoeff 1928, 1936).

DISTRIBUTION

Coasts of southern France, Corsica, Sardinia, Liguria and Tuscany (Taiti & Ferrara 1996).

ECOLOGY

Halophilous species, occurring in the same habitats as *Halophiloscia couchii*.

Genus *Stenophiloscia* Verhoeff, 1908

Stenophiloscia glarearum Verhoeff, 1908

Fig. A12

Stenophiloscia zosterae; Verhoeff 1928: 132, Figs. 27-28; 1936: 159.

MATERIAL EXAMINED

Imperia: 28♂♂, 28♀♀, 8 juvs., Punta de Barbantò beach, Mortola Inferiore, Ventimiglia, banquettes of *P. oceanica*, 13.V.2019, P. Gardini & C. Giusto leg.

Savona: 3♂♂, 1♀, Bergeggi, banquettes of *P. oceanica*, 29.XI.2017, M. Zinni leg.

Genova: 1♀, Genova Sturla, under beached logs, 8.XI.2023, P. Gardini leg.

PREVIOUS RECORDS

Imperia: Sanremo (Verhoeff 1928).

Savona: Noli (Verhoeff 1928, 1936).

DISTRIBUTION

Coasts of southern England, Canary Islands, Morocco (Rif), eastern Spain, Balearic Islands, south-eastern France, Corsica, Italy (including Sardinia and Sicily), Malta, Croatia, Ionian coast of Greece.

ECOLOGY

Halophilous species, occurring in the same habitats as *Halophiloscia couchii* and *H. tyrrhena*.

Family Philosciidae Kinahan, 1857

Genus *Chaetophiloscia* Verhoeff, 1908

Chaetophiloscia cellaria (Dollfus, 1884)

Fig. A13

Chaetophiloscia piligera; Verhoeff 1928: 141; 1936: 141, 159.

Philoscia cellaria; Brian 1940: 402, 419. Sanfilippo et al. 1943: 312. Sanfilippo 1950: 52. Franciscolo 1955: 57, 91.

Chaetophiloscia cellaria; Conci 1952: 9. Franciscolo 1955: 119. Brian 1963: 8. Bologna & Vigna Taglianti 1984: 181, 207. Bonzano 1983: 33; 1986: 38; 1988: 45.

MATERIAL EXAMINED

Imperia: 7♂♂, 9♀♀, Dolceacqua, 19.II.1982, R. Argano leg.

Savona: 3♂♂, 9♀♀, Tana del Castellaro LI1323, Albisola, I.1919, F. Capra leg. (MSNG); 1♂, Tana della Folgore LI56, Toirano, 22.X.1934, G. Ferro leg. (MSNG); 1♀, Savona, basements of the Harbor Master's Office, 22.IV.1979, S. Zoia leg. (MZUF); 2♂♂, 2♀♀, Tana do Mortou LI102, Spotorno, 6.III.1983, leg. C. Bonzano (MSNG); 3♂♂, 4♀♀, Grotta Valdemino LI160, Borgio Verezzi, 23.X.1983, 8.XII.1984 and 14.IV.1985, C. Bonzano leg. (MZUF); 2♂♂, 4♀♀, Isola Gallinara, Albenga, 19.X.1990, R. Poggi leg. (MSNG); 1♂, 4♀♀, Capo Mele, Laigueglia, 13.I.2019, P. Gardini & C. Giusto leg.

Genova: 2♂♂, 6♀♀, Tann-a do Brigidun LI128, Genova Sestri Ponente, 24.II.1900, R. Gestro & G. Mantero leg. (MSNG); 1♀, same locality, 9.II.1908, G. Mantero leg. (MSNG); 1♂, 1♀, Grotta del M.te Gazzo LI401, Genova Sestri Ponente, 17.I.1915, A. Andreini leg. (MSNG); 1♂, same locality, IV.1934, G. Mantero leg. (MSNG); 2♂♂, 1♀, Mt Moro, Genova Quinto al Mare, 190 m a.s.l., 12.II.2020, P. Gardini leg.; 2♂♂, same locality, 100 m a.s.l., 27.IX.2024, G. Gardini & P. Gardini leg.

La Spezia: 4♀♀, Grotta dei Colombi LI80, Palmaria Island, VI.1953, A. C. Ambrosi leg. (MZUF); 1♂, 1♀, Montemarcello, 27.XII.1980, S. Taiti leg. (MZUF); 1♀, Mt Muzzerone, Portovenere, 264 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Imperia: Imperia Oneglia (Verhoeff 1936).

Savona: Bergeggi (Verhoeff 1928). Noli (Verhoeff 1936). Tana do Tascio LI219, Balestrino (Brian 1940). Tana dell'Orpe LI248, Millesimo; Pozzo di Paramura LI215, Ceriale; Grotta Staricco LI136. Borgio Verezzi; Arma de Fate LI33, Finale Ligure (Franciscolo 1955). Tana do Mortou LI102, Spotorno (Franciscolo 1955, Bologna & Vigna Taglianti 1984, Bonzano 1983). Arma de Arene Candide LI34, Finale Ligure (Conci 1952, Franciscolo 1955, Bologna & Vigna Taglianti 1984). Grotta Valdemino LI160, Borgio Verezzi (Bonzano 1986, 1988).

Genova: Grotta sopra Paraggi LI331, Portofino (Brian 1963). Tann-a do Brigidun LI128, Genova Sestri Ponente (Sanfilippo et al. 1943, Sanfilippo 1950). Tann-a di Rio Bagnara LI158, Genova Quinto; Roman aqueduct, Genova (Sanfilippo 1950).

DISTRIBUTION

Northern Mediterranean region from Spain to Greece, French Brittany, Guernsey (Channel Islands), Hungary, southern Russia.

ECOLOGY

Humicolous species with occasional troglophilic and synanthropic tendencies.

Chaetophiloscia elongata (Dollfus, 1884)

Fig. A13

Philoscia elongata; Tua 1900: 12.

Chaetophiloscia elongata; Verhoeff 1928: 141; 1932: 376; 1936: 136, 141, 161.

MATERIAL EXAMINED

Imperia: 2♀♀, Borgata Steri, Cervo, 80 m a.s.l., olive grove, 2.VI/15.VII.2004, R. Fabbri leg. (MSNG); 1♀, Varcavello, Diano Castello, 100 m a.s.l., mesophilic meadow, 2.VI/15.VII.2004, R. Fabbri leg. (MSNG); 2♂♂, 5♀♀, Bevera, Ventimiglia, riparian vegetation, M. Zinni leg.; 3♂♂, 12♀♀, Seborga, 500 m a.s.l., 12.V.2019, G & P. Gardini & C. Giusto leg.; 1♂, Punta de Barbantò beach, Mortola Inferiore, Ventimiglia, banquettes of *P. oceanica*, 13.V.2019, P. Gardini & C. Giusto leg.

Savona: 2♀♀, Leca, Albenga, 5.IV.1981, A. & L. Briganti leg. (MZUF); 2♀♀, Villanova d'Albenga, 21.II.1981, C. Manicastri leg.; 2♀♀, Rive di Monticello, Finale Ligure, 90 m a.s.l., 16.VII.2009, G. B. Delmastro leg. (MCCI); 5♂♂, 12♀♀, Finale Ligure, 18.XII.2009, S. Cianfanelli & M. Calcagno leg. (MZUF).

Genova: 1♂, Genova Boccadasse, 3.I.1893, collector unknown (MZUF); 8♂♂, 6♀♀, Genova, XI.1918, A. Andreini leg. (MSNG); 2♂♂, 1♀, Sestri Levante, 29.XII.1980, S. Taiti leg. (MZUF); 1♂, 2♀♀, Forte Santa Tecla, Val Chiappeto, Genova, 30.VII.1981, M. E. Franciscolo leg. (MSNG); 2♀♀, Camogli, 8.III.1992, A. Arcara & A. Pucci leg. (MZUF); 1♂, 1♀, E slope Mt Moro, Genova Quinto al Mare, 12.XII.2016, G. Gardini & A. Trotta leg.; 1♀, Forte Richelieu, Genova, 415 m a.s.l., 19.V.2018, P. Gardini leg.

La Spezia: 1♂, Padule di Molicciara, Castelnuovo Magra, 30.IV.2007, L. Braida leg. (MSNG); 29♂♂, 26♀♀, same locality, 13.VII.2007, R. Poggi leg. (MSNG).

PREVIOUS RECORDS

Imperia: Sanremo (Verhoeff 1928).

Genova: Rapallo (Tua 1900). Portofino (Verhoeff 1928). Santa Margherita Ligure; Genova Voltri; Genova Nervi (Verhoeff 1932, 1936).

La Spezia: hills of La Spezia (Tua 1900).

DISTRIBUTION

Mediterranean region and western Atlantic Europe; also found along the Black Sea coast in Bulgaria and Crimea. Introduced to South Africa and Belgium.

ECOLOGY

Humicolous species with synanthropic tendencies.

Chaetophiloscia glandulifera Verhoeff, 1908

Fig. A13

Chaetophiloscia glandulifera; Verhoeff 1936: 136.

Previous records

Genova: Camogli (Verhoeff 1936).

DISTRIBUTION

Know only from Cassino (Lazio) (Verhoeff 1908d), Pontremoli (Tuscany) and Camogli (Liguria) (Verhoeff 1936).

ECOLOGY

Humicolous species (?).

REMARKS

None of the specimens from the extensive collection of this genus that we examined could be attributed to *Chaetophiloscia glandulifera* based on Verhoeff's description (Verhoeff 1908d:354, Figs. 14 and 15). It is possible that this species is a synonym of another, but a revision based on Verhoeff's type material or new specimens from the type locality (Cassino, Lazio) is required.

Chaetophiloscia sicula Verhoeff, 1908

Fig. A13

Chaetophiloscia sicula; Verhoeff 1932: 376; 1936: 141, 161.

MATERIAL EXAMINED

Imperia: 1♂, Villa Hanbury, Mortola, Ventimiglia, 9.I.1975, G. Gardini leg. (MZUF); 2♂♂, 2♀♀, Dolceacqua, 19.II.1982, R. Argano leg.; 1♂, Varcavello, Diano Castello, 100 m a.s.l., mesophilic meadow, 2.VI/15.VII.2004, R. Fabbri leg. (MSNG); 1♀, Bevera, Ventimiglia, Val Roia, riparian vegetation, M. Zinni leg.; 1♂, 3♀♀, Capo Mortola, Ventimiglia, maquis, 10.V.2019, P. Gardini leg.; 3♂♂, 2♀♀, Seborga, 500 m a.s.l., 12.V.2019, G & P. Gardini & C. Giusto leg.

Savona: 2♂♂, 3♀♀, Savona, IV.1938, O. Borra leg. (MSNG); 3♀♀, Varazze, holm oak woods, 9.II.1978, G. Gardini leg. (MZUF); 1♂, same locality, 28.III.1978, G. Gardini & S. Zoia leg. (MZUF); 3♂♂, 12♀♀, same locality, 29.IV/29.V.1981, G. Gardini & R. Rizzerio leg. (MSNG); 2♂♂, 5♀♀, same locality, 30.VI/8.X.1981 and 14.IV.1982, R. Rizzerio leg. (MSNG); 1♂, 2♀♀, Finale Ligure, 28.XII.2009, S. Cianfanelli & M. Calcagno leg. (MZUF); 4♀♀, Capo Mele, Laigueglia, 13.I.2019, P. Gardini & C. Giusto leg.; 2♀♀, Colla Micheri, Laigueglia, 132 m a.s.l., 13.I.2019, P. Gardini & C. Giusto leg.; 1♂, 2♀♀, Dego, oak woods, 320 m a.s.l., 18.III.2023, R. Poggi leg.

Genova: 1♂, 1♀, Arenzano, cane thicket, 18.III.1978, G. Gardini & S. Zoia leg. (MZUF); 1♂, 1♀, Torrecambiaso, Genova Pegli, 7.IX.1978, G. Gardini leg. (MZUF); 1♂, 1♀, 1juv., W slope Mt Moro, Genova Quinto al Mare, hollow olive tree trunk, 170 m a.s.l., 15.XI.2016, G. Gardini leg.; 3♀♀, Giardini O. Balduzzi, Genova, 24.IV.2017, M. Zinni leg.; 1♂, 1♀, Chiavari, maquis on rocky coastal cliff, 10.XI.2017, P. Gardini leg.; 6♀♀, Riva Trigoso, Sestri Levante, rocky coastal cliff with *C. maritimum*, 08.III.2026, P. Gardini leg.

La Spezia: 26 ♂♂♀♀, Manarola, Cinque Terre, 28.XII.1980, S. Taiti leg. (MZUF); 1♂, 2♀♀, Corniglia, Cinque Terre, 28.XII.1980, S. Taiti leg. (MZUF); 5♀♀, same locality, 1.III.1981, D. Antichi, A. Torchia & S. Zoia leg. (MZUF);8♂♂, 11♀♀, same locality, 10.V/20.IX.1981, S. Zoia leg. (MZUF).

PREVIOUS RECORDS

Imperia: Ventimiglia; Bordighera (Verhoeff 1936).

Genova: Genova Nervi (Verhoeff 1932, 1936).

DISTRIBUTION

Canary Islands, continental France, Corsica, continental Italy, Sicily, Sardinia, Greece, Crimea. Introduced to USA and greenhouses in the UK (Gregory 2014; Szlavecz et al. 2025).

ECOLOGY

Humicolous species with synanthropic tendencies.

Genus *Ctenoscia* Verhoeff, 1928

Ctenoscia minima (Dollfus, 1892)

Fig. A13

Chaetophiloscia dorsalis Verhoeff 1928: 137-139, Figs. 34, 37, 38.

MATERIAL EXAMINED

Imperia: 1♂, 1♀, Seborga, Mediterranean maquis, 500 m a.s.l., 31.III.2024, P. Gardini leg.

PREVIOUS RECORDS

Imperia: Sanremo; Grimaldi (Verhoeff 1928).

DISTRIBUTION

Canary Islands (Tenerife), Morocco (Rif), Tunisia, Portugal, continental Spain, Balearic Islands, Corsica, Liguria, Sardinia, Sicily and surrounding islands, Malta. Introduced to England (Hughes 2024).

ECOLOGY

Humicolous species, frequently found in littoral habitats.

Genus *Philoscia* Latreille, 1804

Philoscia affinis Verhoeff, 1908

Fig. A14

?Philoscia corsica; Tua 1900: 12.

?Philoscia muscorum Tua 1900: 12.

Philoscia muscorum affinis Verhoeff 1908d: 352, Figs. 4, 29, 30; 1918: 157.

Philoscia muscorum affinis var. *nigrovittata*; Verhoeff 1908e: 524.

Philoscia muscorum triangulifera; Verhoeff 1918: 157, Fig. 39.

Philoscia affinis; Verhoeff 1928: 137; 1932: 375, 376; 1936: 136, 140, 161. Cappello 1948: 14. Franciscolo 1948: 52. Brian 1950: 11. Sanfilippo 1950: 52.

Philoscia affinis var. *triangulifera*; Verhoeff 1936: 140, 158, 161.

MATERIAL EXAMINED

Imperia: 1 juv., Villa Hanbury, Ventimiglia, 9.I.1975, G. Gardini leg. (MZUF); 2♀♀, Vignai, Bajardo, 24.VI.1976, R. Pace leg. (MZUF); 1♂, 3♀♀, Bosco di Rezzo, 17.VI.1977, F. Bernini leg. (MZUF); 1♂, 2♀♀, Bosco di Rezzo, beech forest, 18.VI.1977, F. Giusti leg. (MSNV); 1♂, 6♀♀, 2 juvs., Colle del Garezzo, Monesi di Triora, 1800 m a.s.l., 10.VII.1980, C. Manicastri leg.; 3♀♀, Massiccio del Piancavallo, 1000 m a.s.l., 2.VIII.1981, M. Bologna leg. (MZUF); 1♀, Colla Melosa, Pigna, 1600 m a.s.l., 27/28.IX.1981, V. Raineri leg. (MSNG); 1♂, 4♀♀, Mt Colma slopes, Sanremo, 260 m a.s.l., 6.XI.1981, S. Zoia leg. (MZUF); 1♂, 2♀♀, Mt Cavanelle slopes, Bajardo,

beech forest, 1300 m a.s.l., 6.XI.1981, G. Gardini, S. Zoia & A. Boato leg. (MZUF); 3♀♀, Ciaixe, Ventimiglia, holm oak woods, 300 m a.s.l., 7.XI.1981, G. Gardini & S. Zoia leg. (MZUF); 3♀, Paù, Rocchetta Nervina, 8.XI.1981, B. Lanza & P. Malenotti leg. (MZUF); 4♂♂, 9♀♀, Colle San Bartolomeo, M. Bologna & C. Manicastri leg.; 1♀, S slope Mt Ceppo, Bajardo, 7.VI.1982, L. Ansaldo, C. Torti & S. Zoia leg. (MZUF); 2♀♀, Monesi, 900 m a.s.l., 18.VIII.1982, G. Osella leg. (MSNV); 1♂, Montalto Ligure, chestnut woods, 20.III.1986, C. Torti & S. Zoia leg. (MSNG); 1♀, Mt Saccarello, Monesi, 1800-2100 m a.s.l., 7.VII.1987, S. Vanni leg. (MZUF); 4♀♀, Borgata Steri, Cervo, olive grove, 80 m a.s.l., 2.VI/15.VII.2004, R. Fabbri leg. (MSNG); 10♀♀, Varcavello, Diano Castello, mesophilic meadow, 100 m a.s.l., same date and collector (MSNG); 4♀♀, valley of Inferno stream, San Lorenzo al Mare, xerophilic meadow, 50 m a.s.l., same date and collector (MSNG); 6♀♀, Mt Grammondo slopes, Ventimiglia, maquis and pine trees, 300-1000 m a.s.l., 11.V.2019, P. Gardini et al. leg.; 1♂, 8♀♀, Seborga, 600 m a.s.l., 13.V.2019, P. & G. Gardini, C. Giusto leg.; 1♂, same locality, 31.III.2024, P. Gardini leg.

Savona: 1♀, Savona, IV.1938, O. Borra leg. (MSNG); 2♂♂, 5♀♀, Calizzano, 19.III.1970, A Vigna leg.; 1♂, Capo Mele, rocky cliffside, 24.II.1974, G. Gardini leg. (MZUF); 3♂♂, 6♀♀, 1 juv., S. Bernardino plateau, Finale Ligure, 24.III.1974, G. Gardini leg. (MSNG); 17♂♂, 25♀♀, 14 juvs., same locality, 1.IX.1979, G. Gardini, A. Torchia & S. Zoia leg. (MZUF); 1♂, 2♀♀, Capo Noli, 3.IV.1977, G. Gardini leg. (MZUF); many ♂♂♀♀, same locality, 8.II.1981, D. Antichi & L. Briganti leg. (MZUF); 4♂♂, 14♀♀, Val Ponci, Finale Ligure, 3.IV.1977, S. Zoia leg. (MZUF); 2♂♂, 14♀♀, E slope Mt Ravinet, Loano, 900 m a.s.l., 9.IV.1977, L. Cassulo & S. Zoia leg. (MZUF); 1♀, Varazze, holm oak woods, 28.III.1978, G. Gardini & S. Zoia leg. (MZUF); 1♂, 2♀♀, 3 juvs., Manie, Finale Ligure, 13.V.1979, L. Briganti & S. Zoia leg. (MZUF); 4♂♂, 6♀♀, 2 juvs., Corona, Stella, 13.IV.1980, G. Gardini & S. Zoia leg. (MZUF); 1♂, 3♀♀, Gazzo, Erli, hornbeam/chestnut woods, 500 m a.s.l., 6.VI.1980, G. Gardini, A. Torchia & S. Zoia leg. (MZUF); 6♂♂, 3♀♀, 2 juvs., Millesimo, 550 m a.s.l., 29.X.1980, G. Gardini & S. Zoia leg. (MZUF); 2♂♂, Ricchini, Quiliano, 120 m a.s.l., 29.X.1980, G. Gardini & S. Zoia leg. (MZUF); 1♂, 5♀♀, Villanova d'Albenga, 21.II.1981, C. Manicastri leg.; 1♀, Leca, Albenga, 5.IV.1981, A. & L. Briganti leg. (MZUF); 1♂, Acquafredda, Millesimo, 18.IV.1981, A. & L. Briganti leg. (MZUF); many ♂♂ ♀♀, Varazze, 29.IV/29.V/30.VI/10.IX/8.X/17.XII.1981 and 28.I.1982, leg. R. Rizzerio, holm oak woods (MSNG); many ♂♂♀♀ juvs., Mt S. Giorgio, Altare, (localities Le Meugge, Costa del Prato, Naso di Gatto, Rio Montenotte, Traversine), 440-760 m a.s.l., 3.VIII/16.IX/6.X.1982 and 6.IV/17.V.1983, M. E. Franciscolo leg. (MSNG); 17♂♂ ♀♀, stream between Miera and Berruti, Bric del Tesoro, Altare, 600 m a.s.l., 6.X.1982, M. E. Franciscolo leg. (MSNG); 5♂♂, 4♀♀, Verzi, Finale Ligure, holm oak woods, 18.II.1983, G. Gardini & R. Rizzerio leg. (MSNG); many ♂♂♀♀, Mt Dell'Aquila, Orco Feglino, 20.V.1983, M. E. Franciscolo leg. (MSNG); 2♀♀, 8 juvs., NW slope Mt Baraccone, Altare, 500 m a.s.l., 24.X.1985, G. Gardini, A. Rey & S. Zoia leg. (MSNG); 1♂, 5♀♀, Quiliano, holm oak woods, 14.III.1986, S. Zoia leg. (MSNG); 1♀, Colle del Melogno, 1000 m a.s.l., 1.IX.1986, G. Gardini & R. Rizzerio leg. (MSNV); 2♂♂, 6♀♀, 10 juvs., Mt Caprazoppa, Finale Ligure, 28.II.1988, holm oak woods, G. Gardini, S. Zoia leg. (MSNG); 1♂, Altare, VI.1989, P. Magrini leg. (MSNV); 10♀♀, 3 juvs., Gallinara Island, Albenga, 10.IV/22.VI/19.X.1990, R. Poggi leg. (MSNG); many ♂♂♀♀, same locality, 21.X.1996 and 8.III.1997, D. Lanteri leg. (MSNG); 4♀♀, same locality, holm oak woods, 9.V.1996, G. Gardini leg. (MZUF); 2♂♂, 7♀♀, 14 juvs., same locality, 10.VI.1996, D. Lanteri leg. (MZUF); 1♂, 1♀, Vara, Urbe, under *F. sylvatica*, 700 m a.s.l., 30.IX.1992, C. Giusto leg. (MSNG); 15♀♀, 8 juvs., Eremita, Mallare, 600 m a.s.l., 18.VII.2000, A. Bordoni leg. (MZUF); 6♀♀, Isallo, Magliolo, 640 m a.s.l., 22.VII.2007, G. B. Delmastro leg. (MCCI); 5♂♂, 12♀♀, Finale Ligure, 28.XII.2009, S. Cianfanelli & M. Calcagno leg. (MZUF); 2♀♀, Mt Mao, Spotorno, holm haok and hornbeam woods, 400 m a.s.l., 10.IV.2017, G. Gardini, A. Trotta & C. Giusto leg.; 1♂, Lago dei Gulli, Sassello, 320 m a.s.l., 13.VI.2017, P. Gardini leg.; 1♂, 6♀♀, same locality, 11.VI.2018, leg. L. Galli; 1♂, 1♀, Cianciarin, Arnasco, holm oak woods, 56 m a.s.l., 1.X.2017, P. Gardini leg.; 3♂♂, 13♀♀, Colle del Melogno, Calizzano, 1100 m a.s.l., 24.V.2018, G. Gardini & P. Gardini leg.; 1♂, 10♀♀, 2 juvs., Canova, Magliolo, mixed forest 730 m a.s.l., 24.V.2018, G. Gardini & P. Gardini leg.; 1♂, 4♀♀, 1 juv., Martina Olba Urbe, 500 m a.s.l., 24.VI.2018, G. Gardini, P. Gardini & C. Giusto leg.; 1♂, 1♀, Madonna di Curagna, Nasino, Val Pennavaira,

chestnut woods, 450 m a.s.l., 7.VII.2018, P. Gardini & C. Bonifazio leg.; 3♂♂, 12♀♀, 1 juv., Capo Mele, Laigueglia, 132 m a.s.l., 13.I.2019, P. Gardini & C. Giusto leg.; 2♂♂, 8♀♀, Santuario, Savona, 150 m a.s.l., 13.I.2019, P. Gardini, C. Giusto leg.; 6♀♀, Giogo di Giustenice, 1200 m a.s.l., 30.V.2019, P. Gardini & C. Bonifazio leg.; 2♂♂, 5♀♀, Mt Carmo, Loano, under *F. sylvatica*, 1389 m a.s.l., same date and collectors; 8♀♀, Pian delle Bosse, Pietra Ligure, 840 m a.s.l., same date and collectors; 3♂♂, 6♀♀, Celle Ligure, mixed woods, 14.II.2020, same collectors.

Genova: 1♂, 1♀, Mt Creto, Genova, IX.1914, A. Andreini leg. (MSNG); 1♀, same locality, 8.VI.1931, leg. A. Dodero (MSNG)**;**1♀, Genova Begato, 3.X.1918, A. Andreini leg. (MSNG); 3♀♀, Santo Stefano d'Aveto, VII/VIII/IX.1918, A. Andreini leg. (MSNG); 1♀, Mt Penna, 6/8.IX.1918, A. Andreini leg. (MSNG); 1♀, Forte Diamante, Genova, 21.IV.1919, L. Masi leg. (MZUF); 1♀, Cogoleto, 23.III.1936, A. Festa leg. (MSNG); 4♂♂, 3♀♀, hills around Genova, 11.IV.1938, A. Sanfilippo leg. (MSNG); 1♀, Rapallo, 10.X.1938, G. C. Doria leg. (MSNG)**;** 1♂, 2♀♀, 3 juvs., Trio della Tana, Rapallo, I.1941, G. C. Doria leg. (MSNG); 1♂, Tann-a de Strie LI130, S. Pietro di Novella, Rapallo, V.1942, G. C. Doria leg. (MSNG); 6♂♂, 3♀♀, 4 juvs., Rezzoaglio, Val d'Aveto, 6.VIII.1977 and 5.VII-1978, S. Zoia leg. (MZUF); 2♂, 7♀♀, Peschiera, Arenzano, 6.XI.1977, G. Gardini & G. Parodi leg. (MZUF); 1♂, Genova Prato, 10.III.1978, S. Zoia leg. (MZUF); 4♂♂, 9♀♀, S. Colombano Certenoli, chestnut woods, 13.III.1978, G. Gardini & S. Zoia leg. (MZUF); 11♂♂, 15♀♀, 7 juvs., Arenzano, cane thicket, 28.III.1978, G. Gardini & S. Zoia leg. (MZUF); 1♂, 6♀♀, same locality, 22.VI.1986, G. Gardini leg. (MSNV); 11♂♂, 7♀♀, 1 juv., Torrecambiaso, Genova Pegli, 17.IX.1978, G. Gardini leg. (MZUF); 2♂♂, 3♀♀, Rio Bajardetta, Genova Acquasanta, 20.XI.1979 and 21.II.1980, M. E. Franciscolo leg. (MSNG); many ♂♂♀♀, Arenzano, 22.II.1980, G. Gardini, C. Torti & S. Zoia leg. (MZUF); 5♂♂, 2♀♀, San Carlo di Cese, Genova Voltri, 21.II-7.V.1980, M. E. Franciscolo leg. (MSNG); 3♀♀, Piandifieno, Ne, 31.VIII.1980, L. Briganti & S. Zoia leg. (MZUF); 2♀♀**,** Mt Antola, 17.VII/2.IX.1980, C. Margiocco leg. (MSNG); 1♀, Mt Zucchello, Gorreto, 1300 m a.s.l., beech forest, 15.VIII.1980, G. Gardini & S. Zoia leg. (MSNV); 4♂♂, 4♀♀, 4 juvs., Genova Bavari, chestnut woods, 250 m a.s.l., 12.XI.1980, Terrile & Menin leg. (MZUF); 7♂♂, 12♀♀, S slope Mt Rama, Cogoleto, 7.XII.1980, A. Torchia & S. Zoia leg. (MZUF); many ♂♂♀♀, Sestri Levante, 29.XII.1980, S. Taiti leg. (MZUF); 5♀♀, Portofino, 30.XII.1980, S. Taiti leg. (MZUF); 3♂♂, 4♀♀, Madonna dell'Acqua, Valbrevenna, 600 m a.s.l., 5.VI.1981, M. E. Franciscolo leg. (MSNG); 8♂♂, 6♀♀, Molino Vecchio, Valbrevenna, 550 m a.s.l., 13.V/10.VII.1981, M. E. Franciscolo leg. (MSNG); 2♀♀, Mt Portofino, 600 m a.s.l., 15.XI.1981, G. Gardini leg. (MZUF); 3♀♀, same locality, 21.I/24.II.1982, C. Giusto leg. (MZUF); 2♀♀, Crocetta d'Orero, Serra Riccò, 5.II.1982, R. Poggi leg. (MSNG); 1♂, 2♀♀, Mt Castello, Rapallo, 600 m a.s.l., 7.III.1982, S. Zoia leg. (MZUF); 4♂♂, 4♀♀, 3 juvs., Zoagli, under *Ostrya carpinifolia* Scop., 500 m a.s.l., 7.III.1982, S. Zoia leg. (MZUF); many ♂♂♀♀, Sussisa, Sori, 11.VII.1982, collector unknown (MZUF); 2♂♂, 3♀♀, N slope Mt Becco, Pannesi, Lumarzo, 16.I.1983, S. Zoia leg. (MSNG); 5♀♀, Ruta, Camogli, 5.I.1984, C. Giusto leg. (MSNV); 2♂♂, 13♀♀, Uscio, 2.II/30.III/30.IV.1984 1♀, surroundings of Libiola, Sestri Levante, holm oak woods, 80 m a.s.l., 18.III.1984, S. Zoia leg. (MSNG); 2♂♂, 1♀, Genova Quezzi, oak and laurel woods, 11.IV.1984, G. Gardini, leg. (MSNG); 1♂, 3♀♀, Genova Molassana, 20.X.1984, C. Giusto leg. (MSNV); 5♂♂, 3♀♀, Genova Righi, 320 m a.s.l., 20.III.1985, C. Giusto leg. (MSNV); 7♂♂, 2♀♀, Ognio, Neirone, 380 m a.s.l., chestnut woods, 17.III.1985, S. Zoia leg. (MSNV); many ♂♂♀♀, Genova Vesima, holm oak woods, 14.III.1986, S. Zoia leg. (MZUF); 3♀♀, same locality, holm oak woods, 300 m a.s.l., 16.II.1988, G. Gardini & R. Rizzerio leg. (MSNG)**;** many ♂♂♀♀, Mt Chiappozzo, Reppia, Ne, 28.III.1989, S. Zoia leg. (MSNG); many ♂♂♀♀, Camogli, 8.III.1992, A. Arcara & A. Pucci leg. (MZUF); 1♂, 9♀♀, S. Fruttuoso, Camogli, same date and collectors (MZUF); 4♂♂, 3♀♀, Punata Manara, Sestri Levante, holm oak woods, 23.II.1993, G. Gardini leg. (MSNG); 2♂♂, 3♀♀, Mt Fasce, Genova Bavari, chestunt woods, 20.XI.1993, S. Taiti leg. (MZUF); many ♂♂♀♀, along Rio Lerca, Lerca, Cogoleto, holm oak woods, 15.XI.1995, G. Gardini leg. (MSNG); 2♂♂, 2♀♀, E slope Mt Tocco, Camogli, under *Euphorbia spinosa* L., 440 m a.s.l., 5.XI.1998, G. Gardini leg. (MSNG); 2♂♂, 4♀♀, Camogli, W slope Mt Ruta, 310 m a.s.l., 5.XI.1998, G. Gardini leg. (MSNG); 1♂, 2♀♀, Motta, Arenzano, 3.X.2007, G. B. Delmastro leg. (MCCI); 3♂♂, 5♀♀, Casazze, Ronco Scrivia, 400 m a.s.l., same date and collector (MCCI); 6♂♂, 10♀♀, Mt Moro slopes, Genova

Quinto al Mare, 150 m asl 27.I/20.III.2002 and 20.II.2003, G. Gardini leg. (MSNG); 5♂♂, 7♀♀, 3 juvs., same locality, under *A. unedo*, 15.XI.2016, G. Gardini leg.; 2♀♀, same locality, 12.XII.2016, G. Gardini A. Trotta leg.; 1♀, same locality, under *Erica* sp. and *Quercus* sp., 18.III.2019, M. Zinni leg.; 2♂♂, 3♀♀, same locality, 17.XI.2023, G. Gardini leg.; 2♂♂, 1♀, Genova Quinto al Mare, 20.V.2002, G. Gardini leg. (MSNG); 1♂, 1♀, Mt Gazzo, Genova Sestri Ponente, 23.III.2008, M. B. Invernici leg. (MSNG); 2♂♂, 1♀, Ponte di Lagoscuro, Ne, 29.III.2009, S. Cianfanelli, M. Calcagno, M. Bodon & G. Vezzani leg. (MZUF); 1♀, Bavastri, Torriglia, 15.VI.2016, S. Macciò leg.; 2♂♂, Genova Nervi, E slope Mt Giugo, 550 m a.s.l., 8.III.2017, P. Gardini leg.; 2♂♂, 2♀♀, Prato Liseu, Arenzano, 590 m a.s.l., 25.III.2018, P. Gardini leg.; 2♀♀, Punta Manara, Sestri Levante, 140 m a.s.l., 8.V.2018, G. Gardini & P. Gardini leg.; 2♀♀, same locality, maquis,162 m a.s.l., 24.VII.2018, P. Gardini leg.; 1♀, Casella, 25.V.2018, M. Zinni leg.; 1♀, Forte Diamante, Genova, 624 m a.s.l., 7.IX.2018, P. Gardini leg.; 2♂♂, 5♀♀, Mt Reale, Ronco Scrivia, 900 m a.s.l., 1.V.2019, P. Gardini leg.; 4♂♂, 4♀♀, Lago delle Lame, Rezzoaglio, 1070 m a.s.l., 31.XII.2019; 4♂♂, 1♀, Gola di Sisa, Montoggio, 700 m a.s.l., 28.IX.2019 and 22.V.2020, P. Gardini leg.; 1♂, 1♀, Punta Baffe, Sestri Levante, 240 m a.s.l., under *Erica arborea* L.and *A. unedo*, 20.X.2022, G. Gardini & P. Gardini leg.

La Spezia: 2♂♂, 1♀, Portovenere, holm oak woods, 8.II.1976, G. Gardini leg. (MZUF); 4♀♀, Magra River mouth, 5.III.1977, G. Gardini & A. Torchia leg. (MZUF); 2♀♀, 5 juvs., Santa Maria, Maissana, 20.XI.1977, S. Zoia leg. (MZUF); many ♂♂♀♀, Ameglia, 3.III.1980, S. Zoia leg. (MZUF); 1♂, 7♀♀, surroundings of Cassana, Borghetto di Vara, 200 m a.s.l., 8.X.1980, G. Gardini, S. Zoia & R. Rizzerio leg. (MZUF); 3♂♂, 3♀♀, 2 juvs., same locality, 30.X.1982, L. Briganti & S. Zoia leg. (MZUF); 1♂, 6♀♀, Montemarcello, Ameglia, 27.XII.1980, S. Taiti leg. (MZUF); 4♂, 14♀♀, Manarola and Corniglia, Cinque Terre, 28.XII.1980, S. Taiti leg. (MZUF); many ♂♂♀♀, Corniglia, Cinque Terre, 1.III.1981, D. Antichi, A. Torchia & S. Zoia leg. (MZUF); 5♂♂, 7♀♀, 3 juvs., Punta Palma, Vernazza, same date and collectors (MZUF); 2♂♂, 10♀♀, Biassa, La Spezia, 150 m a.s.l., 21.II.1982, C. Giusto leg. (MSNV); 4♀♀, Liciorno, Maissana, 29.IV.1982, S. Zoia leg. (MZUF); 1♂, 2♀♀, same locality and collector, 23.IV.1985 (MSNV); 5♂♂, 8♀♀, 1 juv., Le Grazie, Portovenere, 5.XII.1982, L. Ansaldo & S. Zoia leg. (MZUF); 5♂♂, 19♀♀, Bocca di Magra, 26.X.1984, Benato leg. (MSNV); 1♂, 2♀♀, 1 juv., Tino Island, Portovenere, 20.IX.1987 and 4.VII.1989, R. Poggi leg. (MSNG); 1♂, same locality, pine woods, 4.V.1989, A. Andreotti leg. (MSNG)**;** 1♀, Palmaria Island, Portovenere, 30.V.1989, R. Poggi leg. (MSNG); 1♂, Padule di Molicciara, Castelnuovo Magra, 30.IV.2007, L. Braida leg. (MSNG); ♂, 5♀♀, same locality, 13.VII.2007, R. Poggi leg. (MSNG); 2♂♂, 4♀♀, Vallecchia, Castelnuovo Magra, 14/24.V and 2.VI.2007, L. Braida leg. (MSNG); 11♀, Mt Murlo slopes, Montemarcello, Ameglia, 13.VII.2007, R. Poggi leg. (MSNG); 1♂, 6♀♀, Graveglia, Riccò del Golfo, 145 m a.s.l., 14.X.2007, G.B. Delmastro leg. (MCCI); 2♂♂, Tellaro, Lerici, 209 m a.s.l., 5.X.2019, S. Cianfanelli & M. Calcagno leg. (MZUF); 7♂♂, 9♀♀, Mt Muzzerone, Portovenere, holm oak woods, 270 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Imperia: Ferrania; Ventimiglia; Olivetta; Bordighera; Imperia Oneglia (Verhoeff 1936); Sanremo (Verhoeff 1918, 1936).

Savona: Bergeggi (Verhoeff 1928). Finalborgo; Santuario presso Savona; Noli (Verhoeff 1936).

Genova: ?Rapallo (Tua 1900). Santa Margherita (Verhoeff 1908d, 1936). Portofino (Verhoeff 1908e, 1928, 1936). Genova Pegli (Verhoeff 1918). Ronco Scrivia; Genova Nervi (Verhoeff 1932). Camogli-Recco; Genova Voltri; Genova Pontedecimo; Rossiglione; Mele (Verhoeff 1936). Forra del Diavolo LI112, San Cosimo (Verhoeff 1936, Sanfilippo 1950). Tann-a de Strie LI130, Rapallo (Cappello 1948, Franciscolo 1948).

La Spezia: ?La Spezia hills; ?Tino Island (Tua 1900).

DISTRIBUTION

U.K., Ireland, Belgium, SW-Germany, France (including Corsica), NE-Spain, Italy (including Sardinia and Sicily), northern Croatia, Malta, northern Algeria.

ECOLOGY

Humicolous species, generally found in wooded habitats.

REMARKS

Tua (1900) cited *Philoscia corsica* Dollfus, 1888 [= *Tiroloscia corsica*] from the Island of Tino. This record is certainly erroneous, as the species is not

present in Liguria and is likely the result of a misidentification with either *Philoscia affinis* or *Philoscia muscorum* (Scopoli, 1763). Given the confirmed presence of *P. affinis* on the island, based on the material we examined, it is likely that the record refers to this species and that the citation of *P. muscorum* by Tua (1900) is also erroneous. However, given the impossibility of examining the original material, we were unable to confirm the accuracy of this identification.

Philoscia muscorum (Scopoli, 1763)

Fig. A14

Philoscia muscorum; Sanfilippo 1950: 52. Bologna & Vigna Taglianti 1984: 33.

MATERIAL EXAMINED

Genova: 1♂, 1♀, Mt Collere slopes, Fontanigorda, 1000 m a.s.l., 26.X.1977, S. Zoia leg. (MZUF); 1♂, 3♀♀, Casazze, Ronco Scrivia, 400 m a.s.l., 3.X.2007, G. B. Delmastro leg. (MCCI).

La Spezia: 3♂♂, 7♀♀, Pallodola, Sarzana, 13.VII/3.VIII.2008, G. Lo Pinto & M. Meli leg. (MSNG).

PREVIOUS RECORDS

Imperia: Arma D'la Ciosa LI350, Cosio d'Arroscia (Bologna & Vigna Taglianti 1984).

Genova: Forra del Diavolo LI112, Genova (Sanfilippo 1950).

DISTRIBUTION

Widespread in Europe. Introduced to North America.

ECOLOGY

Humicolous species, often synanthropic.

Genus *Tiroloscia* Verhoeff, 1926

Tiroloscia apenninorum (Verhoeff, 1908)

Figs. 3, 4, A14

MATERIAL EXAMINED

Genova: 2♂♂, 1♀, E slope Mt Carmo, Maddalena Pass, Val Trebbia, beech forest, 1400 m a.s.l., 11.IX.1980, S. Zoia leg. (MZUF).

DISTRIBUTION

Endemic to Northern Apennines. Until now, the species was known only from Tuscany (Verhoeff 1908d, Taiti & Ferrara 1989, unpublished data). This record from Liguria significantly expands its known distribution range.

ECOLOGY

Humicolous species inhabiting the leaf litter of mesophilic or cold forests.

REMARKS

Based on morphological and molecular data, the genus *Tiroloscia* appeared to be non-monophyletic, with *Tiroloscia apenninorum* being more closely related to species belonging to the genus *Philoscia* than to other members of *Tiroloscia* (Gardini et al. 2025 and unpublished data). A comprehensive revision of the genus is still underway, thus we prefer to retain the species within *Tiroloscia*. The main diagnostic characters of the species are presented in Figures 3 and 4 for a specimen from the type locality (Vallombrosa, Florence Province, Tuscany).

Family Platyarthridae Verhoeff, 1949

Genus *Platyarthrus* Brandt, 1833

Platyarthrus aiasensis Legrand, 1953

Fig. A15

MATERIAL EXAMINED

Savona: 5♀♀, Capo Mele, under stones by the sea, 6.III.1975, G. Gardini leg. (MZUF); 2♀♀, Gallinara Island, Albenga, 19.X.1990, R. Poggi leg. (MSNG).

Genova: 1♀, Forte Tenaglia, Genova, 200 m a.s.l., 24.IV.2018, G. Badile leg.

DISTRIBUTION

Canary Islands, Madeira, Atlantic and Mediterranean coasts France, Spain, Balearic Islands, Corsica, Sardinia, continental Italy, Sicily and surrounding islands, Malta. Tunisia. Introduced to USA (California, Texas), St. Barthelemy (Caribbean), Yemen, UAE and South Africa.

ECOLOGY

Myrmecophilous species. For a complete list of associated ant hosts, see Parmentier et al. (2025).

REMARKS

The subspecies *Platyarthrus schoblii aiasensis* described by Legrand (1954) was elevated to species rank by Caruso (1968a, 1968b). The species was previously recorded in Italy from Tuscany, Lazio, Sicily, Sardinia (Caruso et al. 1987, Taiti & Ferrara 1989, Taiti & Argano 2011, Gentile et al. 2019) and Apulia (unpublished data).

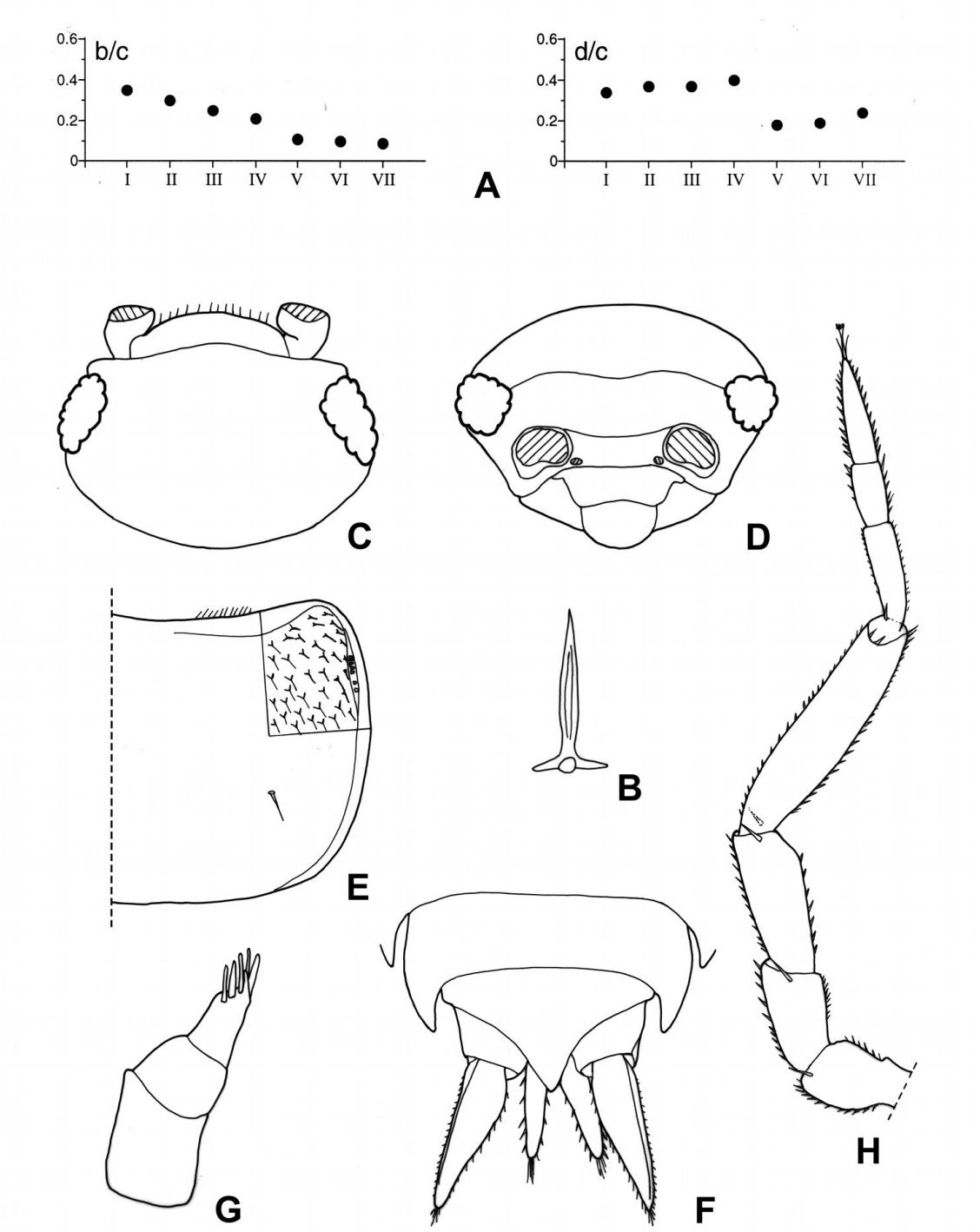

Figure 3. *Tiroloscia apenninorum*, ♂ from Vallombrosa (FI, Tuscany). (**A**) Coordinates of noduli laterales; (**B**) dorsal scale-seta; (**C**) cephalon, dorsal view; (**D**) cephalon, frontal view; (**E**) right side of pereonite 2, showing *nodulus lateralis*, scale-setae and glandular field; (**F**) pleonite 5, telson and uropods, dorsal view; (**G**) antennula; (**H**) antenna.

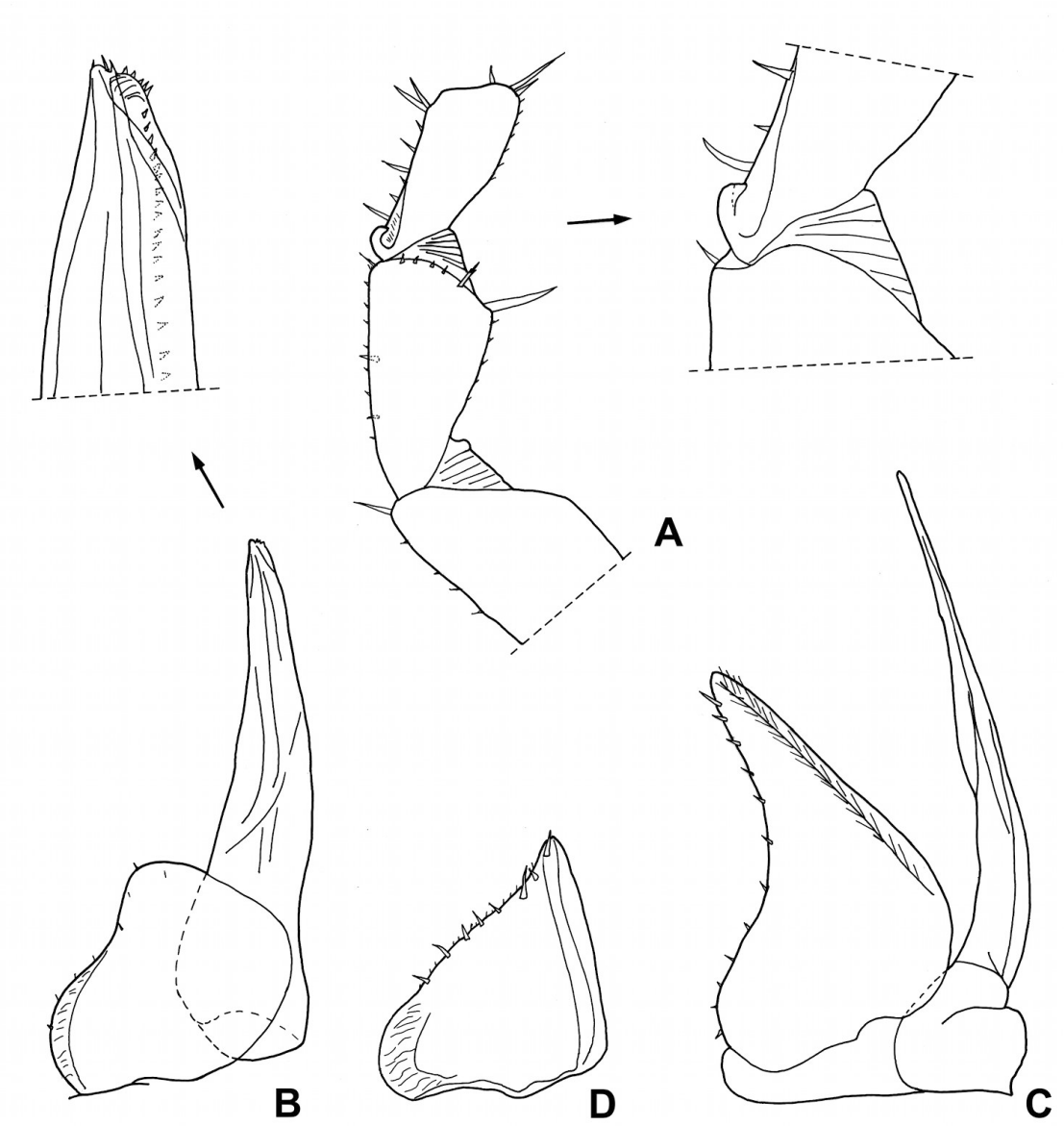

Figure 4. *Tiroloscia apenninorum*, ♂ from Vallombrosa (FI, Tuscany). (**A**) Pereopod 7; (**B**) pleopod 1; (**C**) pleopod 2; (**D**) pleopod 5 exopod.

Platyarthrus caudatus Aubert & Dollfus, 1890

Fig. A16

Platyarthrus caudatus squamatus; Verhoeff 1908c: 181.

PREVIOUS RECORDS

Savona: Noli (Verhoeff 1908c).

DISTRIBUTION

Most of western Mediterranean lands.

ECOLOGY

Myrmecophilous species. For a complete list of associated ant hosts, see Parmentier et al. (2025).

REMARKS

Despite the large number of specimens belonging to the genus *Platyarthrus* available for examination, none could be attributed to this species. Therefore, its occurrence in Liguria remains to be confirmed.

Platyarthrus costulatus Verhoeff, 1908

Fig. A16

Platyarthrus costulatus Verhoeff 1908c: 179; 1932: 376; 1936: 161.

PREVIOUS RECORDS

Savona: Vado Ligure; Noli (Verhoeff 1908c).

Genova: Portofino (Verhoeff 1908c). Genova Nervi (Verhoeff 1932, 1936).

DISTRIBUTION

Atlantic coast of France, western Mediterranean lands, east to the Greek island of Corfu.

ECOLOGY

Endogean species, occasionally found inside ant nests.

REMARKS

As for *Platyarthrus caudatus*, the actual presence of this species in Liguria was not confirmed based on the material examined. Given the relatively widespread occurrence of *Platyarthrus lerinensis* in the region, which was previously considered a subspecies of *Platyarthrus costulatus* (see below), it is likely that Verhoeff's records actually refer to the former species.

Platyarthrus hoffmannseggii Brandt, 1933

Fig. A15

Platyarthrus hoffmannseggii; Arcangeli 1914: 478; 1921: 190, Fig. 1. Verhoeff 1936: 134, 140. Franciscolo 1951: 48.

MATERIAL EXAMINED

Imperia: 1♀, Badalucco, 150 m a.s.l., 13.VII.1979, S. Zoia leg. (MZUF); 2♂♂, 4♀♀, Bassa d'Abellio, Dolceacqua, Alta Via dei Monti Liguri, maquis and holm oak, 500-750 m a.s.l., 12.V.2019, P. Gardini leg.; 2♂♂, 3♀♀, Passo del Ronco, Seborga, under *Castanea sativa* Mill. and *Quercus* sp., 540 m a.s.l., 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

Savona: 2♀♀, Loano, 29.IV.1922, A. Andreini leg. (MSNG); 2♂♂, 3♀♀, Eremo del Deserto, Varazze, 19.III.1977, G. Parodi leg. (MZUF); 2♀♀, Val Ponci, Finale Ligure, 3.IV.1977, G. Gardini leg. (MZUF); 3♀♀, Rio Remenone, Albisola, 9.IV.1977, G. Parodi leg. (MZUF); 1♀, Toirano, 7.IV.1980, G. Gardini leg. (MZUF); 2♀♀, Varazze, holm oak woods, 30.VI.1981, R. Rizzerio leg. (MSNG); 3♀♀, Mt Pizzo Ceresa, Cisano sul Neva, 583 m a.s.l., 1.X.2017, P. Gardini leg.

Genova: 10♂♂, 20♀♀, Santo Stefano d'Aveto, VIII.1918, A. Andreini leg. (MSNG); 3♀♀, S. Colombano Certenoli, chestnut woods, 13.III.1978, G. Gardini & S. Zoia leg. (MZUF); 1♂, W slope Mt Moro, Genova Quinto al Mare, 20.III.2002 and 15.XI.2016, G. Gardini leg. (MSNG); 1♂, 11♀♀, same locality and collector, 170 m a.s.l., 15.XI.2016; 2, 1, same locality, 500 m a.s.l., 18.V.2020 and 17.XI.2023, P. Gardini leg.; 3♀♀, E slope Mt Giugo, Nervi, 550 m a.s.l., 8.III.2017, P. Gardini leg.; 6♀♀, Prato Liseu, Arenzano, 590 m a.s.l., 25.III.2018, P. Gardini leg.; 5♂♂, 10♀♀, between Passo della Maddalena and Mt Carmo, Gorreto, beech forest, 1390 m a.s.l., 2.VII.2020, P. Gardini leg.

La Spezia: 3♀♀, mouth of Magra River, 5.III.1977, G. Parodi & A. Torchia leg. (MZUF); 1♂, 4♀♀, Montemarcello, 27.XII.1980, S. Taiti leg. (MZUF); 3♀♀, Mt Muzzerone, Portovenere, 264 m a.s.l., 3.VI.2022, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Imperia: Ventimiglia; Olivetta; Imperia Oneglia; Bordighera (Verhoeff 1936).

Savona: Arma Pollera LI24 (Franciscolo 1951).

Genova: Portofino (Arcangeli 1914, 1921). Genova (Arcangeli 1921).

La Spezia: La Spezia; Portovenere (Verhoeff 1936).

DISTRIBUTION

Widespread across Europe, North Africa, Asia Minor and Iran. Introduced to North America.

ECOLOGY

Myrmecophilous species. For a complete list of associated ant hosts, see Parmentier et al. (2025).

Platyarthrus lerinensis Vandel, 1957

Fig. A16

MATERIAL EXAMINED

Imperia: 3♂♂, 2♀♀, Passo del Cornà, Ventimiglia, 1046 m a.s.l., 11.V.2019, P. Gardini leg.

Savona: 1♂, Loano, 29.IV.1922, A. Andreini leg. (MSNG); 1♂, Varazze, holm oak woods, 28.III.1978, G. Gardini & S. Zoia leg. (MZUF); 8♂♂, 9♀♀, Varazze, holm oak woods, 29.IV/29.V/30.VI.1981, R. Rizzerio & G. Gardini leg (MSNG); 7♂♂, 24♀♀, Varazze, holm oak woods, 10.IX/17.XII.1981 and 14.III.1982, R. Rizzerio leg. (MSNG); 7♂♂, 13♀♀, Albenga, Gallinara Island, 9-10.IV/11.V/19.X.1990, R. Poggi leg. (MSNG); many ♂♂♀♀, same locality, holm oak woods, 8-9.V.1996, G. Gardini leg. (MSNG; MZUF); many ♂♂♀♀, same locality, 10.VI.1996, D. Lanteri leg. (MZUF); 18♂♂, 18♀♀, Capo Noli, 6.X/16.XI/15.XII.2016, A. Minici leg.; 1♂, SW side of Bergeggi Island,

22.VI.2016, P. Bernelli leg.; 1♂, 3♀♀, Colla Micheri, Laigueglia, holm oak woods, 132 m a.s.l., 13.I.2019, P. Gardini & C. Giusto leg.; 3♂♂, 3♀♀, Celle Ligure, under *Quercus pubescens* Willd., 215 m a.s.l., 14.II.2020, P. Gardini & C. Bonifazio leg.; 9♂♂, 3♀♀, outside Arma do Rian 25 Li/SV, Finale Ligure, 275 m a.s.l., 18.II.2020, P. Gardini leg.; 1♂, 2♀♀, Salto del Lupo, Toirano, 240 m a.s.l., 19.VI.2020, P. Gardini leg.

Genova: many ♂♂♀♀, Arenzano, 22.II.1980, G. Gardini, C. Torti & S. Zoia leg. (MZUF); 2♂♂, 2♀♀, Mt Moro, Genova Quinto al Mare, 27.I and 20.III.2002, G. Gardini leg. (MSNG); 13♂♂, 17♀♀, same locality and collector, 17.XI.2023; 1♂, 4♀♀, same locality, 490 m a.s.l., 2.V.2020, P. Gardini leg.; 3♂♂, 16♀♀, 5 juvs., Giardini O. Balduzzi, Genova, 24.IV.2017, M. Zinni leg.; many ♂♂♀♀, Chiavari, maquis on rocky cliffside, 10.XI.2017, P. Gardini leg.; 9♂♂, 5♀♀, Semaforo Nuovo, Mt Portofino, 450 m a.s.l., 17.IV.2017, P. Gardini leg.; 5♂♂, 10♀♀, Punta Manara, Sestri Levante, 8.V.2018, P. Gardini leg.; 1♂, 7♀♀, 7 juvs., same locality and collector, Mediterranean scrub, 162 m a.s.l., 24.VII.2018; 3♂♂, 8♀♀, 2 juvs., Forte Tenaglia, Genova, 200 m a.s.l., 24.IV.2018, G. Badile leg.; 1♂, 3♀♀, Riva Trigoso, Sestri Levante, rocky coastal cliff with *C. maritimum*, 08.III.2026, P. Gardini leg.

DISTRIBUTION

Mediterranean France, Liguria, Tuscan archipelago, Pontine islands, Sardinia, Sicily and surrounding islands, Maltese archipelago.

ECOLOGY

Endogean species, occasionally found inside ant nests.

REMARKS

Platyarthrus lerinensis was considered a subspecies of *Platyarthrus costulatus* until Caruso & Lombardo (1982). Since all the male specimens we examined belonging to the "*costulatus*" group can be confidently assigned to *P. lerinensis*, it is likely that it is the only species of the group present in Liguria. Therefore, Verhoeff's (1908c, 1931, 1936) records of *P. costulatus* from this region are probably referable to *P. lerinensis*.

Platyarthrus schoblii Budde-Lund, 1885

Fig. A15

Platyarthrus schoeblii; Verhoeff 1908c: 180.

Platyarthrus schoblii; Verhoeff 1936: 140.

MATERIAL EXAMINED

Imperia: 9♀♀, Passo del Cornà, Ventimiglia, 1046 m a.s.l., 11.V.2019, P. Gardini leg.; 29♂♂♀♀, NE slope Mt Grammondo, Ventimiglia, Mediterranean scrub and pine trees, 300-1000 m a.s.l., 11.V.2019, P. Gardini leg.; 9♀♀, NE slope Mt Grammondo, same data.

Savona: 1♀, Varazze, 19.II.1978, G. Gardini & S. Zoia leg. (MZUF).

Genova: 1♂, 6♀♀, Mt Moro, Genova Quinto al Mare, 200 m asl. 27.IV.2020, P. Gardini leg.

PREVIOUS RECORDS

Imperia: Ventimiglia (Verhoeff 1936).

Savona: Noli; Vado (Verhoeff 1908c). Finalborgo (Verhoeff 1936).

DISTRIBUTION

Macaronesian Islands, Spain, France, Corse, Italy, Sardinia, Sicily, Malta, Crimea, Algeria, Morocco, Tunisia, Greece, Crete, Israel, Russia, Iran, Hungary, Socotra Island.

ECOLOGY

Myrmecophilous species. For a complete list of associated ant hosts, see Parmentier et al. (2025).

Platyarthrus sp. "*costulatus* group"

Fig. A16

MATERIAL EXAMINED

Imperia: 2♀♀, Villatella, Ventimiglia, Mediterranean scrub and pine trees, 300-500 m a.s.l., 10.V.2019, P. Gardini leg.; 1♀, Mt Nero, Seborga, Mediterranean scrub, 600 m a.s.l., 13.V.2019, P. Gardini leg.

Savona: 5♀♀, Varazze, holm oak woods, 29.IV and 10.IX.1981, G. Gardini & R. Rizzerio leg. (MSNG); 1♀, Albenga, Gallinara Island, under *Cistus* sp., 24.VII.1982, M. Mariotti leg (MSNG); 2♀♀, Mt Mao, Spotorno, holm oak and hornbeam woods 100 m a.s.l., 10.IV.2017, G. Gardini, A. Trotta & C. Giusto leg.; 1♀, Salto del Lupo, Toirano, 650 m a.s.l., 19.VI.2020, P. Gardini leg.

Genova: 1♀, Punta Manara, Sestri Levante, 10.II.1974, G. Gardini leg. (MZUF); 1♀, Arenzano, cane thicket, 18.III.1978, G. Gardini & S. Zoia leg. (MZUF); 1♀, E slope Mt Tocco, Camogli, under *E. spinosa*, 440 m a.s.l., 5.XI.1998, G. Gardini leg. (MSNG); 1♀, Mt Moro, Genova Quinto al Mare, 100 m a.s.l., 12.XII.2016, G. Gardini & A Trotta leg.

La Spezia: 1♀, Tinetto Island, Portovenere, 4.VII.1989, R. Poggi leg. (MSNG).

REMARKS

As the examined specimens were all females, it was not possible to definitively assign them to *Platyarthrus costulatus* or *Platyarthrus lerinensis*. However, given the absence of *P. costulatus* among the material we examined, they are most likely *P. lerinensis*.

Family Tendosphaeridae Verhoeff, 1930

Genus *Tendosphaera* Verhoeff, 1930

Tendosphaera verrucosa Verhoeff, 1930

Fig. A28

MATERIAL EXAMINED

Imperia: 1♂, 1♀, Bosco di Rezzo, beech forest, 19.VI.1977, F. Giusti leg. (MZUF); 1♂, 2♀♀, Badalucco, 150 m a.s.l., 31.VII.1979, S. Zoia leg. (MZUF); many ♂♂♀♀, Bajardo, mixed forest on sandstone, 800 m a.s.l., 6.XI.1981, G. Gardini, S. Zoia & A. Boato leg. (MZUF); 4♀♀, 7 juvs., same locality, 7.VI.1982, L. Ansaldo, C. Torti & S. Zoia leg. (MZUF); 1♀, Passo del Ronco, Seborga, under *C. sativa* and *Quercus* sp., 540 m a.s.l., 13.V.2019, G. Gardini & P. Gardini leg.

Savona: 3♂♂, 9♀♀, Isallo, Magliolo, mixed forest on limestone, 15.XI.1981, C. Giusto & S. Zoia leg. (MZUF); many ♂♂♀♀, Gazzo, Erli, hornbeam/chestnut woods, 500 m a.s.l., 6.VI.1980, G. Gardini, A. Torchia & S. Zoia leg. (MZUF); 1♀, Acquafredda, Millesimo, 18.IV.1981, A. & L. Briganti leg. (MZUF); 1♀, Colle del Melogno, Magliolo, 1027 m a.s.l., 18.IV.1981, L. Briganti & S. Zoia leg. (MSNG); 1♂, 1♀, same locality, under *F. sylvatica* and *O. carpinifolia*, 1100 m a.s.l., 24.V.2018, G. Gardini & P. Gardini leg.; 4 juvs., entrance of Tana del Pecetto LI569, Magliolo, 18.V.1981, Bruzzone et al. leg. (MZUF); 1♂, 3♀♀, Magliolo, Colle del Melogno, 920 m a.s.l., 13.II.1984, G. Gardini, R. Rizzerio & S. Zoia leg. (MSNG); 2♀♀, Giogo di Toirano 800 m a.s.l., 5.VII.2009, R. Poggi leg. (MSNG); 1♂, Martina Olba, Urbe, 500 m a.s.l., 24.VI.2018, G. Gardini, P. Gardini & C. Giusto leg.

DISTRIBUTION

Alpine species occurring in northern Italy and southeastern France, from the Lombard Prealps to the Maritime and Ligurian Alps (Vandel 1962). It has also been reported from the Apuan Alps in Tuscany (La Greca 1971), but this record needs to be confirmed.

ECOLOGY

Humicolous species with montane affinities, typically found in leaf litter or under stones and logs at elevations above 500 m a.s.l, up to nearly 2000 m a.s.l.

Family Trachelipodidae Strouhal, 1953

Genus *Trachelipus* Budde-Lund, 1908

Trachelipus arcuatus (Budde-Lund, 1885)

Fig. A17

MATERIAL EXAMINED

La Spezia: 1♂, 2♀♀, along the banks of Magra River near San Genesio, Arcola, 13.VII-3.VIII.2008, G. Lo Pinto & M. Meli leg. (MSNG).

DISTRIBUTION

Southern Switzerland, Italy including Sicily, Austria, Slovakia, Slovenia, Croatia, Serbia, Bosnia and Herzegovina, North Macedonia, Albania, northwestern Greece, Romania.

ECOLOGY

Humicolous species, generally found under stones or logs in forested habitats.

REMARKS

Trachelipus arcuatus is relatively widespread and common in Tuscany and the Po Valley (Taiti & Ferrara 1989 and unpublished data). Prior to this research, however, it had never been recorded in Liguria. This species likely has a broader distribution within the region, particularly in its easternmost part.

Trachelipus rathkii (Brandt, 1833)

Fig. A17

MATERIAL EXAMINED

Imperia: 1♀, Bevera, Ventimiglia, Val Roia, riparian vegetation, 25.VI.2018, M. Zinni leg.

DISTRIBUTION

Widespread across Europe, with the exception of Mediterranean countries. Introduced to North and South America. In Italy, it is found in the northern regions, especially in the Po Valley (Schmidt 1997 and unpublished data).

ECOLOGY

Eurytopic species, primarily found in open habitats such as fields and meadows within river valleys. Often synanthropic.

REMARKS

Given its low affinity for Mediterranean environments, *Trachelipus rathkii* is uncommon in Liguria. The only known record comes from the westernmost part of the region, where it was collected along a river, within riparian vegetation.

Trachelipus razzautii (Arcangeli, 1913)

Fig. A17

MATERIAL EXAMINED

Genova: 7♂♂, 12♀♀, Dego, oakwood, 320 m a.s.l., 18.III.2023, R. Poggi leg.

DISTRIBUTION

France, Belgium, Italy, Slovenia, Bulgaria, Greece (Aegean island Lésvos), European part of Turkey, southern Russia. The species appears to be rapidly expanding across Europe, likely facilitated by human activities, as evidenced by a recent record in Belgium (unpublished data).

ECOLOGY

Eurytopic species, primarily found in open habitats.

REMARKS

Trachelipus razzautii is very common in the alluvial plains of Tuscany, Po Valley, and uplands of southern Piedmont (unpublished data). It is likely that this species arrived recently in Liguria, as no individuals attributable to it were found among the extensive material held in different museum collections.

Family Agnaridae Schmidt, 2003

Genus *Orthometopon* Verhoeff, 1917

Orthometopon planum (Budde-Lund, 1885)

Fig. A17

Metoponorthus planus; Tua 1900: 11-12. Bensa 1900: 31. Brian 1963: 10.

Orthometopon planum; Verhoeff 1932: 375; 1936: 134, 139, 160.

MATERIAL EXAMINED

Imperia: 1♂, Pornassio, chestnut woods, 500 m a.s.l., 23.VI.1980, A. & L. Briganti & S. Zoia leg. (MZUF); 1♀, Ceriana, 20.II.1981, M. Bologna leg.; 1♀, Carmo Langan, Triora, 6.VII.1981, A. Vigna leg.; 1♀, Montegrosso Pian Latte, 16.VII.1981, C. Manicastri leg.; 1♂, 3♀♀, Borgata Steri, Cervo, olive groove, 80 m a.s.l., 2.VI/15.VII.2004, R. Fabbri leg. (MSNG); 5♂♂, 8♀♀, Varcavello, Diano Castello, mesophilic meadow, 100 m a.s.l., same date and collector (MSNG); 5♀♀, 1 juv., Villatella, Ventimiglia, Mediterranean scrub and pine trees, 300-500 m a.s.l., 10.V.2019, P. Gardini leg.; 2♂♂, same locality, Mt Grammondo slopes, 300-1000 m a.s.l., 11.V.2019, P. Gardini leg.; 1♂, Bassa d'Abellio, Dolceacqua, Alta Via dei Monti Liguri, maquis and holm oak, 500-750 m a.s.l., 12.V.2019, P. Gardini leg.; 1♀, Seborga, Passo del Ronco, under *C. sativa* and *Quercus* sp., 540 m a.s.l., 13.V.2019, P. Gardini leg.; 2♂♂, Mt Nero, Seborga, maquis, 600 m a.s.l., 13.V.2019, P. Gardini leg.; 8♂♂, 2♀♀, same locality and collector, 31.III.2024; 1♀, Tana Bertrand 104 Li/IM, Badalucco, 29.I.2022, A. Pastorelli leg.

Savona: 1♂, 2♀♀, Val Ponci, Finale Ligure, 3.IV.1977, S. Zoia leg. (MZUF); 1♀, Loano, E slope Mt Ravinet, 900 m a.s.l., 11.IV.1977, S. Zoia leg. (MZUF); 1♂, Magliolo, Colle del Melogno, beech forest, 19.IV.1980, A. & L. Briganti leg. (MZUF); 2♀♀, Millesimo, 550 m a.s.l., 29.X.1980, G. Gardini & S. Zoia leg. (MZUF); 1♂, Grotta di Verzi LI91, Loano, 160 m a.s.l., 17.III.1982, R. Poggi leg. (MSNG); 1♂, Varazze, 17.IV.1982, R. Rizzerio leg. (MSNG); 3♀♀, Grotta Sopra la Cava LI312, Ceriale, 4.X.1985, G. Gardini & R. Rizzerio leg. (MSNV); 1♂, Arma del Rio Cornei LI212, Calvisio, Finale Ligure, 11.V.1986, C. Bonzano leg. (MSNG); 1♀, Gallinara Island, Albenga, 19.X.1990, R. Poggi leg. (MSNG); 1♂, same locality, holm oak woods, 9.V.1996, G. Gardini leg. (MZUF); 1♂, 1♀, same locality, 10.VI.1996, D. Lanteri leg. (MZUF); 2♂♂, same locality, 21.X.1996, same collector (MSNG); 1♀, Carpe, Toirano, 320 m a.s.l., 26.VII.2007, G. B. Delmastro leg. (MCCI); 1♂, 1♀, Canova, Magliolo, mixed forest, 730 m a.s.l., 24.V.2018, G. Gardini & P. Gardini leg.; 1♂, 2♀♀, Martina Olba, Urbe, 500 m a.s.l., 24.VI.2018, G. Gardini, P. Gardini & C. Giusto leg.; 4♀, Madonna di Curagna, Nasino, chestnut woods, 450 m a.s.l., 7.VII.2018, P. Gardini leg.; 6♂♂, 6♀♀, Capo Mele, Laigueglia, 13.I.2019, P. Gardini & C. Giusto leg.; 3♀♀, Santuario, Savona, mixed forest, 150 m a.s.l., same date and collectors; 2♂♂, 1♀, Mt Carmo, Loano, 1300 m a.s.l., 30.V.2019, P. Gardini & C. Bonifazio leg.; 7♂♂, 9♀♀, Pian delle Bosse, Pietra Ligure, mixed forest, 840 m a.s.l., 30.V.2019, P. Gardini & C. Bonifazio leg.; 1♀, Torre Bregalla, Celle Ligure, 215 m a.s.l.,

14.II.2020, P. Gardini leg.; 3♂♂, 7♀♀, Arma do Rian LI25, Finale Ligure, 18.II.2020, P. Gardini leg.; 1♂, 4♀♀, Alassio, 21.VI.2020, A. Trotta leg.

Genova: 1♂, Genova, IX.1918, A. Andreini leg. (MSNG); 1♂, Forte Diamante, Genova, 21.IV.1919, L. Masi leg. (MZUF); 1♀, Giardino Botanico di Genova, 7.III.1977, G. Parodi leg. (MZUF); 1♂, 1♀, Mt Portofino, 15.III.1977, G. Parodi leg. (MZUF); 3♂♂, 8♀♀, Arenzano, 6.XI.1977/8.III.1978/ 22.II.1980, G. Gardini, G. Parodi, C. Torti & S. Zoia leg. (MZUF); 1♂, Spinola, Isola del Cantone, 5.XI.1978, G. Gardini leg. (MZUF); 1♂, ♀, Sestri Levante, 29.XII.1980, S. Taiti leg. (MZUF); 2♂♂, 3♀♀, Portofino, 30.XII.1980, S. Taiti leg. (MZUF); 3♂♂, Madonna dell'Acqua, Valbrevenna, 600 m a.s.l., 5.VI.1981, M. E. Franciscolo leg. (MSNG); 2♂♂, 1♀, Uscio, 30.III.1984, C. Giusto leg. (MSNV); 7♂♂, Genova Righi, 320 m a.s.l., 20.III.1985, C. Giusto leg. (MSNV); 2♂♂, 1♀, San Fruttuoso, Camogli, 8.III.1992, A. Pucci & A. Arcara leg. (MZUF); 3♂♂, 3♀♀, Giardini O. Balduzzi, Genova,24.IV.2017, M. Zinni leg.; 1♂, Prato Liseu, Arenzano, 590 m a.s.l., 25.III.2018, P. Gardini leg.; 8♂♂, 6♀♀, Mt Reale, Ronco Scrivia, mixed forest, 900 m a.s.l., 1.V.2019, P. Gardini leg.; 2♂♂, 4♀♀, Gola di Sisa, Montoggio, 640 m a.s.l., 28.IX.2019, P. Gardini leg.; 3♂♂, 5♀♀, same locality, 22.V.2020, G. & P. Gardini & C. Giusto leg.; 1♀, Genova Quinto al Mare, S slope Mt Fasce 727 m a.s.l., 18.V.2020, P. Gardini leg.; 1♂, 5♀♀, Mt Carmo, Gorreto, 1600 m a.s.l., beech forest, 2.VII.2020, P. Gardini leg.

La Spezia: 1♂, mouth of Magra River, 5.III.1977, G. Gardini & A. Torchia leg. (MZUF); 1♂, Montemarcello, 27.XII.1980, S. Taiti leg. (MZUF); 1♂, Padule, Castelnuovo Magra, 30.IV.2007, L. Braida leg. (MSNG); 1♂, Pitone, Portovenere, under *Q. ilex*, 320 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.; 2♂♂, 2♀♀, Mt Muzzerone, Portovenere, 264 m a.s.l., same date and collectors.

PREVIOUS RECORDS

Imperia: Tana Cornarea LI252, Cosio d'Arroscia (Bensa 1900). Ventimiglia; Olivetta; Bordighera; Sanremo (Verhoeff 1936).

Savona: Finalborgo; Albissola (Verhoeff 1936).

Genova: Nostra Signora della Vittoria, Mignanego (Tua 1900). Ronco Scrivia (Verhoeff 1932, 1936). Portofino; Voltri; Pontedecimo; Mele (Verhoeff 1936). Buranco de Strie LI315, Genova Sestri Ponente (Brian 1963)

La Spezia: La Spezia; Portovenere (Verhoeff 1936). Tino Island (Tua 1900, Brian 1963).

DISTRIBUTION

Western and south-eastern France, Switzerland, northern and central Italy, Croatia, Slovakia, Hungary.

ECOLOGY

Humicolous species, occasionally found in caves or in anthropogenic habitats.

Family Porcellionidae Brandt, 1831

Genus *Acaeroplastes* Verhoeff, 1918

Acaeroplastes melanurus (Budde-Lund, 1885)

Fig. A18

Metoponorthus melanurus; Franciscolo 1952: 65; 1955: 118.

MATERIAL EXAMINED

Imperia: 5♂♂, 2♀♀, Capo Mortola, Ventimiglia, maquis, 10.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Savona: Ballo de Strie LI180, Pontinvrea (Franciscolo 1952). Arma de Arene Candide LI34, Finale Ligure; Tana da Ciappella LI50; Grotta di Verzi LI91, Loano; Garbu de Cunche LI93, Giustenice; Tana della Taragnina LI105, Balestrino; Grotta Inferiore della Cava del Martinetto LI156, Finale Ligure; Arma Inferiore do Principà LI171, Finale Ligure; Tana dell'Orpe LI248, Millesimo (Franciscolo 1955).

DISTRIBUTION

Ireland, England, Azores, Spain, France (including Corsica), coastal Algeria, Italy (including Sardinia and Sicily), Croatia.

ECOLOGY

Eurytopic species with xerophilous tendencies. Occasionally found in anthropogenic habitats.

REMARKS

Acaeroplastes melanurus is currently divided into two subspecies: *Acaeroplastes melanurus melanurus* (Budde-Lund, 1885), distributed in the countries listed above, and *Acaeroplastes melanurus sardous* Verhoeff, 1918, which is present in Corsica, Sardinia, and Tuscany. However, given the unclear taxonomic status of these two entities and the difficulty in interpreting the literature on this species (see, for example, Taiti & Argano 2011), we prefer

to treat *A. melanurus* here as a single taxonomic entity.

Genus *Agabiformius* Verhoeff, 1908

Agabiformius lentus (Budde-Lund, l885)

Fig. A18

Agabiformius lentus; Verhoeff 1932: 376; 1936: 134, 160.

MATERIAL EXAMINED

Imperia: 2 juvs., Villa Hanbury, Ventimiglia, 9.I.1975, G. Gardini leg. (MZUF); 1♂, Mortola Inferiore, Ventimiglia, pebble beach with banquette of *P. oceanica*, 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

Savona: 2♀♀, Bergeggi Island, Bergeggi, 7 and 21.V.2007, E. Borgo & R. Poggi leg. (MSNG).

Genova: 2♂♂, Torrecambiaso, Genova Pegli, 17.IX.1978, G. Gardini leg. (MZUF).

PREVIOUS RECORDS

Genova: Santa Margherita Ligure (Verhoeff 1936). Genova Nervi (Verhoeff 1932, 1936).

DISTRIBUTION

Canary Islands, coasts of the Mediterranean and the Black Sea, and Iran. Introduced to Hawaii, North and South America, Bermuda, Senegal, Seychelles, China, Australia.

ECOLOGY

Thermophilous species which prefers dry habitats and often occurs in sandy environments. It also shows a tendency toward synanthropy and is commonly found in gardens, greenhouses, and urban parks.

Genus *Caeroplastes* Verhoeff, 1918

Caeroplastes porphyrivagus Verhoeff, 1918

Fig. A18

MATERIAL EXAMINED

Imperia: 1♀, Sant' Antonio, Valle di Latte, Ventimiglia, 115 m a.s.l., 21.IX.2007, G. B. Delmastro (MCCI); 1♂, 1♀, Olivetta San Michele, close to Italy-France borders, 1019 m a.s.l., 12.V.2018, E. Séchet leg. (MZUF); 2♀♀, Passo del Cornà, Ventimiglia, 1046 m a.s.l., 11.V.2019, P. Gardini leg.; 1♀, 1 juv., SE slope Mt Grammondo, Ventimiglia, Mediterranean scrub and pine trees, 300-1000 m a.s.l., 11.V.2019, P. Gardini leg.; 2♂♂, 8♀♀, 2 juvs, Dolceacqua, Alta Via dei Monti Liguri, maquis and holm oak, 500-750 m a.s.l., 12.V.2019, P. Gardini leg.; 2♂♂, 2♀♀, between Passo del Ronco and Mt Nero, Seborga, maquis, 600 m a.s.l., 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

DISTRIBUTION

South-eastern France (Vandel 1960; Séchet & Noël 2015) and Liguria.

ECOLOGY

Humicolous species, found in maquis or woods from the coastal areas up to mid-mountain regions (1000 m a.s.l. in the Maritime Alps) (Vandel 1962, Séchet & Noël 2015).

REMARKS

This is the first record of this species outside France. The specimens from Sardinia identified as *Caeroplastes porphyrivagus* by Arcangeli (1950a:116) actually belong to *Acaeroplastes simrothi* (Verhoeff, 1918), a species endemic to the island (Taiti & Argano 2011).

Genus *Porcellio* Latreille, 1804

Porcellio dilatatus Brandt, 1833

Fig. A19

Porcellio dilatatus; Verhoeff 1910: 138. Brian 1940: 402.

Euporcellio dilatatus; Franciscolo 1951: 48; 1955: 74, 86.

Euporcello dilatatus (sic); Franciscolo 1955: 48.

Porcellio (Euporcellio) dilatatus; Franciscolo 1955: 117.

Porcellio manacori; Franciscolo 1955: 38, 52.

Porcellio prope *manacori*; Franciscolo 1955: 53, 117.

MATERIAL EXAMINED

Imperia: 1♂, 1♀, valley of Inferno stream, San Lorenzo al Mare, xerophilic meadow, 2.VI/15.VII.2004, R. Fabbri leg. (MSNG).

PREVIOUS RECORDS

Imperia: Bordighera (Verhoeff 1910).

Savona: Tana da Bazura LI55, Toirano (Brian 1940). Grotta dei Balzi Rossi LI53, Toirano; Grotta Inferiore di Santa Lucia LI59, Toirano (Brian 1940, Franciscolo 1955). Arma Pollera LI24, Finale Ligure (Franciscolo 1951, 1955). Arma do Principà LI26, Finale Ligure; Grotta dell'Acqua LI29; Grotta di Sant'Antonino LI30, Finale Ligure; Tana Lubea

LI47; Grotta del Colombo LI57, Toirano; Arma della Rocca di Perti LI98 (Franciscolo 1955).

DISTRIBUTION

Azores, Canary Islands, European countries and Armenia. Introduced to North and South America, Hawaii, Sri Lanka, Japan, Australia and New Zealand.

ECOLOGY

Euryecious species, with troglophilic and occasionally synanthropic tendencies.

Porcellio incavatus Gardini & Taiti, 2023

Fig. A19

Porcellio incavatus Gardini & Taiti 2023: 15, Figs. 10-12, 16.

PREVIOUS RECORDS

Genova: Santo Stefano d'Aveto (Gardini & Taiti 2023).

DISTRIBUTION

Currently known from a single locality in Liguria.

ECOLOGY

Exact ecology is unknown, but probably a humicolous species.

Porcellio laevis Latreille, 1804

Fig. A19

Porcellio laevis; Verhoeff 1910: 138; 1936: 139.

MATERIAL EXAMINED

Savona: 1♂, Tana Castellaro, Albisola, I.1919, F. Capra leg. (MSNG).

Genova: 1♀, Genova, 7.II.1872, collector unknown (MSNG); 1♀, Rapallo, I.1941, G. C. Doria leg. (MSNG); 1♀, Forte S. Tecla, Genova, 19.IV.1936, A. Festa leg. (MSNG); 1♀, Genova, 2.III.1938, A. Sanfilippo leg. (MSNG); 1♀, Arenzano, 22.II.1980, G. Gardini, C. Torti & S. Zoia leg. (MZUF).

PREVIOUS RECORDS

Imperia: Sanremo (Verhoeff 1910). Imperia Oneglia (Verhoeff 1936).

Savona: Ferrania; Alassio; Noli (Verhoeff 1910).

Genova: Portofino (Verhoeff 1910).

DISTRIBUTION

Originally Mediterranean, now synanthropically cosmopolitan.

ECOLOGY

Euryecious species, with termophilic and synanthropic tendencies.

Porcellio lamellatus (Uljanin, 1875)

Fig. A19

MATERIAL EXAMINED

Savona: 1♂, 3♀♀, Capo Mele, rocky cliffside 24.II.1974, G. Gardini leg. (MZUF).

Genova: 2♀♀, Genova Nervi, rocky cliffside, 12.XII.2016, G. Gardini leg.; 7♂♂, 7♀♀, 2 juvs., same locality, 18.IX.2018/9.III.2019/7.IV.2019, P. Gardini leg.

DISTRIBUTION

Cape Verde, Azores, Canary Islands, Madeira, coasts of the Mediterranean and the Black Sea. Introduced to Hawaii, Bermuda, Cuba, St. Helena, South America, Australia.

ECOLOGY

Halophilous species occurring just above the supralittoral zone.

Porcellio orarum Verhoeff, 1910

Fig. A20

Porcellio monticola; Verhoeff 1907b: 281 (partim: Noli and Nervi); 1910: 139 (partim: Bordighera, Sanremo, Alassio, Noli, Genova). Arcangeli 1931: 14-19 (partim: Arenzano, Genova Voltri). Arcangeli 1936: 12.

Porcellio spinipennis; Verhoeff 1907b: 280 (partim: Noli, Savona, Portofino).

Porcellio lugubris orarum Verhoeff 1910: 137, 139-141; 1936: 135.

Porcellio lugubris orarum var. *alassiense*; Verhoeff 1910: 140

Porcellio lugubris; Arcangeli 1914: 470 (partim: Noli, Arenzano, Genova, Genova Voltri).

Porcellio Verhoeffi; Arcangeli 1931: 9-13 (partim: Camporosso, Genova Borzoli).

MATERIAL EXAMINED

Imperia: 1♀, Villatella, Ventimiglia, Mediterranean scrub and pine trees, 300-500 m a.s.l., 10.V.2019, P. Gardini leg.; 11♂♂, 31♀♀, 2 juvs., Passo del Cornà, Ventimiglia, 1046 m a.s.l., 11.V.2019, P. Gardini leg.; 1♂, 2♀♀, Passo del Ronco, Seborga, under *C. sativa* and *Quercus* sp., 540 m a.s.l., 13.V.2019, P. Gardini leg.

Savona: 1♂, near Grotta di Santa Lucia LI58, Toirano, 5.X.1933, A. Brian leg. (MSNG); 1♂, Toirano, 21.IX.1934, A. Brian leg. (MSNG); 1♀, 1juv., Savona, IV.1938, O. Borra leg. (MSNG); 1♂, 1♀, Giogo di Toirano, 15.V.1958, E. Tortonese leg. (MSNG); 3♀♀, Val Ponci, Finale Ligure, 3.IV.1977, G. Gardini leg. (MZUF); 8♂♂, 19♀♀, E slope Mt Ravinet, Loano, 11.IV.1977, S. Zoia leg. (MZUF); 9♂♂, 13♀♀, Capo Mele, Laigueglia, 13.I.2019, P. Gardini & C. Giusto leg.; 1♀, 1 juv., Colla Micheri, Laigueglia, under *Q. ilex*, 132 m a.s.l., same date and collectors; 2♂♂, 3♀♀, Santuario, Savona, mixed forest, 150 m a.s.l., same date and collectors; 1♀, Ranzi, Pietra Ligure, 1.V.2019, A. Trotta leg.; 2♂♂, 10♀♀, Mt Carmo Loano, 1000-1300 m a.s.l., 30.V.2019, P. Gardini & C. Bonifazio leg.; 1♀, Ceriale, 4.V.2025, J. M. Lemaire.

Genova: 1♂, 1♀, Cogoleto, 26.IV.1938, A. Festa leg. (MSNG); 1♂, Genova, 2.III.1938, A. Sanfilippo leg. (MSNG); 2♂♂, 1♀, Rapallo, 3.IV.1972, B. & M. Lanza leg. (MZUF); 2♂♂, 15♀♀, Sestri Levante, 29.XII.1980, S. Taiti leg. (MZUF); 5♂♂, 3♀♀, Forte S. Tecla, Val Chiappeto, Genova, 30.VII.1981, M. E Franciscolo leg. (MSNG); 3♀♀, Punta Manara, Sestri Levante, 8.V.2018, P. Gardini leg.; 1♂, 2♀♀, Forte Richelieu, Genova, 415 m a.s.l., 19.V.2018, P. Gardini leg.; 4♂♂, 6♀♀, Forte Diamante, Genova, 624 m a.s.l., 7.IX.2018, P. Gardini leg.; 1♀, Riva Trigoso, Sestri Levante, rocky coastal cliff with *C. maritimum*, 08.III.2026, P. Gardini leg.

PREVIOUS RECORDS

Imperia: Sanremo; Bordighera (Verhoeff 1910). Camporosso (Arcangeli 1936). Imperia Oneglia; Olivetta (Verhoeff 1936).

Savona: Savona, Noli (Verhoeff 1907b, 1910). Alassio; Capo Mele (Verhoeff 1910). Albissola; Finalborgo (Verhoeff 1936).

Genova: Genova Nervi; Portofino (Verhoeff 1907b, 1910). Forte Castellaccio, Genova (Verhoeff 1910). Santa Margherita Ligure (Verhoeff 1910, 1936). Arenzano; Genova Voltri; Genova Borzoli (Arcangeli 1931). Camogli (Verhoeff 1936).

DISTRIBUTION

South-eastern France and north-western Italy (Liguria and Piedmont) (Vandel 1960; Séchet & Noël 2015).

ECOLOGY

Euryecious species, generally humicolous with thermophilic tendencies. It can be found from sea-level up to 1000 m.

REMARKS

The taxonomic history of the entire *orarum* group is extremely confused. Verhoeff (1910) described *Porcellio orarum* as a subspecies of *Porcellio lugubris* C. Koch, 1840 [= *Porcellio monticola* Lereboullet, 1853] based on specimens from Antibes (Alpes-Maritime, France), providing only a very brief description and no figures. In the same paper (Verhoeff 1910:139), the author acknowledged the misidentification of *P. orarum lugubris* with *Porcellio spinipennis* Budde-Lund, 1885, which was previously reported by Verhoeff (1907b: 280). Arcangeli (1914) cited *P. lugubris* from several Italian localities, including some in the provinces of Savona and Genova. Subsequently, Arcangeli (1931) placed *P. lugubris* and its subspecies in synonymy with *P. monticola*, citing the latter from several localities in Liguria. However, this species is not expected to occur in Italy (see Vandel 1962:712) and is almost certainly absent from Liguria, as no specimens corresponding to its description were found among the extensive material examined. The records from this region cited as *P. monticola* by Arcangeli (1931)—including part of those previously reported as *P. lugubris* by Arcangeli (1914) and later transferred to *P. monticola*—must therefore correspond to other species, most likely *P. orarum* in western Liguria and *Porcellio pumicatus* Budde-Lund, 1885 in eastern Liguria (see below). For the same reason, we consider the material identified by Verhoeff (1910) as *P. monticola* from the provinces of Imperia, Savona, and Genova—and later transferred to *Porcellio verhoeffi* Dahl, 1916 by Arcangeli (1931)—to be referable to *P. orarum*. Vandel (1951:152, 1962:726) treated the material cited by Verhoeff (1910, 1936) as *P. lugubris orarum* (Verhoeff 1910, 1936) as belonging instead to *P. orarum*, raising it to species rank to distinguish it from *P. monticola*, of which *P. lugubris* is a synonym. Later, Taiti & Ferrara (1996:510) suggested that *P. orarum* should be a junior synonym of *P. pumicatus*, a species occurring in central and southern Italy and previously referred to as *P. verhoeffi* (Arcangeli, 1931) or *P. orarum verhoeffi* (Ferrara & Taiti, 1978, Taiti & Ferrara, 1980, 1989). Here, however, we provisionally follow Vandel (1962) and regard *P. orarum* as a valid species. The material we examined matches reasonably well with the description and figures of *P. orarum orarum* provided by Vandel (1962:726–729, Fig. 351), which should represent the typical form of this species. At the same time, our material also shows slight but

consistent differences from *P. pumicatus*, particularly in the structure of the male pereopod 7 (hump on the carpus barely visible or absent in *P. orarum* vs. consistently present and well developed in *P. pumicatus*) and in the structure of the cephalon (median lobe distinct in *P. orarum* vs. almost absent in *P. pumicatus*) (cf. Vandel 1962: Fig. 351 and Ferrara & Taiti 1978:61, Fig. XXIV). We recognize that these differences are subtle and may fall within the range of intraspecific variation (see Taiti & Ferrara 1996:510). Pending a comprehensive revision comparing all currently recognized subspecies of *P. orarum* (see Vandel 1962) with *P. pumicatus*, ideally supported by molecular data, we prefer to maintain the use of *P. orarum* for populations from France and western Liguria and *P. pumicatus* for those from eastern Liguria and central Italy (see below), as these better reflect the main diagnostic features of the two taxa.

Porcellio cf. *orarum cribrifer* Verhoeff, 1928

Fig. A20

MATERIAL EXAMINED

Imperia: 2♂♂, 3♀♀, Paù, Rocchetta Nervina, 1000 m a.s.l., 8.XI.1981, B. Lanza & P. Malenotti leg. (MZUF).

Savona: 6♂♂, 16♀♀, 7 juvs., E slope Mt Ravinet, Loano, 900 m a.s.l., 9.IV.1977, L. Cassulo & S. Zoia leg. (MZUF); 2♂♂, Finale Ligure, S. Bernardino plateau, 8.II.1981, D. Antichi & L. Briganti leg. (MZUF); 1♂, 1♀, Isallo, Magliolo, mixed forest, 15.XI.1981, C. Giusto, S. Zoia leg. (MSNV).

Genova: 1♂, Mt Fasce, Genova Bavari, chestnut woods, 20.XI.1993, S. Taiti leg. (MZUF); 3♀♀, ridge between Mt More and Mt Fasce, 490 m a.s.l., 9.V.2020, P. Gardini leg.

REMARKS

This form consistently differs from the typical *Porcellio orarum* by its more convex body shape, less laterally developed epimera, reduced posterior angle of the first pereonite, and less developed cephalic lobes, particularly the median one. The coloration also differs from that of typical *P. orarum* specimens, as individuals of this form have a brownish body with distinct light streaks and a dark brown head. Based on this combination of characters, this form resembles *P. orarum cribrifer* Verhoeff, 1928, as redescribed by Vandel (1962:730). However, it is also similar to *Porcellio pumicatus*, from which it differs in the complete absence of a hump on the carpus of the male pereopod 7. Therefore, we are not sure about its identification, pending a future and more comprehensive revision of the *orarum* group, as stated above.

Porcellio pumicatus Budde-Lund, 1885

Fig. A20

Porcellio monticola; Tua 1900: 10. Arcangeli 1931: 14-20, tav. II, Figs. 11-21 (partim: La Spezia, Portovenere). Arcangeli 1936: 12.

Porcellio marginalis; Tua 1900: 10.

Porcellio Verhoeffi; Arcangeli 1931: 9-14, tav. I, Figs. 1-10.

Porcellio lugubris orarum; Verhoeff 1936: 135 (partim: Biassa).

Porcellio (*Porcellio*) *pumicatus*; Arcangeli 1936: 8.

MATERIAL EXAMINED

La Spezia: 1♂, 1♀, mouth of Magra River, 5.III.1977, G. Gardini & A. Torchia leg. (MZUF); 2♂♂, 5♀♀, 9 juvs., Tinetto Island, Porto Venere, 4.VII.1989, R. Poggi leg. (MSNG).

PREVIOUS RECORDS

?Genova: Nostra Signora della Vittoria (Arcangeli 1936).

La Spezia: hills of La Spezia; Portovenere; Tinetto Island (Tua 1900, Arcangeli 1931). Biassa (Verhoeff 1936).

DISTRIBUTION

Northern (Liguria and Emilia-Romagna) and central Italy, including the Tuscan archipelago (Taiti & Ferrara 1980, 1989).

ECOLOGY

Euryecious species, generally humicolous with thermophilic tendencies. It can be found from sea level up to more than 1000 m a.s.l. (similar to *Porcellio orarum*).

REMARKS

As noted above, considerable confusion surrounds the *orarum* group, to which *Porcellio pumicatus* also belongs (see Remarks under *Porcellio orarum*). Verhoeff (1910) reported *Porcellio monticola* from several localities in western Liguria. Arcangeli (1931) reassigned these records to *Porcellio verhoeffi* [= *P. pumicatus*] and added further records from the provinces of Genova and Imperia. Arcangeli (1936) cited *P. pumicatus* from several localities in central Italy and one in Liguria, but without

recognizing the synonymy of *P. verhoeffi* with this species.

Most records of *P. pumicatus* from Liguria—particularly from the provinces of Imperia, Savona, and Genova—are highly doubtful and most likely refer either to *Porcellio orarum* or, more plausibly, to the form referred to here as *Porcellio* cf. *orarum cribrifer*. The latter is indeed similar to *P. pumicatus* but differs mainly in body size and the absence of a hump on the carpus of male pereopod 7. For this reason, all the previous records from western Liguria under the names *P. monticola* and *P. verhoeffi* are placed under *P. orarum* (see above). The only reliable records of *P. pumicatus* from the region are those from the province of La Spezia at the easternmost end of Liguria, where we examined specimens matching the main diagnostic characters of the species (see Ferrara & Taiti 1978:61, Fig. XXIV). As previously mentioned, a comprehensive revision of this species group is required to resolve these taxonomic uncertainties.

Porcellio scaber Latreille, 1804

Fig. A19

MATERIAL EXAMINED

Savona: 2♀♀, Bardineto, under the bark of *Acer pseudoplatanus*, 700 m a.s.l., 23.VII.2023, A. & T. Trotta leg.

DISTRIBUTION

Species of Mediterraneo-Atlantic origin, now synanthropically cosmopolitan.

ECOLOGY

Eurytopic species with a strong synanthropic tendency.

REMARKS

Although it is an ecologically versatile species, *Porcellio scaber* appears to be unusually uncommon in Liguria. However, it should be noted that urban environments—where the chances of finding this species are higher—have been relatively poorly explored.

Porcellio spinipennis Budde-Lund, 1885

Fig. A20

Porcellio spinipennis; Verhoeff 1910: 141; 1936: 139.

MATERIAL EXAMINED

Imperia: 1♂, 1♀, Paù, Rocchetta Nervina, 1000 m a.s.l., 8.XI.1981, B. Lanza & P. Malenotti leg. (MZUF); 1♂, 4♀♀, 1 juv., slopes of Mt Grammondo, Ventimiglia, Mediterranean scrub and pine trees, 300-1000 m a.s.l., 11.V.2019, P. Gardini leg.; 2♂♂, 3♀♀, 2 juvs., Passo del Cornà, Ventimiglia, 1046 m a.s.l., 11.V.2019, P. Gardini leg.; 6♂♂, 9♀♀, Dolceacqua, Alta Via dei Monti Liguri, maquis and holm oak, 500-750 m a.s.l., 12.V.2019, P. Gardini leg.; 4♂♂, 1♀, Passo del Ronco, Seborga, under *C. sativa* and *Quercus* sp., 540 m a.s.l., 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.; 1♂, between Passo del Ronco and Mt Nero, Seborga, maquis, 600 m a.s.l., 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

Savona: 1♀, between Mt Carmo and Giogo di Giustenice, Giustenice, birch woods, 1200 m a.s.l., 30.V.2019, P. Gardini & C. Bonifazio leg.

Genova: 3♂♂, 2♀♀, 2 juvs., Uscio, 30.III.1984, C. Giusto leg. (MSNV).

La Spezia: 1♀, mouth of Magra River, 5.III.1977, G. Gardini & A. Torchia leg. (MZUF).

PREVIOUS RECORDS

Imperia: Sanremo (Verhoeff 1910). Ventimiglia; Olivetta (Verhoeff 1936).

DISTRIBUTION

South-western Alps (both Italian and French sides) and northern Apennines (Liguria, Tuscany and Emilia-Romagna).

ECOLOGY

Humicolous and rupicolous species with montane affinities (up to 2600 m a.s.l.), although it can also be found on low hills near the coast and in alluvial plains.

REMARKS

According to Verhoeff (1910) and Vandel (1962), the material cited by Verhoeff (1907b) as *P. spinipennis* actually belongs to *Porcellio orarum*. Given the considerable confusion around the *orarum* group, it is not possible to assess the validity of either author's interpretation. *Porcellio spinipennis* is well known from south-eastern France and has also been recorded from Tuscany (Taiti & Ferrara 1989), making its occurrence throughout Liguria plausible. However, it appears to be more common in the westernmost part of the region.

Porcellio sp. "*spinipennis* group"

Fig. A20

MATERIAL EXAMINED

Imperia: 8♂♂, 7♀♀, Rifugio Sanremo, Mt Saccarello, 2000 m a.s.l., 21-23.IV.1980, A. & L. Briganti & G. Gardini leg. (MZUF); many ♂♂ and ♀♀, same locality, 21-22.VI.1982, G. Gardini & L. Briganti leg. (MZUF); 1♂, Colla Melosa, Pigna, 27/28.IX.1981, V. Raineri leg. (MSNG); 1♂, 4♀♀, Monesi, 18.VIII.1982, M. & F. Osella leg. (MSNV); 4♂♂, 6♀♀, Mt Saccarello, Monesi, 1800-2100 m a.s.l., 7.VII.1987, S. Vanni leg. (MZUF); 1♂, 2♀♀, same locality, 2130 m a.s.l., 7.VII.2024, P. Gardini leg.

REMARKS

This is probably a new species related to *Porcellio spinipennis* and *Porcellio montanus* Budde-Lund, 1885, which will be treated in more detail in a future study. It differs from the former in the structure of the head, with the median lobe broader and more projecting anteriorly, in male pereopod 7, which always bears a well-developed hump on the carpus, and in the shape of male pleopod 1 exopod. It differs from *P. montanus* in the structure of the male pereopod 7 and the shape of the male pleopod 1 endopod.

It is a high-altitude species that also occurs on the Piedmontese and French sides of the south-western Alps (unpublished data, Franck Noël personal communication).

Porcellio tortonesei Arcangeli, 1932

Fig. A19

Porcellio (Euporcellio) tortonesei Arcangeli 1932: 4, Figs. 1-7.

Porcellio Tortonesei; Brian 1938: 195, 201; 1940: 402. Franciscolo 1952: 70; 1955: 72, 117.

Porcellio tortonesei; Franciscolo 1962: 1-7, Figs. 1-2. Bonzano 1975: 35.

MATERIAL EXAMINED

Savona: 1♀, Tana dei Santi LI224, Toirano, 23.XII.1951, M. E. Franciscolo leg. (MZUF); 11 juvs., Val Varatella, Toirano, 220 m a.s.l., 16.V.1986, B. Campolmi & B. Lanza leg. (MZUF); 7♂♂, 2♀♀, Salto del Lupo, Toirano, 240 m a.s.l., 19.VI.2020, P. Gardini leg.; 1♂, 4♀♀, Mt Rocca Barbena, Castelvecchio di Rocca Barbena, 990 m a.s.l., 27.VII.2024, P. Gardini & C. Bonifazio leg.

PREVIOUS RECORDS

Imperia: Arma do Stefanin LI257, Aquila d'Arroscia (Franciscolo 1962, Bonzano 1975).

Savona: Grotta di Verzi LI91, Loano (Arcangeli 1932). Grotta dei Balzi Rossi LI53, Toirano; Grotta di Merona LI52, Toirano (Brian 1938). Tana dei Santi LI224 (Franciscolo 1952, 1955).

DISTRIBUTION

Species endemic to the Ligurian Alps.

ECOLOGY

Rupicolous species with troglophilic affinities.

Genus *Porcellionides* Miers, 1877

Porcellionides myrmecophilus Stein, 1859

Fig. A18

Porcellio (*Metoponorthus*) *myrmicidarum*; Verhoeff 1918: 137, Fig. 18-19.

Metoponorthus myrmicidarum; Verhoeff 1936: 139.

PREVIOUS RECORDS

Imperia: Taggia (Verhoeff 1918). Oneglia (Verhoeff 1936).

DISTRIBUTION

Mediterranean countries and Romania.

ECOLOGY

Myrmecophilous species, particularly associated with ants of the genus *Messor* Forel, 1890.

REMARKS

Although *Porcellionides myrmecophilus* is widely distributed throughout the Mediterranean Basin, it is not very common. We did not have the opportunity to examine specimens of this species to confirm its presence in the region.

Porcellionides pruinosus Brandt, 1833

Fig. A18

Metoponorthus pruinosus; Verhoeff 1932: 376; 1936: 161. Coddè 1949: 72. Sanfilippo 1950: 52.

MATERIAL EXAMINED

Savona: 3♂♂, 2♀♀, Grotta di Cava Ghigliazza LI296, Mt Caprazzoppa, Finale Ligure, 3.I.1960, G. Dinale leg. (MSNG); 1♀, Leca, Albenga, 5.IV.1981, A. & L. Briganti leg. (MZUF).

Genova: 1♂, 1♀, Genova, II.1928/19.V.1931, L. Masi leg. (MSNG); 1♀, Genova, 23.IV.1936, A. Festa leg. (MSNG); 3♂♂, 2♀♀, Genova, 11.III.1938, A. Sanfilippo leg. (MSNG); 1♀,

Rapallo, VI.1941, G. C. Doria leg. (MSNG); 1♀, Genova Bavari, chestnut woods, 250 m a.s.l., 12.XI.1980, Terrile & Menin leg. (MZUF); 1♀, Punta Manara, Sestri Levante, holm oak woods, 23.II.1993, G. Gardini leg. (MSNG); 1♀, Genova Quinto al Mare, 8.VI.2018, P. Gardini leg.; 1♂, Via Donghi, Genova, 15.X.2023, R. Poggi leg.; 1♂, Riva Trigoso, Sestri Levante, 08.III.2026, P. Gardini leg.

La Spezia: 1♀, Corniglia, Cinque Terre, 5.II.1978, G. Gardini & G. Ratto leg. (MZUF).

PREVIOUS RECORDS

Savona: Grotta di Verzi LI91, Loano (Coddè 1949).

Genova: Genova Nervi (Verhoeff 1932, 1936). Grotta del Drago LI10, Genova (Sanfilippo 1950).

DISTRIBUTION

Originally Mediterranean, now synanthropically cosmopolitan.

ECOLOGY

Eurytopic species with a strong synanthropic tendency. It can inhabit a wide range of environments, avoiding only extreme humidity and drought conditions.

Porcellionides sexfasciatus Budde-Lund, 1885

Fig. A18

MATERIAL EXAMINED

Imperia: 3♂♂, 5♀♀, Bordighera, 19.VI.1921, collector unknown (MZUF).

Genova: 5♂♂, 5♀♀, Riva Trigoso, Sestri Levante, 8.III.2026, P. Gardini leg.

DISTRIBUTION

Azores, Madeira, Canary Islands, Portugal and western Mediterranean countries. Introduced to Central and South America, southern Africa, Australia and New Zealand.

ECOLOGY

Euryecious species with a tendency to settle in coastal areas. Often synanthropic.

Family Cylisticidae Verhoeff, 1949

Genus *Cylisticus* Schnitzler, 1853

REMARKS

At present, the genus *Cylisticus* is considered to include two different groups of species: the *gracilipennis* group and the *nasutus* group. The former comprises the species mainly characterized by the noduli laterales on pereonite 4 very distant from lateral margins compared to those on all the other pereonites; the latter comprises the species with all noduli laterales more or less at the same distance from lateral margins of the pereonites (see Ferrara & Taiti 1978, 1985; Taiti & Ferrara 1980, 1996; Taiti & Manicastri 1980). In Liguria, the *gracilipennis* group includes *Cylisticus annulicornis* Verhoeff, 1908, *Cylisticus bergomatius* Verhoeff, 1908, *Cylisticus convexus* (De Geer, 1778), *Cylisticus gracilipennis* Budde-Lund, 1885, *Cylisticus pallidus* Verhoeff, 1928, and *Cylisticus pontremolensis* Verhoeff, 1936; the *nasutus* group includes *Cylisticus lobatus* Ferrara & Taiti, 1985, *Cylisticus poggii* Gardini & Taiti, 2023, and *Cylisticus* cf. *ormeanus* Verhoeff, 1930. Considering the importance of the positions of the noduli laterales in distinguishing genera of the Crinocheta, it is likely that the species of the *nasutus* group belong to a distinct genus from *Cylisticus*. However, this hypothesis requires a comprehensive revision of all species, ideally integrating both morphological and molecular data.

Cylisticus annulicornis Verhoeff, 1908

Figs. 5, 6, A22

Cylisticus annulicornis Verhoeff 1908c: 184; 1917a: 159; 1928: 163; 1932: 375, 376; 1936: 114, 160, Fig. 44.

Cylisticus ligurinus Verhoeff 1932: 369 (*nomen nudum*); 1936: 115 (**n. syn.**).

TYPE MATERIAL EXAMINED

Genova: 1 ♂ mounted on slide, Portofino – described by Verhoeff (1908c) as *C. annulicornis* (ZSM); 1 ♂ mounted on slide, Rossiglione – identified by Verhoeff (1936) as *C. annulicornis* (ZSM); 1 ♂, Rossiglione, 7.IV.1931, K. Verhoeff leg. – described by Verhoeff (1932) as *C. ligurinus* (ZSM); 1 ♂ mounted on slide, Camogli – identified by Verhoeff (1936) as *C. annulicornis* (ZSM).

OTHER MATERIAL EXAMINED

Imperia: 1♂, 4♀♀, 5 juvs., Pornassio, 500 m a.s.l., elm and chestnut woods, 23.VI.1980, A. & L. Briganti & S. Zoia leg. (MZUF).

Savona: 1 ♂ mounted on slide, Final Borgo, date unknwon – identified by Verhoeff (1936) as *C. annulicornis* (ZSM); 27♂♂ e ♀♀, Gazzo, Erli, hornbeam and chestnut woods, 6.VI.1980, G. Gardini, A. Torchia & S. Zoia leg. (MZUF); many ♂♂ and ♀♀, Varazze, holm oak woods, 29.IV/29.V/30.VI/ 8.X/17.XII.1981 and 14.IV.1982, R. Rizzerio & G. Gardini leg. (MSNG); 1♂, 1♀,

Quiliano, holm oak woods 14.III.1986, S. Zoia leg. (MSNG); 1♂, 1♀, 1 juv., Mt Alto, Mallare, 700 m a.s.l., 12.X.1989, G. Gardini & S. Zoia leg. (MSNG); 3♂, 1♀, 11juvs., Vara, Urbe, under *F. sylvatica*, 700 m a.s.l., 30.IX.1992, C. Giusto leg. (MSNG); 2♂♂, 2♀♀, 1 juv., Colle del Melogno, Calizzano, under *F. sylvatica* and *O. carpinifolia*, 1100 m a.s.l., 24.V.2018, G. Gardini & P. Gardini leg.; 4♂♂, 8♀♀, 4 juvs., Canova, Magliolo, mixed woods, 730 m a.s.l., 24.V.2018, G. Gardini & P. Gardini leg.; 1♂, 1♀, Martina Olba, Urbe, 500 m a.s.l., 24.VI.2018, G. Gardini, P. Gardini & C. Giusto leg.; 1♂, 1 juv., Teccio, Castelbianco, Val Pennavaira, under *O. carpinifolia*, 200 m a.s.l., 27.VII.2018, P. Gardini & C. Bonifazio leg.; 5♀♀, Pian delle Bosse, Pietra Ligure, 840 m a.s.l., 30.V.2019, P. Gardini & C. Bonifazio leg.; 3♂♂, Celle Ligure, under *Q. pubescens*, 200 m a.s.l., 14.II.2020, P. Gardini & C. Bonifazio leg.

Genova: 1♂, 9♀♀, Mt Creto, Genova, IX.1914, A. Andreini leg. (MSNG); 1♂, 1 juv., Santo Stefano d'Aveto, VIII/IX.1918, A. Andreini leg. (MSNG); 2♂♂, 2♀♀, same locality and collector, 7.VIII.1918 (MSNG); 2♂♂, 2♀♀, Forte Diamante, Genova, 26.IX.1918, A. Andreini leg. (MSNG); 9♀♀, Genova Begato, 3.X.1918, A. Andreini leg. (MSNG); 2♂♂, 3♀♀, N slope Mt Collere, Fontanigorda, 1000 m a.s.l., 26.X.1977, S. Zoia leg. (MZUF); many ♂♂ and ♀♀, Peschiera, Arenzano, 6.XI.1977, G. Gardini & G. Parodi leg. (MZUF); 1♂, 1♀, 2 juvs., S. Pietro di Novella, Rapallo, 18.XII.1977, S. Zoia leg. (MZUF); 1♂, 1♀, Genova Prato, 10.III.1978, S. Zoia leg. (MZUF); 1♀, Arenzano, cane thicket, 18.III.1978, G. Gardini & S. Zoia leg. (MZUF); 1♂, 3♀♀, Rezzoaglio, Val d'Aveto, 22.VIII.1978, S. Zoia leg. (MZUF); 1♂, 6♀♀, Torrecambiaso, Genova Pegli, 17.IX.1978, G. Gardini leg. (MZUF); 2♂♂, 1♀, 6 juvs., Spinola, Isola del Cantone, 5.XI.1978, G. Gardini leg. (MZUF); many ♂♂ and ♀♀, Arenzano, 22.II.1980, G. Gardini, C. Torti and S. Zoia leg. (MZUF); 1♂, 4♀♀, same locality, pinewood, 22.VI.1986, G. Gardini leg. (MSNV); many ♂♂ and ♀♀, Bertigaro, Borzonasca, hornbeam woods, 22.VII.1980, G. Gardini & S. Zoia leg. (MZUF); 1♂, 4♀♀, Rio Lischeo, Praglia, Genova, 850 m a.s.l., 23.VII/4.IX.1980, M. E. Franciscolo leg. (MSNG); many ♂♂ and ♀♀, Piandifieno, Ne, 31.VIII.1980, L. Briganti & S. Zoia leg. (MZUF); 1♂, 1♀, Genova Bavari, chestnut woods, 250 m a.s.l., 12.XI.1980, Terrile & Menin leg. (MZUF); 6♂♂, 9♀♀, Molino Vecchio, Valbrevenna, 550 m a.s.l., 13.V/10.VII.1981, M. E. Franciscolo leg. (MSNG); 9♂♂, 5♀♀, Madonna dell'Acqua, Valbrevenna, 600 m a.s.l., 5.VI.1981, M. E. Franciscolo leg. (MSNG); 1♂, 4♀♀, many juvs., Mt Portofino, hornbeam woods, 15.XI.1981, G. Gardini leg. (MZUF); 5♂♂, 5♀♀, 10 juvs., Semorile, Zoagli, under *O. carpinifolia*, 500 m a.s.l., 7.III.1982, S. Zoia leg. (MZUF); 1♂, 5♀♀, Mt Castello, Rapallo, 600 m a.s.l., 7.III.1982, S. Zoia leg. (MZUF); many ♂♂ and ♀♀, N slope Mt Becco, Pannesi, Lumarzo, 16.I.1983, S. Zoia leg. (MSNG); 1♂, 2 juvs., Ruta di Camogli, 250 m a.s.l., 24.I.1984, C. Giusto leg. (MSNV); 2♂♂, Uscio, 300 m a.s.l., 2.II and 30.III.1984, C. Giusto leg. (MSNV); 6♂♂, 6♀♀, surroundings of Libiola, Sestri Levante, holm oak woods, 18.III.1984, S. Zoia leg. (MSNG); 4♂♂, 2♀♀, Ognio, Neirone, 380 m a.s.l., 17.III.1985, S. Zoia leg. (MSNV); 2♂♂, 4♀♀, Punta Manara, Sestri Levante, 20.I.1987, S. Zoia leg. (MSNG); 1♀, same locality, 23.II.1993, G. Gardini leg. (MSNG); many ♂♂ and ♀♀, Mt Chiappozzo, Reppia, Ne, 28.III.1989, S. Zoia leg. (MSNG); 11♂♂, 14♀♀, 6juvs., along Rio Lerca, Lerca, Cogoleto, 15.XI.1995, G. Gardini leg. (MSNG); 3♀♀, W slope Mt Ruta, Camogli, 310 m a.s.l., 5.XI.1998, G. Gardini leg. (MSNG); 1♀, S slope Mt Moro, Genova Quinto al Mare, oak woods, 300 m a.s.l., 23.IV.2000, G. Gardini leg. (MSNG); 3♂♂, 5♀♀, same locality and collector, 100 m a.s.l., 27.I.2002 (MSNG); 1♂, 2♀♀, same locality and collector, 20.III.2002 (MSNG); 1♂, 7♀♀, same locality and collector, 20.II.2003 (MSNG); 12♂♂, 10♀♀, same locality, 200 m a.s.l., 27.IV.2020 and 17.XI.2023, P. Gardini leg.; 1♂, Gattorna, Moconesi, 15.III.2008, M. B. Invernici leg. (MSNG); 3♂♂, 3♀♀, 2 juvs., Ns. Signora delle Grazie sanctuary, Chiavari, 10.XI.2017, P. Gardini leg.; 1♂, Mt Reale, Ronco Scrivia, 900 m a.s.l., 1.V.2019, leg. P. Gardini, bosco misto; 11♂♂, 14♀♀, Gola di Sisa, Montoggio, mixed woods, 700 m a.s.l., 28.IX.2019 and 22.V.2020, G. Gardini, P. Gardini & C. Giusto leg.; 1♂, Crocefieschi, 2.VII.2022, M. Bodon leg.

La Spezia: 1♂, Mt Zenone slope, Maissana, 1000 m a.s.l., 23.IV.1985, S. Zoia leg. (MSNV).

PREVIOUS RECORDS

Savona: Noli (Verhoeff 1908c). Ferrania (Verhoeff 1908c, 1936). Letimbro valley, Savona (Verhoeff 1917a). Finalborgo; Albissola (Verhoeff 1936).

Genova: Portofino; Santa Margherita Ligure (Verhoeff 1908c, 1917a, 1928). Camogli-Recco;

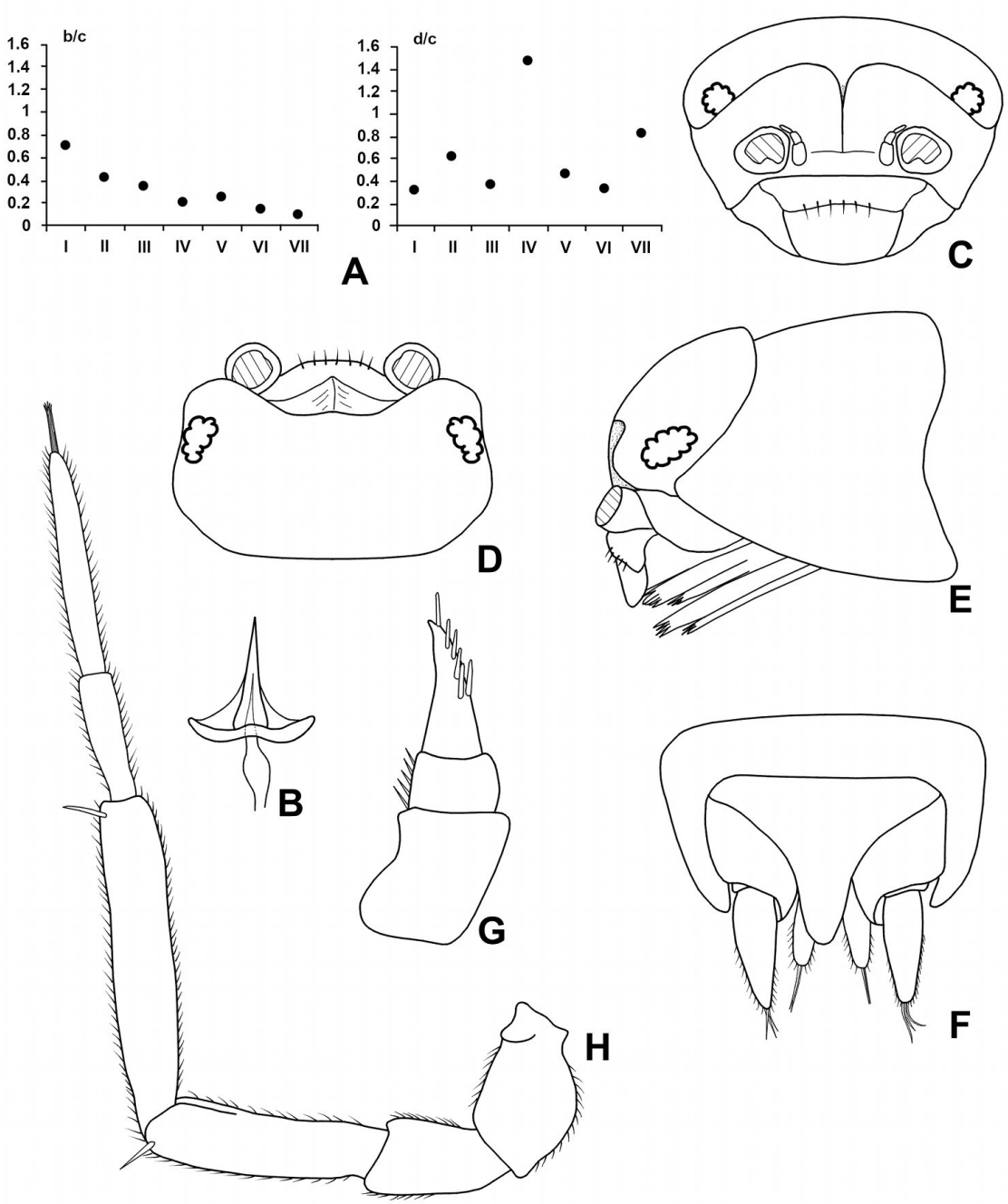

Figure 5. *Cylisticus annulicornis*, ♂ from Portofino (GE, Liguria). (**A**) Coordinates of noduli laterales; (**B**) dorsal scale-seta; (**C**) cephalon, frontal view; (**D**) cephalon, dorsal view; (**E**) cephalon and pereonite 1, lateral view; (**F**) pleonite 5, telson and uropods, dorsal view; (**G**) antennula; (**H**) antenna.

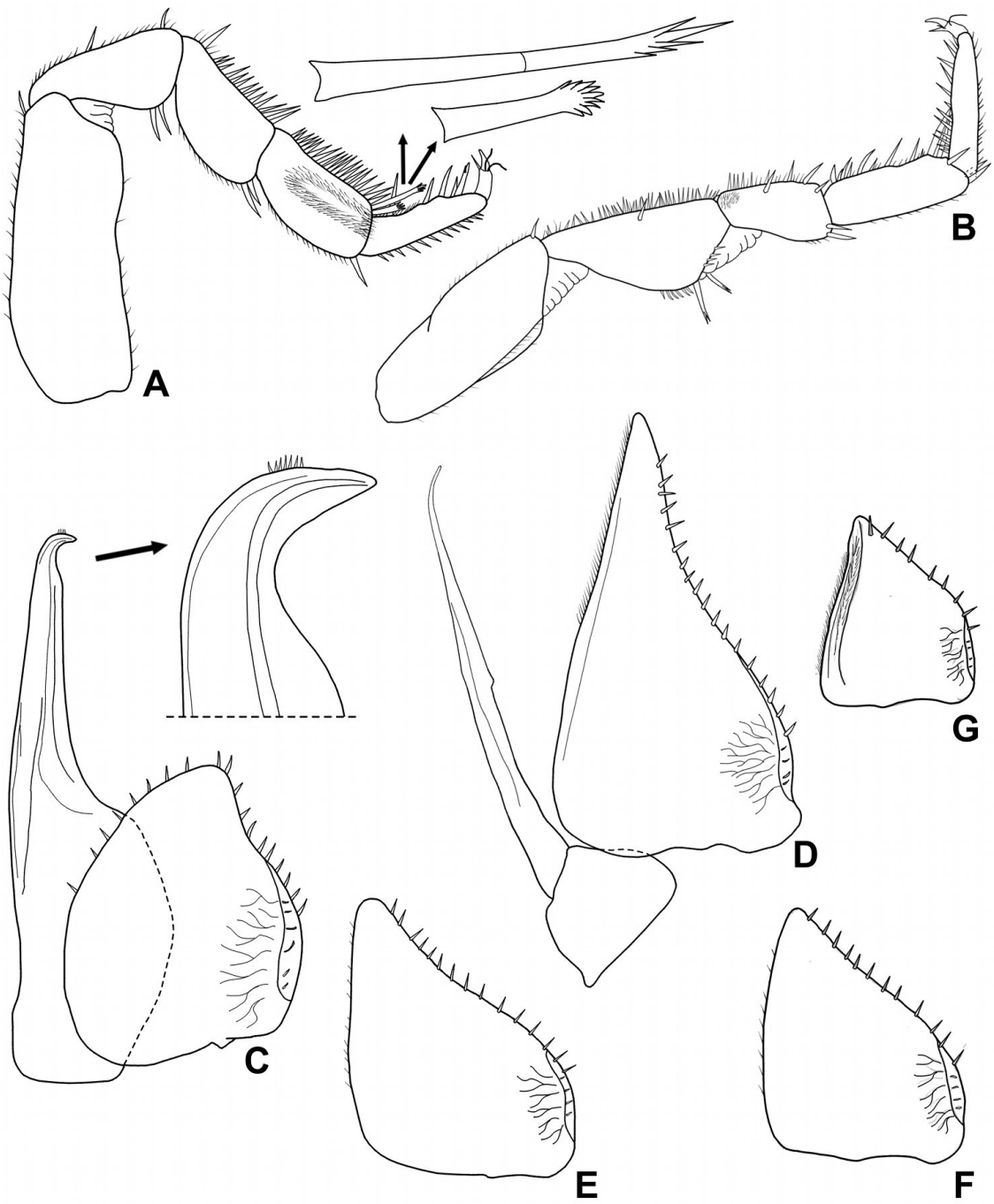

Figure 6. *Cylisticus annulicornis*, ♂ from Portofino (GE, Liguria). (**A**) Pereopod 1; (**B**) pereopod 7; (**C**) pleopod 1; (**D**) pleopod 2; (**E**) pleopod 3 exopod; (**F**) pleopod 4 exopod; (**G**) pleopod 5 exopod.

Genova Voltri; Genova Pontedecimo; Rossiglione; Mele (Verhoeff 1936). Ronco Scrivia (Verhoeff 1917a, 1928, 1932). Genova Nervi (Verhoeff 1932, 1936).

DISTRIBUTION

North-western Italy (Liguria and Piedmont).

ECOLOGY

Humicolous species.

REMARKS

Re-examination of the male holotype of *Cylisticus ligurinus* Verhoeff, 1936, from Rossiglione, deposited in the ZSM, allowed us to propose this species as a junior subjective synonym of *Cylisticus annulicornis* Verhoeff, 1908 (**n. syn.**). The main

diagnostic characters of the species are shown in Figures 5 and 6.

Cylisticus annulicornis is readily distinguished from *Cylisticus bergomatius* Verhoeff, 1928, *Cylisticus gracilipennis* Budde-Lund, 1885, and *Cylisticus pontremolensis* Verhoeff, 1936 by its smaller body size (maximum length 10 mm vs. 18, 15, and 15 mm in the other species, respectively) and by the structure of the male pleopod 1 exopod, which has a markedly shorter and less developed distal part (Fig. 6C). It further differs from *C. bergomatius* and *C. gracilipennis* in lacking a basal lobe on the merus of male pereopod 7 (Fig. 6B), and from *C. gracilipennis* in the having the distal part of the fifth article of the antennae depigmented.

Cylisticus bergomatius Verhoeff, 1928

Fig. A21

Cylisticus plumbeus; Verhoeff 1917a: 159.

Cylisticus plumbeus bergomatius Verhoeff 1928 (partim: Pegli): 162, Figs. 78-79.

MATERIAL EXAMINED

Savona: many ♂♂, ♀♀ and juvs., S. Bernardino plateau, Finale Ligure, 1.XI.1979, G. Gardini, A. Torchia & S. Zoia leg. (MZUF).

PREVIOUS RECORDS

Genova: Genova Pegli (Verhoeff 1917a, 1928).

DISTRIBUTION

Northern and central Italy (safe records from Piedmont, Lombardy, Veneto, Liguria, Tuscany) (Taiti & Ferrara 1995 and unpublished data).

ECOLOGY

Humicolous species, sometimes with troglophile tendencies.

REMARKS

The material cited by Verhoeff (1917) as *Cylisticus plumbeus* [= *Cylisticus gracilipennis* Budde-Lund, 1885] corresponds to that later referred to by Verhoeff (1928) as *C. plumbeus bergomatius* [= *Cylisticus bergomatius*] and subsequently revised by Taiti & Ferrara (1995: 184–186, Fig. 12), who designated the male specimen from Genova Pegli as lectotypus of this species.

Cylisticus bergomatius is distinguished from *Cylisticus gracilipennis* and *Cylisticus pontremolensis* by its larger body size, male pereopod 7 with a narrower ischium and lobe on the merus bearing a tuft of long, five-pointed setae, and male pleopod 1 exopod with a much more elongated distal part (cf. Taiti & Ferrara 1995: Fig. 12 with Ferrara & Taiti 1978: Fig. XIV). It further differs from *C. gracilipennis* in having the distal half of the fifth antennal segment depigmented.

Cylisticus convexus (De Geer, 1778)

Fig. A22

MATERIAL EXAMINED

Savona: 2♀♀, Faie, Varazze, 6.III.1977, E. Bernabò leg. (MZUF).

Genova: 1♂, 1♀, Peschiera, Arenzano, 13.XI.1977, G. Gardini & G. Parodi leg. (MZUF).

DISTRIBUTION

Europe, Asia Minor and central Asia. Introduced to North Africa, St. Helena island, North and South America and New Zealand.

ECOLOGY

Euryecious species, often synanthropic.

REMARKS

Although it is an ecologically versatile species, *Cylisticus convexus* appears to be rather rare in the region. Its occurrence is likely the result of anthropogenic introduction.

Cylisticus gracilipennis Budde-Lund, 1885

Fig. A21

Cylisticus gracilipennis; Brian 1899: 212. Ascenso 1950: 78, 80. Sanfilippo 1950: 52. Franciscolo 1955: 117.

Cylisticus plumbeus; Franciscolo 1955: 117.

MATERIAL EXAMINED

La Spezia: 3♂♂, Vallecchia, Castelnuovo Magra, 14.V.2007, L. Braida leg. (MSNG).

PREVIOUS RECORDS

?Savona: Grotta di Sant'Antonino LI30 (Brian 1899, Ascenso 1950, Franciscolo 1955).

Genova: Forra del Diavolo LI112 (Sanfilippo 1950).

DISTRIBUTION

Northern and central Italy (safe records from Piedmont, Liguria, Tuscany, Emilia-Romagna, Marche, Umbria, Lazio, Abruzzo, Campania, Basilicata) (Taiti & Ferrara 1995).

ECOLOGY

Humicolous species, sometimes with troglophile tendencies.

REMARKS

The records of this species from localities in the province of Savona are doubtful, as we have never found it in the western part of the region. Given the long-standing confusion with *Cylisticus bergomatius*, these records may actually refer to the latter species.

Cylisticus gracilipennis is distinguished from *Cylisticus pontremolensis* by the distal part of the fifth antennal segment being normally pigmented, the epimera of the first pereonite being less protruding posteriorly, and the presence of a distinct lobe on the merus of male pereopod 7 (cf. Ferrara & Taiti 1978: Fig. XIV with Figs. 8 and 9).

Cylisticus lobatus Ferrara & Taiti, 1985

Fig. A22

Cylisticus lobatus Ferrara & Taiti 1985: 33, Figs. 1-9.

MATERIAL EXAMINED

La Spezia: 1♀, Ameglia, 3.III.1980, S. Zoia leg. (MZUF); 1♀, 4 juvs., Montemarcello, 27.VII/27.XII.1980, S. Taiti leg. (MZUF); 4 juvs., Montemarcello, 2.XI.1986, S. Taiti leg. (MZUF).

PREVIOUS RECORDS

La Spezia: Montemarcello (Ferrara & Taiti 1985).

DISTRIBUTION

Species endemic to eastern Liguria (Ferrara & Taiti 1985).

ECOLOGY

Endogean species, typically found beneath large stones deeply embedded in the soil.

Cylisticus pallidus Verhoeff, 1928

Figs. 7, A21

Cylisticus pallidus Verhoeff 1928: 159, Figs. 72-73; 1930a: 175; 1932: 369.

TYPE MATERIAL EXAMINED

Savona: 1 ♂ mounted on slide, 2 ♀♀, Bergeggi, 7.IV.1907, K. Verhoeff leg. – described by Verhoeff (1928) as *Cylisticus pallidus* (ZSM).

OTHER MATERIAL EXAMINED

Savona: 1 ♂ mounted on slide, Santuario near Savona, 25.IV.1929, K. Verhoeff leg. – identified by Verhoeff (1930a) as *C. pallidus* (ZSM);1♂, 1♀, Mt Mao, Spotorno, holm oak and hornbeam woods, 400 m a.s.l., 10.IV.2017, G. Gardini, A. Trotta & C. Giusto leg.; 2♂♂, 9♀♀, Salto del Lupo, Toirano, 320 m a.s.l., 28.XII.2023, P. Gardini & C. Bonifazio leg.

PREVIOUS RECORDS

Savona: Bergeggi (Verhoeff 1928); Santuario near Savona (Verhoeff 1930a, 1932).

DISTRIBUTION

Endemic to western Liguria.

ECOLOGY

Species with endogean tendencies. The specimens collected were found under deeply embedded stones.

REMARKS

Cylisticus pallidus is undoubtedly very close to *Cylisticus bergomatius*. Re-examination of the types of *C. pallidus*, together with the study of newly collected material in the surroundings of the type locality, showed that the male characters of this species, illustrated in Figure 7, are very similar to those of *C. bergomatius* illustrated by Taiti & Ferrara (1995:185, Fig. 12). However, the apex of the male pleopod 1 endopod appears to be slightly different, being more folded in the figure provided by Taiti & Ferrara (1995). Moreover, all adult specimens collected and examined were very pale (sometimes almost depigmented) when alive, differing greatly from the typical grey-brown coloration of *C. bergomatius*. For these reasons, we prefer to keep the two species as distinct taxonomic entities. An integrative re-evaluation of the *gracilipennis* group with molecular data will clarify its taxonomy.

Cylisticus poggii Gardini & Taiti, 2023

Fig. A22

Cylisticus poggii Gardini & Taiti 2023: 12, Figs. 7-9, 16.

PREVIOUS RECORDS

La Spezia: Tino Island, Portovenere (Gardini & Taiti 2023).

DISTRIBUTION

Species endemic to eastern Liguria, so far known only for the small island of Tino (Gardini & Taiti 2023).

ECOLOGY

Endogean species.

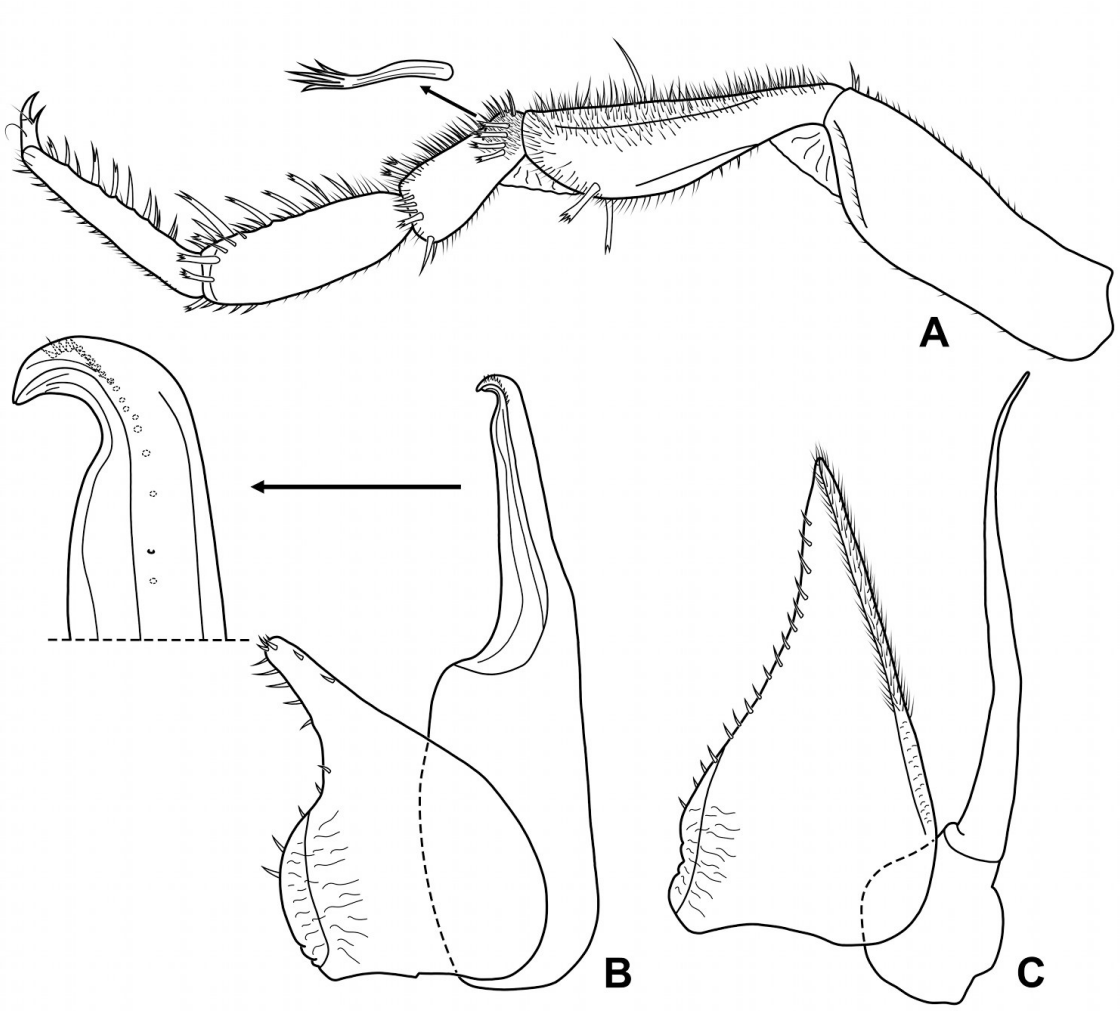

Figure 7. *Cylisticus pallidus*, ♂ from Mt Mao, Spotorno (SV, Liguria). (**A**) Pereopod 7; (**B**) pleopod 1; (**C**) pleopod 2.

Cylisticus pontremolensis Verhoeff, 1936

Figs. 8, 9, A21

Cylisticus pontremolensis Verhoeff 1936: 114, Figs. 40-43.

MATERIAL EXAMINED

Genova: 3♂♂, 4♀♀, Punta Manara, Sestri Levante, 27.II.1977, L. Cassulo leg. (MZUF); 6♂♂, 3♀♀, 2 juvs., Sestri Levante, 29.XII.1980, S. Taiti leg. (MZUF); 1♂, 9♀♀, 2 juvs., between Passo della Maddalena and Mt Carmo, Gorreto, beech forest, 1500 m a.s.l., 2.VII.2020, P. Gardini leg.

La Spezia: 1♂, 1♀, Portovenere, holm oak woods, 8.II.1976, G. Gardini leg. (MZUF); many ♂♂ and ♀♀, Ameglia, 3.III.1980, S. Zoia leg. (MZUF); many ♂♂ and ♀♀, surroundings of Cassana, Borghetto di Vara, 200 m a.s.l., 8.X.1980, G. Gardini, R. Rizzerio & S. Zoia leg. (MZUF); 11♂♂, 10♀♀, 6 juvs., same locality, 30.X.1982, L. Briganti & S. Zoia leg. (MZUF); 2♂♂, 4♀♀, same locality, 4.X.1986, N. Sanfilippo leg. (MSNG); 1♂, 1♀, Palmaria Island, Portovenere, 11.VIII.1981, L. Briganti & S. Zoia leg. (MZUF); 14♂♂, 7♀♀, 4 juvs., Biassa, La Spezia, 150 m a.s.l., 21.II.1982, C. Giusto leg. (MSNV); many ♂♂ and ♀♀, Le Grazie, Portovenere, 5.XII.1982, L. Ansaldo & S. Zoia leg. (MZUF); 1♂, Montemarcello, 270 m a.s.l., 23.IV.2005, S. Taiti & S. Bianchini leg. (MZUF); 1♂, 3♀♀, same locality, 3.IV.2022, P. Gardini & C. Giusto leg.; 5♂♂, 10♀♀, Valle Marossa, Lerici, 205 m a.s.l., 5.X.2019, S. Cianfanelli & M. Calcagno leg. (MZUF); 2♂♂, 3♀♀, 1 juv., Monte Muzzerone, Portovenere, holm oak woods, 270 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.

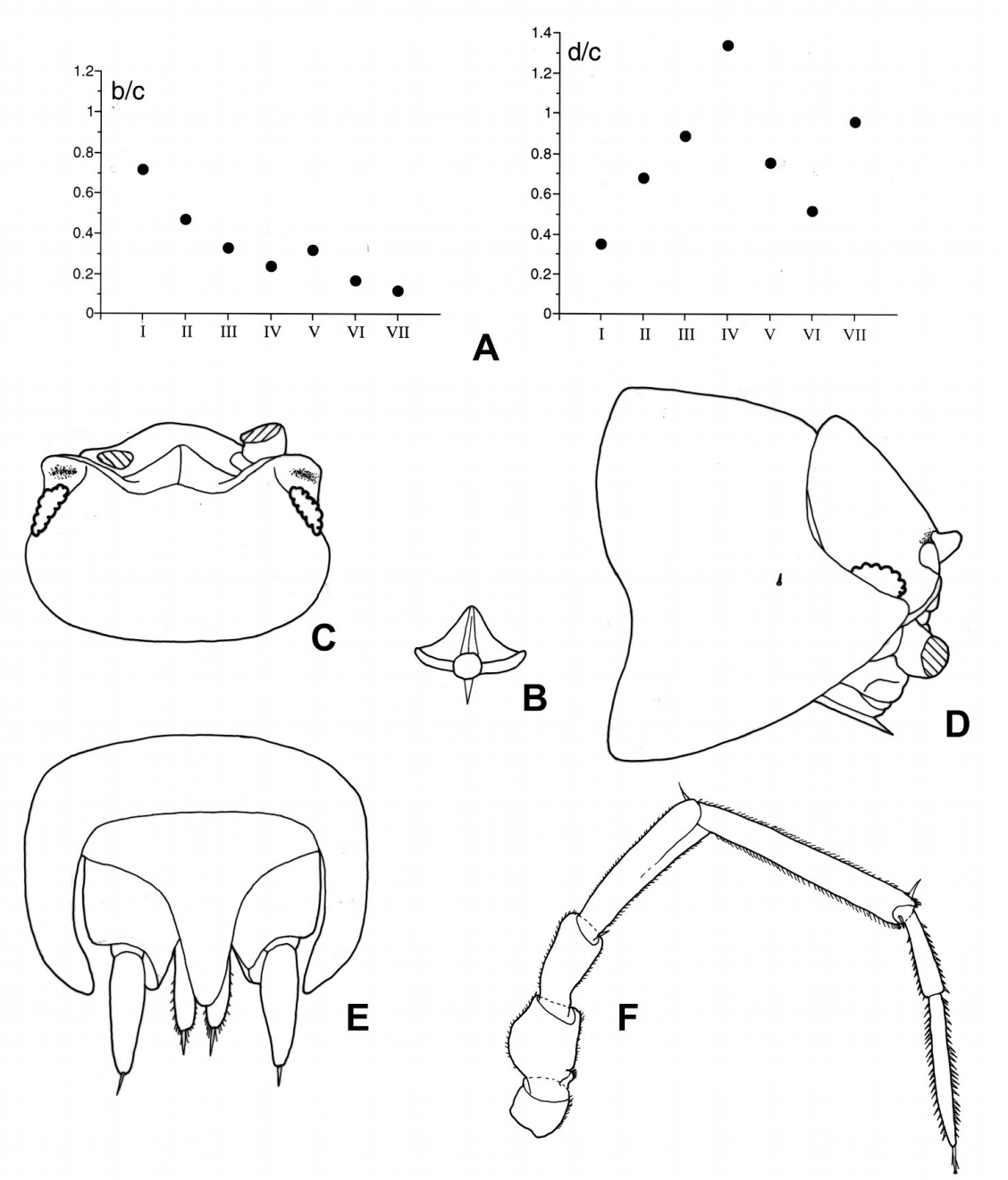

Figure 8. *Cylisticus pontremolensis*, ♂ from the vicinity of Pontremoli (MS, Tuscany). (**A**) Coordinates of noduli laterales; (**B**) dorsal scale-seta; (**C**) cephalon, dorsal view; (**D**) cephalon and pereonite 1, lateral view; (**E**) pleonite 5, telson and uropods, dorsal view; (**F**) antenna.

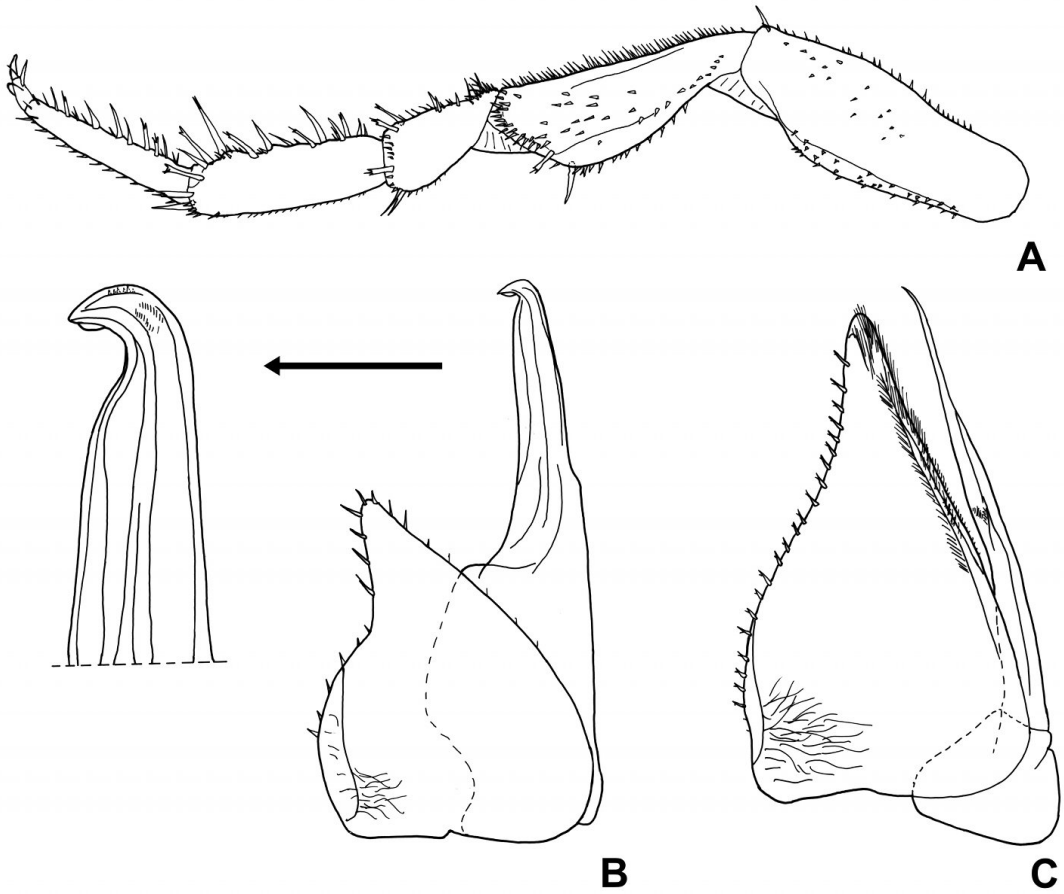

Figure 9. *Cylisticus pontremolensis*, ♂ from the vicinity of Pontremoli (MS, Tuscany). (**A**) Pereopod 7; (**B**) pleopod 1; (**C**) pleopod 2.

PREVIOUS RECORDS

Genova: Portofino; Santa Margherita Ligure (Verhoeff 1936).

La Spezia: Portovenere; Biassa; La Spezia (Verhoeff 1936).

DISTRIBUTION

Northern Apennines (Liguria, Emilia-Romagna and Tuscany) (Verhoeff 1936 and unpublished data).

ECOLOGY

Humicolous species.

REMARKS

The main diagnostic characters of this species are illustrated in Figs. 8 and 9. *Cylisticus pontremolensis* can be distinguished from *Cylisticus gracilipennis* mainly by the depigmentation of the distal part of the fifth antennal segment (normally pigmented in *C. gracilipennis*), the posteriorly more protruding epimera of the first pereonite, and the absence of a protruding lobe on the merus of the male pereopod 7 (cf. Ferrara & Taiti 1978: 42–44, Fig. XIV). It differs from *Cylisticus bergomatius* in having less protruding lateral cephalic lobes, the merus of the male pereopod 7 lacking a basal lobe with a tuft of setae with apices divided into five tips, and the male pleopod 1 exopod with a less pronounced distal part.

Cylisticus cf. *ormeanus* Verhoeff, 1930

Figs. 10-12, A22

MATERIAL EXAMINED

Imperia: 8♀♀, Passo del Ronco, Mt Nero, Seborga, under *C. sativa* and *Quercus* sp., 540 m a.s.l., 13.V.2019, G. Gardini, P. Gardini & C. Giusto leg.; 6♂♂, 17♀♀, same locality, 31.III.2024, P. Gardini leg.

ECOLOGY

Humicolous species with endogean tendencies.

REMARKS

This species, for which we provide the main diagnostic characters (Figs. 10-12), is readily distinct

Figure 10. *Cylisticus* cf. *ormeanus*, from Seborga (IM, Liguria). (**A**) ♂, habitus in life; (**B**) ♀, habitus in life.

from the species of the *gracilipennis* group by the different position of the *noduli laterales* (Fig. 11A). Instead, it appears to be more closely related to *Cylisticus ormeanus* Verhoeff, 1930, and *Cylisticus esterelanus* Verhoeff, 1917. Verhoeff (1930a: 175) described *C. ormeanus* on female specimens from Ormea (province of Cuneo, Piedmont, about 60 km from Seborga). In his brief description, he defined the new species as a "pale, subterranean, light greyish-yellow species with light brown eyes consisting of three rows of ocelli". The author considered the new species to be closely related to *C. esterelanus*, from which it differed mainly by having more developed lateral cephalic lobes, a more prominent frontal ridge, and by the position of the *noduli laterales* on tergites 1–3 (forming an obtuse angle in *C. ormeanus* vs. on the same line in *C. esterelanus*) and on tergites 3–7 (almost on the same line in *C. ormeanus*). According to Verhoeff (1930a), *C. ormeanus* can also be readily distinguished from *Cylisticus pallidus* by the cephalic structure and, above all, by the position of the *noduli laterales* on tergites 3–5 (almost on the same line in *C. ormeanus* vs. the *noduli* on pereonite 4 far from lateral margins of the pereonites in *C. pallidus*, as in all members of the *gracilipennis* group). In the redescription and figures of *C. esterelanus* provided by Vandel (1962), however, the *noduli laterales* are in a slightly different position from that described by Verhoeff (1930a) and are fully comparable to those of *C. ormeanus* as well as to those of the species illustrated here (cf. Vandel 1962: Fig. 284 with Fig. 11A). Nevertheless, the male characters of the species illustrated here, particularly the male pereopod 7 (Fig. 12B), strongly differ from those of *C. esterelanus*, both in Vandel's drawings (Vandel 1962:570, Fig. 283A-C) and in direct comparison with specimens of the latter species from the Esterel Massif. Therefore, we consider that the species presented here may correspond to *C. ormeanus*. However, because we were unable to examine any male specimens from the type locality of the latter, we cannot draw firm conclusions at present and reserve them for a future study.

Family Armadillidiidae Brandt, 1833

Genus *Alloschizidium* Verhoeff, 1919

Alloschizidium segestanum Gardini & Taiti, 2023

Fig. A23

Alloschizidium segestanum Gardini & Taiti 2023: 19, Figs. 13-15.

PREVIOUS RECORDS

Genova: Punta Manara, Punta Baffe and Bracco, Sestri Levante municipality (Gardini & Taiti 2023).

DISTRIBUTION

Species endemic to Liguria (Gardini & Taiti, 2023).

ECOLOGY

Endogean species, typically found beneath large stones deeply embedded in the soil.

Genus *Armadillidium* Brandt, 1833

Armadillidium alassiense Verhoeff, 1910

Figs. 13, 14, A24

Armadillidium alassiense Verhoeff 1910: 121, 129

Armadillidium (Pseudosphaerium) alassiense (genuinum); Verhoeff 1936: 123.

Armadillium (Armadillium) carniolense alassiense Arcangeli 1954: 153, Fig. 22-24.

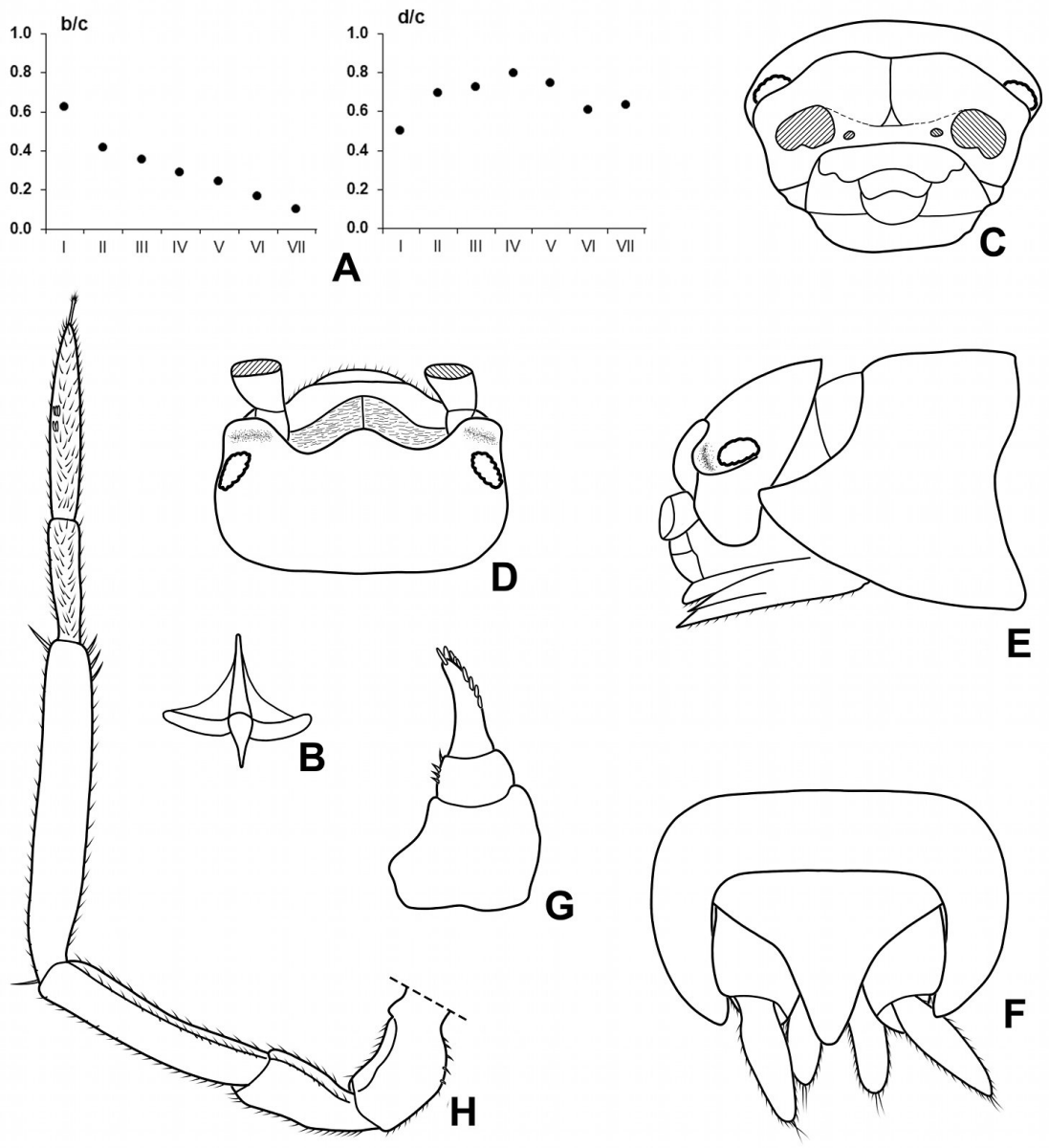

Figure 11. *Cylisticus* cf. *ormeanus*, 9.7 x 4.2 mm ♀ from Seborga (IM, Liguria). (**A**) Coordinates of noduli laterales; (**B**) dorsal scale-seta; (**C**) cephalon, frontal view; (**D**) cephalon, dorsal view; (**E**) cephalon and pereonite 1, lateral view; (**F**) pleonite 5, telson and uropods, dorsal view; (**G**) antennula; (**H**) antenna.

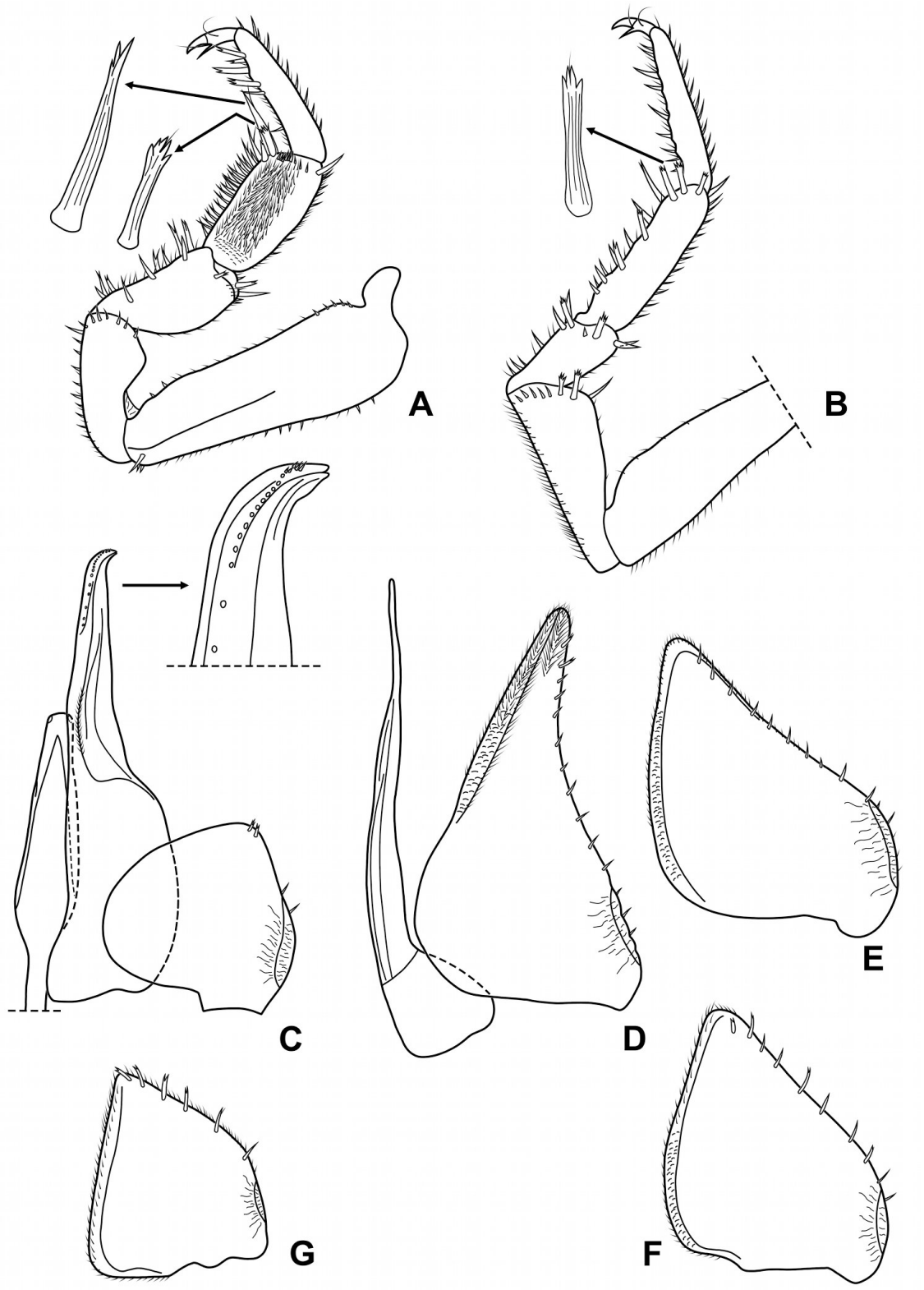

Figure 12. *Cylisticus* cf. *ormeanus*, 8 x 3 mm ♂ from Seborga (IM, Liguria) (**A**) Pereopod 1; (**B**) pereopod 7; (**C**) pleopod 1; (**D**) pleopod 2; (**E**) pleopod 3; (**F**) pleopod 4; (**G**) pleopod 5.

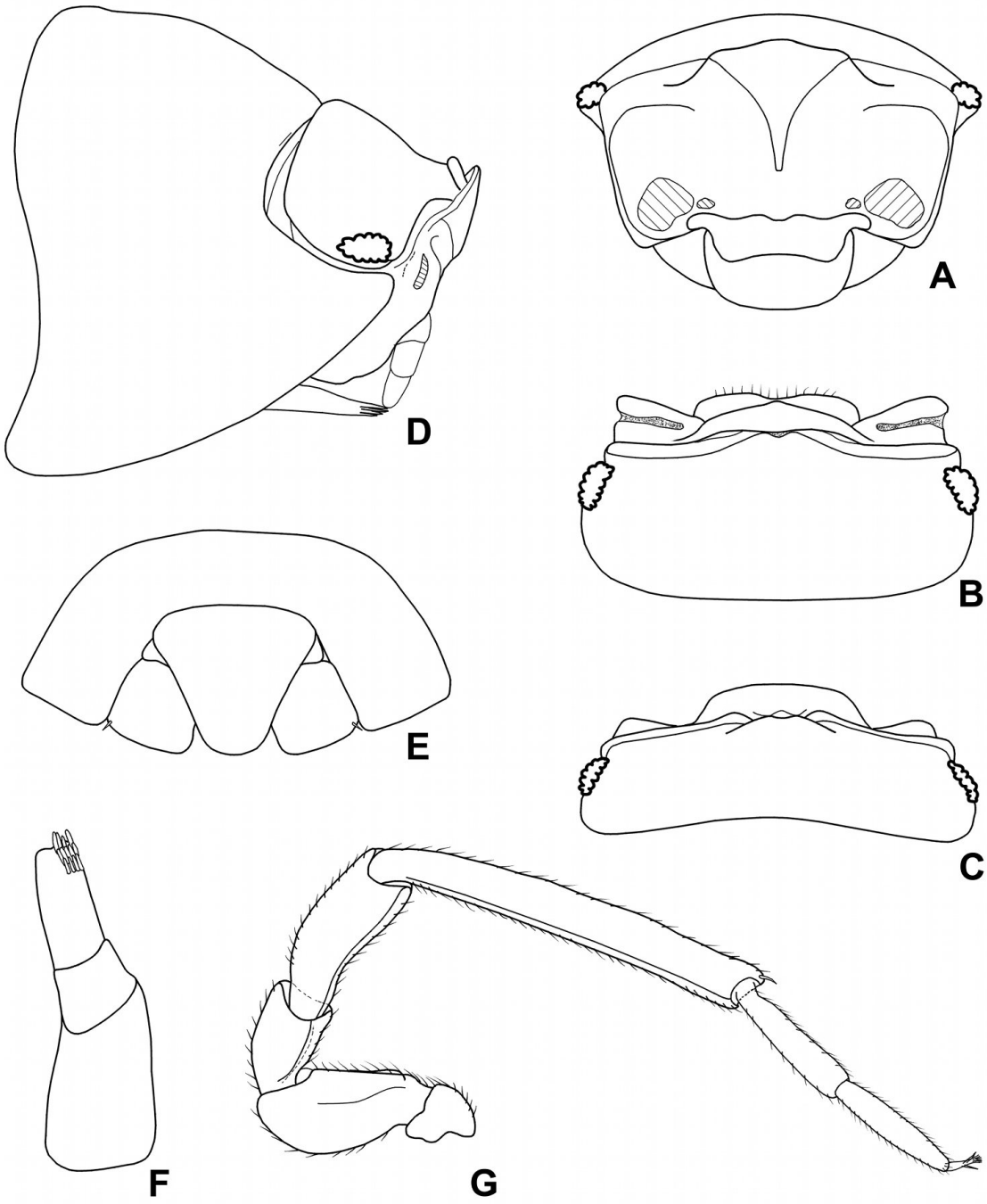

Figure 13. *Armadillidium alassiense*, ♂ from Capo Mele, Alassio (SV, Liguria). (**A**) Cephalon, frontal view; (**B**) cephalon, dorsal view; (**C**) cephalon, posterior view; (**D**) cephalon and pereonite 1, lateral view; (**E**) pleonite 5, telson and uropods, dorsal view (**F**) antennula; (**G**) antenna.

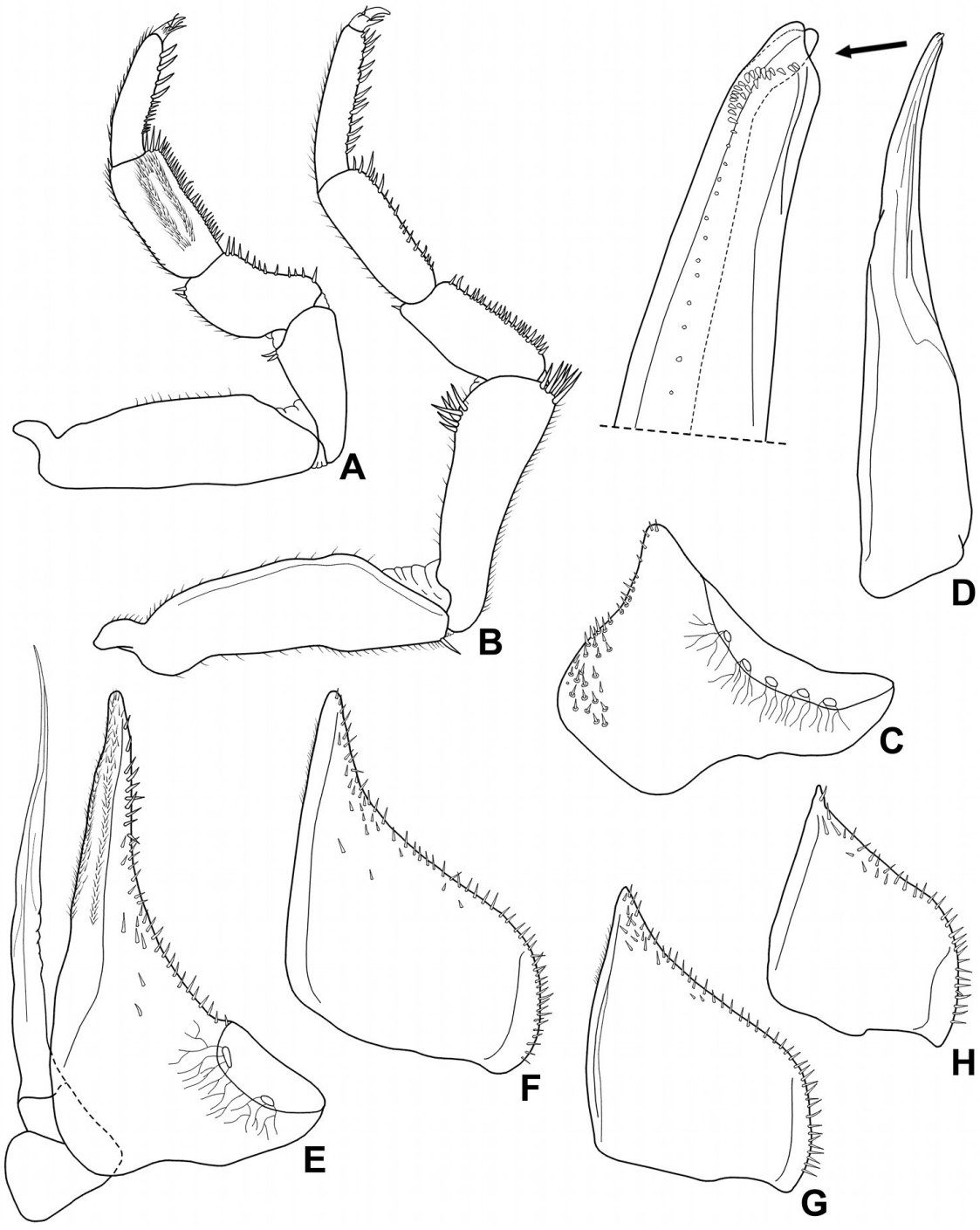

Figure 14. *Armadillidium alassiense*, ♂ from Capo Mele, Alassio (SV, Liguria). (A) pereopod 1; (B) pereopod 7; (C) pleopod 1 exopod; (D) pleopod 1 endopod; (E) pleopod 2; (F) pleopod 3 exopod; (G) pleopod 4 exopod; (H) pleopod 5 exopod.

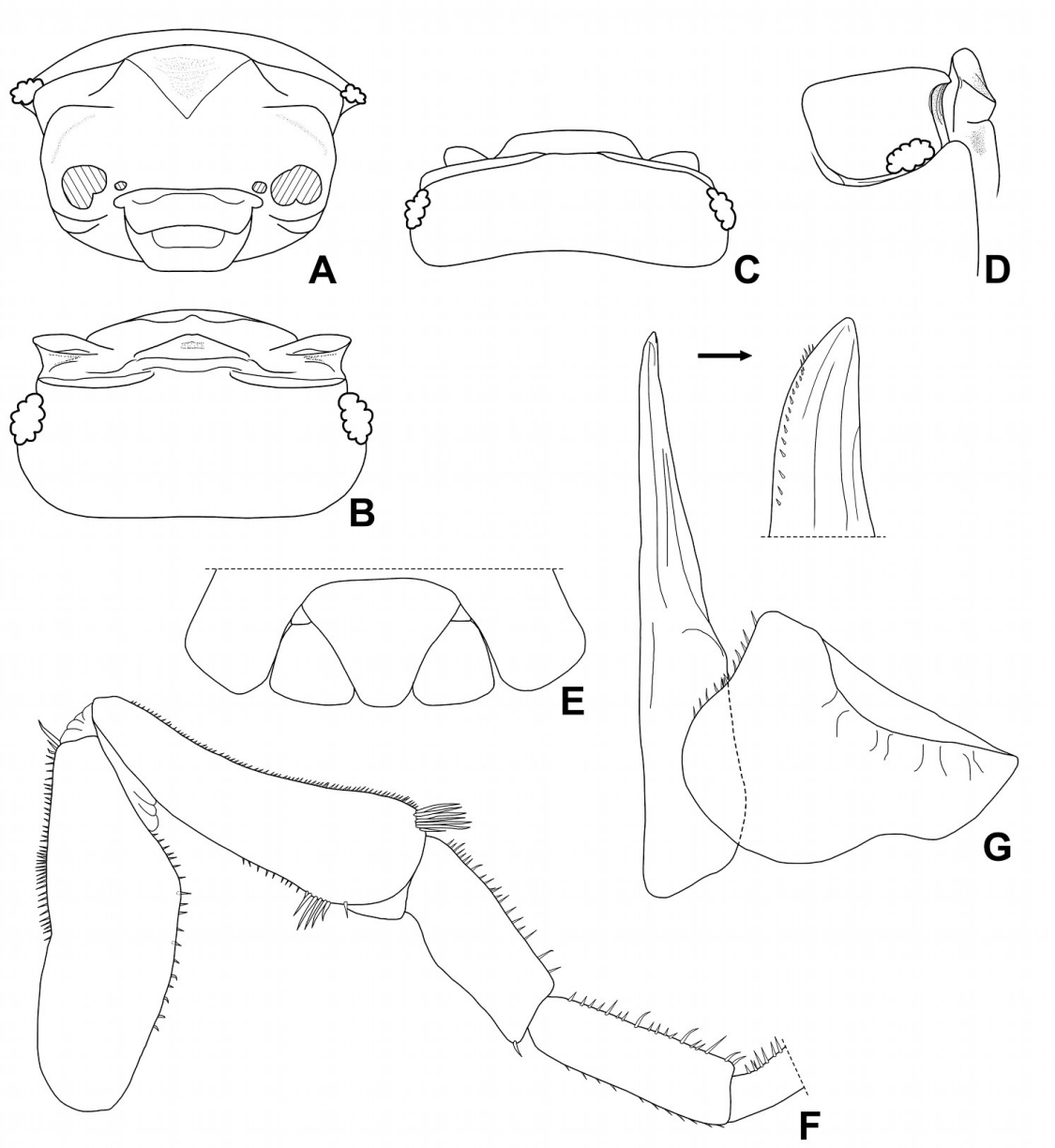

Figure 15. *Armadillidium ormeanum*, ♂ from Ormea (CN, Piedmont). (**A**) Cephalon, frontal view; (**B**) cephalon, dorsal view; (**C**) cephalon, posterior view; (**D**) cephalon, lateral view; (**E**) pleonite 5, telson and uropods, dorsal view (**F**) pereopod 7; (**G**) pleopod 1.

TYPE MATERIAL EXAMINED

Savona: 1♂, 1♀, Capo Mele, Alassio, date unknown, K.W. Verhoeff leg. (ZSM).

OTHER MATERIAL EXAMINED

Imperia: 2♂♂, 2♀♀, Lucinasco, unknown date and collector (MZUF); 5♂♂, 2♀♀, Bajardo, 800 m a.s.l., 7.VI.1982, L. Ansaldo, C. Torti & S. Zoia leg. (MZUF); 1♂, Bassa d'Abellio, Dolceacqua, maquis and holm oaks, 500-750 m a.s.l., 12.V.2019, P. Gardini leg.; 13♂♂, 5♀♀, Passo del Ronco, Seborga, under *C. sativa* and *Quercus* sp., 540 m a.s.l., 13.V.2019, P. Gardini leg.; 1♂, Seborga, M.te Nero m 600, 13.V.2019, leg. P. Gardini, macchia; 5♂♂, 33♀♀, 2 juvs., Mt Saccarello, Monesi di Triora, 2130 m a.s.l., 7.VII.2024, P. Gardini leg.

Savona; 2♂♂, 1♀, Capo Mele, Laigueglia, 24.II.1974, G. Gardini leg. (MZUF); 2♂♂, Stellanello, 250 m a.s.l., 21.VII.2008, G. B. Delmastro leg. (MCCI).

PREVIOUS RECORDS

Savona: Alassio; Capo Mele (Verhoeff 1910).

Imperia: Valle dell'Impero, Imperia Oneglia; Valle Borghetto near Bordighera (Verhoeff 1936).

DISTRIBUTION

Endemic to western Liguria (Arcangeli 1954).

ECOLOGY

Humicolous species, frequent in leaf litter of mesophilic woods but also adapted to more Mediterranean environments.

REMARKS

Verhoeff (1910) described *Armadillidium alassiense* from Alassio and Capo Mele without providing figures. The same author (Verhoeff 1931) described two additional species belonging to the same group: *Armadillidium tendanum* Verhoeff, 1931, on specimens from Tenda (France, Alpes-Maritimes), and *Armadillidium ormeanum* Verhoeff, 1931, on specimens from Ormea (Italy, Piedmont). Later, Verhoeff (1936) considered *A. tendanum* as a subspecies of *A. alassiense* (*A. alassiense tendanum*), arguing that the differences in male characters were insufficient to justify specific distinction. Vandel (1960) provided a redescription and illustrations of what he considered *A. alassiense*, without, however, clearly specifying the origin of the specimens. It is highly probable that Vandel did not examine or illustrate specimens from Verhoeff's type series or from the type localities, but rather from the Roja Valley or nearby areas, where the type localities of *A. tendanum* and *Armadillidium rojanum* Verhoeff, 1936 are situated.

The re-examination of the type material of *A. alassiense* (unclear whether holotype and paratype or two paratypes) and *A. tendanum* preserved at the ZSM, together with new material from the type locality of the former, allows us to state that the two species are indeed distinct, and that the figures provided by Vandel (1960) for *A. alassiense* correspond to *A. tendanum*. Here, we provide figures of the main diagnostic characters of *A. alassiense* (Figs. 13 and 14) based on a specimen collected at the type locality. *Armadillidium tendanum* is therefore resurrected as a valid species, to which the French records published so far (see Vandel 1962 and Séchet & Noël 2015) most probably refer. The taxonomic identity of *A. rojanum*, which Vandel tentatively regarded as a synonym of *A. alassiense* but is currently treated as a valid species, still requires careful evaluation.

Armadillidium alassiense and *A. tendanum* differ mainly in the structure of the antennal lobes (bent backward and with a posterior swelling in *A. alassiense* vs. widely open and without swelling in *A. tendanum*; cf. Fig. 13A-D with Vandel 1962: Fig. 394A-B), in the shape of the ischium of male pereopod 7 (strongly concave in *A. alassiense* vs. slightly concave or almost straight in *A. tendanum*; cf. Fig. 14B with Vandel 1962: Fig. 394F), and in the morphology of the male pleopod 1 exopodite (posterior lobe strongly developed and inner margin deeply concave in *A. alassiense* vs. posterior lobe less developed and inner margin only slightly concave or straight in *A. tendanum*; cf. Fig. 14C with Vandel 1962: Fig. 394G).

As for the status of *A. ormeanum*, re-examination of the type material (1♂, Ormea, Piedmont, K.W. Verhoeff leg.) preserved at the ZSM, for which we provide illustrations of the main characters (Fig. 15), suggests that this species may be a synonym of *A. alassiense*. However, the male pleopod 1 exopodite appears to show some differences in *A. ormeanum*, with a less-developed posterior lobe (Fig. 15G). The absence of recent material from Ormea does not allow us to further clarify this situation for the time being, which we plan to address in future study.

Armadillidium arcangelii Strouhal, 1929

Fig. A26

MATERIAL EXAMINED

Genova: many ♂♂♀♀, Genova, 2.III.1938, A. Sanfilippo leg. (MSNG); 3♂♂, same locality, 2.IV.1938, A. Sanfilippo leg. (MSNG); 5♂♂, 8♀♀, Sori, 4.IV.1994, G.A.C. Balma leg. (MCCI); 5♂♂, 10♀♀, Riva Trigoso, Sestri Levante, 08.III.2026, P. Gardini leg.

DISTRIBUTION

Portugal, Spain, southern England, France, Belgium, The Netherlands, Poland, Slovenia, Italy, Germany, Austria, Croatia, Poland, ?Greece, ?Turkey. The species is rapidly expanding towards Europe probably due to human activity (Noël et al. 2022).

ECOLOGY

Euryecious species, often synanthropic.

Armadillidium assimile Budde-Lund, 1885

Fig. A25

Armadillidium assimile; Arcangeli 1925: 5.

Armadillidium (Armadillidium) pujetanum; Arcangeli 1935: 204.

Armadillidium Simoni assimile; Arcangeli 1950b: 19.

MATERIAL EXAMINED

La Spezia: 4♂♂, 1♀, Padule di Molicciara, Castelnuovo Magra, marshland, 2.VI.2007, L. Braida leg. (MZUF).

PREVIOUS RECORDS

Genova: Torriglia (Arcangeli 1925). Nostra Signora della Vittoria, Mignanego (Arcangeli 1935).

DISTRIBUTION

Portugal, south-eastern Spain, southern France, Corsica, Sardinia, western Italy (Liguria and Tuscany). Introduced to Azores.

ECOLOGY

Humicolous species, occurring both in open and forested habitats.

Armadillidium depressum Brandt, 1833

Fig. A26

Armadillidium depressum; Tua 1900: 4. Verhoeff 1910: 127; 1936: 138. Arcangeli 1914: 463

Armadillidium (Armadillidium) depressum; Strouhal 1927: 12

MATERIAL EXAMINED

Imperia: 1♂, 2♀♀, Seborga, 500 m a.s.l., 12.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

Savona: 2♂♂, 4♀♀, 2 juvs., Capo Mele, Laigueglia, 13.I.2019, P. Gardini & C. Giusto leg.; 3♂♂, 2♀♀, Pietra Ligure, 27.VII.2019 and 1.VI.2022, A. Trotta leg.

Genova: 4♂♂, 1♀, Genova San Giuliano, V.1897, G. Mantero leg. (MSNG); 7♂♂, 6♀♀, 3 juvs., Forte Richelieu, Genova, 415 m a.s.l., 19.V.2018, P. Gardini leg.

La Spezia: 3♂♂, 2♀♀, Lerici, 17.VIII.1985, G. Taroni & L. Bartolozzi leg. (MZUF).

PREVIOUS RECORDS

Imperia: Rocchetta (Arcangeli 1914). Sanremo (Strouhal 1927). Bordighera (Verhoeff 1936).

Genova: Genova (Tua 1900, Arcangeli 1914). Genova Pegli (Verhoeff 1910).

DISTRIBUTION

Southern U.K., France, Italy, Switzerland, Austria. Records from Belgium are doubtful (P. De Smedt, pers. comm.).

ECOLOGY

Euryecious species, sometimes synanthropic.

Armadillidium dollfusi Verhoeff, 1902

Figs. 16, 17, A24

Armadillidium Simoni; Tua 1900: 3.

Armadillidium opacum Dollfusi Verhoeff 1902: 251

Armadillidium dollfusi; Verhoeff 1907a: 488

Armadillidium maculatum; Verhoeff 1908b: 491.

Armadillidium simoni; Verhoeff 1910: 120, 128; 1932: 375.

Armadillidium (Pseudosphaerium) simoni gigas; Verhoeff 1931: 519 (partim: Nervi).

Armadillidium simoni (genuinum); Verhoeff 1936: 134, 137, 160.

Armadillidium (Pseudosphaerium) simoni pontremolense; Verhoeff 1936: 118, Fig. 55.

Armadillidium (Armadillidium) carniolense vaudeli (sic!); Arcangeli 1954: 151, Fig. 19-21.

MATERIAL EXAMINED

Genova: 4♂♂, 2♀♀, Mt Penna, 6/8.IX.1918, A. Andreini leg. (MSNG); 1♂, Punta Manara, Sestri Levante, 27.II.1977, L. Cassulo, G. Gardini & S. Zoia leg. (MZUF).

La Spezia: 4♀♀, surroundings of La Spezia, date and collector unknown (MZUF); 2 ♂♂, 1 ♀, hills NW of La Spezia, date and collector unknown (MZUF); 30♂♂ ♀♀ juvs., Corniglia, 28.XII.1980, S. Taiti leg. (MZUF); 8♂♂, 6♀♀, Ameglia, 14.XI.2017, J. Nardi leg. (MZUF).

PREVIOUS RECORDS

?Savona: Savona (Verhoeff 1910).

Genova: Portofino; Santa Margherita Ligure (Verhoeff 1910, 1936). ?Genova Nervi; ?Genova Pegli (Verhoeff 1910). ?Ronco Scrivia (Verhoeff 1910, 1932, 1936). Camogli; ?Genova Pontedecimo (Verhoeff 1936). Chiavari (Arcangeli 1954).

La Spezia: Hills of La Spezia (Tua 1900, Verhoeff 1936). La Spezia (Verhoeff 1902). Portovenere; Biassa (Verhoeff 1936). Palmaria Island, Portovenere (Arcangeli 1954).

DISTRIBUTION

Endemic to the northern Apennines (Tuscany, Liguria and Emilia-Romagna) (Taiti & Ferrara 1989).

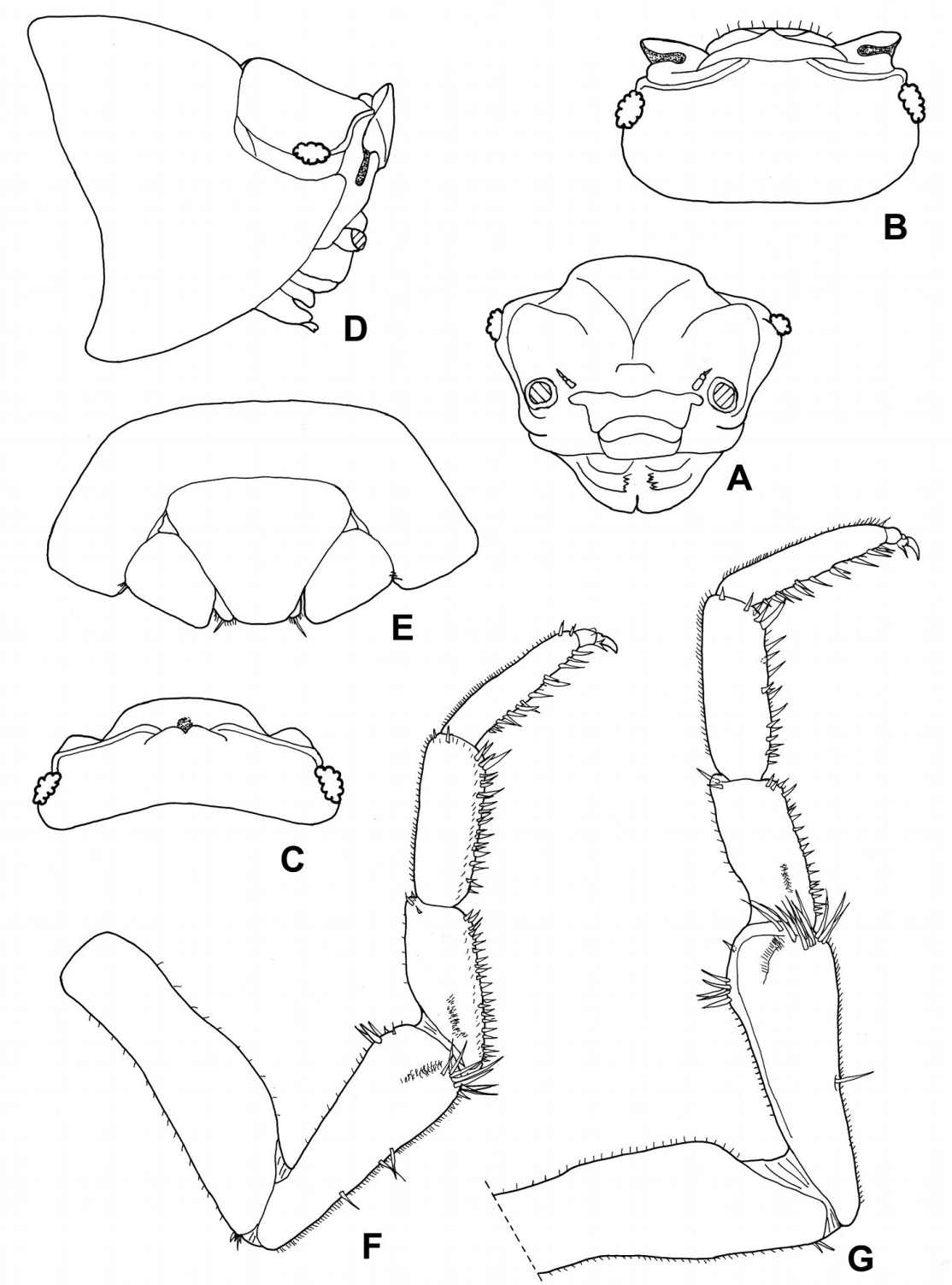

Figure 16. *Armadillidium dollfusi*, ♂ from Cinque Terre (SP, Liguria). (**A**) Cephalon, frontal view; (**B**) cephalon, dorsal view; (**C**) cephalon, posterior view; (**D**) cephalon and pereonite 1, lateral view; (**E**) pleonite 5, telson and uropods, dorsal view (**F**) pereopod 7 of a specimen with three setae on the sternal margin of the ischium; (**G**) pereopod 7 of a specimen from Camaiore (LU, Tuscany) with one seta on the sternal margin of the ischium.

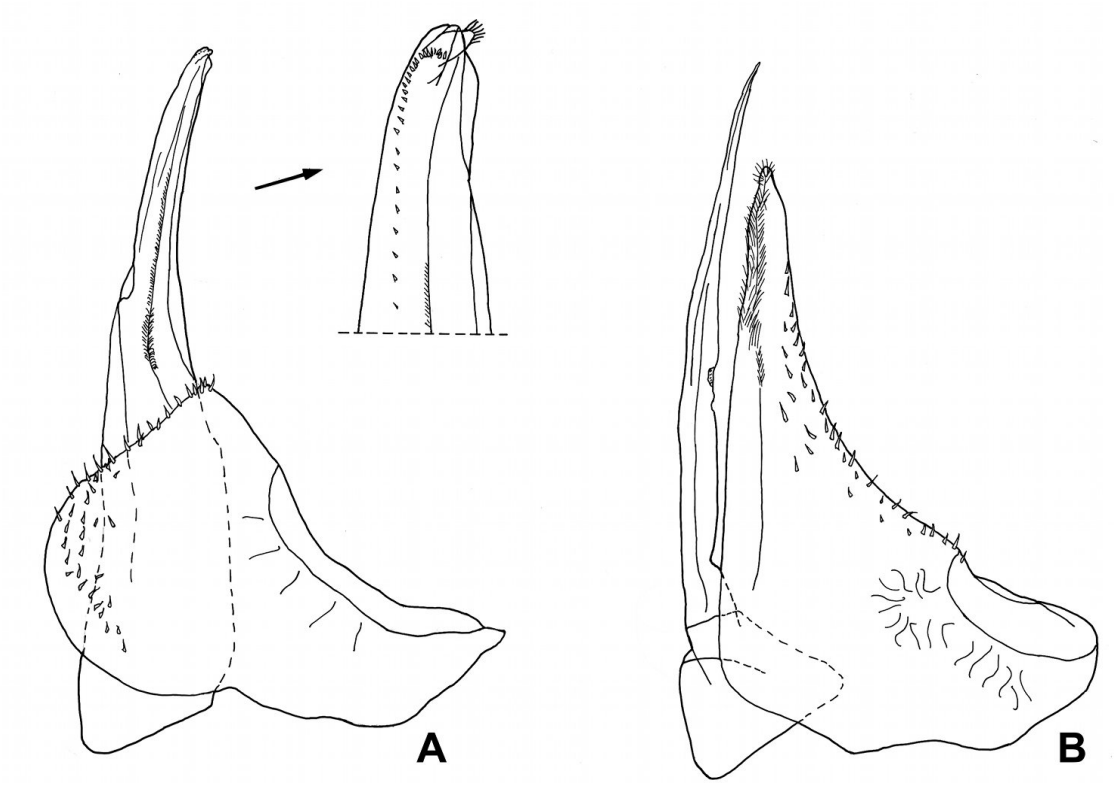

Figure 17. *Armadillidium dollfusi*, ♂ from Cinque Terre (SP, Liguria). (**A**) Pleopod 1; (**B**) pleopod 2.

ECOLOGY

Humicolous species, frequent in leaf litter of mesophilic woods but also adapted to Mediterranean environments.

REMARKS

Verhoeff (1902) described *Armadillidium dollfusi* as a subspecies of *Armadillidium opacum* (C. Koch, 1841) from La Spezia. Following the erroneous record of *Armadillidium simoni* Dollfus, 1887 by Tua (1900) from the same locality, Verhoeff (1910) synonymized *A. dollfusi* with what he believed to be *A. simoni*. However, *A. simoni sensu* Tua (1900) and Verhoeff (1910, 1932) does not correspond to the true *A. simoni*, whose distribution is limited to southeastern France. As stated by Vandel (1962), all Italian records attributed to *A. simoni* actually refer to a different species unrelated to the *maculatum* group. Arcangeli (1954) assigned these records to *Armadillidium carniolense vandeli* Arcangeli, 1954, without considering the priority of the name *A. dollfusi*. Consequently, most of the Italian records of *A. simoni* should be referred to *A. dollfusi* (or to *Armadillidium ficalbii* Arcangeli, 1911; see below).

The records from the province of Savona and part of those from Genova (marked with a question mark above) are very doubtful and most probably refer to different species. The only reliable bibliographic records are those from Portofino eastward. The figures attributed to *A. simoni genuinum* from the French and Italian Riviera by Verhoeff (1931:519, pl. 6, Fig. 3) are very similar to those of *Armadillidium alassiense* (Fig. 14B). Given the considerable confusion created by Verhoeff, it is likely that all records from the province of Savona currently attributed to *A. dollfusi* actually refer to *A. alassiense*, whereas those from the province of Genova probably refer to *Armadillidium genuaense* **n. sp.** (described below). However, this cannot be proven at this time. *Armadillium alassiense* and *A. dollfusi* are closely related, differing mainly in the absence of one to three setae on the sternal margin of the ischium of male pereopod 7 in *A. alassiense* (cf. Fig. 14B with Fig. 16G). A similar confusion occurred with Tuscan specimens cited as *A. simoni gigas*, which in fact correspond to *Armadillidium ficalbii* Arcangeli, 1911 rather than *A. dollfusi* (see Schmalfuss 2003).

Armadillidium genuaense Gardini, Montesanto & Taiti **n. sp.**

Figs. 18-21, A24

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Figure 18. *Armadillidium genuaense* **n.sp.**, 15 mm x 7 mm paratype ♂ from Rondanina (GE, Liguria). (**A**) Habitus in life, dorsal view; (**B**) Habitus in life, frontal view.

TYPE MATERIAL EXAMINED

Holotype — **Genova**: ♂, Gola di Sisa, Creto, 640 m a.s.l., 28.IX.2019, P. Gardini leg (MZUF 10082).

Paratypes — **Genova**: 2♂♂, 8♀♀, same data as holotype (MZUF 10082); 1♂, 6♀♀, Forte Diamante, Genova, 26.IX.1918, A. Andreini leg. (MSNG); 1♂, Genova Voltri, 29.V.1939, Cucini leg. (MSNG); 2♂♂, 4♀♀, N slope Mt Collere, Fontanigorda, Val Trebbia, 1000 m a.s.l., 20.IX.1980, S. Zoia leg. (MZUF 10083); 3♂♂, 1♀, 1 juv., Santuario N. S. dell'Acqua, Molino Vecchio, Valbrevenna, 600 m a.s.l., 5.VI.1981, M. E. Franciscolo leg. (MSNG); many ♂♂♀♀, Molino Vecchio, Valbrevenna, 550 m a.s.l., 13.V-10.VII.1981, M. E. Franciscolo leg. (MSNG); 1♂, 4♀♀, surroundings of Crocetta d'Orero, Serra Riccò, 1.V.1981, C. Giusto leg. (MZUF 10084); 1♂, 1♀, 1 juv., same locality, 400 m a.s.l., 21.IV.2017, P. Gardini leg. (MSNG); 1♂, 2♀♀, Mt Fasce, Genova Quinto al Mare, 490 m a.s.l., 9.V.2020, P. Gardini leg. (MSNG); 3♂♂, 1♀, between Gola di Sisa and Mt Alpesisa, Montoggio, 785 m a.s.l., 22.V.2020, G. Gardini, P. Gardini & C. Giusto leg. (MZUF 10085); 1♂, Rondanina, 900 m a.s.l., 12.XI.2025, S. Zoia leg. (MSNG).

ETYMOLOGY

From *Genua*, the Latin name of Genova, in whose province the species has been collected.

DESCRIPTION

Maximum dimensions: ♂, 19 x 9.5 mm; ♀, 19.5 x 10 mm.

Color dark grey, sometimes grey-brown slightly marbled in females or young specimens. Animals able to roll up into ball, mesospheric type. Dorsal cuticle smooth with sparse triangular scale-setae (Fig. 18B). One line of *noduli laterales* per side on same line, far from lateral margins of pereonites (Fig. 18A). Eye with 24-26 ommatidia. Cephalon (Fig. 18C-F) with wide, triangular scutellum, protruding over vertex, with posterior swelling; antennary lobes subtriangular, bent backwards, with deep antennary grooves; post-scutellar line slightly relieved on vertex. Pereonite 1 with posterior margin regularly sinuous and posterior corners distinctly protruding backwards (Fig. 18A). Telson trapezoidal, as long as wide, with straight sides and rounded apex (Fig. 18G). Antennula of three articles, second article very short, third one with tuft of 11 subapical aesthetascs disposed in two rows (Fig. 18H). Antenna reaching first half of pereonite 2 when stretched backwards; flagellum of two articles, shorter than fifth article of peduncle; second flagellar article slightly longer than first (Fig. 18I). Mandibles with molar penicils dichotomized, 2 + 8 free penicils on left mandible and 1 + 8 on right (Fig. 19A,B). Maxillula outer branch with 4 + 6 (3 cleft) teeth; inner branch with pointed inner apex and two stout penicils (Fig. 19C). Maxilla with bilobed and setose apex, outer lobe distinctly wider than inner lobe (Fig. 19D). Maxilliped palp with two long setae on basal article, second article as in Fig. 19E; endite with one terminal triangular seta and one triangular spine on posteromedial corner and two triangular spines on distal margin (Fig. 19E). Pleopod 1 and 2 exopods with polyspiracular covered lungs (Fig. 20C,D). Uropod with exopod flattened, slightly wider than long; endopod longer than exopod (Fig. 19F).

Male. Pereopod 1-4 with brush of setae on carpus; pereopod 1 merus concave (Fig. 20A).

Pereopod 7 ischium with very slightly concave sternal margin and with two tufts of long, robust setae on distal margin (Fig. 20B). Pleopod 1 exopod with short posterior lobe, medial margin sinuous with short setae; endopod with apical part straight and rounded apex (Fig. 20C). Pleopod 2 exopod

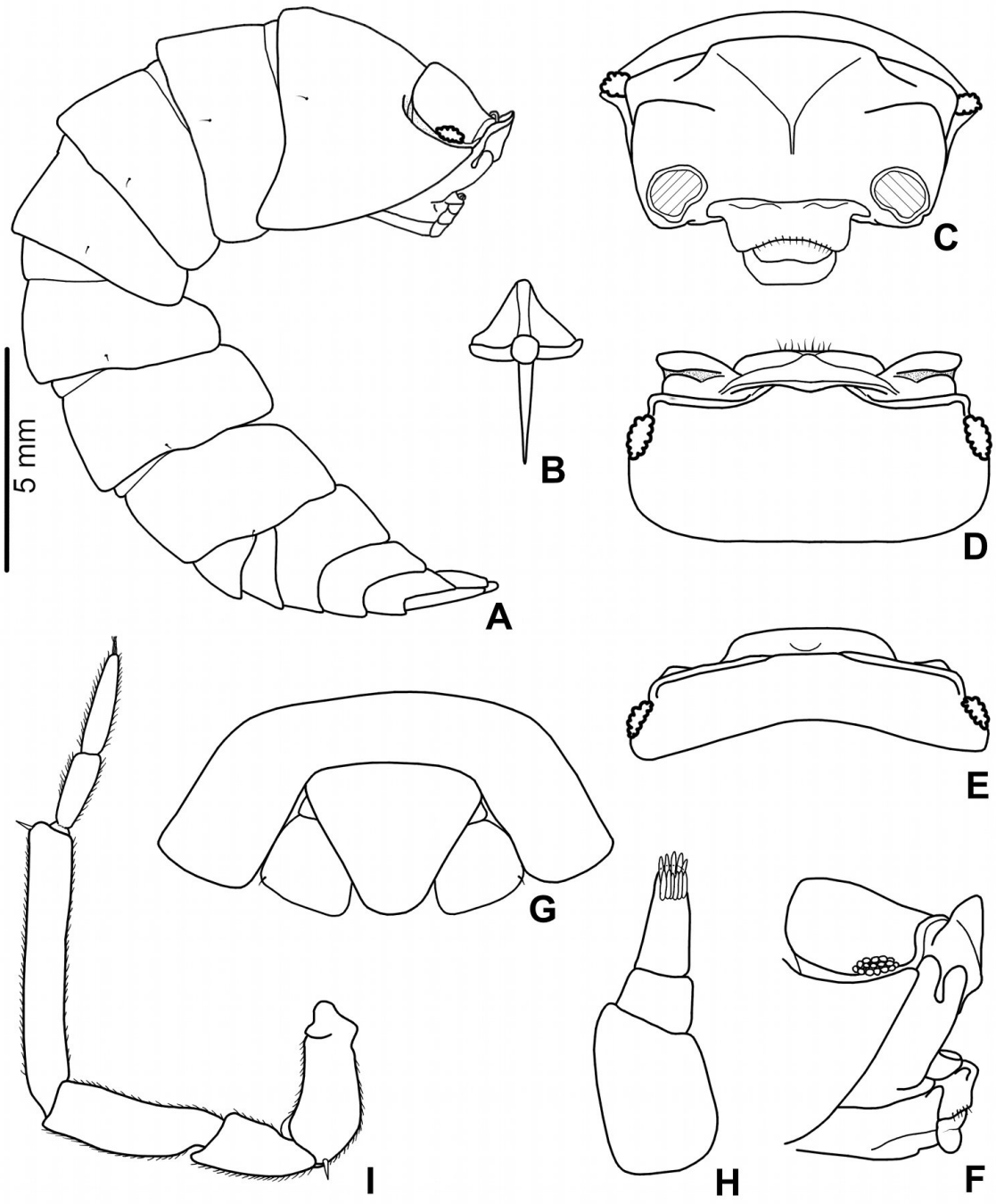

Figure 19. *Armadillidium genuaense* **n.sp.**, 18 mm x 8.5 mm paratype ♂ from Gola di Sisa, Creto (GE, Liguria). (**A**) Habitus, lateral view; (**B**) dorsal scale-seta; (**C**) cephalon, frontal view; (**D**) cephalon, dorsal view; (**E**) cephalon, posterior view; (**F**) cephalon, lateral view; (**G**) pleonite 5, telson and uropods, dorsal view (**H**) antennula; (**I**) antenna.

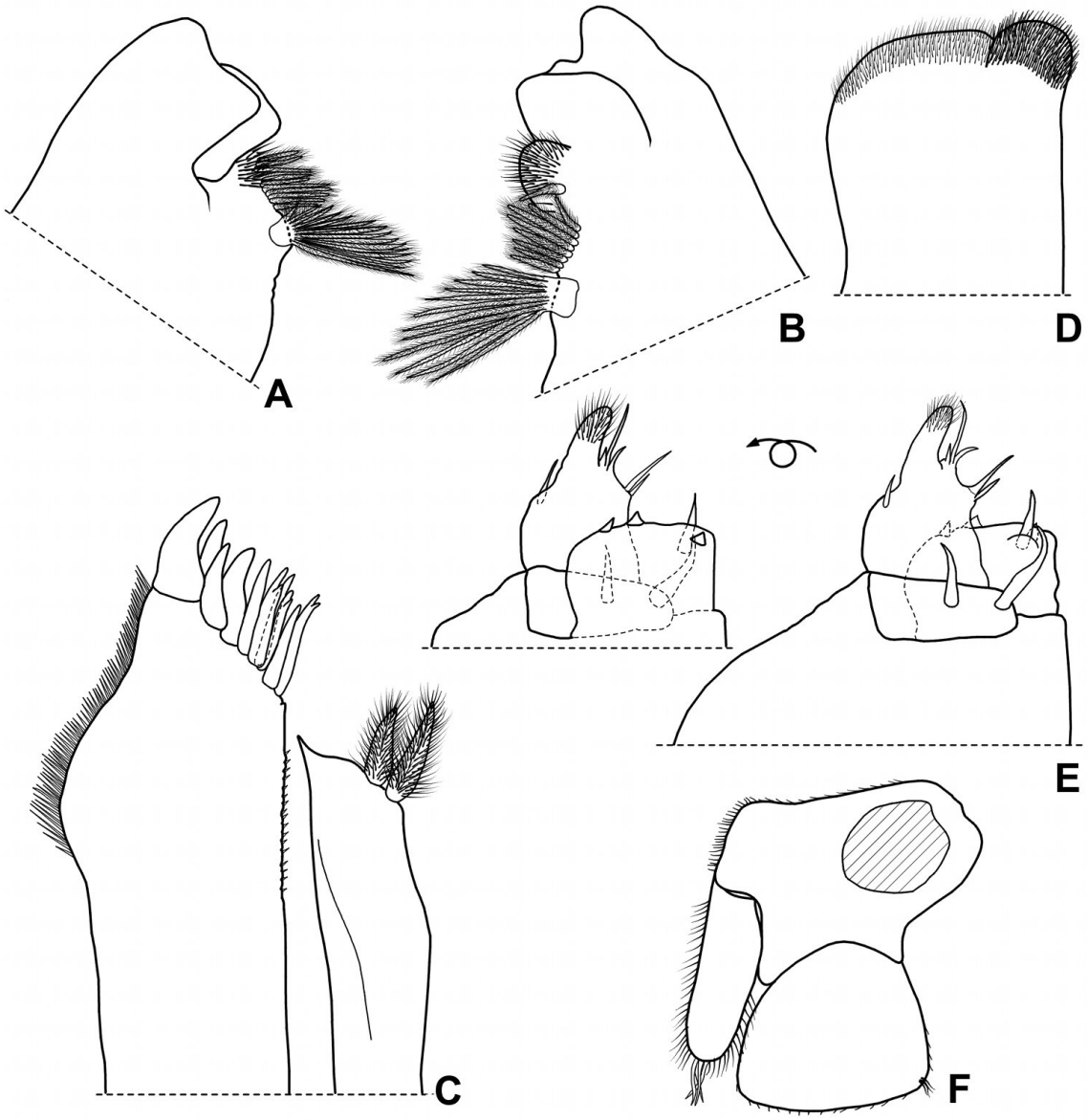

Figure 20. *Armadillidium genuaense* **n.sp.**, 18 mm x 8.5 mm paratype ♂ from Gola di Sisa, Creto (GE, Liguria). (**A**) Left mandible; (**B**) right mandible; (**C**) maxillula; (**D**) maxilla; (**E**) maxilliped; (**F**) right uropod.

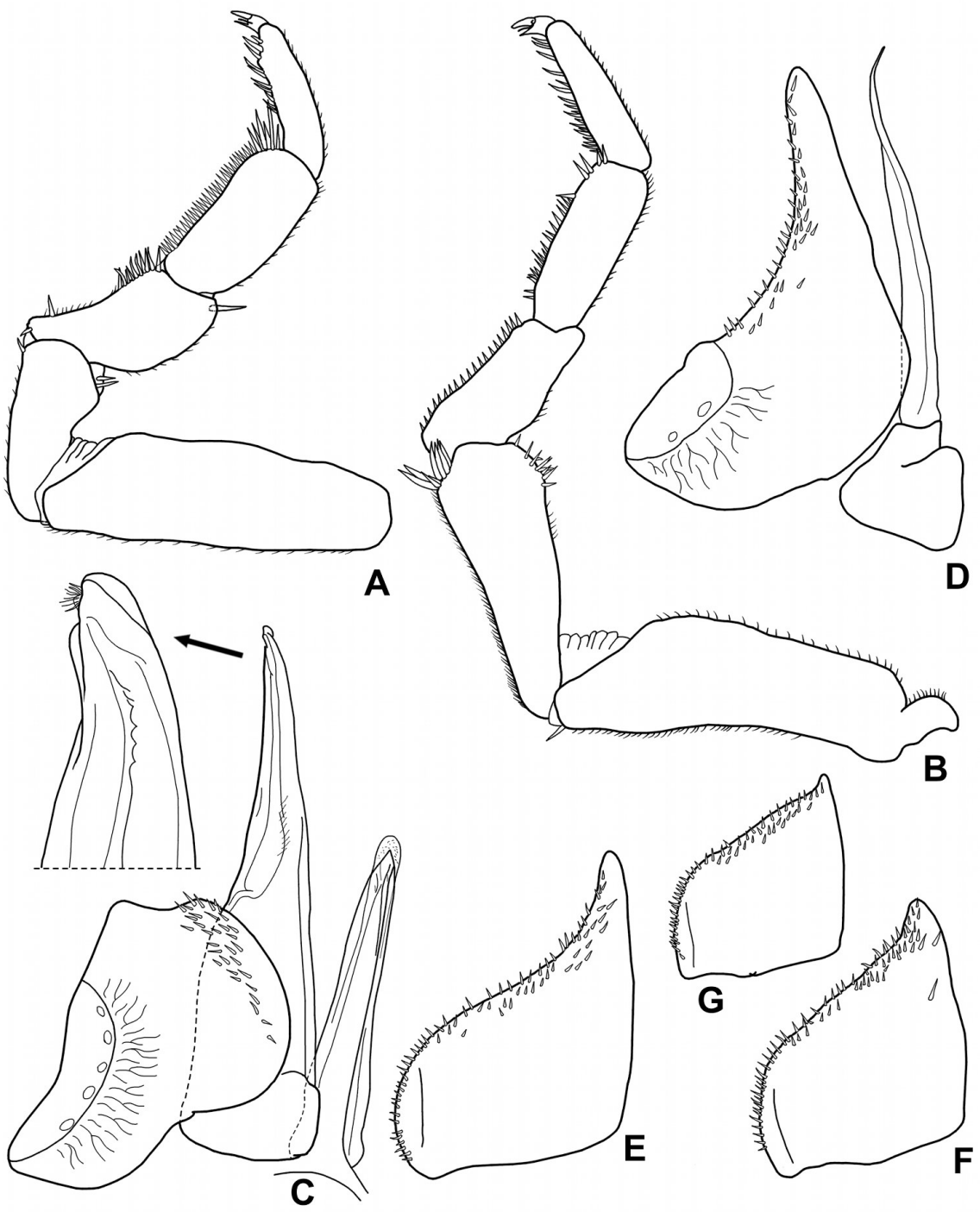

Figure 21. *Armadillidium genuaense* **n.sp.**, 18 mm x 8.5 mm paratype ♂ from Gola di Sisa, Creto (GE, Liguria). (**A**) pereopod 1; (**B**) pereopod 7; (**C**) pleopod 1 and genital papilla; (**D**) pleopod 2; (**E**) pleopod 3 exopod; (**F**) pleopod 4 exopod; (**G**) pleopod 5 exopod.

triangular with concave outer margin bearing short setae and elongated posterior lobe; endopod narrow, as long as endopod (Fig. 20D). Pleopod 3-5 exopods as in Figure 20E-G.

DISTRIBUTION

Endemic to the Ligurian Apennines.

ECOLOGY

Humicolous species, generally found in leaf litter of mesophilic woods but also adapted to more open and dry habitats.

REMARKS

According to the classification proposed by Vandel (1962), *Armadillidium genuaense* **n. sp.** belongs to the *sordidum* group of species, and in particular to the subgroup *alassiense,* which to date included six species: *Armadillidium alassiense* (western Liguria), *Armadillidium apuanum* Taiti & Ferrara, 1995 (Apuan Alps, Tuscany), *Armadillidium dollfusi* (northern Apennines), *Armadillidium ficalbii* (Monti Pisani, Tuscany), *Armadillidium ormeanum* (south-western Piedmont) and *Armadillidium tendanum* (south-eastern France; see Remarks under *A. alassiense*).

Armadillidium genuaense **n. sp.** differs from *A. alassiense*, *A. ormeanum,* and *A. tendanum* in having a wider scutellum that is more protruding over the vertex, and the antennary lobes that are more strongly bent backwards with deeper antennary grooves (cf. Fig. 18A-F with Fig. 13A-D, Fig. 15A-D and with Vandel 1962:820, Fig. 394A,B). It also differs from the same species in having male pereopod 7 bearing two distinct tufts of long setae on the distal margin of the ischium (cf. Fig. 20B with Fig. 14B, Fig. 15F, and with Vandel 1962:820, Fig. 394F). It also differs from *A. alassiense* and *A. ormeanum* in having the sternal margin of the male pereopod 7 ischium less concave (cf. Fig. 20B with Fig. 14B and 15F), and from *A. ormeanum* and *A. tendanum* in having the male pleopod 1 exopod with a more sinuous medial margin (cf. Fig. 20C, Fig. 15G, and Vandel 1962:820, Fig. 394G). It further differs from *A. alassiense* in having the posterior lobe of male pleopod 1 exopod less developed (cf. Fig. 20C with Fig. 14C).

Armadillidium genuaense **n. sp.** is readily distinguished from *A. dollfusi* by the absence of one to three setae on the sternal margin of the ischium of male pereopod 7 (cf. Fig. 20B with Fig. 16F,G) and the male pleopod 1 exopod with a more sinuous medial margin (cf. Fig. 20B with Fig. 17A).

Finally, *Armadillidium genuaense* **n. sp.** differs from *A. apuanum* and *A. ficalbii* in having a less concave sternal margin of the ischium of the male pereopod 7 (cf. Fig. 20B with Taiti & Ferrara 1996:189, Fig. 15F) and the posterior lobe of the male pleopod 1 exopod less developed (cf. Fig. 20C with Taiti & Ferrara 1996:189, Fig. 15F). It also differs from *A. apuanum* in having the scutellum much less protruding over the vertex and the antennary lobes subtriangular and less developed (cf. Fig. 18A-F with Taiti & Ferrara 1996:189, Fig. 15A-D). It further differs from *A. ficalbii* in having a single swelling on the back of the frontal scutellum instead of a double swelling and in lacking a well-developed lobe on the distal part of the ischium of male pereopod 7 (cf. Fig. 20B with Arcangeli 1954:148, pl. VII Figs. 12, 13).

Armadillidium gestroi Tua, 1900

Fig. A26

Armadillidium Gestri (sic) Tua 1900: 5, fig.3.

Armadillidium quadriseriatum; Verhoeff 1908b: 458, 489; 1910: 123; 1931a: 511; 1932: 378; 1936: 138, 156.

Armadillidium Gestroi; Arcangeli 1910: 13-27, figs1-17; 1914: 464. Brian 1940: 402. Franciscolo 1955: 118.

Armadillidium quadristrigatum (sic!); Verhoeff 1931: 497.

Armadillidium (Duplocarinatum) albigauni Arcangeli 1935: 207-208, Figs. 1-3 (**n. syn.**).

Armadillidium gestroi; Bonzano 1986: 38.

MATERIAL EXAMINED

Imperia: 2♂♂, 1♀, 1 juv., Porto Maurizio, date and collector unknown (MZUF).

Savona: 1♀, 1 juv., Finalmarina, Finale Ligure, 1894, F. Solari leg. (MSNG); 1♂, 1♀, Pianmarino, Finale Ligure, 13.V.1923, E. Gridelli leg. (MSNG); many ♂♂♀♀, Noli, 13.IV.1924, E. Gridelli leg. (MSNG); 4♂♂, 7♀♀, Finalmarina, Finale Ligure, 7.IV.1929, O. Borra leg. (MSNG); 3 ♀♀, Loano, VIII.1971, Bordoni leg. (MZUF); 1♀, Verzi, Finale Ligure, 29.X.1972, G. Gardini leg. (MSNG); 1♂, 1♀, Finale Ligure, 3.IV.1977, Turco leg. (MZUF); 1♂, 8♀♀, E slope Mt Ravinet, Loano, 900 m a.s.l., 11.IV.1977, leg. S. Zoia (MZUF); 1♀, Arma do Principà 26 Li/SV, Finale Ligure, 240 m a.s.l., 10.VI.1984, C. Bonzano leg. (MZUF); 1♂, 6♀♀, Passo di Caprazoppa, Finale Ligure, 12.XII.1984, C. Giusto leg. (MSNV); 1♂, Calvisio, Finale Ligure,

200 m a.s.l., 11.V.1986, C. Bonzano leg. (MSNG); 2♀♀, same locality, 29.VII.2007, G. B. Delmastro leg. (MCCI); 10♂♂, 18♀♀, Gallinara Island, Albenga, 9.IV-11.V-22.VI-19.X.1990, R. Poggi leg. (MSNG); 1♂, 3♀♀, same locality, 16.X.1990, G. Doria, L. Emanueli & S. Salvidio leg. (MSNG); 1♂, 1♀, 1 juv., same locality, holm oak woods, 9.V.1996, G. Gardini leg. (MZUF); 3♂♂, 1♀, 1 juv., same locality, 10.VI.1996, D. Lanteri leg. (MZUF); 6 juvs., Vezzi Portio, 250 m a.s.l., date unknown, B. Lanza et al. leg. (MZUF); 1♂, 1♀, E ridge of Mt Pizzo Ceresa, Albenga, 580 m a.s.l., 1.X.2017, P. Gardini & C. Bonifazio leg.; 3♂♂, 1♀, SE slope Mt Caprazoppa, Borgio Verezzi, 10.IX.2018, A. Trotta leg.; 1♂, Pozzo delle Cento Corde LI137, Borgio Verezzi, 15.II.2019, G. Piccardo & A. Trotta leg. 3♂♂, 1♀, Arma do Rian LI25, Finale Ligure, 18.II.2020, P. Gardini leg.; 1♂, 1♀, between Salto del Lupo and S. Pietro ai Monti, Toirano, 650 m a.s.l., 19.VI.2020, P. Gardini leg.; ♂♂, 4♀♀, Rive di Monticello, Finale Ligure, 16.VII.2021, G. B. Delmastro leg. (MCCI); 3♂♂, 6♀♀, Pietra Ligure, 29.V.2022, A. Trotta leg.; 1♂, 1♀, Mt Grosso, Borgio Verezzi, 7.V.2023, A. Trotta & R. Zaniboni leg.

PREVIOUS RECORDS

Imperia: Porto Maurizio; Mt Grande near Porto Maurizio (Arcangeli 1914).

Savona: Borgio Marina (Tua 1900). Finalmarina (Tua 1900, Arcangeli 1910). Mt Caprazoppa, Finale Ligure (Arcangeli 1910). Noli (Verhoeff 1908b, 1910, 1932). Ceriale (Verhoeff 1910). Albenga (Arcangeli 1935). Finale Ligure (Verhoeff 1936). Tana da Bazura LI55, Toirano (Brian 1940). Arma do Principà 26 Li/SV (Franciscolo 1955, Bonzano 1986). Arma do Rian LI25; Grotta di S. Antonino LI30; Arma de Fate LI33; Grotta Inferiore della Cava del Martinetto LI156; Grotta del Colombo LI57, Toirano; Arma do Morto LI97 (Franciscolo 1955).

DISTRIBUTION

Endemic to western Liguria.

ECOLOGY

Rupicolous species, often found at cave entrances.

REMARKS

Armadillidium albigauni was described and illustrated by Arcangeli (1935:207, pl. I, Figs. 1–3) based on only two small females (4.8 mm in length) from Albenga. The description and figures, lacking male characters, are insufficient to identify the species with certainty or to assess its validity. Based on specimens collected from the same locality (1♂, 1♀, Albenga, 1.X.2017, P. Gardini & C. Bonifazio leg.) and of roughly the same size, we consider the specimens described by Arcangeli (1935) as *A. albigauni* to be juveniles of *Armadillidium gestroi*. The two taxa share the same characteristic arrangement of yellowish-white spots on the tergites. The cephalic structure described by Arcangeli (1935) for *A. albigauni* appears slightly different from that of *A. gestroi*, but this may be due to the fact that the author examined very young specimens (the maximum body length of *A. gestroi* reaches 20 mm). Therefore, we propose *Armadillidium albigauni* Arcangeli, 1935, as a junior subjective synonym of *Armadillidium gestroi* Tua, 1900 (**n. syn.**).

Armadillidium granulatum Brandt, 1833

Fig. A26

Armadillidium granulatum; Verhoeff 1936: 138.

MATERIAL EXAMINED

Imperia: 17♂♂, 17♀♀, Capo Mortola, Ventimiglia, rocky cliffside with *C. maritimum*, 10.V.2019, G. Gardini, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Imperia: Bordighera (Verhoeff 1936).

DISTRIBUTION

Atlantic coasts of Europe, central–western Mediterranean, and Black Sea.

ECOLOGY

Littoral but non-halophilous species. According to Vandel (1962), it can be found up to 20 km inland from the coast.

REMARKS

This species appears to be relatively uncommon in Liguria, where it has only been collected in the westernmost part of the region. This may be due to the comparatively lower sampling effort in littoral habitats than in inland environments.

Armadillidium maculatum (Risso, 1816)

Fig. A25

Armadillidium maculatum; Verhoeff 1907a: 479; 1936: 137.

Armadillidium maculatum (Risso), (nec Verhoeff) (=*willii* B.-L.); Verhoeff 1910: 125.

Armadillidium maculatum cingendum Verhoeff 1910: 119, 127. Vandel 1962: 813 (**n. syn**).

Armadillidium (Armadillidium) maculatum; Strouhal 1927: 26.

MATERIAL EXAMINED

Imperia: 1♀, Chiusavecchia, 25.III.1984, collector unknown (MZUF); 1♀, between S. Pancrazio and Torri, Ventimiglia, 60 m a.s.l., 1.VI.1996, S. Cianfanelli & M. Calcagno leg. (MZUF); 3♂♂, 1♀, Olivetta San Michele, 260 m a.s.l., 22.IV.1997, same collectors (MZUF); 3♂♂, 5♀♀, Capo Mortola, Ventimiglia, cliffside, 11.V.2019, G. Gardini, P. Gardini & C. Giusto leg.; 6♂♂, 4♀♀, same locality and date, maquis, P. Gardini leg.; 3♂♂, 2♀♀, Villatella, Ventimiglia, 300-500 m a.s.l., maquis and pine trees, 10.V.2019, P. Gardini leg.; 1♂, 1♀, same locality, NE slope Mt Grammondo, 300-1000 m a.s.l., maquis and pine trees, 11.V.2019, P. Gardini leg.; 1♂, Alta Via dei Monti Liguri, Bassa d'Abellio, Dolceacqua, maquis and holm oaks, 500-750 m a.s.l., 12.V.2019, P. Gardini leg.

Savona: 2 ♂♂, Capo Mele, Laigueglia, 24.II.1974, G. Gardini leg. (MZUF); 4♂♂, 11♀♀, 4 juvs., same locality, 13.I.2019, P. Gardini & C. Giusto leg.; 1♀, Via Romana, Alassio, 8.III.2020, C. Bonifazio leg.

PREVIOUS RECORDS

"Riviera" (Verhoeff 1907).

Imperia: Mt Nero near Ospedaletti (Verhoeff 1910). Sanremo (Verhoeff 1910, Strouhal 1927). Bordighera; Olivetta (Verhoeff 1936).

Savona: Alassio; Capo Mele (Verhoeff 1910). Gallinara Island, Albenga (Vandel 1962).

DISTRIBUTION

South-eastern France (Alpes-Maritimes), Monaco and western Liguria (Vandel 1960).

ECOLOGY

Lapidicolous and humicolous species with thermophilic tendencies, occurring from sea level up to 900 m.

REMARKS

Until the present study, *Armadillidium maculatum* was divided into two subspecies: *A. maculatum maculatum* Risso, 1816, for populations from southeastern France and the province of Imperia in Liguria, and *A. maculatum cingendum* Verhoeff, 1910, for populations from the province of Savona (see Vandel 1962). This subdivision was based solely on presumed geographic isolation and the different coloration of the populations from Savona province compared to those from the westernmost part of Liguria and France. However, a comparison of specimens from both subspecies collected in both Ligurian and French localities revealed no consistent morphological differences sufficient to justify the recognition of two distinct subspecies. Therefore, we consider *Armadillidium maculatum cingendum* Verhoeff, 1910 as a junior subjective synonym of *Armadillidium maculatum maculatum* Tua, 1900 (**n. syn.**).

Armadillidium nasatum Budde-Lund, 1885

Fig. A25

Armadillidium nasatum; Tua 1900: 3

Armadillidium nasutum (sic); Verhoeff 1907: 477; 1908b: 487; 1910: 122; 1936: 133, 138, 160. Franciscolo 1948: 52. Sanfilippo 1950: 52.

MATERIAL EXAMINED

Imperia: 5 ♂♂, 9 ♀♀, Bordighera, 19.VI.1971, collector unknown (MZUF); 2 ♂♂, 9 ♀♀, S. Lazzaro Reale, 17.VI.1973, B. Lanza leg. (MZUF); 9♂♂, 5♀♀, Borgata Steri, Cervo, 80 m a.s.l., olive grove, 2.VI-15.VII.2004, R. Fabbri leg. (MSNG); 2♂♂, 2, Sant'Antonio, Ventimiglia, 115 m a.s.l., 21.IX.2007, G. B. Delmastro leg. (MCCI); 1♂, Costiolo, Prelà, 160 m a.s.l., 25.VII.2008, G. B. Delmastro leg. (MCCI).

Savona: 1♂, 2juvs., Rio Remenone, Albissola, 29.IV.1977, G. Parodi leg. (MZUF); 2♂♂, 1♀, banks of Centa stream, Leca, Albenga, 5.IV.1981, A. & L. Briganti leg. (MZUF); 7♂♂, 15♀♀, Carpe, Toirano, 26.VII.2007, G. B. Delmastro leg. (MCCI).

Genova: 1♂, 1♀, Forte S. Tecla, 19.IV.1936, A. Festa leg. (MSNG); 1♂, 2♀♀, 1 juv., Rapallo, XI.1938, G. C. Doria leg. (MSNG); 1♀, Genova Voltri, 29.V.1939, collector unknown (MSNG); 1 ♀, surroundings of Tann-a da Vulpe LI264, Bargagli 23.XI.1967, A. Vigna leg. (MZUF); 3♂♂, 2 juvs., Peschiera, Arenzano, 13.XI.1977, G. Gardini & G. Parodi leg. (MZUF); 2♂♂, 12♀♀, 4 juvs., Arenzano, cane thicket, 18.III.1978, G. Gardini & S. Zoia leg. (MZUF); many ♂♂♀♀, same locality, 22.II.1980, G. Gardini, C. Torti & S. Zoia leg. (MZUF); 4♂♂, 3♀♀, Genova Staglieno, 2.VIII.1980, R. Poggi leg. (MSNG); 3♂♂, 1♀, Forte S. Tecla, Val Chiappeto, 30.VII.1981, M. E. Franciscolo leg. (MSNG). 9♂♂, 10♀♀, Mt Fasce, Genova, 500 m a.s.l., 9 and 18.V.2020, P. Gardini leg.; 1♂, Rio San Pietro, Genova Quinto al Mare, 27.IX.2024, G. Gardini & P. Gardini leg.

La Spezia: 1♀, 1 juv., Magra River mouth, 5.III.1977, G. Gardini & A. Torchia leg. (MZUF);

1♀, Pitone, Portovenere, 3.IV.2022, P. Gardini & C. Giusto leg.

PREVIOUS RECORDS

Imperia: Sanremo (Verhoeff 1910).

Savona: Vado (Verhoeff 1908b).

Genova: Rapallo (Tua 1900). Genova Nervi; Portofino (Verhoeff 1908b). Castellaccio, near Genova; Genova Pegli (Verhoeff 1910). Santa Margherita Ligure; Camogli; Genova Voltri; Genova Pontedecimo (Verhoeff 1936). Tann-a de Strie LI130, Rapallo (Franciscolo 1948). Roman aqueduct (Sanfilippo 1950).

La Spezia: Tinetto Island; hills of La Spezia (Tua 1900). La Spezia (Verhoeff 1936).

DISTRIBUTION

Native to Italy, France, northern Spain, the Netherlands and southern England, synanthropic in northern and eastern Europe, European Russia, Georgia and Iran. Introduced to North and South America and Japan.

ECOLOGY

Euryecious species, typically associated with open habitats. Frequently synanthropic.

Armadillidium portofinense Verhoeff, 1908

Figs. 22, A25

Armadillidium portofinense Verhoeff 1908b: 459; 1910: 127; 1936: 134. Vandel 1962: 791.

?*Armadillidium pallasii*; Tua 1900: 2 (partim: Genova).

TYPE MATERIAL EXAMINED

Genova: 3♂♂, 3♀♀, "Riviera", K. Verhoeff leg. – identified by Verhoeff as *A. portofinense* (ZSM).

OTHER MATERIAL EXAMINED

Genova: 1♂, 1♀, Punta Manara, Sestri Levante, Mediterranean scrub, 20 m a.s.l., 8.V.2018, P. Gardini leg.

PREVIOUS RECORDS

Genova: ?Genova (Tua 1900, Verhoeff 1910). Portofino (Verhoeff 1908b). Camogli-Recco (Verhoeff 1936).

DISTRIBUTION

Endemic to Ligurian Apennines.

ECOLOGY

Humicolous species, generally occurring in meso-thermophilic woods.

REMARKS

Armadillidium portofinense was described by Verhoeff (1908b) without illustrations from specimens collected at Portofino (Genova province). Tua (1900) cited *Armadillidium pallasii* Brandt, 1833 from Genova, which is certainly a misidentification, as this species has never been recorded from Liguria. According to Verhoeff (1910), these specimens should be referred to as *A. portofinense* rather than *A. pallasii*. We regard this statement as doubtful, given the considerable morphological differences between the two species and the fact that, to date, *A. portofinense* has never been collected in the close vicinity of Genova. Nevertheless, because we were unable to directly verify this identification, we provisionally accept Verhoeff's (1910) interpretation, albeit with caution.

Armadillidium portofinense belongs to the *nasatum* group, which is particularly diverse in central and southern Italy (Ferrara & Taiti 1978, Taiti & Ferrara 1980, Taiti & Ferrara 1989). It is readily distinguished from *Armadillidium nasatum*, the only other species of the group occurring in Liguria, by the following combination of characters: posterior margin of the first pereonite regularly sinuous, without a sharp angle between the tergite and the pleuroepimera; scutellum wider, less protruding over the vertex, and with a straight upper margin instead of slightly concave; telson with a wider, more rounded apex instead of triangular; ischium of the male pereopod 7 with a more concave sternal margin and bearing a setose field on its distal part; male pleopod 1 exopod with a more distinct and developed posterior lobe; apex of the male pleopod 1 endopod less curved outwards.

Illustrations of the main diagnostic characters of *A. portofinense*, based on Verhoeff's type material deposited in the ZMUC collection, are provided in Figure 22.

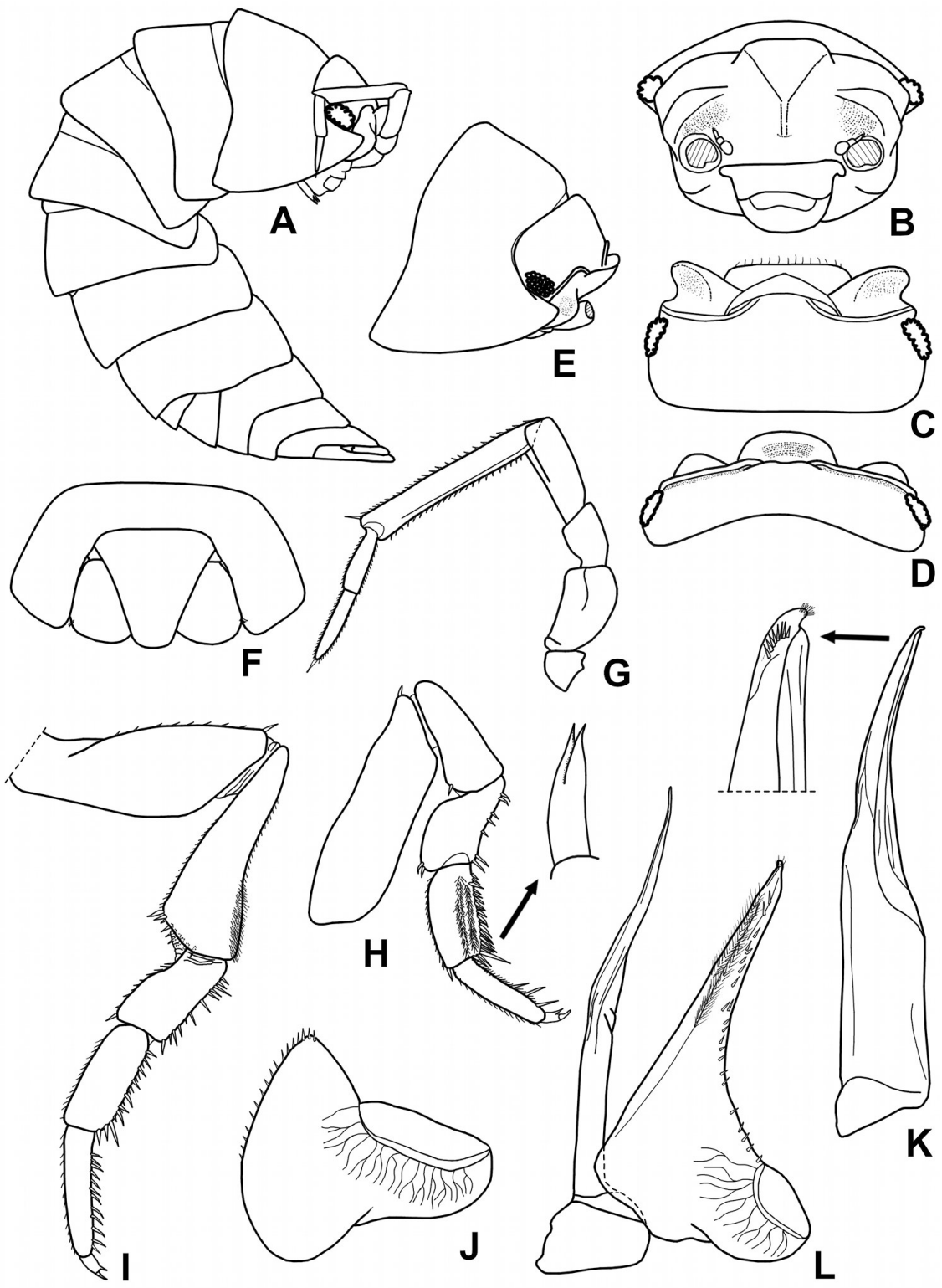

Figure 22. *Armadillidium portofinense* ♂ from "Riviera" (probably Camogli or Portofino, Liguria). (**A**) Habitus, lateral view; (**B**) cephalon, frontal view; (**C**) cephalon, dorsal view; (**D**) cephalon, posterior view; (**E**) cephalon and pereonite 1, lateral view (**F**) pleonite 5, telson and uropods, dorsal view; (**G**) antenna; (**H**) pereopod 1; (**I**) pereopod 7; (**J**) pleopod 1 exopod; (**K**) pleopod 1 endopod; (**L**) pleopod 2.

Armadillidium savonense Verhoeff, 1931

Figs. 23, A24

Armadillidium (Pseudosphaerium) savonense Verhoeff 1931: 520, Fig. 2; 1936: 120, Fig. 53-54.

Armadillinum (Pseudosphaerium) savonense ligurinum Verhoeff 1936: 121.

Armadillinum (Pseudosphaerium) savonense finalense Verhoeff 1936: 121, Figs. 51-52.

Armadillinum (Pseudosphaerium) savonense albissolense Verhoeff 1936: 122, Fig. 50.

Armadillinum (Pseudosphaerium) carniolense savonense; Arcangeli 1954: 154.

TYPE MATERIAL EXAMINED

Savona: 1 ♂ mounted on slide, 2 ♀♀, Santuario near Savona, 25.IV.1929, K. Verhoeff leg. – described by Verhoeff (1931) as *A. savonense* (ZSM).

OTHER MATERIAL EXAMINED

Savona: 2♂♂, 2♀♀, 2 juvs., Finalborgo, 1897, F. Solari leg. (MSNG); 1♂, Mt S. Giorgio-Rio Montenotte, Altare, 3.VIII.1982, M. E. Franciscolo leg. (MSNG); 3♂♂, 1♀, Finale Ligure, Portio, 250 m a.s.l., 9.IV.1988, B. Campolmi et al. leg. (MZUF); 3♂♂, 6♀♀, Isallo, Magliolo, 640 m a.s.l., 22.VII.2007, G. B. Delmastro leg. (MCCI); 2♂♂, 1♀, Salto del Lupo, Toirano, 650 m a.s.l., 19.VI.2020, P. Gardini leg.

Genova: 3♂♂, 2♀♀, Cogoleto, 23.III.1936, A. Festa leg. (MSNG); 12♂♂ ♀♀, Colla del Canile, Piani di Praglia, Ceranesi, 850 m a.s.l., 3.VI-23.VII.1980, M. E. Franciscolo leg. (MSNG); 1♂, 2♀♀, Rio Lischeo, same locality, 850 m a.s.l., 23.VII-4.IX.1980, M. E. Franciscolo leg. (MSNG); 4♂♂, 2♀♀, 1 juv., Prato Liseu, Arenzano, 590 m a.s.l., 25.III.2018, P. Gardini leg.

PREVIOUS RECORDS

Savona: Santuario near Savona (Verhoeff 1931). Albissola; Ferrania; Finale Ligure (Verhoeff 1936).

Genova: Mele; Rossiglione (Verhoeff 1936).

DISTRIBUTION

Endemic to western Liguria.

ECOLOGY

Humicolous species, frequent in leaf litter of mesophilic woods.

REMARKS

Armadillidium savonense was described by Verhoeff (1931) from specimens collected at Santuario, approximately 6 km northwest of Savona. According to the author, this species is closely related to *Armadillidium sordidum* and *Armadillidium clavigerum* Verhoeff, 1928, with which it shares a strongly developed lobe on the distal part of the ischium of the male pereopod 7. It is readily distinguished from *A. sordidum*—the only other species also occurring in Liguria—by the much greater development of this lobe, the frontal shield being narrower but higher, and the antennal lobes being more strongly curved backward (cf. Fig. 23D, F with Ferrara & Taiti 1978: Fig. XXXIV).

Illustrations of the main diagnostic characters of *Armadillidium savonense*, based on Verhoeff's type material deposited in the ZSM collection, are provided in Figure 23.

Armadillidium sordidum Dollfus, 1887

Fig. A24

Armadillidium sordidum Dollfus 1887: 91, 95; 1896: 358. Tua 1900: 5. Verhoeff 1908b: 491; 1910: 129; 1936: 137-138, 157. Arcangeli 1914: 458.

Armadillidium (Armadillidium) sordidum sordidum; Arcangeli 1954: 155-157, Figs. 25-29.

MATERIAL EXAMINED

Imperia: 3♂♂, 3♀♀, 1 juv., Sant'Antonio, Ventimiglia, 115 m a.s.l., 21.IX.2007, G. B. Delmastro leg. (MCCI); 4♂♂, 6♀♀, Villatella, Ventimiglia, 300-500 m a.s.l., 10.V.2019, P. Gardini leg.; 1♂, 2♀♀, Bassa d'Abellio, Dolceacqua, maquis and holm oaks, 500-750 m a.s.l., 12.V.2019, P. Gardini leg; 1♂, 11♀♀, Seborga, 500 m a.s.l., G. Gardini, P. Gardini & C. Giusto leg.

Savona: 1♂, 1♀, Verzi, Finale Ligure, 29.X.1972, G. Gardini leg. (MSNG); 5♂♂, 4♀♀, Val Ponci, Finale Ligure, 3.IV.1977, G. Gardini leg. (MZUF); 2♂♂, E slope Mt Ravinet, Loano, 900 m a.s.l., 11.IV.1977, S. Zoia leg. (MZUF); 9♂♂, 3♀♀, Isallo, Magliolo, mixed forest, 15.XI.1981, C. Giusto & S. Zoia leg. (MZUF); 1♂, Mt dell'Aquila, Orco Feglino, 20.V.1983, M. E. Franciscolo leg. (MSNG); 1♂, 2♀♀, Calvisio, Finale Ligure, 180 m a.s.l., 29.VII.2007, G. B. Delmastro leg. (MCCI); 1♂, 3♀♀, Segno, Vado Ligure, 18.VII.2008, G. B. Delmastro leg. (MCCI); 2♂♂, SE slope Mt Caprazoppa, Borgio Verezzi, 10.IX.2018 and 22.IV.2019, A. Trotta leg.; 1♂, same locality, A. Trotta & R. Zaniboni leg.; 1♂, Ranzi, Pietra Ligure, 1.V.2019, A. Trotta leg.; 2♂♂, 1♀, Pian delle Bosse, Pietra Ligure, 840 m a.s.l., mixed forest, 30.V.2019,

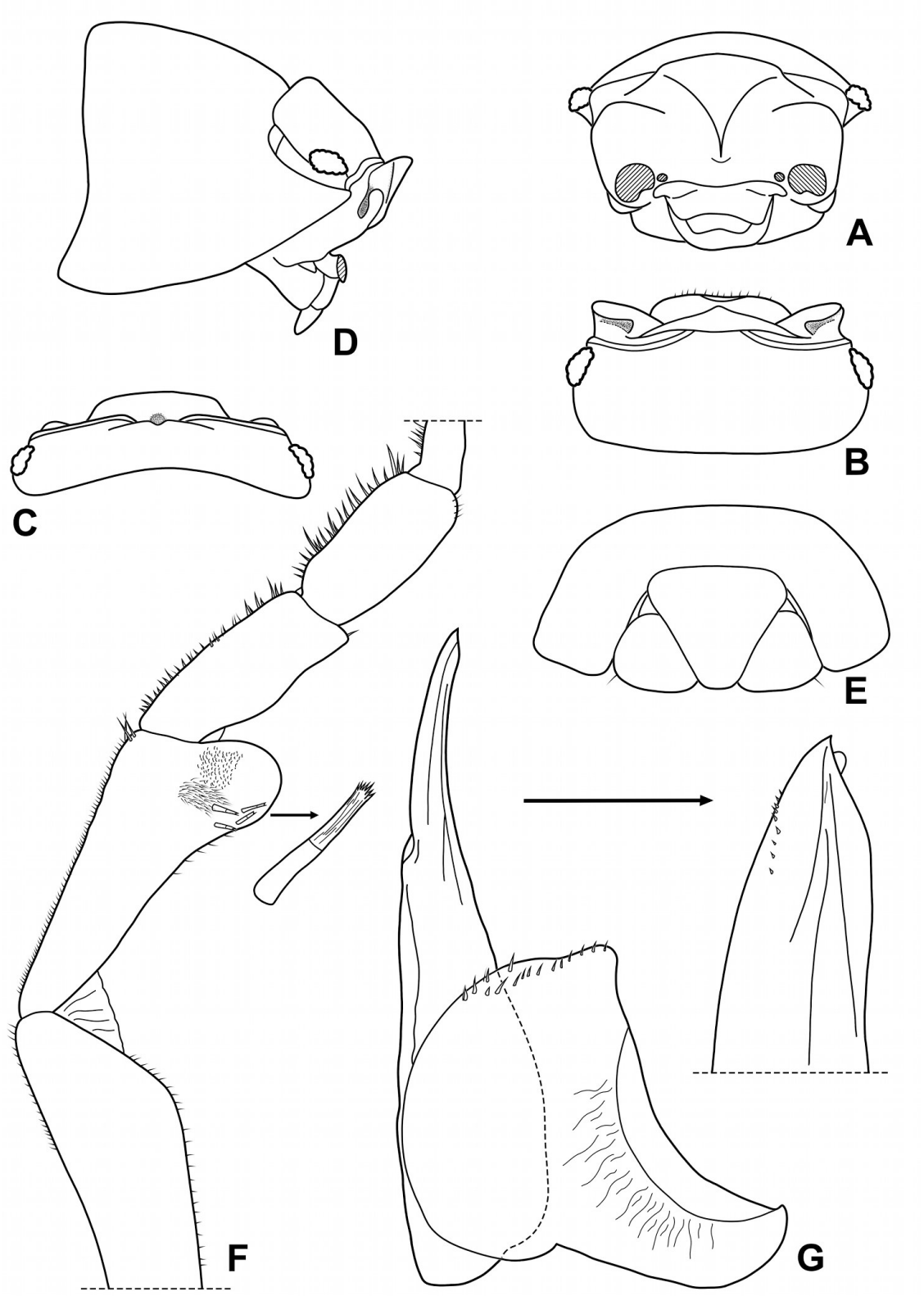

Figure 23. *Armadillidium savonense*, type ♂ from Santuario (SV, Liguria). (**A**) Cephalon, frontal view; (**B**) cephalon, dorsal view; (**C**) cephalon, posterior view; (**D**) cephalon and pereonite 1, lateral view; (**E**) pleonite 5, telson and uropods, dorsal view (**F**) pereopod 7; (**G**) pleopod 1.

P. Gardini & C. Bonofazio leg.; 1♂, 2♀♀, Salto del Lupo, Toirano, 19.VI.2020, P. Gardini & C. Bonifazio leg.

Genova: 1♂, Forte Diamante, Genova, 21.IV.1919, L. Masi leg. (MSNG); 3♂♂, 2♀♀, Mt Fasce and Mt Moro, Genova Quinto al Mare, between 500 and 730 m a.s.l., 2 and 18.V.2020, P. Gardini leg.

PREVIOUS RECORDS

"Liguria" (Dollfus 1896).

Imperia: Sanremo (Dollfus 1887, Verhoeff 1910, 1936). Bordighera (Verhoeff 1910, 1936).

Savona: Savona (Verhoeff 1908b). Noli (Verhoeff 1908b, 1936). Albissola (Verhoeff 1936). Finale Ligure (Verhoeff 1936). Ferrania (Verhoeff 1908b).

Genova: Arenzano; Genova Voltri (Arcangeli 1914).

La Spezia: La Spezia; Portovenere (Tua 1900).

DISTRIBUTION

Spain, Mediterranean France, northern-central Italy (southern Piedmont, Liguria, Tuscany, Umbria), Corsica, ?Sardinia.

ECOLOGY

Humicolous species, frequent in mesophilic woods but also adapted to drier environments and littoral habitats.

Armadillidium vulgare Latreille, 1804

Fig. A27

Armadillidium vulgare; Tua 1900: 4. Verhoeff 1910: 123; 1932: 376; 1936: 133, 138, 157, 159-160. Sanfilippo 1950: 52.

MATERIAL EXAMINED

Imperia: 2♀♀, Lucinasco, unknown date and collector (MZUF); 3♀♀, surroundings of Porto Maurizio, IX.1914, A. Andreini leg. (MSNG); 3 juvs., Bordighera, 19.VI.1971, unknown collector (MZUF); 5♂♂, 5♂♂, 1 juv., Capo Verde, Sanremo, 21.V.1996, S. Cianfanelli & M. Calcagno leg. (MZUF); 1♀, Bevera, Ventimiglia, 1.VI.1996, same collectors (MZUF); 3♂♂, 5♀♀, Varcavello, Diano Castello, mesophilic meadow, 100 m a.s.l., 2.VI-15.VII.2004, R. Fabbri leg. (MSNG); 3♀♀, Torrente Inferno valley, San Lorenzo al Mare, mesophilic meadow, 50 m a.s.l., same date and collector (MSNG); 1♀, S. Antonio, Ventimiglia, 115 m a.s.l., 21.IX.2007, G. B. Delmastro leg. (MCCI); 2♀♀, Capo Mortola, Ventimiglia, maquis, 10.V.2019, G. Gardini, P. Gardini & C. Giusto leg.; 2♂♂, 5♀♀, Seborga, 500 m a.s.l., 12.V.2019, same collectors; 1♀, Punta de Barbantò beach, Mortola Inferiore, Ventimiglia, 13.V.2019, same collectors.

Savona: 4♂♂, 9♀♀, Noli, 13.IV.1924, E. Gridelli leg. (MSNG); 1♂, 4 juvs., Savona, IV.1938, O. Borra leg. (MSNG); 1 juv., Celle Ligure, 19.III.1974, G. Gardini leg. (MZUF); 1♂, Capo Mele, cliffside, 13.VIII.1974, G. Gardini leg. (MZUF); 3♂♂, Faie, Varazze, 6.III.1977, E. Bernabò leg. (MZUF); 1♂, 5♀♀, 1 juv., Val Ponci, Finale Ligure, 3.IV.1977, G. Gardini & S. Zoia leg. (MZUF); 1♀, E slope Mt Ravinet, Loano, 900 m a.s.l., 11.IV.1977, S. Zoia leg. (MZUF); 1♂, banks of Centa stream, Leca, Albenga, 5.IV.1981, A. & L. Briganti leg. (MZUF); 2♂♂, 11♀♀, Carpe, Toirano, 320 m a.s.l., 26.VII.2007, G. B. Delmastro leg. (MCCI); 7♂♂, 9♀♀, Rive di Monticello, Finale Ligure, 16.VII.2009, G. B. Delmastro leg. (MCCI); 1♂, 21 juvs., Finale Ligure, 28.XII.2009, S. Cianfanelli & M. Calcagno leg. (MZUF); 6 juvs., Piamboschi, Cisano sul Neva, olive grove, 1.X.2017, P. Gardini & C. Bonifazio leg.; 6♂♂, 10♀♀, 2 juvs., Capo Mele, Laigueglia, 13.I.2019, P. Gardini & C. Giusto leg.; 2♂♂, 2♀, Pietra Ligure, 12 and 15.III.2020, A. Trotta leg.; 1♀, same locality and collector, 29.V.2022; 25♀♀, Dego, holm oak woods, 320 m a.s.l., 18.III.2023, R. Poggi leg.

Genova: 4♂♂, 5♀♀, Genova, unknown date and collector (MSNG); 1♀, Busalla, VII.1869, unknown collector (MSNG); 1♀, Genova, 7.II.1872, unknown collector (MSNG); 1♀, Genova, VI.1915, V. Reverberi leg. (MSNG); 1♂, 2♀♀, Forte Diamante, Genova, 21.IV.1919, A. Andreini leg. (MSNG); 1♂, 2♀♀, same locality and date, L. Masi leg. (MZUF); 1♂, Mt Fasce, Genova, 13.IV.1936, A. Festa leg. (MSNG); 1♂, 2♀♀, Genova, 25.VI.1936, A. Festa leg. (MSNG); 1♀, Genova, IX.1937, A. Sanfilippo leg. (MSNG); 2♂♂, hills of Genova, 2.III.1938, A. Sanfilippo leg. (MSNG); 1♂, 2♀♀, Genova Righi, 21.IV.1940, L. Masi leg. (MSNG); 1♂, 8♀♀, Rapallo, II.1942, G. C. Doria leg. (MSNG); 8♂♂, 4♀♀, Tann-a de Strie 130 Li/GE, Rapallo, V.1942, G. C. Doria leg. (MSNG); 1♂, 4♀♀, 1 juv., Orto Botanico di Genova, 7.III.1977, G. Parodi leg. (MZUF); 3♂♂, 3♀♀, Spinola, Isola del Cantone, 20.III.1977, G. Gardini leg. (MZUF); 1♂, Calcinara, Uscio, 450 m a.s.l., 30.IV.1984, C. Giusto leg. (MSNV); 3♀♀, 1 juv., Genova Righi, 302 m a.s.l., 16.VI.1981, C. Giusto leg. (MZUF); 3♂♂, 5♀♀, same locality and collector, 20.III.1985 (MSNV); 1♂, Val Chiappeto, Forte S. Tecla, 30.VII.1981, M. E. Franciscolo leg. (MSNG); 2♂♂, 5♀♀, 3 juvs., Camogli, 8.III.1982, A. Pucci & A. Arcara leg.

(MZUF); 1♀, Genova Quinto al Mare, 13.IV.2017, P. Gardini leg.; 1♂, 1 juv., same locality and collector, 3.III.2019,; 2♂♂, 5♀♀, 7 juvs., Giardini O. Balduzzi, Genova, 24.IV.2017, M. Zinni leg.; 2♂♂, 3♀♀, 2 juvs., Ronco Scrivia, 320 m a.s.l., 27.V.2018, A. Marmugi leg.; 1♂, 11♀♀, Mt Moro, Genova Quinto al Mare, 200 m a.s.l., 27.IV.2020, P. Gardini leg.; 2♂♂, Mt Fasce, Genova, 490 m a.s.l., 9.V.2020, P. Gardini leg.; 4♂♂, 3♀♀, Mt Alpesisa, Montoggio, 980 m a.s.l., 22.V.2020, G. Gardini, P. Gardini & C. Giusto leg.; 1♀, Riva Trigoso, Sestri Levante, 08.III.2026, P. Gardini leg.

La Spezia: 1♀, mouth of Magra river, 5.III.1977, G. Gardini & A. Torchia leg. (MZUF); 6 juvs., Cinque Terre, Manarola, 28.XII.1980, S. Taiti leg. (MZUF); 2♀♀, Monterosso al Mare, 20.II.1983, Terrile & Menin leg. (MSNV); 3♀♀, 3 juvs., Lerici, 17.VIII.1985, G. Taroni & L. Bartolozzi leg. (MZUF); 1♂, Bandita, Vallecchia bassa, 24.V.2007, L. Braida leg. (MSNG); 2♂♂, Monte Murlo, Ameglia, 320 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.; 1♂, 1♀, Pitone, Portovenere, under *Q. ilex*, 320 m a.s.l., same date and collectors.

PREVIOUS RECORDS

"Riviera" (Verhoeff 1910).

Imperia: Ventimiglia; Bordighera; Imperia Oneglia (Verhoeff 1936).

Savona: Noli (Verhoeff 1936).

Genova: Genova Nervi (Verhoeff 1932, 1936). Genova Pontedecimo; Santa Margherita Ligure (Verhoeff 1936). Tann-a da Scaggia LI15, Bargagli; Grotta Superiore di Iso LI119, Campomorone; Forra del Castelluccio LI126; Acquedotto Romano (Sanfilippo 1950).

La Spezia: La Spezia (Tua 1900, Verhoeff 1936).

DISTRIBUTION

Originally Mediterranean, now synanthropically cosmopolitan.

ECOLOGY

Eurytopic species with a strong synanthropic tendency.

Genus *Paraschizidium* Verhoeff, 1919

Paraschizidium coeculum Silvestri, 1897

Fig. A23

Armadillidium (*Paraschizidium*) *olearum*; Verhoeff 1917b: 164, Figs. 3-6.

MATERIAL EXAMINED

Savona: 3♂♂, 2♀♀, Loano, 29.IV.1922, A. Andreini leg. (MSNG); 1♂, 3♀♀, SW slope Mt Ravinet, Loano, 500 m a.s.l., 10.IV.1977, S. Zoia leg. (MZUF); 8 juvs., Varazze, 28.III.1978, G. Gardini & S. Zoia leg. (MZUF); many ♂♂ and ♀♀, Varazze, holm oak woods, 29.IV/29.V/30.VI.1981, R. Rizzerio & G. Gardini leg. (MSNG); many ♂♂ and ♀♀, Varazze, 10.IX/17.XII.1981 and 14.III/14.IV.1982, R. Rizzerio leg. (MSNG); 3♂♂, 3♀♀, Verzi, Finale Ligure, holm oak woods, 18.II.1983, G. Gardini & R. Rizzerio leg. (MSNG); 14♂♂, 22♀♀, Capo Noli, 6.X/16.XI/15.XII.2016, A. Minici leg.; 3♂♂, Bergeggi, burnt cork oak woods, 150 m a.s.l., 9.IV/2.VIII.2017, C. Bonifazio & P. Bernelli leg.; 4♂♂, 2♀♀, same locality, 1.III/17.IX.2017, L. Galli & M. Zinni leg.; 25♂♂ and ♀♀, Teccio, Castelbianco, Val Pennavaira, under *O. carpinifolia*, 200 m a.s.l., 27.VII.2018, P. Gardini & C. Bonifazio leg.; 42♂♂ and ♀♀, Colla Micheri, Laigueglia, under *Q. ilex*, 132 m a.s.l., 13.I.2019, P. Gardini & C. Giusto leg.; 2♂♂, 1♀, Torre Bregalla, Celle Ligure, under *Q. pubescens*, 215 m a.s.l., 14.II.2020, P. Gardini leg.; 108♂♂ and ♀♀, outside cave Arma do Rian LI25, Finale Ligure, holm oak woods, 275 m a.s.l., 18.II.2020, P. Gardini leg.; 2♂♂, 9♀♀, Salto del Lupo, Toirano, 300 m a.s.l., 19.VI.2020.

Genova: many ♂♂ and ♀♀, Genova, XI.1918, A. Andreini leg. (MSNG); many ♂♂ and ♀♀, Arenzano, 22.II.1980, G. Gardini, C. Torti & S. Zoia leg. (MZUF); many ♂♂ and ♀♀, Genova Quezzi, under *Quercus* sp. and *Laurus nobilis* L., 11.IV.1984, G. Gardini leg. (MSNG); 10♂♂, 10♀♀, Mt Gazzo, Genova Sestri Ponente, holm oak woods, 14.X.1990, G. Gardini leg. (MSNG); 3♂♂, 5♀♀, S slope Mt Moro, Genova Quinto al Mare, oak woods, 300 m a.s.l., 23.IV.2000, G. Gardini leg. (MSNG); many ♂♂ and ♀♀, same locality and collector, under downy oak, 100 m a.s.l., 27.I.2002 (MSNG); 2♂♂, 1♀, same locality and collector, 20.III.2002 (MSNG); 1♀, same locality, 12.XII.2016, G. Gardini & A. Trotta leg.; 48♂♂ and ♀♀, same locality, under *Erica* sp. and *Quercus* sp., 18.III.2019, M. Zinni leg.; 61♂♂ and ♀♀, same locality, under *A. unedo* and *Quercus* sp., 27.IV.2020, P. Gardini leg.; 36♂♂ and ♀♀, same locality, 17.XI.2023, G. Gardini leg.; 3♀♀, Giardini O. Balduzzi, Genova, 24.IV.2017, M. Zinni leg.; many ♂♂ and ♀♀, Chiavari, maquis, 10.XI.2017, P. Gardini leg.; 15♀♀, Forte Tenaglia, Genova, 200 m a.s.l., 24.IV.2018, G. Badile leg.

La Spezia: 1♂, 1♀, Cinque Terre, Corniglia, 1.III.1981, D. Antichi, A. Torchia & S. Zoia leg. (MZUF); 1♀, Valle Marossa, 1.2 km SSE of Tellaro, Lerici, 209 m a.s.l., 5.X.2019, S. Cianfanelli & M. Calcagno leg. (MZUF); 1♂, 3♀♀, Monte Murlo, Ameglia, 320 m a.s.l., 3.IV.2022, P. Gardini & C. Giusto leg.; 6♂♂, 3♀♀, Pitone, Portovenere, 320 m a.s.l., under *Q. ilex*, same date and collectors.

PREVIOUS RECORDS

Imperia: Sanremo (Verhoeff 1917b).

DISTRIBUTION

Island of Menorca (Spain), Aix Island (France), northern and central Italy, Istria, Hungary.

ECOLOGY

Endogean species, typically found beneath large stones deeply embedded in the soil.

REMARKS

Armadillidium coeculum was described without illustrations by Silvestri (1897) from specimens collected at Montecapraro (Alessandria province, southern Piedmont, Italy) and was subsequently assigned to the genus *Paraschizidium* (Verhoeff 1917b, Arcangeli 1933), of which *Paraschizidium olearum* Verhoeff, 1917 from Sanremo is the type species. As noted by Manicastri & Taiti (1994), *P. olearum* Verhoeff, 1917 (nec Vandel 1962) is a synonym of *P. coeculum*, which is characterized by the presence of long, hair-like scale-setae on the dorsal surface of the body and by the structure of the cephalon, with the frontal shield separated from the vertex only laterally (cf. Manicastri & Taiti 1984: Fig. 5). The French populations erroneously identified by Vandel (1962:760, Figs. 363–365) as *P. olearum* might belong to *Paraschizidium ferrarai* Taiti & Montesanto, 2018 (see below).

Paraschizidium ferrarai Taiti & Montesanto, 2018

Fig. A23

MATERIAL EXAMINED

Savona: many ♂♂ and ♀♀, Gallinara Island, Albenga, 10.IV/11.V/19.X.1990, R. Poggi leg. (MSNG); 7♂♂, 3♀♀, same locality, 8-9.V.1996, G. Gardini leg. (MSNG); 4♂♂, 8♀♀, same locality, 10.VI.1996, D. Lanteri leg. (MZUF); 2♂♂, Bergeggi Island, 22.VI.2016, P. Bernelli leg.

DISTRIBUTION

Currently known for sure only from the small islands of Gallinara and Bergeggi (Liguria) and Gorgona (Tuscan Archipelago) (Taiti & Montesanto 2018). Most probably also present in south-eastern France (see Remarks).

ECOLOGY

Endogean species, typically found beneath large stones deeply embedded in the soil.

REMARKS

This species is readily distinguished from *Paraschizidium coeculum* in bearing much shorter, claviform scale-setae on the dorsal surface of the body (Taiti & Montesanto 2018: Figs. 12-14). As stated above, the populations reported by Vandel (1962:760) as *Paraschizidium olearum* from several French localities might belong to *Paraschizidium ferrarai* (see also Séchet & Noël 2015; Noël & Séchet 2017).

Family Armadillidae Brandt, 1831

Genus *Armadillo* Duméril, 1816

Armadillo officinalis Duméril, 1816

Fig. A28

Armadillo officinalis; Verhoeff 1910: 143; 1936: 138.

MATERIAL EXAMINED

Imperia: 3♀♀, Bordighera, 19.IV.1921, unknown collector (MZUF); 4♂♂, 5♀♀, Capo Verde, Sanremo, 31.V.1996, S. Cianfanelli & M. Calcagno leg. (MZUF).

Genova: 5♀♀, 5 juvs., Genova Nervi, rocky cliffside, 18.IX.2018, P. Gardini leg.; 1♂, same locality and collector, 7.IV.2019.

PREVIOUS RECORDS

Imperia: Sanremo (Verhoeff 1910). Bordighera (Verhoeff 1936).

Savona: Capo Mele (Verhoeff 1910).

DISTRIBUTION

Mediterranean and Black Sea countries, The Netherlands and Iran.

ECOLOGY

Termophilic species, frequent in Mediterranean scrubs and maquis. Sometimes synanthropic.

Species inquirendae

Porcellionides olivarum (Verhoeff 1928)

Metoponorthus olivarum Verhoeff 1928: 142, Fig. 41.

PREVIOUS RECORDS

Genova: Portofino (Verhoeff 1928).

DISTRIBUTION

Only known from Liguria.

ECOLOGY

Unknown, probably thermophilous species with tendency toward synanthropy.

REMARKS

Based on the drawings provided by Verhoeff (1928:142, Fig. 41), this species is likely a synonym of *Porcellionides sexfasciatus*. However, it has not yet been possible to find specimens matching Verhoeff's description at the type locality, preventing a proper assessment of species validity.

DISCUSSION

This study provides the first comprehensive assessment of the terrestrial isopod fauna of Liguria, including an annotated checklist and distribution maps for each species in the region (Figs. A1-A28 in the Appendix). Overall, the region proved to host a high diversity of terrestrial isopods, much greater than previously reported. Prior to this study, only 77 species were known from Liguria, belonging to 30 genera and 13 families. A total of 109 species belonging to 38 genera and 18 families, are now recorded, although the specific identity of some taxa remains uncertain (Table A1 in the Appendix). Three families (Stenoniscidae, Tendosphaeridae, and Trachelipodidae) and seven genera (*Buchnerillo*, *Caeroplastes*, *Leucocyphoniscus*, *Stenoniscus*, *Tendosphaera*, *Tiroloscia*, and *Trachelipus*) are reported for the first time from this region (Table A1). Of the 109 species recorded, one (*Armadillidium genuaense* **n. sp.**) is described as new to science, and 30 are recorded for the first time for Liguria (Table A1 in Appendix). In addition, the records of *Caeroplastes porphyrivagus*, *Trichoniscus nicaeensis*, and *Trichoniscus darwini* represent the first for Italy, bringing the national total to 390 species. Conversely, we were unable to confirm the occurrence of six species (*Chaetophiloscia glandulifera*, *Helleria brevicornis*, *Platyarthrus caudatus*, *Platyarthrus costulatus*, *Porcellionides myrmecophilus*, and *Tylos ponticus*) in Liguria. While *Pl. caudatus*, *Pl. costulatus*, and *Po. myrmecophilus* are very likely to occur in the region, the presence of *H. brevicornis* and *T. ponticus* appears to be much more doubtful. In particular, *H. brevicornis* is most likely absent from Liguria, and the old records of Budde-Lund (1885) and Verhoeff (1910) probably referred to introduced populations that have since gone extinct. Regarding *C. glandulifera*, its unresolved taxonomic status precludes any definitive conclusion. Finally, one species (*Porcellionides olivarum*) is treated here as *species inquirenda*.

The presence of such a high number of species—representing more than one-fourth of the total terrestrial isopod species known from Italy (390)—is remarkable, especially in relation to the relatively small size of the region (5418 km²). For comparison, 136 species—of which 69 in common with Liguria—have been recorded from Tuscany (22,943 km²) (Taiti et al., in preparation), 115 from Sardinia (24,100 km²), 28 of which are still awaiting description (Taiti & Argano 2011, unpublished data), 103 from Sicily (25,832 km²) (Pezzino 2014), and 78 from Corsica (8680 km²) (Taiti & Ferrara 1995).

Such diversity could be mainly due to Liguria's geographical position and unique geoclimatic conditions that make it a significant biogeographic crossroads, where species with Tyrrhenian, Alpine, and North Apennine distributions coexist. The westernmost area of the region is particularly noteworthy for hosting Ibero-French taxa, which are not found elsewhere in the Italian peninsula (Bologna & Vigna Taglianti 1984, Casale & Vigna Taglianti 1984, Minelli & Zapparoli 1984, Vigna Taglianti 1984, Garnier et al. 2004, Ketmaier et al. 2006, Badano & Letardi 2010). In addition, the marked environmental heterogeneity of the region, due to its peculiar territorial conformation and the rapid transition from coastal to mountainous systems, with consequent strong altitudinal gradients and pronounced microclimatic variation, likely further promotes species richness. The wide range of ecological categories recorded in the Ligurian oniscidean fauna clearly reflects this habitat diversity, which overall provides favorable conditions for a rich and compositionally heterogeneous assemblage of terrestrial isopods (Table A1). Humicolous or forest associated species represent the largest component (42 species; 38.9%), followed by subterranean taxa (23; 21.3%; both endogean and cave-dwelling), which together account for more than half of the recorded diversity. Strictly halophilous and littoral taxa are also well represented (13 species; 12.1%), reflecting the importance of coastal environments for oniscidean isopods (Messina et al. 2014). Twelve species can be considered euryecious (11.1%), thriving in a wide

range of different habitats, while six (5.6%) are more strictly synanthropic. The remaining 11% includes myrmecophilous (6; 5.6%), xerophilous (3; 2.8%), rupicolous (2; 1.9%), and strictly montane species (1; 0.9%).

According to the distributions of species, the Ligurian oniscidean fauna can be divided into 11 chorological categories (Fig. 24 and Table A1). The largest group (48 species, about 44%) includes species with Alpine, Apennine, or Alpine–Apennine distributions (categories AA, AP, WA, and SWA in Table A1). Of these, 18 species (about 17%) show an exclusively Alpine distribution (WA and SWA), 17 (16%) an Apennine distribution (AP), while Alpine–Apennine species (AA) account for approximately 12% (13 species). This highlights the importance of this region as a transitional zone connecting the western Alpine–Provençal fauna with the Apennine fauna of peninsular Italy (Balletto et al. 1984; Casale & Vigna Taglianti 1984; Covas & Blondel 1998; Garnier et al. 2004; Schmitt et al. 2021). To provide a few examples, at species level, *Cyphotendana ligurina* shows a remarkable Alpine-Apennine distribution, ranging from the south-western Alps to the Tuscan-Emilian Apennines (see the distribution map in Taiti & Ferrara 1989: Fig. 4). At the genus level, the *Armadillidium* species belonging to the *alassiense* subgroup provide an excellent example of the diversification and distribution of related species along the Alpine–Apennine arc (Fig. A24): the seven species currently included in the group (see Remarks under *Armadillidium genuaense* **n.sp.**) show contiguous but rarely overlapping distributions, extending from the Maritime Alps (*Armadillidium tendanum*) to the Pisan Mountains (*Armadillidium ficalbii*) in central Italy. Within the same chorological category, the genus *Buddelundiella* deserves special mention. Of the 13 species currently described in the genus, eight exhibit a West-Alpine distribution, occurring between Liguria, southern Piedmont, and southeastern France; one (*Buddelundiella sanfilippoi*) shows an Apennine distribution, being present in eastern Liguria and north-western Tuscany; and another (*Buddelundiella voluta* Verhoeff, 1930) has an Alpine–Apennine distribution (see Tabacaru 1971; Taiti & Ferrara 1989; Gardini & Taiti 2023). Although not yet recorded within the administrative borders of Liguria, *B. voluta* represents an interesting case of disjunct Alpine–Apennine distribution, being known from southern Piedmont and localities in the Tuscan–Emilian Apennines, with an apparent gap of several hundred kilometers. A similar pattern is exhibited by *Tendosphaera verrucosa*, which is rather common in western Liguria but apparently absent from the eastern part of the region, while it appears again in the Apuan Alps. However, these gaps are probably due to a lack of research in the field and will likely be filled with more intensive surveys. A third interesting case in the West Alpine taxa with a disjunct distribution is that of *Alpioniscus feneriensis*, a troglobitic species known from the South-western Alps (France, Liguria, and southern Piedmont) and the North-western Alps.

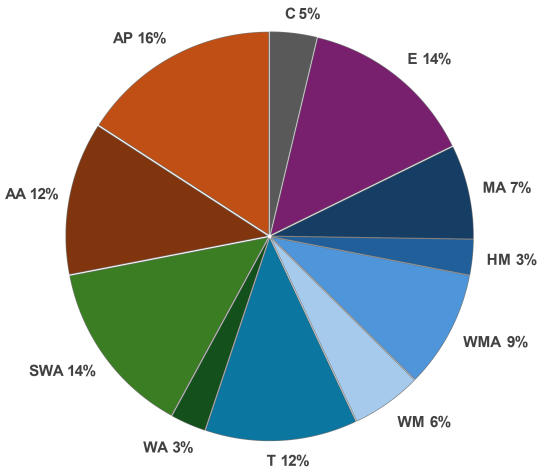

Figure 24. Pie chart showing the chorological categories of the Oniscidea from Liguria. Abbreviations: C = Cosmopolitan; E = European; MA = Mediterranean-Atlantic; HM = Holomediterranean; WMA = West Mediterranean-Atlantic; WM = West Mediterranean; T = Tyrrhenian; WA = West Alpine; SWA = South-West Alpine; AA = Alpine-Apennine; AP = Apennine.

The second-largest chorological group in Liguria is composed of species with a more or less broad Mediterranean distribution (27 species, approximately 25%; categories MA, WMA, WM, and HM in Fig. 24 and Table A1). Of greater biogeographical interest, however, are the 14 species (approximately 13%) with a Tyrrhenian distribution, which underscore Liguria's close ties with the other lands bordering the Tyrrhenian Sea. The most illustrative example of a species with a northern Tyrrhenian distribution is *Armadillidium sordidum* (see the distribution map in Ferrara & Taiti 1978: Fig. XXXVII). However, as is common within the Oniscidea, the most remarkable cases involve subterranean or endogean taxa. At the genus level, *Alloschizidium* is worth highlighting; it currently comprises 18 species, most of which are endogean or

cave-dwelling and are mainly distributed within the Tyrrhenian region (Gardini & Taiti 2023). The Ligurian species *Alloschizidium segestanum* marks the northernmost occurrence of this genus. Similarly, within the genus *Paraschizidium*, *P. ferrarai is* particularly noteworthy for its peculiar distribution. This species is indeed reliably known only from two very small Ligurian islands (Bergeggi and Gallinara) and the island of Gorgona in the Tuscan Archipelago, even if it is probably present in southeastern France as well (see Remarks under this species). A similar case is found in *Cylisticus lobatus* and *Cylisticus poggii*, two members of the *nasutus* group of species, both with extremely restricted—almost punctiform—distribution ranges in eastern Liguria.

The remaining 19 species (approximately 18%) show a wide European (15 species; ~14%) or cosmopolitan distribution (5 species; ~5%). Notably, some widely distributed species that are relatively common in northern Italy, such as *Trachelipus rathkii* and *Trachelipus razzautii*, appear to be rare in Liguria. Although this pattern is difficult to explain at present, it may be related to a filter effect exerted by the Alpine and Apennine chains that border the region to the north. An even more striking example is provided by *Trichoniscus alemannicus* Verhoeff, 1917, a humicolous species distributed in Western Europe and relatively common in both lowland and montane habitats. In Italy, this species occurs in the Western Alps, Piedmontese Po plain, Apuan Alps, and Tuscan–Emilian Apennines (see Taiti & Ferrara 1989) and was expected to be distributed in Liguria as well. However, it has never been collected within the region and appears to be absent from the South-Western Alps and from the southern side of the Ligurian Apennines. The apparent absence of the species in Liguria may be explained by the combined effect of these mountain barriers and the transition in climatic conditions from continental to Mediterranean.

Finally, it should be emphasized that of the 109 species recorded, 15 (14%) are endemic to administrative Liguria (Table A1). This number rises to 27 (25%) when considering the broader geographic region, which includes the Ligurian Alps (extending partly into Piedmont and France) and the Ligurian Apennines (extending partly into Piedmont, Lombardy, Emilia-Romagna, and Tuscany) (Table A1). These numbers are close to those of nearby regions, such as Tuscany (~20% endemic species; Taiti & Ferrara 1989) and Corsica (~23% endemic species; Taiti & Ferrara 1996).

Future directions

As noted above, this is the first study to summarize and organize the current knowledge of the oniscidean fauna of Liguria. However, it is not intended as an endpoint but as a foundation for future research in the region and adjacent areas. Several parts of Liguria, particularly the north-eastern sector bordering Emilia-Romagna and Tuscany, remain poorly explored and merit further investigation.

Furthermore, several taxonomic problems remain that require focused attention in future studies. The most significant problems involve the *Porcellio orarum* and *Porcellio spinipennis* groups of species, the subgroup *alassiense* within the genus *Armadillidium*, and the group *gracilipennis* within the genus *Cylisticus*. These problems are mainly due to the highly confused taxonomic history, marked by repeated re-descriptions and synonymizations, often made in a very superficial manner. Within the scope of this study, we have attempted to point out these issues for future more detailed revisions.

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