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Giuseppe Montesanto [1]

CHAETOPHILOSCIA CELLARIA FROM THE CARTHUSIAN MONASTERY OF CALCI, PISA (MALACOSTRACA, ISOPODA, ONISCIDEA)

Abstract - G. Montesanto, Chaetophiloscia cellaria *from the carthusian monastery of Calci, Pisa (Malacostraca, Isopoda, Oniscidea).*

Following the publication of a recent study presenting a list of terrestrial isopods found within the grounds of the Certosa Monumentale di Calci (Pisa), a further oniscidean species has been recorded: *Chaetophiloscia cellaria*. Detailed illustrations of the species are provided, along with notes to distinguish it morphologically from the congeneric species *C. elongata*, found in previous surveys. Although it can be considered a widely distributed species in Italy and abroad, its presence within the study area is also discussed in more detail.

Key words - biodiversity, fauna, zoology, ecology, taxonomy, systematics

Riassunto - G. Montesanto, Chaetophiloscia cellaria *dalla Certosa di Calci, Pisa (Malacostraca, Isopoda, Oniscidea).*

Facendo seguito alla pubblicazione di un recente studio, che intendeva presentare un elenco degli isopodi terrestri rinvenuti all'interno del perimetro della Certosa Monumentale di Calci (Pisa), è stata scoperta una ulteriore specie di Oniscidea: *Chaetophiloscia cellaria*. Vengono fornite illustrazioni dettagliate della specie, ed alcune note per distinguerla morfologicamente dalla specie congenerica *C. elongata*, già rinvenuta in precedenti indagini. Sebbene possa essere considerata una specie ampiamente diffusa in Italia e all'estero, viene altresì discussa la sua presenza nell'area di studio in modo più approfondito.

Parole chiave - biodiversità, fauna, zoologia, ecologia, tassonomia, sistematica

Introduction

The genus *Chaetophiloscia* Verhoeff, 1908 currently comprises 19 recognized species, distributed primarily in countries bordering the Mediterranean and Black Sea (Schmalfuss, 2003). A limited number of species have been introduced beyond their native range; notably, *Chaetophiloscia sicula* Verhoeff, 1908 has been recorded as introduced into the United States (Hornung & Szlávecz, 2003) and into greenhouse environments in England (Gregory, 2014). Five additional species presently assigned to the genus are known from extra-European localities: *Chaetophiloscia frontalis* Lemos de Castro, 1967 (Brazil), *Chaetophiloscia gatunensis* (Van Name, 1926) (Costa Rica, Panama, and presumably Brazil), *Chaetophiloscia grayi* Vandel, 1973 (Australia), *Chaetophiloscia guernei* (Dollfus, 1887) (the Azores), and *Chaetophiloscia starosti* Borutzky, 1953 (Tajikistan) (Schmalfuss, 2003). However, their placement within *Chaetophiloscia* is demonstrably incorrect, and a thorough taxonomic revision is required to include these species in a correct genus. Additionally, *Chaetophiloscia walkeri* (Pearse, 1915), also currently listed within the genus, must be regarded as a *nomen dubium* (Leistikow, 2001).

To date, 12 species belonging to the suborder Oniscidea had been reported within the perimeter of the Carthusian Monastery of Calci, an area firstly investigated regarding the isopod fauna of Monte Pisano by Montesanto *et al.* (2025). The primary goal of this study is to document the occurrence of a species that was not previously recorded in the specified study area. Recent research has led to the discovery of *Chaetophiloscia cellaria* (Dollfus, 1884) within the Certosa, which is reported and illustrated here. A morphological comparison is also provided to distinguish *C. cellaria* from the congeneric species *Chaetophiloscia elongata* (Dollfus, 1884), which was previously documented in the same area (Montesanto *et al.*, 2025).

This study offers a comprehensive illustration of the species, facilitating future comparative analy-

[1] Museo di Storia Naturale, Università di Pisa, Via Roma, 79, 56011 Calci, Pisa, Italy
Corresponding author: Giuseppe Montesanto (giuseppe.montesanto@unipi.it)

ses with all other members of the genus. Moreover, many anatomical parts of the species had never been illustrated before. The decision to provide a full illustration of this species is also due to the fragmentary nature of the extant figures in the literature, some of which are of poor quality. The creation of additional illustrations is also part of a broader project called "OniscidBase." The goal of this project is to facilitate the analysis of taxonomic gaps and assess the distribution and functional importance of terrestrial isopods (Gongalsky *et al*., 2025).

Materials and methods

Samplings were performed manually, with the help of entomological tweezers, on the western side of the Charterhouse, along the perimeter wall. The collected material was stored in 75% ethanol. Samples were identified and individuals were counted separately as males and females following standard procedures (see also Montesanto & Cividini, 2017 for further details). The material was stored at the Invertebrate Zoology section of the Museum of Natural History, University of Pisa, abbreviated as: MSN-UNIPI ONI-NN. References for Tuscany were reported. The species was illustrated with the aid of a camera lucida mounted on a Zeiss Standard microscope. The figures were drawn by the author using the methods reported in Montesanto (2015a, 2016). The measures shown on the scales in the figures were obtained using ImageJ software (National Institutes of Health, USA).

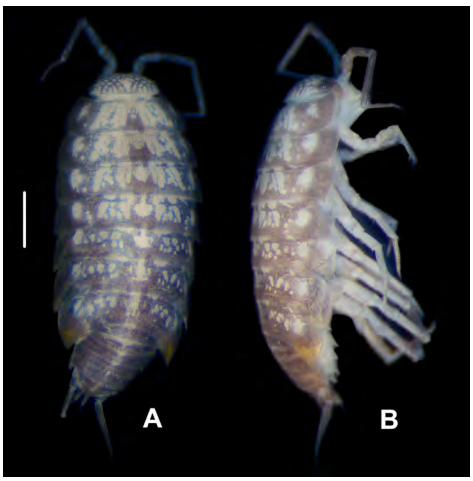

Fig. 1 - *Chaetophiloscia cellaria* (Dollfus, 1884) from Certosa Monumentale di Calci (Pisa, Tuscany, Italy); A, ♀ habitus, dorsal view; B, ♀, habitus, lateral view; scale, 1 mm.

Systematics

Class Malacostraca Latreille, 1802
Order Isopoda Latreille, 1817
Suborder Oniscidea Latreille, 1802
Family Philosciidae Kinahan, 1857
Genus *Chaetophiloscia* Verhoeff, 1908
Type species: *Philoscia elongata* Dollfus, 1884 by original designation.

Chaetophiloscia cellaria (Dollfus, 1884)

Philoscia cellaria; Arcangeli, 1925: 49.
Chaetophiloscia piligera; Verhoeff, 1931a: 553; Verhoeff, 1931b: 303; Verhoeff, 1933: 53.
Chaetophiloscia cellaria; Arcangeli, 1947: 106; Lanza, 1949: 188; Arcangeli, 1950a: 131; 1950b: 40; Lanza & Marcucci, 1953: 53; Lanza, 1961: 29; Vandel, 1962: 499, fig. 248; Zangheri, 1966: 519; Ferrara & Taiti, 1978: 24; Taiti & Ferrara, 1980: 258; Taiti & Ferrara, 1989: 79; Favilli, 1990: 105, 112; Bartolozzi & Taiti, 1991: 234; Taiti & Ferrara, 1995a: 183.
?*Chaetophiloscia sicula*; Fanfani & Groppali, 1979: 13.

Material examined

Calci (Pisa), Certosa Monumentale, 43°43'19"N 10°31'22"E, 25/XI/2025, G. Montesanto leg., 4 ♂♂, 5 ♀♀ (MSN-UNIPI ONI-35).

Remarks

The length of the female specimens was approximately 7 mm (**fig. 1**), while the males measured approximately 6.5 mm. The colour is typically brown, with red-orange areas at the posterolateral corners of pereonite 7 (**fig. 1**). In contrast, *Chaetophiloscia elongata* displays a distinctive pattern of uniform colouration, marked by a conspicuous darker band along the epimera of the pereon. The body is covered by dense hair-like scale-setae, a characteristic feature of the species, which is clearly visible under a binocular microscope. The arrangement of the noduli laterales is shown in **fig. 2A, B**. Scale-setae as in **fig. 2C**. The first pereonite is characterised by a rounded posterior margin (**fig. 2B, D**). The seventh pereonite has a sinuous posterior margin that does not form a regular curve (**fig. 2E**). The epimera of

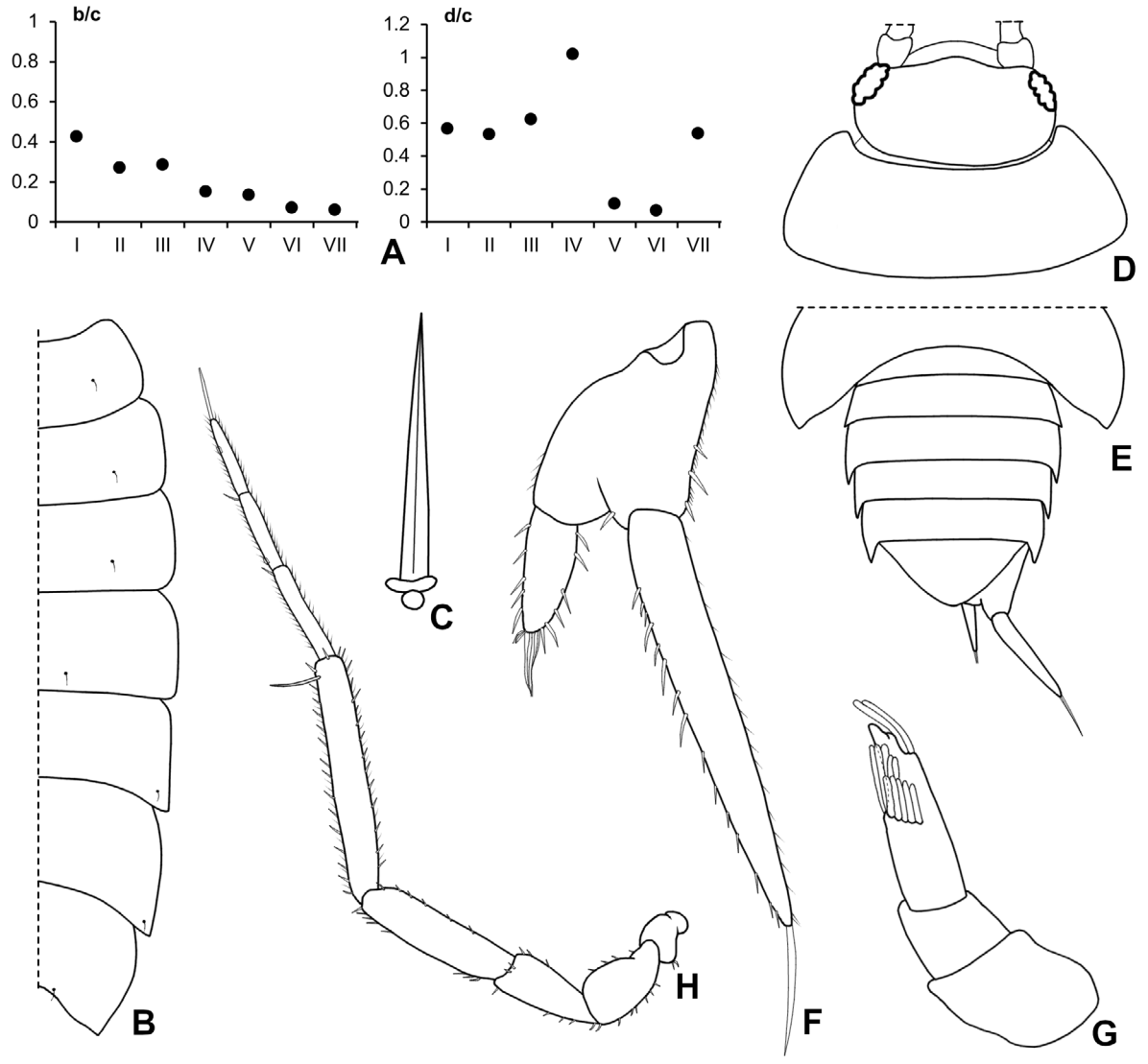

Fig. 2 - *Chaetophiloscia cellaria* (Dollfus, 1884) ♂ from Certosa Monumentale di Calci (Pisa, Tuscany, Italy); A, Coordinates of noduli laterales; B, Pereon epimera I-VII with the position of the noduli laterales; C, dorsal scale-seta; D, cephalon and pereonite 1, dorsal view; E, pereonite 7, pleon, telson and right uropod, dorsal view, F, uropod; G, antennula; H, antenna.

the pleon (**fig. 2E**) are more developed and not folded downward in comparison to *C. elongata*. The telson is triangular with a rounded apex (**fig. 2E**), whereas in *C. elongata* it is pointed. The uropods (**fig. 2F**) possess a very long and slender exopodite, which is longer and less stout than in *C. elongata*. In contrast, the endopodite is short. Mouth parts as in **fig. 3A-E**. The secondary sexual characters of the male are illustrated in **fig. 4A-I**. The first male pleopod has an endopodite with a pointed distal part, widened at the base; the apex bears a line of thin setae on the outer margin and small teeth on the inner margin (**fig. 4D**). The following characters are shared with other species of the genus: the position of the noduli laterales with a maximum on pereonite 4 in the d/c coordinates (**fig. 2A**); cephalon (**fig. 2D**) with no frontal line, suprantennal line present; pleon narrower than pereon with epimera reduced (**fig. 2E**); mandibles with molar penicil dichotomised (**fig. 3A, B**); maxillula with inner set of teeth apically cleft (**fig. 3C**); maxilliped endite without penicil (**fig. 3E**).

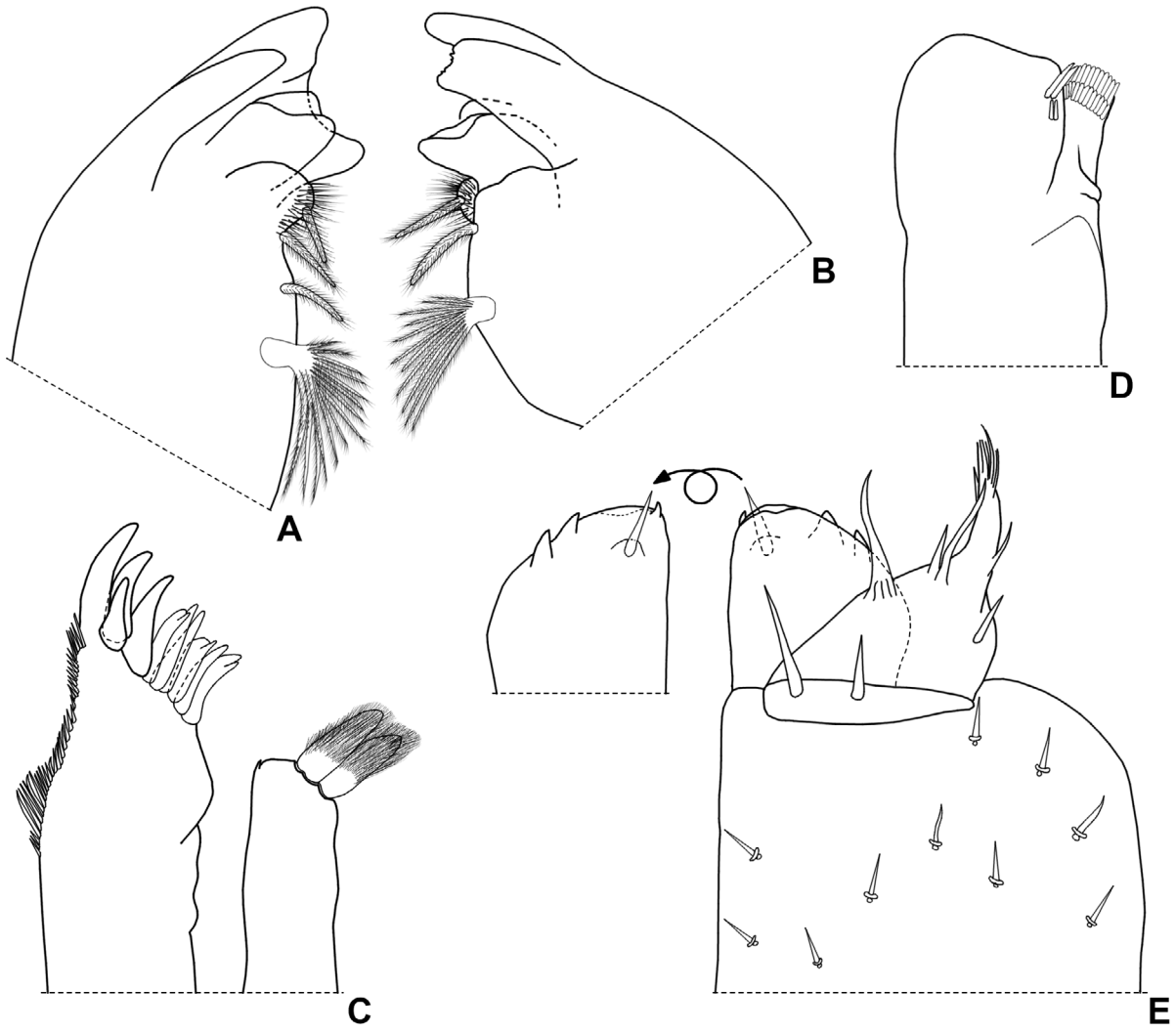

Fig. 3 - *Chaetophiloscia cellaria* (Dollfus, 1884) ♀ from Certosa Monumentale di Calci (Pisa, Tuscany, Italy); A, left mandible; B, right mandible; C, maxillula; D, maxilla; E, maxilliped.

Ecology and distribution

Humicolous species with troglophilic and synanthropic tendencies. *Chaetophiloscia cellaria* is common in limestone and volcanic caves, but also in artificial tunnels. It is often found in leaf litter and under deeply buried stones. The species is present in the northern Mediterranean region from Spain to Greece, French Brittany (Noël & Séchet, 2017), Guernsey (Channel Islands) (Gregory & Marquis, 2019), Hungary (Visilics, 2007, Farkas & Vilisics, 2013), Rostov region in southern Russia (Kuznetsova & Gongalsky, 2012).

In France, it is widespread across most of the metropolitan territory, more common in the southern part of the country where it leads an epigean life while it is more troglophilic and synanthropic further north (Noël & Séchet, 2017). It occurs throughout Italy and in Tuscany it is distributed in all environments from coastal hills to non-Apennine uplands, Apennine mountains, alluvial plains and on the islands of the Tuscan archipelago (Ferrara & Taiti, 1978; Taiti & Ferrara, 1989). For the province of Pisa, and in particular for Monte Pisano, several records are known: Pisa, Botanical Garden (Arcangeli, 1925); Monte Pisano, Grotta del Monte Maggiore, above Ripafratta (Arcangeli, 1925); Monte Pisano, "La Spelonca" Cave (Arcangeli, 1925); Monte Pisano (Arcangeli, 1950a); mountains beyond the Serchio, Tana della Volpe near Ponte al Serchio (Lanza,

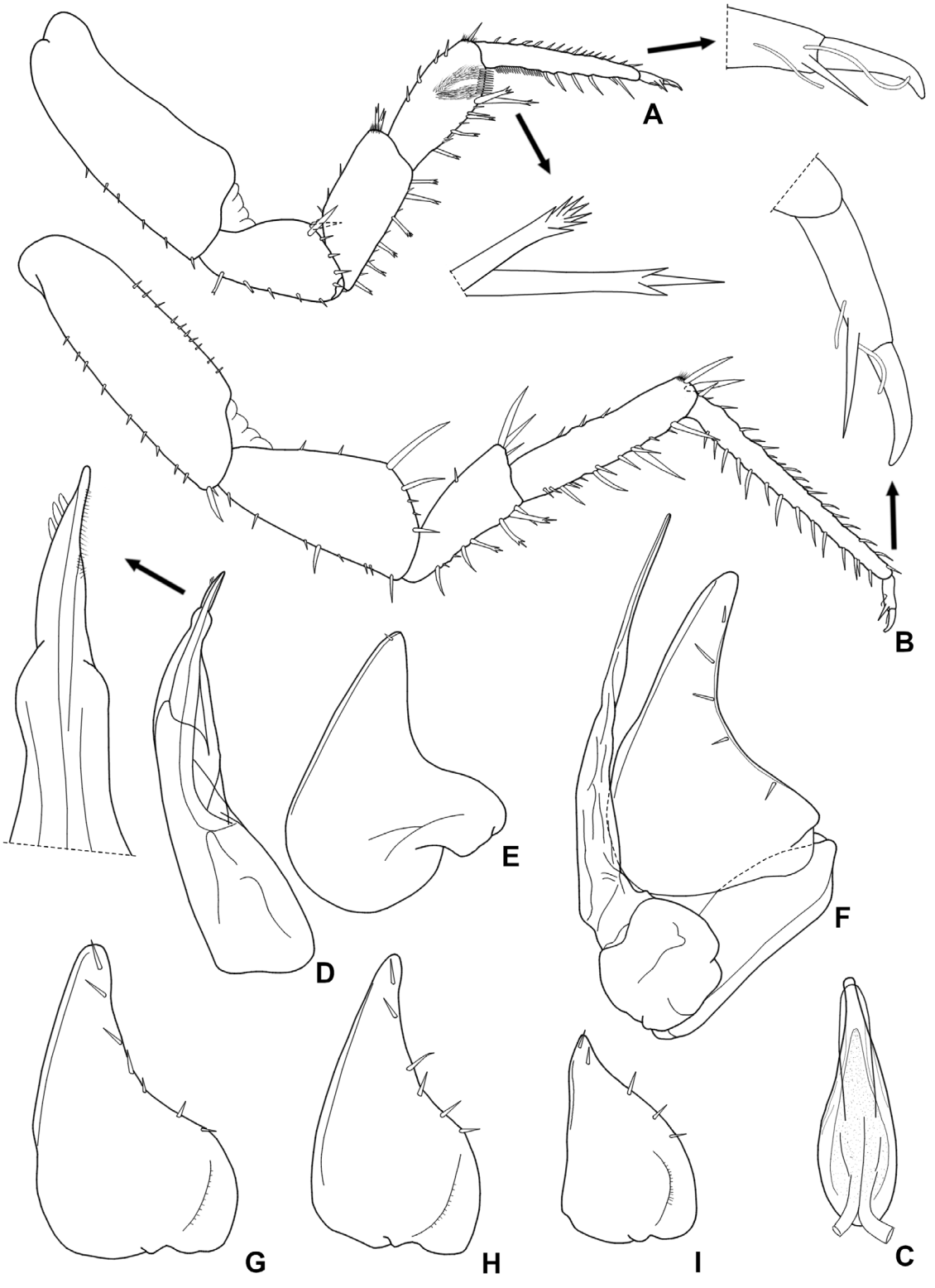

Fig. 4 - *Chaetophiloscia cellaria* (Dollfus, 1884) ♂ from Certosa Monumentale di Calci (Pisa, Tuscany, Italy); A, pereopod 1; B, pereopod 7; C, genital papilla; D, pleopod 1 endopod; E, pleopod 1 exopod; F, pleopod 2; G, pleopod 3 exopod; H, pleopod 4 exopod; I, pleopod 5 exopod.

1961); mountains beyond the Serchio, La Cantinaccia Cave, Vecchiano (Lanza, 1961). Finally, the species has also been recorded in a tropical greenhouse in Basel, Switzerland by Cifuentes *et al.* (2022), but according to the figures 2C and 2D provided by the authors, the species is certainly not *C. cellaria*.

Discussion

In recent years, a variety of subterranean and endogean terrestrial isopods have been discovered in Tuscany and *Chaetophiloscia cellaria* has been listed as a troglophilic species (Taiti & Ferrara, 1989, 1995; Taiti & Montesanto, 2018; Gardini *et al.*, 2026b). Although its presence may have been hypothesized, it is currently unknown whether this species was previously present in the study area. Research in this field is ongoing, and in comparison, to the latest discoveries in various Italian regions of new species of terrestrial isopods (Taiti & Montesanto, 2018, 2025; Gardini *et al.*, 2026b), this is certainly not a major discovery. However, it clearly indicates that knowledge about this species is progressing. Recent findings have also revealed the presence of this species in regions where its distribution range was previously thought to be limited (Kuznetsova & Gongalsky, 2012; Farkas & Vilisics, 2013; Noël & Séchet, 2017; Gregory & Marquis, 2019).

Urbanization represents one of the most prevalent and rapidly evolving forms of terrestrial ecosystem modification on a global scale (Darrel Jenerette & Potere, 2010; Yang *et al.*, 2018). Urbanization acts as a significant environmental filter, inducing both community homogenization and directional changes. Consequently, terrestrial isopod communities exhibit a structured organization at both the taxonomic and functional levels (Gardini *et al.*, 2026a). This new finding highlights the importance of local habitat characteristics for isopod community conservation in urban environments (Vilisics & Hornung, 2009; Szlàvecz *et al.*, 2018). Integrating such local features with broader landscape connectivity may support more diverse and resilient macrodetritivore assemblages and sustain their associated ecosystem functions (Gardini *et al.*, 2026a).

The recent discovery of *Chaetophloscia cellaria* has increased the number of species found in the Charterhouse of Calci to 13. It is not a particularly high number if this is compared with other similar works on the diversity of terrestrial isopods in protected areas or in particularly preserved environments from a naturalistic point of view. As an example, in some protected areas of Sicily the presence of 23-24 species has been found (Messina *et al.*, 2011; Messina *et al.*, 2012; Messina *et al.*, 2014). The number of species listed here is slightly lower than that found for other similar studies in an urban environment. In a study carried out in the city of Budapest (Hungary) in two botanical gardens, 17 species were found, of which only 3 were cosmopolitan (Vilisics & Hornung, 2009). In another paper (Vilisics *et al.*, 2012) the urban areas of three Swiss cities were studied, obtaining a list of 18 species. The areas examined in these studies are, however, far larger than the botanic garden in Pisa (approximately 30,000 square metres) (Montesanto, 2015b; 14 species) and the Charterhouse in Calci (approximately 73,500 square metres). By contrast, a recent study conducted in the city of Rome and its environs revealed the presence of 42 distinct species of terrestrial isopods within urban and suburban habitats (Gardini *et al.*, 2026a). It is worth noting that this latest paper highlights the importance of historic urban and peri-urban green spaces which have, to some extent, been preserved from the advance of urbanisation, in sustaining fairly diverse populations of these animals. Thirteen or fourteen species were also found in Rome's large historic parks, such as Villa Ada or Villa Pamphili (Gardini *et al.*, 2026a).

Chaetophiloscia cellaria had not previously been documented within the enclosure of the Charterhouse, as previously discussed. This can be explained through the collection methods employed in the previous study. Most collections were based on the utilization of pitfall traps. Furthermore, areas characterized by open areas or natural ground cover were preferred. Due to the elusive nature of this species, which has been documented to inhabit human-made structures, such as cellars and abandoned locations, and its preference for subterranean environments, these habitats were not included in the primary collection. However, the specimens were discovered beneath a stone slab that was positioned against an exterior wall, indicating that they were not confined within enclosed spaces or basements.

The species list of oniscidean isopods living within the Charterhouse area is then enriched by another interesting species (see Montesanto *et al.*, 2025). The

Natural History Museum housed within the Charterhouse has recently begun conducting scientific and dissemination activities together with other international organizations, specifically in the field of animal communication and mimicry (see also Cividini & Montesanto, 2018; Cividini *et al*., 2020). This will certainly foster the idea of conducting future publications, exhibitions, training, and dissemination activities based on knowledge of the diversity of terrestrial isopods within the Charterhouse. Future research on this species is necessary since, as pointed out by Schmalfuss (2016) in his work on terrestrial isopods from Oman, *C. cellaria* seems to consist of several separate species. However, this hypothesis needs to be confirmed by both morphological and molecular analyses with an integrated approach of specimens from different localities.

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Conflict of interest statement

The author declares that he has no conflict of interest, neither known competing financial interests nor personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

Arcangeli A., 1925. *Gli isopodi terrestri della Sardegna*. Bollettino dei Musei di Zoologia ed Anatomia Comparata della Regia Università di Torino, 39, 13-75 and plates 4-5.

Arcangeli A., 1947. *Raccolte faunistiche compiute nel Gargano da A. Ghigi e F. P. Pomini. II. Isopodi terrestri*. Acta pontificiae Academiae Scientiarum, 12, 93-114.

Arcangeli A., 1950a. *Gli isopodi terrestri della Sardegna. 2a edizione*. Bollettino dell'Istituto e Museo di Zoologia dell'Università di Torino, 2, 77-191 and plates 1-7.

Arcangeli A., 1950b. *Gli isopodi terrestri dell'estuario veneto*. Atti del Museo Civico di Storia Naturale di Trieste, 18, 13-59.

Bartolozzi L., Taiti S., 1991. *Gli Invertebrati del Giardino di Boboli*. In: Acidini Luchinat C. & Garbero Zorzi E. (Eds), *Boboli 90. Atti del Convegno Internazionale*, 231-240. Edifir, Firenze.

Cifuentes J., Gilgado J. D., Bobbitt I., 2022. *The woodlice of Switzerland (Crustacea, Isopoda, Oniscidea), with 6 new records from heated greenhouses*. Revue Suisse de Zoologie, 129 (2), 343-367. https://doi.org/10.35929/RSZ.0081

Cividini S., Montesanto G., 2018. *Aggregative behavior and intraspecific communication mediated by substrate-borne vibrations in terrestrial arthropods: An exploratory study in two species of woodlice*. Behavioural Processes, 157, 422-430. https://doi.org/10.1016/j.beproc.2018.07.006

Cividini S., Sfenthourakis S., Montesanto G., 2020. *Are terrestrial isopods able to use stridulation and vibrational communication as forms of intra and interspecific signaling and defense strategies as insects do? A preliminary study in* Armadillo officinalis. Science of Nature, 107 (1), 4. https://doi.org/10.1007/s00114-019-1656-3

Darrel Jenerette D., Potere D., 2010. *Global analysis and simulation of land-use change associated with urbanization*. Landscape Ecology, 25 (5), 657-670. https://doi.org/10.1007/s10980-010-9457-2

Fanfani A., Groppalli R., 1979. *La fauna dell'Isola di Montecristo. Arcipelago Toscano (Studi sulla riserva naturale dell'Isola di Montecristo. XXIII)*. Pubblicazioni dell'Istituto di Entomologia dell'Università di Pavia, 9, 1-52.

Farkas S., Vilisics F., 2013. *Magyarország szárazföldiászkarák faunájának határozója (Isopoda: Oniscidea)*. Natura Somogyiensis, 23, 89-124. *(in Hungarian)*

Fafilli L., 1990. *Phylum Arthropoda, Classe Crustacea*. In: *Catalogo e Bibliografia degli Invertebrati viventi nella provincia di Siena*, 103-119. Nuova Immagine Editrice, Siena.

Ferrata F., Taiti S., 1978. *Gli isopodi terrestri dell'Arcipelago Toscano. Studio sistematico e biogeografico*. Redia, 61, 1-106.

Gregory S.J., Marquis A., 2019. *First record of* Chaetophiloscia cellaria *(Dollfus, 1884) from the Channel Islands (Isopoda: Oniscidea: Philosciidae)*. Bulletin of the British Myriapod & Isopod Group, 31, 37-43.

Gardini P., De Smedt P., Fattorini S., Audisio P., Sabatelli S., 2026a. *Homogenisation and loss of specialisation in terrestrial isopods along an urban gradient: The role of local and landscape factors*. Urban Ecosystems, 29, 133. https://doi.org/10.1007/s11252-026-01994-6

Gardini P., Montesanto G., Galli L., Taiti S., 2026b. *Oniscidea of Liguria (north-western Italy), with the description of a new species (Malacostraca: Isopoda)*. Biogeographia – The Journal of Integrative Biogeography, 41 (1). http://dx.doi.org/10.21426/B6.54058

Gongalsky K.B., De Smedt P., Kuznetsova D.M., Segers S., Gardini P., Hornung E. *et al*., 2025. *OniscidBase: A call for contributions to a global database to advance terrestrial isopod research*. Soil Organisms, 97 (3), 247-269. https://doi.org/10.25674/466

Hornung E., Szlàvecz K., 2003. *Establishment of a Mediterranean Isopod (*Chaetophiloscia sicula *Verhoeff, 1908) in a North American Temperate Forest*. In: *The Biology of Terrestrial Isopods*. Crustaceana Monographs, 2, 181-189. Brill, Leiden.

Kuznetsova D.M., Gongalsky K.B., 2012. *Cartographic analysis of woodlice fauna of the former USSR*. ZooKeys, 176, 1-11.

Lanza B., 1949. *Speleofauna toscana. I. Cenni storici ed elenco ragionato dei Protozoi, dei Vermi, dei Molluschi, dei Crostacei, dei Miriapodi e degli Aracnidi (Acari esclusi) cavernicoli della Toscana*. Attualità Zoologiche. Supplemento dell'Archivio Zoologico Italiano, 6, 161-223.

Lanza B., 1961. *La fauna cavernicola della Toscana*. Rassegna Speleologica Italiana, 13 (2), 23-51.

Lanza B., Marcucci G., 1953. *Note su alcune grotte della Toscana con cenni sulla loro fauna*. Rassegna Speleologica Italiana, 5 (2), 50-58.

Leistikow A., 2001. *Phylogeny and Biogeography of South American Crinocheta, traditionally placed in the family "Philosciidae" (Crustacea: Isopoda: Oniscidea)*. Organisms, Diversity & Evolution, 1, 239-240.

Messina G., Montesanto G., Pezzino E., Caruso D., Lombardo B.M., 2011. *Diversity of terrestrial isopods in a protected area characterized by salty coastal ponds (Vendicari, Sicily)*. Journal of Natural History, 45 (35-36), 2145-2158. https://doi.org/10.1080/00222933.2011.587899

Messina G., Pezzino E., Montesanto G., Caruso D., Lombardo B.M., 2012. *The diversity of terrestrial isopods in the natural reserve "Saline di Trapani e Paceco" (Crustacea, Isopoda, Oniscidea) in northwestern Sicily*. Zookeys, 176, 215-230. https://doi.org/10.3897/zookeys.176.2367

Messina G., Montesanto G., Pezzino E., Sciandrellio S., Caruso D., Lombardo B.M., 2014. *Plant communities preferences of terrestrial crustaceans (Isopoda: Oniscidea) in a protected coastal area of southeastern Sicily (Italy)*. Biologia, 69 (3), 354-362. https://doi.org/10.2478/s11756-013-0321-0

Montesanto G., 2015a. *A fast GNU method to draw accurate scientific illustrations for taxonomy*. Zookeys, 515, 191-206. https://doi.org/10.3897/zookeys.515.9459

Montesanto G., 2015b. *Gli isopodi terrestri dell'orto botanico di Pisa (Crustacea, Isopoda, Oniscidea)*. Atti della Società Toscana di Scienze Naturali, Memorie, Serie B, 122, 171-178. http://www.stsn.it/AttiB2015/MONTESANTO.pdf

Montesanto G., 2016. *Drawing setae: a GNU way for digital scientific illustrations*. Nauplius, 24, e2016017. https://doi.org/10.1590/2358-2936e2016017

Montesanto G., Cividini S., 2017. *A crossover design to assess feeding preferences in terrestrial isopods: A case study in a Mediterranean species*. Biologia, 72, 194-203. https://doi.org/10.1515/biolog-2017-0020

Montesanto G., Nardi J., Sergenti A., Dellacasa M., 2025. *Diversity of Terrestrial Isopods from the Carthusian Monastery of Calci, Pisa, Italy (Crustacea, Isopoda, Oniscidea)*. Atti della Società Toscana di Scienze Naturali, Memorie, Serie B, 132, 5-15. https://doi.org/10.2424/ASTSN.M.B.2025.01

Noël F., Séchet E., 2017. *Inventaire actualisé des Isopodes terrestres (Crustacea, Isopoda, Oniscidea) du Parc national de Port-Cros et de l'aire optimale d'adhésion (Var, Provence, France)*. Scientific Reports of Port-Cros National Park, 31, 213-274.

Schmalfuss H., 2003. *World catalog of terrestrial isopods (Isopoda: Oniscidea)*. Stuttgarter Beiträge zur Naturkunde, Serie A 654, 1-341.

Schmalfuss H., 2016. *Two new species and new records of terrestrial isopods (Isopoda: Oniscidea) from Oman*. Stuttgarter Beiträge zur Naturkunde A, 9 (1), 31-39. https://doi.org/10.18476/sbna.v9.a3

Szlàvecz K., Vilisics F., Tóth Z., Hornung E., 2018. *Terrestrial isopods in urban environments: an overview*. ZooKeys, 801, 97-126. https://doi.org/10.3897/zookeys.801.29580

Taiti S., Ferrara F., 1980. *Nuovi studi sugli isopodi terrestri dell'Arcipelago Toscano*. Redia, 63, 249-300.

Taiti S., Ferrara F., 1989. *Biogeography and ecology of terrestrial isopods from Tuscany*. Monitore Zoologico Italiano (N.S.), Monografia, 4, 75-101.

Taiti S., Ferrara F., 1995. *Isopodi terrestri (Crustacea, Oniscidea) delle grotte della Toscana (Italia centrale)*. Mémoires de Biospéologie, 22, 169-196.

Taiti S., Montesanto G., 2018. *New species of subterranean and endogean terrestrial isopods (Crustacea, Oniscidea) from Tuscany (central Italy)*. Zoosystema, 40 (11), 197-226. https://doi.org/10.5252/zoosystema2018v40a11

Taiti S., Montesanto G., 2025. *Two new species of* Trichoniscus *with gland-piliferous organs (Isopoda, Oniscidea)*. Travaux de l'Institut de Spéologie "Émile Racovitza", 64, 31-47. https://www.doi.org/10.59277/TISER.2025.01

Vandel A., 1962. *66. Isopodes terrestres (deuxième partie)*. Faune de France, Paris, 417-931 pp.

Verhoeff K.W., 1931a. *Über Isopoda terrestria aus Italien. 45. Isopoden-Aufsatz*. Zoologische Jahrbücher, Abteilung für Systematik, Ökologie und Geographie der Tiere, 60, 489-572 and plates 6-8.

Verhoeff K.W., 1931b. *Vergleichend geographisch-ökologische Untersuchungen über die Isopoda terrestria von Deutschland, den Alpenländern und anschließenden Mediterrangebieten*. Zeitschrift für Morphologie und Ökologie der Tiere, 22, 231-268.

Verhoeff K.W., 1933. *Zur Systematik, Geographie und Ökologie der Isopoda terrestria Italiens und über einige Balkan-Isopoden*. Zoologische Jahrbücher, Abteilung für Systematik, Ökologie und Geographie der Tiere, 65, 1-64.

Vilisics F. 2007. *New and rare species in the isopod fauna of Hungary (Crustacea, Isopoda, Oniscidea): Results of field surveys and revisions*. Folia Historico Naturalia Musei Matraensis, 31, 115-123.

Vilisics F., Bogyó D., Sattler T., Moretti M., 2012. *Occurrence and assemblage composition of millipedes (Myriapoda, Diplopoda) and terrestrial isopods (Crustacea, Isopoda, Oniscidea) in urban areas of Switzerland*. ZooKeys, 176, 199-214. https://doi.org/10.3897/zookeys.176.2153

Vilisics F., Hornung E., 2009. *Urban areas as hot-spots for introduced and shelters for native isopod species*. Urban Ecosystems, 12 (3), 333-345. https://doi.org/10.1007/s11252-009-0097-8

Yang D., Ye C., Wang X., Lu D., Xu J., Yang H., 2018. *Global distribution and evolvement of urbanization and PM2.5 (1998-2015)*. Atmospheric Environment 182, 171-178. https://doi.org/10.1016/j.atmosenv.2018.03.053

Zangheri P., 1966. *Repertorio sistematico e topografico della Flora e Fauna vivente e fossile della Romagna. Tomo II*. Museo Civico di Storia Naturale di Verona, Memorie Fuori Serie 1, 31-854.

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