



An annotated catalogue of the epigeic and cave centipedes (Chilopoda) of Sardinia*

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Abstract

Published and unpublished data on the epigeic and cave centipedes of Sardinia (Italy) are summarized and critically revised in this paper. Fifty-four species are listed and discussed (1 Scutigermorpha, 19 Lithobiomorpha, 6 Scolopendromorpha, 28 Geophilomorpha), two of which new to the island: *Lamyctes emarginatus* (Newport, 1844) and *Schendyla montana* (Attems, 1895). Thirty-one species have been recorded in caves (1 Scutigermorpha, 14 Lithobiomorpha, 6 Scolopendromorpha, 10 Geophilomorpha) – including the poorly known *Plutonium zwierleini* Cavanna, 1881 – six of which exclusive of this habitat (5 *Lithobius* spp., 1 *Cryptops* sp.). Five species are introduced or probably introduced. General geographic distribution, chorotype, Sardinian localities and ecological notes (altitudinal ranges, habitats) are given for each species. Taxonomic notes are given for some species. *Lithobius turritanus* Fanzago, 1881 and *Lithobius molophai* Restivo De Miranda, 1978, previously considered synonyms of *Lithobius tricuspis* Meinert, 1872 and *Lithobius cerii* Verhoeff, 1943, respectively, are recognized as valid species, **status rev.** The new synonymies *Lithobius melanops domusnovae* Restivo De Miranda, 1976 = *Lithobius lapidicola* Meinert, 1872 **syn. nov.**, *Lithobius oligoporus* Latzel, 1884 = *Lithobius turritanus* Fanzago, 1881 **syn. nov.** and *Lithobius fraleliae* De Miranda Restivo, 1978 = *Lithobius turritanus* Fanzago, 1881 **syn. nov.** are proposed. *Lithobius turritanei* Restivo De Miranda *i. l.* in Cassola, 1982 is recognized as *nomen nudum*. *Cryptops breviunguis* A. Costa, 1882 is proposed as *species inquirenda* and its identity with *Cryptops anomalans* Newport, 1844 is rejected. *Lithobius molophai* Restivo De Miranda, 1978 and *L. sardous* Silvestri, 1898 are redescribed on type or topotypical material. A lectotype for *L. sardous* Silvestri, 1898 is also designated. *Lithobius sardus* Manfredi, 1956 **status nov.**, formerly a subspecies of *L. agilis* C. L. Koch, 1847, is raised to species level; its probable affinity with *L. turritanus* Fanzago, 1881 is also discussed. *Lithobius infossus*

Silvestri, 1894 (= *L. dahliei* Verhoeff, 1925) is erased from the centipede fauna of Sardinia, and previous records should be referred to an unidentified species of *Lithobius* or to *L. nuragicus* Zapparoli, 1997.

Key words: Scutigermorpha, Lithobiomorpha, Scolopendromorpha, Geophilomorpha, lectotype designation, new synonymies, taxonomy, distribution, catalogue, Sardinia.

Historical background

Sardinia is one of the Mediterranean islands of main faunistic and zoogeographical interest and it has been the object of intensive scientific exploration since the first half of the 18th century, especially by Italian naturalists (Cassola 1983; Baccetti 1964, 1996).

The first records on epigeic centipedes dates back to the second half of the 19th century when Pirotta (1878) published the findings of *Scolopendra oraniensis* Lucas, 1846 from Vacca Island (SW Sardinia) and from near Cagliari (Cala Salinas, S Sardinia), collected during two expeditions of the cutter “Violante” by members of the Museum of Natural History of Genoa in 1875 and 1876. At about the same time, Magretti (1878, 1880), entomologist from Milan (Italy), published the results of his research carried out between 1877 and 1879 in Asinara Island (NW Sardinia) and a few other localities of the main island (Baccetti 1996; Cassola 1983; Manfredi 1981).

Soon after these first occasional reports, more substantial information was gathered by the Italian zoologist Achille Costa during his historical surveys on the “Geo-Fauna Sarda”, conducted in 1881–1885 (Costa 1882, 1883, 1884a, 1884b, 1884c, 1884d, 1884e, 1885) (*cf.* Croveti 1970), and data from the province of Sassari were added in the same period by the Italian myriapodologist Filippo Fanzago (Fanzago 1881a, 1881b, 1884a, 1884b, 1884c). A few other records from San Pietro Island (SW Sardinia) are due to Pietro Pavesi (De Carlini 1885), while collections in various parts of the island by the Italian entomologists and naturalists Raffaello Gestro, Umberto Lostia di Santa Sofia, Angelo Solari and Giovan Battista Traverso formed the subject of a note by Silvestri (1898). Material occasionally collected in 1896 by the German palaeontologist Eberhard Fraas was published by Verhoeff (1901: 412).

Further collections, so far unpublished, were made during the zoological expedition in northern Sardinia of the ship “Washington”, of the Italian Royal Navy, under the command of Captain G. Cassanello in 1893, and by Giacomo Doria, the founder of the Museum of Natural History in Genoa, in the Gennargentu massif in 1899 (see under “Material and methods”).

After this pioneering period, no papers on the epigeic centipedes of Sardinia were published before the seventies and eighties of the 20th century. Apart from the contributions of De Miranda Restivo (1978a [as Restivo de Miranda 1978a in References], 1982, 1983, 1986), based on material collected in those years, noteworthy is a paper by Eason (1980) in which the findings collected in 1957 by the Dutch myriapodologist C.A.W. Jeekel are described, laying the basis for a modern revision of the Sardinian centipede fauna. Other findings gathered by C.A.W. Jeekel in the same occasion were later discussed in Bonato *et al.* (2006).

More recently, the collections made during several surveys organized by the Italian universities of Genoa, Padua, Siena and Rome, and the natural history museums of Verona and Bergamo during the 1970's, form the bulk of a paper by Minelli (1983a), certainly the richest work ever prepared on the centipede fauna of the island in terms of material examined, collecting sites and information. This work was followed by those of Minelli *et al.* (1984), Minelli and Iovane (1987) and Zapparoli and Minelli (2005).

Other investigations later focused on the epigeic centipedes of Sardinia, namely those carried out in the small circumsardinian islands (Foddai *et al.* 1994; Minelli *et al.* 1994; Foddai *et al.* 1996), between 1985 and 1995, in the framework of a survey by the Italian National Council of Research by means of the oceanographic ship “Minerva” (Baccetti *et al.* 1989; Baccetti 1996).

Regarding the cave fauna, the first hypogean centipede record from Sardinia was collected in the area of Nuoro by the Genoese entomologist Agostino Dodero in 1903, even though the biospeleological exploration