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Enchytraeidae (Oligochaeta, Annelida) from a field site in Portugal, with the description of five new species and a redescription of *Enchylea heteroducta* Nielsen & Christensen, 1963

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Abstract

Five new species of terrestrial Enchytraeidae (Oligochaeta, Clitellata) are described from an experimental field area in Portugal. *Achaeta coimbrensis* **sp. nov.** belongs to a group of species without pyriform glands and with lateral spermathecal ectal pores. *Fridericia sousai* **sp. nov.**, *F. roembkei* **sp. nov.**, *F. marginata* **sp. nov.**, and *F. ciliotheca* **sp. nov.** have a maximum of four chaetae per bundle and two spermathecal diverticula, a character combination shared by c. 30 other species of this genus. The new *Fridericia* species are distinguished from these congeners by combinations of characters, but the ventral pattern of the clitellum alone is sufficient to separate the new species from each other. *Enchylea heteroducta* Nielsen & Christensen, 1963 is redescribed, this being the first record after the original description and the first record from a natural habitat. Further 16 species of enchytraeids are recorded, and there are now 32 species of enchytraeids known from Portugal.

Key words: Annelida, Clitellata, soil fauna, taxonomy, new species, soil biodiversity

Introduction

In this paper we describe five new species of terrestrial Enchytraeidae (Oligochaeta, Annelida) from an experimental field area in Portugal, belonging to the Coimbra Higher School of Agriculture (ESAC), and we record 23 more species taxa from this site, 17 of them with valid names. The terrestrial enchytraeid fauna of Portugal is almost unknown. In fact, the only existing data are from a previous study at the ESAC site (Moser & Römbke 2007, Schmelz 2003: p.20). Fifteen species taxa were distinguished, eight of them with valid names (Table 1). Records from freshwater habitats are available from an extensive survey of aquatic oligochaetes in rivers of the North-West of the Iberian peninsula (Collado & Martínez-Ansemil 1991, Collado *et al.* 1993, Collado 1994, Martínez-Ansemil & Collado 1996a,b). Ten mostly aquatic or semi-aquatic species of enchytraeids were recorded, two of them described as new (Table 1). Enchytraeids from the marine littoral of Portugal have not been studied at all.

One of the five new species belongs to the genus *Achaeta*, and here to a group of species without pyriform glands and with lateral spermathecal ectal pores. The remaining four new species belong to the genus *Fridericia*, and here to an assemblage of c. 30 species with a maximum of four chaetae per bundle and two spermathecal diverticula (see Schmelz 2003, Dózsa-Farkas 2009). Furthermore we redescribe *Enchylea heteroducta* Nielsen & Christensen, 1963. This monotypic genus was originally described from laboratory cultures of unknown origin; our record, first published in Schmelz and Collado (2012), is the first after the original description and the first from a natural habitat.

The species were sampled and investigated in the framework of two ecotoxicological experiments that examined the combined effects of chemicals and climate related factors on soil organisms (Müller *et al.* 2010). The experiments were carried out with TMEs (Terrestrial Model Ecosystems) (Knacker *et al.* 2004, Moser *et al.* 2004), these are large intact soil cores (mesosoms) extracted from the field for treatment in the laboratory while