

BOOK REVIEW

Enchytraeids of Hungary (Annelida, Clitellata, Enchytraeidae)

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There is no country in the world where the species diversity of terrestrial Enchytraeidae is better known than Hungary. This is due to the work of one person, Klára Dózsa-Farkas, who has studied the enchytraeids of this country for more than 50 years. Her comprehensive knowledge on Hungarian enchytraeids is now united in a beautifully edited book, as number 7 in the small but invaluable series ‘Pedozoologica Hungarica’ which, until now, covers two books on earthworms, a three-volume monograph on free-living Hungarian nematodes, and a catalogue of Hungarian oribatid mites.

‘Enchytraeids of Hungary’ is a monograph on the 123 species recorded so far from the country, 34 of which were newly discovered and described by Dózsa-Farkas herself. Following an introduction to important taxonomic characters and a key to genera, each species is presented in a separate chapter with a morphological description, microscopical photographs of structures to recognize the species, and an indication of the localities where the species was found, the latter often accompanied by a UTM gridmap of the country with the localities. Characters of species of a genus are compared in clearly structured tables, often illustrated with line drawings. The information in this book goes beyond the more than 30 papers published by Dózsa-Farkas on the Hungarian enchytraeid fauna. It contains new material, notably micro-photographs of many species, including the most common ones; some doubtful species are revalidated based on new material (*Fridericia paranemoralis* Dóz.-Fark., *Enchytronia christenseni* Dóz.-Fark., *Enchytraeus irregularis* Niels. & Christ., and others), and one species new to science is described, *Enchytronia holochaeta*. The importance of DNA-data is highlighted briefly, and the last chapter presents some frequently observed parasites of enchytraeids.

The importance of such a work for the knowledge of soil biodiversity in Hungary goes without saying. The diversity of soil fauna is central for issues such as sustainable agriculture, a hot issue at the level of the European Community and worldwide, but reliable data are difficult to obtain due to the lack of expertise or informed publications. We also need comprehensive information on richness and distribution of species to answer questions related to expected faunal and ecosystem changes due to global warming. And, last but not least, each species is inherently valuable, both a humble enchytraeid as well as a splendid butterfly are worth being known and protected; each species is an integral part of the natural heritage of a country. In all these aspects, the work of Dózsa-Farkas is a substantial and, for Hungary, indispensable contribution.

However, this book is also a treasure for soil biologists working with enchytraeids in other countries for at least two reasons. First of all, most of the common European species are covered; for example, 86 of the 123 species listed occur also in Germany, a country with a similar number of species; I would expect a comparable percentage for other European countries, those of southern Europe perhaps excepted. Secondly, the photographs show the taxonomic structures as they are seen under the microscope; this is a tremendous advantage to previous works, because the aspect of these structures may differ considerably from the schematic line drawings in the available keys. It is the photographs, together with the detailed diagnoses and comparative tables, that make the species recognizable and give them, so to say, a profile. A tremendous amount of work is behind these photos, which cover almost the entire range of the light-microscopically accessible morphological diversity of soil-dwelling enchytraeids. Anyone who has investigated these worms knows how difficult it is to

detect, for example, the lentiform epidermal gland cells of an *Achaeta* species or the pharyngeal bifurcation of the dorsal blood vessel of a *Marionina* species, both crucial for species identification; here they are, presented in clear and focused photos.

These photographs train the eye in what is going to be seen when studying these unspectacular and ephemeral creatures crawling under the microscope. Two to four photos per species are presented. They do not present all taxonomically important characters, but this reduction, probably imposed by budget restrictions, helps to concentrate and to memorize. I also recommend the plates that accompany the introduction of characters in chapter 3 and, as an especially welcome supplement at the end of the book, the figure plate with parasites of enchytraeids in chapter 8: bacteria, gregarines, ciliates, rotifers, nematodes, microsporidian fungi, and cestode larvae, never shown before in such diversity, and all likely to be confused with enchytraeid structures (eggs, coelomocytes), or at least puzzling for the student of enchytraeids who tries hard to identify the taxonomic characters. These parasites are by no means rare, and they can fill out the body cavity completely, which reminds us, as a side note, that any soil food web model is incomplete if it ignores these predators from within.

I disagree with a few minor points: the presentation of *Cognettia* (under the name of *Chamaedrillus*, the valid name of this genus when the book was in print) includes recently erected cryptic species that have not

yet been recorded in Hungary – they may be expected, but nonetheless they should not be on the list of species known from the country. On the other hand, the not-so-recent subdivision of *Marionina argentea* into several non-cryptic species is ignored even though morphological characters are available. *Fridericia* cf. *alata*, different from *F. alata*, is counted as a species of its own; why then not give it a proper name? The grid maps lack information on the squares that have *not* been surveyed; such information is in my view necessary to evaluate the distributional data. Habitat descriptions lack information on soil type and pH. The literature is not always cited correctly, and one more proofreading would have eliminated some spelling errors in the taxon names.

That said, this work is a great step ahead in the knowledge of enchytraeids, and an invaluable and overdue complement to the currently available identification works. Grid-map distributional information, photographs, DNA-sequences to confirm or to question morphologically defined species limits - it seems that ‘enchytraeidology’, if this is a discipline, is coming of age and closing up in standards to those of other, more conspicuous, animal taxa. This achievement cannot be overestimated, giving the exceedingly sparse personal and financial resources of this discipline.

‘Enchytraeids of Hungary’ should be on the bookshelf of every soil zoologist.

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