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EDITORIAL

Deeper taxonomic knowledge for better understanding soil biodiversity and its patterns

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Soil remains among one of the least explored ecosystems on this planed in terms of biodiversity. Though overall, soil is considered to host approximately two thirds of terrestrial taxa, the actual numbers of species are far from being comprehensive and accurate (FAO, 2020). Even with the exploding integration of molecular approaches into the modern taxonomic routine, lists of belowground species grow every year. With this our understanding of the functional complexity and redundancy of soil food webs also increases. Thus, excellence in taxonomic knowledge contributes to better understanding our soil and their true value.

With this respect Soil Organisms Journal is honored to present this special issue, which hosted soil animal taxonomy-related contributions presented at XIX International Colloquium on Soil Zoology (ICSZ) and the XVI International Colloquium of Apterygota (ICA) in 2024 in Cape Town, South Africa - one of the world's most picturesque cities, guarded over by Table Mountain and bordered by two oceans (Fig. 1). Discussion at both events centered around soil biodiversity and its functions across mountains and plains in agricultural and pristine soils at the face of the Global Change. The special emphasis was given to the increasing need in the deeper taxonomic knowledge of soil fauna and relevant conservation measures to keep our soils full of life and sustainable.

Reports from this highly influential international forum were devoted to both relatively popular among soil zoologists collembolans, but living in association with hermit crabs (Palacios-Vargas et al., this issue), and to Catamachilis (Insecta: Microcoryphia) insects, which sometimes are referred to as „Cinderellas" in soil zoology due to a very limited knowledge about their taxonomy (Gaju-Ricart et al., this issue). The paper by Palacios-Vargas et al. (this issue) stressed that there are several important frontiers on this rally associated with interactions of soil- and water-dwelling organisms and possible neglected ecological niches to host even greater soil biodiversity than expected. Gaju-Ricart et al. (this issue) in turn suggested important morphological thresholds in separating species that were thought before to be geographically isolated populations of a single species. The study sets solid backgroud for the advanced spatial ecological and biogeographic analysis of the examined taxon in Spain. The contribution by Molero-Baltanás et al. (this issue) sheds light on the diversity of African Ctenolepismatinae - primitive wingless insects (Zygentoma: Lepismatidae) - stored at

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Figure 1. Cape Town, South Africa - one of the world's most picturesque cities, guarded over by Table Mountain and bordered by two oceans which hosted the XIX International Colloquium on Soil Zoology (ICSZ) and the XVI International Colloquium of Apterygota (ICA) in 2024. Image by Dr Daniil Korobushkin.

the Humboldt University Museum of Natural History in Berlin (Molero-Baltanás et al., this issue). The authors of this paper demonstrate that many inspiring discoveries can be done not only in the field, but browsing around museum collections, containing undescribed taxonomic treasures from all over the world. The key prerequisite here is using modern techniques (e.g. electronic microscopy) for increasing reliability of collection specimens' identification.

The Guest editor would like to thank Soil Organisms for the invitation to supervise this special issue. All Editors thank the authors for contributing their cutting-edge research, and the reviewers for their dedication and insightful suggestions. Besides, all Editors on behalf of the authors who have contributed to this issue express their sincere gratitude to the Local Organizing Committee - Dr Charlene Janion-Scheepers and Dr Juliette Chassain as well as conference organisers: Deidre Raubenheimer, Yvonne Brown, Meagan Whyte, Cindy Maree, Lihle Khetshane, and Janet Sirmongpong, whose determination and courage made this international even so successful. We are grateful to all participants for stimulating discussions and inspiring ideas worth investigating in the future.

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