

***Lithobius*: A big genus of a small subphylum (Arthropoda, Myriapoda) – phylogeny and evolutionary history**

Anne-Sarah Ganske

anne-sarah.ganske@nhm-wien.ac.at

PhD Student

Supervisors: Nesrine Akkari (NHM-Wien) & Andreas Wanninger

3rd Zoological Department, Naturhistorisches Museum Wien

Department of Integrative Zoology, University of Vienna

The subphylum Myriapoda encompasses more than 15,000 described species classified in Diplopoda, Pauropoda, Symphyla and Chilopoda. Approximately 1,200 species are from the order Lithobiomorpha (Chilopoda), with circa 500 sub-/species assigned to the genus *Lithobius* Leach, 1814 (Lithobiidae). Classic taxonomic characters are insufficient to reconstruct the species interrelationships of this genus and its relationships to other lithobiid genera. Thus, further microanatomical and molecular analyses are necessary to shed light on its phylogeny and evolutionary history. During my PhD project, I am focusing on the genus *Lithobius*, thereby (i) aiming to reveal morphological characters with a phylogenetic signal to supplement an existing character set, (ii) acquiring molecular data from recently collected material and (iii) combining the morphological and molecular datasets for a phylogenetic analysis of the genus.

The morphological investigation focuses on the peristomatic structures, the mandibles and the first maxillae, which I study using light and scanning electron microscopy. Additionally, I carry out investigations on the mandibulo-tentorial complex and the reproductive system of both sexes using micro-computed tomography. The peristomatic structures (epipharynx and hypopharynx) of 35 species of the genus *Lithobius* and allied genera revealed eight characters with systematic potential and ongoing analysis of the mandibles and first maxillae continues to uncover additional characters. Combined analyses of the molecular and morphological data sets will be the next step in this research. With this integrative approach, I aim to elucidate the phylogeny and evolutionary history of the genus *Lithobius*.