

ABSTRACT

The main objective of this thesis was to create an educational website aimed at soil arthropods. It can be used primarily by teachers of biology and ecology, lecturers of extracurricular science education or by the students who are interested in this issue. This photographic atlas of soil arthropods consists of my own micro images obtained by the use of light and scanning electron microscope. The micro images are accompanied by text to each group of soil arthropods, which is divided into sections containing information about the systematic classification, anatomy and morphology, biology and importance, eventually representatives of the group. The atlas is accompanied by other materials usable in the classroom, such as didactic test, didactic game and proposals for group work, worksheet, field and laboratory work or educational presentations focused on soil arthropods. These materials can be downloaded from the website, along with the entire atlas of soil arthropods. The atlas is available on the following address: <https://sites.google.com/site/pudniclenovci/>.

The review of the literature deals with the importance of arthropods in the soil and their mutual interactions. Then I describe the methods of study of arthropods (sampling, sample preparation for light and scanning electron microscopy and photo documentation) and briefly explain the principles of electron microscopy.

Samples for the practical part come mostly from my own soil and litter samples, partly from the collection of my supervisor and from educational collections of the Department of Biology and Environmental Studies at the Pedagogical Faculty of Charles University in Prague. Soil samples I extracted using a Berlese - Tullgren extractor. From selected representatives I prepared permanent mounts for light and scanning electron microscopy and made digital images.

Specifically, in this way I prepared the following groups: pseudoscorpiones (Pseudoscorpionida), spiders (Araneida), mites - Cryptostigmata (=Oribatida); Trombidiformes(=Prostigmata, Actinenida); Astigmata(=Acaridida); Gamasida (= Mesostigmata), symphylans (Symphyla), millipedes (Diplopoda), centipedes (Chilopoda), terrestrial isopods (Oniscoidea), Protura, diplurans (Diplura), springtails (Collembola) and larvae of selected insect orders (Insecta).

Keywords: soil arthropods, light microscopy, permanent preparations, scanning electron microscopy, didactics, atlas, website, educational materials, the importance of arthropods in the soil.