

Abstract

The thesis is focused on anatomy and implementation of dissections of 4 selected model invertebrates in school practice. The selected model species include swan mussel (*Anodonta cygnea*), stick insect (*Medauroidea extradentata*), cockchafer (*Melolontha melolontha*) and sea urchin (*Echinus esculentus*). In case of the cockchafer, the text is based on this model species, but the supporting photographs of dissection are taken from the tropical cetoniid beetle *Pachnoda*, which has very similar internal anatomy with the cockchafer. For all selected animals, I describe external and internal morphology as well as recommended methods of obtaining the material, proper killing of specimens, and dissection techniques. The text is supplemented with original digital macrophotographs. The thesis includes also an overview of primary and secondary school textbooks with focus on anatomy of the selected animals. The text is supplemented by a glossary of morphological terminology used in this thesis.

Attached is a photographic atlas of dissections, which is a combination of this master thesis and my bachelor thesis (defended in 2010), in which I dealt with five model invertebrates in the same way. This is *Ascaris suum*, *Lumbricus terrestris*, *Helix pomatia*, *Procambarus aff. fallax* and *Archimandrita tessellata*. The complete atlas of dissections was also transformed in an on-line guide in the form of web page. The aim was to create a photographic atlas of dissections as a teaching aid for teachers and their pupils.

Another large part of this thesis is a research based on a questionnaire among students from a chosen grammar school, which ascertained their opinions and attitudes towards dissections performed in practical classes of biology. The research shows that the majority of student is interested in performing dissections. Nearly two-thirds of students stated that the dissection is better for remembering the subject matter than mere theory. I found statistically significant differences in opinions and attitudes towards dissection of pupils planning to study medicine, biology or veterinary medicine, which evaluate the dissection more favourably than other pupils.

Key words:

Dissection, invertebrates, ascarid, earthworm, snail, swan mussel, crayfish, cockroach, beetle, stick insect, sea urchin, attitudes of pupils