

## ABSTRACT

Lymnaeid snails of the genus *Radix* are common freshwater molluscs of Europe. Formerly, the following species have been reported from the Czech Republic according to the morphology of the shell: *R. auricularia*, *R. peregra*, *R. ovata* and *R. ampla*. However, recent studies involving molecular data revealed that species determination based on traditional approaches employing morphology of the shell and gonads can be more complicated, confusing and not fully reliable. The shape of the shell is affected by particular life conditions of the snails and proves to be highly variable. The characteristics that can be found on gonads are dependent on the reproductive phase of the snail, and sometimes also on the presence of trematode larval stages, which can cause parasitic castration. Recently, molecular taxonomy is the most reliable approach, especially when a combination of sequences of mitochondrial and nuclear DNA is used. As molecular analyses are relatively time-consuming and expensive, some authors try to find some additional morphological features that could be used for determination of *Radix* snails in the field, without the need of demanding equipment. Problems in taxonomy and systematics of members of the genus *Radix* have a practical point in studies of trematode life cycles. From the view of human and veterinary medicine, the families Schistosomatidae (genera *Trichobilharzia* and *Schistosoma*) and Fasciolidae (genera *Fasciola* and *Fascioloides*) include the most important parasites associated with these snails.

**Key words:** Lymnaeidae, *Radix*, *Lymnaea*, shell, Trematoda, fluke, Schistosomatidae, *Trichobilharzia*, *Fascioloides*, *Fasciola*, molecular taxonomy, ITS2