Comparative studies on three lymnaeid snail species (Gastropoda: Lymnaeidae) in Korea, with special reference to the life cycle of *Echinostoma cinetorchis*

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Three lymnaeid snail species belonging to the family Lymnaeidae, *Radix auricularia, Austopeplea ollula* and *Fossaria truncatula* have been reported so far in Korea; however, their taxonomic status remains as a problem. The present study was carried out to compare these snails with two Australian lymnaeid species, *Lymnaea viridis* and *L. tomentosa,* and to establish the taxonomical status of Korean lymnaid snail species. *A. ollula* occurring in Korea are very much similar to *L. viridis* from Australia. No significant anatomical differences were found between two species in this study. Electrophoretic data from 14 enzymes employed in three different kinds of buffer systems showed genetically distinguishable zymodems each other. EST and ICDH loci showed polymorphic banding patterns. *A. oulla* and *L. viridis* were most closely clustered in a dendrogram with the genetic identity value of 0.939, and these two species were lineated with *L. tomentosa* at the value of 0.852. *A. ollula, L viridis* and *L tomentosa* were more closely related to *F. truncatula* while *R. auricularia* were distantly related. The life cycle study of *Echinostoma cinetorchis* was carried out with the lymnaeid snails employed in this study. *A. ollula* was found to be the 1st and 2nd intermediate hosts for *E. cinetorchis.* The snails were susceptible to the miracidia of *E. cinetorchis.* However, none of *R. auricularia* was infected with these miracidia. After stopped the shedding cercariae from *A. ollula,* a number of metacercariae were observed in their digestive gland. This is the first report in Korea that *A. ollula* act as the first and second snail intermediate host of *E. cinetorchis.*