

**Morphological and DNA analyses reveal cryptic diversity in *Anentome wykoffi* (Brandt, 1974) (Gastropoda: Nassariidae), with descriptions of two new species from Thailand**

**ABSTRACT**

The assassin snail genus *Anentome* is widely distributed in South East Asia. In Thailand, the genus comprises at least six species, one of which is *Anentome wykoffi*, a species that may act as an intermediate host of parasitic trematodes. Recent fieldwork has shown that *A. wykoffi* is far more common and widespread in Thailand than has been assumed, yet the taxonomy remains poorly known. Therefore, this study explores morphological and DNA sequence (COI and 28S rRNA) variation in *A. wykoffi* to verify and finetune the taxonomic interpretation of this species. To this end, 12 populations of *A. wykoffi* were sampled in Thailand. This survey allowed us to preliminarily distinguish three putatively cryptic morphotypes. Shell shape measurements and geometric morphometric analyses revealed significant differences between these morphotypes, whereas SEM observations of the shell sculpture and radula confirmed the consistent separation of the three morphotypes. Finally, a combined phylogenetic and species delimitation analysis of COI and 28S rRNA sequence data showed that the three morphotypes represent three well-supported clades, one of which is sister group to *A. cambojiensis*. As such, the three morphotypes as defined by (1) the presence or absence of a carinated shoulder, (2) the number of spiral lines on the spira and (3) the pattern of the central cusps on the central radular tooth, are interpreted as three different species under the morphological and phylogenetic species concepts but also likely under the biological species concept, viz. *A. wykoffi* (*sensu stricto*), *A. longispira* sp. nov. and *A. khelangensis* sp. nov. The three cryptic species are (re)described and the implications of separation are briefly discussed.