



MORPHOLOGICAL INVESTIGATION OF GENITAL ORGANS AND FIRST INSIGHTS INTO THE PHYLOGENY OF THE GENUS *SICILIARIA* VEST, 1867 AS A BASIS FOR A TAXONOMIC REVISION (MOLLUSCA, GASTROPODA, CLAUSILIIDAE)

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Siciliaria calcarae borgettensis De Mattia W et al., ssp. nov.

ZooKeys 1077 ♦ 2021
Special Issue

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The taxonomy and systematics of the door snail genus *Siciliaria* was revised based on an integrative approach including a comprehensive genital anatomical investigation, which was combined with shell morphology and DNA sequence data (mitochondrial COI, nuclear ITS2 sequences). The genital morphology of 120 specimens of 22 taxa from 44 populations was investigated, and a new general description of the genital morphology of the genus is provided. Additionally, 26 specimens of 14 taxa of five genera (MolluscaBase 2021) of Alopinae (*Mauritanica*, *Charpentieria*, *Stigmatica*, *Gibbularia*, *Papillifera*) were included in the genetic analyses. New anatomical structures are described: the parapseudopapilla for *Charpentieria dyodon* and the hemipapilla for *Charpentieria stenzii*. In the phylogenetic tree based on COI sequences, the species of the genus *Siciliaria* s. l. from northwestern Sicily were found within two separate highly supported main clades. In the tree based on the nuclear ITS2 marker sequence, resolution was considerably lower but it partially confirmed the mitochondrial tree. The genus *Sicania* Tomlin, 1929 (corresponding to main clade II in the trees) is re-introduced. *Siciliaria scarificata* did not appear in one of the two main clades but clustered together with *Mauritanica perinni polygyra*. Concerning monophyly of species, only the widely distributed *S. calcarae* was paraphyletic in the COI tree, a finding that has to be investigated further with multiple marker sequences. For the other genera (*Mauritanica*, *Charpentieria*, *Stigmatica*, *Gibbularia*, and *Papillifera*) detailed descriptions of the anatomy of the genital organs of 46 taxa for a total amount of 133 dissected specimens are also provided here. Some of these taxa could be included in the phylogenetic analysis. Although the taxon sampling of these taxa was far from being complete, the comprehensive data provided here (concerning morphology, genetics, and distribution) provide first insights into the phylogenetic relationships of this diverse group of clausiliid taxa. The following six taxa new to science are described: *Siciliaria grobmanniana addaurae* ssp. nov., *Siciliaria calcarae borgettensis* ssp. nov., *Siciliaria calcarae jatimensis* ssp. nov., *Siciliaria calcarae parajatimensis* ssp. nov., *Siciliaria calcarae cruenta* ssp. nov., and *Siciliaria tiberii armettensis* ssp. nov.

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