



<http://dx.doi.org/10.11646/zootaxa.3620.1.2>

<http://zoobank.org/urn:lsid:zoobank.org:pub:3870AC9F-A4EE-4E36-86C7-E1D6967A2A2E>

***Serina* Gredler (Gastropoda, Stylommatophora: Enidae), the continuous-peristomed mountain snails endemic to the eastern slope of the Qinghai-Xizang Plateau**

MIN WU & QIN XU

School of Life Science, Nanjing University, Hankoulu 22, Nanjing 210093, China.

Correspondence: MIN WU, E-mail: minwu1969@yahoo.cn

Abstract

In this paper we initiate a taxonomic review of the genus *Serina* Gredler, endemic to the eastern slope of the Qinghai-Xizang Plateau, namely S Gansu, SW Sichuan, SE Xizang Autonomous Region and N Yunnan of China. We describe the genital anatomy for some species and the shell morphology for all known species: *Serina belae* (Hilber), *S. cathaica* Gredler, *S. egressa* Sturany, *S. prostoma* (Ancey), *S. ser* Gredler, *S. subser* Gredler, *S. soluta* (Möllendorff) and *S. vincentii* (Gredler). Based on the re-evaluation of both shell and genitalic differentiations we prefer to classify the taxon *egressa* as a separate species rather than a subspecies of *S. ser*. In our study we come to the conclusion that *S. soluta inflata* Yen and *S. soluta stenochila* (Möllendorff) should be regarded as synonyms of *S. soluta* due to the insufficient differentiation among them. *Buliminus (Holcauchen) tubios* Annandale, *Bulimus prostoma leucochila* Ancey and *Serina deqenensis* Chen, Zhou and Luo were conspecific with *Serina prostoma* and that *Serina sobrina* (Preston) was conspecific with *Clausiliopsis szechenyi* (Böttger). We propose a new species *Serina denticulata* n. sp. from the Southern Gansu Plateau. Furthermore we discuss the phylogenetic relationship among the genera *Serina*, *Clausiliopsis* Möllendorff, *Pupopsis* Gredler, and *Pupinidius* Möllendorff based on the morphological data from twelve relevant species.

Key words: Enoidea, *Serina*, revision, morphology, new taxon, phylogeny, Qinghai-Xizang Plateau

Introduction

Serina Gredler, 1898, an enid genus was established based on the study of three species (*Serina cathaica* Gredler, *S. ser* Gredler and *S. subser* Gredler) in which *S. ser* was designed as the type of the genus (Gredler, 1898a). Sturany (1900) described the fourth taxon *S. cathaica egressa*, which was treated as the subspecies of *S. ser* by Möllendorff (1901) who meanwhile proposed new members of *Serina* (a subgenus of *Bulimus*, s. str. Möllendorff, 1901), *B. (S.) solutus solutus* and *B. (S.) solutus stenochilus*, adopted *Bulimus (Napaeus) vincentii* Gredler to *Serina*, and provided the first checklist of the genus *Serina*, comprising seven species and subspecies. Later, this list was revised for three times, respectively by Kobelt (+*Bulimus prostomus* Ancey, 1884, excluding *S. vincentii*: seven species and subspecies) (Kobelt, 1902), by Yen (+*Buliminus belae* Hilber, 1883, excluding *S. vincentii*, + a new proposed *S. soluta inflata*: nine species and subspecies) (Yen, 1939), and by Chen *et al.* (+ 2 *Turanena* species and a new proposed species *S. deqenensis*: thirteen species and subspecies) (Chen *et al.*, 2003). The information about the anatomy of this genus was obtained from *S. ser* and *S. subser* (Wiegmann, 1901; Schileyko, 1998) before the present work.

All the known *Serina* localities are distributed on the Qinghai-Xizang Plateau slope, where most other Chinese enid genera are also distributed (Wu & Zheng, 2009; Wu & Wu, 2009; Wu & Gao, 2010; many other literature cited in this paper). On this slope, the localities where the *Serina* species were found include the valleys of Kangding, Luding (both of Yangtze drainage, Sichuan), Mangkang (Jingshajiang River, a branch of Yangtze River, Xizang Autonomous Region) and Deqing (Upper Mekong, Yunnan), all of which are geographically separate. The valleys preferred by *Serina* species are usually of aridity or semi-aridity, and are formed by the deep incision of the above rivers and are known to have abundant biodiversity (Li *et al.*, 1998). The seasonal rainfall in this region is generally less than several hundred millimetres per year and intensively occurred in the way of rainstorm.