

A NEW SPECIES OF *METULA* (GASTROPODA, COLUBRARIIDAE) FROM CHINA SEAS

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Abstract A new colubrariid species, *Metula sulcata* sp. nov., is described and illustrated from the East China Sea and South China Sea. The new species has small, bullet-like shell with four axial grooves on protoconch that distinguishes it from congeners.

Key words Colubrariidae, *Metula sulcata* sp. nov., China seas

INTRODUCTION

The genus *Metula* H. Adams & A. Adams, 1853 was established for four species: *Buccinum clathratum* A. Adams & Reeve, 1850, *Buccinum mitrella* Adams & Reeve, 1850, *Metula hindsii* H. Adams & A. Adams, 1853 and *Metula cumingi* H. Adams & A. Adams, 1853. Subsequently, Kobelt (1876) designated *Buccinum clathratum* A. Adams & Reeve, 1850 as type species of *Metula*. Later, it has a long time for various authors to deal with this genus due to uncertain nomenclatural and taxonomic status of the type species (Smith, 1904; Rehder, 1943; Altena, 1949; Cernohorsky, 1971; Olsson & Bayer, 1972). This contentious taxonomical problem has never been settled until Emerson (1986), who clarified the identity of *Buccinum clathratum* A. Adams & Reeve, 1850 and determined this species as the type species of *Metula*. However, the binomen *Buccinum clathratum* have been twice preoccupied, and *Metula amosi* Vanatta, 1913 is the oldest available name for the type species of *Metula*.

Based on presence of radula, Cernohorsky (1971) included this group to Buccinidae rather than Colubrariidae. The view was accepted by subsequent authors (Olsson & Bayer, 1972; Kilburn, 1975; Emerson, 1986; Bouchet, 1988). However, Ponder (1973) considered this group should be included in Colubrariidae based on anatomical studies. This placement was recently confirmed by molecular evidence (Oliverio & Modica, 2009).

Up to now, over 40 recent and fossil species have been described from Indo-West Pacific and American regions (Altena, 1949; Olsson & Bayer, 1972; Harasewych, 2014; Bouchet, 2015). Among

them, four species have been reported from China including *Metula metula* (Hinds, 1844), *Metula angioyorum* Parth, 1992, *Metula tumida* (Ma & Zhang, 2000) and *Metula thachi* Fraussen & Huang, 2011. Thus, the new species described in this paper represents the fifth species of *Metula* from China water.

MATERIALS AND METHODS

The studied specimens were collected from the East China Sea and South China Sea. Specimens have been deposited in the Marine Biology Museum, Chinese Academy of Sciences (MBMCAS). The following abbreviations are used in the text: MBM-Marine Biological Museum; RN-registration number; coll.-collector; dd-empty shell; spm-specimen.

SYSTEMATICS

Family Colubrariidae Dall, 1904

Genus *Metula* H. Adams & A. Adams, 1853

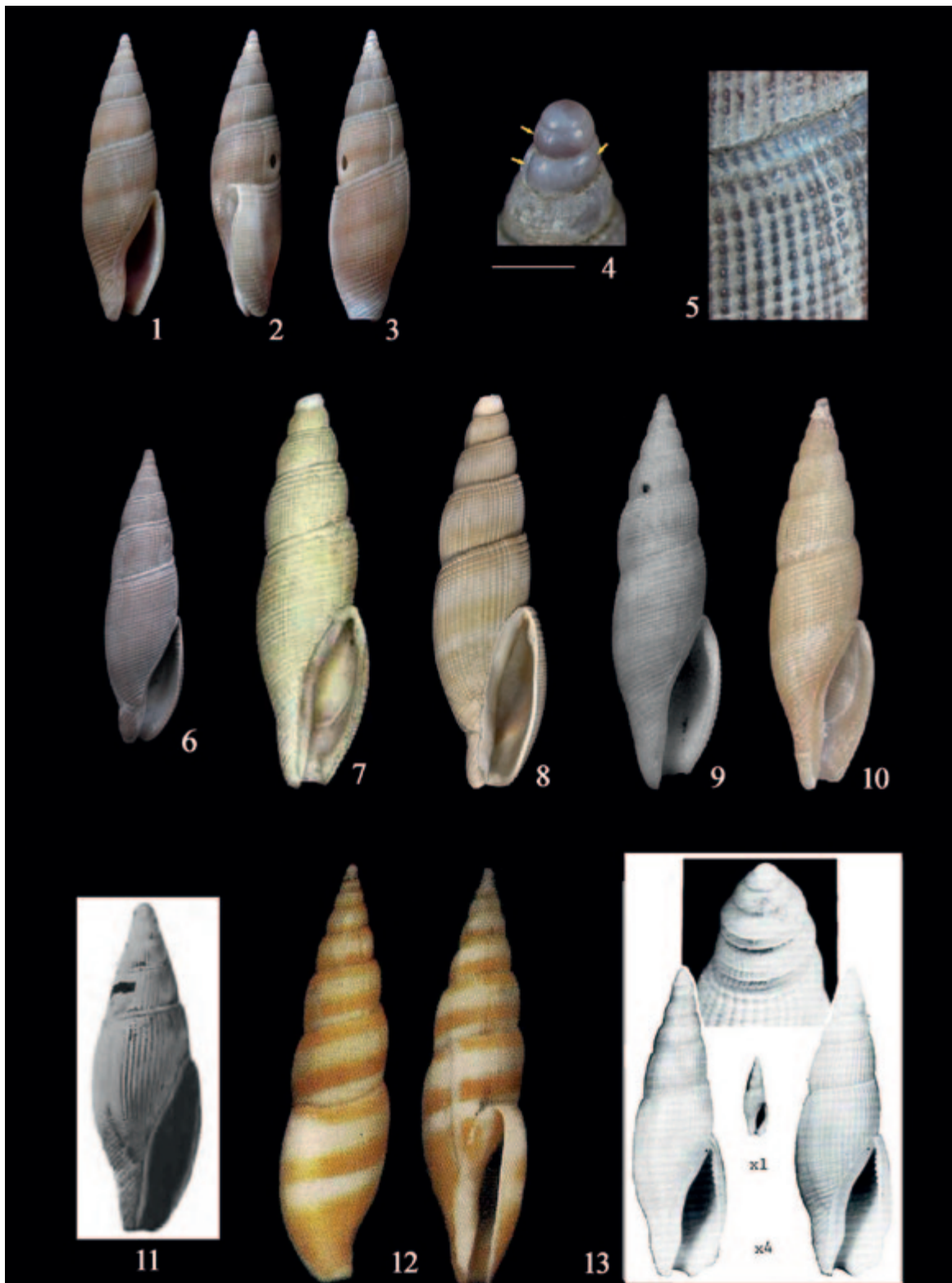
Type species by subsequent designation (Kobelt, 1876): *Buccinum clathratum* A. Adams & Reeve, 1850.

Metula sulcata sp. nov.

Figs 1–10.

Holotype 1 spm, dd, East China Sea, 28°35'98" N 123°11'95" E, 75m deep, soft mud bottom, coll. Shuqian Zhang, 17 vii 2013, in MBMCAS, RN: MBM179958.

Paratype 1 spm, dd, Beibu Gulf, South China Sea, 19°45'00" N 108°30'00" E, 69m deep, sand and mud bottom, coll. Shoupeng Shen, 9×1960, in MBMCAS, RN: MBM255473.



Figures 1–13 Shells of *Metula* species. 1–6. *Metula sulcata* sp. nov. 1–5. Holotype, 22.1mm, East China Sea, 28°35'98" N 123°11'95" E, 75m deep, soft mud bottom, in MBMCAS, RN: MBM179958; 6. Paratype; 7–10. *Metula elongata* (Dall, 1907); 7. Holotype, USNM 110502, 35.2mm; 8. Specimen from off Taiwan, 37.6mm; 9. After Garilli & Galletti, 2007: fig. 4–4.; 10. After Nishi, Izawa & Matsuoka, 2012: pl. 35, fig. 3.; 11. Holotype of *Metula ibbotsoni*, after Ladd, 1977: 50, pl. 17, fig. 4.; 12. *Metula angioyorum*, holotype, after Parth, 1992: 55; 13. *Metula daphnelloides* Melvill & Standen, 1903, holotype, after Kaicher, 1987: card 4882. Scar bar=500 μ m. Arrows indicate the axial grooves on protoconch.

Type locality East China Sea, off China, 28°35'98" N 123°11'95" E, 75m deep, soft mud bottom.

Measurements Holotype: 22.1mm in length and 6.3mm in width; Paratype: 22.1mm in length and 6.1mm in width.

Description Shell small sized for the genus (up to 22.1mm), solid, bullet-like in shape, consisting of three protoconch and six teleoconch whorls. Spire high, body whorl occupying 3/5 of total shell length. Protoconch smooth, with four conspicuous axial grooves. Teleoconch whorls slightly convex with impressed suture. Sculpture of raised spiral cords and curved opisthocline axial ribs (predominated), the two forming beaded intersections. Penultimate whorl with 20 spiral cords and 57 axial ribs; body whorl with 40 spiral cords and 47 axial ribs. Aperture ovate; inner lip smooth; outer lip thickened, bearing a broad labral varix, inside of outer lip with denticles that prominent at both ends but obsolete at middle portion. Siphonal canal short, widely open and slightly recurved. Shell base color pale brown, with one brown spiral band at lower part of spire whorl, and with two ones on body whorl.

Derivation of name The name of new species is derived from Latin *sulcus*, referring to the axial grooves on the protoconch.

Comparisons *Metula sulcata* sp. nov. is characterised by its small sized, bullet-like shell with four axial grooves on the protoconch. This new species closely resembles *Metula elongata* (Dall, 1907), *Metula ibbotsoni* Ladd, 1977, *Metula angioyorum* Parth, 1992, *Metula daphnelloides* Melvill & Standen, 1903 and *Metula mitrella* (Adams & Reeve, 1850) in general appearance.

From the new species, *Metula elongata* (Dall, 1907) differs in having more convex teleoconch whorls, much larger shell size, smaller protoconch (see Fig. 8) and different proportions.

The new species can be distinguished from *Metula ibbotsoni* Ladd, 1977, a fossil species, in following features: the spiral sculpture on shell of the new species is nearly as strong as the axial, whereas the spiral cords of *Metula ibbotsoni* are much weaker than axial ribs; the aperture is longer than spire in *Metula ibbotsoni* instead of being shorter in the new species.

Metula angioyorum Parth, 1992 can be distinguished from *Metula sulcata* sp. nov. by its larger, more fusiform shell with higher spire, different spiral color pattern and by its round protoconch without axial grooves.

The new species can be separated from *Metula daphnelloides* in bullet-like shell shape, in the more constricted siphonal canal and in having axial grooves rather than spiral keels on the protoconch.

Metula mitrella differs from *Metula sulcata* sp. nov. in having a flattened protoconch with spiral keels (see Altena, 1949: 389, fig. 7.; Cernohorsky, 1971: 151, fig. 54.; Harasewych, 2014: 94, fig. 21.) rather than a rounded protoconch with axial grooves.

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