



Report on the turrid genera *Gemmula*, *Lophiotoma* and *Ptychosyrinx* (Gastropoda: Turridae: Turrinae) from the China seas

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Abstract

Based on the material deposited in the Marine Biological Museum of the Chinese Academy of Sciences, Qingdao, the present paper reports 26 turrid species, which belong respectively to three genera of the subfamily Turrinae, including four new species, *Gemmula grandigyrate* **sp. nov.**, *Gemmula flata* **sp. nov.**, *Lophiotoma pseudocosmoi* **sp. nov.**, and *L. verticala* **sp. nov.**, and four species newly recorded from the China seas. *Gemmula grandigyrate* **sp. nov.** is peculiar in the genus in having a large conical protoconch of six whorls; *Gemmula flata* **sp. nov.** is similar to the “martini series Powell, 1964” in the shell profile, but can be easily separated from the species of this series by the shell sculpture; *Lophiotoma pseudocosmoi* **sp. nov.** differs from the close species of the genus *Lophiotoma* and a similar species of the genus *Gemmula*, *G. cosmoi* (Sykes, 1930), by the peripheral carina and the shell height; *Lophiotoma verticala* **sp. nov.** looks like a species of genus *Fusiturris*, *F. undatiruga* (Bivona, 1832), but differs from the latter by the stronger axial fold, less conspicuous spiral folds, stronger peripheral carina and deeper sinus.

Key words: Turridae; Turrinae; *Gemmula grandigyrate* **sp. nov.**; *Gemmula flata* **sp. nov.**; *Lophiotoma pseudocosmoi* **sp. nov.**; *Lophiotoma verticala* **sp. nov.**; new species; new recorded species; China seas

Introduction

The mollusk Family Turridae H. & A. Adams, 1853, is the largest family in the Class Gastropoda with remarkable diversity of the shell forms. Because of the tremendous variation of shell shape, size and sculptural characteristics as well as the shell color, the turrid species are very difficult to distinguish.

Up to now, the classification of the Turridae is still confused. Mainly based on shell characters, Powell (1966) recognized nine subfamilies of the family. McLean (1971) recognized 15 subfamilies. Taylor *et al.* (1993) studied the relationships among the sub-groups of the superfamily Conoidea with cladistic analysis, and proposed to divide the traditional Turridae (s. l.) into five families: Drilliidae Morrison, 1966, Pseudomelatomidae Morrison, 1966, Strictispirinae McLean, 1971, Turridae H. and A. Adams, 1853 (s. s., sensu Taylor *et al.*, 1993) and Conidae Fleming, 1822. Those genera with slender, hypodermic marginal teeth in the traditional Turridae (s. l.) were included in the family Conidae in their system. In the present paper, we follow the system of Taylor *et al.* (1993).

Olivera (1999, 2002, 2004a, 2004b) published a series of reports about the subfamily Turrinae from the Philippines. In the series, he “provisionally uses only three major genera in the Turrinae for forms that are broadly distributed over the Indo-Pacific: *Turris* (Röding, 1798), *Lophiotoma* (Casey, 1904), and *Gemmula* Weinkauff, 1875”. Of the three genera, the genus *Lophiotoma* (s. l.) encompasses not only all species that Powell (1964, 1966) assigned to *Lophiotoma* (s. s.), but also all of the species previously assigned to the genera *Lophioturris* Powell, 1964, *Xenuroturris* Iredale, 1929 and *Unedogemmula* MacNeil, 1960. Kilburn