

南海玉螺科两新种记述*

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提要 在整理中国科学院海洋生物标本馆收藏的玉螺科标本时,经形态分类和齿舌解剖学研究,发现了属于玉螺科的 2 个新种,即:马氏玉螺 *Natica maxiutongi* sp. nov. 和南海窦螺 *Sinum nanhaiensis* sp. nov.。两新种均分布于南中国海,其中马氏玉螺采自海南岛陵水和黎安的潮间带至潮下带浅海砂质海底,壳面褐色或栗色,体螺层上有 3—4 条深褐色的螺带;南海窦螺分别采自广东近海和南沙群岛海域水深 105m 和 102m 的泥质沙海底,贝壳小,呈长卵圆形,壳面白色或淡黄褐色,表面螺肋和生长纹细密。

关键词 软体动物、腹足纲,玉螺科,新种,南中国海

中图分类号 Q959.212

玉螺科(Naticidae)是腹足类动物中种数较多且经济价值较高的一个类群。本科动物的贝壳多呈球形、半球形、卵圆形或耳形;螺层较少,体螺层宽大或膨圆;壳面平滑,雕刻较贫弱。玉螺科动物分布甚广,从热带至寒带海区,从潮间带、浅海至较深的海底都有其踪迹,但大多数种类生活在潮间带及其浅海沙、泥沙或软泥质海底。玉螺科动物在我国的南北沿海均有分布,并且种类较多。马绣同等(1994),张素萍等(1997, 2003), Zhang (2008)已先后报道了玉螺科动物近 70 种。近年来在海南岛和南沙群岛海域生物资源和底栖生物调查中陆续采到了一些玉螺科标本,通过形态分类和齿舌解剖学研究,并查阅了有关玉螺科分类文献(Cernohorsky, 1971; Kabat, 1990; Majma, 1989; Recluz, 1844; Reeve, 1866),鉴定出玉螺科 2 新种。本文中作者把 2 新种与近似种进行了比较讨论,对其形态特征描述如下。

玉螺属 *Natica* Scopoli, 1777

Natica Scopoli, 1777. Introd. Hist. Nat., p. 392.

模式种 *Nerita vitellus* Linnaeus, 1758

特征 贝壳呈球形或卵球形,表面光滑,通常具色斑或色带;壳口半圆形,厣石灰质,坚实,外缘具 1—3 个螺肋或凹沟,脐孔小或中等大。

齿舌:中齿有三个齿尖,呈“山”字形,中央齿尖大,侧齿呈爪状,内缘齿分叉,外缘齿光滑,弯曲。
新种描述如下:

1 马氏玉螺(新种)*Natica maxiutongi* sp. nov. (图 1—3)

模式标本产地 正、副模标本采自海南(黎安)。2008 年 3 月 27 日,采集者,张素萍。正模标本编号:39786;副模标本编号:39787。共采到 8 个标本,其中 4 个生活标本。生活在潮间带至浅海细沙质海底。

标本测量(mm) 正模标本:壳长 14.0,壳宽 12.5;副模标本:壳长 13.0,壳宽 11.0。

正、副模标本均保存于中国科学院海洋生物标本馆(青岛)。

命名:本种以已故马绣同先生的名字命名,以纪念他在软体动物分类学研究中的贡献。

形态描述 贝壳小,呈卵球形,壳质结实。螺层约 4—5 层,缝合线浅而明显。螺旋部低小,体螺层膨圆。壳面平滑,有光泽,生长纹细,在缝合线下有 1 条白色的环行螺带,并有放射状的褶皱。

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壳面栗色或褐色, 体螺层上具有 3—4 条界限不清的深褐色或浅色的螺带, 基部为白色。壳口半圆形, 内面深褐色, 外唇薄, 呈弧形; 内唇稍直, 上部滑层较厚, 中部形成一个半圆形的滑层结节, 覆盖了大部分脐部, 仅在脐的上部留有一个小而深的缝

隙(图 1a,b)。厝石灰质, 核突出, 紫红色, 边缘有一条明显的螺肋。

习性与地理分布 暖水种, 栖息于潮间带至浅海的沙或泥沙质海底。目前仅知分布于我国的海南岛。



图 1 马氏玉螺 (新种) *Natica maxiutongi* sp. nov.
Fig.1 *Natica maxiutongi* sp. nov.



图 2 马氏玉螺(新种)*Natica maxiutongi*(a)与格纹玉螺(近似种)*Natica gultieriana*(b)厝的形态比较
Fig.2 Morphological comparison of opercula. a. Operculum of *Natica maxiutongi* and b. Operculum of *Natica gultieriana*

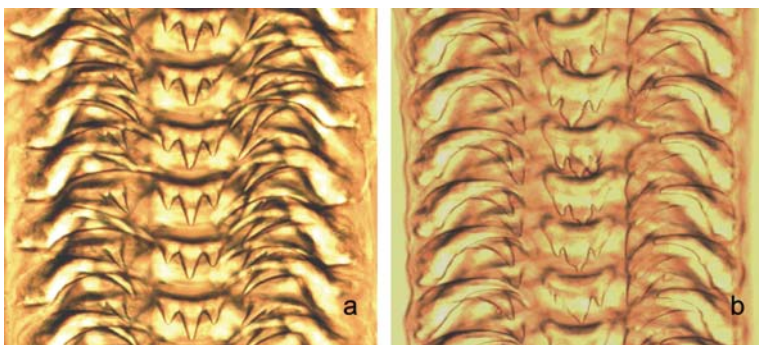


图 3 马氏玉螺(新种)*Natica maxiutongi*(a)与格纹玉螺 *Natica gultieriana*(b)齿舌形态比较
Fig.3 Morphological comparison of radulae. a. Radula of *Natica maxiutongi* and b. Radula of *Natica gultieriana*

讨论 新种与格纹玉螺 *Natica gultieriana* Recluz, 1844 的外形近似, 但新种壳面呈褐色或栗色, 体螺层上有 3—4 条深褐色螺带, 无花纹; 而格纹玉螺壳色多为青灰色、灰白色或黄褐色, 多数个体有不规则地褐色花纹。二者的厝也有区别, 新种的厝外缘有一条凸出螺肋, 无宽的凹沟, 核呈紫红色(图 2a); 而格纹玉螺的厝外缘有一条细肋和一条宽而低平的凹沟, 核呈浅黄色(图 2b)。对两个近似种的齿舌进行解剖观察, 发现二者中齿的齿形和齿尖也有很大的差异, 新种的中齿 3 个齿较尖, 尤其是中央齿尖细而长(图 3a); 而格纹玉螺的中央齿较宽大, 两边的齿较小(图 3b)。

窦螺属 *Sinum* Reoding, 1798
Sinum Roeding, 1798, Mus. Bolten., p.14
Sigaretus Lamarck, 1799, Mem. Soc. Nat. Hist. Paris, p.77

模式种: *Sinum haliotideum* Roeding, 1798 =*Helix halioidea* Linnaeus, 1758

特征 贝壳扁平, 呈耳形、半卵圆形或椭圆形。壳质薄或稍厚, 结实。壳顶小, 有的为白色, 也有的呈紫色、肉色或褐色。螺旋部极低小, 体螺层特大。

表面雕刻有细的螺肋,具薄的淡黄色壳皮。壳口大而宽广,脐孔小或无。厣有或无。本属动物的软体部分肥大,不能完全缩入壳内。

齿舌:中齿有3个齿尖,齿尖通常短小,并常有分叉,侧齿呈爪状。

2 南海窦螺(新种)*Sinum nanhaiensis* sp. nov. (图4—5)

模式标本产地 正模标本采自南沙群岛(5°00'N, 112°00'E),水深102 m。1994年9月23日,由唐质灿采集,正模标本编号:39788;副模标本编号:39789。2个副模标本采自南海(21°45'N, 115°30'E),水深105 m,泥沙质海底。

标本测量(mm) 正模标本:壳长11.0,壳宽15.0;副模标本:壳长8.0,壳宽11.5。

正、副模标本均保存于中国科学院海洋生物标本馆(青岛)。

命名:新种名称是以模式标本产地“南海”定名。

形态描述 贝壳小,呈长椭圆形,壳质薄。螺层约4层,缝合线浅而细。螺旋部低小,微凸出,胚壳光滑,无螺肋,呈黄褐色。体螺层特大,几乎为贝壳的全部(图4a)。壳面为淡黄褐色或白色,被有一层黄褐色透明的壳皮,易脱落,具有细密稍曲折螺旋肋,生长纹细。壳口特大,长卵圆形,内面淡黄褐色或灰白色。外唇简单,内唇呈弧形,上部滑层较小,微反卷,脐部较窄,脐孔小,浅。本属有的种具有一个角质厣,小而透明,呈黄褐色,有的无厣,所采到的标本未见厣。

习性与地理分布 本种为暖水性种类;主要栖息在浅海,在南沙群岛水深102 m和广东近海水深105 m沙质泥海底拖网采到3个标本。目前仅知分布于南中国海。

讨论 新种与光滑窦螺 *Sinum laevdatum* (Lamarck, 1822)外形较近似,但新种壳形细长,呈长椭圆形,表面螺肋和生长纹细密;而光滑窦螺的壳形较宽,近椭圆形,表面螺肋和生长纹较粗糙,体螺层上具有不均匀地纵行黄褐色条纹。齿舌解剖发现,二者齿舌的形态也有差异。新种的齿舌中齿3个齿尖,



图4 南海窦螺(正模)*Sinum nanhaiensis* 形态(a)、胚壳(b)及表面雕刻(c)
Fig.4 a. *Sinum nanhaiensis* sp. nov. b. Protoconch; c. Surface sculpture

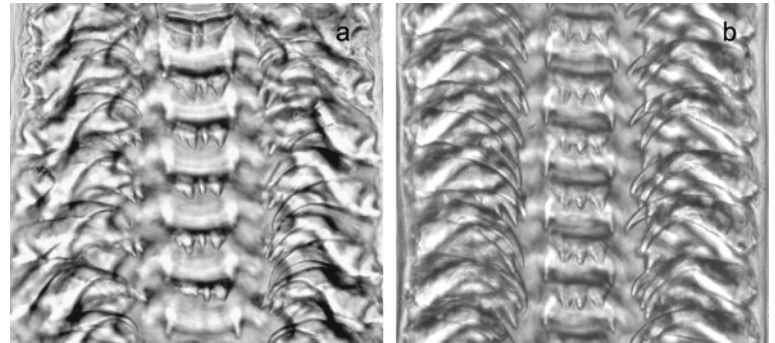


图5 南海窦螺(新种)*Sinum nanhaiensis*(a)与光滑窦螺(近似种) *Sinum laevdatum*(b)齿舌形态比较

Fig.5 Morphological comparison of radulae. a. Radula of *Sinum nanhaiensis* and b. Radula of *Sinum laevdatum*

其中央齿尖小,两边的齿尖大,而且有分叉,侧齿有2个齿尖(图5a);而光滑窦螺中齿的3个齿尖大小较均匀,侧齿上有3个分叉的齿尖(图5b)。

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TWO NEW SPECIES OF NATICIDAE (MOLLUSCA, GASTROPODA) FROM SOUTH CHINA SEA

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Abstract Two new species of Naticidae (Mollusca, Gastropoda), distributed in South China Sea, were recognized and classified morphologically in this paper, and the internal anatomy on radula was described based on the mollusk collection of the Marine Biological Museum, Chinese Academy of Sciences. *Natica maxiutongi* sp. nov. was found in sandy bottom from intertidal zone to shallow water near Lingshui and Li'an, Hainan Island, with maroon or brown shell, white base, and 3—4 dark-brown or light color banded body whorl. *Sinum nanshaiensis* sp. nov. was collected in mud-sandy bottom of shallow waters about 100 m depth offshore in Guangdong and Nansha Islands, with small and elliptical shell in color of yellow-brown or white. The new species are described and comparison with similar species are conducted and discussed.

The new species are described as follows:

1. *Natica maxiutongi* sp. nov.

Material examined: Holotype, No. 39786. Collected from Li'an, Hainan Island. Collected by Zhang Suping in intertidal zone to shallow water on sandy bottom.

Paratypes, No.39787. Collected from Li'an and Lingshui, Hainan Island. Collected by Ma Xiutong and Zhang Suping. Found in intertidal to shallow water zone on sandy bottom.

A total of 8 specimens were collected, of which 4 were living specimens.

Measurements (mm): Holotype. Shell length 14.0, breadth 12.5

Paratype. Shell length 13.0, breadth 11.0

Holotype and 7 paratypes specimens are deposited in the Marine Biological Museum, Chinese Academy of Sciences (Qingdao).

Etymology: The specie is named by the name of Mr. Ma Xiutong in memory of his contribution to taxonomic study of mollusks.

Description. Shell small, solid, in shape of globose-ovate, with 4—5 whorls, suture shallow and clear. Spire low and small. Body whorl large and round. Shell surface smooth and gloss, growth lines weak. Under the suture with one white band and radial ridges. Shell maroon or brown in color, base white, body whorl with 3—4 dark-brown or light color bands. Aperture semicircle, interior dark-brown, outer lip thin and coved; inner lip nearly straight, parietal callus thick, on central formed a semicircle lobe, cover most part of the umbilical region, only above the navel with a small and deep cracks. Operculum calcareous, nucleus convex, red-purple in color, margin with a rib.

Habits and distribution. Warm water species. Found on sandy or mud-sandy bottom in intertidal zone to shallow water. At present, collected only in Hainan Island, China.

Remarks. The shape of new species is similar to that of *Natica gultieriana* Recluz, 1844, but differs from that

in shell surface being brown or maroon in color. Body whorl with 3—4 dark-brown bands, without pattern; *Natica gultieriana* is normally steel-gray, grey-white or yellow-brown, most shell with irregular brown pattern. The operculum is also different, the outer margin of operculum has a convex rib, without groove, and the nucleus is red-purple (Fig.2a). However, the outer margin of operculum of *N. gultieriana* has a fine rib and a wide and shallow groove, and the nucleus in light-yellow color (Fig.2b).

Anatomical study on radulae of the two similar species showed that the shape of central tooth and the cusp are very different. The three cusps of central tooth of the new species are sharp, especially the central cusp is long and sharp (Fig.3a). However, the central tooth of *N. gultieriana* is bigger and the side teeth are smaller (Fig.3b).

2. *Sinum nanhaiensis* sp. nov.

Material examined: Holotype No. 39788. Collected from Nansha Islands (5°00'N, 112°00'E), depth 102 m. Collected by Tang Zhichan.

Paratypes, No. 39789. Collected from the South China Sea (21°45'N, 115°30'E), depth 105 m. In muddy-sand bottom. A total of three specimens were collected.

Measurements (mm): Holotype. Shell length 15.0, breadth 11.0

Paratype. Shell length 11.5, breadth 8.0

Holotype and two paratype specimens are deposited in the Marine Biological Museum, Chinese Academy of Sciences (Qingdao).

Etymology: The new species name, “nanhai” is named after the type locality.

Description: Shell small, long-elliptical in shape, thin, with 4 whorls, suture shallow and clear. Spire low and small, slightly convex. Body whorl especially large, almost occupies all of the shell. Apex smooth, without rib, yellow-brown in color. Shell yellow-brown or white in color, covered with thin light-brown periostracum, with regular and flexural spiral ribs, growth lines fine. Aperture especially large, elongate ovate in shape, inner aperture yellow-brown or gray-white in color. Outer lip curved, upper part of the inner lip expanding slightly, umbilical region narrow, umbilicus small and shallow. Usually with or without a corneous operculum in *Sinum*. The operculum was not observed in the new species.

Remarks. The new species is similar to *Sinum laevgatum* (Lamarck, 1822). The shell of the new species is long-elliptical in shape, spiral ribs and growth lines fine. However, the shell of *Sinum laevgatum* is broader, almost elliptical in shape, ribs and growth lines thick. On the body whorl there are vertical stripes, yellow-brown in color.

Anatomical study on radulae of the two similar species reveals obvious difference. The central tooth of the new species is with three sharp cusps; the central cusp is smaller and side cusps are bigger and branched (Fig. 5a), while those of *Sinum laevgatum* are nearly identical (Fig. 5b).

Habits and distribution: warm water species, mainly habit in shallow waters. The specimens were collected from Nansha Islands and Guangdong Province of China, on muddy-sand bottom in depth of 102 m and 105 m. At present, collected only from the South China Sea.

Key words Mollusca, Gastropoda, Naticidae, New species, South China Sea