A revision of Marginella reeveana Petit, 1851

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ABSTRACT Marginella reeveana Petit, 1851 is revised on the basis of its type material. A lectotype is appointed and a new type locality is established. The variability of the shell is displayed. The distribution and the relationships of the species are discussed. M. reeveana is considered as an isolated southern representative of a widely distributed tethyan group, ranging in the recent from the Arabian Sea to West Africa.

INTRODUCTION

The species Marginella splendens Reeve, 1842 was based on 3 shells belonging to the renowned collection of Hugh Cuming (1791-1865) and said to originate from 'Guinea'. M. reeveana was given by Petit (1851) as replacement name for Marginella splendens Reeve (non Grateloup, 1834).

Despite the many important samplings of Marginellidae made off the coasts of West Africa (including the Guinean coast and the Gulf of Guinea) during the 150 years following its description, the species has only ever been known from the three syntypes in the Natural History Museum, London. It is hardly surprising therefore that the Guinean origin of this species has been doubted, with some workers tending to believe in a varietal status of the taxon, whose shell morphology and pattern of decoration strongly resembles the species Marginella denticulata (Link, 1807). The latter is widespread off central Senegal (Dakar and Petite Cote) and displays a very high variability of both shell morphology and decoration rarely seen in the family Marginellidae. Some similar forms are known from Casamance (southern Senegal) to Sierra Leone. It can be assumed that several sibling species may well be separated in the future from this M. denticulata complex.

During the years 1985-86, the second author obtained a lot of 9 live collected specimens, trawled up by commercial fishing operations in 40-60 metres off Elmina, central coast of Ghana. Due to the rapid exhaustion of fish stocks, the trawlers soon left the area and the supply of M. reeveana samples came to an end. This restricted lot of shells does, however, enable us to have a more detailed look at the variability of the species and its likely distribution whilst allowing us to review its taxonomic status.

ABBREVIATIONS

NHM Natural History Museum, London.
MC Museum of Hugh Cuming
AWC A. Wakefield collection
PRC P. Ryall collection
spm live collected specimen

SYSTEMATICS

Genus Marginella Lamarck, 1799 [Type species, by monotypy: Voluta glabella Linné, 1758.]

Marginella reeveana Petit, 1851 (Figs 1-9)


Type material. 3 syntypes in NHM (Figs 1-3), with several accompanying labels. Original label: "Marginella splendens Reeve Type Guinea M.C." Recent label by K. Way, present curator of Mollusca: "BM(NH) reg. no. 1975008 Syntypes Conch. Icon. 15 Marginella Sp. 30 1865 Guinea. Hugh Cuming Colln. 3 spcs Acc. N. 1829."

As noted by Tomlin (1917), the largest syntype of M. splendens is evidently the figured type. This largest specimen (Figs 1,2) is hereby appointed as lectotype of Marginella reeveana Petit, 1851, replacement name of M. splendens Reeve, 1842.
Other material examined. Ghana, off Elmina, 40-60 m: 8 spm, PRC; 1spm, AWC.

Type locality. "Guinea". According to the apparent absence of the species off the present state of Guinea and its occurrence off the present state of Ghana (formerly British Guinea), the type locality is here confirmed as "Guinea, present state of Ghana, West Africa".

Original description. In his Conchologica Systematica, REEVE (1842 b: 249) quotes his new species as 'M. marginata splendens, (Humphrey, MSS). N obis, Proceedings Zool. Soc., 1842' and illustrates it with two figures (pl. 277, figs 2, 3: dorsal and ventral views) corresponding to our lectotype (Figs 1, 2). No further description is given.

The reference made by Reeve to the Proceedings constitutes a mistake, as the corresponding article (1842 a) does not deal with Marginella splendens, nor indeed with any other Marginelliidae. TOLSLIN (1917) has confirmed the quotation and drawings in Conchologica Systematica (REEVE, 1842 b) as constituting the original description.

Complementary description. SOWERBY (1846: 375) gave the first consistent definition of the species on the basis of the type material, and illustrated both the largest syntype (1846: pl. 74, fig. 23) in ventral view (Fig. 1) and the medium sized syntype (pl. 74, fig. 24) in dorsal view (Fig. 3):

M. ovali, creberrimè plicata, pallidè rosea, griseo vel rubro nebulata, maculis griseis vel roseis curvatis per seriebus tribus dispositis: spira producta, anfractibus rotundatis; columnella plicis quatuor sub-quadratis ultimis dubus qbliguis; labio externo antice emarginato, intùs crenulato, extùs punctato. Like M. glablia in general form, but finely ridged, and having three rows of curved spots on the back, besides the minute dots which cover the shell. In Mr. Cumings Collection; from Guinea".

PETIT (1851: 51) implicitly proposed that M. reeveana as a replacement name for M. splendens, without giving any further description or figure.

Redescription. (on the basis of the new material examined, Figs 1-9): The shell has 3.5 whorls and presents a pyriform outline. Protoconch large and pronounced. Spire small, triangular and stepped, the whorls are inflated, the shoulder is strongly rounded, the surface of the entire body whorl is sculptured by narrow, tightly packed axial ribs. Outer lip thick and arched, 16-20 strong labial teeth, 4 strong and sinuous columellar plications. The shell is covered by minute black dots, regularly distributed along rows in spiral alignment. The decoration of the body whorl is completed by 2 spiral rows of chevrons oriented towards the left and separated by a large spiral colour band situated at the level of the upper part of the aperture. The spire whorls show a row of chevrons which may be partially hidden under the suture above. The inside of the siphonal canal bears a dark colour patch along its border. The colour decoration ranges from pinkish to orange-brown or greyish-blue, on a whitish to light yellowish background.

Dimensions. Shell measurements of the syntypes: 23.8 x 13.5 mm (Figs 1, 2), 19.4 x 11 mm (Fig. 3), 14.9 x 9.7 mm. Other material studied: L=19 to 25.25 mm.

Distribution. The species seems to be endemic from the central coast of Ghana (not known from off Ivory Coast nor from the eastern part of the Gulf of Guinea).

DISCUSSION. The new material studied shows itself to be very similar to the type material, and M. reeveana therefore seems to be a very constant species. The morphology of the shell exhibits several original characters which allow it to be distinguished from M. denticulata 'sensu authorum': the axial ribs are more numerous and extend the length of the shell, the outline is more pyriform and rounded, the protoconch is larger and the labrum is more thickened. These features are not found in the numerous intra & interpopulational variations observed within the M. denticulata complex ranging in the Senegal/Sierra Leone area, and M. reeveana can be strictly separated on the basis of these shell morphological particularities. The decoration however is the same as that observed throughout the full range of variation observed in M. denticulata from central Senegal.

Any form of M. denticulata and any other close relatives are known off Ivory Coast or from other places in the Gulf of Guinea, where M. reeveana appears as being the single representative of the M. denticulata complex. The endemic status of M. reeveana in Ghana is not entirely a surprise as the region has special biogeographic significance. The coast of Ghana belongs to the "atypical tropical region" ranging from Cape Palmas to Benin, and is characterized by a rather high productivity of demersal species (1.2 mt/km²) compared to the surrounding regions (LE LOEFF & VON CONSEL, 1998: 318). This higher productivity seems to be correlated to a higher diversity.

Due to the seasonal alternance of cold upwelling currents, the region has maintained a noticeable incidence of species showing strong affinities with the recent temperate European fauna, together with representatives of intertropical groups resulting from the Pliocene Euro-West African stock. Within this region, the coast of Ghana can be considered (LE LOEFF & VON CONSEL, 1998: 319) as a "relict pocket" for the old tethyan fauna.

M. reeveana must be considered as belonging to this case, being the most southern ranging representative of the M. denticulata complex, and showing strong affinities with M. obtusa Sowerby, 1846 from the Arabian Sea, which is apparently associated itself with several sibling species in the same area. It can be assumed that M. reeveana is a representant of a widely distributed tethyan group of Marginella, which is being conserved off West Africa through a fragmented set of species. The M. denticulata complex
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Figs 1-9: Marginella reveana Petit, 1851. Figs 1, 2: lectotype NHM, 23.8 x 13.5 mm. Fig. 3: paralectotype NHM, 19.4 x 11.0 mm. Fig. 4: PRC, 21.85 x 13 mm. Fig. 5: AWC, 19.75 x 11.6 mm. Fig. 6: PRC, 25.25 x 15.30 mm. Fig. 7: PRC, 23.95 x 13.70 mm. Fig. 8: PRC, 23.7 x 14.30 mm. Fig. 9: PRC, 24.2 x 14.10 mm.

Figure 1-9: Marginella reveana Petit, 1851. Figure 1-2: lectotype NHM, 23.8 x 13.5 mm. Fig. 3: paralectotype NHM, 19.4 x 11.0 mm. Fig. 4: PRC, 21.85 x 13 mm. Fig. 5: AWC, 19.75 x 11.6 mm. Fig. 6: PRC, 25.25 x 15.30 mm. Fig. 7: PRC, 23.95 x 13.70 mm. Fig. 8: PRC, 23.7 x 14.30 mm. Fig. 9: PRC, 24.2 x 14.10 mm.
and the M. obtusa complex are under study by the first author.

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REFERENCES


