



Description of a new *Volvarina* from the Gulf of Guinea

Descripción de una nueva *Volvarina* del Golfo de Guinea

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Recibido el 26-X-2004. Aceptado el 24-I-2005

ABSTRACT

Volvarina ryalli sp. nov. is described from the northern subequatorial zone of West Africa, ranging from western Liberia to central Ghana, at lower infralittoral and upper circalittoral levels. *Volvarina ryalli* is compared with the *V. ambigua* (Bavay, 1913) / *V. deliciosa* (Bavay, 1913) complex from off northwest Africa and with *V. angolensis* (Odhner, 1923) from southern Angola.

RESUMEN

Se describe *Volvarina ryalli* spec. nov. del norte de la zona subecuatorial de África occidental, cuya área de distribución va desde el oeste de Liberia a la parte central de Ghana, y que se encuentra desde niveles infralitorales bajos hasta circalitorales altos. *Volvarina ryalli* se compara con el complejo *V. ambigua* (Bavay, 1913) / *V. deliciosa* (Bavay, 1913) de la zona noroccidental de África y con *V. angolensis* (Odhner, 1923) del sur de Angola.

KEY WORDS: *Volvarina*, Gulf of Guinea, circalittoral, new species.

PALABRAS CLAVE: *Volvarina*, Golfo de Guinea, circalitoral, especie nueva.

INTRODUCTION

Like most marine molluscan families, the marginelliform gastropods are believed to have poor specific diversity in the Gulf of Guinea. This commonly held point of view has been qualified over the last 20 years by the discovery or rediscovery of a noticeable number of marginelliform species in this area. GOFAS AND FERNANDES (1988) recorded a rich local assemblage and high levels of endemism from São Tome, both in Marginellidae and Cystiscidae. ROLÁN AND FERNANDES (1997) recorded a similar situation from Ghana for the Cystiscidae. Five *Marginella* species from the Gulf of Guinea have been recently brought to light. *Marginella xicoi*

Boyer, Ryall and Wakefield, 1999, closely related to *M. tyermani* Marrat, 1876 from shallow waters of the eastern Gulf of Guinea, has been described from Ghana (BOYER, RYALL AND WAKEFIELD, 1999) and *M. reeveana* Petit, 1851, closely related to *M. denticulata* Link, 1807 from Senegal, has been rediscovered also in Ghana (BOYER, RYALL AND WAKEFIELD, 2004). *Marginella bellii* Sowerby, 1846, from the eastern Gulf of Guinea, has been reevaluated together with a sibling species described as *M. aequinoctialis* Boyer and Simbille, 2004 from northern Gabon (BOYER AND SIMBILLE, 2004). Some other *Marginella* species come from the Gulf of Guinea, like *M. hel-*

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matina Rang, 1832 described from the "African coast" and the closely related *M. amazona* Bavay, 1913 described from "Cotonou", both currently under revision by the present author, and like the distinctive but elusive *M. vexillum* Redfield, 1852 described from "Cape Palmas, West Africa".

The genus *Volvarina*, well-represented by several species groups from northwest Africa (GOFAS, 1989), the Cape Verde Islands (MORENO AND BURNAY, 1999) and Angola (GOFAS AND FERNANDES, 1992), seems to be less diversified in the Gulf of Guinea. Only *V. cincta* (Kiener, 1834), ranging from Senegal to the central coast of Ghana (P. Ryall, pers. comm.) and perhaps as far as the eastern Gulf of Benin (in KNUDSEN, 1956 as "*M. marginata* Born" in stn. 102), *V. cf. monilis* (Linné, 1758), ranging apparently from Gran Canaria (pers. coll.) to northern Gabon (as "*M. deliciosa efasciata* Bavay" in BERNARD, 1984), and *V. insulana* Gofas and Fernandes, 1988 from São Tomé, are recorded from this area.

In this situation the discovery of a new centimeter-long *Volvarina* species from the northern Gulf of Guinea deserves a special mention, demonstrating that the knowledge of the marginellid fauna (and more generally the molluscan marine fauna) from this area is far from complete. The present article is dedicated to the description of this new *Volvarina* species.

Abbreviations:

ORSTOM: French organism of public research regarding the economic development, now IRD (Institut de Recherche pour le Développement en Coopération, Paris)

MNHN: Muséum national d'Histoire naturelle, Paris

FBC: collection of the author

PRC: Peter Ryall collection

l: length/size

sh: shells

spm: specimens

stn: station

TAXONOMY

Family MARGINELLIDAE Fleming, 1828

Genus *Volvarina* Hinds, 1844

Type species by subsequent designation (Redfield, 1870): *Marginella nitida* Hinds, 1844 = *Voluta mitrella* Risso, 1826.

Volvarina ryalli sp. nov. (Figs. 1-4)

Type material: Holotype (Fig. 1) and paratype (Fig. 2) deposited in MNHN, both from the type locality. Together with the type lot there are several juvenile shells of *Volvarina*, the larger ones clearly belonging to *V. cincta* and the smaller ones being impossible to identify. The label attached to the type lot reads: "région d'Abidjan Côte d'Ivoire drag. plateau continental coll. Le Loeuff - ORSTOM MNHN Paris - Malacologie".

Other material examined: Liberia: 1 sh (l = 10.3 mm), Calypso 1956, stn. 12, 6°40' N, 11°23' W, 51 m, silt (MNHN, ex-coll. Marche-Marchad). Ivory Coast: 1 sh (l = 10.5 mm), off Grand Bassam, circalittoral (FBC). Ghana: 1 spm [l = 12 mm (Fig. 3)], 15 miles off Takoradi, 20 m, coral rubble (FBC, ex-PRC); 3 spm [l = 12.25 mm, 12.25 mm, 11.20 mm (Fig. 4)], same locality (PRC, 05-1980); 2 sh (l = 13 mm and 10.6 mm), off Mia Mia Bay, 27-32 m (PRC, 03-1999).

Type locality: Off Abidjan, central Ivory Coast.

Etymology: The specific name is dedicated to Peter S. Ryall, who first attracted the author's attention to the distinctive shell morphology of the species.

Description: Holotype (Fig. 1): shell slender, subcylindrical, protoconch paucispiral, very small, low. Spire short,

narrow, triangular, rather convex, with 4 $\frac{1}{4}$ whorls. Body whorl long, with base truncated. Aperture moderate, widened



Figs. 1-4. *Volvarina ryalli* sp. nov. 1: holotype, off Abidjan region, continental slope (MNHN; 13.85 x 6.40 mm); 2: paratype, off Abidjan region, continental slope (MNHN; 13.15 x 6.40 mm); 3: off Sekondi, Ghana, 20 m (FBC, ex-PRC; 11.90 x 5.45 mm), 4: off Sekondi, Ghana, 20 m (PRC; 11.20 x 5.20 mm).

Figs. 1-4. *Volvarina ryalli* spec. nov. 1: holotipo, costa de la región de Abidjan, plataforma continental (MNHN; 13,85 x 6,40 mm); 2: paratipo, costa de la región de Abidjan, plataforma continental (MNHN; 13,15 x 6,40 mm); 3: costa de Sekondi, Ghana, 20 m (FBC, ex-PRC; 11,90 x 5,45 mm), 4: costa de Sekondi, Ghana, 20 m (PRC; 11,20 x 5,20 mm).

in its anterior part. Outer lip vertical, shouldered, with two discontinuities of the outline, one posteriorly, and another more progressive before the base. Outer margin thickened, rather narrow, strongly stepped, gently rounded, inner lip smooth, faintly convex in its medium part. Four well separated columellar plaits, the two anterior ones larger, the second very long and sinuous, the two upper ones smaller and short.

Colour ground pale yellowish (discoloured).

Animal and radula unknown.

Dimensions: The holotype measures 13.85 x 6.40 mm, the paratype 13.15 x 6.40 mm.

Distribution: From the western coast of Liberia to the central coast of Ghana, lower infralittoral and upper circalittoral.

Habitat: Live specimens have been trawled off Ghana (20 m) in coral rubble.

Remarks: *Volvarina ryalli* sp. nov. shows a very distinctive and original shell mor-

phology in the context of the Eastern Atlantic *Volvarina*. The *Volvarina* species from this area showing the most comparable shell features are, on the one hand, *V. ambigua* (Bavay, 1913) and *V. deliciosa* (Bavay, 1913), both corresponding to a complex of closely matching forms (possibly conspecific) distributed from off western Morocco to off northern Mauritania (cf. BAVAY in DAUTZENBERG, 1913 and GOFAS, 1989), and on the the other hand, the elusive *V. angolensis* (Odhner, 1923), only known with certainty from two Angolan type specimens (cf. GOFAS AND FERNANDES, 1992) showing close affinities with the *V. ambigua* / *V. deliciosa* complex.

The shell of *V. ryalli* differs from those of *V. ambigua*, *V. deliciosa* and *V. angolensis* by its taller spire, more pyriform outline, more shouldered labrum, aperture wider throughout its length, and uniformly cream to pale tan subhyalineous ground colour, sometimes with a paler spiral gap slightly below the mid part of the body whorl, and never any darker spiral band.

Due to the close similarity of their shell morphology, the *V. ambigua* / *V. deliciosa* complex and *V. angolensis* are assumed to belong to the same species group, whereas the possible belonging of *V. ryalli* to this species group is considered with reserve, awaiting further data about the variability of shell morphology and decoration, radula characters and soft parts chromatism in these different species.

V. ryalli has not been recorded in the literature and is not represented in public or private collections except by the material presented here. The dredg-

ing stations made by the Atlantide Expedition in 1945-1946 throughout the Gulf of Guinea did not yield any specimens matching *V. ryalli*. The specimens attributed by KNUDSEN (1956: 82, 84) to "*Marginella ambigua* Bavay" (Stn. 113, 4° 05' N, 7° 09' E, 32 m, 7sh) and to "*Marginella deliciosa* Bavay" (Stn. 148, 9° 57' N, 15° 22' W, 25 m, 1 sh) have been checked. They all belong to the *V. cf. monilis* complex, easy to separate from the species discussed above by the pattern of its columellar plaits, with a very small anterior plait closely paired with the larger one coming next.

ACKNOWLEDGEMENTS

I am indebted to Virginie Héros (Muséum national d'Histoire naturelle, Paris) and to Peter S. Ryall (Takoradi, Ghana) for the loan of material, to Philippe Maestrati (Muséum national d'Histoire

naturelle, Paris) for the photographs; Alain Robin (Le Mesnil Saint Denis, France) for mounting the plate, and Nicole and Robert Hasselot (Jouques, France) for typing out the manuscript.

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