Coluzea groschi, a new species of Columbariinae (Gastropoda: Turbinellidae) from Southeastern Africa

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ABSTRACT. *Coluzea groschi*, a new species of Columbariinae, is described from the edge of the continental shelf off the southern coast of Mozambique. Shell size, coloration, absence of strong axial ribs, as well as protoconch and radular morphology, serve to distinguish this new species from *Coluzea eastwoodae* (Kilburn, 1971), *C. canaliculata* (von Martens, 1901), and *Columbarium natalense* Tomlin, 1928, the species to which it is most similar.

INTRODUCTION

The subfamily Columbariinae, which may be recognized conchologically by a narrow, fusiform shell with a deviated paucispiral protoconch, a pronounced shoulder generally with spines or knobs, a long, axial siphonal canal, the absence of columellar folds, and a characteristic, strongly ovate operculum, achieves great diversity at bathyal depths off the southern and eastern coasts of Africa (e.g., von Martens, 1901; Tomlin, 1928; Barnard, 1959). To this rich fauna, we add another species, *Coluzea groschi*, described herein. This new species was trawled along the coast of Mozambique by fishermen based in Maputo, and brought to our attention by the Amorim family.

Abbreviations

MNHN: Muséum national d'Histoire naturelle, Paris, France.
NM: Natal Museum, Pietermaritzburg, South Africa.
USNM: National Museum of Natural History, Smithsonian Institution, Washington.
ZMB: Museum für Naturkunde (Zool. Museum), Berlin, Germany.
HT: holotype
Pt: paratype

SYSTEMATICS

Family **TURBINELLIDAE** Swainson, 1840

Genus ***Coluzea*** Allen, 1926

Coluzea groschi n. sp.
Fig. 1-5

Description: Shell (Fig. 1) of medium size (to 40 mm), moderately thick, strongly fusiform. Spire angle 30-35°. Protoconch (Figs 2-3) of 1¾ glassy whorls, first 1/2 whorl deflected from shell axis by about 40°, larger than more cylindrical subsequent whorl. Transition to teleoconch gradual, spanning 1/2 whorl, marked by appearance of fine spiral threads, followed by development of carina just below mid-whorl. Teleoconch of up to 7 1/3 convex whorls, marked by onset of short, open, laterally-directed spines along carina and spiral cords below carina. Suture abutted to previous whorl just anterior to pronounced spiral cord (third cord anterior to carina). Spiral sculpture of 6-10 cords between suture and carina, 7-8 between carina and siphonal canal, 16-20 along proximal ¾ of siphonal canal. Single, fine threads may be present between adjacent cords, especially near carina and along siphonal canal. Axial sculpture confined to short, open, radial to slightly recurved spines along periphery, 8 on early whorls increasing to 13-18 on final whorl. Spiral threads run alongside and onto spines. Axial growth striae fine, sinuate. Aperture broadly ovate, tapering anteriorly. Outer lip glazed, furrowed beneath peripheral keel, and, to a lesser degree, beneath larger spiral cords. Inner lip smooth, formed by resorption of spiral sculpture from outermost layer of parietal

region (as in *Benthovoluta claydoni*, see Harasewych, 1987: figs. 15, 16). Siphonal canal long, thick, axial, distal end may be slightly dorsally deflected. Shell color golden brown to white (paratype 1). Periostracum moderately thick, with numerous, short, axial lamellae. Operculum (Fig. 4) broadly rounded posteriorly, sharply tapered anteriorly, with terminal nucleus.

Rehydrated animal of holotype (male), with short tentacles, very small black eyes, deep mantle cavity containing ctenidium that is about twice as long and equally as wide as osphradium, large hypobranchial gland, and narrow rectum with small rectal gland at its anterior end. Proboscis nearly as long as shell, coiled within a proboscis sheath alongside gland of Leiblein. Radula (Fig. 5) minute (1.6 mm long), narrow (93 µm), composed of 101 rows of teeth. Lateral teeth monocuspid, rachidian teeth with three teeth confined to the central portion of a strongly curved (nearly semi-circular) basal plate that has broad lateral expansions. Male pallial gonoduct narrow, running below rectum, descending to floor of mantle cavity to form open groove that leads to base of broad, dorsoventrally flattened, distally rounded penis.

	HT	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5	Pt 6
Shell length	39.6	35.5	35.1	31.1	39.3	36.7	29.1
Aperture length	5.3	5.1	5.1	4.9	6.5	5.2	4.8
Siphonal canal length	19.8	16.77	16.8	14.4	17.7	17.3	12.9
No. whorls, protoconch	1.75	1.75	1.75	1.75	1.75	1.75	2
No. whorls, teleoconch	7.30	7	7.25	6	7	6.25	6
No. spines on last whorl	13	15	15	14	18	16	16
Spire angle	30°	31.5°	35°	34°	34.5°	31°	37°

Table 1. *Coluzea groschi* n.sp. Measurements of shell characters. Linear measurements in mm. n = 7

Etymology

This species is named to honor Mr. J. Kurt Grosch. Until his death in 1990, he lived in Mozambique with the Amorim family and fostered their interest in shells.

Type locality

Off southern Mozambique, between Quissico and Zavora, by fisherman from Maputo region, living at a depth of about 100 m.

Type material

Holotype (male), USNM 894809; paratypes 1-2. Amorim collection; paratype 3 Granja collection; paratype 4, Fraussen collection; paratype 5, MNHN; paratype 6, NM K6817, S Mozambique, between Quissico and Zavora, in about 100 m. Ms. F. Amorim, April 21, 1990.

Comparative Remarks

Of the Columbariinae of the southwestern Indian Ocean, *Coluzea groschi* superficially resembles *Coluzea eastwoodae* (Kilburn, 1971) and *Coluzea canaliculata* (von Martens, 1901). It may be distinguished from the former by its smaller size, frequently darker color, the presence of spiral cords between suture and periphery, and a protoconch in which the first whorl is larger than the second. While the protoconch and radula of *C. groschi* resemble those of *C. canaliculata* (protoconch figured by Martens, 1904: pl. 2, fig. 7, although this work is dated 1903, Weaver and du Pont, (1970:353) state that this work was actually published in January 1904; radula figured by Thiele, 1925:pl.46, fig. 23), and their shells are of comparable size, *C. groschi* has a much higher spire and lacks the sutural canal of *C. canaliculata*. While *C. groschi* is know only from depths of approximately 100 m, *C. eastwoodae* and *C. canaliculata* live at depths in excess of 400 m. *Coluzea groschi* is similar in adult size, shell pigmentation, and bathymetric distribution to *Columbarium natalense* Tomlin, 1928, but the latter may be easily distinguished by the presence of pronounced axial ribs. While the protoconch, size and general shape of *C. groschi* closely resembles that of *Fustifusus pinicola* (Darragh, 1987) from off New Caledonia, *C. groschi* lacks the pronounced axial sculpture, weakly raised columellar plait, and color pattern of *F. pinicola*, while its radula is typical of *Coluzea* and lacks the the 7+ cusped rachidian of *Fustifusus* (Harasewych, 1991: fig.24).

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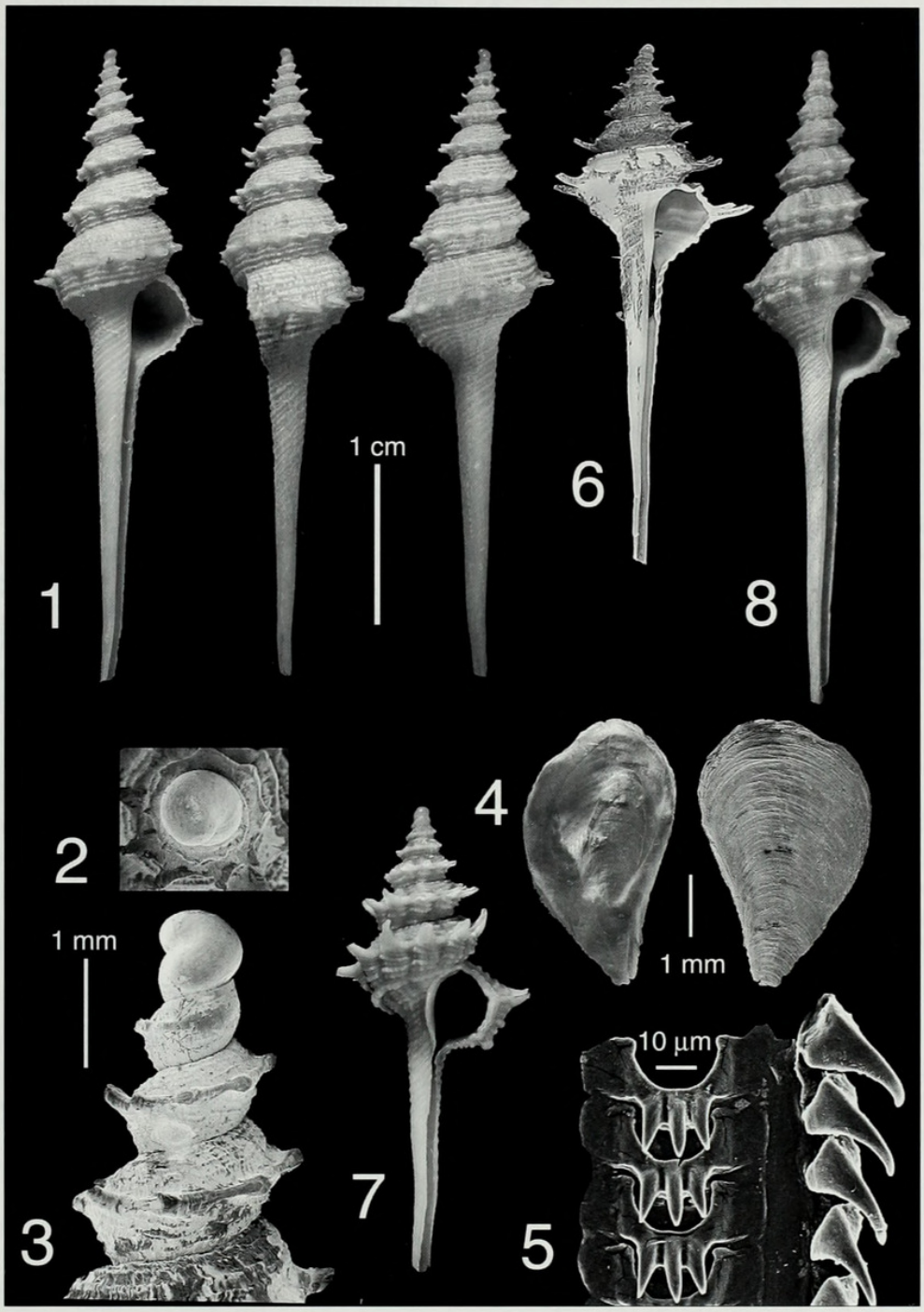

Figs. 1-5. *Coluzea groschi* n.sp. Off southern Mozambique, Maputo region, in about 100 m, holotype (USNM 894809).

1. Apertural, lateral and dorsal views of shell.
2. Apical and 3, lateral views of protoconch.
4. Inner and outer views of operculum.
5. portion of radular ribbon.

Fig. 6. *Coluzea canaliculata* (Martens, 1901), apertural view of holotype (ZMB 61028), Off Zanzibar (6°34'S, 39°35'E) , in 404 m. *S.S. Valdivia* Stn. 242.

Fig. 7. *Columbarium natalense* Tomlin, 1928, Transkei, off Whale Rock, 31°59.5'S, 2916.9'E, in 90 m, on sponge rubble, small pebbles. R.V. Meiring Naudé Stn. M6 (NM C.2842).

Fig. 8. *Fustifusus pinicola* (Darragh, 1987), S of Isle of Pines, New Caledonia, 22°47.20'S, 167°21.60'E, in 395 m, MUSORSTOM 4, sta. DW226 (USNM 860478).

1 cm scale bar applies to all shells.

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