A new species of *Mitra* from deep water off South Africa (Gastropoda: Prosobranchia: Mitridae)

Richard Salisbury
8807 Craydon Drive, Boise, Idaho 83704, USA.

and

Richard Neil Kilburn
Natal Museum, Private Bag 9070, Pietermaritzburg 3201, South Africa

KEYWORDS: Mollusca, Gastropoda, Prosobranchia, Mitridae, *Mitra*, taxonomy, South Africa.

ABSTRACT. *Mitra brinkae* n. sp. is described from the outer edge of the continental shelf off south-eastern Africa. It is compared to the South African species *Cancilla meyeriana* Salisbury, 1992, and to the Southern Australia species *Mitra glabra* Swainson, 1821, and *Mitra declivis* Reeve, 1844. Superficial similarities to the Australian fossil species *Eumitra alokiza* Tenison-Woods, 1880, are examined. The specimen recorded from South Africa by BARNARD (1959) as *Mitra subulata* Lamarck, 1811 [= *Vexillum costatum* (Gmelin, 1791)] is not referable to that species, but is probably a very worn example of *Cancilla meyeriana*.

INTRODUCTION

Several new deep-water mitriform gastropods have recently been dredged off South Africa, largely during the Natal Museum dredging programme. Some of these new species exhibit sculptural similarities to both recent and fossil mitrids.

SYSTEMATICS

Family MITRIDAE Swainson, 1831
Subfamily MITRINAE Swainson, 1831

Genus *Mitra* Lamarck, 1798

Type species (by subsequent designation) *Voluta mitra* Linnaeus, 1758, Recent, Indo-Pacific.

Mitra (Mitra) brinkae n. sp.

Figs 1-3, 5

Type material

Holotype (figs 1-2, 5) Natal Museum C8648/T854, off Whale Rock (lat 32° 02.9'S, long 29°19.7'E.), Transkei, South Africa, sand and shell rubble 250-280 m; Natal Museum Dredging Programme, 3/vii/85. Paratype 1 (fig. 3): Natal Museum S9068/T865, trawled off north coast of Natal, January, 1981, don. Mrs Dawn Brink. Paratype 2: trawled (or possibly *ex pisce*) off north coast of Natal, March, 1991; Dawn Brink collection.

Description

Shell of moderate size, fusiform, spire acuminate, aperture length less than half that of total length. Protoconch unknown; teleoconch of 7-9 whorls. Whorls slightly convex in profile, periphery median; sutures sharply defined and fairly deep. Superficially almost smooth, first 5-6 whorls sculptured with 5 shallow, punctate spiral grooves, becoming obsolete by 5th or 6th whorl; subsutural sculpture consists of very fine pliculate riblets (fig. 5); body whorl appears smooth but under microscopic examination, fine axial riblets (little stronger than coarse growth lines) are seen to radiate from suture onto body whorl. Inner lip of aperture with 4-5 thin columella folds; outer lip smooth within. Pale flesh-colour with occasional faint, diffuse, yellowish-brown longitudinal bands and streaks. Multiple repair scars are present on all specimens seen.

Dimensions: 46.0 x 11.0 mm, aperture length 21.0 mm (holotype); 45.0 x 10.5 mm, aperture 20.0 mm (paratype 1); 53.4 x 12.0 mm, aperture 23.9 mm (paratype 2).

Range

Outer continental shelf of south-eastern Africa, from Zululand to north-eastern Transkei.

Habitat

Sand and shell rubble in about 250-280 metres (only dead shells seen).

Figures 1-6. (*opposite page*)

1-3. ***Mitra brinkae*** n. sp. 1-2, Holotype NMSA C8648/T854, 46.0 x 11.0 mm. 3, Dorsal view of paratype 1, NMSA S9068/T865, 45.0 x 10.5 mm.
4. ***Cancilla meyeriana*** Salisbury, 1992, holotype, NMSA D1536/T723, 42.0 x 10.5 mm.
5-6. Sculpture on early whorls of 5, *Mitra brinkae*, holotype, and 6, *Cancilla meyeriana*, holotype.

Remarks

Mitra brinkae is characterised by its narrow shell, rather short aperture and nearly obsolete sculpture on its later whorls, save for fine axial plicules below the suture (see Fig. 3 in particular). Only the Australian Pliocene fossil species, *Eumitra alokiza* Tenison-Woods, 1880 (Fig. 9) seems to be superficially comparable in general sculptural features, but is, in fact, sculptured with fine, shallow but distinct spiral grooves over the entire shell. *M. brinkae* could also be confused with the Southern Australia species, *Mitra glabra* Swainson, 1821 (Fig. 10), which, however, is larger, wider and sculptured with shallow spiral grooves which are often stained dark brown; the ground colour in *Mitra glabra* is tan, marked with longitudinal streaks of brown, which normally follow growth lines; in some specimens the spiral grooves are finely punctate. *Mitra declivis* Reeve, 1844 (Fig. 11), believed by some to be a "smooth" form of *M. glabra*, is similarly sculptured with very shallow spiral grooves, but unlike *M. glabra* these grooves are not coloured; *M. declivis* also lacks the brown longitudinal streaks found in *M. glabra*. Both species lack the subsutural plicules of *Mitra brinkae*.

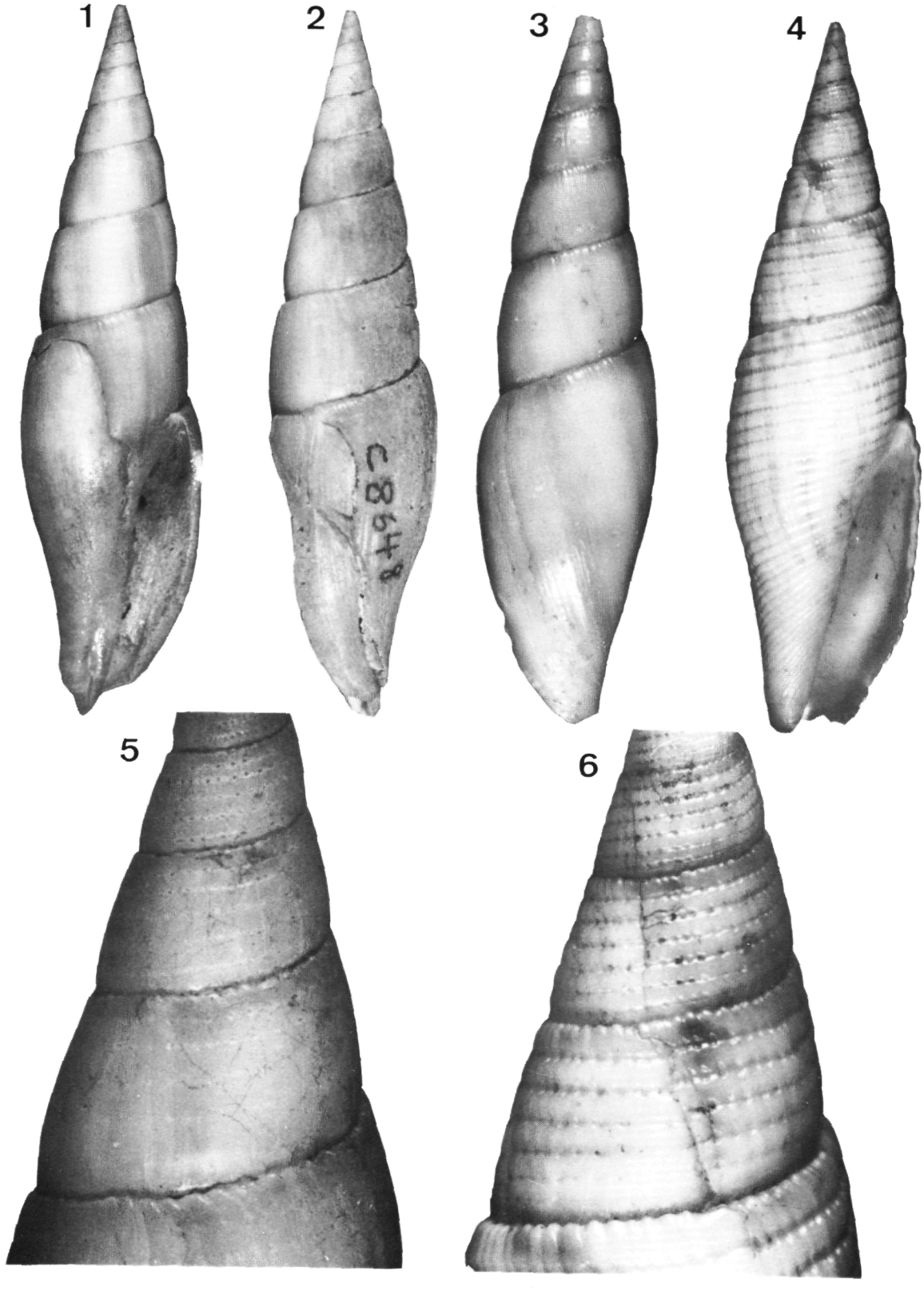
Of southern African mitrids the recently described *Cancilla meyeriana* Salisbury, 1992 (Fig. 4, holotype), is similar in size and occurs in the same general area. *Mitra brinkae* differs in being much smoother, without any sign of spiral cords on the body whorl. The early whorls bear somewhat similar spiral sculpture in both species (see Figs 5-6), but in *M. brinkae* this is not crossed by distinct axial pleats, which in *C. meyeriana* give the lirae a "segmented" appearance.

It is relevent to comment on the badly worn shell (Fig. 7), dredged off O'Neil Peak [= Neill Peak or Cunge (Zululand)] in 90 fathoms [=164 m], which was recorded by BARNARD (1959: 50, text fig. 13a) as *Mitra (Callithea) subulata* Lamarck, 1811. The same specimen (South African Museum A8763) was illustrated by KENSLEY (1973: text fig. 672). This shows some resemblance to *Mitra brinkae*, but the retention of distinct spiral sculpture on the base of the body whorl is more indicative of *Cancilla meyeriana*. Although its identity is somewhat academic, it is certainly not referable to Lamarck's taxon. Lamarck's original description of *M. subulata* cited SCHRÖTER (1783: pl. 4, Fig. 27), as possibly illustrating his species; the species figured there has never been positively identified and it could be either a ribbed mitrid or a costellarid. However, Cernohorsky reviewed Lamarck's species of Mitroidea and illustrated (CERNOHORSKY, 1969: 972, pl. 4, fig. 27) the holotype of *Mitra subulata* from the Lamarck collection in the Museum d'Histoire Naturelle, Geneva. This demonstrates that *Mitra subulata* is the Indo-Pacific species now known as *Vexillum (Costellaria) costatum* (Gmelin, 1791). GMELIN (1791: 3458) in fact cited the same Schröter figure for his *Voluta costata*. The range of *Vexillum costatum* (Fig. 8) extends to the coral coast of northern Mozambique (Natal Museum collection H449 from Conducia Bay, and K3364 from Nacala). However, this species differs widely from *Mitra brinkae* in having closely-spaced but well-developed axial ribs, and in other characters.

Mitra brinkae appears to be rare, and no living examples are known. One of the three types (paratype #1) is malformed, with a peculiar curve to the spire resembling that found in some species of the buccinid genus *Colubraria* Schumacher, 1817. Although at least one of the types may have been taken from the gut of a fish, the dredged/trawled origin of the others shows that the smooth surface is not the result of action by digestive juices. Nor is there any sign of the overall pitting and loss of microsculpture that would be caused by such digestion.

Etymology

Named in honour of Mrs Dawn Brink of Westville, South Africa, for her contributions to the study of deep-water mitrids from South Africa.


1
2
3
4
5
6
C8648

Figures 7-11. (*opposite page*)

7. ?*Cancilla meyeriana*, worn specimen recorded from Zululand by Barnard (1959) as *Mitra subulata* (*non* Lamarck, 1811), South African Museum A8763, 25.2 x 7.8 mm.
8. *Vexillum costatum* (Gmelin, 1791), Natal Museum H449, Conducia Bay, Mozambique, K. Grosch, 46.6 x 9.9 mm.
9. *Eumitra alokiza* Tenison-Woods, 1880, Miocene of Victoria, Australia, 43.0 x 10.0 mm.
10. *Mitra glabra* Swainson, 1821, Smokey Bay, Southern Australia, 63.0 x 17.0 mm.
11. *Mitra declivis* Reeve, 1844 [=*?Mitra glabra* Swainson, 1821], Australia (locality Unknown), probably Southern Australia, 46.0 x 14.5 mm.

Acknowledgements

The authors thank Mrs Michelle van der Merwe of the South African Museum for the loan of material and Ms Linda Davis of the Natal Museum for preparation on the plates. Dr Dai Herbert read the manuscript. Dawn Brink and Michael & Dawn Meyer have continued to assist in many ways.

REFERENCES

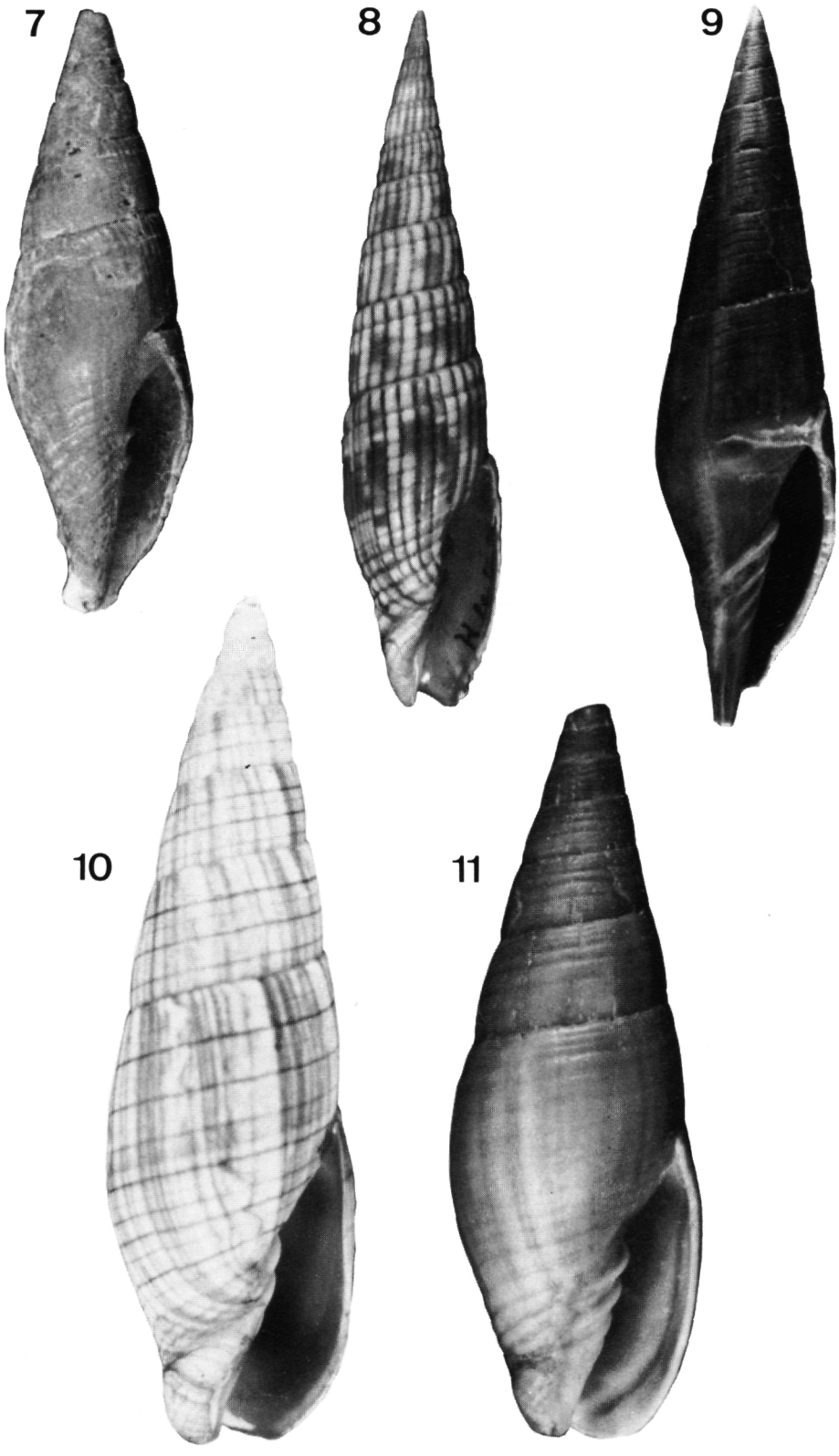
BARNARD, K. H. 1959. Contributions to the knowledge of South African marine Mollusca. Part II. Gastropoda: Prosobranchiata: Rhachiglossa. *Annals of the South Africa Museum* 45 (1): 1-237.

CERNOHORSKY, W. O. 1969. The types of the Lamarck collection in the Museum d'Histoire Naturelle in Geneva. Recent Mollusca of the genera *Mitra*, *Columbella* (part) and *Cancellaria* (part). *Revue Suisse de Zoology*. 76 (4): 953-994, pls 1-7.

GMELIN, J. F. 1791. *Caroli a Linné, Systema Naturae per Regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Editio decima tertia, aucta, reformata.* G Beer, Leipzig. 1 (6): 3021-3910.

KENSLEY, B. 1973. *Sea Shells of Southern Africa - Gastropods.* Maskew Miller, Cape Town. pp. 225.

SCHRÖTER, J. S. 1783. *Einleitung in die Conchylienkenntnis nach Linné.* J.J. Gebaner, Halle. 1ter Band, 860 pp.


7
8
9
10
11