Description of a new species of *Calliostoma* (Gastropoda: Trochidae: Calliostomatinae) from Madagascar

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ABSTRACT. *Calliostoma muriellae* n.sp. is described and compared with similar *Calliostoma* species from deep waters around the world.

RESUME. *Calliostoma muriellae* n.sp. est décrite et comparée avec des espèces analogues de *Calliostoma* d'eaux profondes du monde entier.

INTRODUCTION

A few month ago, Guido T. Poppe, a well known shell collector from Belgium, entrusted me with calliostomatid-shells from deep water off Madagascar. These shells, that belong obviously to the subgenus *Otukaia* Ikebe, 1942, remember especially *Calliostoma* species from off Chile and Antarctic. Further studies showed that these shells belong to a species different from all described species and has to be considered as new to science.

Abbreviations

Repository
IRSNB : Institut royal des Sciences naturelles de Belgique, Bruxelles.
MNHN : Muséum national d'Histoire naturelle, Paris.

Other abbreviations

D : diameter
H : height
HA : height of aperture
P1, P2, P3, ... : primary cords (P1 is the most adapical)
S1, S2, S3, ... : secondary cords (S1 is the most adapical)
dd : no live-taken specimens present in sample
lv : live-taken specimens present in sample

SYSTEMATICS

Family: **TROCHIDAE** Rafinesque, 1815
Subfamily : **CALLIOSTOMATINAE** Thiele, 1924
Genus: ***Calliostoma*** Swainson, 1840
Type species: *Trochus conulus* Linnaeus, 1758 (by s.d. Herrmannsen, 1846) - Mediterranean Sea
Subgenus : ***Otukaia*** Ikebe, 1942 [= *Alertalex* Dell, 1956]
Type species : *Calliostoma kiheiziebisu* Otuka, 1939 - Japan (Tosa Bay)

Calliostoma muriellae n.sp.
Figs 1-4

Type material

Madagascar, off Majenga, trawled in 800 m, holotype IRSNB, 27.2 x 23.6 mm (lv); paratype MNHN, 28.7 x 24.6 mm (dd); paratype, 29.5 x 25.9 mm (dd) , author's collection; paratype, 30.2 x 26.2 mm (dd), collection G.T. Poppe*.

Other material

Madagascar, off Majenga, trawled in 800 m, 8 dd, coll. G.T. Poppe; 22° 16.9'S – 42° 56' E, trawled in 1200 m, 1 dd, MNHN, coll. A. Crosnier.

Diagnosis

A typical *Calliostoma* species, conoidal in shape, with worls bearing two major spiral cords and a weaker subsutural one, with a flat, nearly smooth base and without umbilicus.

Description

Shell rather large for the genus (height up to 30.4 mm, width up to 27.2 mm), conoidal in shape; spire high, almost conical, 2.7x to 3.6x higher than aperture, apical angle from 63° to 70°, anomphalous. *Protoconch* of 1.25 to 1.5 whorl, covered by reticulate network of fine ridges. Apical fold weakly rounded, terminal varix visible, slightly thickened. *Teleoconch* of 7 or 8 whorls, bearing spiral cords. Suture visible, not canaliculated. First whorl of teleoconch convex, sculptured by three granular

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primary cords; P1 weakest, close to suture; whorl slightly concave in shape between P3 and suture; beads of cords more or less rounded, isolated; prosocline axial riblets connecting granules of cords. On second whorl, P2 becoming weakly stronger than P3, with rounded well separated beads, larger than on other cords; P4 appearing clearly above suture, but partly covered by next whorl; space between cords fairly similar in size. On third whorl, beads of P1 become stronger, but weaker than those of P2; axial riblets becoming weak, finally disappearing. Subsequent whorls less convex, almost flat. On three next whorls, P2 still strongest, P1 and P3 similar, but beads of P3 becoming close packed and transversaly elongated whereas those of P1 staying rounded and separated; P2 and P3 forming keel; space between cords fairly smooth, larger than cords; distance between P3 and P4 smaller than gap separating P1 from P2 and P2 from P3. P4 clearly visible on last whorl, smooth, forming a secondary keel on periphery; beads of primary cords tend to be weaker and more transversaly elongated; smooth weak secondary cords S1,S2 and S3 occasionally appearing on some specimens, S3 slightly stronger, but still much weaker than P3. Aperture ovate, horizontally weakly elongated, with only weak lirae or even smooth within; outer lip rather thin at rim, rounded; inner lip thicker, with angle at meeting point with outer lip. Columella weakly arched, smooth; callus completely closing umbilicus, producing expansion at bottom. Base flat or weakly convex, with one or two smooth external strong cords and 3 or 4 large subgranular cords around umbilical area; area between two groups of cords fairly smooth or covered by 15 to 18 very weak, close packed, low cords.

Colour of protoconch and teleoconch white or pinkish white, slightly irridescent; rim of aperture and columella nacreous.

Operculum unknown.

	H	D	HA	H / HA	H / D
min	22.50	21.10	7.90	2.72	1.03
max	30.40	27.20	9.10	3.60	1.17
mean	27.07	24.15	8.48	3.20	1.12
standard deviation	2.42	1.64	0.60	0.29	0.04

Table 1. - *Calliostoma muriellae*. Shells measurements in mm (Madagascar) – sample of 11 specimens

Discussion

Calliostoma muriellae n.sp. is close to *C. (Otukaia) delli* McLean & Andrade, 1982 (Figs 5-6) from off Chile, but *C. delli* has a less elevated spire and smooth, not granular, spiral cords; moreover, the distance between P3 and P4 is similar as between P2 and P3 and distance between P1 and P3 is larger than in *C. muriellae*.

The new species slightly remember *C. (O.) eltanini* Dell, 1990, but this species from the Pacific-Antarctic Ridge is smaller and has a much more depressed spire; moreover, the whorls of *C. eltanini* are more convex, producing a shape that is not conoidal.

C. muriellae is also superficially similar to *C.(O.) alertae* Marshall, 1995 [= *C. (O.) blacki* (Dell, 1956)] from the New Zealand area, but *C. alertae* is characterized by a very weak P1 and a strong S2 that resemble to P2.

C. fonkii (Philippi, 1860), from off Chile and Peru, is different from the new species because it is maller, its P1 is the strongest cord, its P3 is smooth and its base bears only 6 or 7 cords; moreover, S1 and S2 are stronger than those of *C. muriellae*, when they are present.

Etymology

The new species is named after Murielle Willox, Belgium, an assistant collection manager of Guido Poppe, whom dynamism greatley contribute to the knowledge of molluscs.

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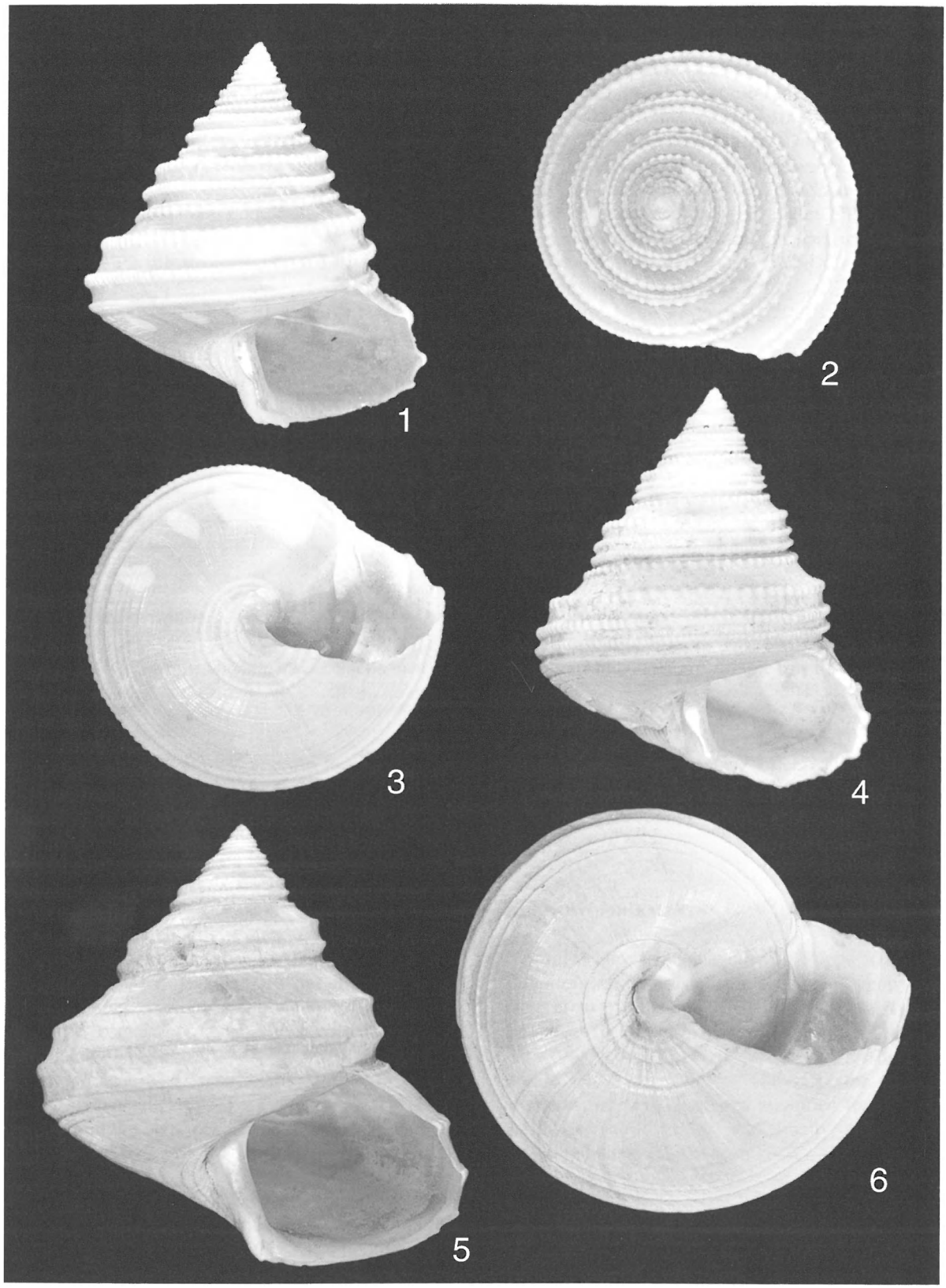

1-3. *Calliostoma (Otukaia) muriellae* n.sp. holotype IRSNB, Madagascar, off Majenga., 27.2 x 23.6 mm.
4. *C. (O.) muriellae* n.sp., paratype MNHN, Madagascar, off Majenga., 28.7 x 24.6 mm.
5-6. *C. (O.) delli* McLean & Andrade, 1982, Chile, off Quintero, 30.5 x 30.3 mm, coll. C. Vilvens.