Gloria Maris	56 (1)	20 - 23	Antwerp; 20 May 2017

A new record and a new species of *Calliostoma* (Gastropoda: Trochoidea: Calliostomatidae) from southwestern Mediterranean Sea and adjacent Atlantic area

Claude VILVENS (1) & Frank SWINNEN (2)

(1) Rue de Hermalle 113, B-4680 Oupeye, Belgium
Scientific Collaborator, Muséum national d'Histoire naturelle, Paris
vilvens.claude@skynet.be
(2) Eikstraat 13, B-3920 Lommel, Belgium
Scientific collaborator Royal Belgian Institute of Natural Sciences, Brussels & Museu de Historia Natural do Funchal, Madeira
f.swinnen.lommel@telenet.be

Keywords:GASTROPODA, CALLIOSTOMATIDAE, seamount, Gorringe Bank, *Calliostoma*, new species.

Abstract: New records of a known southwestern mediterranean **Calliostomatidae** species are provided from the Strait of Gibraltar and Gorringe Bank, extending its distributional area. A new species is described from the seamounts of the Gorringe Bank and compared with similar **Calliostomatidae** species.

Introduction: The authors had the opportunity to study malacological material collected by divers in the Gorringe Bank area (nowadays also referred to as Gorringe Ridge), off Portugal, between the Azores and the Strait of Gibraltar, along the Azores–Gibraltar fault zone. The marine life of seamounts of the Gorringe Bank has been studied for about 20 years (Oceana, 2005).

During this study, it appeared that some of the samples were new records of a known species while other specimens belong to a new species that is described in this paper.

Material and methods: Regarding the description methodology, the main conchological features used are (see Figure 1 below):
-general shape of the shell (depressed, high spired – conical, cyrtoconoidal, coeloconoidal);
-shape of the whorls (convex, concave, straight - with or without shoulder or keel);
-spiral cords of the whorls (onthogeny, number, beads, strength);
-spiral cords on the base (number, beads, distance between);
-shape of the aperture, the outer and the inner lip.

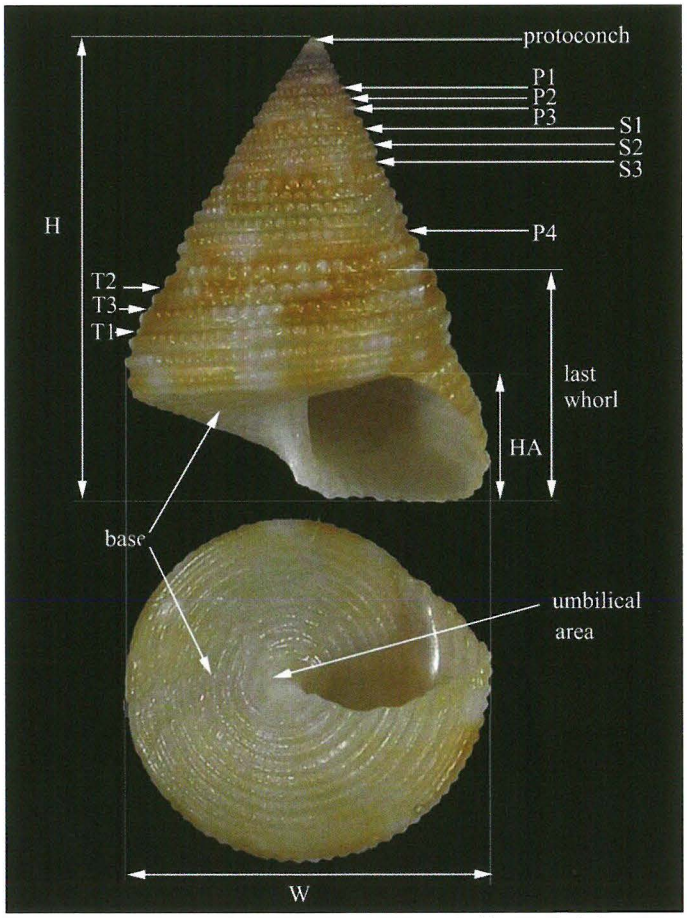


Figure 1: Features of **Calliostomatidae** shells; H: height; W: width; HA: height of the aperture; P1, P2, P3, ...: primary cords; S1, S2, S3, ...: secondary cords; T1, T2, ...: tertiary cords (shell : *Calliostoma chlorum* Vilvens, 2005, Fiji, BORDAU 1, stn DW1454, 13.6 x 10.4 mm).

Abbreviations:

Repositories:
IRSNB/KBIN: Institut royal des Sciences naturelles de Belgique / Koninklijk Belgisch Instituut voor Natuurwetenschappen.

Other abbreviations:
P1, P2, P3, ...: primary cords (P1 is the most adapical)
S1, S2, S3, ...: secondary cords (S1 is the most adapical)
lv: live-taken specimens present in sample
dd: not live-taken specimens present in sample

Systematics: We follow the classification suggested in WoRMS, based on the classification by Bouchet & Rocroi (2005) where **Calliostomatidae**, earlier treated as a subfamily of **Trochidae** (Hickman & McLean, 1990), with a few subfamilies such as Calliostomatinae and Thysanodontinae are now ranked as a family within the superfamily Trochoidea (besides true **Trochidae**, **Solariellidae** and others).

Superfamily **TROCHOIDEA** Rafinesque, 1815
Family **CALLIOSTOMATIDAE** Thiele, 1924
Subfamily **CALLIOSTOMATINAE** Thiele, 1924
Genus ***Calliostoma*** Swainson, 1840
Type species: *Trochus conulus* Linnaeus, 1758 (by s.d. Herrmannsen, 1846) – Recent, Mediterranean Sea.

Calliostoma funiculatum Ardovini, 2011
Figs 1-4

Calliostoma funiculatum Ardovini, 2011: 19-20, 5 figs.

Type locality: Egadi Islands, western Sicily, Italy, 70 m.

Material examined: Morocco, Gibraltar Strait, off Mediterranean coast. 80 m, 2 lv.

Distribution: Western Sicily, 70 m; Spain, off Malaga, 30-50 m; Gibraltar Strait, 80 m.

Remarks: The main characteristics of this species are:
-height up to 14.4 mm, width up to 12.1 mm;
-shell rather thin;
-an elevated spire, conical in shape, an angular periphery, with up to 8 whorls;
-protoconch about 200 µm wide, of 1-1.25 whorl;
-granular spiral cords following this ontogeny: on first teleoconch whorl, P1-2-3 appearing immediately, P3 the strongest; interspace between cords at least similar in size to cords; wide prosocline ribs in the intervals between cords, making the cords granular; interspace between ribs similar in size to cords;
-at end of second whorl, P4 emerging from suture, thinner than other cords;
-on 4th whorl, P1, P3 and P4 similar in size, P2 weaker and S2 appearing;
-on 5th whorl, S1 appearing, very thin, P4 becoming more or less smooth;
-on last whorl, all cords similar in size, except P1 slightly stronger and P4 much stronger; all cords smooth, except P1 subgranular;
-a very weakly convex to almost flat base, with about 14-15 smooth, rather thin spiral cords; distance between cords smaller than cords on the external part, similar in size on the internal part;
-anomphalous;
-a pinkish orange colour, first whorls reddish brown, P4 white or with irregular orange patches; protoconch orange; umbilical area white.

Calliostoma delongueville sp. nov.
Figs 5-6

Type material: Holotype: lv, 20.7 x 18.0 mm, IRSNB/KBIN I.G. 33454 / MT.3539; **Paratype 1:** lv, 17.9 x 15.1 mm, F. Swinnen collection; **Paratype 2:** dd, 15.6 x 14.3 mm, C. Delongueville collection.

Type locality: Portugal, off Sagres, Gorringe Bank, dived on algae reefs on rocky bottom, depth unknown.

Distribution: Only known from the type locality (living).

Diagnosis: A typical *Calliostoma* species with an elevated spire, 4 nearly smooth, rather tick spiral cords on the penultimate whorl, a weakly convex base with about 6 spiral cords and without umbilicus.

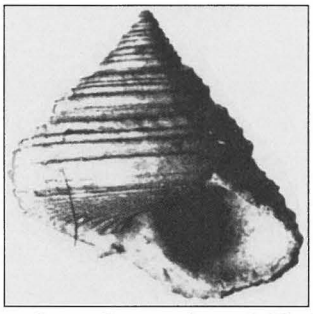
Description: Shell of medium size for the genus (height up to 20.7 mm, width up to 18.0 mm), higher than wide, conical in shape; spire elevated, height 1.2x width, 3.4x aperture height; subangular periphery; anomphalous. Protoconch about 320 µm wide, of 1.25 whorl, rounded, eroded in all samples; apical fold more or less straight without terminal varix. Teleoconch of up to 9.6 whorls weakly convex to more or less flat. Suture very poorly visible, not canaliculated. First whorl convex, with 3 cords P2, P3 and P4 appearing immediately, granular; distance between cords smaller than cords themselves. On second whorl, P1 appearing near mid-whorl; all cords similar in size, except P2 slightly stronger. On third

whorl, P1 and P2 still granular, P3 and P4 subgranular. On fourth whorl, all cords smooth, similar in size; distance between cords similar in size to cords. On next whorls, cords stronger and distance between them bigger than size of cords. On last whorl, S4 appearing, peripheral, weak. Aperture subelliptic, slightly transverse; outer lip rather thick, curved, with a rounded basal part, producing a rounded angle at meeting point with inner lip. Columella curved with an adapical angle, oblique, with a small terminal tooth; partly translucent, callus completely covering umbilicus. Base weakly convex, with half a dozen of low spiral cords, made subgranular by fine radial sculpture; distance between cords bigger than cords except the two most external cords.

Colour of teleoconch yellowish with darker orange flames; protococonch and first whorls pink.

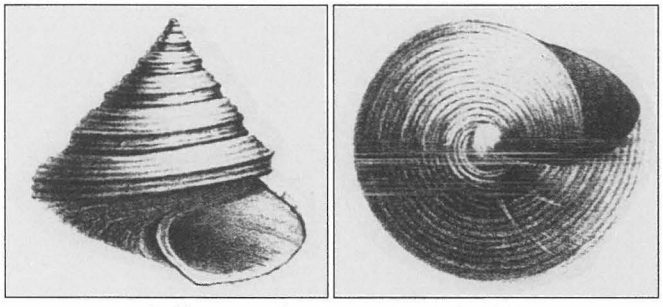
Operculum corneous, circular, multispiral with a short growing edge, light brown.

Discussion: The new species may be confused with *Calliostoma leptophyma* Dautzenberg & Fischer, 1896 from the Azores, but this similarly sized species is much more depressed, lacks the terminal small columellar tooth and has more numerous spiral cords on the base.



Calliostoma leptophyma Dautzenberg & Fischer, 1896 (from Dautzenberg & Fischer, 1896)

C. delonguevilleae sp. nov. resembles *C. laqueatus* Locard, 1897 from off Sahara, now considered a synonym of *C. leptophyma* Dautzenberg & Fischer, 1896, but this slightly taller species is wider than high with more numerous, thinner spiral cords on the whorls and on the base.



Calliostoma laqueatus Locard, 1897 (from Locard, 1898)

C. delonguevilleae sp. nov. is rather close to *C. funiculatum* Ardovini, 2011 from western Mediterranean Sea, but the new species has much more convex whorls, a subangular periphery, a different spiral cords ontogeny without S1 but with S4 on the last whorl and only 6 spiral cords on the base.

Etymology: Named after Christiane Delongueville, dynamic secretary of the Belgian Royal Malacological Society and well-known expert of the Mediterranean malacofauna.

Acknowledgmentes: We would like to thank P. Bouchet (MNHN) for access to the malacological resources of the MNHN and V. Héros (MNHN) for her help in finding various scientific informations.

References:

Ardovini R., 2011. *Calliostoma funiculatum* n. sp. (Gastropoda, Calliostomatidae) Sicilia occidentale, Isole Egadi. *Malacologia Mostra Mondiale* 71: 19-20

Bouchet, P. & Rocroi, J.P., 2005. Classification and nomenclator of gastropod families. *Malacologia* 47(1-2): 1-397.

Dautzenberg, P. & Fischer, H., 1896. *Dragages effectués par l'Hirondelle et par la Princesse Alice*. Extraits des Mémoires de la Société Malacologique de France pour l'année 1896.

Hickman, C.S. & Mc Lean, J.H., 1990. Systematic revision and suprageneric classification of trochacean gasteropods. *Natural History Museum of Los Angeles County Science Series* VI+169 pp.

Locard, A., 1897. *Expéditions scientifiques du Travailleur et du Talisman pendant les années 1880, 1881, 1882, 1883*. Mollusques testacés. Tome 1 et 2.

http://www.marinespecies.org WoRMS (World Register of Marine Species) (access on 2017-3-24)

http://malachia.com/topic/calliostoma-funiculatum-ardovini-2011 Associazione Naturalistica Malachia (access on 2017-4-20)

http://eu.oceana.org/en/publications/reports/seamounts-gorringe-bank Oceana organizatiion, providing the report The Seamounts of the Gorringe Bank (pdf file, 2005) (access on 2017-5-7)

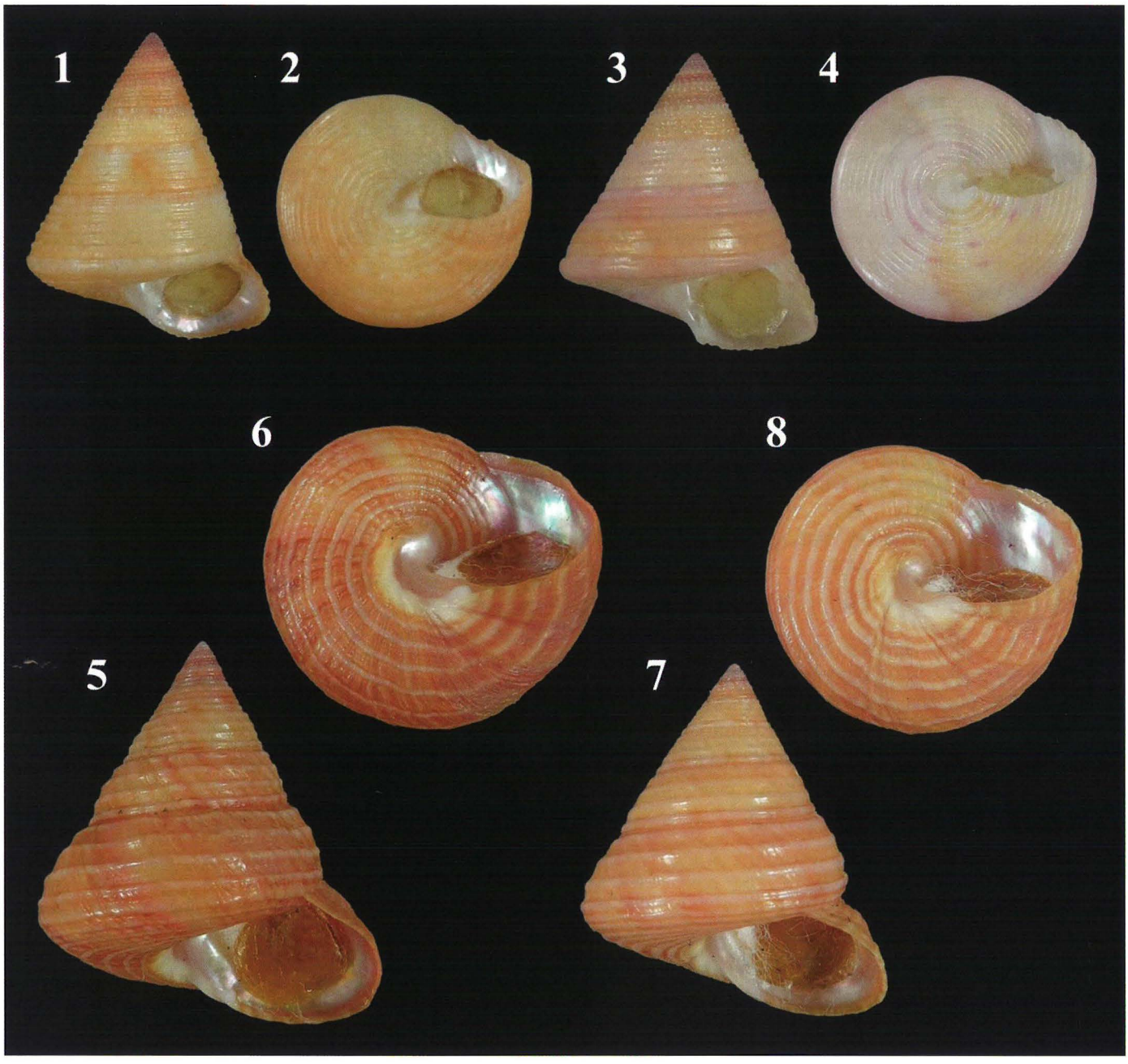


Plate:

1-4: ***Calliostoma funiculatum*** Ardovini, 2011. Morocco, Gibraltar Strait, off Mediterranean coast. 80 m.
1-2: 14.4 x 11.2 mm.
3-4: 14.0 x 12.1 mm.

5-8. ***Calliostoma delonguevilleae*** sp. nov. Portugal, off Sagres, Gorringe Bank.
5-6: Holotype, 20.7 x 18.0 mm.
7-8: Paratype 1, 17.9 x 15.1 mm.