About the variability of *Bolma jacquelineae* (Marche-Marchad, 1957) (Mollusca: Gastropoda: Turbinidae)

Frank Nolf

Pr. Stefanieplein, 43/8 – B-8400 Oostende
frank.nolf@pandora.be

Keywords: Mollusca, TURBINIDAE, *Bolma christianeae*, *Bolma jacquelineae*, W Africa, variability, local form.

Abstract: Nolf (2005) introduced the species name *Bolma christianeae* for specimens of a *Bolma* from Angola half a decade ago. These shells showed several differences with the similar *B. jacquelineae* (Marche-Marchad, 1957). However, after studying more than fifty specimens from São Tomé (Gulf of Guinea) it must be admitted that both forms belong to the same species. We can assume that the population living in waters off Angola is merely a local form of *B. jacquelineae*, living at a depth of about 75 m. Intermediate specimens between both species can occasionally be found at depths of 25-45 m in the Gulf of Guinea.

Abbreviations:

CFN: Private collection of Frank Nolf (Oostende, Belgium)
H.: Height.
L.: Length.
PEMARCO: Pêche Maritime du Congo.

Discussion: Shells of *B. jacquelineae* (Plate I, Figs 1-5; Plate II, Figs 6-10; Plate III, Figs 11-14; Plate IV, Figs 15-18; Plate V, Figs 19-22; Plate VI, Figs 23-26) and *B. christianeae* (Plate VII, Figs 27-29; Plate VIII, Figs 30-33; Plate IX, Figs 34-35) are both very solid, thick, trochiform, not umbilicated, generally slightly broader than high. The spire is blunt at the extremity, whorls straight or slightly concave. The last whorl takes about half of the total height of the shell. The protoconch is depressed, almost flat, smooth, carinated and composed of two-three whorls. The base is imperforated and decorated with about six concentric rows of small pale pink granulations. The columella is arched and contains a callosity at its base in juvenile specimens, which becomes a broad edge in adult shells. The aperture is oval and oblique and its anterior is nacreous. The operculum is ovate. The inner side is flat and yellowish brown, while the outer side is magenta red, bulbous and pustulose. The main difference between *B. christianeae* and *B. jacquelineae* consists in the spiral ornamentation of the whorls. The penultimate whorl of *B. christianeae* is provided with triangular spines while the last whorl has about 10-12 rows of triangular, sharp pointed spines, which are inclined forwards.
Specimens of *B. jacquelineae* have reduced to blunt nodules in the penultimate whorl and 15 to 20 pointed knobs in the last whorl. The subsutural area of *B. jacquelineae* is covered with a cord of irregular small knobs while in *B. christianeae* a second carina overlaps the suture with about 10 triangular spines, sloping down. The colour of *B. christianeae* is olive-green in the upper side of the whorls and reddish purple in the lower side. So far no other colour combinations have been found in specimens of *B. christianeae*. Shells from Sierra Leone, São Tomé and Principe Island (*B. jacquelineae*) tend to be paler and are generally greenish. Orange or magenta tinted shells are not frequent and one shell, i.e. about 2% of all the specimens, showed characteristics of both *B. christianeae* and *B. jacquelineae* (Plate V, Figs 21-22).

Obviously, interbreeding between animals of different populations is possible. Therefore, we can conclude that *B. christianeae* should no longer be regarded as a different species. Although the described morphological characteristics are constant in the populations living in the Angolese waters off Quicombo (13°49' E. - 11°19' S.) it should be appropriate to regard the specimens from Angola as an ecological form, i.e. *Bolma jacquelineae* forma *christianeae* Nolf, 2005. As far as known, no specimens have been found in waters off Cameroon, Gabon and the Republic of Congo till now. The population in Angola is living at the limit of its geographic distribution. As it is separated from other populations living off the islands in the Gulf of Guinea it could eventually evolve in a subspecies or a separate species later on.

Conclusion: After studying more then fifty specimens of *Bolma jacquelineae* from São Tomé it appears that a continuing cline can be observed between specimens of typical *B. jacquelineae* and *B. christianeae*. The latter can no longer be regarded as a separate species but merely as a local form of the former.
In the Gulf of Guinea intermediate specimens between both forms are observed.

B. jacquelineae (off Sierra Leone) and *B. christianeae* (off Angola) show very constant typical characteristics at the border of their geographic area.

Acknowledgements: Many thanks go to Jean-Etienne Ghyoot (Destelbergen, Belgium) who provided a lot of specimens of *B. jacquelineae* from São Tomé. Johan Verstraeten (Oostende, Belgium) made critical notes and useful remarks on the text.

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Geographic distribution of *Bolma jacquelineae* Marche-Marchad, 1957

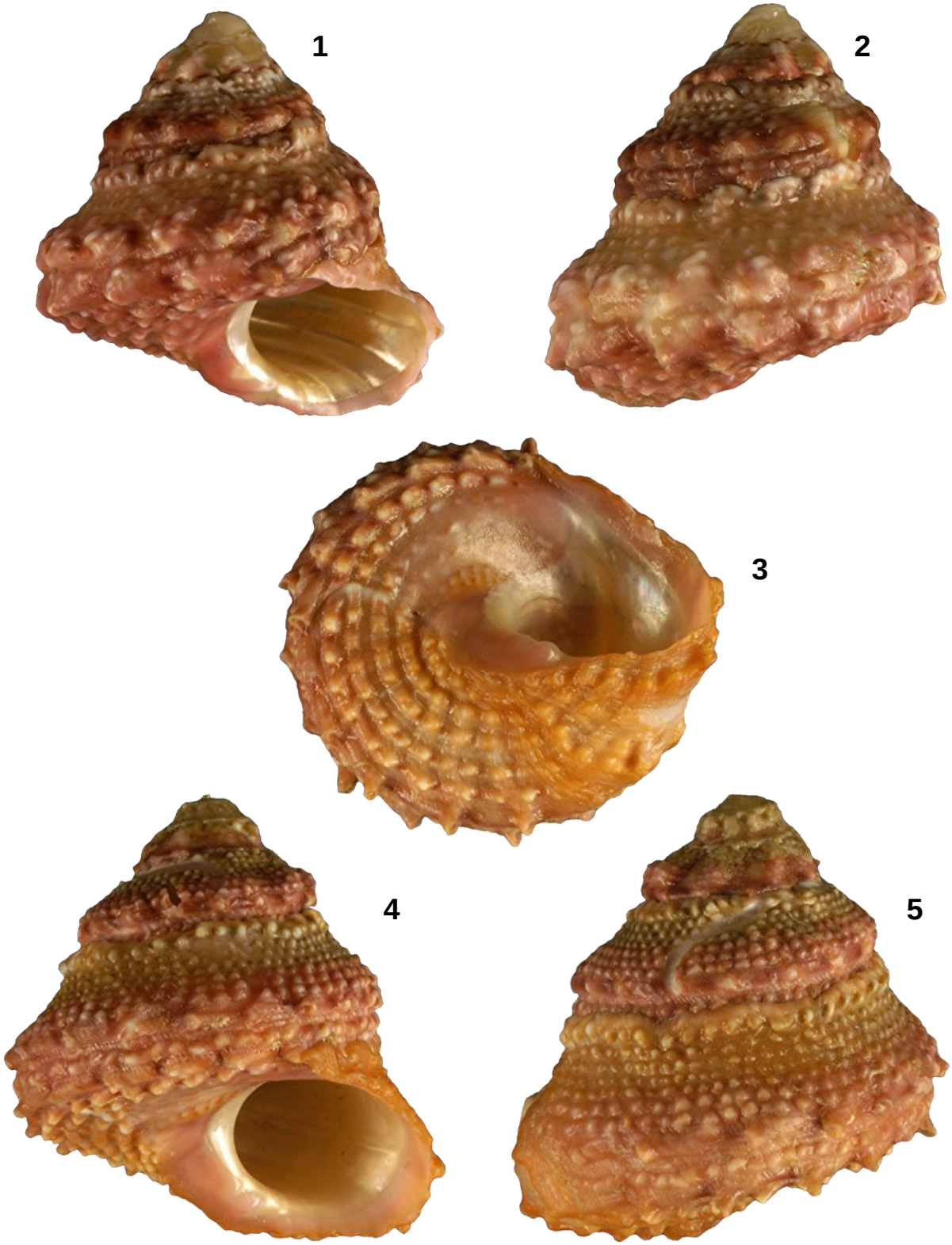


Plate I. Figs 1-5: *Bolma jacquelineae* (Marche-Marchad, 1957). Trawled by fishermen off Sierra Leone, W Africa. 1986. CFN; 1-2: H. 22.12 mm L. 23.25 mm; 3-5: H. 23.22 mm L. 23.13 mm.

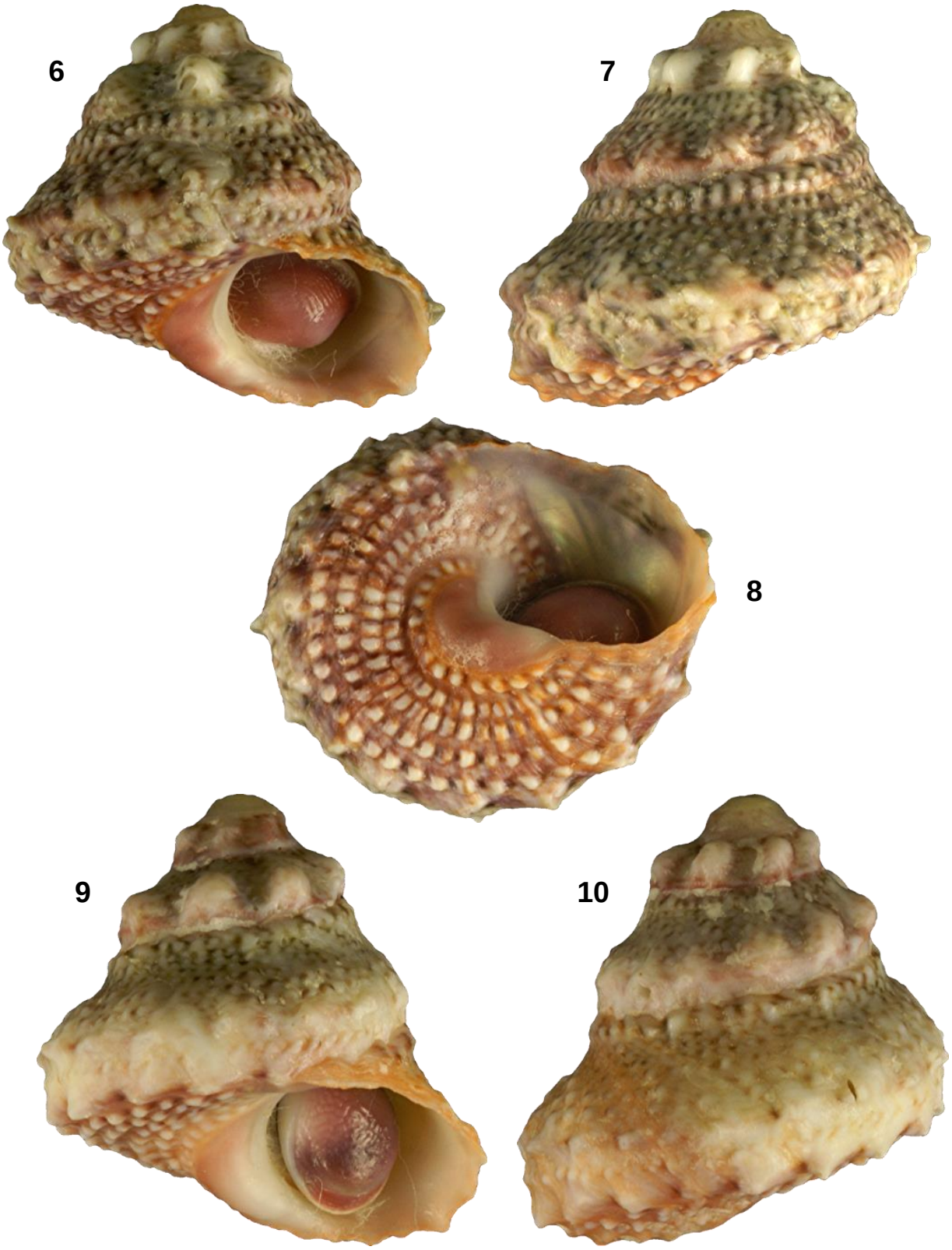


Plate II. Figs 6-10: *Bolma jacquelineae* (Marche-Marchad, 1957). Ilhas Rollas, São Tomé, Gulf of Guinea, W Africa. By diving at a depth of 45 m at night. September 2008. CFN; 6-8: H. 19.03 mm L. 22.08 mm; 9-10: H. 22.12 mm L. 23.30 mm.

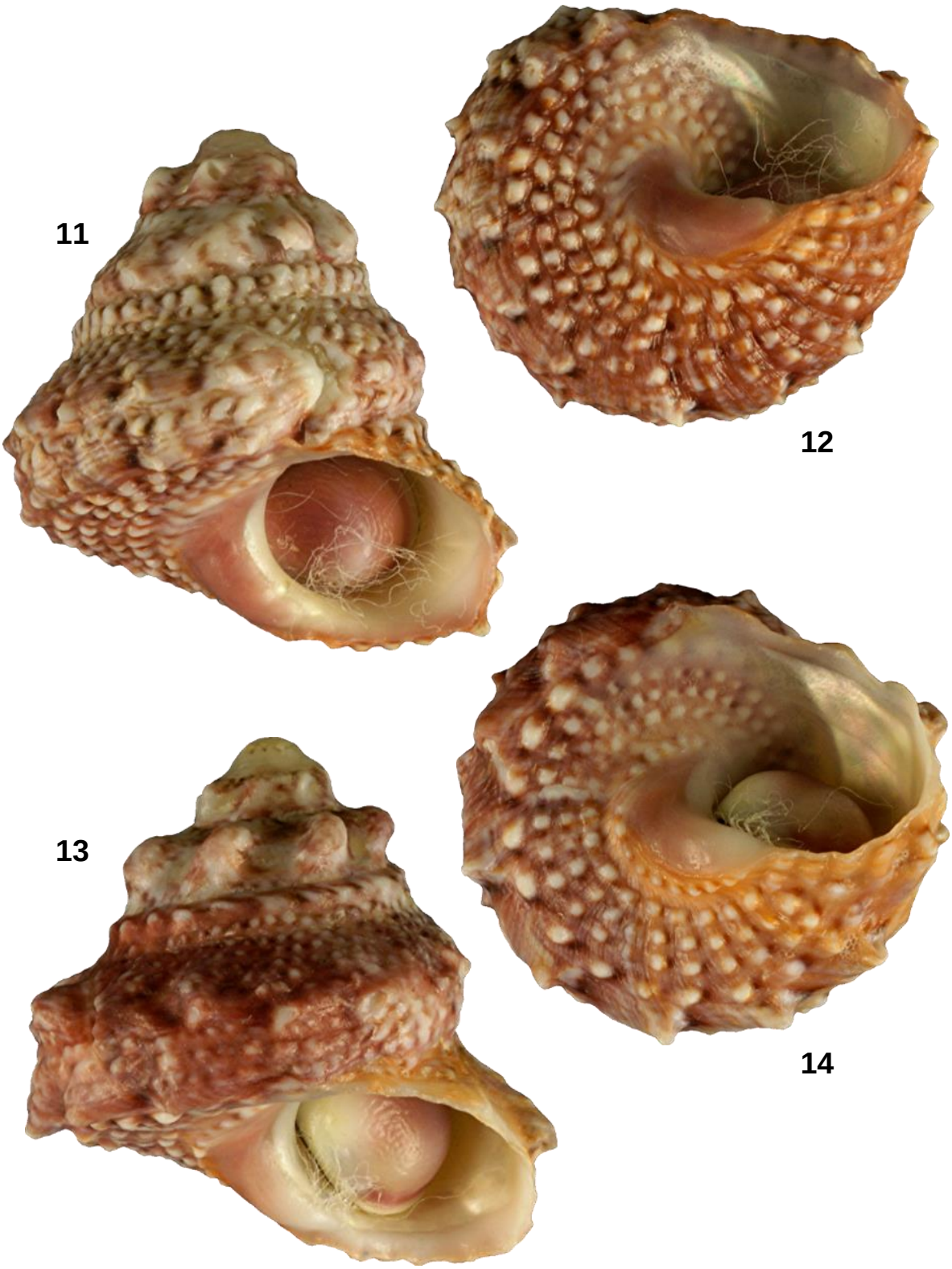


Plate III. Figs 11-14: *Bolma jacquelineae* (Marche-Marchad, 1957). Ilhas Rollas, São Tomé, Gulf of Guinea, W Africa. By diving at a depth of 45 m at night. September 2008. CFN; 11-12: H. 22.49 mm L. 21.98 mm; 13-14: H. 22.88 mm L. 22.67 mm.

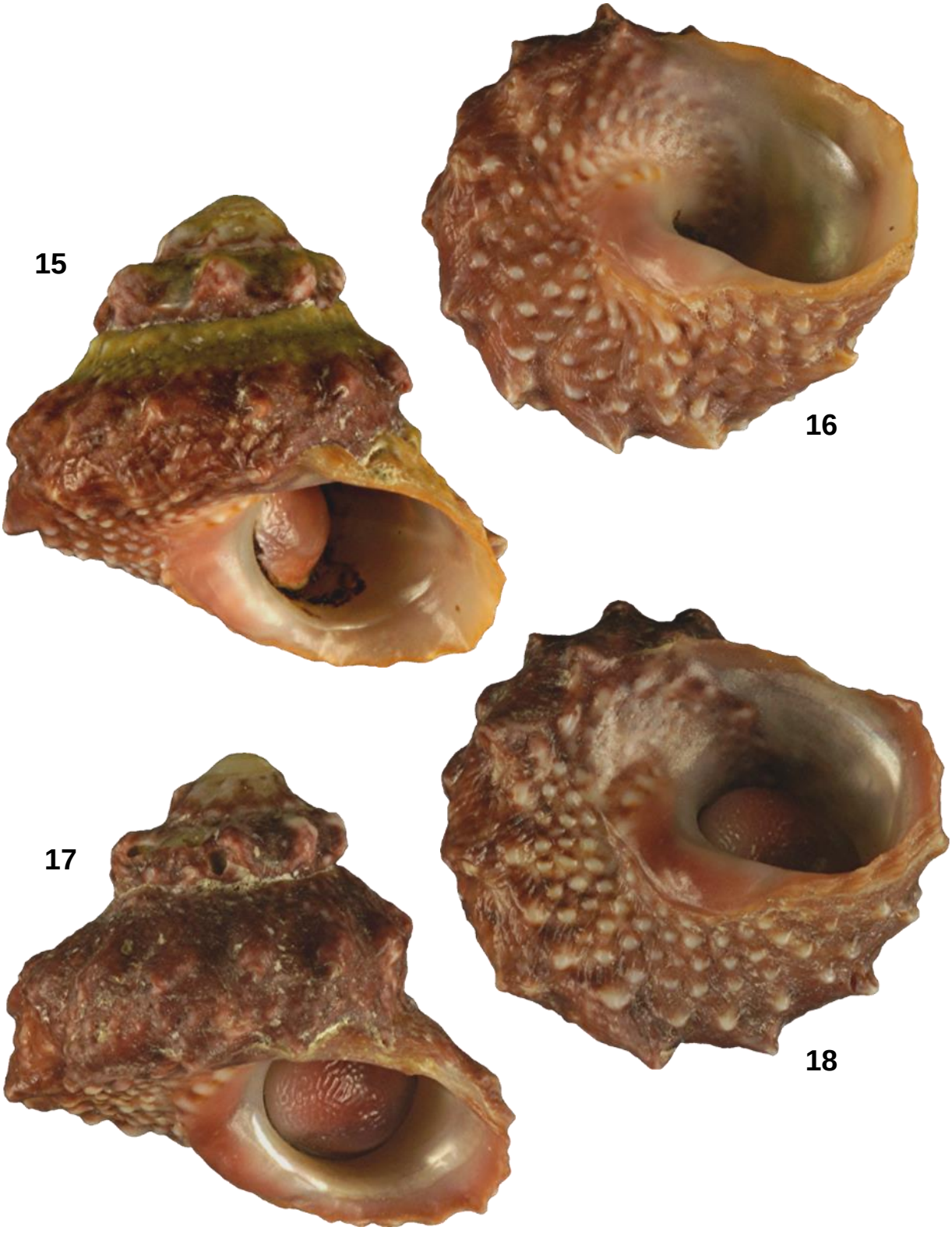


Plate IV. Figs 15-18: *Bolma jacquelineae* (Marche-Marchad, 1957). Ilhas Rollas, São Tomé, Gulf of Guinea, W Africa. By diving at a depth of 45 m at night. December 2009. CFN; 15-16: H. 19.67 mm L. 21.52 mm; 17-18: H. 20.23 mm L. 21.61 mm.

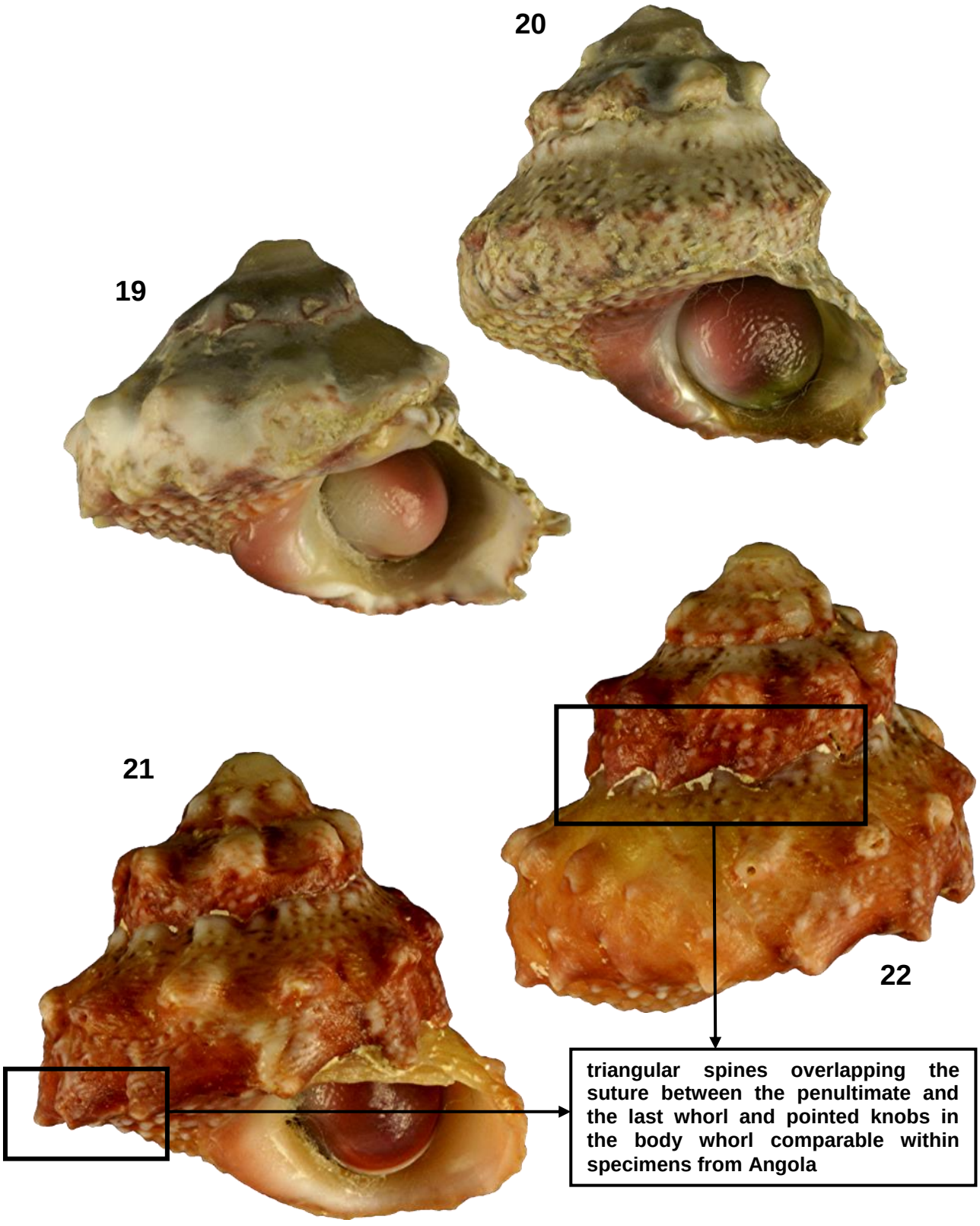


Plate V. Figs 19-22: *Bolma jacquelineae* (Marche-Marchad, 1957). Ilhas Rollas, São Tomé, Gulf of Guinea, W Africa. By diving at a depth of 45 m at night. December 2009. CFN; 19: H. 17.91 mm L. 23.61 mm; 20: H. 22.97 mm L. 24.32 mm; 21-22: H. 22.85 mm L. 24.07 mm.

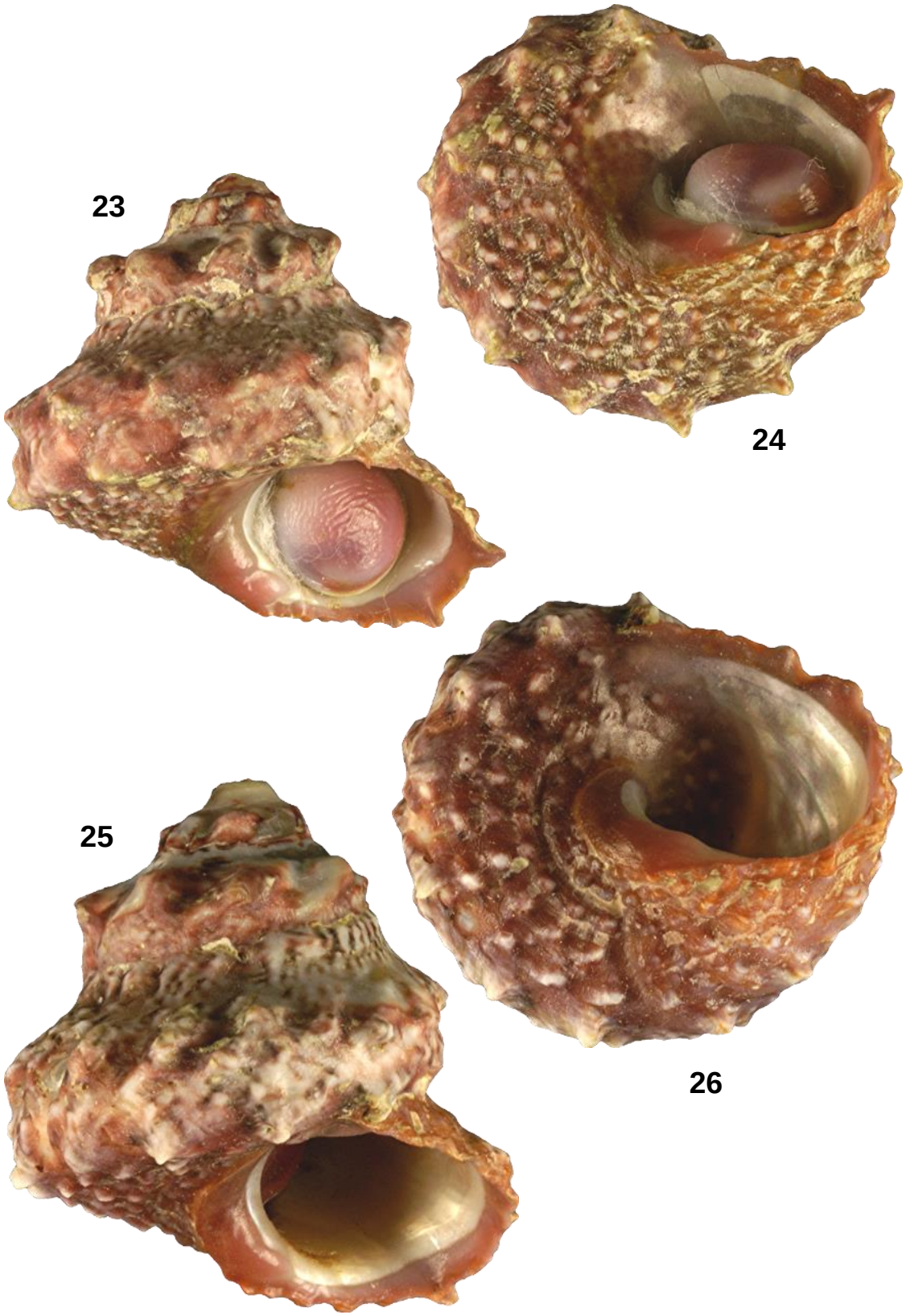


Plate VI. Figs 23-26: *Bolma jacquelineae* (Marche-Marchad, 1957). Ilhas Rollas, São Tomé, Gulf of Guinea, W Africa. By diving at a depth of 45 m at night. December 2009. CFN; 23-24: H. 25.44 mm L. 27.52 mm; 25-26: H. 27.14 mm L. 26.25 mm.

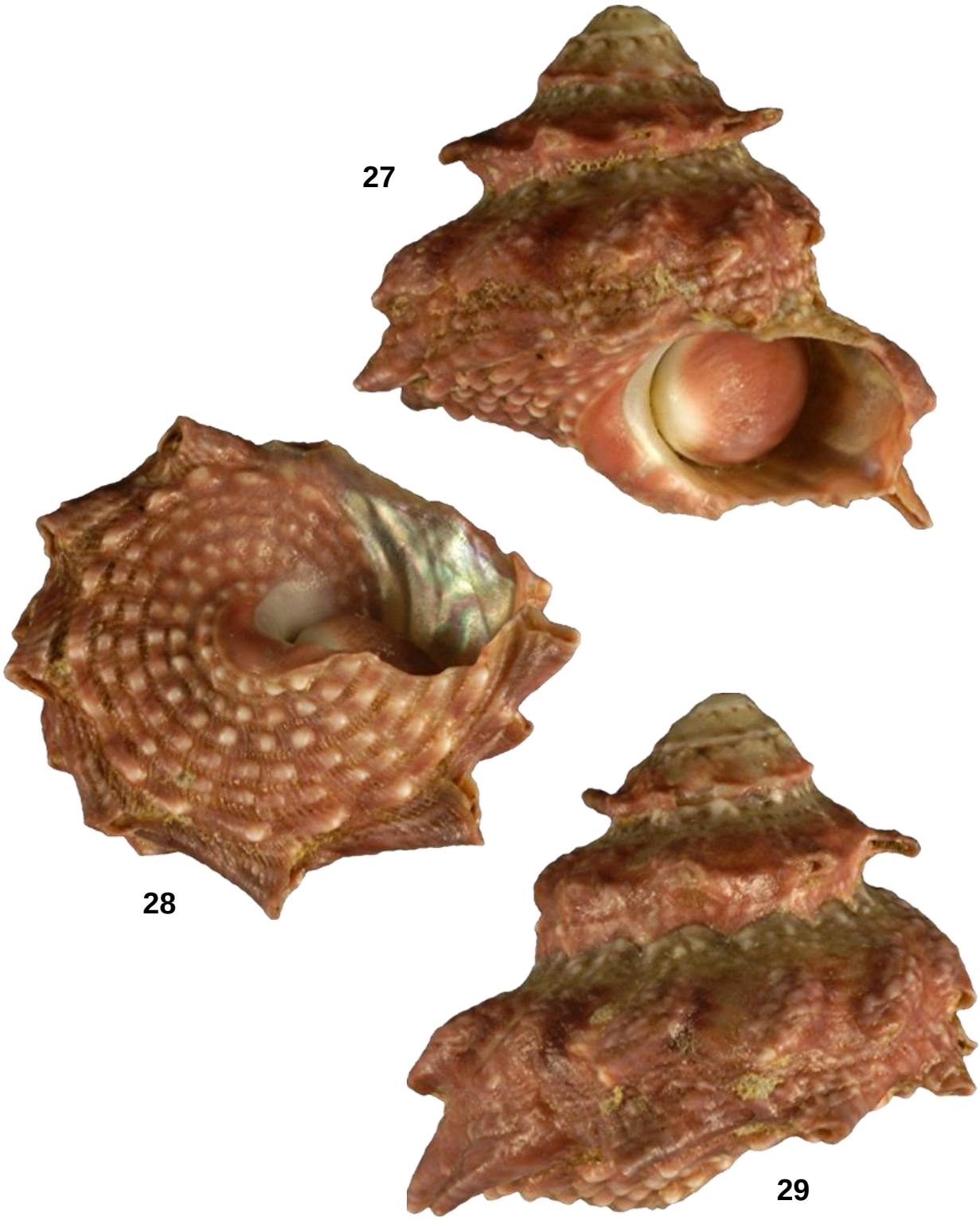


Plate VII. Figs 27-29: *Bolma jacquelineae* forma *christianeae* Nolf, 2005. Trawled by Belgian fishermen (PEMARCO) off Quicombo, Angola. On stones at a depth of 73 m. 1969. CFN. Paratype 4. H. 18.83 mm L. 22.21 mm.

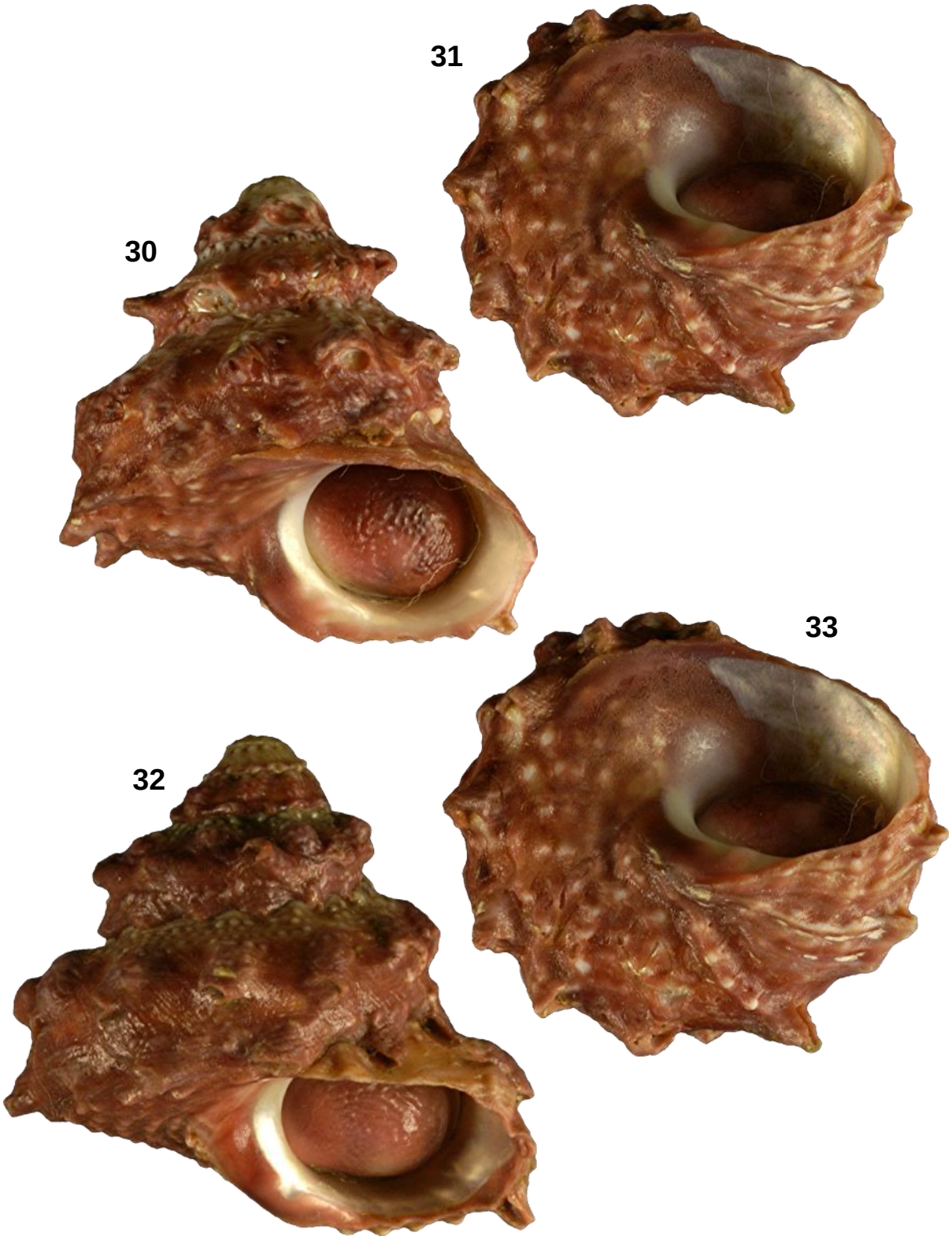
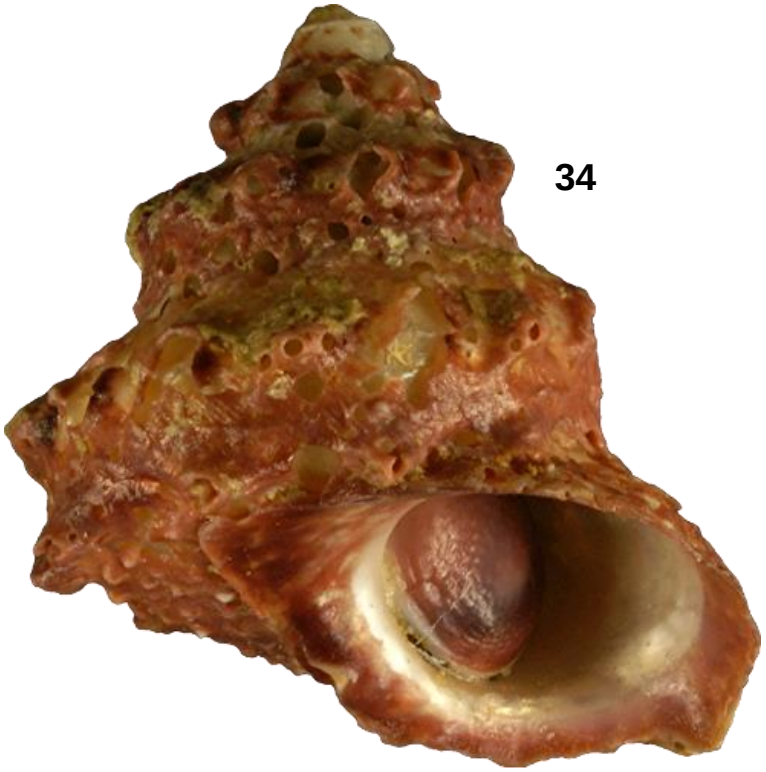


Plate VIII. Figs 30-33: *Bolma jacquelineae* forma *christianeae* Nolf, 2005. Trawled by Belgian fishermen (PEMARCO) off Quicombo, Angola. On stones at a depth of 73 m. 1969. CFN; 30-31: Paratype 2. H. 24.20 mm L. 24.58 mm; 32-33: Paratype 6. H. 24.48 mm L. 26.75 mm.



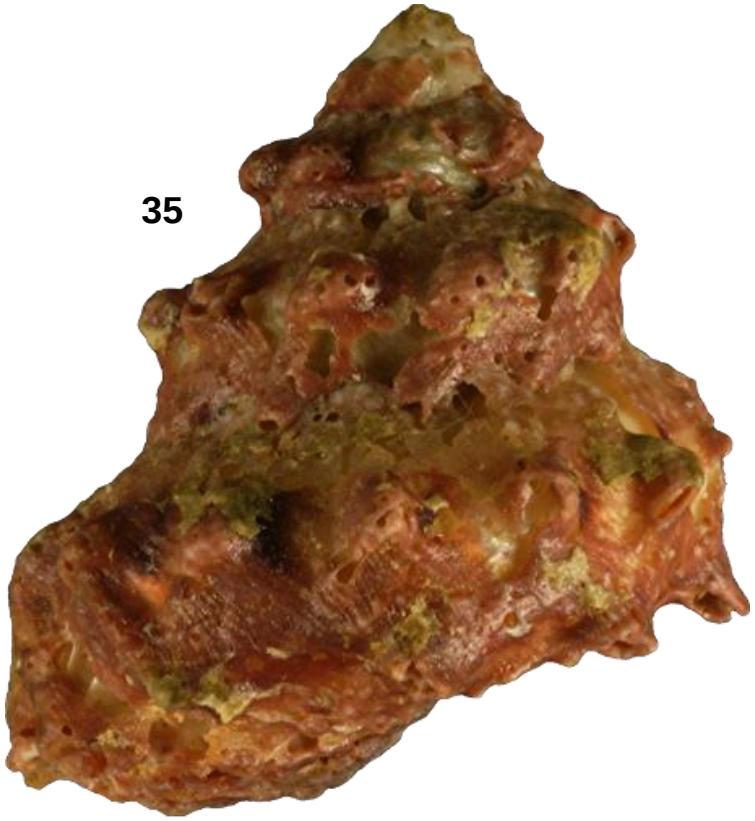


Plate IX. Figs 34-35: *Bolma jacquelineae* forma *christianeae* Nolf, 2005. Trawled by Belgian fishermen (PEMARCO) off Quicombo, Angola. On stones at a depth of 73 m. 1969. CFN. Paratype 7. H. 27.48 mm L. 27.61 mm.

Fusinus rostratus (Olivi, 1792) (Mollusca: Gastropoda: Fasciolariidae) a rock dweller in the intertidal zone of the Bay of Morlaix, Brittany, France

Frank Nolf

Pr. Stefanieplein, 43/8 – B-8400 Oostende
frank.nolf@pandora.be

Keywords: Mollusca, FASCIOLARIIDAE, *Fusinus rostratus*, invader, Brittany, France, Mediterranean Sea, intertidal zone.

Abstract: Recently (2006-2008), specimens of *Fusinus rostratus* (Olivi, 1792) were found in the Bay of Morlaix (Brittany, France) (Le Duff, Grall & Quiniou, 2008; Nolf, 2009). These specimens were obtained from beam trawlers at a depth of 7-9 m on a bottom of dead shells or muddy maerl. In August 2010 the author caught one live specimen in about the same area at low tide.

Abbreviations:
CFN: Private collection of Frank Nolf.

Discussion:
Fusinus rostratus (Olivi, 1792) is a habitant of the Mediterranean Sea. It is a common shell in the northern and central Adriatic Sea and the Strait of Sicily, but it was also recorded from Algarve (Portugal), the Canaries (Poppe & Goto, 1991) and also from the Moroccan coasts (Pasteur-Humbert, 1962; Ardovini & Cossignani, 2004). Recently, it was also found off Galicia, Spain (Horro & Rolán, 2007). The southernmost limit seems to be North Angola (Nolf, 2009).
The report by Le Duff et al. (2008) was the first one for the presence of *F. rostratus* in North Atlantic waters. This looks rather surprising but it can be explained by introduction via oyster cultures, though the exact origin is unknown till now.
F. rostratus lives at a depth of at least 20 m in the Mediterranean Sea. In the Bay of Morlaix the specimens were caught by beam trawlers at about 10 m in August 2006, spring and October 2007. The animals lived on a heterogeneous-mud bottom of *Crepidula fornicatus* (Linnaeus, 1758) and dead maerl fragments mixed with mud.

A live specimen was found by the author in the intertidal zone of Ile Callot (Bay of Morlaix, Brittany, France) on 12 August 2010. It was collected at the edge of a small rock covered with a few *Enteromorpha* sp. among specimens of *Gibbula pennanti* (Philippi, 1836) and *G. umbilicalis* (da Costa, 1778). On nearby rocks *Laminaria* sp. was dominantly present.
Although only one specimen was collected its presence in an intertidal area is rather surprising.

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The intertidal zone of Ile Callot, Bay of Morlaix, Brittany, France: rocks covered with kelp (*Enteromorpha* sp., *Laminaria* sp.)

***Fusinus rostratus* on the edge of a rock at low tide**

***Fusinus rostratus* (Olivi, 1792). Ile Callot, Bay of Morlaix, Brittany, France. On the edge of a small rock in the *Laminaria*-area at low tide. 12 August 2010. 39.05 mm. CFN. Uncleaned specimen left and middle, the cleaned shell right.**

Ile Callot, Bay of Morlaix, Brittany, France

Location of the presence of *F. rostratus*

Some remarks about *Phenacovolva patriciae* Nolf, 2008 (Mollusca: Gastropoda: Ovulidae)

Frank Nolf

Pr. Stefanieplein, 43/8 – B-8400 Oostende
frank.nolf@pandora.be

Keywords: Mollusca, OVULIDAE, *Phenacovolva patriciae*, holotype.

Abstract: The present paper makes clear that the holotype of *Phenacovolva patriciae* is deposited in the RBINS and not in the MNHN as wrongly stated by Lorenz & Fehse (2009).

Abbreviations:

CFN: Private collection of Frank Nolf, Oostende, Belgium.
MNHN: Muséum national d'Histoire naturelle, Paris, France.
RBINS: Royal Belgian Institute for Natural Sciences, Brussels, Belgium.

Discussion: Lorenz & Fehse (2009) figured the holotype of *Phenacovolva patriciae* on plate 126, fig. 5 as deposited in the MNHN. In fact, the type is registered and catalogued in the DaRWIN database of the RBINS with the code MT2299. The label mentions the following locality data: 'Luanda Island, Angola. Dredged by fishermen. On *Gorgonia* sp. at a depth of 50 m. 1974. 11.42 mm' (and not '*approx. 13 mm*' as noted by Lorenz & Fehse).

In the original description (Nolf, 2008) the author classified this species in the genus *Phenacovolva.* His opinion has been based upon the typical characteristics such as the narrow lanceolate terminal processes at either end of the shell and the rather long terminal projections. Lorenz & Fehse (2009) preferred to use the genus *Neosimnia*, used for shells with a slight funicular cord and very minor dorsally striations. In fact, *P. patriciae* is nearly smooth and the curling posterior can be observed in most species of the genus *Phenacovolva*.

Moreover, it is obvious that only figs 4, 5 and 6 on plate 126 in '*The Living Ovulidae*' represent the real *Phenacovolva patriciae*. Figs 1, 2 and 3 on the same plate may prove to be another species, probably not yet described.

References:

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Nolf, F., 2008. A forgotten species from Angola, described as *Phenacovolva patriciae* (Mollusca: Gastropoda: Ovulidae). *Neptunea*, **7**(1): 1-6.

***Phenacovolva patriciae* Nolf, 2008**
Holotype (RBINS, code MT2299)

Europicardium nolfi (Mollusca: Bivalvia: Cardiidae) a new species from Angola

Frank Swinnen

Lutlommel, 10B, B-3920 Lommel, Belgium
f.swinnen@skynet.be

Keywords: Mollusca, CARDIIDAE, *Europicardium*, new taxon, W Africa.

Abstract: Since more than forty years (1966) an aberrant form of *Europicardium caparti* is present in the collection Nolf (Oostende, Belgium). This specimen was trawled by Belgian fishermen working for the PEMARCO in the North of Angola. A decade ago another specimen was obtained from Mussulo Bay by a Portuguese shell collector. It turned out that these shells belong to an undescribed species that can only be confused with *E. caparti* (Nicklès, 1955).

Abbreviations:

CFN: Private collection of Frank Nolf, Oostende, Belgium.
CFS: Private collection of Frank Swinnen (Lommel, Belgium)
H.: Height.
L: Length.
MMF: Museuo Municipal do Funchal, Madeira, Portugal.
MNHN: Muséum national d'Histoire naturelle, Paris, France.
NMR: Natuurhistorisch Museum Rotterdam, The Netherlands.
PEMARCO: Pêche Maritime du Congo.
RBINS: Royal Belgian Institute for Natural Sciences, Brussels, Belgium.
RMNH: Nationaal Natuurhistorisch Museum Naturalis, Leiden, The Netherlands.

Type material:

Holotype: Mussulo Bay, Luanda, Angola. Trawled at a depth of 20-25 m. In sand. 12 December 1998. H. 41.03 mm L. 44.45 mm. MMF (41270). Ex CFS.
Pl. II, Figs 3-8; Pl. III, Figs 9-13.
Paratype: Ambriz, Angola. Trawled by Belgian fishermen (PEMARCO) at a depth of 30 m 1966. H. 42.36 mm L. 43.05 mm. CFN.
Pl. I, Figs 1-2.

Introduction: The genus *Europicardium* was introduced by Popov (1977) and was originally represented by four fossil species from Europe and north-west Africa (Miocene to Pliocene) and by two single Recent species, namely *E. caparti* (Nicklès, 1955) and *E. serrulata* (Deshayes, 1855) (= *Cardium kobelti* von Maltzan, 1885).

Type species of the genus: *Europicardium multicostatum* (Brocchi, 1814). The genus has right suboval anterior cardinal teeth, which are not directly above the socket but are situated slightly anterior of it. The tooth does not hang down over the socket opening. It has simple spines early in ontogeny. Midway through ontogeny there is a rapid shift from knob-like spines emanating from the top of the ribs to twisted frills emanating from the posterior edge of the ribs. It has twisted frills that appear to be heavily imbricated and fused individual spines.

Description:

***Europicardium nolfi* sp. nov.**

(Pl. I, Figs 1-2; Pl. II, Figs 3-8; Pl. III, Figs 9-13; Pl. IV, Figs 14-17; Pl. V, Figs 18-23; Pl. VI, Figs 24-27; Pl. VII, Figs 28-31, Pl. VIII, Figs 32-35)

The shell is globular, inequilateral, thick and wider than high. The outline is somewhat circular, angular and ovate-quadrate, especially the anterior margin. The umbo is rough and the ribs are slightly visible throughout the inner side of the shell. Each valve has about 50 narrow ribs [50 + 1 second rib (last posterior rib) – 51 + 1 second rib] separated by wider interspaces. The edge of the ribs carries small low lamelliform scales, which are most prominent posteriorly and anteriorly. From rib 9-11 on the anterior side the direction of the setting changes and results in the formation of a continuous crest with a helicoidal ornamentation, overlapping the interspaces between nearby ribs. At the posterior side the scales loose this appearance and become more spinose, especially on the last ribs. The hinge plate is long and broad and its posterior end is pink coloured. The right valve has two small cardinal teeth, the lowest one being the strongest, two lateral anterior teeth, the highest being very weak, and one strong lateral posterior tooth. The left valve possesses two small cardinal teeth, the highest one being very weak, one very strong lateral anterior tooth and one smaller lateral posterior tooth.

The colour is yellowish white scattered with pink zigzag markings. The umbo is pinkish orange. The interior is glossy, yellowish pink in the upper part and creamy white in the lower area. The muscular scars are nearly circular.

Measurements: H. 41-42 mm L. 43-45 mm.

Derivation of name: The name is attributed in honour of Frank Nolf (Oostende, Belgium) who first remarked the differences with the similar *Europicardium caparti* (Nicklès, 1955).

Habitat: In sand at a depth of 20-30 m.

Locus typicus: North Angola.

Geographic range: This species seems restricted to North Angola (Ambriz - Mussulo Bay).

Discussion: The new species can only be confused with ***Europicardium caparti* (Nicklès, 1955)**, living in the same area. The latter is relatively thin but solid, a little longer than high. The shell is heart-shaped, globular, inequilateral, the posterior part being more developed than the anterior part. About 49-54 fine ribs are covered with thin, low spines, slightly rounded, little pronounced and separated with narrower interstices. The spines are most prominent posteriorly and anteriorly. The edge of the ribs is crowded with a very fine and fragile ornamentation of small spines looking as rounded pearls, brilliant and clearly separated from themselves. From rib 10-11 these pearls become oval standing obliquely to the ribs and get comma-like appearances (like golf clubs) merging together when reaching the margin of a valve. They become smaller in the ventral border, forming an undulated continuing crest. At the posterior side they loose their brilliant character and get a pinkish and spirally appearance. The beaks are adjacent, small, glossy and slightly turned forward fairly extending above the hinge plate. Just in front of the beaks, the border of the valves is sinuous and thickened. Behind the short ligament, the right valve is slightly projecting above the left valve. The hinge plate of the right valve is very high and elevated giving the extreme posterior-dorsal margin of the shell an irregular appearance. The internal border is deeply crenulated. The right valve has two small cardinal teeth, the lowest one being the strongest, two lateral anterior teeth, the highest being very weak, and one large lateral posterior tooth. The left valve possesses two small cardinal teeth, the highest one being very weak, one strong lateral anterior tooth and one smaller lateral posterior tooth. The colour is creamy white with rusty brown dots especially at the upper part of the shell. Juvenile specimens tend to be similar to *Fulvia serrulata* (Deshayes, 1855) because of the irregular brown spots on a white background. However, *E. caparti* has a very conspicuous rib sculpture, which is absent in the genus *Fulvia*.
The interior is glossy, slightly ribbed, white and tinted with pale yellow or pink below the beaks. The muscular scars are oval and slightly visible.
The height is about 50 mm.
Distribution: Western Africa, from Senegal to Angola. Always found in deeper water from about 50 m to considerable depths.

E. caparti appears to be a rather variable species. Specimens from the Cape Verde Islands are more globular and less inequivalve. The outline and the H./L. are different from normal *E. caparti*. I here refer to a specimen in NMR "*Fulvia ?Loxocardium caparti* (Nicklès, 1955)". Cape Verde Isl., SW of Boa Vista, 15°55' N – 23°06' W, depth 100 m, shell bottom; rectangular dredge. CANCAP 6.071, 13.06.1982. Ex coll. RMNH Leiden (5308); ex coll. Onverwagt. H. 46.4 mm; L. 44.1 mm." (pers. comm. by J.J. ter Poorten to F. Nolf; Pl. VIII, Figs 32-35 by ter Poorten). More samples of globular specimens collected by the '*Mercator*' (Capart, 1951) in the Gulf of Guinea, Gabon and Angola have been found in the collections of the RBINS. It mostly concerns broken or single valves. More extensive study about these specimens is needed to elaborate if they really belong to *E. caparti* or eventually to another undescribed species.
The following is a short enumeration of the most important differences between *E. nolfi* and *E. caparti*. ***E. nolfi*** has:
- a heavier shell, *E. caparti* is lighter and more fragile;
- a more angular outline, especially the anterior margin, compared with the more oval, elongate form of *E. caparti*;
- beaks that are not so extending from the hinge plate as within *E. caparti*;
- a lower H./L.-ratio than within *E. caparti* (an average of 0.95 compared to 1.06);
- interspaces between the ribs deeper and wider than within *E. caparti*;
- a rib sculpture that consists of dull lamelliform scales instead of oval glossy pearls; the crest of scales overlaps the interspaces between the ribs in the anterior part; scales in the posterior part change into rather coarse, blunt, white spines (pinkish coloured within *E. caparti*);
- a broader and longer hinge plate that is much smaller within *E. caparti*;

- a pink coloured umbo and ligamental nymph (whitish within *E. caparti*, which possesses a nearly smooth umbo);
- a very strong lateral anterior tooth, broader than within *E. caparti*;
- an inner margin that is more incised compared with *E. caparti*.

Conclusion: There are enough differences between both forms to conclude that *Europicardium nolfi* is a separate species with a range restricted to waters off Angola. *E. caparti* occurs in a wider range, extending from Senegal to Angola. Both species are found on a shell bottom at an average depth of 20-30 m.

Acknowledgements: Special thanks go to Frank Nolf (Oostende, Belgium) for drawing my attention to the differences between the new species and the *Europicardium caparti*. He has been very helpful as a kind of coach in taking photographs and making constructive comments and corrections in collaboration with Johan Verstraeten (Oostende, Belgium). Rose Marie Sablon and Thierry Backeljau (both from the RBINS) made the Dautzenberg-collection and the wet collections from the '*Mercator*'-expeditions available for intensive research. Jan Johan ter Poorten (Amsterdam, The Netherlands) was so kind to provide photographs and additional information to Frank Nolf.

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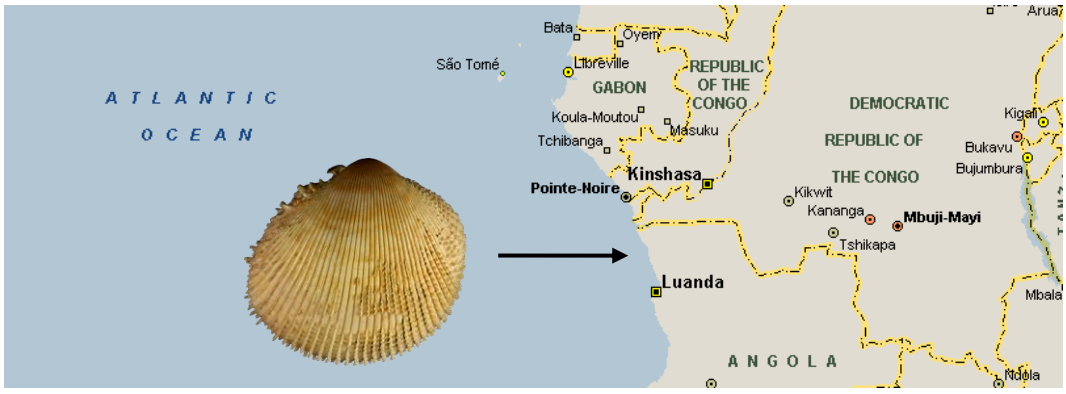


Location of *Europicardium nolfi*

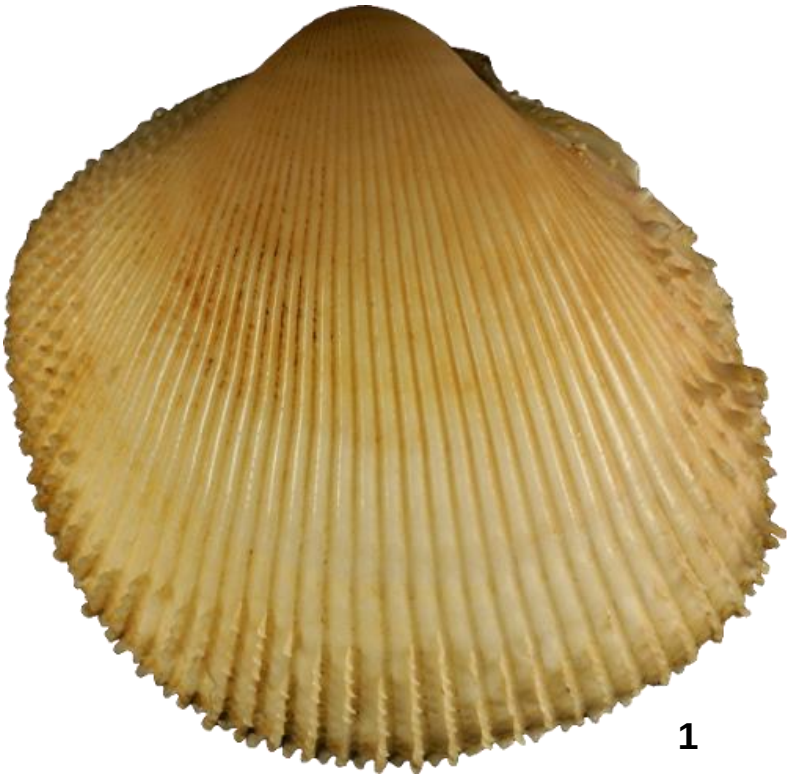
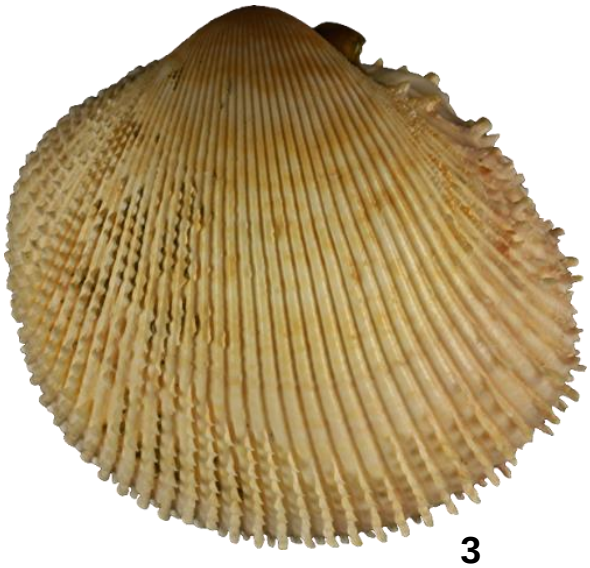
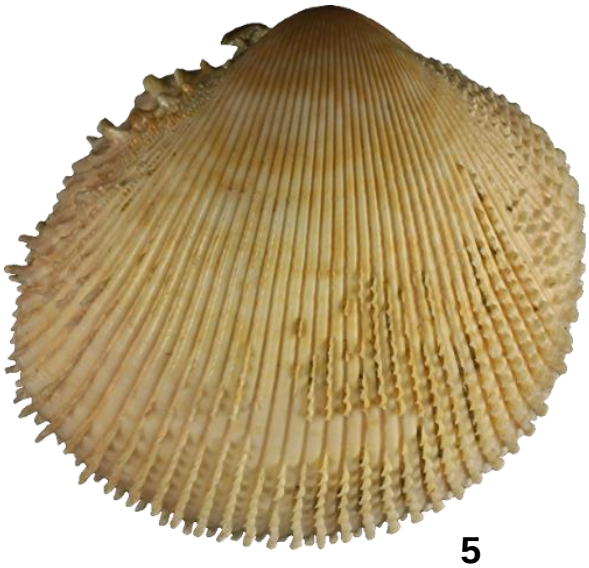


Plate I. Figs 1-2: *Europicardium nolfi* Swinnen, 2010. Ambriz, Angola. Dredged by Belgian fishermen (PEMARCO) at a depth of 30 m. 1966. Paratype (CFN). H. 41.82 mm L. 43.05 mm; 1: left valve; 2: right valve.





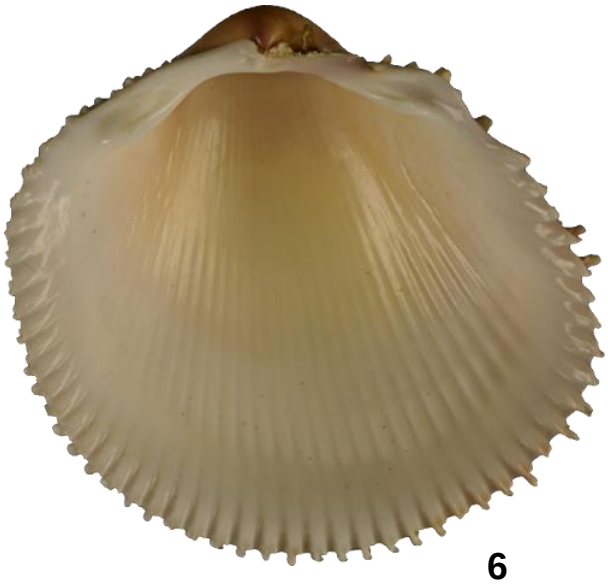


Plate II. Figs 3-8: *Europicardium nolfi* Swinnen, 2010. Mussulo Bay, Luanda, Angola. Trawled at a depth of 20-25 m. In sand. 12 December 1998. Holotype (MMF - n° 41270; ex coll. Frank Swinnen, Lommel, Belgium). H. 41.03 mm L. 44.45 mm; 3-4: left valve; 5-6: right valve; 7: cardinal and lateral teeth of the left valve; 8: cardinal and lateral teeth of the right valve.

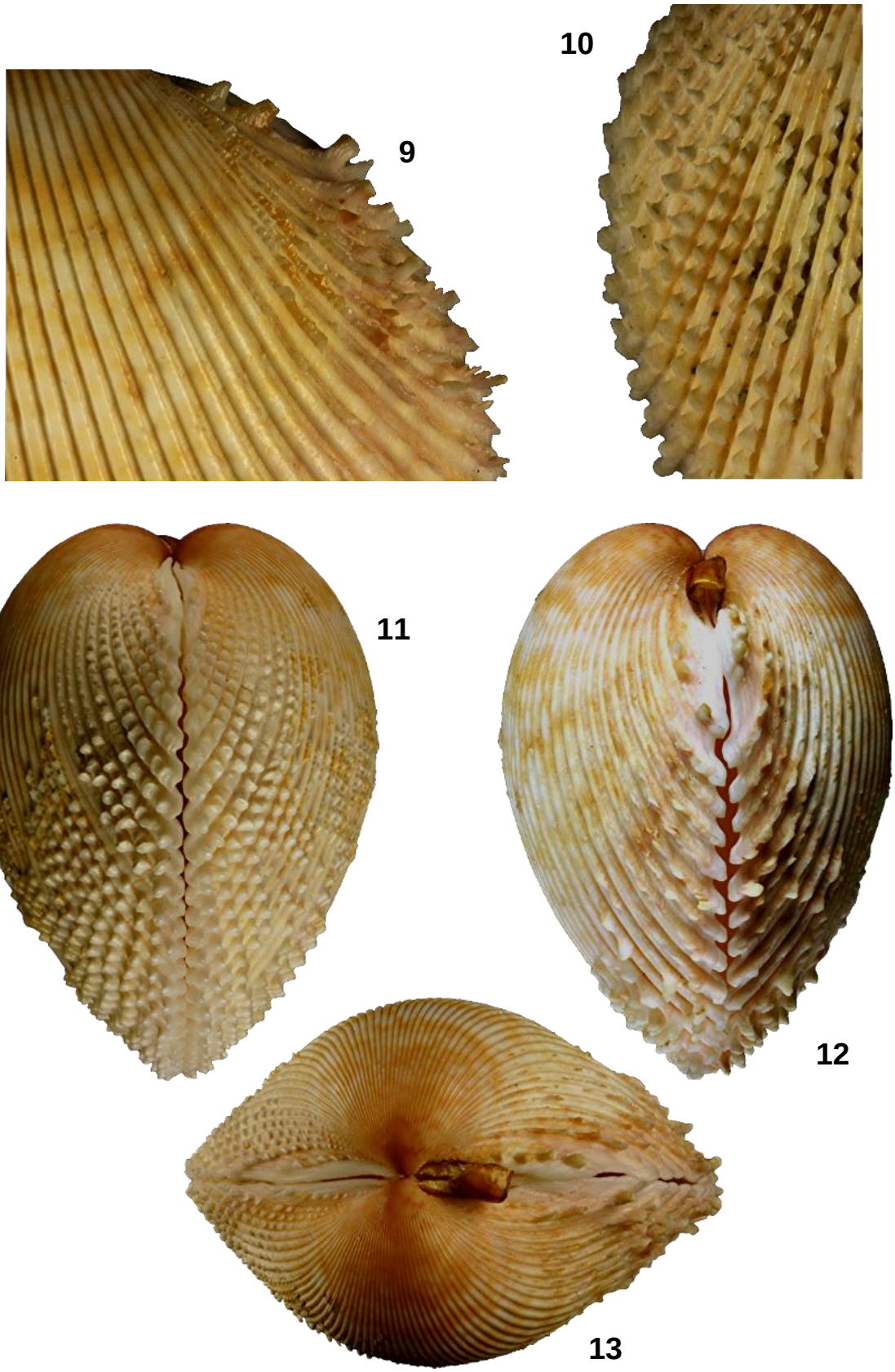


Plate III. Figs 9-13: *Europicardium nolfi* Swinnen, 2010. Mussulo Bay, Luanda, Angola. Trawled at a depth of 20-25 m. In sand. 12 December 1998. Holotype (MMF - n° 41270; ex coll. F. Swinnen, Lommel, Belgium). H. 41.03 mm L. 44.45 mm; 9: spiny scales on the posterior part of valves; 10: lamelliform scales on the anterior side of valves; 11: anterior side; 12: posterior side; 13: dorsal area.

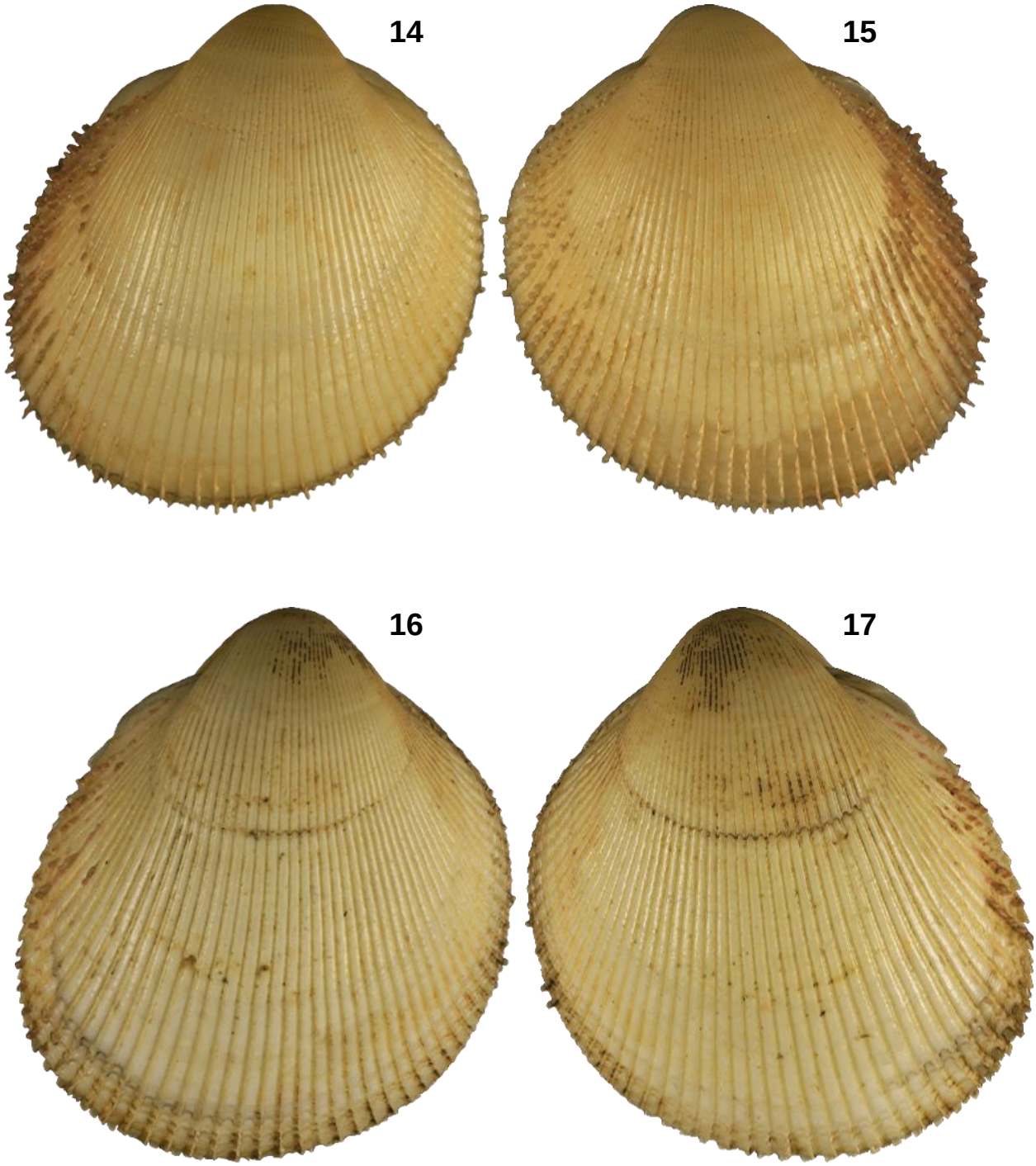


Plate IV. Figs 14-17: *Europicardium caparti* (Nicklès, 1955). Ambriz, Angola. Trawled by Belgian fishermen (PEMARCO) at a depth of 73 m. 1971. Paratype (CFN); 14-15: H. 38.56 mm L. 36.22 mm; 14: RV; 15: LV; 16-17: H. 44.38 mm L. 40.11 mm; 16: RV; 17: LV.

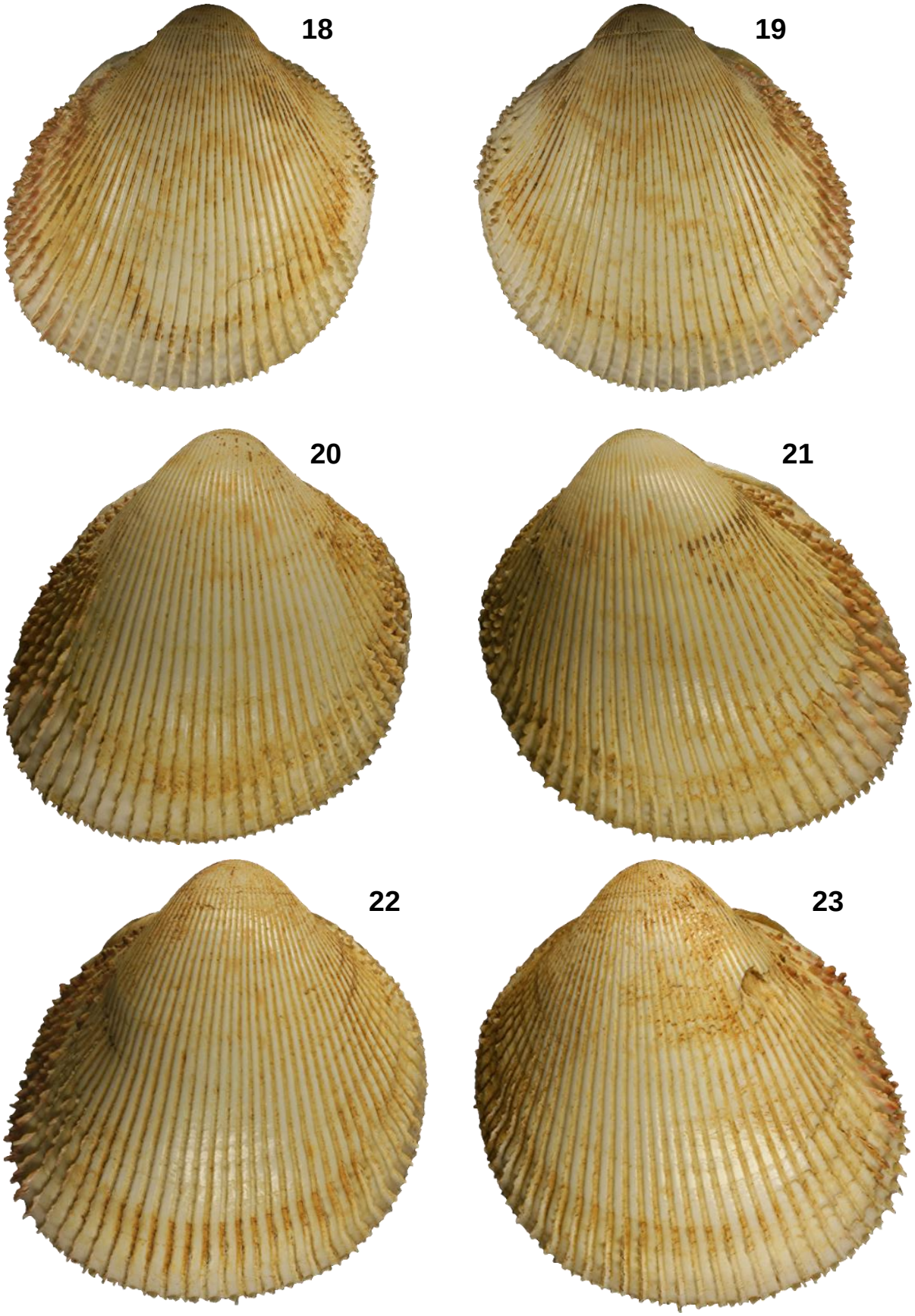


Plate V. Figs 18-23: *Europicardium caparti* (Nicklès, 1955). Cayar, Senegal. Trawled by fishermen at a depth of 100 m. 2000. CFS; 18-19: H. 43.16 mm L. 41.53 mm; 18: RV; 19: LV; 20-21: 45.45 mm L. 44.62 mm; 20: RV; 21: LV; 22-23: H. 45.84 mm L. 43.09 mm, 22: RV; 23: LV.

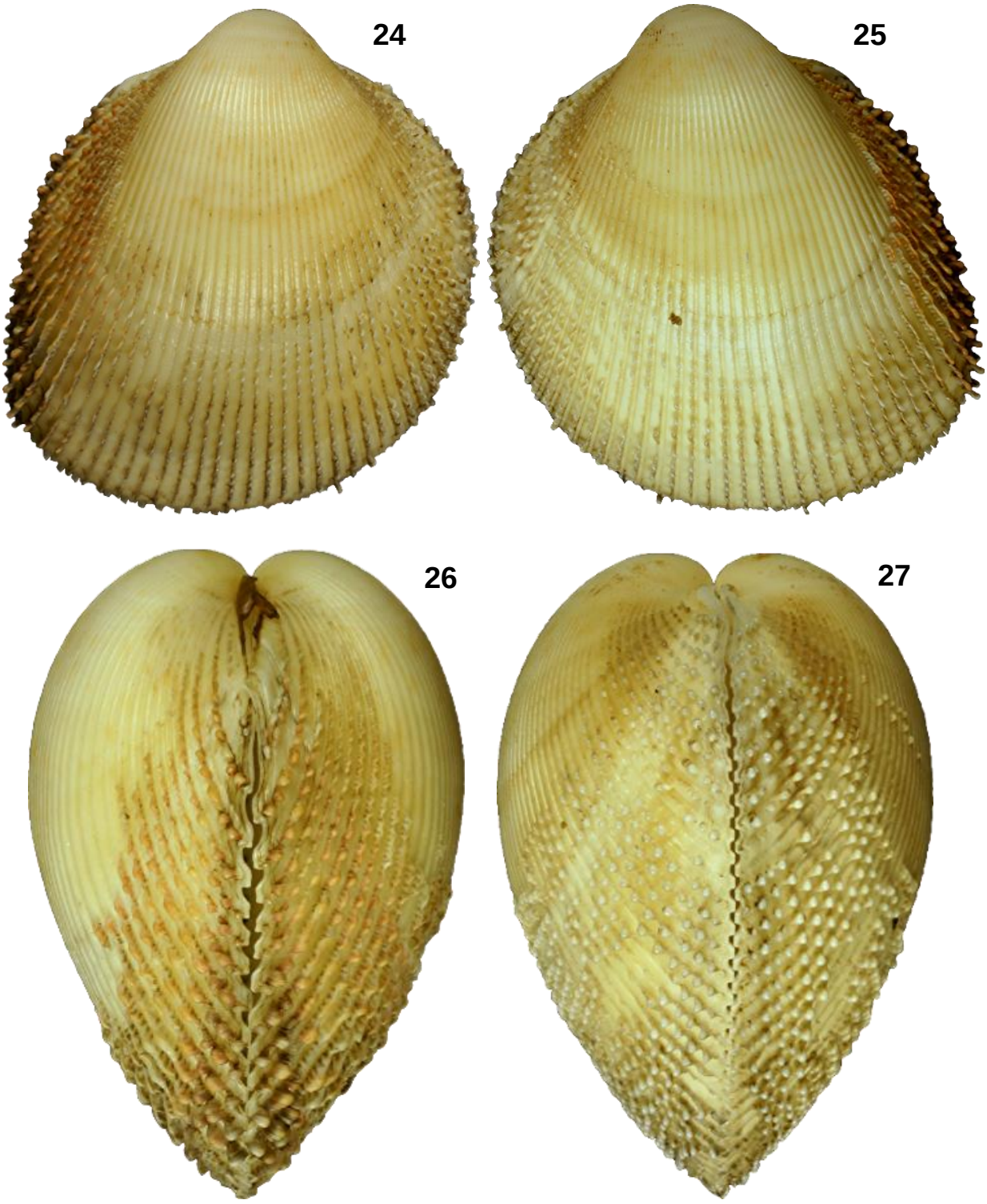


Plate VI. Figs 24-27: *Europicardium caparti* (Nicklès, 1955). Cap Lopez, Gabon. 01°13' S. / 08°31' E. Dredged by the '*Mercator*' at a depth of 73 m. 9 March 1949. H. 35.99 mm L. 33.71 mm. RBINS; 24: RV; 25: LV; 26: posterior side; 27: anterior side.

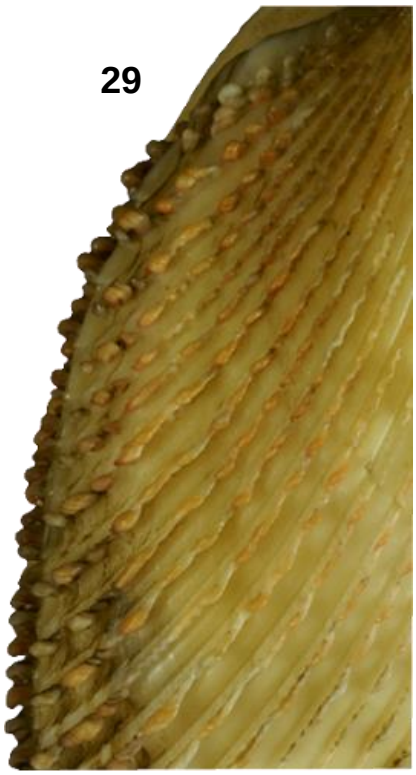


Plate VII. Figs 28-31: *Europicardium caparti* (Nicklès, 1955). Cap Lopez, Gabon. 01°13' S. / 08°31' E. Dredged by the '*Mercator*' at a depth of 73 m. 9 March 1949. H. 35.99 mm L. 33.71 mm. RBINS; 28; dorsal area; 29: continuing crest of pearly nodules at the posterior side of valves; 30: ventral part of valves; 31: crest of comma-like scales.

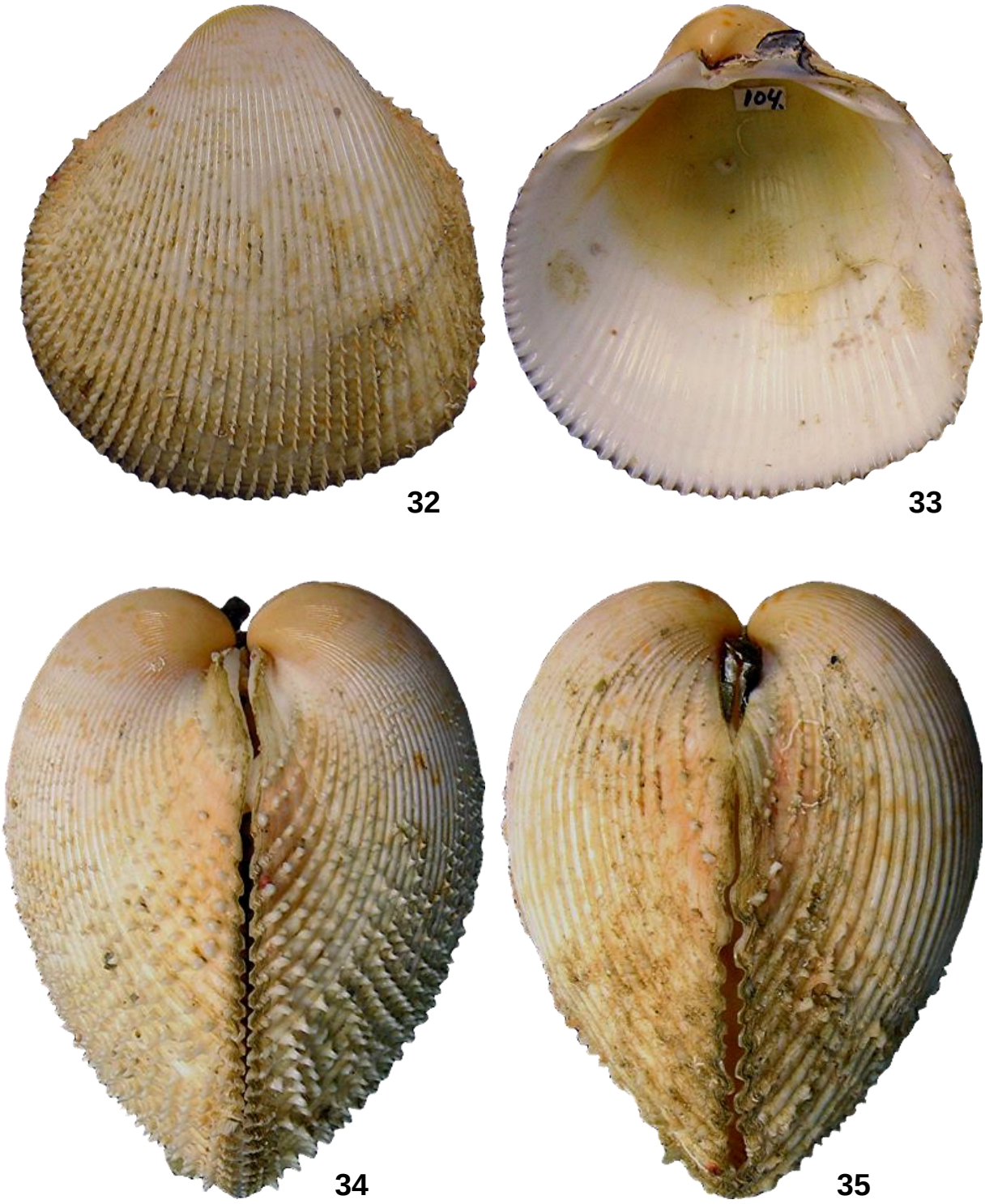


Plate VIII. Figs 32-35: *Europicardium caparti* (Nicklès, 1955). SW of Boa Vista, Cape Verde Islands, 15°55' N – 23°06' W. Trawled with a rectangular dredge on a shelly bottom at a depth of 100 m. CANCAP-expedition 6.071. 13 June 1982. Ex col. RMNH (5308); ex coll. Onverwagt. H. 46.4 mm L. 44.1 mm (photograph by Jan Johan ter Poorten); 32: LV; 33: inside of right valve; 34: anterior side; 35: posterior side.

Comparison between *Europicardium nolfi* (left) and *E. caparti* (right)