A northern range extension for *Comitas saldanhae* (Barnard, 1958) (Mollusca: Gastropoda: Clavatulidae)

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Keywords: Mollusca, CLAVATULIDAE, *Comitas saldanhae*, Namibia, range extension.

Abstract: *Comitas saldanhae* (Barnard, 1958), a species supposedly endemic to a very restricted area from Cape Point to Saldanha Bay, is also reported from the north of Namibia, SW Africa where it was found in the sixties of the previous century.

Abbreviations:
CFN: Private collection of Frank Nolf.
PEMARCO: Pêche Maritime du Congo.

Diagnosis: Because in literature so few specimens of *Comitas saldanhae* (Barnard, 1958) have been illustrated it seemed worthwhile to devote an article to this deep-water species from a region, which was relatively unexplored up to recently. However, Belgian fishermen navigating for PEMARCO were very active off the coasts of Angola and even in the north of Namibia, off Cape Frio and at the mouth of the Kunene-river (18° S., 11° 45' E.) in the second half of the previous century (1962-1973). Many interesting shells, for instance *Aporrhais uttingeriana pesgallinae* Barnard, 1963, *Athleta lutosa* (Koch, 1948), *Cotonopsis monfilsi* Emerson, 1993, *Metula africana* Bouchet, 1988, *Nassarius wolffi* Knudsen, 1956 and *Pteropurpura fairiana* (Houart, 1979) to name but a few, were trawled at depths between 100-300 m in this region. Other species are still awaiting description.
This species was originally described as a *Turris*, but does certainly not belong to this genus because of the broadly arcuate sinus occupying the shoulder slope as indicated in Barnard's line drawing of the type. Barnard's material consisted of three dead specimens and one live taken specimen, but all of them missed the nuclear whorls. Because of the operculum, which is leaf-shaped with a terminal nucleus and the radula of modified "wishbone" type, a provisional location in the genus *Comitas* is justified. Species belonging to *Comitas* generally inhabit the deeper and colder waters of the Indo-Pacific, Australia, New Zealand and South Africa.

The most striking characteristics of *Comitas saldanhae* (Pl. I, Figs 1-6; Pl. II, Figs: 7-12) are as follows: moderately solid shell, protoconch with 2-2.5 nuclear whorls, 7.5 to 8 post-natal whorls, sutures impressed, subsutural cord smooth, shoulder weakly angular (but frequently corroded) a little above mid-whorl, oblique axial ribs from shoulder to suture below, 12-14 on earlier whorls, 15-16 on later whorls, subequal in width to intervening grooves, crossed by spiral lirae, 2 or 3 on 3rd whorl, 3 or 4 on 4th whorl, increasing to 7 or 8 on last whorl, 12-14 additional spiral threads on base, outer lip thin and flaring with the anal sinus moderately deep but broadly arcuate, siphonal canal wide and truncate or moderately long.
Operculum: ovate with terminal nucleus.
Colour: chalky white.
Periostracum: yellow in juvenile specimens or olive-green and particularly present on the higher part of the whorls. Nearly completely absent in older shells.
Radula with 60 pairs of teeth, no central plate, lateral with wing-like appendage.
Habitat: According to Belgian fishermen (PEMARCO) it lives on sponges.

Type-locality: At a depth of 56 m off Baboon Point, Saldanha Bay, Western Cape, Republic of South Africa.
Other localities: Off Lüderitz, Namibia, SW Africa (at depths of 55 m, 311 m and 183 m); Cape Point, Western Cape, Republic of South Africa (at depths of 457 to 1280 m).

The shells figured in this paper were attached to sponges and trawled by Belgian fishermen (PEMARCO) at a depth of 243 m off Cape Frio, Namibia, SW Africa (18° S./ 11°45' E.) in 1969. *C. saldanhae* seems to be rather common in this area as more than fifty specimens were obtained in a few years of trawling. No specimens were found by PEMARCO off the coast of Angola. As usual most of the shells were corroded and badly missed their protoconch, especially the older shells. In some cases the apex was filled with secondary shelly substance, creating a false protoconch. Perfect or nearly perfect nuclear whorls were seldom present (Pl. I, Figs 1, 2 & 5).

Conclusion: The geographic range of *C. saldanhae* can be extended from Cape Point (South Africa) to the north of Namibia.

Acknowledgements: I am very grateful to Johan Verstraeten (Oostende, Belgium) who carefully controlled the content of the text. David Monsecour was so kind as to make corrections to the English text.

References:

Barnard, K.H., 1958. Contributions to the knowledge of South African marine mollusca. Part I. Gastropoda: Prosobranchiata: Toxoglossa. *The Annals of the South African Museum*, **44**(4): 73-163.

Powell, A.W.B., 1969. The family Turridae in the Indo-Pacific. Part. 2. The subfamily Turriculinae *Indo-Pacific Mollusca*, vol. 2, n° 10: 207-416.

Powell, A.W.B., 1966. The molluscan families Speightiidae and Turridae. An evaluation of the valid taxa, both Recent and fossil, with lists of characteristic species. *Bulletin of the Auckland Institute and Museum*, **5**: 1-184.

Steyn, D.G. & Lussi, M., 2005. *Offshore Shells of Southern Africa. A pictorial guide to more than 750 Gastropods.* Menly/ Durban North. 289 pp.

Tucker, J.K., 2004. Catalog of Recent and fossil turrids (Mollusca). *Zootaxa*, 682. Auckland. 1295 pp.

Vaught, K.A, 1989. *A Classification of the Living Mollusca.* American Malacologists, Inc., Melbourne, Florida. 195 pp.

Geographic distribution of *Comitas saldanhae* (Barnard, 1958)

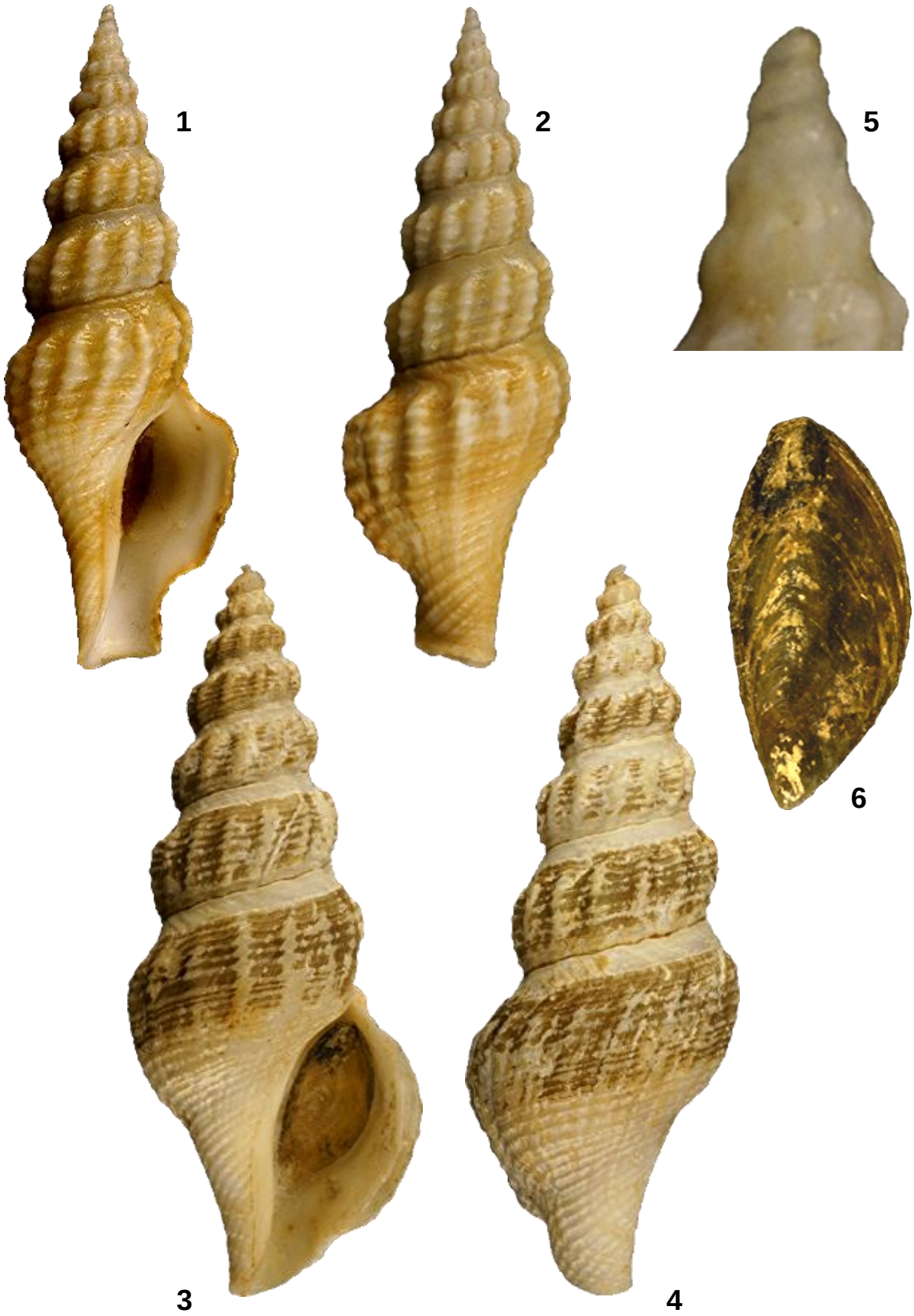

Plate I. Figs 1-6: *Comitas saldanhae* (Barnard, 1958). Cape Frio, Namibia, SW Africa. 18° S./11° 45' E. Trawled by Belgian fishermen (PEMARCO). Attached to sponges at a depth of 243 m. 1969. CFN; 1-2: 37.67 mm; 3-4: 42.55 mm; 5: protoconch; 6: operculum.

Plate II. Figs 7-12: *Comitas saldanhae* (Barnard, 1958). Cape Frio, Namibia, SW Africa. 18° S./ 11°45' E. Trawled by Belgian fishermen (PEMARCO). Attached to sponges at a depth of 243 m. 1969. CFN; 7: 49.04 mm; 8: 52.06 mm; 9: 56.90 mm; 10-12: labial profiles and apertural features.

Rehabilitation of *Clavatula smithi* Knudsen, 1952 (Mollusca: Gastropoda: Clavatulidae)

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Keywords: Mollusca, Gastropoda, CLAVATULIDAE, *Clavatula smithi*, *Clavatula caerulea*, West Africa.

Abstract: This paper demonstrates that *Clavatula smithi* Knudsen, 1952 and *Clavatula caerulea* (Weinkauff in Weinkauff & Kobelt, 1875) are two separate species living in the same geographic region off the West African coasts.

Abbreviations:

CFN: Private collection of Frank Nolf.
CPH: Private collection of Paul-Henri Hattenberger (St. Jean de Blaignac, France).
MNHN: Musée National d'Histoire Naturelle (Paris, France).
ZMUC: Zoologisk Museum, København, Denmark

Introduction: It was remarkable that Knudsen (1956) himself synonymized *Clavatula smithi* with *C. caerulea*, even though he had remarked several clear differences between both species (1952). Thanks to the material from the "*Atlantide*"-expedition (ZMUC) and many specimens from several other locations off W Africa (MNHN), an intensive comparison has been undertaken.

Diagnosis:

***Clavatula smithi* Knudsen, 1952**
(Plate I, Figs 1-8; Plate II, Figs 9-16; Plate III, Figs 17-22).

For a better understanding, the original description of *Clavatula smithi* by J. Knudsen (1952) is reproduced here.
'*Shell turriform and slender with 10-12 whorls. Protoconch consists of about 3 completely smooth whorls. The upper part of the adult shell has a characteristic axial sculpture, consisting of arcuate ribs, which form prominent nodules near the upper suture and below the subsutural band. This sculpture gradually changes into oblique ribs present only below the subsutural band. The ribs are distinctly nodulose near the subsutural band, being obsolete towards the lower suture, where they have disappeared in most specimens. Up to 20 ribs may be present on the body whorl, in the holotype 15 are seen. The growth lines are irregular, close set and flexuous across the subsutural band. The upper row of nodules on the upper part of the adult shell have developed into a continuous spiral edge, completely devoid of nodules, and running at some distance below the upper suture. On the penultimate whorl some specimens have a row of small nodules just above the lower suture. On the body whorl 2 rows of small nodules are present below the larger ones. On the lowest part of the whorl 7-9 coarse spiral lines are seen. On the subsutural band and between the ribs some fine spiral lines can be detected. Aperture small. Columella slightly convex. Sinus situated at some distance from the suture, deep and broad and with slightly reflected edge. Outer wall slightly convex. Sipho short, somewhat reflected. Colouration: The upper part of the whorls brown, ribs and lower part of the whorls whitish. In some shells the brown colour extends down between the ribs, but in most specimens it is sharply limited just above the latter. On the body whorl a brown band is present on the lower part of the whorl, running across the two rows of smaller nodules. Measurements: 13.4 x 4.0. Holotype: 10.8 x 3.4.*

Remarks: *The present species is closely related to* Clavatula coerulea (sic) *Weinkauff. It is distinguished from this species by the characteristic spiral edge below the upper suture, the shape of the ribs, and the colouration. The shape of the aperture and the sinus also differs from this species.*

Distribution: *Gold Coast to Nigeria.*'

Later on, after a re-examination of the "*Atlantide*" material, Knudsen (1956) synonymyzed *Clavatula smithi* with '*Clavatula coerulea* (Weinkauff)' (sic). A casual remark is that the real name for the latter is *Clavatula caerulea* (Weinkauff in Weinkauff & Kobelt, 1875).

***Clavatula caerulea* (Weinkauff in Weinkauff & Kobelt, 1875)**
(Plate IV, Figs 23-30; Plate V, Figs 31-38; Plate VI, Figs 39-44; Plate VII, Figs 45-50)

The original description of this species is as follows:
'*Testa anguste-fusiformis, granuloso-carinata, caerulea carina albo-purpuroque articulata; spira turrita, acuminata, anfractibus 11 acute carinatis, carina granulosa granis crassis, suturis marginatis, marginibus granulosis, apex acutus, ecarinatus, glaber anfr. 3. Apertura angusta, intus albida, cauda breviuscula, labrum acutum, mediocriter curvatum, superne in aream infrasuturalem profunde sinuosum.*
Long. 20 Mm., diam. maj. 6 Mm. Apert. c. c. 8 Mm.'
The shell is narrow and elegant with a turreted spire containing 11 incised whorls. The protoconch consists of 3.5 smooth whorls and is milky white. The suture is relatively deep but adorned with a series of very small nodules. Below the subsutural area, there is a second row of larger, creamy brown knobs followed by a shallow excavation. The carina of the last whorl is covered with 17-18 thick and white ovoid nodules. The growth lines are very conspicuous, particularly across the subsutural band. The main part of the last whorl, below the carina, is covered with about 7 rows of tiny wax-white nodules connected with faint vertical ribs. Aperture rather broad. Columella slightly convex. Sinus deep, situated at some distance from the suture. Outer lip nearly straight, or slightly concave in some shells. Siphonal canal short and broad, somewhat turned backwards.
Colour: Adult shell light brown to lilac brown with two broad whitish bands on each whorl, one in the subsutural zone and the second across the nodules of the periphery. Between these nodules dark brown spots are present.

C. caerulea was originally described as *Pleurotoma caerulea* by Weinkauff (1875) and illustrated by two similar specimens on plate 7, figs 4 and 6. Later on he misspelled it as *C. coerulea* (1877). This name was erroneously used by Nicklès (1947, 1950), Knudsen (1952) and Bernard (1984). Von Martens (1881-1885) redescribed that species because the type locality was unknown to Weinkauff and also because of the poor quality of the original figures. Moreover, he states that the subgenus '*Surgula*', as used by Weinkauff had to be changed into the correct name '*Surcula*'. Unfortunately, von Martens (1881-1885) figured another species different from *C. caerulea* on plate 21, figs 5-9 resulting in a useless and confusing description. This mistake was remarked by von Maltzan (1883) and he proposed the name *Clavatula martensi* for the species identical to the excellent figure accompanying the description of von Martens, concluding that *C. martensi* is a species quite different from *C. caerulea* Weinkauff. Tryon (1884) figured two specimens of *C. caerulea* (plate 5, figs 59 and 60), one of them (fig. 60) being *C. martensi*.

Discussion: The material dredged by the "*Atlantide*"-expedition and studied by Knudsen (Plate I, Figs 1-8) has been reviewed and compared with specimens of *C. caerulea* (Weinkauff in Weinkauff & Kobelt, 1875). All the specimens possessed a constant appearance: a slender form and a spiral ridge without nodules, running at a certain distance below the upper suture. All these shells were crabbed and dead taken. So, in most of them the sinus and the aperture were badly damaged.
After a thorough study of the specimens from different locations deposited in the MNHN, it can be decided that *C. smithi* is really a separate species. The combination of a lot of characteristics unambiguously makes it possible to differ *C. smithi* from *C. caerulea*.

The following is a summary of the most important differences.
C. smithi has:
- a much smaller shell (between 8 and 16 mm) compared with *C. caerulea* (from 15 to 22 mm);
- a very slender turriform shell; *C. caerulea* has a broader shell;
- a continuous spiral ridge, completely devoid of nodules occasionally provided with very weak flattened small granules, running at some distance of the upper suture; *C. caerulea* possesses a subsutural cord with small prominent knobs on a more prominent shoulder, occasionally accompanied by a second row of tiny granules just below the suture;
- a constant colouration: upper part of the whorls brown, ribs and lower part of the whorls creamy white; some specimens are brown coloured between the ribs; the body whorl has a brown band below the shoulder and is white coloured in the lowest part at the back of the anterior canal; *C. caerulea* is olive-green to grey-brown coloured with dark brown blotches between the white knobs of the shoulder, and a grey coloured zone between the subsutural collar and the shoulder together with a paler zone at the lower part of the body whorl;
- live collected specimens have a very thin olive-brown periostracum;
- the sinus of the posterior canal is shallow and rather broad compared to the short, narrow and well-defined sinus in *C. caerulea*;
- the aperture is narrow compared to the broader mouth of *C. caerulea*.

Geographic distribution: Both *C. smithi* and *C. caerulea* live in the same West African area from Gambia and Senegal to the north of Angola.

Conclusion: The differences between the two species are so evident that no doubt can exist about the exact position of these separate taxons. It can be supposed that Knudsen synonymized his *Clavatula smithi* with *C. caerulea* mainly because of the bad condition of the specimens dredged by the "*Atlantide*". Most of the specimens were dead collected and inhabited by hermit crabs. So, the posterior sinus was badly damaged and all the shells from both species were discoloured, being pink instead of brownish (Pl. IV, Figs 23-30; Pl. V, Figs 31-38).

Acknowledgements: I am very grateful to Ole Tendall en Antonia Vedelsby (ZMUC) for making specimens of *C. smithi* and *C. caerulea* collected by the "*Atlantide*"-expedition available for photography and study, Philippe Bouchet and Virginie Héros (MNHN) for the loan of West African turrids and at last Johan Verstraeten (Oostende, Belgium) and David Monsecour who were so kind as to review this paper.

References:

Ardovini, R. & Cossignani, T., 2004. *West African Seashells*. Ancona. 319 pp.

Bernard, P.A., 1984. *Coquillages du Gabon*. Libreville. 140 pp.

Knudsen, J., 1952. Marine Prosobranchs of Tropical West Africa collected by the "Atlantide" Expedition 1945-46. *Videnskabelige Meddelelser fra Dansk naturhistorisk Forening i Kjobenhavn*. Bd. 114: 129-185, pls I-III.

Knudsen, J., 1955. Marine Prosobranchs of Tropical West Africa (Stenoglossa). In: *Atlantide Report, n°3, Scientific Results of the Danish Expedition to the Coasts of Tropical West Africa 1945-1946*, Copenhagen, p. 7-110, pls I-IV.

Maltzan, H.F. von, 1883. Beiträge zur Kenntnis der senegambischen Pleurotomiden. *Jahrbücher der Deutschen Malakozoologischen Gesellschaft*, 10: 115-135, pl. 3.

Martens, E. von, 1881-85. *Conchologische Mittheilungen als Forsetzung der Novitates Conchologicae. Vol. 2.* Theodor Fischer, Cassel, iv + 103-128 pp., pls 19-24.

Nicklès, M., 1947. *La collection de Mollusques testacés marins de l'I.F.A.N. Catalogues I.* Institut Français d'Afrique Noir. Dakar. 23 pp.

Nicklès, M., 1950. *Mollusques testacés marins de la Côte occidentale d'Afrique*. Manuels Ouest-Africains. **2**. Paris. Paul Lechevalier. 269 pp, 464 figs.

Nolf, F., 2008. A study on the true identity of *Clavatula martensi* von Maltzan, 1883 (Mollusca: Gastropoda: Clavatulidae) resulting in the description of a new species, *Clavatula matthiasi*. *Neptunea*, **7**(1): 7-16.

Tryon, G.W., Jr., 1884. Conidae, Pleurotomidae. *Manual of Conchology, Structural and Systematic, with Illustrations of the Species*. **Vol. VI**. Tryon, Philadelphia. 413 pp, 34 pls.

Tucker, J.K., 2004. Catalog of Recent and fossil turrids (Mollusca). *Zootaxa*, 682. Auckland. 1295 pp.

Vaught, K.A, 1989. *A Classification of the Living Mollusca.* American Malacologists, Inc., Melbourne, Florida. 195 pp.

Weinkauff, H.C. & Kobelt, W., 1875-1887. Die Familie Pleurotomidae. Erste Abtheilung. *Systematisches Conchylien Cabinet von Martini & Chemnitz,* **4**(3): 1-248., pls A, 1-42. Bauer & Raspe, Nürnberg.

Weinkauff, H.C, 1877. Catalog der Arten des Genus *Pleurotoma s. st. Jahrbücher der Deutschen Malakozoologischen Gesellschaft*, **4**, 1-10.

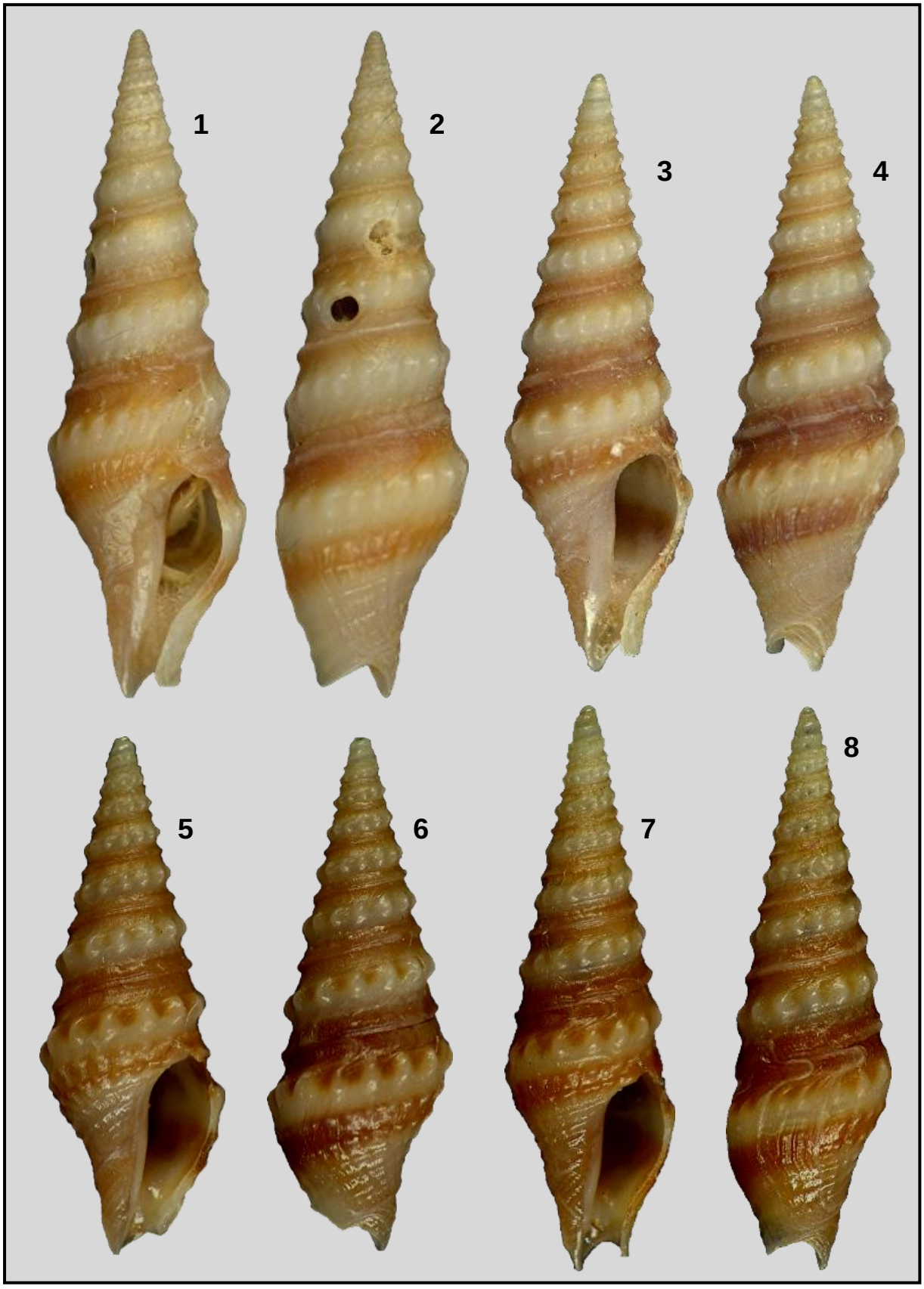


Plate I. Figs 1-8: *Clavatula smithi* Knudsen, 1952. "*Atlantide*"-expedition (1945-1946). ZMUC; Figs 1-2: Station 86. Off Ghana, W Africa. 05° 45' N/ 00° 57' E. Dredged at a depth of 17 m. 31 January 1946. 13.37 mm; Figs 3-8: Station 100. Off Lagos, Nigeria, W Africa. 06° 06' N/ 04° 29' E. Dredged at a depth of 29 m. 15 February 1946; 3-4: 10.39 mm; 5-6: 8.48 mm; 7-8: 9.82 mm.

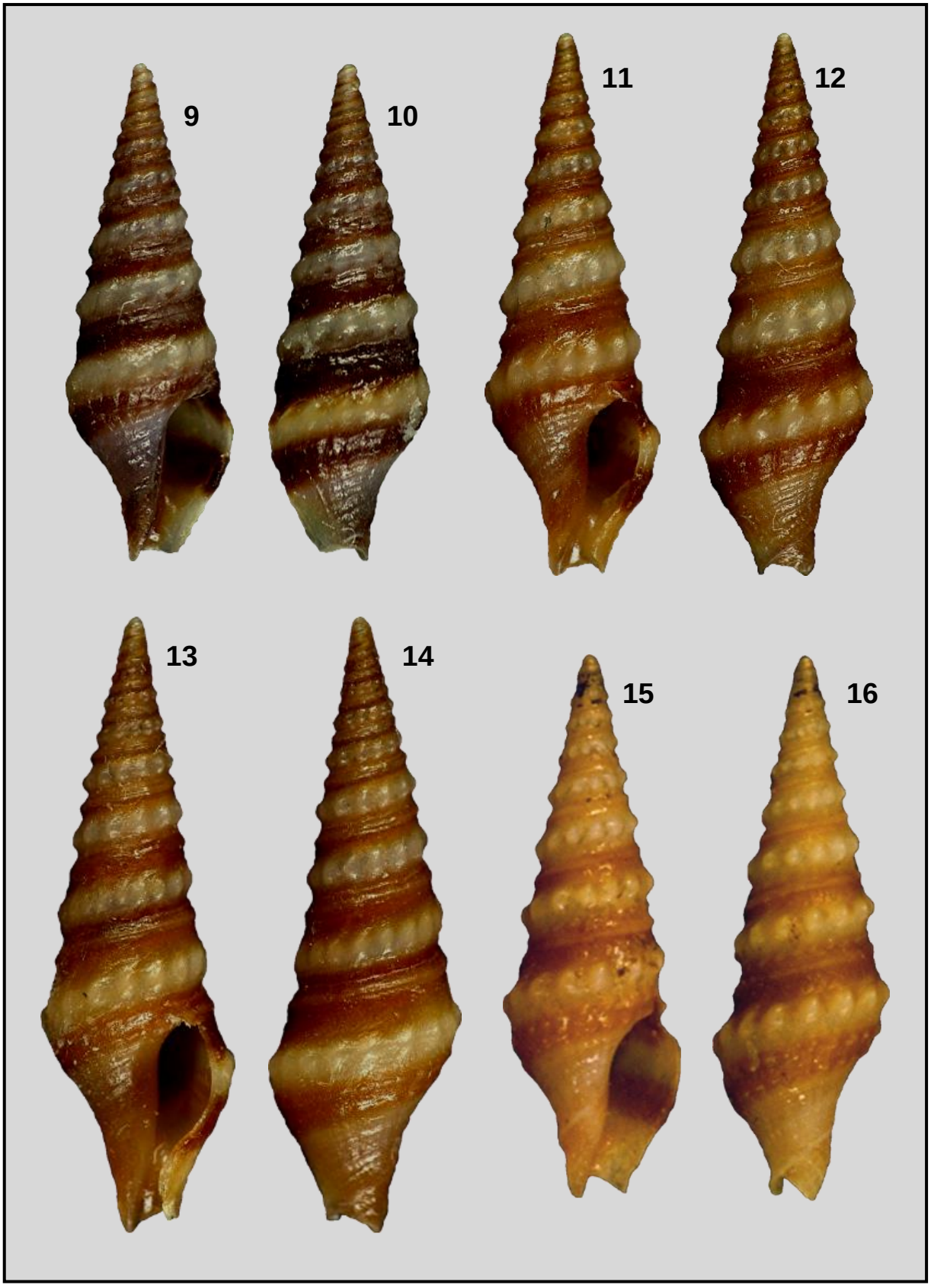


Plate II. Figs 9-16: *Clavatula smithi* Knudsen, 1952; 9-14: Pointe-Noire, Plage Mondaine, Republic of the Congo. In shell grit. CPH; 9-10: 6.46 mm; 11-12: 8.11 mm; 13-14: 11.05 mm; 15-16: ORSTOM-beach, Pointe-Noire, Republic of the Congo. Dredged in muddy sand at a depth of 6 m. December 1985. 9.42 mm. MNHN.

Plate III. Figs 17-22: *Clavatula smithi* Knudsen, 1952; 17-18: ORSTOM-beach, Pointe-Noire, Republic of the Congo. Dredged in muddy sand at a depth of 6 m. December 1985. 12.23 mm. MNHN; 19-20: Foz do Bengo, Prov. Bengo, Angola. In sand at a depth of 4 m. 1968. 12.66 mm. CFN; 21: Cap Roxo, South Casamance, Senegal. 17° 20' N/ 16° 53' W. Dredged in muddy sand at a depth of 15 m. 27 March 1988. 9.07 mm. MNHN; 22: protoconch.

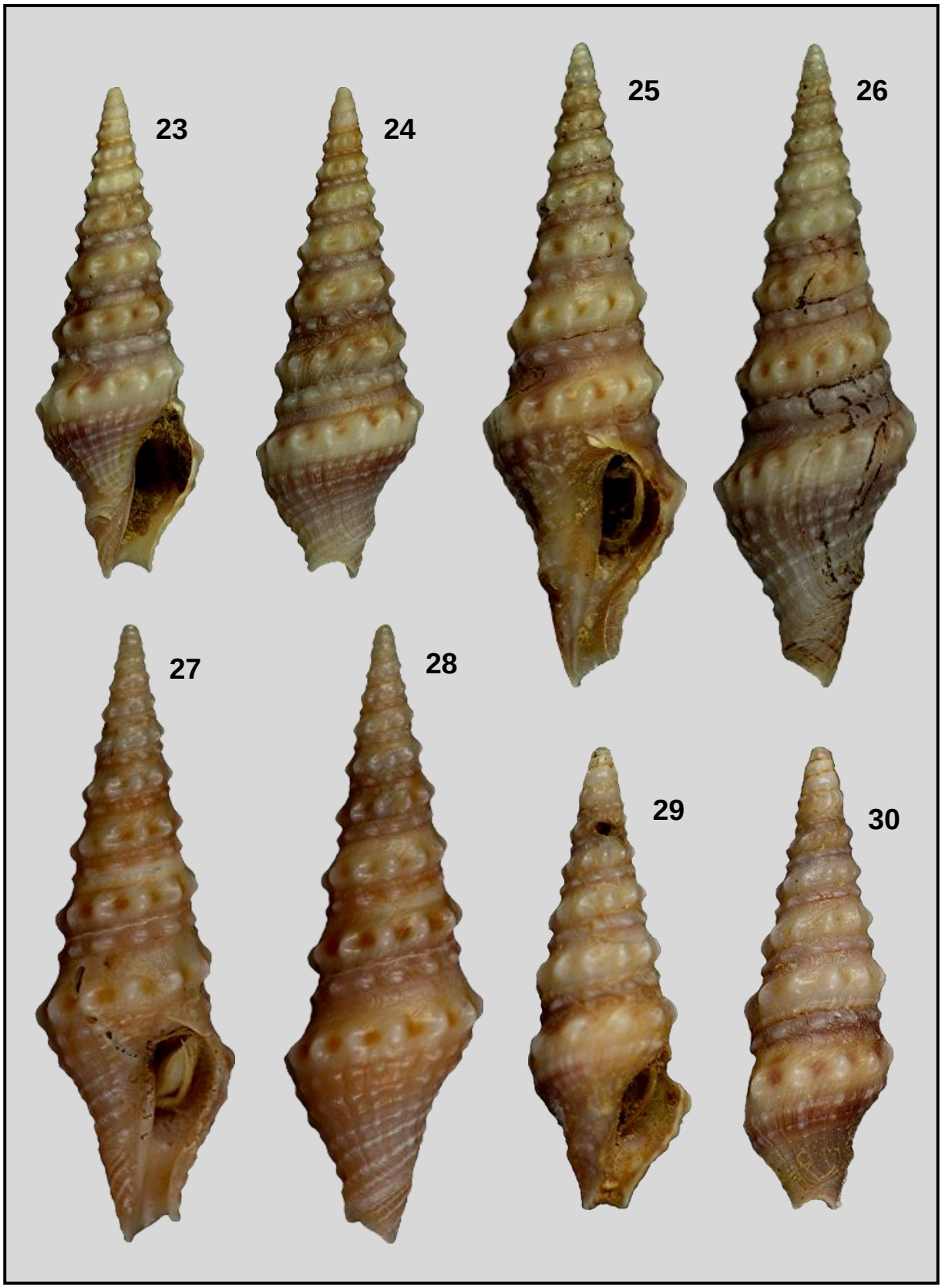


Plate IV. Figs 23-30: *Clavatula caerulea* (Weinkauff in Weinkauff & Kobelt, 1875). "*Atlantide*"-expedition (1945-1946). ZMUC; 23-26: Station 52. Off Monrovia, Liberia. In sand. 3 January 1946. 9.25 mm; 23-24: 9.25 mm; 25-26: 13.03 mm; 27-28: Station 86. Ghana. 05° 45' N/ 00° 57' E. Dredged at a depth of 17 m. 12.93 mm; 29-30: Station 72. Off Takoradi, Ghana. 04° 51' N/ 01° 42' W. Dredged in mud at a depth of 24 m. 6.57 mm.

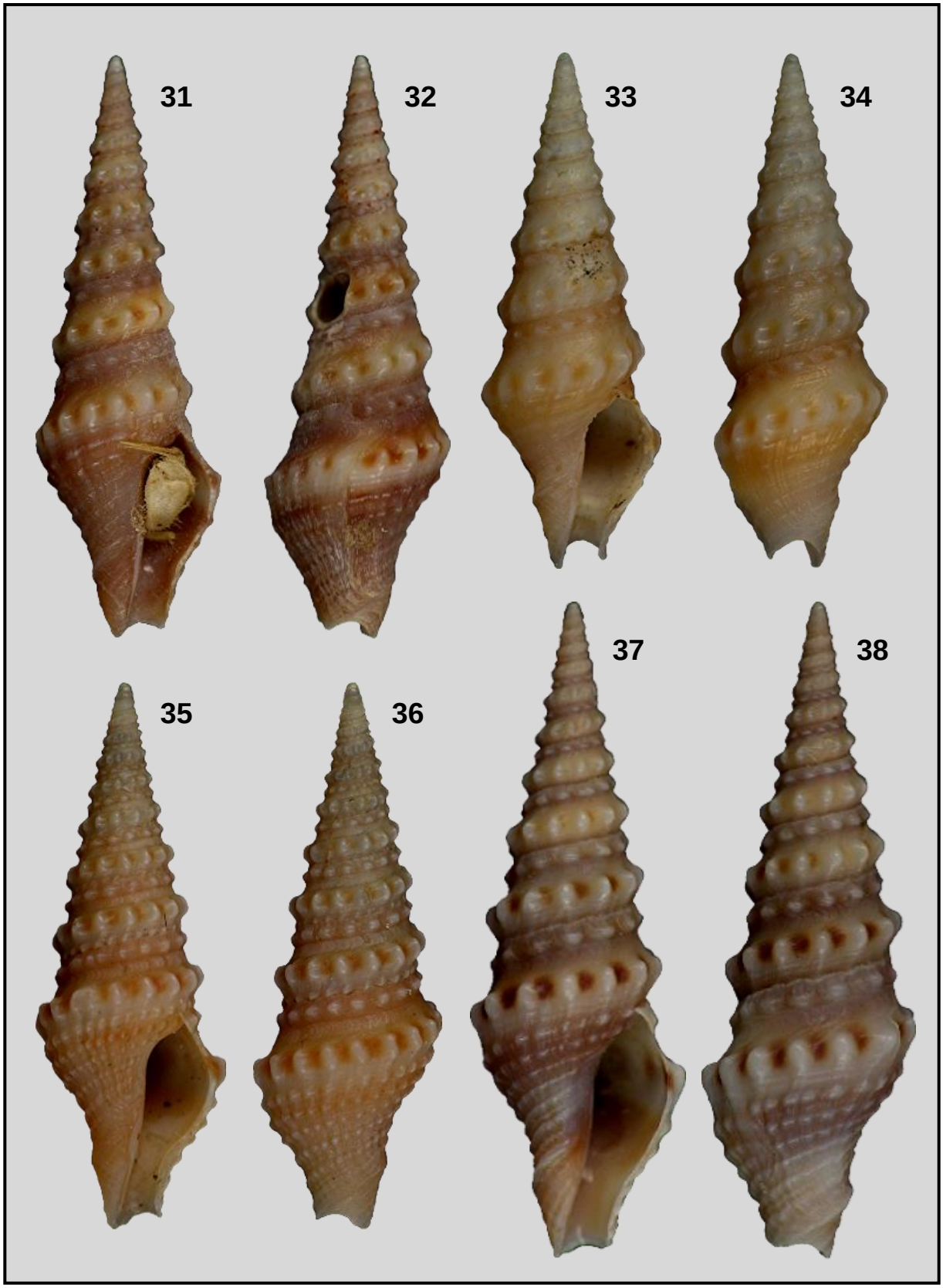
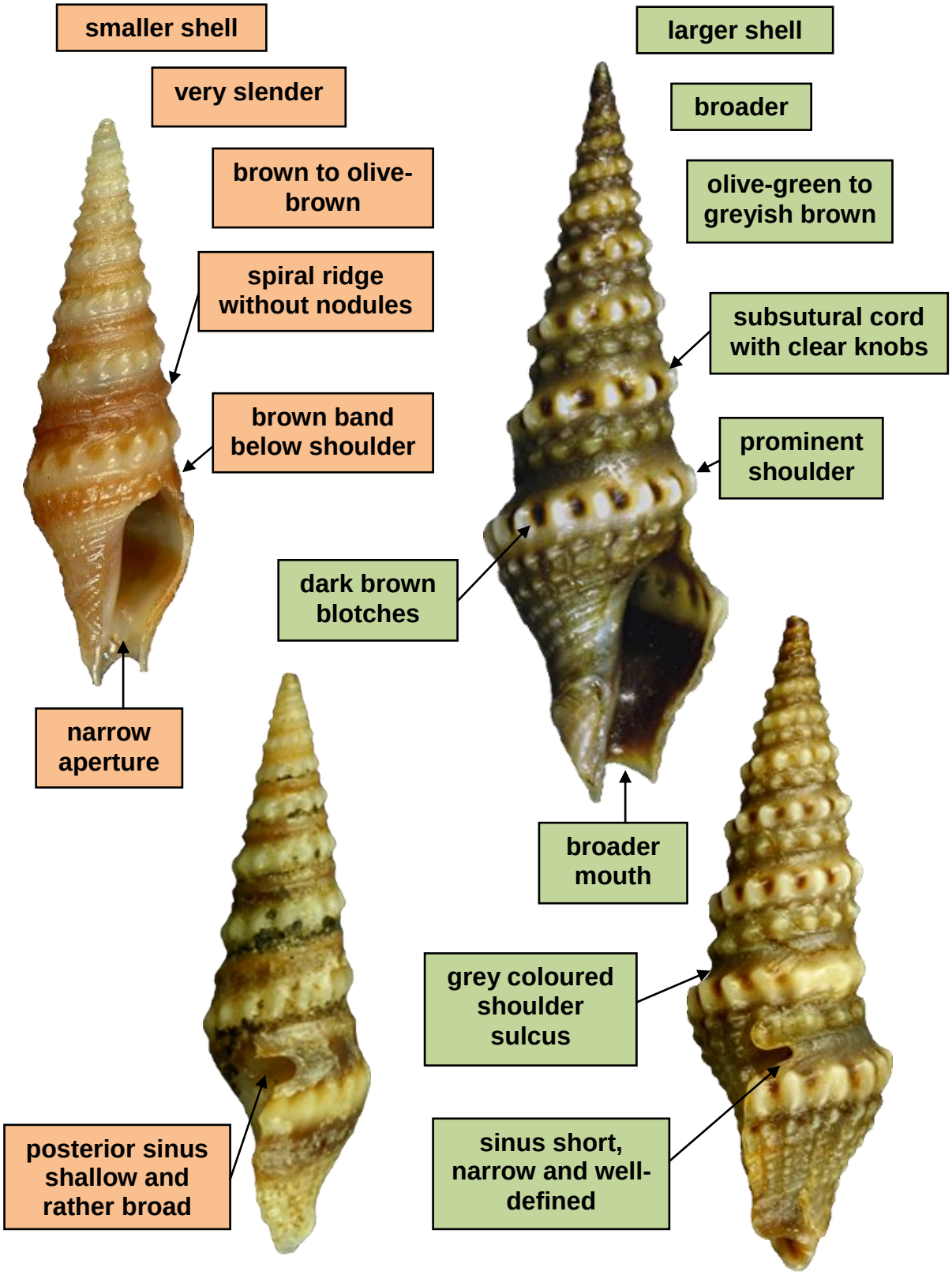


Plate V. Figs 31-38: *Clavatula caerulea* (Weinkauff in Weinkauff & Kobelt, 1875). "*Atlantide*"-expedition (1945-1946). ZMUC; 31-32: Station 100. Off Lagos, Nigeria. 06° 06' N/ 04° 29' E. Dredged in mud at a depth of 29 m. 15 February 1946. 15.13 mm; 33-34: Station 101. Off Lagos, Nigeria. 05° 59' N/ 04° 36' E. 15 February 1946. 11.29 mm; 35-36: Station 141. Off Freetown, Sierra Leone. Dredged at a depth of 15 m. 9 April 1946. 14.38 mm; 37-38: Station 161. Off Banjul, Gambia. Dredged at a depth of 18 m. 24 April 1946. 16.12 mm.

Plate VI. Figs 39-44: *Clavatula caerulea* (Weinkauff in Weinkauff & Kobelt, 1875); 39-41: North Casamance, Senegal. 12° 53' N/ 17° 03' W. Dredged in fine muddy sand at a depth of 19 m. 25 March 1988. MNHN; 39: 19.52 mm; 40-41: 19.35 mm; 42-43: Barra do Dande, Prov. Bengo, Angola. Dived in mud at a depth of 5 m. 1983. MNHN; 42: 19.79 mm; 43: 21.93 mm; 44: protoconch.

Plate VII. Figs 45-50: *Clavatula caerulea* (Weinkauff in Weinkauff & Kobelt, 1875). CFN; 45: Gambia. Dredged at a depth of 7 m. 19.40 mm; 46: Off Abidjan, Ivory Coast. Dredged at a depth of 20 m. 13.08 mm; 47: Pointe Idolo, Gabon. 1986. 15.96 mm; 48-50: Bay of Pointe-Noire, Republic of the Congo. Dredged in fine sandy mud at a depth of 6 m. 1985. MNHN; 48: 15.78 mm; 49: 16.90 mm; 50: 17.51 mm.



Comparison between *Clavatula smithi* Knudsen, 1952 (left) and *Clavatula caerulea* (Weinkauff in Weinkauff & Kobelt, 1875) (right)

Anacithara biscoitoi (Mollusca: Conoidea: Turridae), a new species from West Sahara (W Africa)

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Keywords: Mollusca, Gastropoda, TURRIDAE, *Anacithara biscoitoi*, The Western Sahara, West Africa, new taxon.

Abstract: This paper describes a third species of *Anacithara* from West African waters. The two other previously known species are *A. angulosa* (E.A. Smith, 1871) and *A. maltzani* (Knudsen, 1952) (Horro et al., 2010).

Abbreviations:

CFD: Private collection of Francisco Déniz (Tenerife, Canary Islands, Spain).
CFN: Private collection of Frank Nolf.
CFS: Private collection of Frank Swinnen.
MMF: Museu Municipal do Funchal, Madeira, Portugal
RBINS: Royal Belgian Institute for Natural Sciences, Brussels, Belgium.

Introduction: The genus *Anacithara* Hedley, 1922 belongs to the superfamily Conoidea and the family TURRIDAE, subfamily Crassispirinae Morrison, 1966 (Millard, 2008). It was originally placed in the subfamily Mangelliinae Fischer, 1887 (within the family CONIDAE Fleming, 1822) but Kilburn (1994) transferred it to the subfamily Crassisispirinae McLean, 1971 (within the family TURRIDAE H. & A. Adams, 1853) after studying the radula and describing three new species from South Africa. The radula was similar to that of *Haedropleura* Bucquoy, Dautzenberg & Dollfus, 1883 and the operculum was deviant from the one in Mangelliinae. Originally, no representatives of the genus *Anacithara* were located neither in South Africa nor in West Africa. Knudsen (1994) attributed this genus to three species from South Africa whereas Horro *et al.* (2010) transferred two species from West Africa *A. angulosa* (E.A. Smith, 1871) (from *Cythara*) and *A. maltzani* (Knudsen, 1952) (from *Haedropleura*) to *Anacithara*. The Spanish authors based their decision on the shape, the protoconch and the microsculpture, which are very similar to *A. angulicostata* Kilburn, 1994.

The genus *Anacithara* is used for species with a small shell (3.5-9 mm) and a rather widely open aperture without denticles within the outer lip or on the columella. The protoconch is bluntly rounded containing 2-3 smooth whorls, followed by a stage of curved axial riblets. The adult sculpture is of long bluntly rounded axial folds, overridden by dense spiral lirae. Recent species are mostly known from the Indo-Pacific (northern Queensland, Loyalty Islands, New Caledonia and the Arabian Sea). Fossil representatives are known from Tasmania (Oligocene), New Zealand (Oligocene to Miocene) and probably from the Pliocene of Java to Japan.

Type species: *Mangilia naufraga* Hedley, 1909 (Hope Island, Queensland, Australia).

Material and methods: This study is based upon the shells trawled by Spanish fishermen and deposited in the collections of both authors.

Type material:
Holotype: The Western Sahara. Trawled by fishermen at a depth of 50-60 m. July 2001. MMF 41587. 9.98 mm (Pl. I, Figs 1, 2 & 7).
Paratypes: The Western Sahara. From fishermen at a depth of 50-60 m. July 2001.

1. 8.88 mm (CFN). (Pl. I, Figs 5-6)
2. 9.08 mm (CFD). (Pl. I, Fig. 3)
3. 8.57 mm (CFS). (Pl. I, Fig. 4)

Type locality: Up to now only known from The Western Sahara, W Africa.

Description:
Family TURRIDAE Swainson, 1840
Subfamily Crassispirinae Morrison, 1966
Genus *Anacithara* Hedley, 1922

***Anacithara biscoitoi* spec. nov.**
(Pl. I, Figs 1-7)

Shell small (8-10 mm), shape rather columbelliform, with a blunt spire and a moderately wide aperture. Protoconch multispiral, consisting of about 2-2.5 whorls, smooth but the first teleoconch whorl with an initial stage of close terminal axial riblets. Subsutural region flattened, not showing a

bordering ridge. Whorls (5) slightly convex, with a flattened shoulder slope. Sculptured by axial ribs continuously running from whorl to whorl, 10-12 on the penultimate whorl, but the 9-10 ribs on the last whorl become weaker towards the base. Overridden by very fine equally spaced shallow spiral threads (20-23 on the penultimate whorl), approximately some 50 on the body whorl. Siphonal canal squarely truncate and short, tip not shallowly indented, fasciole not differentiated. Stromboid notch distinct. Outer and inner lip smooth inside. Aperture rather rhomboidal, with columella and outer lip almost parallel.
Colour: translucent white over the whole surface and provided with light brown dots between the axial ribs just below the suture, poorly visible in earlier whorls.

Etymology: *A. biscoitoi* is named in honour of Manuel Jose Biscoito, director of the Departamento Estaçao de Biologia Marinha do Funchal, Funchal, Madeira, Portugal. He kindly provided the second author with all the opportunities to dredge and study the fauna of Madeira since 1998.

Discussion: The new species is readily distinguishable by its small size, the translucent white shell and the light brown dots between the axial ribs.
Anacithara angulosa (E.A. Smith, 1871) (Pl. II, Figs 8-9) from Ivory Coast to Angola, has a smaller number of narrow grooves: 5-6 on first whorls, 13-14 on the penultimate whorl and about 30 on the last whorl. Moreover, under high magnification a dense microsculpture of pits with a smaller number of axial ribs (7-8 ribs on the first two whorls and only 7 on the body whorl) can be oberved on the interspace. The aperture is ovoidly elongate with a short and very wide siphonal canal. The colour is almost uniform pinkish with darker bands, visible on the axial ribs.
Anacithara maltzani (Knudsen, 1952) (Pl. II, Figs 10-13) from Senegal (Pl. II, Figs 10-12) to Angola (Pl. II, Fig. 13) has more prominent and curved axial ribs, a darker colour, a shorter body whorl, a wider aperture and a prominent external lip. The protoconch is darker. Under high magnification small irregular pits are visible.
Anacithara simplex (Turton, 1932) from Port Alfred (Republic of South Africa) differs by the moderately deep suture, is rendered crenulate by rib terminations of a higher number of ribs (11-14 per whorl). It has a smaller number of spiral threads (10-15 on the penultimate whorl), which are more incised than in *A. biscoitoi*.

Conclusion: The new species shows enough differences to conclude that it is impossble to confuse it with other similar representatives of *Anacithara*. Regarding the use of the genus *Anacithara* and the relationship with the genus *Haedropleura*, more molecular and DNA data from live taken animals are needed to settle the status of the treated species with certainty.

Acknowledgements: We are indebted to Francisco Déniz (Canary Islands, Spain) for kindly providing specimens of the new turrid. We also wish to thank David Monsecour (Aarschot, Belgium) and Johan Verstraeten (Oostende, Belgium) for carefully correcting the manuscript and for providing us with many interesting comments.

References:

Ardovini, R. & Cossignani, T., 2004. *West African Seashells*. Ancona. 319 pp.
Bouchet, Ph. & Rocroi, J.-P., 2005. Classification and Nomenclator of Gastropod Families. *Malacologia*, **47**(1-2): 1-397.
Horro, J., Gori, S. & Rolán, E., 2010. *Haedropleura ryalli*, a new species from São Tomé (Gastropoda, Turridae). *Iberus*, **28**(2): 1-4.
Horro, J., Ryall, P. & Rolán, E., 2010. *Anacithara* (Conoidea, Turridae): a new genus to West Africa. *Gloria Maris*, **49**(1): 15-23.
Kilburn, R.N., 1994. Turridae [*s.l*] (Mollusca: Gastropoda) of southern Africa and Mozambique. Part 7. Subfamily Crassispirinae, section 2*. Annals of the Natal Museum*, **35**: 177-228.
Knudsen, J., 1952. Marine Prosobranchs of Tropical West Africa collected by the “Atlantide” Expedition 1945-46. *Videnskabelige Meddelelser fra Dansk naturhistorisk Forening i Kjobenhavn*. Bd. 114: 129-185, pls I-III.
Millard, V., 2008. *Classification of Mollusca. A Classification of Worldwide Mollusca.* **Vol.1**, Fourth Edition. Clareinch.1026 pp.
Powell, A.W.B., 1966. The molluscan families Speightiidae and Turridae. An evaluation of the valid taxa, both Recent and fossil, with lists of characteristic species. *Bulletin of the Auckland Institute and Museum*, **5**: 1-184.
Tucker, J.K., 2004. Catalog of Recent and fossil turrids (Mollusca). *Zootaxa*, 682. Auckland. 1295 pp.
Vaught, K.A, 1989. *A Classification of the Living Mollusca.* American Malacologists, Inc., Melbourne, Florida. 195 pp.

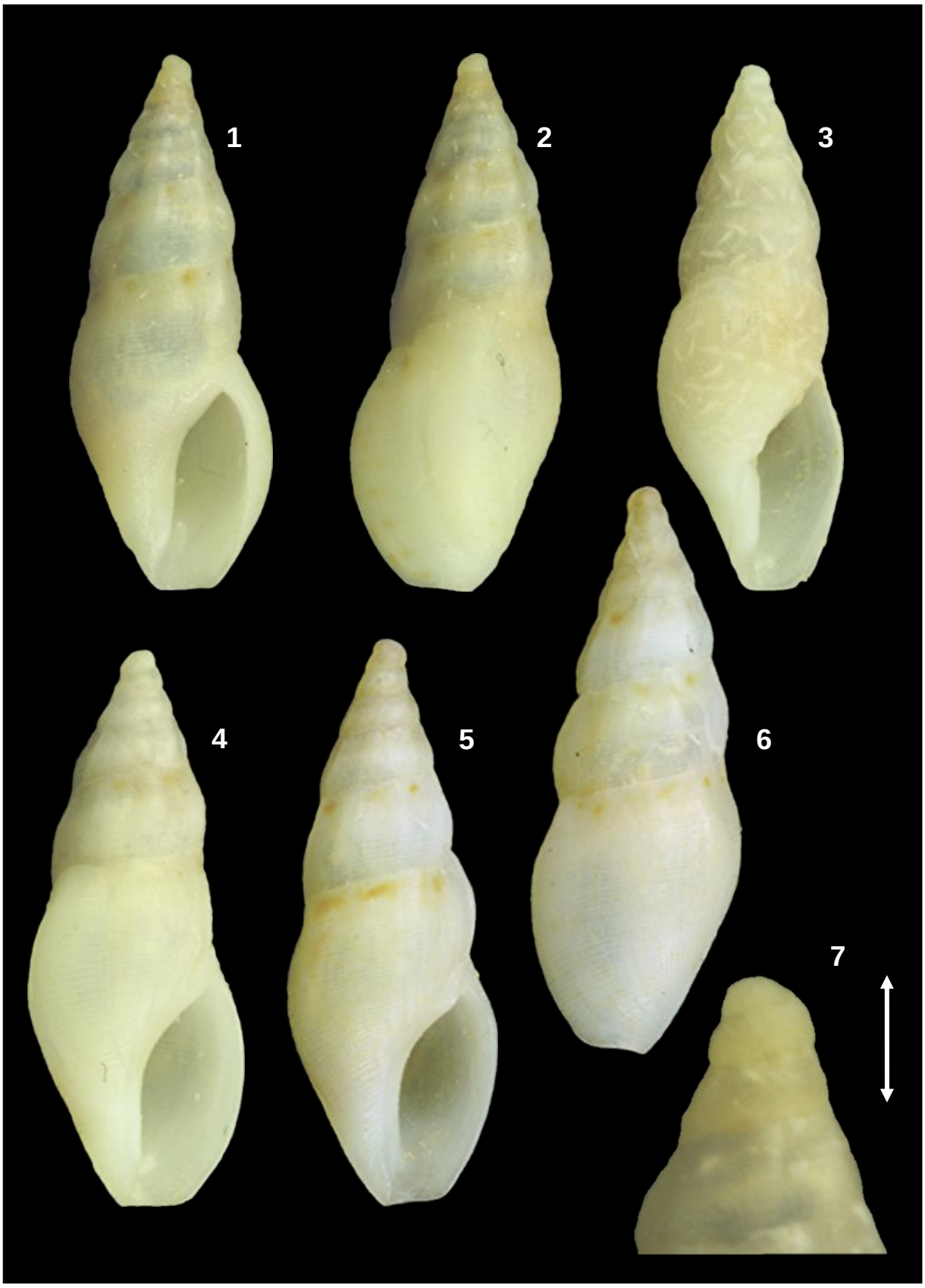

Plate I. Figs 1-6: *Anacithara biscoitoi* spec. nov. The Western Sahara. Trawled by fishermen at a depth of 50-60 m. July 2001; 1-2: 9.98 mm. Holotype. MMF 41587; 3: 9.08 mm. Juvenile specimen. Paratype 2. CFD; 4: 8.57 mm. Paratype 3. CFS; 5-6: 8.88 mm. Paratype 1. CFN; 7: protoconch of the holotype.

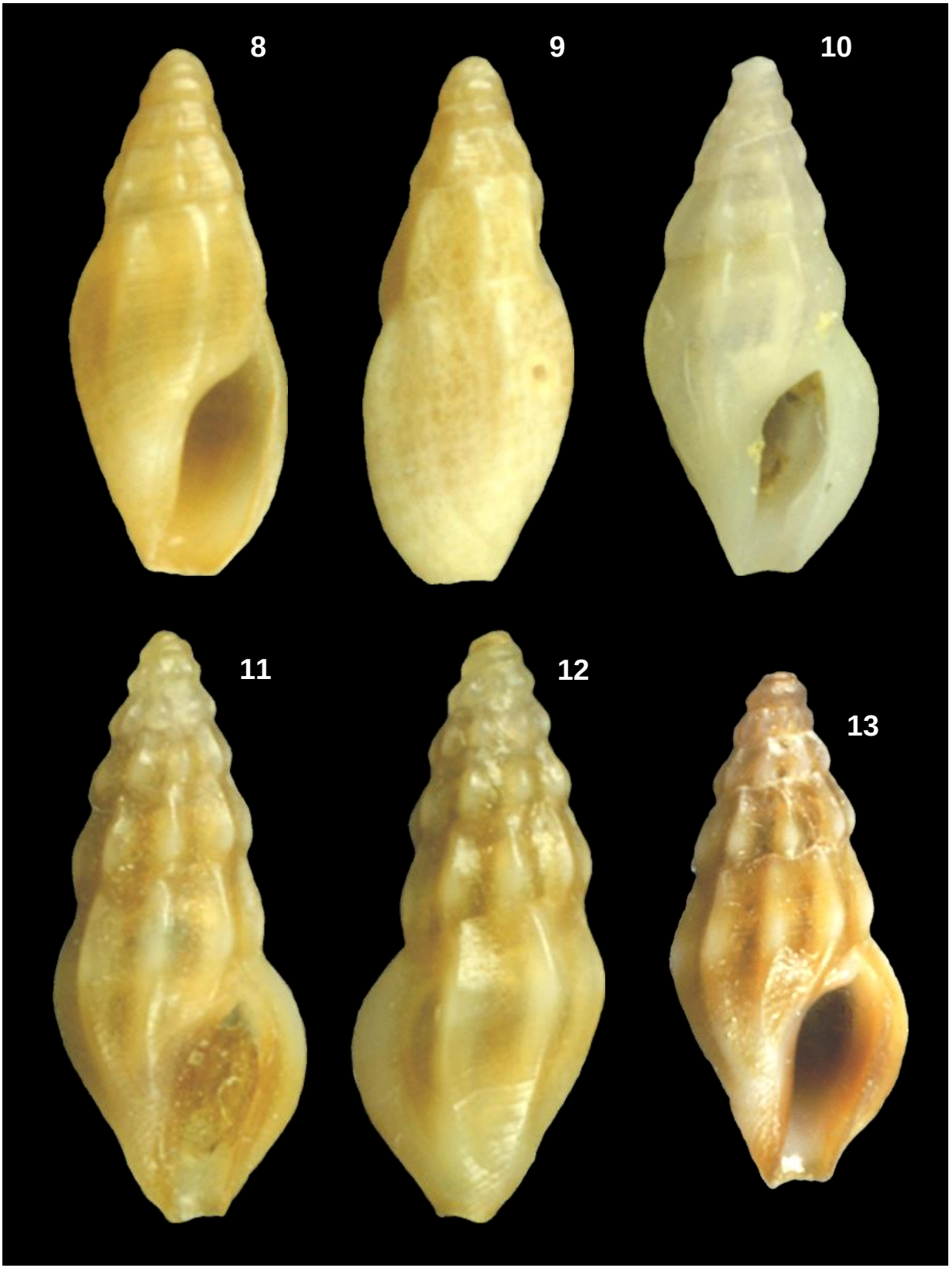

Plate II. Figs 8-9: *Anacithara angulosa* (E.A. Smith, 1871). Dredged off Abidjan, Ivory Coast. CFN. 5.04 mm; 10-13: *Anacithara maltzani* (Knudsen, 1952). CFN; 10-12: Dredged among shell grit at a depth of 43 m off Gorée Island, Dakar, Senegal. December 1980; 10: 5.89 mm; 11-12: Live collected/ with operculum. 6.73 mm; 13: Ilha de Luanda, Angola. Dredged at a depth of 40-60 m. 5.39 mm.

The genus *Semele* in West Africa (Mollusca: Bivalvia: Semelidae)

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Keywords: Mollusca, Bivalvia, SEMELIDAE, *Semele lamyi*, *Semele martinii*, *Semele modesta*, Gulf of Guinea, W Africa.

Abstract: The presence of *Semele modesta* (Reeve, 1853) in the Gulf of Guinea is confirmed. The relationship and the differences with *S. martinii* (Reeve, 1853) from the West Atlantic and *S. lamyi* from West Africa are discussed.

Abbreviations:
CFN: Private collection of Frank Nolf.
CFS: Private collection of Frank Swinnen (Lommel, Belgium)
H.: Height.
L.: Length.
LV : Left valve.
RV : Right valve.

Diagnosis:
Family SEMELIDAE Stoliczka, 1870
Genus *Semele* Schumacher, 1817

In W Africa the genus *Semele* is represented by two species only:

***Semele modesta* (Reeve, 1853)**
Pl. I, Figs 1-4; Pl. II, Figs 5-7
= *Amphidesma modesta* Reeve, 1853

This species belongs to the '*decisa*'-group, which contains several rather large, heavy, irregularly commarginally sculptured species. Until recently most authors followed Boss (1972) and considered a rare, deeper water species from Brazil and Uruguay as an amfiatlantic species with *modesta* as the earliest name. Yet, we agree with Huber (2010) in stating that the South American species is distinct from the West African *modesta*. It was named *Amphidesma martinii* by Reeve (1853).
Semele martinii grows larger, more than 62 mm, whereas the West African *Semele modesta* is usually smaller than 30 mm. Both species are uncommon. The habitat is distinct. *Semele martinii* is a sublittoral sand-dwelling species from at least 55-120 m, whereas *S. modesta* can be dived subtidally in sandy gravel at a depth of 4-6 m in São Tomé. The sculpture in adult specimens is quite distinct. The valves of *S. martinii* are commarginal fading anteriorly and very irregular posteriorly (like other species of the *S. decisa*-group), whereas in *S. modesta* the shells are rather equal, roughly ridged with dense fine radials. The description and the figure (fig. 1544 on p. 554) by Rios (2009) relate to *S. martinii*. Boss (1972; pl. 4 fig. B) illustrates a relatively large *S. modesta* (38.8 mm) from Ascension (W Africa). In the previous decade several specimens were dived by Italian and Belgian shell collectors in the Islands of São Tomé and Principe.

Geographic distribution: Liberia, the Gulf of Guinea (St. Helena, Ascension, São Tomé, Principe, Gabon).

Type locality: Cape Palmas (Liberia).

***Semele lamyi* Nicklès, 1955**
Pl. II, Figs 8-9
= *Semele obliqua* Lamy, 1914 [non Wood, 1815]
= *Semele purpurascens* Nicklès, 1950 [non Gmelin, 1791]

Another *Semele* from W Africa is *S. lamyi* Nicklès, 1955 (Pl. II, Figs 8-9). It was referred to as *S. purpurascens* (Gmelin, 1791) by Lamy (1923) and Nicklès ((1947; 1950; 1952), a species living from North Carolina (USA) to the Rio de la Plata (which separates Uruguay and Argentina), the coasts of the Gulf of Mexico, Texas, East Mexico and the Caribbean Sea. It is also found in the East Pacific, from Panama, Nicaragua and the Galapagos Islands towards the coasts of South America (Ecuador, Peru to Chile) (= *S. sparsilineata* Dall, 1915). Originally, Nicklès (1950) reported *S. purpurascens* as a West African species from Senegal, Guinea and the Republic of the Congo. However, his description and figure were based on a specimen from the Antilles (Caribbean Sea). Later on (1955), he obtained several valves from the *Atlantide*-expedition and he described *S. lamyi* as a new species. *S. lamyi* is different by the character of the pallial sinus (smaller), the strength of the cardinal dentition (less developed) and the nature of the sculpture. The surface lamellae of the outer surface of *S. purpurascens* are obliquely crossing the growth lines in the anterior and the median part of the

valves, whereas in *S. lamyi* they run parallel to each other.

Geographic distribution: From Senegal to Angola.

Type locality: Guinea-Bissau.

Acknowledgements: Jean-Etienne Ghyoot (Destelbergen, Belgium) made special efforts to dive bivalve shells from the Republic of São Tomé and Principe. Many thanks go to Frank Swinnen (Lommel, Belgium) for providing additional specimens for study and photography. David Monsecour (Aarschot, Belgium) and Johan Verstraeten (Oostende, Belgium) carefully corrected the manuscript of this paper.

References:

Ardovini, R. & Cossignani, T., 2004. *West African Seashells*. Ancona. 319 pp.

Boss, K.J., 1972. The genus *Semele* in the Western Atlantic (Semelidae; Bivalvia). *Johnsonia*, **5**(49): 1-32.

Coelho, E., 2009. *Compendium of Brazilian Sea Shells.* Rio Grande. 668 pp.

Huber, M., 2010. *Compendium of Bivalves*. ConchBooks. Hackenheim. 901 pp.

Lamy, E., 1923. Campagne du *Sylvana*, mission de Polignac et Gain. Moll. testacés. C.R. Congr. Soc. sav. [1922], *Sciences*: 22-37.

Nicklès, M., 1947. *La collection de Mollusques testacés marins de l'I.F.A.N.* Publ. I.F.A.N. Dakar, Catalogues **1**, 23 pp.

Nicklès, M., 1950. *Mollusques testacés marins de la Côte occidentale d'Afrique.* Manuels Ouest-Africains. Vol. II. Lechevalier. Paris. 269 pp.

Nicklès, M., 1952. Mollusques testacés marins du littoral de l'A.E.F. *Journal de Conchyliologie*, **92**: 143-154

Nicklès, M., 1955. Scaphopodes et Lamellibranches récoltés dans l'Ouest Africain. *Atlantide Report N°3. Scientific Results of the Danish Expedition to the Coasts of Tropical West Africa 1945-1946.* Danish Science Press, Copenhagen. 93-237, 41 figs.

Reeve, L.A. (& G.B. Sowerby II), 1853. *Monograph of the genus* Amphidesma. *Conchologia Iconica: or, Illustrations of the Shells of Molluscous Animals*, Vol.8. London.

Rios, E. de Carvalho, 2009. *Compendium of Brazilian Sea Shells*. Rio Grande, Brazil. 668 pp.

Geographic range:

S. modesta (Reeve, 1853) **S. lamyi Nicklès, 1955**

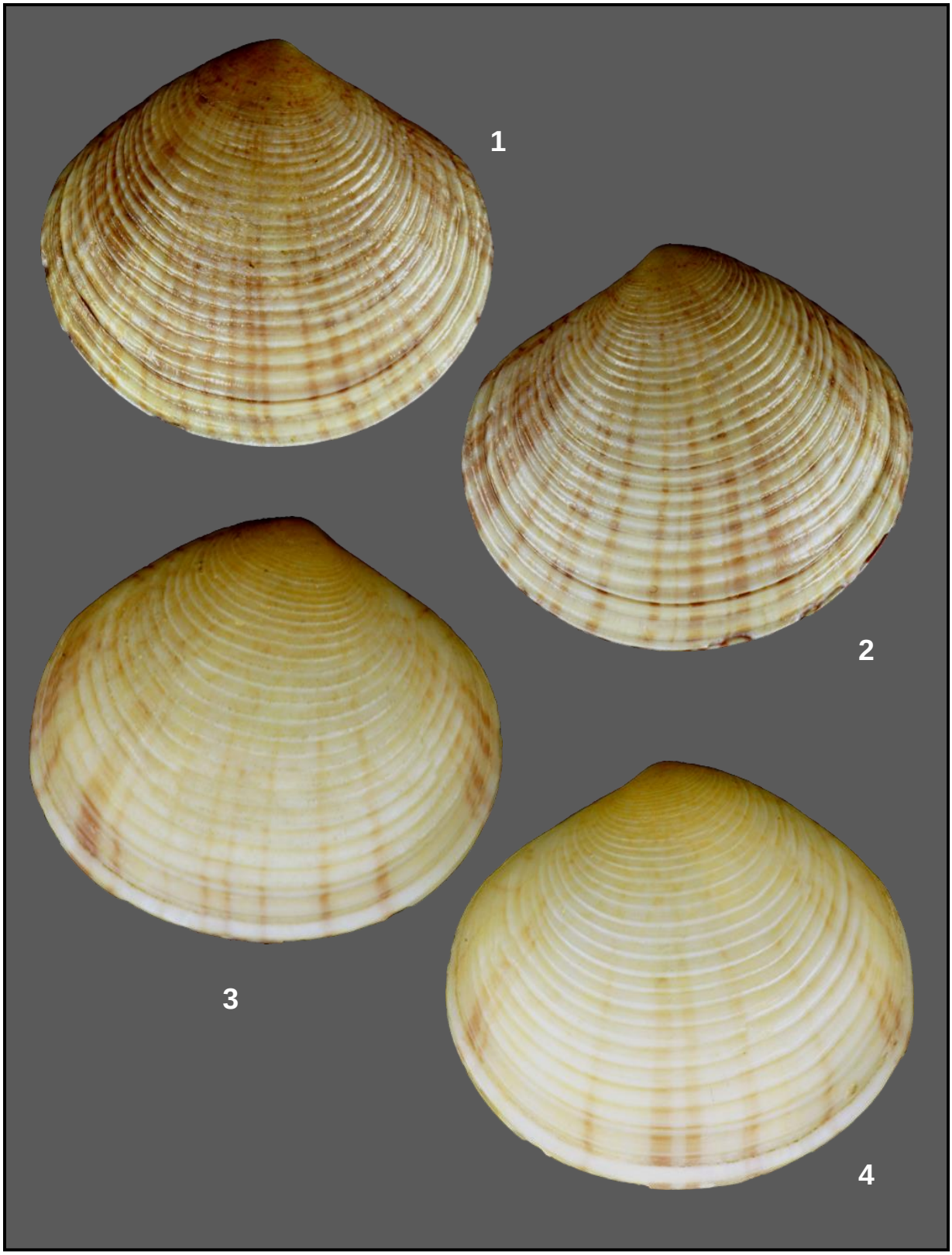

Plate I. Figs 1-4: *Semele modesta* (Reeve, 1853). Lagoa Azul, São Tomé, Gulf of Guinea. Dived in sandy gravel at a depth of 5 m; 1-2: CFN. H. 22.17 mm L. 24.68 mm; 1: RV; 2: LV; 3-4: CFS. H. 23.19 mm L. 25.49 mm; 3: RV; 4: LV.

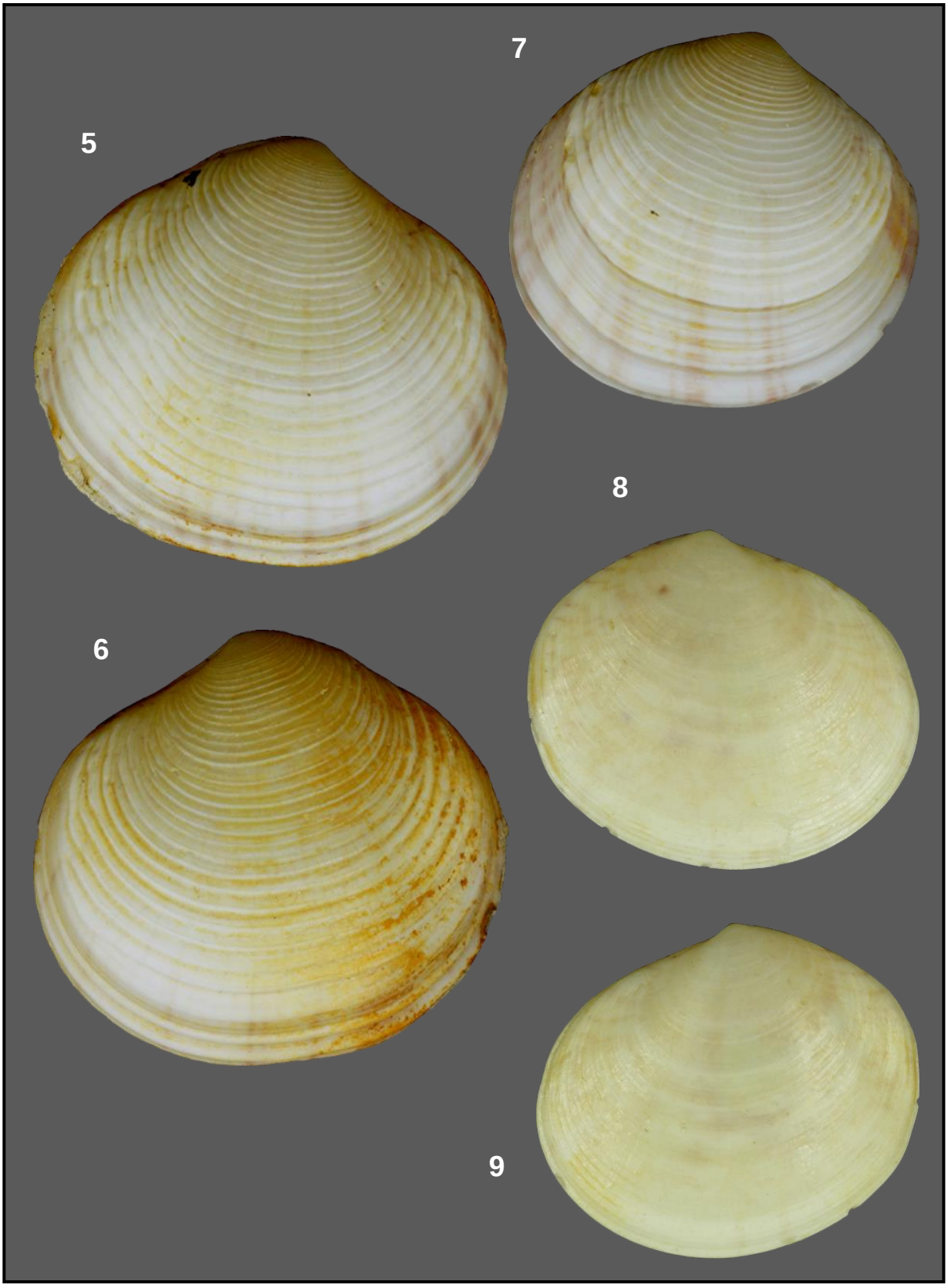

Plate II. Figs 5-7: *Semele modesta* (Reeve, 1853). Lagoa Azul, São Tomé, Gulf of Guinea. Dived in sandy gravel at a depth of 5 m. CFS; 5-6: 26.41 mm L. 28.79 mm; 5: RV; 6: LV; 7: RV. H. 22.08 mm L. 24.14 mm; Figs 8-9: *Semele lamyi* Nicklès, 1955. Pointe-Noire, Republic of the Congo. Dredged in sand at a depth of 8 m. 1992. CFN. H. 17.93 mm L. 20.43 mm; 8: RV; 9: LV.

Clavatula christianae, a new turrid from West Africa (Mollusca: Gastropoda: Clavatulidae)

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Keywords: Mollusca, Gastropoda, CLAVATULIDAE, *Clavatula christianae*, West Africa, new taxon.

Abstract: A new *Clavatula*-species from West Africa is described. This shell was already figured and erroneously identified as *Drillia rosolina* Marrat, 1877 by Dautzenberg (1910), Nicklès (1950) and Bernard (1984). *Drillia rosolina* is a junior synonym of *D. rosacea* Reeve, 1845. *C. christianae* is compared with the related *Clavatula delphinae* (Nolf, 2008).

Abbreviations:
CFN: Private collection of Frank Nolf.
MNHN: Musée National d'Histoire Naturelle, Paris, France
RBINS: Royal Belgian Institute for Natural Sciences, Brussels, Belgium.

Introduction: The West African Clavatulinae Gray, 1858 have not been revised since the works of Strebel (1912; 1914). Unfortunately, these works were restricted to the genera *Perrona* Schumacher, 1817 and *Tomella* Swainson, 1840 (later on renamed *Tomellana* Wenz, 1943) and to the genus *Pusionella* Gray, 1847. Different authors dealt with West African Clavatulinae: von Maltzan (1883), Knudsen (1952 ; 1956), Nicklès (1950) and Bernard (1984), while the work of Kilburn (1985) was limited to the South African, mainly Indo-Pacific, species.
Other studies covered *Clavatula mystica* Reeve, 1843 (Boyer & Hernández, 2004; Nolf, 2007), *C. martensi* von Maltzan, 1883 (Nolf, 2008) and the new species *C. cossignanii* from Senegal (Ardovini, 2004). The genus *Clavatula* is more represented in West Africa than originally supposed by different authors in the past. In recent literature many more clavatulids were discovered and described: *C. knudseni* Nolf & Verstraeten, 2007; *C. matthiasi* Nolf, 2008; *C. hattenbergeri* Nolf & Verstraeten, 2008; *C. congoensis* Nolf & Verstraeten, 2008; *C. delphinae* Nolf, 2008 and *C. pseudomystica* Nolf, 2008.
Knudsen (1952; 1956) lumped all the species currently attributed to different genera of the Clavatulinae in the genus *Clavatula*. Powell (1966) reported the recent genera *Clavatula*, *Perrona*, *Tomellana* and *Pusionella* as being present off West Africa

During intensive handling and studying thousands of West African turrids during the latest decade we found several specimens that looked different from all other *Clavatulid*-species and they remained unidentified till now. The present new species proved to be very scarce and it can only be compared with *Clavatula delphinae* (Nolf, 2008).

Marrat (1877) introduced the new species *Pleurotoma* (*Drillia*) *rosolina* from West Africa. Unfortunately, that species was not figured and the description was very brief. Dautzenberg (1910) hesitatingly referred a sample of shells dredged by the *Mission Gruvel* from Mauritania to this species. The specimen illustrated by Dautzenberg (pl. I, figs 17-18) is figured on our Pl. III, Fig. 13-14 (collections of the MNHN) and a large sample of these shells was found in the Dautzenberg-collection (RBINS) (Pl. III, Figs 15-18). The specimens were said to be whitish with a brown band on the body whorl and so they did not agree with the shell of Marrat, which was uniformly pink coloured. On the lower part of the body whorl two rows of tubercles are present, a characteristic not mentioned by Marrat. This species was later on described and figured by Nicklès (1950) and Bernard (1984) as *Drillia rosolina*. It seems evident that all these specimens belong to the same species, but certainly not to *Drillia rosolina* Marrat, 1877. The colouration and the structure of the outer surface are totally different as the shell of Marrat is uniformly pink and has not got the two/three rows of tubercles on the lower part of the body whorl. Moreover, the ribs in the Dautzenberg-samples are strictly axial and not oblique as in *D. rosolina*. Unfortunately, it was not possible to locate the type of the Marrat-shell but judging from the description there is no doubt about the complete similarity to *Drillia rosacea* Reeve, 1845:
'*P. testa turrita, acuminata, rosea; anfractibus longitudinaliter costatis et transversim striatis, costis obliquis, prope suturas concavis; apertura brevi, fauce rosea; profunde emarginato. Eximia venustate.*
Hab. West Africa.

This very beautiful shell resembles P. rosea*, Sow., from which it differs in being obliquely ribbed, closely striated and of a uniform rose colour*.' (Marrat, 1877).

The following is the original description of *Drillia rosacea* (Reeve, 1845) :
'Pleurotoma rosacea. '*Pleur. testa ovato-turrita, anfractibus rotundatis, superne depresso-concavis, transversim subtiliter striatis, longitudinaliter crebricostatis; canali brevissimo; sinu lato, subamplo; undique eximie rosacea*.'
Hab.- ?'

Knudsen (1952) and Tucker (2004) are right to claim that *D. rosolina* Marrat, 1877 is a junior synonym of *Drillia rosacea* Reeve, 1852. Knudsen (1952) made a new description of *Drillia rosacea* to avoid any confusion and to facilitate all further identifications.

Material and methods: The study is based on shells obtained from Paul-Henri Hattenberger (Republic of the Congo), several other French and Portuguese shell collectors who brought many unidentified shells to our attention and especially on the samples of the Mission Gruvel (1908) stored in the MNHN and the Ph. Dautzenberg-collection (RBINS).

Type material:
Holotype: Cacuaco, Prov. Bengo, Angola. On intertidal rocks. 1975. 22.67 mm. RBINS IG.31835 - catalogue number in DaRWIN database: MT.2523. (Pl. II, Figs 7-8).

Paratypes:
1. 11.94 mm. (CFN). Cap Esterias, Gabon. (Pl. I, Figs 1-2).
2. 12.84 mm. (CFN). Pointe-Noire, mouth of the Songolo river, Republic of the Congo. Collected by snorkelling at a depth of 4 m. (Pl. I, Figs 3-4).
3. 15.72 mm (CFN). Cacuaco, Prov. Bengo, Angola. On intertidal rocks. 1975. (Pl. II, Figs 5-6).
4. 24.81 mm (CFN). Cacuaco, Prov. Bengo, Angola. On intertidal rocks. 1975. (Pl. II, Figs 9-10).
5. 25.34 mm (CFN). Cacuaco, Prov. Bengo, Angola. On intertidal rocks. 1975. (Pl. II, Figs 11-12).
6. 19.54 mm (MNHN). Bilaouak, north of Nouakchott, Mauritania. 18° 34' N. Dredged by Gruvel in 1908. (Pl. III, Figs 13-14).
7. 13.57 mm (RBINS). Bilaouak, north of Nouakchott, Mauritania. 18° 34' N. Dredged by Gruvel in 1908. (Pl. III, Fig. 15).
8. 22.33 mm (RBINS). Bilaouak, north of Nouakchott, Mauritania. 18° 34' N. Dredged by Gruvel in 1908. (Pl. III, Fig. 16).
9. 23.32 mm (RBINS). Bilaouak, north of Nouakchott, Mauritania. 18° 34' N. Dredged by Gruvel in 1908. (Pl. III, Figs 17-18).

Description:
Family CLAVATULIDAE Gray, 1853
Genus Clavatula Lamarck, 1801

***Clavatula christianae* spec. nov.**
(Pl. I, Figs 1-6; Pl. II, Figs 7-12; Pl. III, Figs 13-18)

The protoconch consists of 2.5 glossy whorls. The general outline is claviform and the surface of the whorls (8) is glossy. The body whorl takes about half the shell's length. The shell is covered with an axial sculpture of numerous close-set, very slightly oblique angular ribs (10-20) running from the shoulder to the suture of the following whorl, 16-20 on the last whorl where they become weaker in the lower part carrying 3-5 rows of small weakened nodules. The whole surface is intersected by a large number of parallel spiral threads. The shallow suture is distinct and undulating, due to the incision of the oblique ribs followed by a strong sharp ridge. The subsutural area is very narrow. The sinus is shallow and neatly curved. The mouth is elongated and narrow.
Colouration: The entire surface is brownish: lighter in the upper part of the whorls and darker in the lower part while interrupted by greyish white ribs. The shoulder on the body whorl is greyish white, followed by a broad brown area below and a very narrow creamy white band in the area of the tiny knobs on the siphonal canal. The aperture is generally brown and becomes bluish grey deeper inside. Specimens from Gabon (Bernard, pl. 51, fig. 196) and Angola (Pl. I, Figs 5-6 ; Pl. II, Figs 7-12) tend to become olive-brown instead of light brown.
An operculum could be recovered from the holotype. Unfortunately, it was slightly damaged, but the following *Clavatula*-characteristics were readily visible as well on the outside as on the inside of the operculum: ovate lunate with a medio-lateral nucleus. The animal has not been studied.

Measurements: From 12 to 26 mm.

Etymology: *Clavatula christianae* is named after Christiane Vander Gucht, the author's wife who shared so many years with him in building up a

scientific shell collection. For convenience sake the last vocal '*e*' in '*Christiane*' has been omitted.

Habitat: In sandy mud in the littoral and infralittoral zone (2-10 m) to sublittoral waters.

Type locality: Cacuaco, Prov. Bengo, Angola.

Geographic range: From Mauritania to the north of Angola (Cacuaco, Prov. Bengo). Yet, as in many other West African species there is a gap in the distribution between Senegal and the Gulf of Guinea. This is caused by a lack of material obtained from fishermen and local shell collectors in these countries, in addition to a more dangerous situation for foreign divers because of political instability.

Discussion: The new species can only be compared with *Clavatula delphinae* Nolf, 2008 (Pl. IV, Figs 19-24). This turriform shell is more elongated in outline and it has a broader aperture. The siphonal canal is longer. The subsutural ridge is not so conspicuous and the subsutural area is wider. The ribs are shorter and strongly oblique, whereas *C. christianae* has longer axial ribs. Moreover, the colour of *C. delphinae* in general is not uniformly brown, but rather greyish, especially concerning the aperture. Both species live in the same geographic area, except that *C. delphinae* is restricted to the littoral region from Ghana to Angola.

As the operculum is consequent to the shape of the aperture and the opercular growth takes the most convenient form to fill the apertural space this part of the animal can only be considered to be of secondary importance as a taxonomic characteristic. However, the special structure of the operculum found in the holotype confirms our opinion that the present new species belongs to the genus *Clavatula*. The mouth of *C. christianae* is narrower than in similar *Clavatula*-species and so it is more lanceolate. However, the general shape remains ovate lunate with a medio-lateral nucleus surrounded by excentric rings. The operculum in *Drillia* is leaf-shaped with a subterminal nucleus.

Conclusion: *Clavatula christianae* seems to be rarely collected although it occurs in littoral to sublittoral waters. Its characteristics are very specific and no confusion with any other turrid can be made. Occasionally, juvenile specimens could be mistaken for the related *C. delphinae*, but the abovementioned differences allow to separate them at a glance. The junior synonymy of *Drillia rosolina* Marrat, 1877 with *D. rosacea* Reeve, 1845 is confirmed.

Acknowledgements: First of all many thanks go to Philippe Bouchet & Virginie Héros (MNHN) for kindly loaning the specimen of '*Drillia rosolina*' collected by Gruvel. Thierry Backeljau (RBINS) provided the opportunity to take photographs of the samples of that species in the Dautzenberg-collection. David Monsecour (Aarschot, Belgium) and Johan Verstraeten (Oostende, Belgium) were involved in checking the manuscript and correcting the English text.

References:

Ardovini, R., 2004. *Clavatula cossignanii* sp.n. (Gastropoda, Turridae) dal Senegal, West Africa. Mostra mondiale. Ancona. Malacologia, **43**: 5-6.

Ardovini, R. & Cossignani, T., 2004. *West African Seashells*. Ancona. 319 pp.

Bernard, P.A., 1984. *Shells of Gabon*. Libreville, Gabon. 140 pp.

Bouchet, Ph. & Rocroi, J.-P., 2005. Classification and Nomenclator of Gastropod Families. *Malacologia*, **47**(1-2): 1-397.

Boyer, F. & Hernández, J.M., 2004. Variability and distribution of *Clavatula mystica* (Reeve, 1843). *Iberus*, **22**(1): 77-84.

Dautzenberg, Ph., 1910. Contribution à la Faune Malacologique de l'Afrique Occidentale. *Actes de la Société Linnéenne de Bordeaux*. Tome 64: 47-220. 4 pls.

Knudsen, J., 1952. Marine Prosobranchs of Tropical West Africa collected by the "Atlantide" Expedition 1945-46. *Videnskabelige Meddelelser fra Dansk naturhistorisk Forening i Kjobenhavn*. Bd. 114: 129-185, pls I-III.

Knudsen, J., 1956. Marine Prosobranchs of Tropical West Africa (Stenoglossa). *Atlantide Report n°4*: 7-110, pls. 1-4.

Maltzan, H.F. von, 1883. Beiträge zur Kenntnis der senegambischen Pleurotomiden. *Jahrbücher der Deutschen Malakozoologischen Gesellschaft*, **10**: 115-135, pl. 3.

Marrat, F.P., 1877. A list of West African Shells, including three new Pleurotomae and one new Columbella. *The Quarterly Journal of Conchology I*: 237-244.

Millard, V., 2008. *Classification of Mollusca. A Classification of Worldwide Mollusca.* **Vol.1**, Fourth Edition. Clareinch.1026 pp.

Nicklès, M., 1950. *Mollusques testacés marins de la Côte occidentale d'Afrique.* Manuels Ouest-Africains. Vol. II. Lechevalier. Paris. 269 pp.
Nolf, F. & Verstraeten, J., 2007. *Clavatula knudseni* (Mollusca: Gastropoda: Clavatulidae): a new turrid species from West Africa. *Neptunea*, **6**(4): 10-22.
Nolf, F., 2007. About a possible further range extension for *Clavatula mystica* (Reeve, 1843) (Mollusca: Gastropoda: Clavatulidae). *Neptunea*, **6**(4): 23-30.
Nolf, F., 2008. A study on the true identity of *Clavatula martensi* von Maltzan, 1883 (Mollusca: Gastropoda: Clavatulidae) resulting in the description of a new species, *Clavatula matthiasi*. *Neptunea*, **7**(1): 7-16.
Nolf, F. & Verstraeten, J., 2008. Two new turrid species from Congo-Brazzaville: *Clavatula hattenbergeri* and *Clavatula congoensis* (Mollusca: Gastropoda: Clavatulidae). *Neptunea*, **7**(1): 17-29.
Nolf, F., 2008. Two new turrid species from West Africa: *Clavatula delphinae* and *Clavatula pseudomystica* (Mollusca: Gastropoda: Clavatulidae). *Neptunea*, **7**(2): 6-13.
Powell, A.W.B., 1964. The family Turridae in the Indo-Pacific. Part 1. The subfamily Turrinae. *Indo-Pacific Mollusca*, **1**(5): 227-346.
Powell, A.W.B., 1966. The molluscan families Speightiidae and Turridae. An evaluation of the valid taxa, both Recent and fossil, with lists of characteristic species. *Bulletin of the Auckland Institute and Museum*, **5**: 1-184.
Strebel, H., 1912. Bemerkungen zu den *Clavatula*-Gruppen *Perrona* und *Tomella*. *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten*, **29**(2): 1-24, pl. 1.
Strebel, H., 1914. Mollusca I, Gen. *Pusionella*. *Beiträge zur Kenntnis der Meeresfauna Westafrikas*, **1**(2): 87-125, pl. 3.
Tucker, J.K., 2004. Catalog of Recent and fossil turrids (Mollusca). *Zootaxa*, 682. Auckland. 1295 pp.
Vaught, K.A, 1989. *A Classification of the Living Mollusca.* American Malacologists, Inc., Melbourne, Florida. 195 pp.

Geographic distribution of *Clavatula christianae*

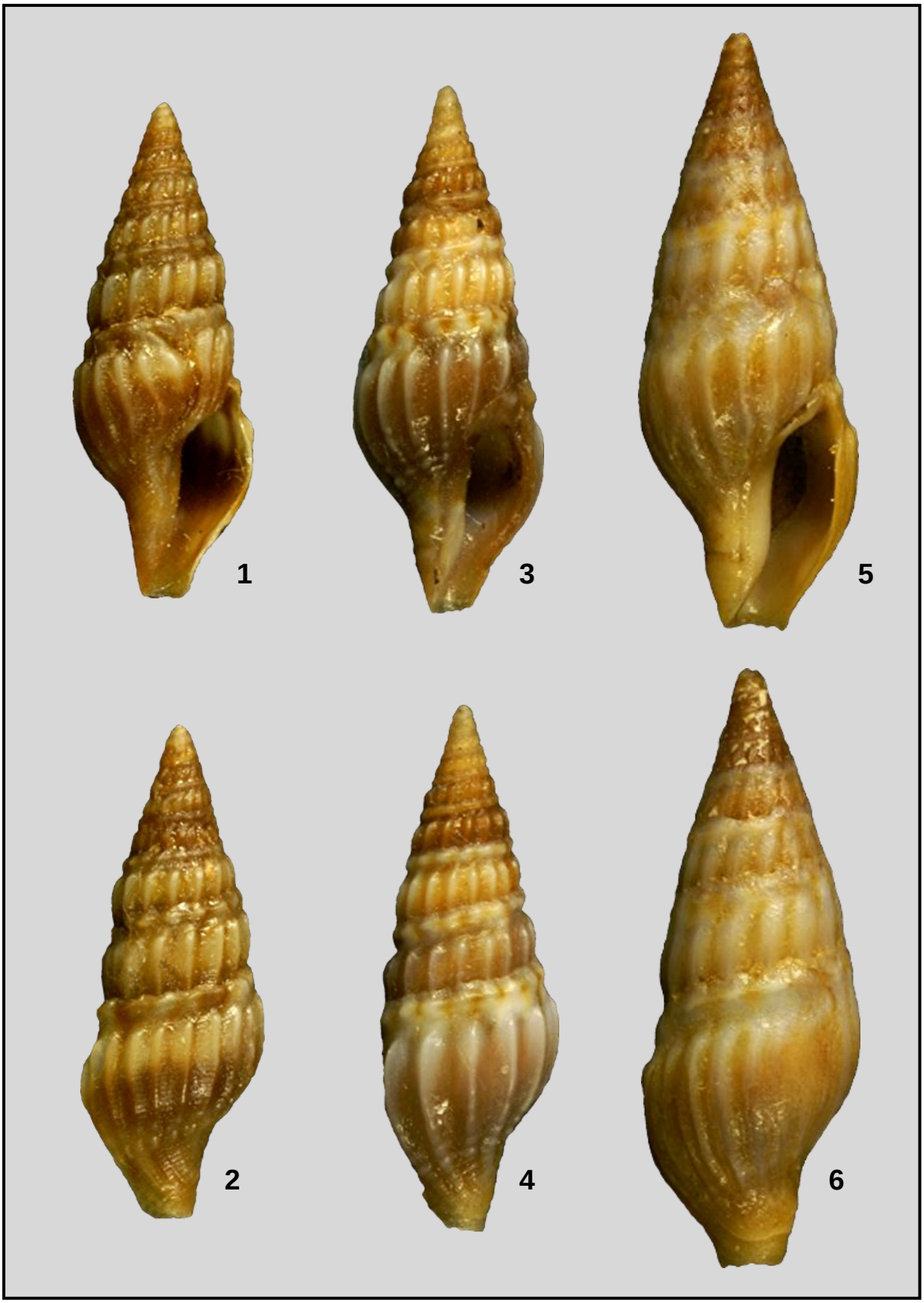


Plate I. Figs 1-6: *Clavatula christianae* nov. spec.; 1-2: Cap Esterias, Gabon. Paratype 1. CFN. 11.94 mm; 3-4: Pointe-Noire, mouth of the Songolo river, Republic of the Congo. Collected by snorkelling at a depth of 4 m. 1995. Paratype 2. CFN. 12.84 mm; 5-6: Cacuaco, Prov. Bengo, Angola. On intertidal rocks. 1975. Paratype 3. CFN. 15.72 mm.

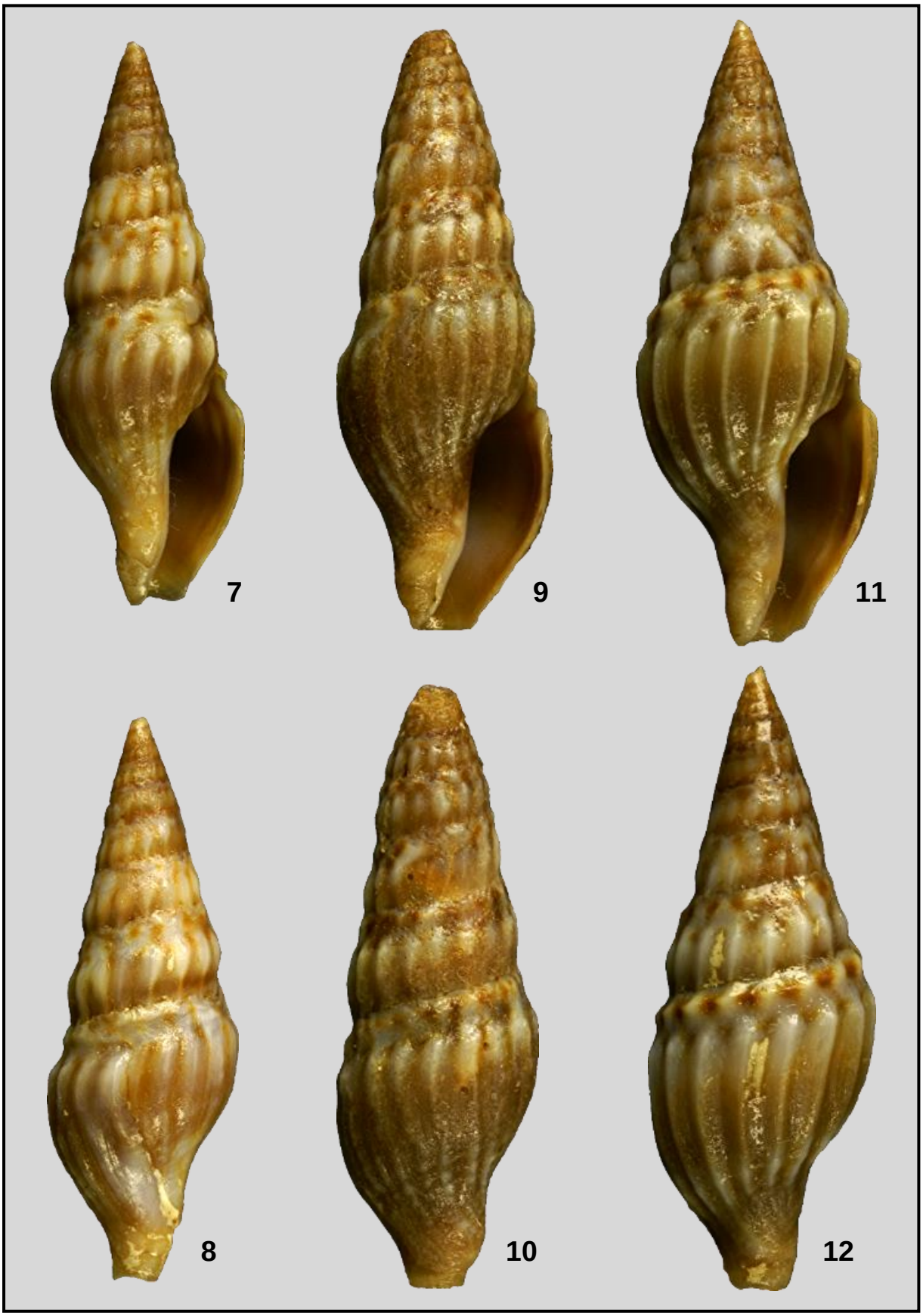


Plate II. Figs 7-12: *Clavatula christianae* nov. spec. Cacuaco, Prov. Bengo, Angola. On intertidal rocks. 1975; 7-8; Holotype. RBINS IG.31835 – catalogue number in DaRWIN database: MT.2523. 22.67 mm; 9-12: CFN; 9-10: Paratype 4. 24.81 mm; 11-12: Paratype 5. 25.34 mm.

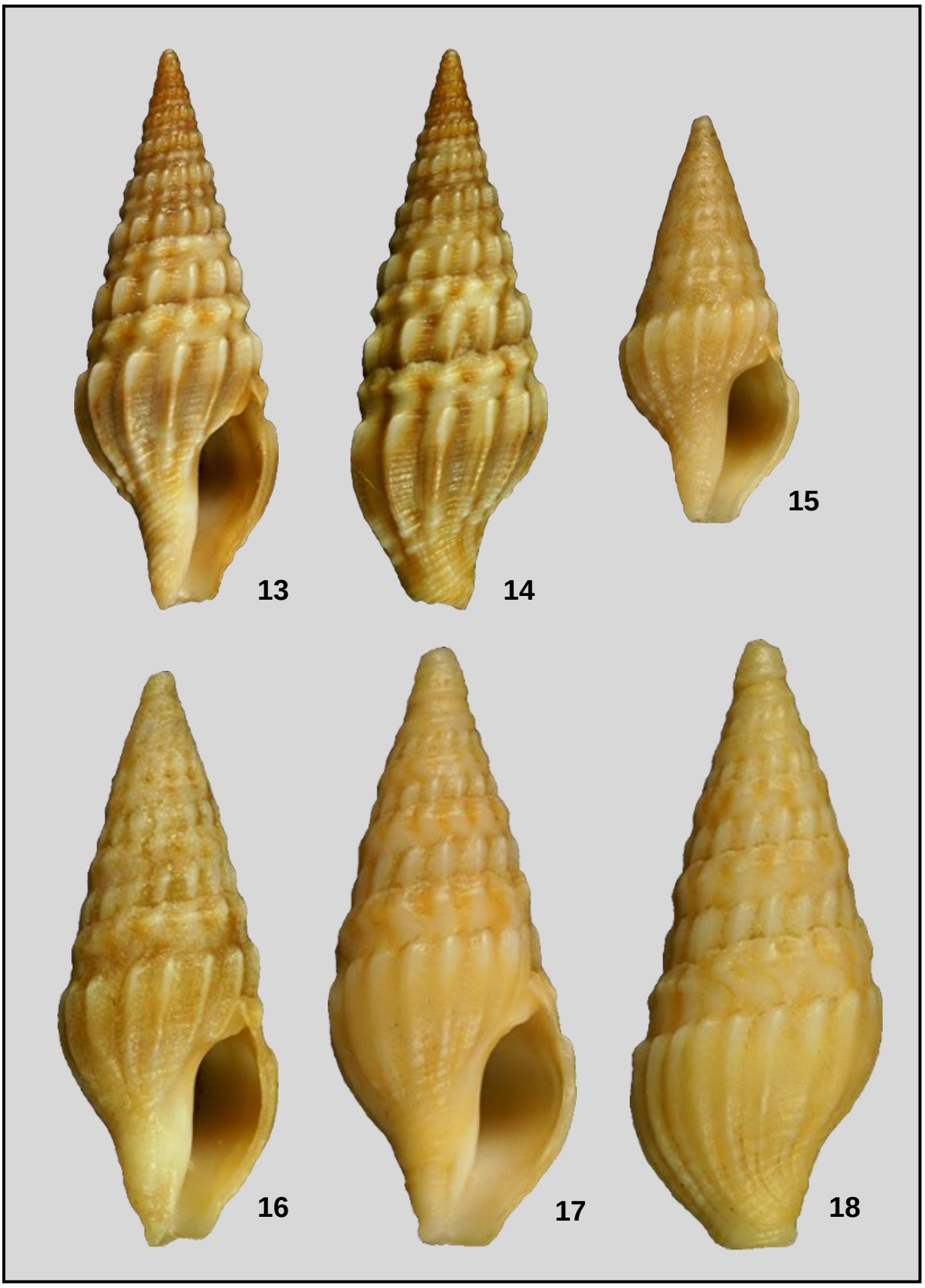


Plate III. Figs 13-18: *Clavatula christianae* nov. spec. Bilaouak, north of Nouakchott, Mauritania. 18° 34' N. Dredged by Gruvel in 1908; 13-14: MNHN. 19.54 mm; 15-18: RBINS; 15: 13.57 mm; 16: 22.33; 17-18: 23.32 mm.

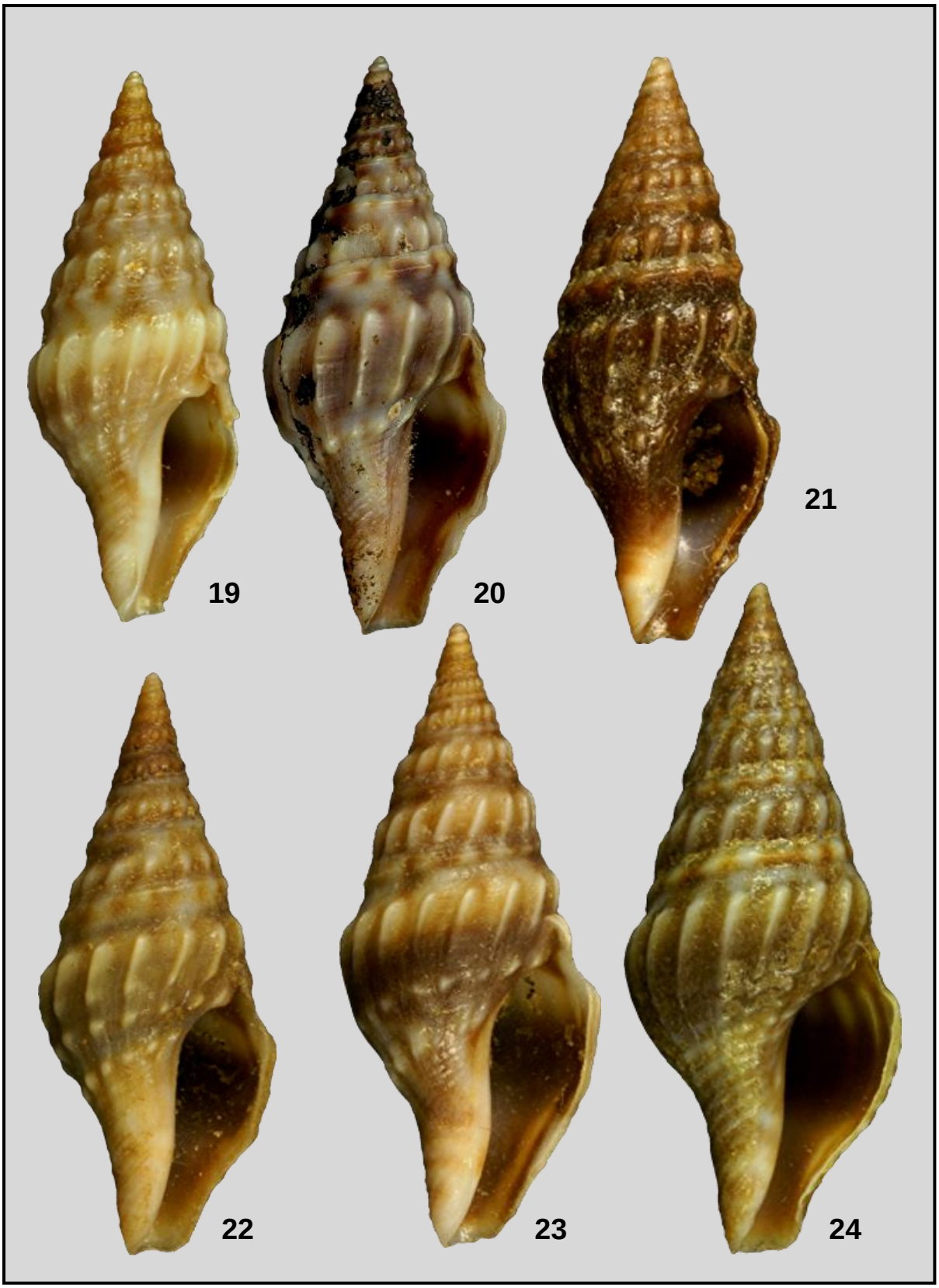
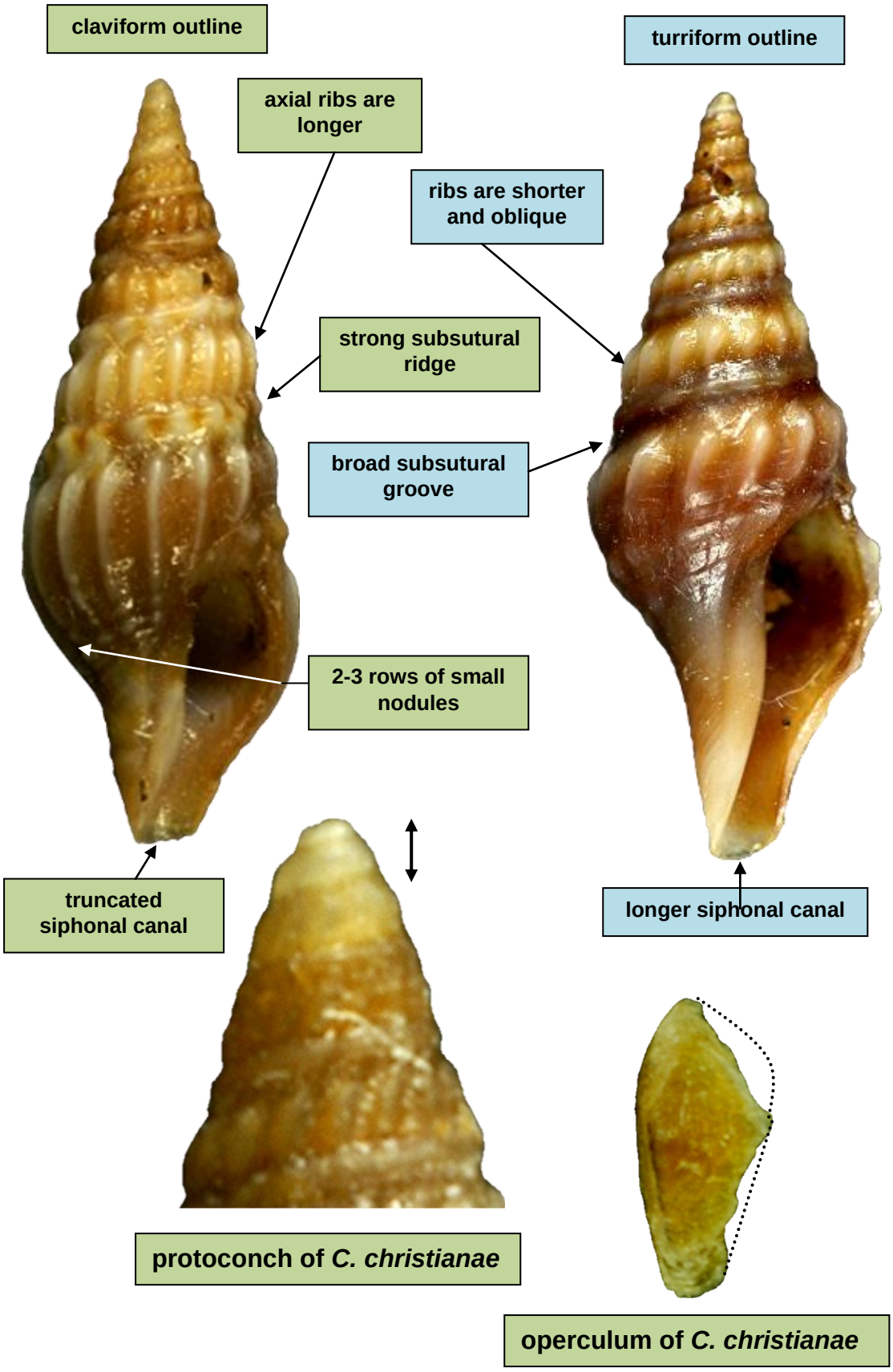


Plate IV. Figs 19-24: *Clavatula delphinae* Nolf, 2008. CFN; 19: Cap Esterias, Gabon. Paratype 3. 14.38 mm; 20: Pointe-Noire, mouth of the Songolo river, Republic of the Congo. Collected by snorkelling at a depth of 4 m. 1995. Paratype 4; 21-24: Barra do Dande, Prov. Bengo, Angola. 1973. Dived on a rocky bottom at a depth of 3-5 m; 21: 15.67 mm; 22: 16.81 mm; 23: 17.44 mm; 24: 19.50 mm.



Comparison between *Clavatula christianae* (left; paratype 2) and *Clavatula delphinae* (right; holotype)