

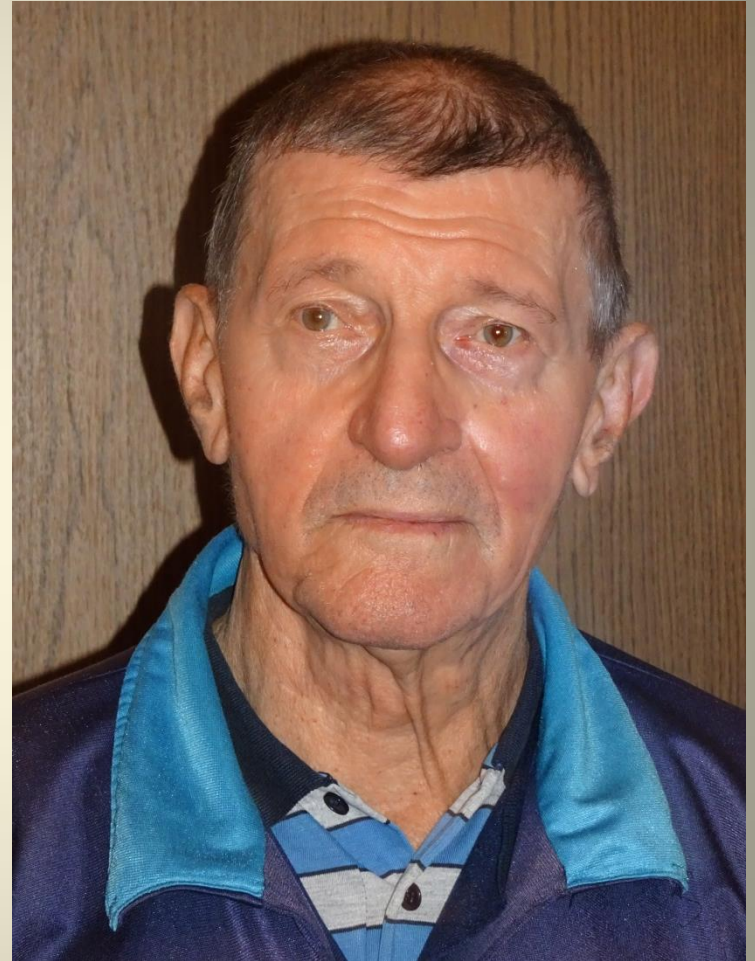
# The genus *Cymbium* in Angolan waters

speaker: Frank Nolf

# Introduction

**André Coenye:**

Belgian navigating officer of PEMARCO who operated from Cabinda to the mouth of the Cunene River, the border between Angola and Namibia, from 1960 to 1973.



**Results of dredgings from 1960 to 1973:**  
thousands of shells, among them many  
undescribed species:

- *Acesta angolensis*
- *Adinopsis skoogi*
- *Aporrhais senegalensis*
- *Aporrhais pesgallinae*
- *Clavatula quinteni*
- *Clavatula xanteni*
- *Cymbium coenyei*
- *Cymbium fragile*
- *Cymbium patulum*
- *Europicardium nolfi*
- *Fusinus albinus*
- *Fusinus caparti*

- *Glycymeris rafaelmesai*
- *Latirus mollis*
- *Nucula mariaae*
- *Phenacovolva patriciae*
- *Pteropurpura dearmatus*  
*fairiana*
- *Xenophora digitata*

and many others in the  
families *Marginellidae*,  
*Muricidae*, *Drilliidae*, *Turridae*,  
*Clavatulidae*, ...

# The genus *Cymbium*

- Typetaxon: *Cymbium cymbium* (Linnaeus, 1758)
- a taxonomic not fully defined group in the family VOLUTIDAE
- 14 different species
- geographical range: from the western end of the Mediterranean Sea to the border between Angola and Namibia
- no species from the Canaries
- animals are ovoviviparous

- Important contributions to the knowledge of *Cymbium* by:
  - \* Broderip (1830), Pallary (1930), Weaver & DuPont (1970), Tripodi (1972), Bruynseels (1975), Marche-Marchad (1977), Marche-Marchad & Rosso (1978), Fittkau & Stürmer (1980 & 1985), Poppe & Goto (1992).
- Main problems: unreliable sources and data, the lack of accurate locality data
- Most specimens are trawled and are intended for food purposes

- Other problems:
  - \* individual variability
  - \* the scarce number of morphological characteristics that can be used in the diagnosis
  - \* the standardized shape
  - \* absence of sculpture
  - \* small differences in colour and general outline
  - \* possible influence of habitat conditions and sexual dimorphism → more bulbous last whorl, wider aperture in female specimens

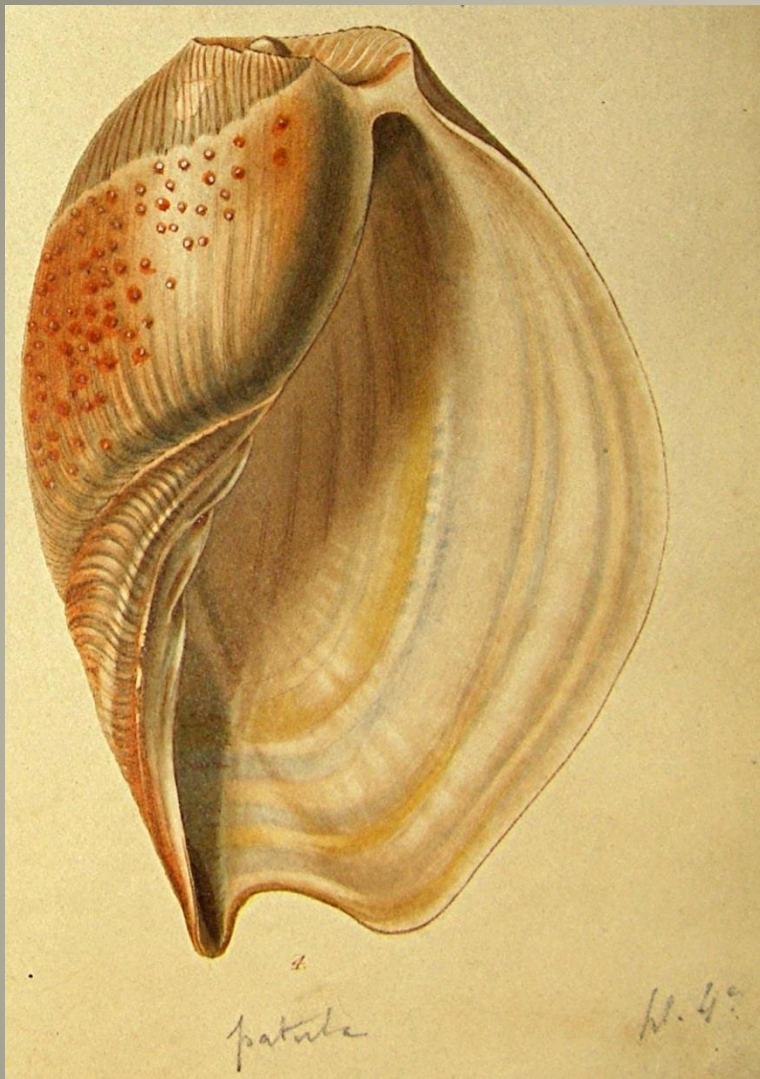
- *Cymbium* specimens in the present study were gathered by a Belgian fishermen (PEMARCO) who paid attention to accurate information about exact locality, depth and habitat.
- The following conchological characteristics have been used: general shape of shells, number of columellar folds, the condition of the sutural ramp, the protoconch and its eventual callus, the siphonal and adapical notch, extension of the shoulder, internal and external colour of shells, aspects of the enameled layer and the periostracum.

- Conchological differences should be compared later on to the shape of radula, aspect of the newborn larva, number of larvae per birth, pigmentation or pattern of soft parts and finally the results of DNA barcoding research.



# *Cymbium patulum* (Broderip, 1830)

- **Type locality:** '*Oceano Africano*' (sic)
- **Habitat:** from Luanda, Morro, Quicombo (Angola) – trawled between 70 and 100 m and off the mouth of the Cunene River (the border between Angola and Namibia) – trawled at 170-180m.  
Lives on a muddy bottom.



Broderip, W.J., 1830. A Monograph of the Genus *Cymba* [in] Broderip, W.J. and G.B. Sowerby, *Species Conchyliorum*, 1(1): figs 4-4b. *Cymbium patulum* (Broderip, 1830).



***Cymbium patulum* (Broderip, 1830)**  
Ambriz, Angola. 07°51' S/ 13°08' E. -  
trawled by Belgian fishermen  
(PEMARCO) at a depth of 100 m. 1967.  
168.13 mm.



***Cymbium patulum* (Broderip, 1830)**  
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trawled by Belgian fishermen  
(PEMARCO) at a depth of 100 m. 1967.  
168.13 mm.



***Cymbium patulum* (Broderip, 1830)**  
Cape Morro, Angola. 10°50' S/ 13°37' E. -  
trawled by Belgian fishermen (PEMARCO) at a  
depth of 70 m. 1972. 151.64 mm.



***Cymbium patulum* (Broderip, 1830)**  
Ambriz, Angola. 07°51' S/ 13°08' E. -  
trawled by Belgian fishermen (PEMARCO) at a  
depth of 100 m. 1974. 144.53 mm.



***Cymbium patulum* (Broderip, 1830)**  
Cape Morro, Angola. 10°50' S/ 13°37' E. –  
trawled by Belgian fishermen (PEMARCO) at a  
depth of 70 m. 1972. 151.64 mm



***Cymbium patulum* (Broderip, 1830)**

Trawled by Belgian fishermen off Cape Fria, mouth of the Cunene River, border between Angola and Namibia. 18° S/ 12 E. 1964.

Left and middle: 138.26 mm; right: juvenile specimen, 28.72 mm.



# ***Cymbium coenyei* Nolf, 2017**

Off the mouth of the Congo River, near the lighthouse between Banana and Cabinda,

Democratic Republic of the Congo.

05°59' S/ 12°21' E. Trawled by Belgian fishermen (PEMARCO) at a depth of ca 20 m from a muddy bottom. 1967.

Measurements: from 90 to 153 mm.



**Holotype. RBINS (IG 33588, MT 3618).  
121.23 mm.**



**Paratype 1 - 152.79 mm**



**Paratype 2 - 135.29 mm**



**Paratype 4 - 113.69 mm**



**Paratype 5**  
**113.69 mm**



**Paratype 6**  
**139.91 mm**





**Paratype 7**  
**138.59 mm**



**Paratype 8**  
**139.91 mm**





**Paratype 9 - 115.92 mm**





**Paratype 10 - 139.76 mm**



**Paratype 11 - 90.39 mm  
specimen with distinct  
striped dorsum**



**Paratype 12 - 118.75 mm**



**Paratype 13 - 117.35 mm**



**Paratype 14 - 118.92 mm**

# *Cymbium pachyus* (Pallary, 1930)

- **Type locality:** Douala, Cameroon.
- **Habitat:** From the littoral to about 10 m  
Lives on a muddy bottom.
- **Geographic distribution:** From Togo, Benin, Nigeria to the coasts of Cameroon. Absent in Angolese waters.



Cameroon  
Francas  
1917

*Cymbium pachyus* Pallary  
var.  
Douala (Cameroon)  
fig. "Ann. Mus. Marseille"  
t. 22, mém. 3 - 1930 -  
dit. Nicklès 1951 p. 75, fig. 3.



***Cymbium pachyus* (Pallary, 1930)**

Douala, Cameroon. Designated by M. Nicklès as **paratype** in 1951.  
Dautzenberg Coll., RBINS.



*Cymbium pachyus* Pallary  
Douala (Cameroun)  
TYPE  
fig. "Ann. Mus. Marseille"  
t. 22, mém. 3 - 1930 - p. 74 -  
dét. Nicklès 1951. fig. 2



***Cymbium pachyus* (Pallary, 1930)**

Douala, Cameroon. Designated by M. Nicklès as **holotype** in 1951.

Dautzenberg Coll., RBINS.





***Cymbium pachyus* (Pallary, 1930)**

Kribi, Cameroon. Dived. December 1975.

84.40 mm.



***Cymbium pachyus* (Pallary, 1930)**  
Kribi, Cameroon. Dived. December 1975.  
113.02 mm.



***Cymbium pachyus* (Pallary, 1930)**  
Kribi, Cameroon. Dived. December 1975.  
119.21mm.



***Cymbium pachyus***  
**(Pallary, 1930)**  
Kribi, Cameroon. Dived.  
December 1975.  
113.05 mm.



# *Cymbium fragile*

## Fittkau & Stürmer, 1985

- **Type locality:** Benin.
- **Habitat:** In sandy mud at a depth of 100 m (Ambriz, Cape Morro, off Luanda in Angola) and at ca 180 m off Cape Fria, mouth of the Cunene River, border between Angola and Namibia.
- **Geographic distribution:** Ivory Coast, Ghana, Togo, Benin, Nigeria, Gabon, Angola (Cunene River is the southern limit of the range).

The Mediterranean coast of Morocco is not reliable as a possible locality.

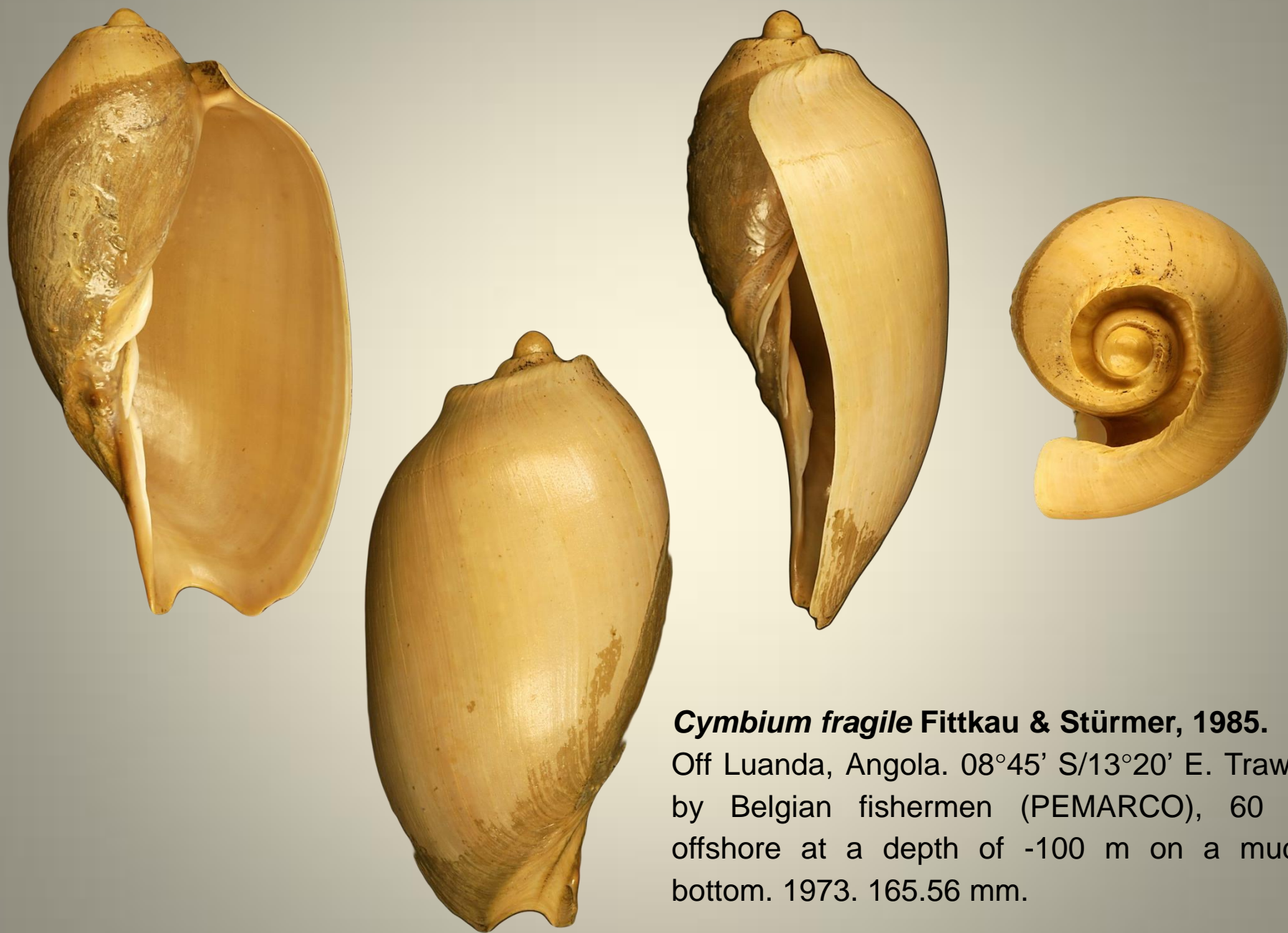
- **Measurements:** Between 80 and 200 m.



***Cymbium fragile* Fittkau & Stürmer, 1985.**  
Off Cape Fria, mouth of the Cunene River,  
border between Angola and Namibia.  
18° S/ 12 E. Trawled by Belgian fishermen  
at -183 m on a muddy bottom. 1973.  
176.5 mm.



***Cymbium fragile* Fittkau & Stürmer, 1985.**  
Off Luanda, Angola. 08°45' S/13°20' E. Trawled  
by Belgian fishermen (PEMARCO) 60 km  
offshore at a depth of -100 m on a muddy  
bottom. 1973. 142.13 mm.



***Cymbium fragile* Fittkau & Stürmer, 1985.**

Off Luanda, Angola. 08°45' S/13°20' E. Trawled by Belgian fishermen (PEMARCO), 60 km offshore at a depth of -100 m on a muddy bottom. 1973. 165.56 mm.





***Cymbium fragile* Fittkau & Stürmer, 1985.**

Off Luanda, Angola. 08°45' S/13°20' E.  
Trawled by Belgian fishermen (PEMARCO),  
60 km offshore at a depth of -100 m on a  
muddy bottom. 1973. 175.35 mm.



***Cymbium fragile* Fittkau & Stürmer, 1985.**

Ambriz, Angola. Trawled by Belgian fishermen (PEMARCO) at a depth of 100 m, on mud. 1973; left: 99.38 mm; right: 110.69 mm.



***Cymbium fragile* Fittkau & Stürmer, 1985.**

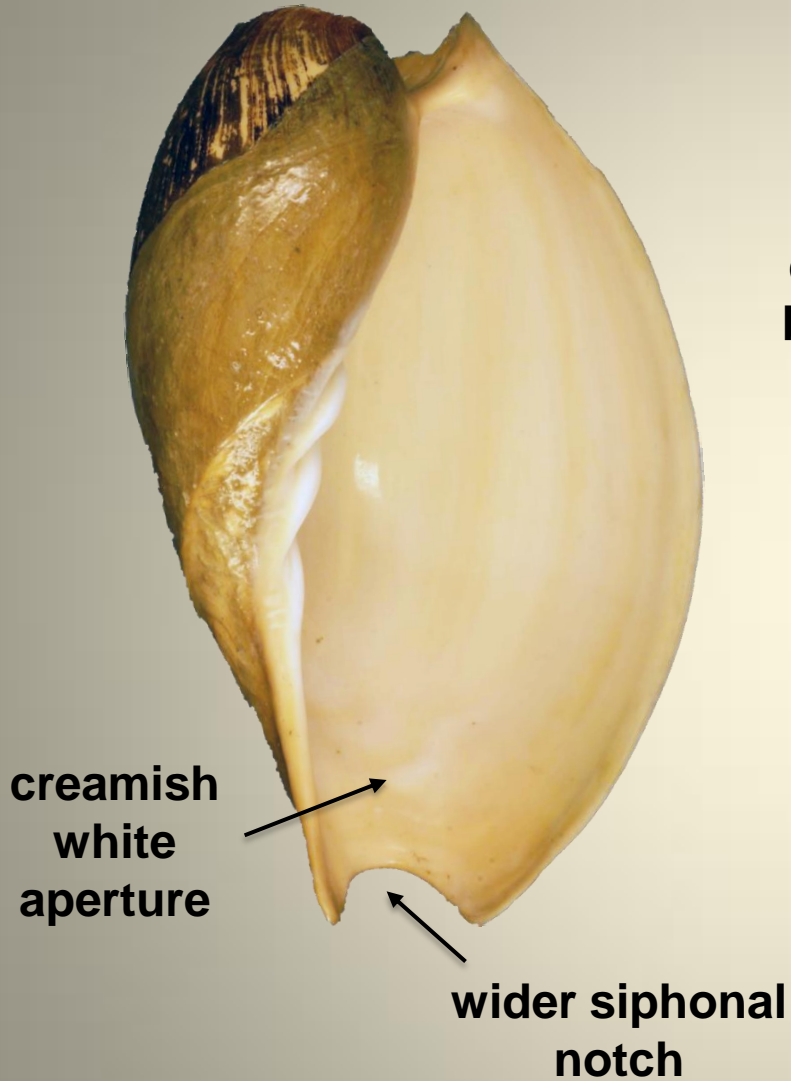
Ambriz, Angola. Trawled by Belgian fishermen (PEMARCO) at a depth of 100 m, on mud. 1973. 117.34 mm.



***Cymbium fragile* Fittkau & Stürmer, 1985.** Ambriz, Angola. Trawled by Belgian fishermen (PEMARCO) at a depth of 100 m, on mud. 1973.  
Left: 118.79 mm. Right: 125.47 mm.

**bulbous outline**

**slender, narrow outline**

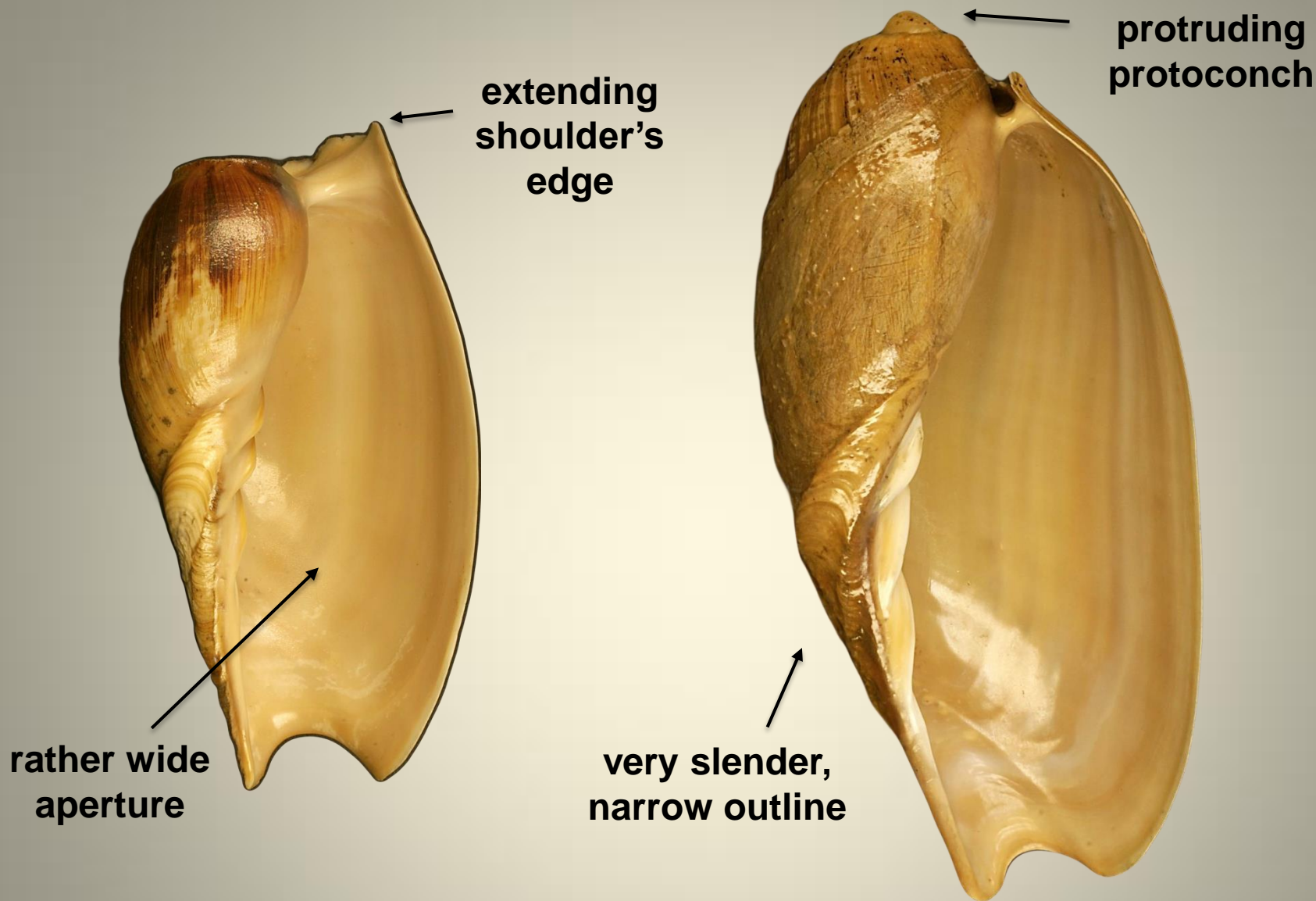


narrow adapical area, coloured blue-grey

blue-grey aperture



Comparison between the ventral side of the *Cymbium* species.  
Left: *Cymbium patulum* (Broderip, 1830). Right: *Cymbium coenyei* nov. sp.



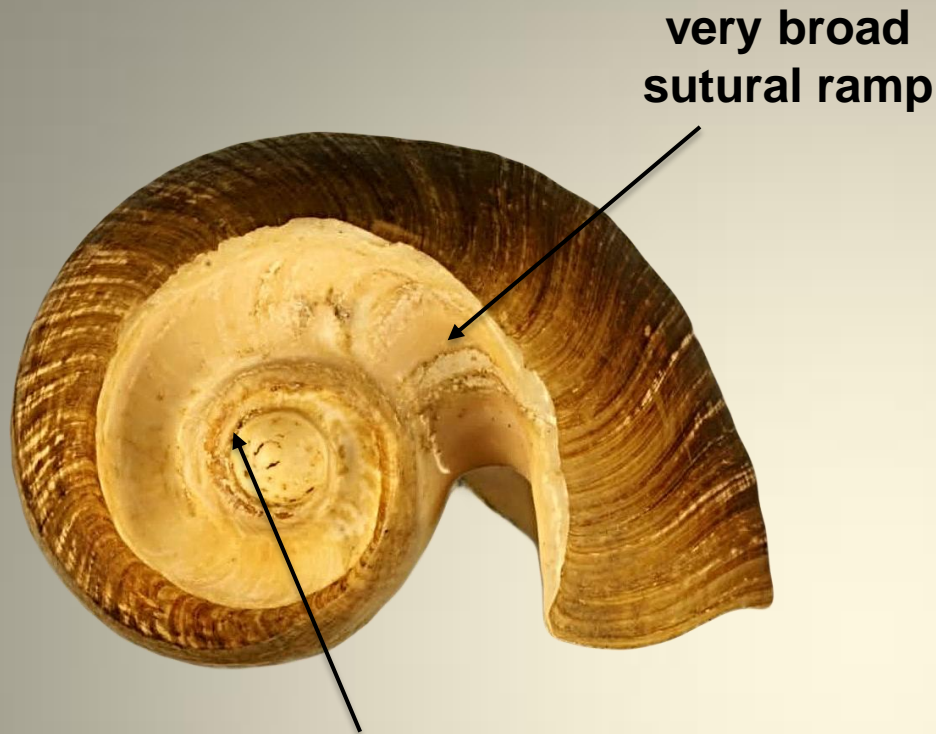
extending  
shoulder's  
edge

protruding  
protoconch

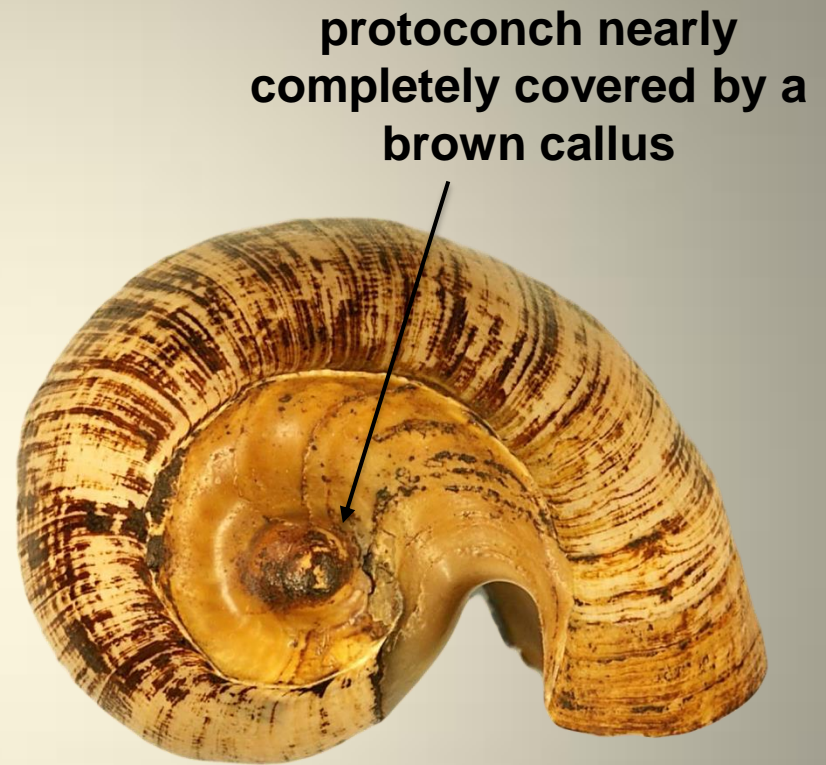
rather wide  
aperture

very slender,  
narrow outline

Comparison between the ventral side of the *Cymbium* species.  
Left: ***Cymbium pachyus*** (Pallary, 1930).  
Right: ***Cymbium fragile*** Fittkau & Stürmer, 1985.



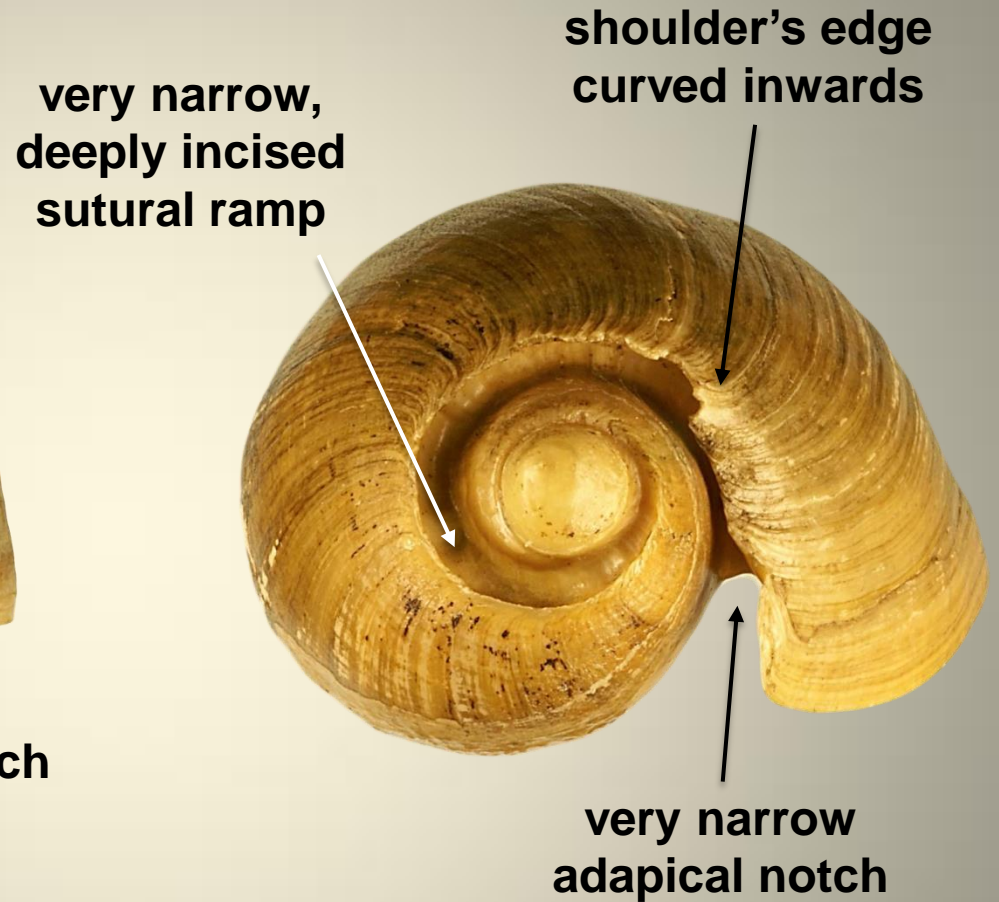
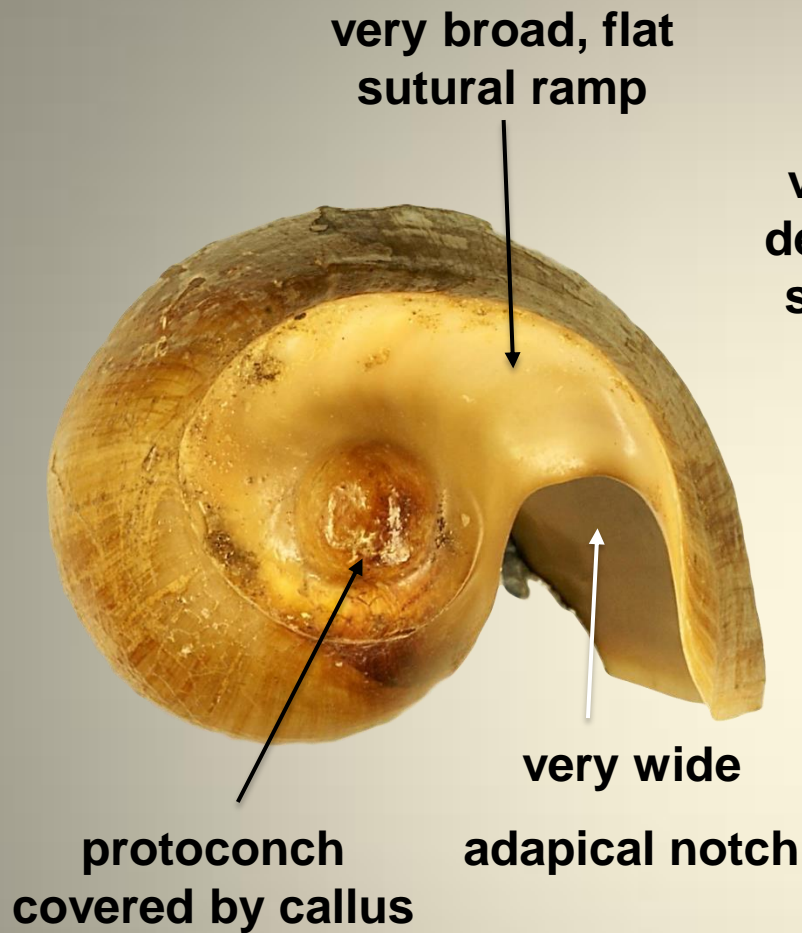
sutural's incision runs over a total distance of more than a circumference



protoconch nearly completely covered by a brown callus

Comparison between the protoconch and the sutural ramp of the *Cymbium* species.

Left: *Cymbium patulum* (Broderip, 1830). Right: *Cymbium coenyei* nov. sp.



Comparison between the protoconch and the sutural ramp of the *Cymbium* species.

Left: *Cymbium pachyus* (Pallary, 1930).

Right: *Cymbium fragile* Fittkau & Stürmer, 1985.





## Geographic distribution of the different species in Angolan waters

*Cymbium coenyei* 

*Cymbium fragile* 

*Cymbium patulum* 