

**The endemic
West African GLYCYMERIDIDAE
species**

**summary and presentation of two
new species**

The family GLYCYMERIDIDAE in West Africa

- limited to the genus *Glycymeris*;
- a very 'difficult' mind-breaking family;
- from 30 to 90 mm;
- equivalve, mostly symmetric (= equilateral);
- outline: circular, occasionally posteriorly angled = not a good identification tool;
- usually thick, solid shells;

- opisthogyrate = the beaks are turned towards the posterior end of valves;
- ligament area: amphidetic or prosodetic;
- taxodont hinge: 2 rows of teeth = unusable as identification tool;
- anterior muscle scar: narrower than the posterior one, lower part truncated;
- posterior muscle scar: nearly circular but the lower part is narrowing below;
- no pallial sinus;

- inner ventral margin strongly crenulated;
- microsculpture: very unique and constant characteristic for each species and a good identification tool; concentric growth lines or reticulated pattern;
- habitat: in sand, gravel or mud from the infralittoral zone to deeper waters.

Glycymeris rafaelmesai

Nolf & Swinnen, 2013

History:

- Gómez & Pérez (2011): report of an unknown species from the Canary Islands;
- coll. Mesa, Déniz, Guillén & Swinnen: several specimens from Lanzarote and Senegal;
- coll. F. Nolf: 2 spec. from Mauritania and 1 spec. from Angola (PEMARCO);
- no specimens from the Gulf of Guinea.

Type material:

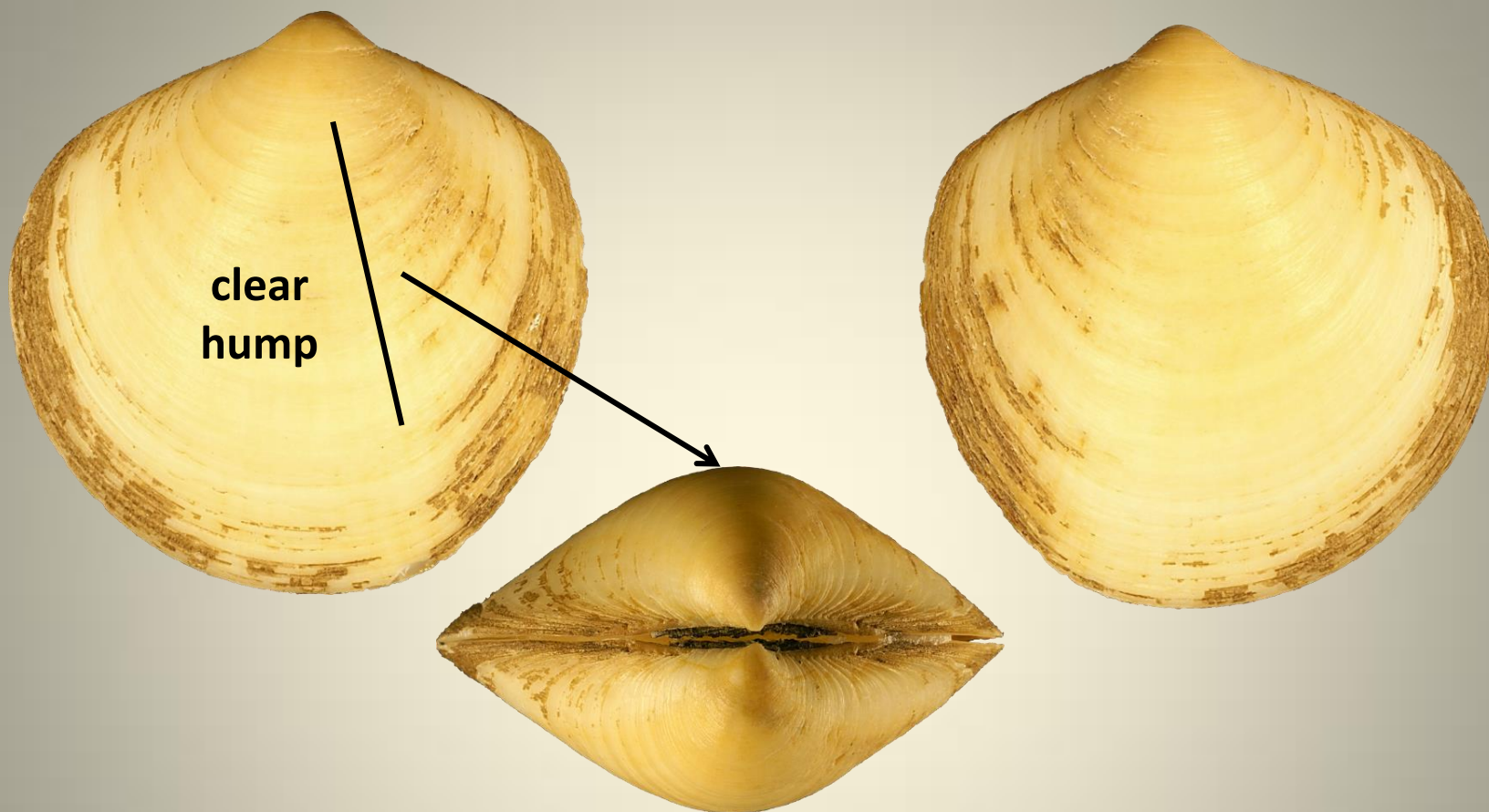
- holotype: RBINS
- paratypes: 1-13 (coll. Déniz, Guillén, Mesa, Swinnen & Nolf) – Lanzarote, Mauritania, Senegal, W Sahara and Angola;
- H. 35-67 mm L. 37-67 mm;
- derivation of the name: after Rafael Mesa (Canary Islands)
- habitat: in sand at a depth of 20-40 m;
- geographic range: Lanzarote (Canary Isllds), Western Sahara (67-85 m), Mauritania (300-400 m), Angola (75 m)

Glycymeris rafaelmesai
paratype 1 - Lanzarote





Glycymeris rafaelmesai
paratype 1 - Lanzarote
inside



Glycymeris rafaelmesai
paratype 2 - Lanzarote



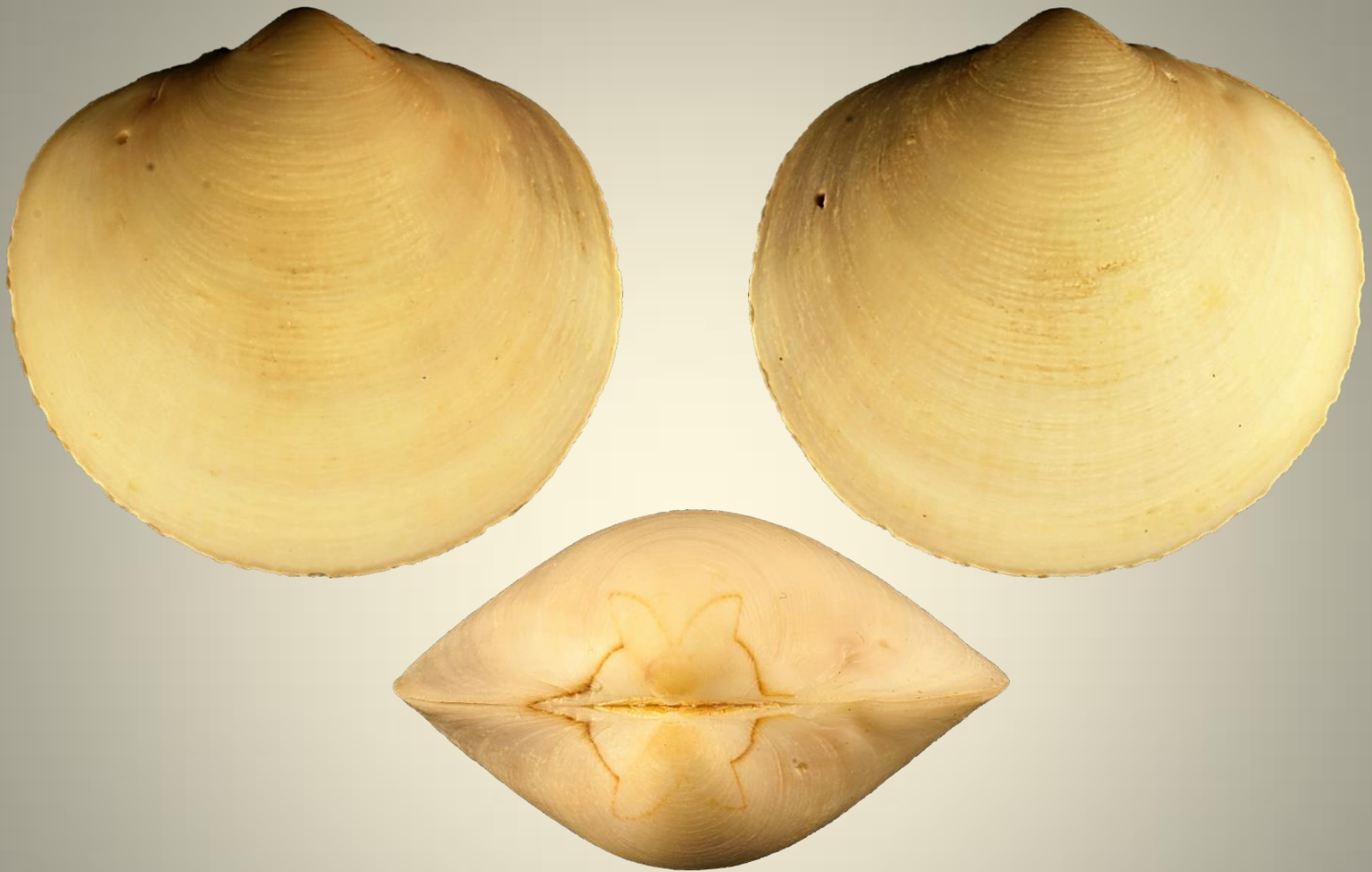
Glycymeris rafaelmesai
paratype 2 - Lanzarote



Glycymeris rafaelmesai
holotype (KBIN) - Lanzarote



Glycymeris rafaelmesai
holotype (KBIN) – Lanzarote
inside



Glycymeris rafaelmesai
paratype 3 - Senegal



Glycymeris rafaelmesai
paratype 3 – Senegal
inside



Glycymeris rafaelmesai
paratype 4 – Senegal



Glycymeris rafaelmesai
paratype 4 – Senegal
inside



Glycymeris rafaelmesai
paratype 5 – Mauritania



Glycymeris rafaelmesai
paratype 6 – Mauritania



Glycymeris rafaelmesai
paratype 7 – Western Sahara



Glycymeris rafaelmesai
paratype 7 – Western Sahara
inside



Glycymeris rafaelmesai
paratype 8 – Western Sahara



Glycymeris rafaelmesai
paratype 8 – Western Sahara
inside



Glycymeris rafaelmesai
paratype 11 – Mauritania



Glycymeris rafaelmesai
paratype 11 – Mauritania



Glycymeris rafaelmesai
paratype 12 – Mauritania



Glycymeris rafaelmesai
paratype 13 – Angola

Description

- shell: solid and heavy, equivalve and equilateral, globular;
- outline: subcircular, posterior shell margin is acute and slightly truncated, the anterior one is nearly perfectly rounded, sometimes a slight ridge runs from the umbo to the posterior ventral edge;
- umbo: opisthogyrate;
- ligament: amphidetic;

- taxodont hinge plate: 2 series of 9-15 teeth;
- microsculpture: very fine concentric undulating ribs, no radial grooves, no reticulated pattern;
- periostracum: velvety, pale-olive coloured;
- colour: off-white to cream, sometimes with faint traces of fine brown zigzag lines in umbonal region; often completely or partly brown coloured (caused by a ferruginous bottom); inside: creamy white, partly or even almost completely brown coloured.

Comparison with other species

- West Atlantic Ocean:

- * *G. americana* (Defrance, 1826): juvenile specimens

- * *G. decussata* (Linnaeus, 1758)

- * *G. undata* (Linnaeus, 1758)



***Glycymeris americana* (juvenile)**
East Panama



Glycymeris decussata
Guadeloupe, Lesser Antilles, Caribbean Sea



Glycymeris undata
East Panama

Comparison with other species

- **East Atlantic Ocean:**

- * *Glycymeris concentrica* (Dunker, 1853)
- * *G. formosa* (Reeve, 1843)
- * *G. glycymeris* (L., 1758)
- * *G. vanhengstumi* Goud & Gulden, 2009
- * *G. nummaria* (L., 1758)
- * *G. pilosa* (L. 1767)
- * *G. scripta* (von Born, 1778)
- * *G. stellata* (Bruguière, 1789)

Glycymeris concentrica (Dunker, 1843)

- where?: Mauritania, Canary Islands, Cape Verde Islands, Senegal, Guinea, Ivory Coast, Ghana, Principe Island, Gabon, Angola;
- outline: circular, posterior end slightly produced and obliquely truncated;
- ligament: amphidetic;

- microsculpture: reticulated pattern of an enormous number of very regular concentric fine cords crossed by a smaller number of broad flattened radiating ribs;
- periostracum: dark brown velvety, rather resistant;
- colour: variable, completely brown or occasionally with white bands crossed with brown interrupted lines;
- measurements: 20-45 mm.



Glycymeris concentrica
Senegal



Glycymeris concentrica
Senegal



Glycymeris concentrica
Ivory Coast



Glycymeris concentrica
Angola



Glycymeris concentrica
Angola

Glycymeris formosa (Reeve, 1843)

- where?: Cape Verde Islands, Gulf of Guinea;
- outline: nearly circular, posteriorly truncated;
- ligament: amphidetic;
- microsculpture: faint reticulated pattern of very weak radiating threads and irregular concentric flattened ribs;

- periostracum: velvety, limited to the border of the valves, similar to *G. rafaelmesai*, *G. concentrica* and *G. scripta*;
- colour: a pattern of 10-15 of violet-brown flammules and stripes running over the whole surface of the valves;
- measurements: 30-80 mm;
- differs from *G. stellata* by a smaller number of internal crenulations.
- **Remark:** *G. formosa* var. *tumida* Dautzenberg & H. Fischer, 1906 is much more swollen with dark-red coloured flammules.



Glycymeris formosa
Cape Verde Islands



Glycymeris formosa
Cape Verde Islands



Glycymeris formosa
Cape Verde Islands



Glycymeris formosa
Cape Verde Islands



Glycymeris formosa
Cape Verde Islands



Glycymeris formosa
var. *tumida*
Cape Verde Islands



Glycymeris formosa
var. tumida
Principe Island, Gulf of Guinea



Glycymeris formosa
var. *tumida*

Principe Island, Gulf of Guinea

***Glycymeris scripta* (von Born, 1778)**

- where?: Canary Islands, Mauritania, Senegal, Sierra Leone;
- outline: almost completely circular;
- ligament: mostly prosodetic, slightly amphidetic in large adult specimens;
- microsculpture: homogenous cancellate pattern of very fine concentric threads and equal narrow radiating ribs;

- periostracum: velvety, olive-brown;
- colour: 10-15 brown zigzag lines on a yellowish white background;
- measurements: 40-70 mm.

- **Remark:** this is *Le Vovan* of Adanson

Pectunculus vovan 'Adanson' Lamy, 1942
(Fischer-Piette, 1972)



Glycymeris scripta
Mauritania



Glycymeris scripta
Mauritania



Glycymeris scripta
Senegal

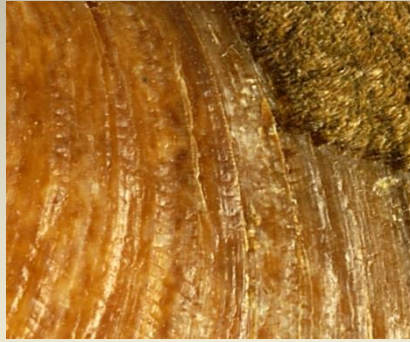


Glycymeris scripta
Senegal

Glycymeris stellata (Bruguière, 1789)

- where?: Madeira, Canary Islands, Mauritania, Senegal, Sierra Leone, Gulf of Guinea, Cameroon, Angola;
- outline: nearly circular, broader than high, valves obtusely truncated;
- ligament: amphidetic;
- microsculpture: dense reticulated structure of irregular concentric cords crossed by very fine radiating threads, clear growth stages;

- periostracum: velvety, dark olive-brown;
- colour: many concentric undulating brown zigzag lines merging in a nearly brown zone at the bottom of the valves;
- measurements: 50-70 mm;
- differs from *G. formosa* by the larger number of shorter internal crenulations



Glycymeris stellata
Senegal



Glycymeris stellata
Senegal

Glycymeris sp.

- Locus typicus: Sumba, Angola;
- shell: small, solid with flattened valves;
- outline: subovate, posteriorly truncated;
- ligament: prosodetic;
- hinge plate: 2 series of taxodont teeth, anterior part with 10 teeth nearly continuously proceeding in a posterior series with 14-15 smaller teeth;

- microsculpture: practically no traces of a pattern (external surface of valves is glossy with only faint radial ribs and microscopic concentric threads);
- periostracum: absent;
- colour: bluish grey with brown streaks and zigzag markings; dark blotch posteriorly; interior of valves brilliant with a well-defined central brown blotch.
- **Remark:** only 1 (juvenile?) specimen (coll. F. Nolf)



***Glycymeris* sp.**
Angola



***Glycymeris* sp.**
Angola



G. concentrica



G. formosa



G. rafaelmesai



G. scripta



G. stellata

Comparison of the microsculpture

G. concentrica
G. scripta



G. formosa
Glycymeris sp.



G. rafaelmesai
G. stellata



Geographic distribution