# Contributions to the knowledge of the Triviidae: XXVI. New species from French Polynesia (Mollusca: Gastropoda)


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**Keywords:** MOLLUSCA, GASTROPODA, TRIVIIDAE, *Trivirostra*, recent, new species, French Polynesia.


**Introduction:** The study of TRIVIIDAE from the Pacific and Indo-Pacific has continued since the most recent description of species from French Polynesia (Fehse & Grego, 2008). In the meantime more than 50,000 specimens have been examined and identified by the senior author. Still the archipelago causes further surprises in the genus *Trivirostra*. Dredgings and dive collecting by Jean Letourneux and his team brought up several dozens of new shells. Furthermore, both authors could obtain other specimens from different sources. The present study is also supported by Dr. Philippe Bouchet and the MNHN with their huge amount of dredging materials from French Polynesia besides other Indo-Pacific localities. Among the material two new species were discovered which are described as *Trivirostra leylae* nov. sp. and *Trivirostra matavai* nov. sp.

**Abbreviations:**

DFB – collection Dirk Fehse, Berlin, Germany.
JGS – collection Jozef Grego, Banska Bystrica, Slovakia.
JLT – collection Jean Letourneux, Tuamotu, French Polynesia.
MNHN – Muséum national d'Histoire naturelle, Paris, France.
ZSM – Zoological State Collection, Munich, Germany.

L − length
W − width
H − height
LT − number of labral teeth
CT − number of columellar teeth
RR − number of dorsal ribs

**SUPERFAMILY:** TRIVIOIDEA Troschel, 1863
**FAMILY:** TRIVIIDAE Troschel, 1863
**SUBFAMILY:** TRIVIINAE Troschel, 1863
**GENUS:** *Trivirostra* Jousseaume, 1884

Type species: *Cypraea oryza* Lamarck, 1810, by monotypy

### ***Trivirostra leylae* nov. sp.**

(Fig. 1; Pl. 1, Figs 1a-d, 2a-d, 3a-d & 4a-d))

**Type locality:** Off Paea, Tahiti, French Polynesia.

**Type material:**
**Holotype:** MNHN, No. 24614.
**Paratype 1:** ZSM, No. 20110634 (Arue fault close to Outuaiai tip, City of Arue).
**Paratype 2:** DFB, No. 10581-1 (Arue fault close to Outuaiai tip, City of Arue).
**Paratype 3:** DFB, No. 10581-2 (Arue fault close to Outuaiai tip, City of Arue).
**Paratype 4:** JGS, No. T0675 (Arue fault close to Outuaiai tip, City of Arue).
**Paratype 5:** JLT (Arue fault close to Outuaiai tip, City of Arue).
**Paratype 6:** DFB, No. 10582 (Makemo).
**Paratype 7:** DFB, No. 10583-1, (Maupiti).
**Paratype 8:** DFB, No. 10583-2, (Maupiti).
**Paratype 9:** DFB, No. 10583-3, (Maupiti).
**Paratype 10:** DFB, No. 10583-4, (Maupiti).
**Paratype 11:** JLT, (Maupiti).
**Paratype 12:** DFB, No. 10584, (Hatai).

Several further paratypes are deposited at the MNHN: 10 (Lifou), 11 (Society Islands), 15 (Tuamotu), 1 (Solomon Islands), 8 (Australes Islands), 16 (Vanuatu), 2 (Fiji), 6 (Marquesas), 4 (New Caledonia).
Further paratypes in coll. DFB: 15 (Tahiti, Arue fault, dived at 20 m).

**Distribution:** In addition to the type locality also known from Lifou, the Solomon Islands, Makemo, Tikehau, Tematangi and Hereheretue of Tuamotu, Hitai, Segond Channel, Palikulo

Bay, Urélapa Is., Aoré Is., Aésé Is., Tutuba Is. and Tangoa Is. of Vanuatu, Niau, Raiatea, Kaukura, Makatea, Huahine and Moorea of the Society Islands, Rimatara, Rurutu, Banc Président Thiers and Banc Arago of the Australes Islands, Viti Levu of the Fiji Islands, Ua Pou Is., Ua Huka Is., Eiao Is. and Hiva Oa Is. of the Marquesas, Touho of New Caledonia and Maupiti of the Leeward Islands.
Dead specimens were dredged at Huahine at 1160 m.

**Description:** Shell small, ovate, slightly inflated and opaque. Terminals somewhat produced with anterior tip blunt and posterior protruding. Dorsum abruptly elevated, trapezoid in profile with a short, fairly widely incised mid-dorsal sulcus which bisects and/or depresses the transverse ribs that are slightly thickened on both sides of the sulcus. Margins rounded. Ventrum slightly convex with strongly recurved terminals. Aperture very narrow, almost straight, strongly curved posteriorly. Canals indented and smooth. Columella concave, inner margin slightly curved without an adaxial carinal ridge. Fossula deeply concave. Fossular edge slightly excavated. Columellar edge not clearly delimited from fossula. Fossular and columellar edge completely covered by the inner labral edge. Labrum rounded, broadest at its mid-portion, declivous anteriorly. Outer labral margin curved and rounded. Inner edge slightly curved. Dorsal ribbing − 16 on average (varies between 16 and 20 in number) − irregular, close-set and coarse. Ribs continuous from the dorsal elevation, becoming fine and more numerous over sides, margins, ventrum and labrum and terminating as sharp, fine teeth on the labral edge − 21 on average (varies between 18 and 23 in number). Ribs continue on the columellar wall becoming much finer and they wane before reaching inner columellar edge. They are not thickened on the developed, roundly edged parietal lip and their number is 18 on average (varies between 15 and 19). Parietal lip almost straight, posteriorly curved.
Shell colour uniformly white.

**Living animal:** Mantle translucent with small green-brown dots and densely spaced, short, white dendrites. The mantle lobes are covered with few, widely spaced, short, translucent, finger-like papillae. The latter have a white core. Siphon long, translucent, occasionally covered by similar wart-like papillae, greenish-brown dots and shorter white dendrites. The cephalic tentacles are opaque white, long and are covered with irregular white, small patches. The small black eyes are deposited few millimetres above the foot of the tentacles. The spade-shaped foot is opaque white with short, white dendrites.

**Radula:** Not recorded.

**Variation:** The dorsal sulcus varies from deeply incised to somewhat slightly incised (paratype 5). Some shells are very inflated, almost spherical with short terminals (paratype 6). Otherwise the shells are rather uniform in their appearance.

**Measurements:**
Holotype: L = 4.8 mm, W = 3.3 mm, D = 3.0 mm, LT 22, CT 18, RR 20 (MNHN, No. 24614)
Paratype 1: L = 5.1 mm, W = 3.4 mm, D = 3.0 mm, LT 23, CT 19, RR 18 (ZSM, No. 20110634)
Paratype 2: L = 4.2 mm, W = 2.9 mm, D = 2.7 mm, LT 20, CT 19, RR 18 (DFB, No. 10581-1)
Paratype 3: L = 4.7 mm, W = 3.1 mm, D = 2.8 mm, LT 22, CT 19, RR 20 (DFB, No. 10581-2)
Paratype 4: L = 4.3 mm, W = 3.1 mm, D = 2.7 mm, LT 23, CT 17, RR 16 (JGS, No. T0675)
Paratype 5: L = 4.1 mm, W = 2.8 mm, D = 2.5 mm, LT 22, CT 18, RR 16 (JLT)
Paratype 6: L = 5.2 mm, W = 3.4 mm, D = 3.0 mm, LT 19, CT 18, RR 16 (DFB, No. 10582)
Paratype 7: L = 4.6 mm, W = 3.3 mm, D = 3.1 mm, LT 18, CT 15, RR 18 (DFB, No. 10583-1)
Paratype 8: L = 4.6 mm, W = 3.3 mm, D = 2.9 mm, LT 21, CT 18, RR 16 (DFB, No. 10583-2)
Paratype 9: L = 4.3 mm, W = 3.0 mm, D = 2.6 mm, LT 21, CT 18, RR 16 (DFB, No. 10583-3)
Paratype 10: L = 4.2 mm, W = 3.0 mm, D = 2.7 mm, LT 18, CT 16, RR 16 (DFB, No. 10583-4)
Paratype 11: L = 4.8 mm, W = 3.3 mm, D = 3.0 mm, LT 22, CT 19, RR 16 (JLT)
Paratype 12: L = 4.0 mm, W = 2.7 mm, D = 2.5 mm, LT 19, CT 18, RR 16 (DFB, No. 10584)

**Comparison:** *Trivirostra leylae* nov. sp. resembles the Philippine *Trivirostra mactanica* Fehse & Grego, 2002 concerning the shape and appearance of the dorsal sulcus. The new species differs from *T. mactanica* by the protruding anterior terminal tip, the non-central and curved aperture, the dorsal ribs are only depressed within the sulcus and are not thickened in a knobby way on both sides of the furrow, the terminals are shorter, the shell is more ovate and the labrum is narrower.
Besides in *T. mactanica* and *T. leylae* nov. sp. an incised dorsal sulcus is also found in *Trivrostra tryphaenae* Fehse, 1998. However, the shell morphology of the latter is completely different. *Trivirostra tryphaenae* has a more inflated and larger shell with obscured terminals

and cannot be confused with *T. mactanica* and *T. leylae* nov. sp.

**Etymology:** In honour of Mrs. Leyla Letourneux Natua, Tuamotu, who provided us with sufficient material to describe this taxon.

**Fig. 1:** *Trivirostra leylae* nov. sp. Holotype. MNHN, No. 24614. Living animal from off Paea, Tahiti, French Polynesia – below: corresponding shell.

***Trivirostra matavai* nov. sp.**
(Fig. 2; Pl. 2, Figs 1a-d, 2a-d, 3a-d & 4a-d)

**Type locality:** Off Paea, Tahiti, French Polynesia.

**Type material:**
**Holotype:** MNHN, No. 24615.
**Paratype 1:** ZSM, No. 20110635 (Matavai Bay, City of Arue).
**Paratype 2:** DFB, No. 10585-1 (Matavai Bay, City of Arue).
**Paratype 3:** JGS, No. T0676 (Matavai Bay, City of Arue).
**Paratype 4:** JLT (Matavai Bay, City of Arue).
**Paratype 5:** DFB, No. 10585-2 (Matavai Bay, City of Arue).
**Paratype 6:** DFB, No. 10585-3 (Matavai Bay, City of Arue).
**Paratype 7:** DFB, No. 10585-4 (Matavai Bay, City of Arue).
**Paratype 8:** DFB, No. 10585-5 (Matavai Bay, City of Arue).
**Paratype 9:** DFB, No. 10585-6 (Matavai Bay, City of Arue).
**Paratype 10:** DFB, No. 10585-7 (Matavai Bay, City of Arue).
**Paratype 11:** JLT (Matavai Bay, City of Arue).
**Paratypes 12 to 16:** JLT (Matavai Bay, City of Arue).
**Several further paratypes** are deposited at the MNHN: 9 (Lifou), 2 (Society Islands), 3 (Tuamotu), 1 (Australes Islands), 11 (Vanuatu), 8 (New Caledonia).

**Distribution:** From Bay of Santal of Lifou; from Niau and Moorea of the Society Islands; from Tikehau, Amanu atoll of Tuamotu; from Rapa of the Australes Islands; from Segond Channel, Aoré Is., Malo Is., Tutuba Is. of Vanuatu; from Koumac, Grand Passage and Touho of New Caledonia.

**Description:** Shell small, ovate and opaque. Anterior terminal broad, slightly produced, strongly recurved with a blunt tip. Posterior terminal narrow, slightly produced and recurved with a protruded tip. Dorsum abruptly elevated, trapezoid in profile, with a long, narrow, incised mid-dorsal sulcus which bisects and/or depresses the transverse ribs. Margins rounded. Ventrum flattened. Aperture narrow, somewhat widened at fossular section, almost straight, posteriorly curved. Anal and siphonal canal deeply indented and smooth. Columella somewhat concave with slightly developed inner adaxial carinal ridge. Fossula deeply concave. Fossular edge slightly excavated with both the columellar and fossular edge somewhat indented. Inner fossular and columellar edge covered with labrum. Labrum rounded, broadest at its mid-portion, declivous anteriorly. Outer labral margin curved and rounded. Inner edge almost straight with posterior end slightly curved. Dorsal ribbing − 22 on average (varies between 18 and 24 in number) − numerous, fine, somewhat irregular and close-set. Ribs continue from the dorsal elevation, becoming more numerous over sides, margins, ventrum and labrum. They terminate as sharp, fine teeth on the labral edge − 22 on average (varies between 20 and 25 in number). Ribs continue on the columellar wall, where they become much finer. They are not thickened on the developed, roundly edged and projected parietal lip, and their number is 20 on average (varies between 18 and 22). Parietal lip slightly sinuous.
Shell colour white.

**Living animal:** Mantle translucent wine-red, covered with opaque wine-red patches and lines. The edges of the mantle lobes are transparent with a yellow line. The mantle is densely spaced with many transparent, conical papillae. The papillae are covered with yellow dots and small white patches. Siphon very short, pale wine-red, occasionally covered by yellow dots and small white patches. The cephalic tentacles are reddish brown, long and are covered with yellow to white dots. The small black eyes are located at the foot of the tentacles. The spade-shaped foot is opaque orange with white dendrites and yellow dots.

**Radula:** Not recorded.

**Variation:** The shells are rather uniform in their appearance but they slightly vary in their inflatedness.

**Measurements:**
Holotype: L = 4.8 mm, W = 3.2 mm, D = 2.7 mm, LT 23, CT 22, RR 24 (MNHN, No. 24615)
Paratype 1: L = 3.3 mm, W = 2.2 mm, D = 1.9 mm, LT 22, CT 20, RR 18 (ZSM, No. 20110635)
Paratype 2: L = 3.8 mm, W = 2.4 mm, D = 2.1 mm, LT 21, CT 21, RR 20 (DFB, No. 10585-1)
Paratype 3: L = 3.9 mm, W = 2.7 mm, D = 2.3 mm, LT 22, CT 20, RR 20 (JGS, No. T0676)
Paratype 4: L = 3.7 mm, W = 2.5 mm, D = 2.2 mm, LT 22, CT 21, RR 22 (JLT)
Paratype 5: L = 3.4 mm, W = 2.3 mm, D = 1.9 mm, LT 23, CT 19, RR 20 (DFB, No. 10585-2)
Paratype 6: L = 3.5 mm, W = 2.5 mm, D = 2.1 mm, LT 20, CT 20, RR 22 (DFB, No. 10585-3) subadult

Paratype 7: L = 3.7 mm, W = 2.5 mm, D = 2.1 mm, LT 22, CT 18, RR 22 (DFB, No. 10585-4)
Paratype 8: L = 4.1 mm, W = 2.7 mm, D = 2.3 mm, LT 23, CT 22, RR 22 (DFB, No. 10585-5)
Paratype 9: L = 3.7 mm, W = 2.7 mm, D = 2.3 mm, LT 23, CT 20, RR 22 (DFB, No. 10585-6)
Paratype 10: L = 3.8 mm, W = 2.6 mm, D = 2.3 mm, LT 24, CT 19, RR 22 (DFB, No. 10585-7)
Paratype 11: L = 3.8 mm, W = 2.6 mm, D = 2.2 mm, LT 25, CT 19, RR 22 (JLT)

**Comparison:** *Trivirostra matavai* nov. sp. is seemingly assigned to the group of small taxa of the *Trivirostra-hordacea* complex: *T. hordacea* (Kiener, 1834), *T. thaanumi* Cate, 1979 and *T. boucancanotica* Fehse & Grego, 2002. *Trivirostra boucancanotica* is only known from the western Indian Ocean and differs from *T. matavai* nov. sp. by the elongated, somewhat cylindrical shell with produced terminals. *Trivirostra thaanumi* can easily be distinguished from *T. matavai* by the narrower columella and fossula – their internal edges are visible through the aperture without turning the shell.

The senior author (Fehse *in* Severns, 2011: 178) already observed an undescribed species within *T. hordacea*. *Trivirostra hordacea* has an elongated shell with a somewhat broad columella and fossula. Their internal edges are visible when the shell is slightly turned to the right. *Trivirostra matavai* nov. sp. is more inflated with a broad columella and fossula. Their internal edges can hardly be examined through the aperture, even when the shell is extremely turned. Ernest & Thorsson (1999: text figs 480-14, 480-15, 480-17, 480-23, 480-24; compare Fehse, 2002) showed the living animal of *T. hordacea*. The mantle lobes of *T. hordacea* are transparent with large, dark grey, irregularly shaped patches and with a white foot and therefore, easily distinguishable from *T. matavai*.

**Etymology:** Named after the locality where the species was discovered in considerable quantities for the first time.

**Acknowledgements:** Many thanks to Jean Letourneux and his team for their cooperation and the photos of the living animals. Special thanks to Dr. Philippe Bouchet, Virginie Héros and the MNHN for the loan of their dredging material. We are grateful to Johan Verstraeten, David Monsecour and Frank Nolf for their helpful suggestions.

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**Fig. 2:** *Trivirostra matavai* nov. sp. Holotype. MNHN, No. 24615. Living animal from off Paea, Tahiti, French Polynesia – below: corresponding shell.


**Fig. 3:** Islands of Moorea and Tahiti with City of Arue.


**Fig. 4:** Matavai Bay in front of Arue.

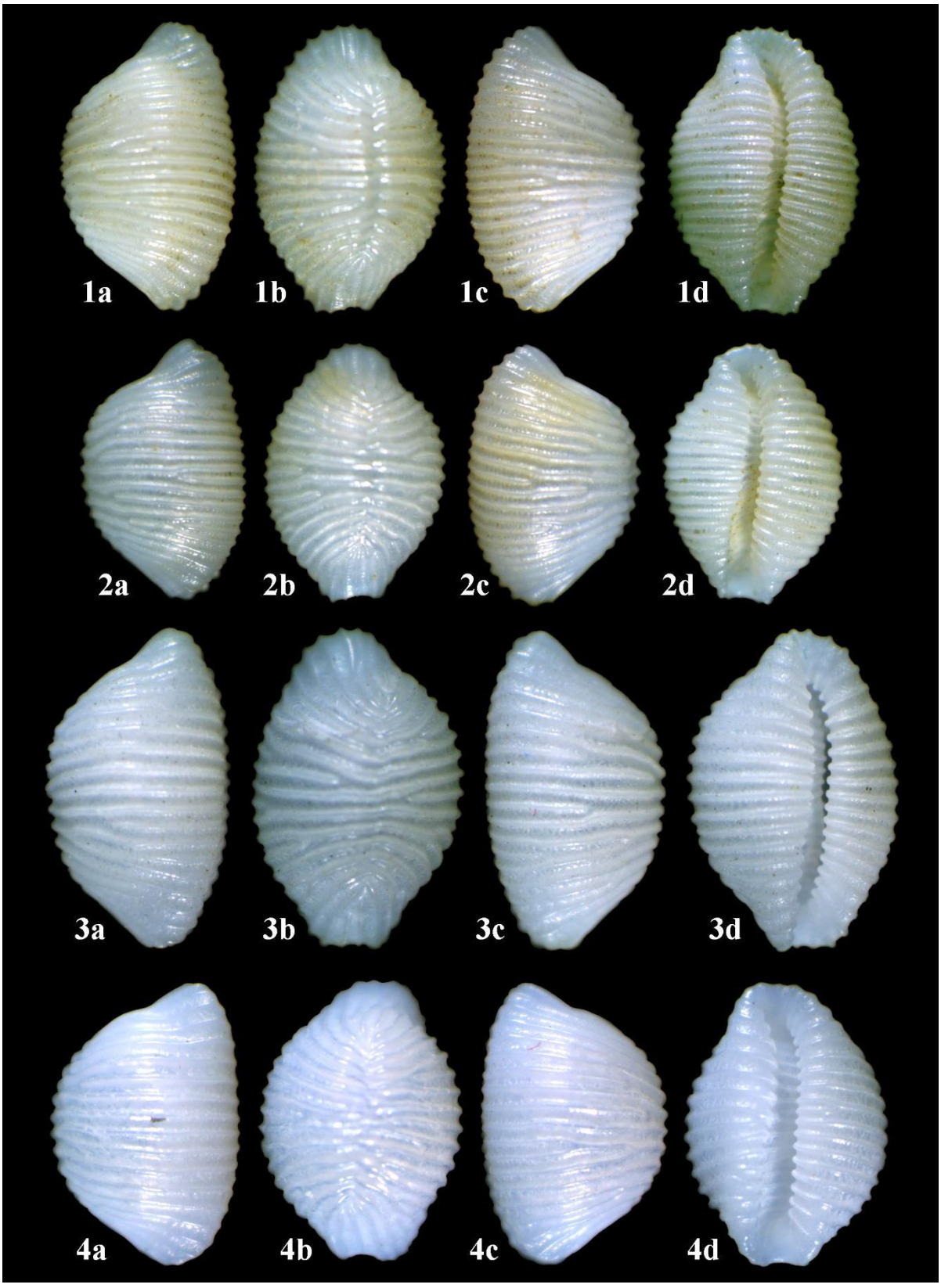


**Plate 1:** *Trivirostra leylae* nov. sp.

Figs 1a-d. Paratype 3. Length: 4.7 mm. Arue fault close to Outuaiai tip, City of Arue, NE coast of Tahiti, French Polynesia. Coll. DFB, No. 10581-2.

Figs 2a-d. Paratype 2. Length: 4.2 mm. Arue fault close to Outuaiai tip, City of Arue, NE coast of Tahiti, French Polynesia. Coll. DFB, No. 10581-1.

Figs 3a-d. Paratype 6. Length: 5.2 mm. Makemo, 'Pohue', Tuamotu. Coll. DFB, No. 10582.

Figs 4a-d. Paratype 7. Length: 4.6 mm. Maupiti, Leeward Islands. Coll. DFB, No. 10583-1.

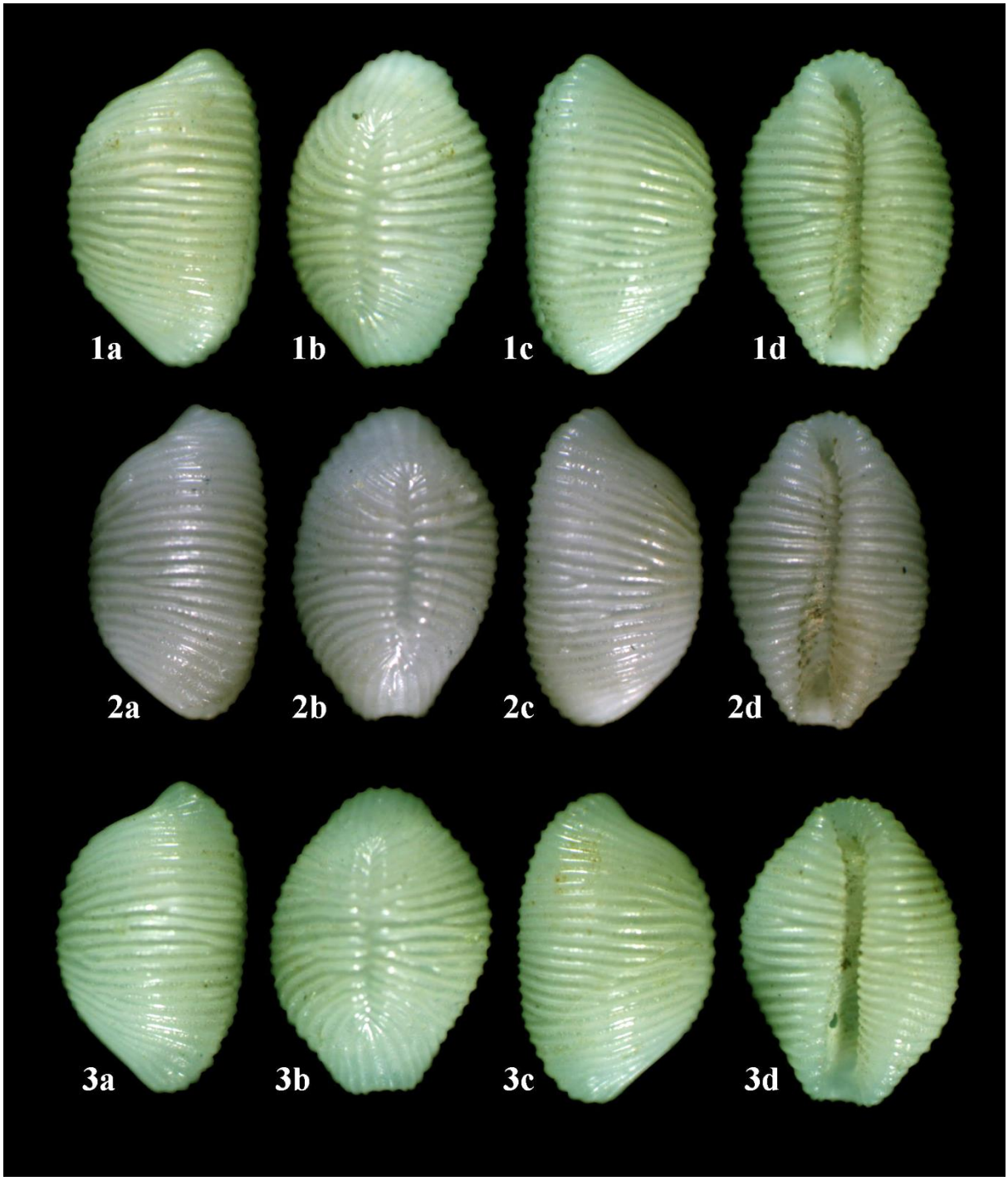


**Plate 2:** *Trivirostra matavai* nov. sp.

Figs 1a-d. Paratype 10. Length: 3.8 mm. Matavai Bay, City of Arue, NE coast of Tahiti, French Polynesia. Coll. DFB, No. 10585-7.

Figs 2a-d. Paratype 2. Length: 3.8 mm. Matavai Bay, City of Arue, NE coast of Tahiti, French Polynesia. Coll. DFB, No. 10585-1.

Figs 3a-d. Paratype 9. Length: 5.2 mm. Matavai Bay, City of Arue, NE coast of Tahiti, French Polynesia. Coll. DFB, No. 10585-6

# Contributions to the knowledge of the Eratoidae. VIII. Eratoidae of Mozambique and Madagascar


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**Keywords:** MOLLUSCA, GASTROPODA, ERATOIDAE, recent, new species, Madagascar, Mozambique.


**Introduction:** Liltved (2000: 191-194) is the most recent comprehensive work on the Eratoidae from southern Africa. He considered *Eratoena sulcifera* (Sowerby II, 1832), *Sulcerato recondita* (Melvill & Standen, 1903) and *Alaerato* '*gallinacea*' (Hinds, 1844) as distinct species from the western Indian Ocean although he denied the existence of any other genera than *Erato* Risso, 1826. In 2009 Bozzetti described two species from Lavanono, Madagascar and from Inhanbane, Mozambique as 'new'. He based both on juvenile shells and only compared them with *Sulcerato pura* (Kuroda & Habe, 1971) in ignorance of the morphology of Eratoidae. *Sulcerato pura*, however, is only known from the northern part of the central Indo-Pacific – Japan, E China Sea and the Philippines. The holotypes of *Erato edentula* Bozzetti, 2009 (MNHN, No. 22894) and *Erato inhanbanensis* Bozzetti, 2009 (MNHN, No. 22895) lack any distinguishing features such as dentition and ventral folds (compare Fehse & Grego, 2012). Bozzetti's taxa are *nomen dubium* although they are most probably juvenile specimens of *S. recondita*.
Recently, I could obtain a larger collection of Eratoidae from Conduceia, Mozambique. The following species were identified: *Eratoena capensis* Schilder, 1933, *Eratoena rosadoi* n. sp., *E. sulcifera* (Sowerby II, 1832), *Sulcerato haplochila* (Melvill & Standen, 1903), *S. recondita* (Melvill & Standen, 1903) and *Alaerato elizabethae* n. sp.
Sowerby II (1832: 15) did not select a holotype for *E. sulcifera* and the specimen he used to describe the taxon is lost (Cate, 1977: 350). Therefore, Cate (1977: text fig. 18) showed a specimen from Reeve's collection. Reeve's specimen cannot be used as type specimen because Sowerby did not examine the shell and the specimen is completely eroded and lacks all distinguishing features. Therefore, a neotype is defined herein to separate the east African species from the taxa of the central Indo-Pacific and Pacific.
The examination of the huge amount of dredging material of the MNHN now allows for the description of a further deep water *Alaerato* from NW Madagascar. It is named herein as *A. virginiae* n. sp.
References are only mentioned in the synonymy lists herein when specimens are shown and their identity could be confirmed.
All the species mentioned below could be studied by type specimens (e.g. Cate, 1977) and by hundreds of specimens from various localities in the author's collection. All type specimens of the new species were dead collected.

**Abbreviations:**

| | |
|---|---|
| DFB | - collection Dirk Fehse, Berlin, Germany. |
| FL | - collection Felix Lorenz, Buseck, Germany. |
| MNHN | - Musée national d'Histoire naturelle, Paris, France. |
| NHMUK | - Naural History Museum, London, England. |
| ZSM | - Zoological State Collection, Munich, Germany. |
| LT | - number of labral teeth |
| CT | - number of columellar teeth |

**SUPERFAMILY:** TRIVIOIDEA Troschel, 1863
**FAMILY:** ERATOIDAE Schilder, 1925
**SUBFAMILY:** ERATOINAE Schilder, 1925
**GENUS:** *Eratoena* Iredale, 1935
Type species: *Ovulum corrugatum* Hinds, 1844, by monotypy

***Eratoena sulcifera* (Sowerby II, 1832)**
(Pl. 1, Figs 1a-c, 2a-c)

1832 *Erato sulcifera* Sowerby, The Conchological Illustrations: 15, fig. 45.
1859 *Erato sulcifera* Sowerby – Sowerby, Thesaurus Conchyliorum … *Erato*: 81, pl. 219, figs. 1-3.
1933 *Proterato* (*Proterato*) *sulcifera sulcifera* Sowerby (1832) – Schilder, Monograph of the Subfamily Eratoinae: 248, 253, 273, text figs. 20, 21.
1956 *Proterato* (*Proterato*) *sulcifera* (Sowerby, 1832) – Allan, Cowry Shells of World Seas: 140, pl. 14, fig. 4.
1967 *Proterato sulcifera* (Sowerby, 1832) – Maes, The littoral marine mollusks …: 121, pl. 9, fig. F.

1977 *Proterato* (*Eratoena*) *sulcifera sulcifera* (Sowerby, 1832) – Cate, A Review of the Eratoidae …: 350, text fig. 18.
1982 *Erato sulcifera* Sowerby, 1832 – Kilburn & Rippey, Sea Shells of Southern Africa: 59, pl. 13, fig. 2.
1986 *Proterato* (*Proterato*) *sulcifera* (Sowerby, 1832) – Drivas & Jay, Shells of Réunion. …: 24, 1 unnumb. text fig.
1995 *Eratoena sulcifera* (Sowerby, 1832) – Bosch *et al*., Seashells of Eastern Arabia: 84, text fig. 304.
2000 *Erato sulcifera* Sowerby II, 1832 – Liltved, Cowries and their relatives …: 191, text figs. 294, 295.

**Type material:** Neotype: MNHN, coll. No. 25758. Length: 4.7 mm; width: 3.1 mm; height: 2.6 mm; LT 23; CT 22.
**Type locality:** Off Cabo de Conduceia, N Mozambique.

**Distribution:** Glorieuses, Jordan (Red Sea), Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Tanzania. The distribution is confirmed by specimens in the author's collection and the MNHN collection.

**Variation:** The shells are more or less inflated and pustulated. Sometimes the dorsal furrow is less developed. The shell colour varies from white to green or light red. The number of ventral folds varies from 4 to 7.

**Etymology:** From the Latin, *sulcus*, meaning furrow and, *ferus*, *-a*, meaning distinct.

### *Eratoena capensis* (Schilder, 1933)

(Pl. 1, Figs 3a-c)

1933c *Proterato* (*Proterato*) *sulcifera capensis* Schilder, Monograph of the Subfamily Eratoinae: 248, 253, 261, text fig. 22.
1977 *Proterato* (*Eratoena*) *sulcifera capensis* Schilder, 1933c – Cate, A Review of the Eratoidae …: 350, text fig. 19.
2000 *Erato sulcifera* (Sowerby) – Jarrett, Marine Shells of the Seychelles: 28, text-fig. 105.

**Type material:** Holotype: Coll. Tomlin lost or misplaced. Length: 3.9 mm; width: 1.5 mm; LT 22; CT 27.

**Type locality:** Off Port Shepstone, RSA. The empty shells were dredged in depths between 81 and 100 m in rubble.

**Distribution:** KwaZulu-Natal (RSA), Mauritius, Mozambique. The distribution is confirmed by specimens in the author's collection.

**Variation:** Not enough specimens of this rare species are available to identify its intraspecific variation. However, the same variability as for *E. sulcifera* could be expected.

**Etymology:** Named after the type locality 'Cape of Good Hope'.

### *Eratoena rosadoi* n. sp.

(Pl. 1, Figs 4a-c, 5a-c, 6a-c & 7a-c)

**Type material:**
**Holotype:** MNHN, coll. No. 25759. Length: 3.6 mm; width: 2.4 mm; height: 2.0 mm; LT 24; CT 23.
**Paratype 1:** Coll. of DFB, No. 10911-1, length: 3.6 mm; width: 2.4 mm; height: 2.1 mm; LT 24; CT 23.
**Paratype 2:** Coll. of DFB, No. 10911-2, length: 3.3 mm; width: 2.2 mm; height: 2.0 mm; LT 25; CT 25.
**Paratype 3:** Coll. of DFB, No. 10911-3, length: 3.1 mm; width: 2.1 mm; height: 1.7 mm; LT −; CT – [subadult].
**16 further paratypes** from type locality: 1 in coll. ZSM, No. 20130202; 1 in coll. FL; 14 in coll. DFB, No. 10911-4 to 10911-18.

**Type locality:** Off Cabo de Conduceia, N Mozambique.

**Distribution:** The species is only known from the type locality.

**Description:** Shell minute, pear-shaped, granulated, with a slightly elevated spire. Protoconch and subsequent whorls completely covered by a callus. Suture obscured. Junction with teleoconch indistinct. Body whorl almost 95% of total height, adapically shouldered, with the maximum diameter at one third of the distance from the adapical suture, evenly tapered below and somewhat constricted at the ventrum. Dorsum rounded. Dorsal sulcus long, broad, distinct, slightly deepened, sinuous, and sharply margined. Whole shell surface covered by glossy callus, pustules and wrinkles. Aperture comprises about 90% of total height, slightly sinuous and narrow. Labrum broad, thickened, smooth, ventrally flattened, and rounded at outer margin, sharply edged at inner margin. Labral teeth fine, somewhat irregular, 24 in number, considerably extending as fine, close-set folds.

Folds elongated anteriorly to the outer labral margin. Siphonal canal short, rounded and indented. Anal canal simple, indented. Columella straight, flattened with a weakly developed inner carinal ridge and a roundly thickened parietal lip. Columellar denticles fine, somewhat irregular, anteriorly extended as short folds. Ventral folds fine, ten in number, most anterior one reaching the ventral margin. Fossula obsolete, slightly concave, not delimited from the columella. Terminal ridge obscured.
Shell dorsally light reddish brown with white clouds on mid-dorsum, spire and anterior tip. Ventrum, labrum, columella and fossula white. Protoconch red. Two red dots on anterior tip.

**Variation:** The inflation of the shell only varies slightly. The number of ventral folds varies from 10 to 12. The aperture is more or less sinuous.

**External morphology and radula:** No information on external morphology and radula is available.

**Comparison:** The shells of the new species are usually – at the type locality – more than one millimeter smaller than the sympatric *E. sulcifera*. Furthermore, *E. rosadoi* n. sp. differs from *E. sulcifera* by the blunt spire, the more pyriform outline, the slightly more inflated shell, the higher number of ventral folds (at least 10 in *E. rosadoi* vs. max. 7 in *E. sulcifera*) and the sinuous dorsal sulcus. Such a sinuous sulcus has only been observed in the fossil *Erato dolini* Fehse & Landau, 2003 from the French Oligocene.
The central Indo-Pacific *Eratoena nana* (Sowerby II, 1859) – *Hespererato septentrionalis* Cate, 1977 is a junior synonym – has a coarser dentition and a lower number of ventral folds (at least 10 in *E. rosadoi* vs. max. 5 in *E. nana*).
The Pacific *Eratoena schmeltziana* (Crosse, 1867) and *Eratoena gourgueti* Fehse, 2010 have a slenderer shell and a lower number of ventral folds (at least 10 in *E. rosadoi* vs. max. 4 in *E. gourgueti* and max. 5 in *E. schmeltziana*).
Only *Eratoena grata* (Cossignani & Cossignani, 1997) has a similar size and shell outline but the teleoconch is more inflated, the sulcus and the aperture are straight, the labral folds are finer and more distant and the ventral folds are less numerous (at least 10 in *E. rosadoi* vs. max. 4 in *E. grata*).

**Etymology:** Named in honor of José Rosado, who supplied the type material.

***Sulcerato recondita* (Melvill & Standen, 1903)**
(Figs 1-2; Pl. 1, Figs 1a-c)

1903 *Erato recondita* Melvill & Standen, Descriptions of sixty-eight new …: 302, pl. 21, fig. 9.
1933c *Proterato* (*Proterato*) *recondita* Melvill & Standen (1903) – Schilder, Monograph of the Subfamily Eratoinae: 248, 253, 271, text fig. 18.
1977 *Proterato* (*Sulcerato*) *recondita* (Melvill & Standen, 1903) – Cate, A Review of the Eratoidae …: 348, text fig. 14.
1995 *Sulcerato recondita* (Melvill & Standen, 1903) – Bosch *et al*., Seashells of Eastern Arabia: 84, text fig. 306.
2000 *Erato recondita* Melvill & Standen, 1903 – Liltved, Cowries and their relatives …: 192, text fig. 296.
?2009 *Erato edentula* Bozzetti, Due nuove *Erato* …: 30, 2 unnumb. text figs.
?2009 *Erato inhanbanensis* Bozzetti, Due nuove *Erato* …: 31, 2 unnumb. text figs.

**Type material:** Lectotype: NHMUK, No. 1903.12.15.47. Length: 5.2 mm; width: 3.3 mm; LT 19; CT 17 [designated by Cate, 1977: text fig. 14].

**Type locality:** "Hab. Gulf of Oman, lat. 24°58' N., long. 56°54' E., 156 fathoms" (Melvill & Standen, 1903: 302).

**Distribution:** Israel (Red Sea), KwaZulu-Natal (RSA), Maldives, Mozambique, Reunion, Tanzania. The distribution is confirmed by specimens in the author's collection and the MNHN collection.

**Variation:** The inflation of the shell and the height of the spire vary. The colour varies from white to light green and sometimes light brown.

**Etymology:** From the Latin, *reconditus*, *-a*, meaning hidden, concealed.

**Fig. 1:** *Sulcerato* cf. *recondita* (Melvill & Standen, 1903). Subadult. Holotype of '*Erato*' *edentula* Bozzetti, 2009. Lavanono, 280 km SW of Talognaro, Madagascar. MNHN, No. 22894.

**Fig. 2:** *Sulcerato* cf. *recondita* (Melvill & Standen, 1903). Juvenile. Holotype of '*Erato*' *inhanbanensis* Bozzetti, 2009. Inhanbane, Mozambique. MNHN, No. 22895.

***Sulcerato haplochila* (Melvill & Standen, 1903)**
(Pl. 2, Figs 2a-c, 3a-c)

1903 *Erato recondita* var. *haplochila* Melvill & Standen, Descriptions of sixty-eight new …: 302, pl. 21, fig. 10.
1977 *Erato recondita* var. *haplochila* Melvill & Standen, 1903 – Cate, A Review of the Eratoidae …: 348, text fig. 15.

**Type material:** Lectotype: NHMUK. Length: 5.0 mm; width: 3.3 mm; LT 21; CT 19 [designated by Cate, 1977: text fig. 15].

**Type locality:** "Hab. Gulf of Oman, cum præcedente" (Melvill & Standen, 1903: 302)

**Distribution:** Mozambique. The distribution is confirmed by specimens in the author's collection.

**Variation:** The inflation of the shell and the height of the spire vary.

**Comparison:** Melvill & Standen (1903: pl. 21, fig. 10) based the description of '*E. haplochila*' on a shell of which the labral and columellar dentition are slightly eroded or less developed because their drawing shows distinct ventral folds. Ventral folds are only found in mature specimens. Cate's (1977: text fig. 15) lectotype of *S. haplochila*, however, possesses a fully developed apertural dentition and differs from Cate's lectotype of *S. recondita* by the coloration. The anterior tip of *S. recondita* varies from white to light brown whereas *S. haplochila* possesses two red dots. Therefore, *S. haplochila* cannot be a variation of *S. recondita* as suggested by Melvill & Standen (1903: 302) or Cate (1977: 348).

**Etymology:** From the Greek,$\alpha\pi\lambda o\varsigma$, meaning simple and, $\chi\varepsilon\iota\lambda\iota$, meaning lip.

***Alaerato elizabethae* n. sp.**
(Pl. 3, Figs 2a-c, 3a-c & 4a-c)

**Type material:**
**Holotype:** MNHN, coll. No. 25760. Length: 3.7 mm; width: 2.6 mm; height: 2.2 mm; LT 16; CT 16.
**Paratype 1:** Coll. of DFB, No. 10919-1, length: 4.0 mm; width: 2.8 mm; height: 2.3 mm; LT 17; CT 17.
**Paratype 2:** Coll. of DFB, No. 10919-2, length: 3.4 mm; width: 2.4 mm; height: 1.9 mm; LT 15; CT 16.
**3 further paratypes** in coll. DFB, No. 10919-3 to 10919-5.
**Type locality:** Off Cabo de Conduceia, N Mozambique.

**Distribution:** The species is only known from the type locality.

**Description:** Shell minute, pear-shaped, smooth, with a blunt, knob-like spire. Protoconch and subsequent whorls completely covered by a callus. Suture not visible. Junction with teleoconch indistinct. Body whorl almost 95% of total height, adapically shouldered, with the maximum diameter at one third from the adapical suture, evenly tapered below and only slightly constricted at the ventrum. Dorsum rounded. Dorsal sulcus obscured represented by obsolete dimples behind spire and anterior extremity in fully adult specimens. Whole shell surface covered by a glossy callus. Aperture comprises about 95% of total height, straight and narrow. Labrum thickened, smooth, flattened, rounded at outer margin, edged at inner margin, with somewhat coarse, irregular denticles. Denticles extending as coarse folds onto the flattened part of the labrum. Siphonal canal short, rounded and indented. Anal canal funnel-like widened, indented. Columella slightly convex, narrow with a weakly developed inner carinal ridge and a roundly thickened, slightly projected parietal lip. Columellar denticles coarse, slightly irregular and somewhat indistinct, most anterior denticles extending as wavy folds onto ventrum. Ventral folds coarse, obscured, six in number. Fossula slightly concave, obsolete, not delimited from the columella. Terminal ridge obscured.
Shell colour translucent white with a light reddish brown cloud at mid-dorsum. Anterior tip yellowish brown.

**Variation:** The inflation of the shell varies. The shells are more or less pear-shaped. Ventral folds vary from four to six in number. Sometimes indistinct clouds are visible on ventrum.

**External Morphology and radula:** No information on external morphology and radula is available.

**Comparison:** The knob-like, blunt spire assigns the new species to the genus *Alaerato* although the labrum does not show 'the exaggerated, wing-like extension of the acute angular portion of the posterior outer lip' (Cate, 1977: 354). Yet, the knob-like shaped, blunt spire is a further very characteristic feature of the genus.

*Alaerato elizabethae* n. sp. differs from all other known species of the genus – *A. amamioshima* Cate, 1977, *A. angistoma* (Sowerby II, 1832) **comb. nov.**, *A. angulifera* (Sowerby II, 1859) (Pl. 3, Figs 5a-c), *A. bisinventa* (Iredale, 1931), *A. gallinacea* (Hinds, 1844), *A. mactanica* (Cossignani & Cossignani, 1997) and *A. palawanica* Fehse, 2011 – by the missing 'wing-like extension' of the posterior portion of the labrum and the wavy ventral folds.

**Etymology:** Named in honour of Elizabeth Ama the author's wife.

***Alaerato virginiae* n. sp.**

(Pl. 1, Figs 6a-c; Pl. 4, Figs 1a-c, 2a-c & 3a-c)

?2000 *Erato gallinacea* (Hinds, 1844) – Liltved, Cowries and their relatives …: 194, text fig. 298.

**Type material:**
**Holotype:** MNHN, coll. No. 25761. Length of labrum: 5.1 mm; width: 3.4 mm; height: 2.7 mm; LT 24; CT −.
**Paratype 1:** MNHN, coll. No. 25762-1. Length of labrum: 5.3 mm; width: 4.0 mm; height: 3.1 mm; LT 25; CT −. MNHN loc. #DW3196, off W Cap d'Ambre, 12° 08' S – 48° 56' E, NW Madagascar; dredged at 238-249 m.
**Paratype 2:** MNHN, coll. No. 25762-2. Length of labrum: 4.2 mm; width: 2.9 mm; height: 2.4 mm; LT 25; CT −. MNHN loc. #DW3196, off W Cap d'Ambre, 12° 08' S – 48° 56' E, NW Madagascar; dredged at 238-249 m.
**Paratype 3:** MNHN, coll. No. 25763. Length of labrum: 4.5 mm; width: 3.2 mm; height: 2.5 mm; LT 24; CT −. MNHN loc. #TS04, off E Cap Antsirabe, 25° 02.3' S – 47° 00.3' E, S Madagascar; dredged at 22-24 m.
**7 further paratypes:** 4 in coll. MNHN, No. 25762, from MNHN loc. #DW3196; 1 in coll. DFB, No. 8184 from Shelly Beach, S KwaZulu-Natal, South Africa; 1 in coll. DFB, No. 10331 from off Inhaca Island, S Mozambique, dredged at 45-65 m; 1 in coll. DFB, No. 10677 from off Cap d'Ambre, NW Madagascar.

**Type locality:** MNHN loc. #DW3238, off Bay Narendry, 14° 29' S – 47° 27' E, NW Madagascar; dredged at 48-139 m.

**Distribution:** The species is only known with certainty from the type locality because the specimens shown by Liltved (2000: text fig. 298) were not examined (see discussion).

**Description:** Shell minute, pear-shaped, teleoconch posteriorly slightly angled, with an elevated, knob-like spire. Protoconch and subsequent whorls completely covered by thick callus. Suture and junction with teleoconch distinct. Body whorl almost 80% of total height, adapically shouldered, with the maximum diameter of one fifth distance from the adapical suture, evenly tapered below and somewhat constricted at the ventrum. Dorsum angled. Dorsal sulcus sinuous, obscured represented by obsolete dimples behind spire and anterior extremity in fully adult specimens. Whole shell surface except dorsum covered with glossy and thick callus. Spire covered with small pustules. Aperture comprises about 90% of total height, slightly sinuous and narrow. Labrum broad, roundly thickened, smooth, sharply edged at inner margin. Labral teeth coarse, somewhat irregular, 24 in number, considerably extending as coarse, close-set folds. Folds do not reach outer labral margin. Siphonal and anal canal short, rounded and indented. Columella sinuous, flattened with an inner carinal ridge and a roundly thickened parietal lip. Columellar denticles coarse, somewhat irregular, posteriorly obscured, anteriorly extending as short folds. Ventral folds coarse, nine in number, not reaching the ventral margin. Fossula obsolete, slightly concave, not delimited from the columella. Terminal ridge obscured.
Shell white. Dorsal angle and anterior dimple brown. Anterior tip and anal canal dorsally yellow brown.

**Variation:** The inflation of the shell and height of spire vary. The shells are more or less sharply angled. Aperture sometimes distinctly sinuous. Ventral folds vary from seven to ten in number.

**External morphology and radula:** No information on external morphology and radula is available.

**Comparison:** The shell outline of *Alaerato virginiae* n. sp. reminds *Proterato hindlei* (Ladd, 1977) but essentially differs by the callused shell, the dentition and the coloration. The angled shell distinguishes the new species from all other species of the genus except for *Alaerato palawanica* Fehse, 2011 (Pl. 4, Figs 5a-c). The latter differs from *A. virginiae* n. sp. by the essentially elongated labral and ventral folds reaching the labral and ventral margin and its coloration.

Besides by previously mentioned features, *Alaerato virginiae* n. sp. is also distinguishable from *A. gallinacea* (Hinds, 1844) (Pl. 4, Figs 4a-c) by the slim spire, elongated outline and shorter ventral folds.

*Alaerato amamioshima* Cate, 1977 lacks the labral folds and *A. bisinventa* (Iredale, 1931) has a finer dentition. *Alaerato angulifera* (Sowerby II, 1859) (Pl. 4, Figs 5a-c) possesses a squat, small shell and a short, very blunt spire. The whole shell morphology of *A. elizabethae* n. sp. separates the Mozambican species from *Alaerato virginiae* n. sp.

Liltved (2000: 194) reported specimens from Uvongo and Shelly Beach, Durban Bluff, Gobey's Point and from Kosi Bay, KwaZulu-Natal and from Kei River mouth, Transkei, South Africa. All these shells could not be examined by the author. He mentioned that these shells had been found in beach drifts or were dredged at depths of 25 to 222 m. Both shells that Liltved (2000: text fig. 298) shows are most probably identical to the new species but they are less dorsally angled and not as much callused as the specimens from NW Madagascar. However, their slim spire and their elongated shell immediately distinguish both from *A. gallinacea*.

**Etymology:** Named in honour of Virginie Héros of the MNHN, Paris.

**Acknowledgements:** I thank José Rosado and Dr. Felix Lorenz for supplying material from Mozambique. I am very grateful to Dr. Philippe Bouchet and Virginie Héros of the MNHN for their disposal of their huge material of Trivioidea and to Dr. Felix Lorenz for his good offices.
I am grateful to Johan Verstraeten, David Monsecour and Frank Nolf for their helpful suggestions.

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**Plate 1**

*Eratoena sulcifera* (Sowerby II, 1832)

1a-c. Neotype. Length: 4.7 mm, width: 3.1 mm, height: 2.6 mm. Off Cabo de Conduceia, N. Mozambique. Coll. MNHN, No. 25758.

2a-c. Coll. DFB, No. 10909-1; length: 5.2 mm, width: 3.5 mm, height: 2.8 mm. Off Cabo de Conduceia, N. Mozambique.

*Eratoena capensis* (Schilder, 1933)

3a-c. Coll. DFB, No. 10910-1; length: 4.4 mm, width: 3.1 mm, height: 2.5 mm. Off Cabo de Conduceia, N. Mozambique.

*Eratoena rosadoi* n. sp.

4a-c. Holotype. Length: 3.6 mm, width: 2.4 mm, height: 2.0 mm. Off Cabo de Conduceia, N. Mozambique. Coll. MNHN, No. 25759.

5a-c. Paratype 1. Length: 3.6 mm. width: 2.4 mm, height: 2.1 mm. Off Cabo de Conduceia, N. Mozambique. Coll. DFB, No. 10911-1.

6a-c. Paratype 3. Juvenile. Length: 3.1 mm. width: 2.1 mm, height: 1.7 mm. Off Cabo de Conduceia, N. Mozambique. Coll. DFB, No. 10911-2.

7a-c. Paratype 2. Length: 3.3 mm. width: 2.2 mm, height: 2.0 mm. Off Cabo de Conduceia, N. Mozambique. Coll. DFB, No. 10911-3.

**Plate 2**

*Sulcerato recondita* (Melvill & Standen, 1903)

1a-c. Coll. DFB, No. 10907-1; length: 5.3 mm, width: 3.2 mm, height: 2.7 mm. Off Cabo de Conduceia, N. Mozambique.

*Sulcerato haplochila* (Melvill & Standen, 1903)

2a-c. Coll. DFB, No. 10908-1; length: 4.5 mm, width: 2.8 mm, height: 2.3 mm. Off Cabo de Conduceia, N. Mozambique.

3a-c. Juvenile. Coll. DFB, No. 10908-2; length: 4.5 mm, width: 3.0 mm, height: 2.5 mm. Off Cabo de Conduceia, N. Mozambique.

**Plate 3**

*Alaerato* sp. cf. *Alaerato virginiae* n. sp., subadult

1a-d. MNHN, loc. #DW3552, off S Faux-Cap, 26° 07' S – 45° 39' E, S Madagascar; dredged at 264-280 m. Length: 5.6 mm, width: 4.1mm, height: 3.3 mm.

*Alaerato elizabethae* n. sp.

2a-c. Holotype. Length: 3.7 mm, width: 2.6 mm, height: 2.2 mm. Off Cabo de Conduceia, N. Mozambique. Coll. MNHN, No. 25760.

3a-c. Paratype 1. Length: 4.0 mm. width: 2.8 mm, height: 2.3 mm. Off Cabo de Conduceia, N. Mozambique. Coll. DFB, No. 10919-1.

4a-c. Paratype 2. Length: 3.4 mm. width: 2.4 mm, height: 1.9 mm. Off Cabo de Conduceia, N. Mozambique. Coll. DFB, No. 10919-2.

*Alaerato angulifera* (Sowerby II, 1859)

5a-c. DFB, coll. No. 8431-1; length: 3.5 mm. Off Tubod, Siquijor Isl., Philippines; dredged at 85 m.

*Alaerato virginiae* n. sp.

6a-c. Paratype 3. Length of labrum: 4.5 mm; width: 3.2 mm; height: 2.5 mm. MNHN loc. #TS04, off E Cap Antsirabe, 25° 02.3' S – 47° 00.3' E, S Madagascar. Coll. MNHN, No. 25763.

**Plate 4**

*Alaerato virginiae* n. sp.

1a-c. Holotype. Length of labrum: 5.1 mm; width: 3.4 mm; height: 2.7 mm. MNHN loc. #DW3238, off Bay Narendry, 14° 29' S – 47° 27' E, NW Madagascar. Coll. MNHN, No. 25761.

2a-c. Paratype 1. Length of labrum: 5.3 mm; width: 4.0 mm; height: 3.1 mm. MNHN loc. #DW3196, off W Cap d'Ambre, 12° 08' S – 48° 56' E, NW Madagascar. Coll. MNHN, No. 25762-1.

3a-c. Paratype 2. Length of labrum: 4.2 mm; width: 2.9 mm; height: 2.4 mm. MNHN loc. #DW3196, off W Cap d'Ambre, 12° 08' S – 48° 56' E, NW Madagascar. Coll. MNHN, No. 25762-2.

*Alaerato gallinacea* (Hinds, 1844)

4a-c. DFB, No. 8233. Length: 4.2 mm. Off Hadsan Beach Resort, Mactan Island, Philippines; dredged at 150 m.

*Alaerato palawanica* Fehse, 2011

5a-c. Paratype 1. Length: 6.2 mm; width: 4.0 mm; height: 3.2 mm. Off Roxas, N Palawan, Sulu Sea, Philippines; dredged on sandy bottom in coral rubble at 10-20 m. Coll. DFB, No. 10293-1.

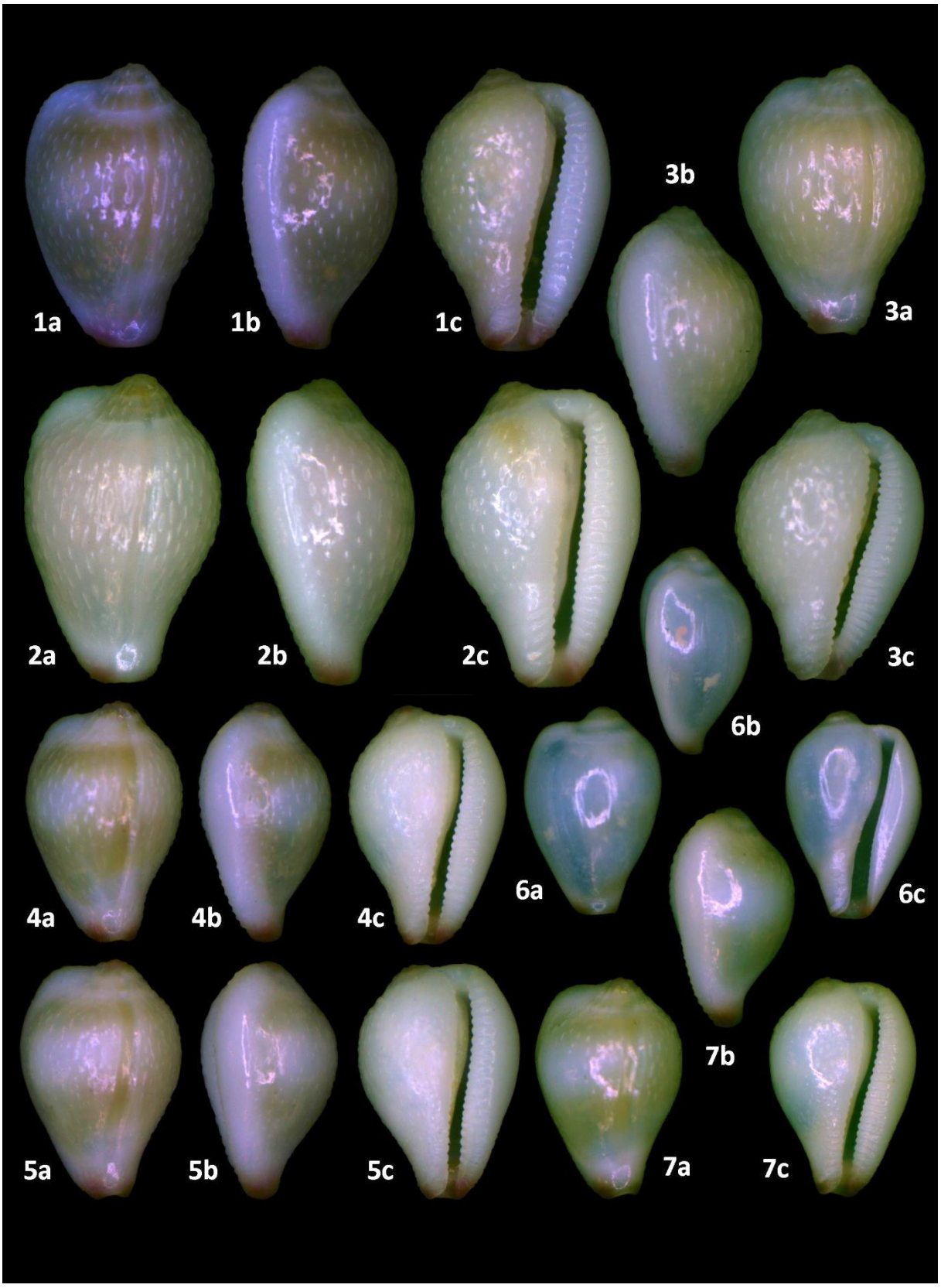


**Plate 1**

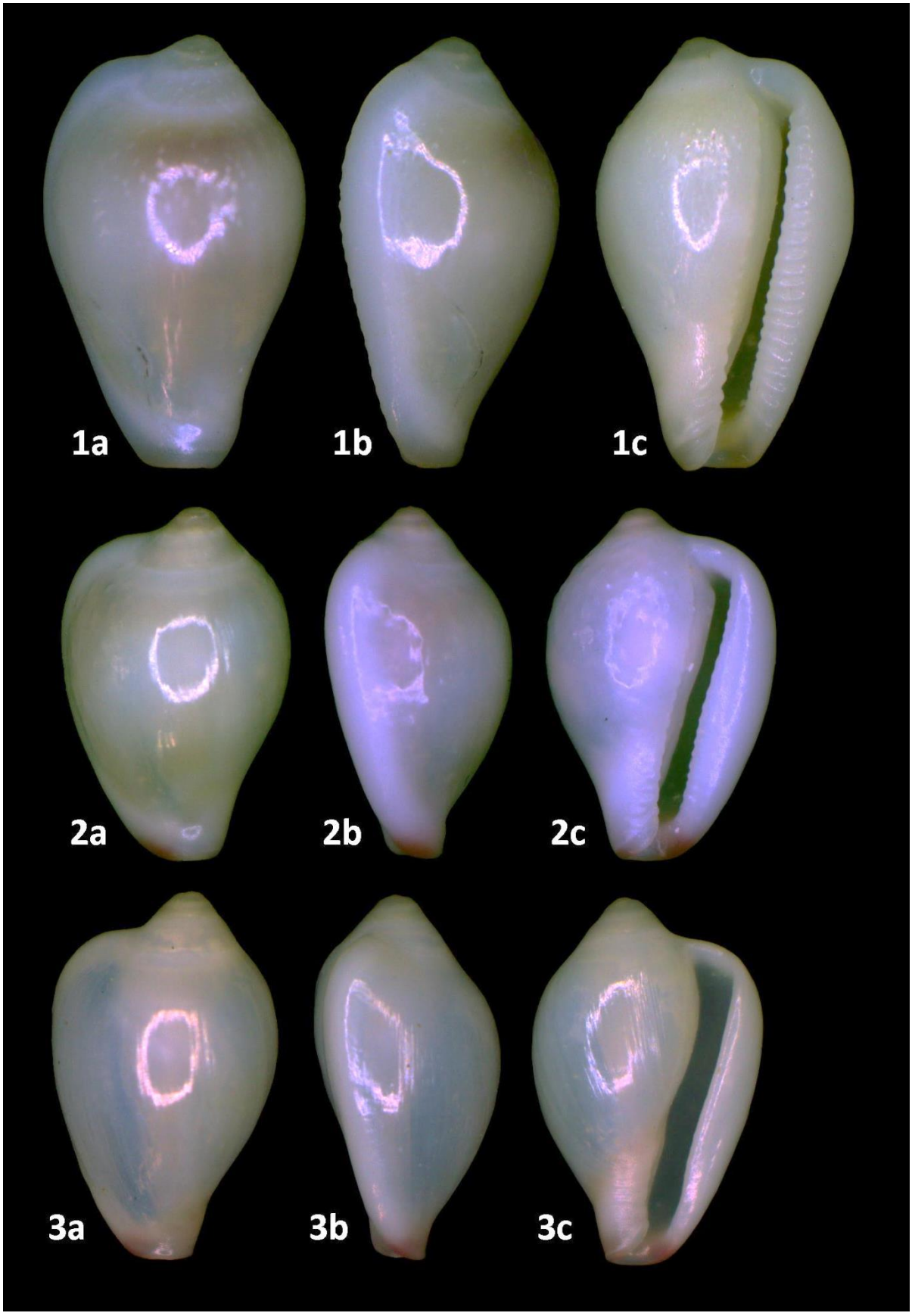


**Plate 2**

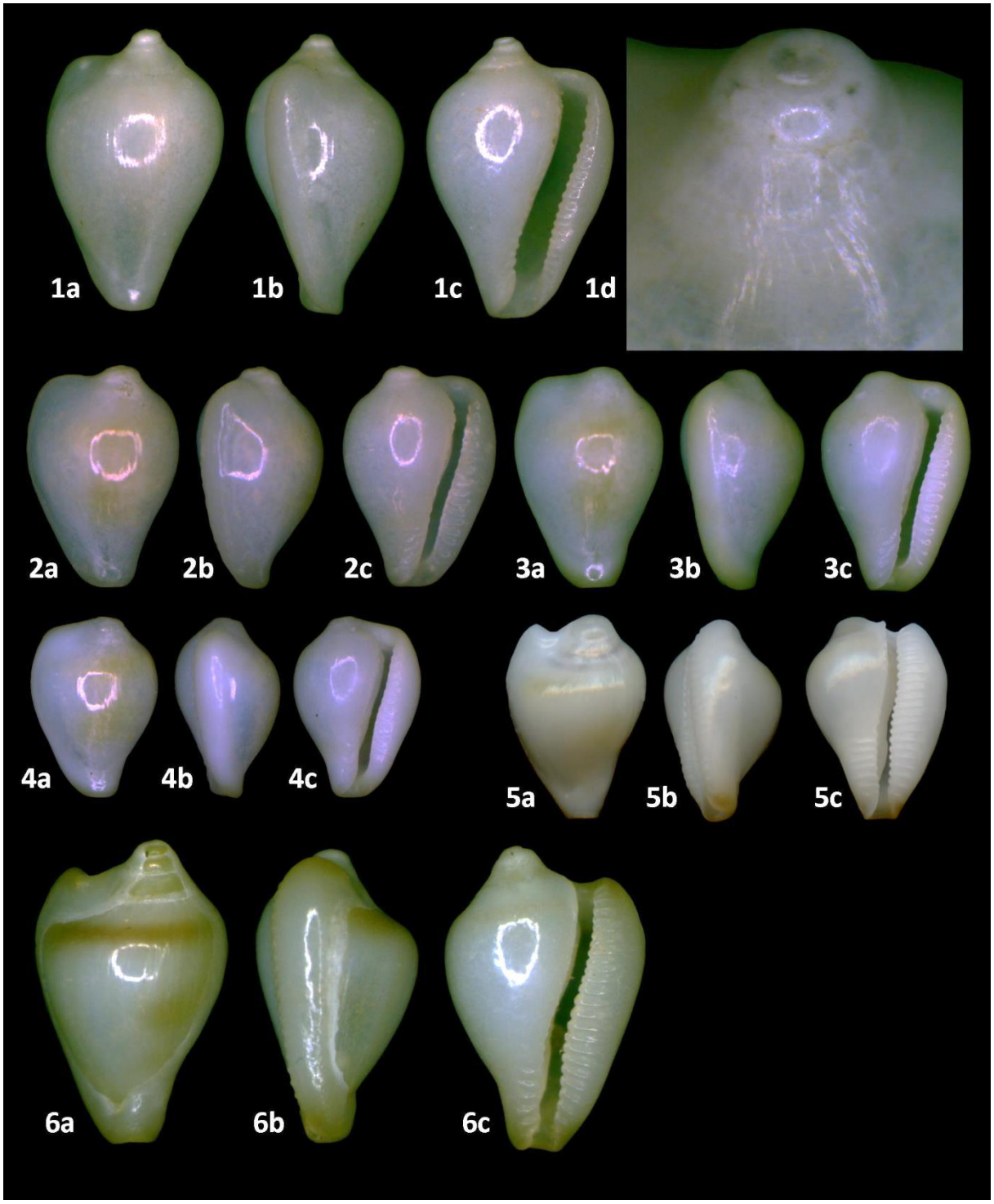


**Plate 3**

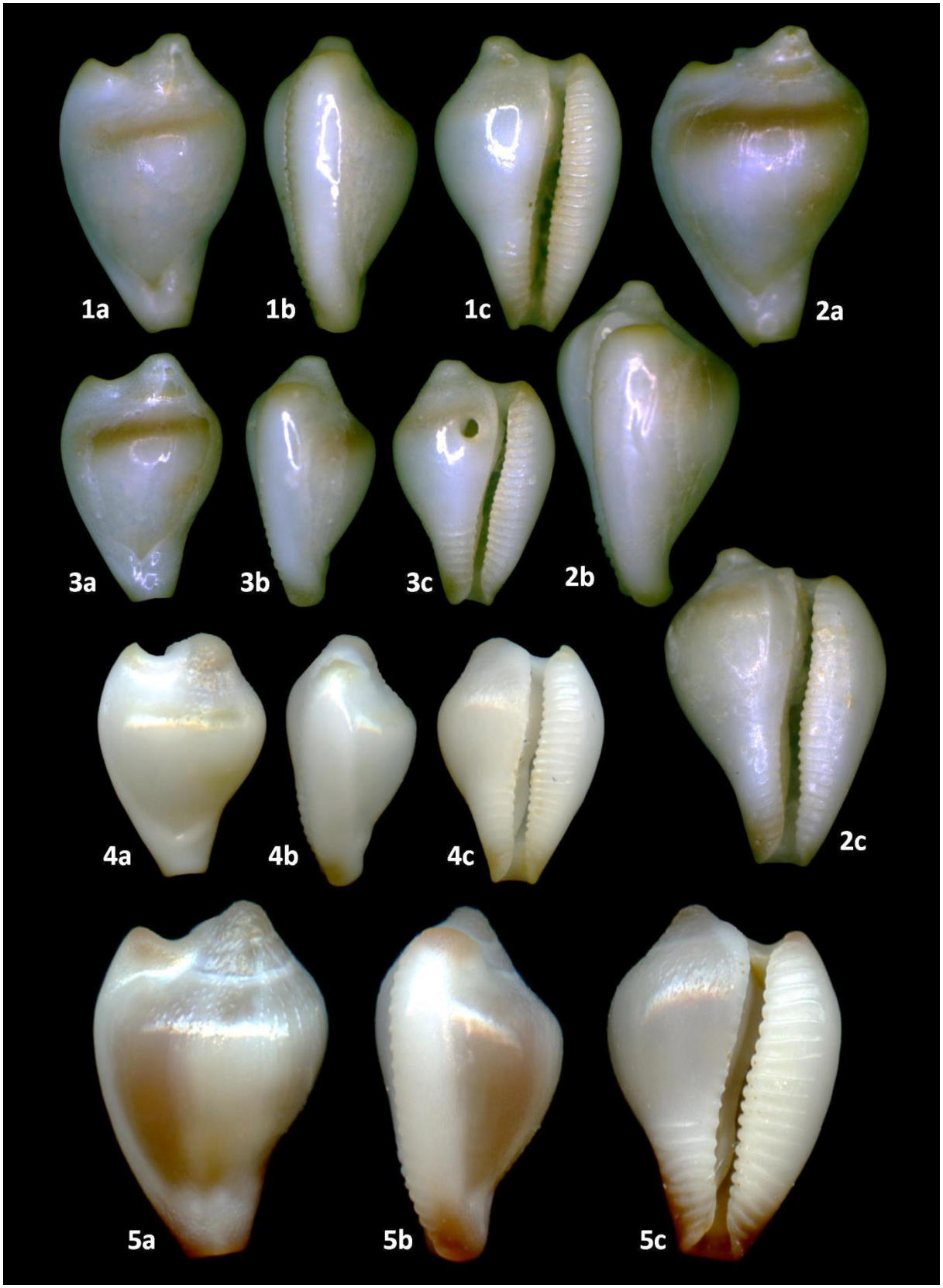


**Plate 4**

# An unusual locality for *Lepidopleurus cajetanus* (Poli, 1791) (Mollusca: Polyplacophora: Leptochitonidae)

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**Keywords:** MOLLUSCA, POLYPLACOPHORA, LEPTOCHITONIDAE, *Lepidopleurus cajetanus*, range extension.

**Abstract:** A specimen of *Lepidopleurus cajetanus* (Poli, 1791) was collected off Cherbourg (Normandy, France). This appears to be the most northern report for a chiton that has been known as a Mediterranean, Iberian and Canarian species till now.

**Materials and methods:** In May 2012 Mr. Frédéric Ziemski of the French Hémisphère Sub Group kindly sent me a picture (Plate I) of a cream-coloured chiton he had collected and requested my help on the identification of the species. The specimen, about 15 mm in length, was recovered by a dredge on small pebbles at a depth of 49 m, in front of Omonville-la-Rogue, west of Cherbourg, Normandy, France (49°43,9813 N - 1°48,1290 W), on the 24th of May 2011. The specimen was immediately recognized as an adult specimen of *Lepidopleurus cajetanus* (Poli, 1979). This species with a quite narrow girdle, has an off-white to light brown colour but can even be darker influenced by the environment it lives in. Although quite variable in sculpture when young, the species cannot be confused with any other European species when adult because of the presence of the typical thick concentric, terraced ribs on the head and tail valve and the lateral areas of the intermediate valves. It lives on and under rocks, stones, dead shells and other hard substrates and is mostly found intertidally although records up to 40 m of depth are known.

**Diagnosis:** So far, *Lepidopleurus cajetanus* (Poli, 1791) was only known from Mediterranean waters (from Spain towards Israel), the Canaries and from Oran (Algeria) in northern Africa up to the Portuguese coasts in the E Atlantic and the southern Bay of Biscay (N Spain). At the end of the 19$^{th}$ century specimens were occasionally collected from Quibéron and off le Gâvre by Taslé (1867), from Roscoff by Vasseur (1877) and Lanninon by Daniel (1883). It concerned different localities in Brittany (Dautzenberg, Ph. & Fischer., P.H.).

As far as I could trace, no recent records from Brittany nor the North Sea were reported in the previous century. In their Monograph, Kaas & Van Belle (1985) already concluded that those early records were probably the result of the introduction of Portuguese oysters and that no distinct populations are living north of the Iberian Peninsula. Whether the current record is also the result of such an introduction or whether the species has migrated this far north will need to be confirmed by more finds.

**Acknowledgements:** Many thanks go to Frank Nolf (Belgium) and Johan Verstraeten (Belgium) for critical remarks and additional photographs. David Monsecour (Aarschot) was a careful reader of the English text.

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**Localisation of the find of *Lepidopleurus cajetanus* (Poli, 1795)**

**Plate I:** *Lepidopleurus cajetanus* (Poli, 1791) attached to a substrate of small pebbles.
Dredged off Omonville-la-Rogue, West of Cherbourg, Normandy, France at a depth of 49 m. 49°43,9813 N - 1°48,1290 W. 24 May 2011. Length: about 15 mm.

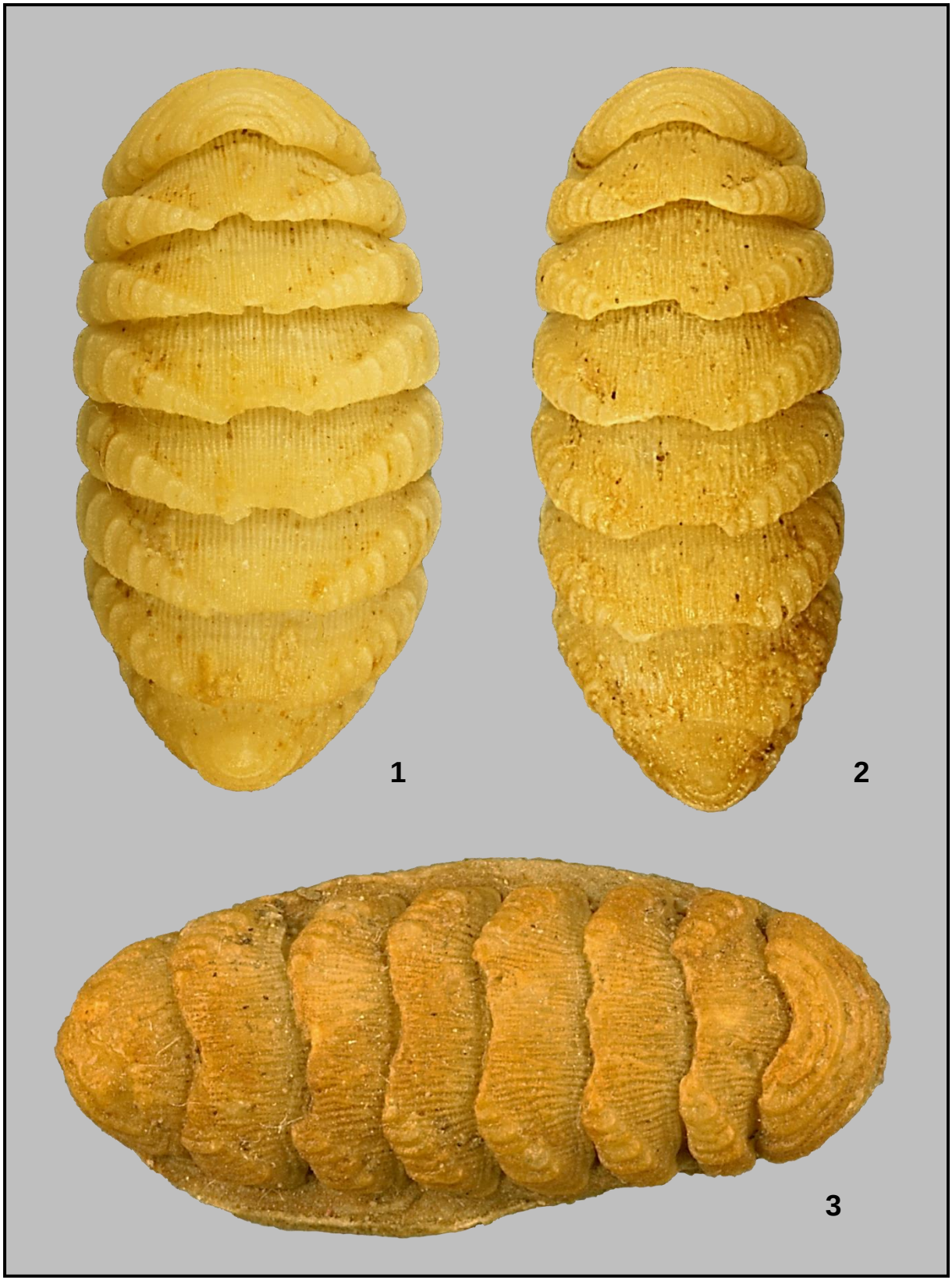


**Plate II.** Figs 1-3. *Lepidopleurus cajetanus* (Poli, 1791). Coll. F. Nolf; 1-2: Lagonisi, Sithonia, Greece. Under stones. Dived at a depth of 4 m. August 1992; 1: 17.45 mm; 2: 17.90 mm; 3: Rade de Marseille, S France. From diver. 18.67 mm.

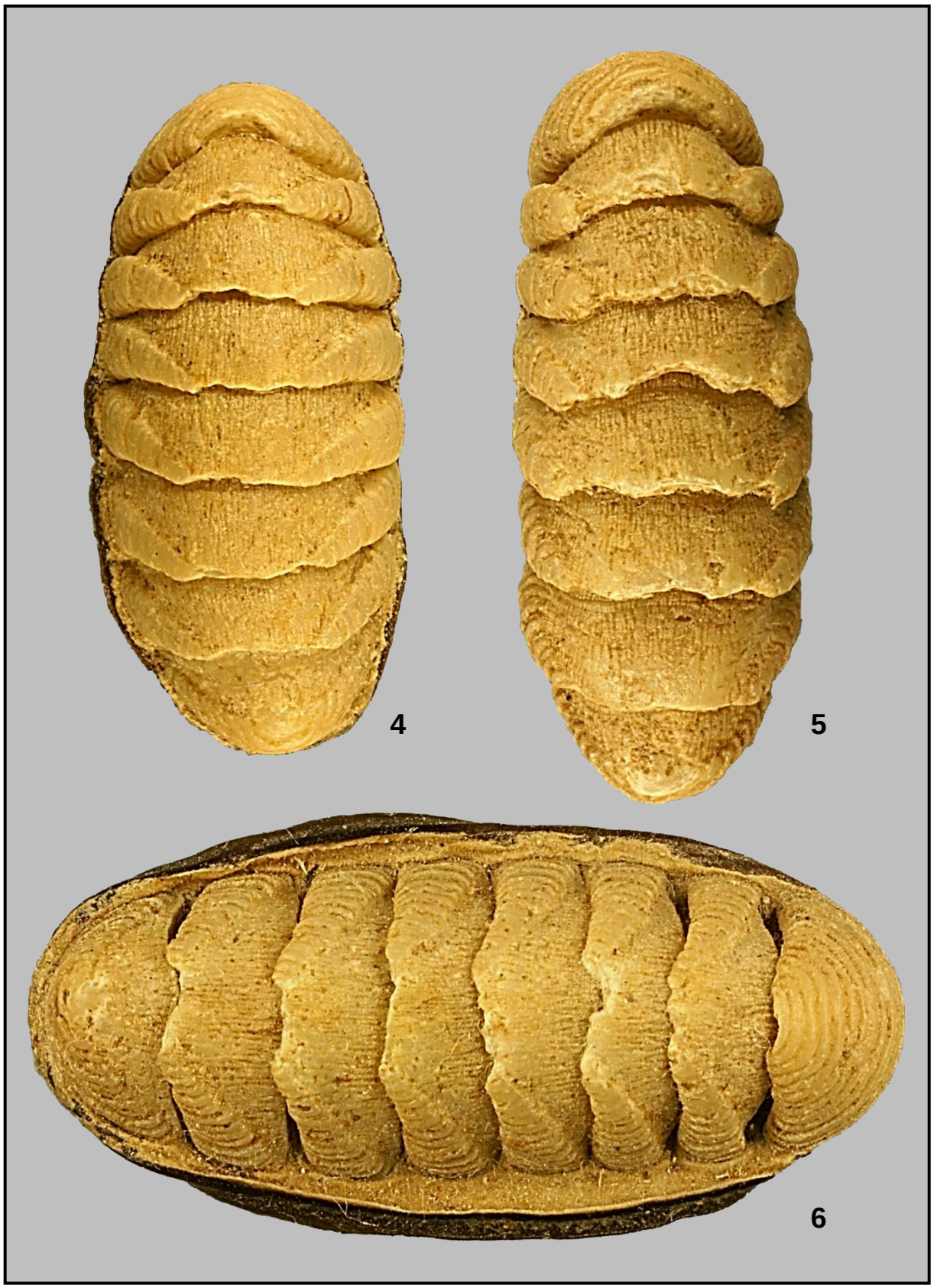


**Plate III.** Figs 4-6. *Lepidopleurus cajetanus* (Poli, 1791). Arrecife, Lanzarote, Canary Islands. In sand, under stones on Playa del Reducto. 25 May 1971. Coll. F. Nolf; 4: 19.93 mm; 5: 21.51 mm; 6: 25.64 mm.

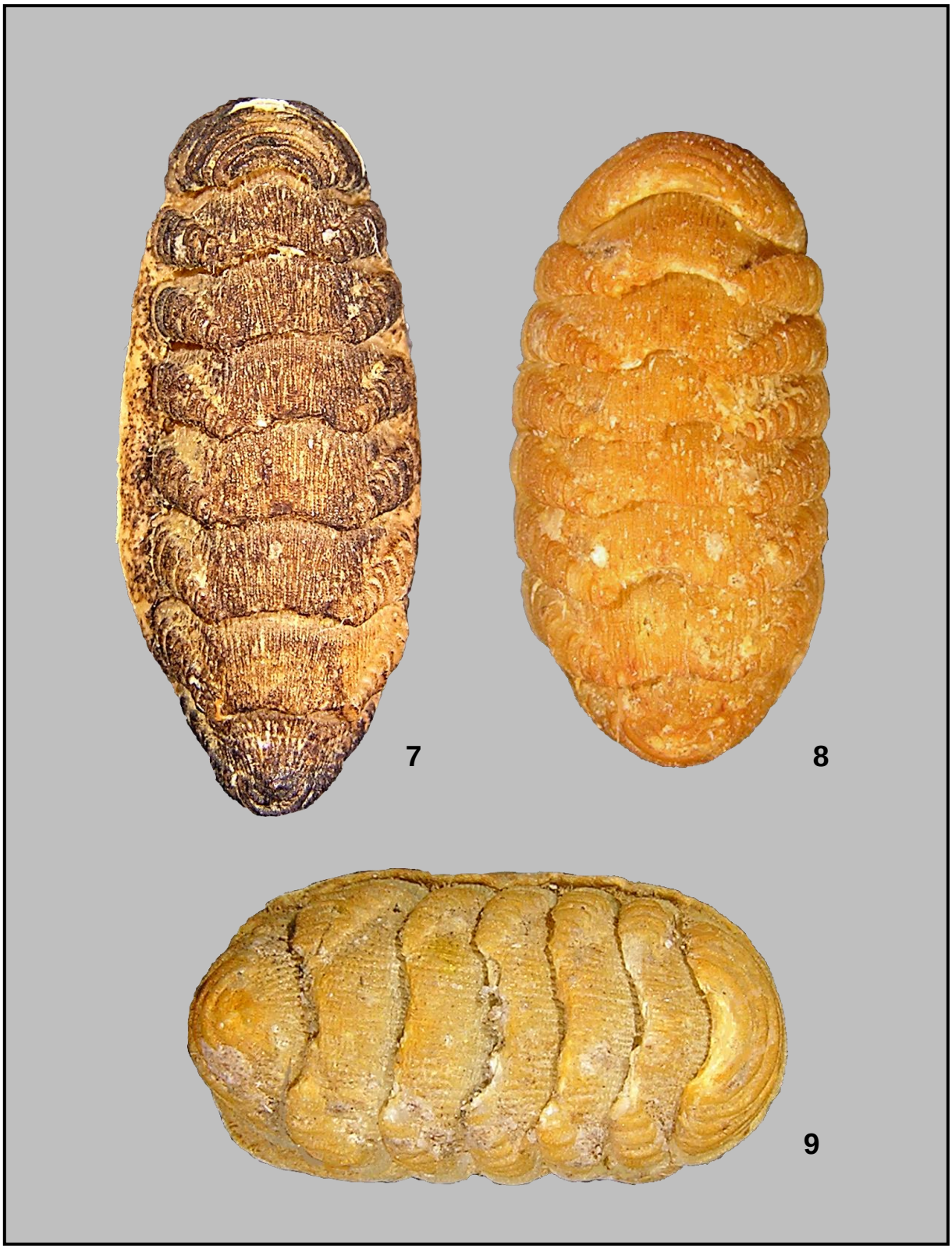


**Plate IV.** Figs 7-9. *Lepidopleurus cajetanus* (Poli, 1791). Coll. B. Anseeuw; 7: Menfi, Sicily, Italy. In sand under large boulders. Depth: -0.5 m. 20 June 2001. 19.9 mm; 8: Marseille Harbour, France. Under intertidal rock. 15.2 mm; 9: South Lanzarote Island, Canary Islands. Under rocks at a depth of 2-3 m. 13 November 2006. 11.1 mm. 7 valved specimen.

# An unusual habitat and colour form of *Tectura virginea* (O.F. Müller, 1776) (Mollusca: Gastropoda: Lottiidae)

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**Family LOTTIIDAE**

***Tectura virginea* (O.F. Müller, 1776)**
Pl. I, Figs 1-3; Pl. II, Figs 4-9

= *Patella virginea* O.F. Müller, 1776
= *Patella parva* da Costa, 1778
= *Lottia unicolor* Forbes, 1844

**Range:** From Iceland and northern Scandinavia south to the Canary Islands and the Azores. Also in the Mediterranean Sea, but not in the Baltic Sea. Reported from all European offshore islands. From the littoral area to 100 m deep.

**Material and methods:** Shells of *Tectura virginea* (O.F. Müller, 1776) from Jersey (Pl. I, Figs 1-3) are compared with those from Brittany (Pl. II, Fig. 4) and Normandy (Pl. II, Figs 5-9) (France).

**Diagnosis:** Green Island or La Motte is a tidal island in the parish of St. Clement on the south-east coast of Jersey (Channel Islands). It is situated near the seashore and is accessible at low tide. Visitors to the island need to be careful not to be cut off by the incoming tide. The island has a grassy surface on a predominantly clay bottom, surrounded by rocks, which are interesting for exploration by shell collectors. Two specimens of *T. virginea* were collected on seaweed (*Lamellaria* sp., *Fucus* sp.). This habitat is very unusual since this species in fact only occurs beneath stones where they are covered with a calcareous layer, which is hard to remove. The latter process often results in badly damaging the shell surface, which is mostly pinkish white. Pink or brown, broadening and often branching rays (13-40) run from the apex towards the margin of the shell. The rays may be entirely or partly interrupted so as to produce a chequered pattern. Occasionally, shells are pure white (*T. virginea* var. *lactea* Jeffreys, 1865). However, the shells collected at Green Island (Jersey, Channel Islands) had a particularly greenish and slightly orange reticulated surface. The inside was iridescent green. Unfortunately, no preliminary observations were made on the colour of the mantle edge of the living animal before conservation in alcohol.
*T. virginea* usually lives on small stones and valves of shells, preferring these habitats to bedrock, at least between tidemarks or in tidal rock pools. It is most abundant under and on the sides of stones bearing encrusting red algae. These algae serve as food but it also ingests detritus, as the gut is often full of diatoms and sponge spicules but not sand grains. It has a strong radula and powerful jaws, which would be adequate for such a diet.
After more than forty years of intensive observation on the coast of Normandy and Brittany in France it is the first time we have found such strangely coloured specimens of *T. virginea*. The green colour can possibly be explained by the different habitat. The presence of the specimens on brown algae could have influenced the diet and as a conseqeunce the colour of the shells. In one of the specimens we can observe different growth stages. The lowest part of the shell is of a pure light green colour, but the first growth stages are light orange. This feature may confirm our opinion that the habitat has influenced the appearance of the specimens in Jersey.

**Conclusion:** More study in the local area will be needed to achieve a definitive judgment. Furthermore it would be interesting to observe the colour of the mantle and the exact identity of the host algae, too.

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**Green Island**

**Green Island, Jersey, Channel Islands, UK**

**Arne Ghys searching for shells**

**Green Island, Jersey,**
**Channel Islands, UK - 23 July 2010**

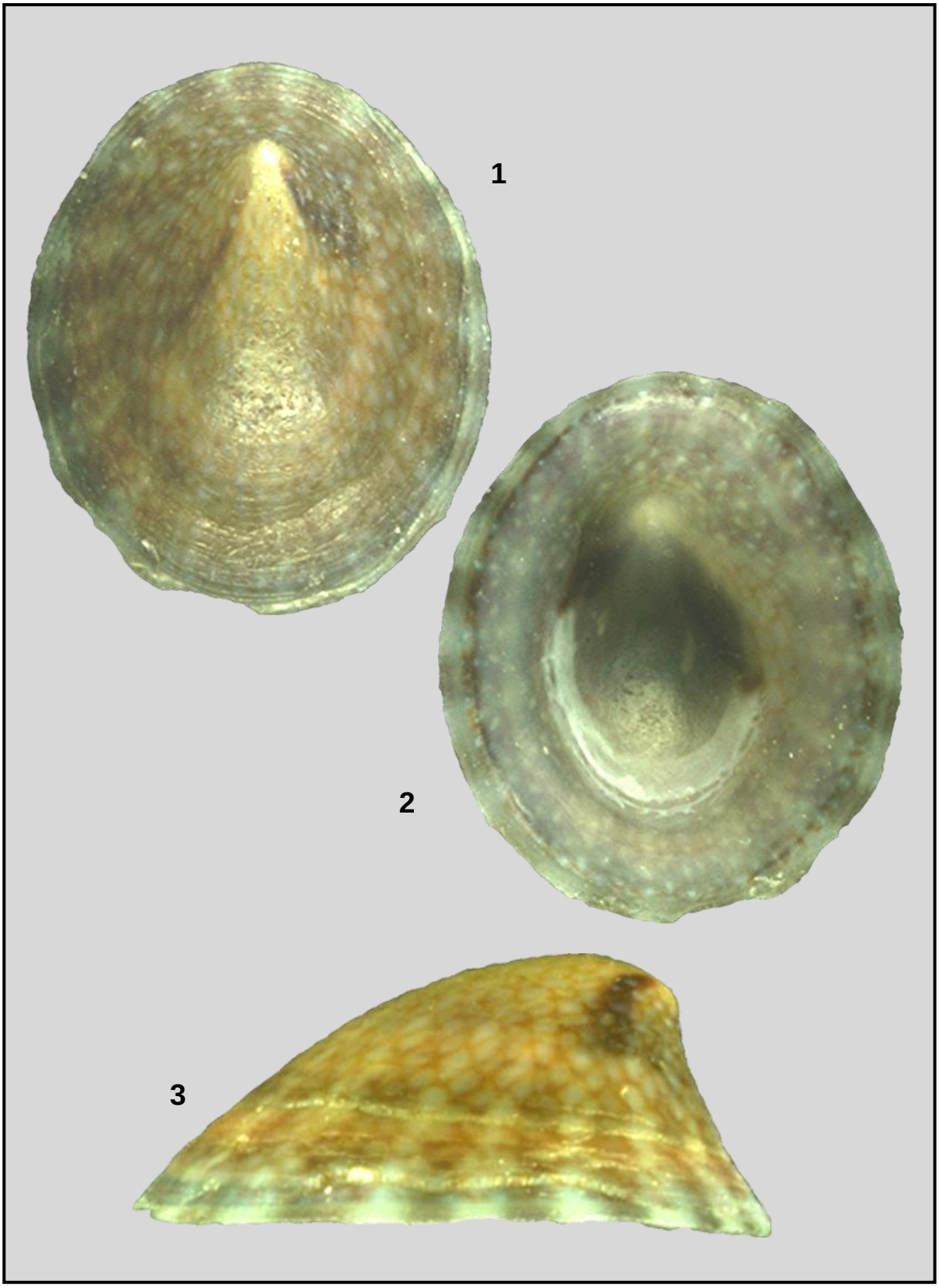


**Plate I.** Figs 1-3: *Tectura virginea* (O.F. Müller, 1776). Green Island, parish of St. Clement, Jersey, Channel Islands. Leg. Arne Ghys. Coll. F. Nolf. H. 3.48 mm L. 8.53 mm; 1: outer surface; 2: inner surface: 3: side-view.

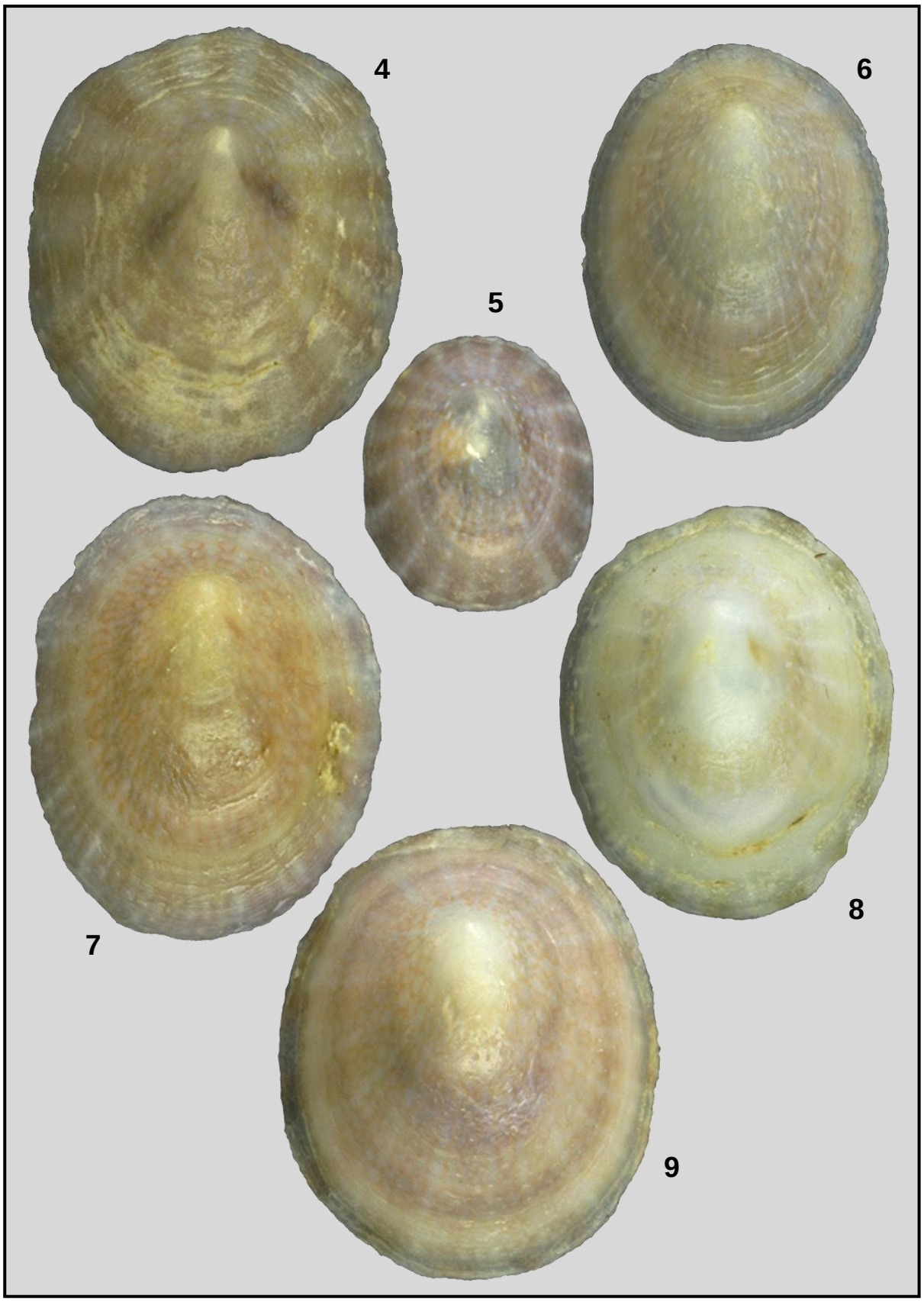


**Plate II.** Figs 4-9: *Tectura virginea* (O.F. Müller, 1776). Coll. F. Nolf; 4: Port Blanc, Brittany, France. Under rock in tidal pool. 1 April 2001. H. 4.21 mm L. 9.87 mm; 5-9: Barneville-Carteret, Normandy, France. Under stones in tidal pool at extreme low tide. 18 August 2001; 5: 2.87 mm L. 6.41 mm; 6: 3.21 mm L. 8.94 mm; 7: H. 4.14 mm L. 9.73 mm; 8: 4.87 mm L. 9.57 mm; 9: H. 4.73 mm L. 11.48 mm.