

**Additions to "Les Muricidae de Polynésie Française" and
description of a new species of *Morula* Schumacher, 1817
(Muricidae, Rapaninae) from French Polynesia**

Roland HOUART¹ & Jean TRÖNDLÉ²

¹ Research Associate, Institut royal des Sciences naturelles de Belgique
Rue Vautier, 29, B-1000 Brussels, Belgium

² Research Associate, Muséum National d'Histoire Naturelle
Rue de Buffon, 55, F-75005 Paris, France

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ABSTRACT. The revision of the French Polynesian Muricidae is addended and a new species, *Morula cernohorskyi*, is described from the Tuamotu and Society Archipelagos.

RESUMÉ. Quelques ajouts et corrections sont apportés à la révision des Muricidae de Polynésie Française. Une nouvelle espèce, *Morula cernohorskyi*, est décrite des Archipels des Tuamotu et de la Société.

I. INTRODUCTION

The French Polynesian muricids have been revised by TRÖNDLÉ & HOUART (1992). Seventy four species were recorded, of which three remained unidentified and six were considered to be endemic.

New records, modification in the classification, few corrections, and the discovery of new species have led us to write the present paper. In addition to the new species described here, two other taxa were recently named: *Orania simonetae* Houart, 1995, from the Marquesas Islands, and *Nassa tuamotuensis* Houart, 1996, from the Cook Islands, the Tuamotu, and the Society Archipelagos.

Nassa sarta (Bruguière, 1789) is separated from *N. francolina*. It is recorded from Tubuai. The "true" *Nassa francolina* is not signalized in French Polynesia.

Other species, not signalized in TRÖNDLÉ & HOUART (1992) are here recorded for the first time: *Pterynotus elongatus* (Lightfoot, 1786), *Murexiella rosamiae* (D'Attilio & Myers, 1985), and *Morula angulata* (Sowerby, 1894), not *Morula angulata* in TRÖNDLÉ & HOUART (1992: 99).

Abbreviations

MNHN: Muséum National d'Histoire Naturelle, Paris, France.

NMNZ: Museum of New Zealand, Wellington.

NM: Natal Museum, Pietermaritzburg, South Africa.

II. CORRECTIONS AND MODIFICATIONS

Subfamily MURICINAE Rafinesque, 1815

Chicoreus (Chicopinnatus) laqueatus
(Sowerby, 1841)

TRÖNDLÉ & HOUART, 1992: 78, fig. 19

Chicoreus laqueatus was temporarily included in *Pterynotus* by TRÖNDLÉ & HOUART (1992: 78). It is now classified in *Chicopinnatus* (HOUART, 1992: 35, 113).

Pterymarchia bouteti (Houart, 1990)

TRÖNDLÉ & HOUART, 1992: 77, fig. 23

Pterymarchia martinetana (Röding, 1798)

TRÖNDLÉ & HOUART, 1992: 79, figs 25, 108

Pterymarchia tripterus (Born, 1778)

TRÖNDLÉ & HOUART, 1992: 79, fig. 26

These three species have been temporarily assigned to *Pterynotus*, awaiting a new genus. The genus *Pterymarchia* was described by HOUART (1995c: 127), with *Murex tripterus* as type species.

Subfamily **MURICOPSINAE**
Radwin & D'Attilio, 1971

Favartia brevicula (Sowerby, 1834)

Murex breviculus Sowerby, 1834: pl. 63, fig. 37

TRÖNDLÉ & HOUART, 1992: 114, fig. 36 (as *Favartia* sp.)

A specimen collected in Tubuai was compared with *Favartia brevicula* by HOUART (1986: 431, pl. 5, fig. 13). The species was already signalized in French Polynesia by SALVAT & RIVES (1975: 313, fig. 197), but TRÖNDLÉ & HOUART (1992: 69) listed it as doubtful in French Polynesia. However, new material containing young specimens, collected in 1993 in New Caledonia (MNHN), permits better comparison. It is now almost certain that the specimen illustrated in HOUART (1986) and in TRÖNDLÉ & HOUART (1992) is a subadult specimen of *F. brevicula*.

Subfamily **ERGalATAXINAE**
Kuroda & Habe, 1971

Orania pacifica (Nakayama, 1988)

TRÖNDLÉ & HOUART, 1992: 102 [as ?*Morula* (?*Morula*) *pacifica*]

The study of many specimens from throughout the geographical range of the species, and careful comparison with other species of the genus *Orania* (HOUART, 1995b) allow us now to classify that species definitely in the Erganataxinae.

Pascula muricata (Reeve, 1846)

Ricinula muricata Reeve, 1846: pl. 5, fig. 39

TRÖNDLÉ & HOUART, 1992: 114, fig. 103 (as *Pascula* sp.)

Hundreds of specimens of that species have been examined and compared since 1992 (MNHN, NM, colls R. Houart, O. Simonet, J. Tröndlé). The species is now clearly identified as *Pascula muricata*. The holotype, together with several other specimens, was illustrated in HOUART (1995b).

Spinidrupa euracantha (A. Adams, 1853)

TRÖNDLÉ & HOUART, 1992: 105, fig. 90 [as *Morula* (*Spinidrupa*) *euracantha*]

Spinidrupa Habe & Kosuge, 1966 is considered to be monotypic. It was transferred from Rapaninae to

Erganataxinae (HOUART, 1995a), based on shell and radular characters.

Subfamily **RAPANINAE** Gray, 1853

(Thaidinae Jousseume, 1888 in

TRÖNDLÉ & HOUART, 1992)

Morula striata (Pease, 1868)

TRÖNDLÉ & HOUART, 1992: 103 (read fig. 79, not 80 as stated)

Morula uva (Röding, 1798)

TRÖNDLÉ & HOUART, 1992: 104 (read fig. 82, not 83 as stated)

Habromorula bicatenata (Reeve, 1846)

TRÖNDLÉ & HOUART, 1992: 105, fig. 90 [as *Morula* (*Spinidrupa*) *bicatenata*]

Habromorula porphyrostoma (Reeve, 1846)

TRÖNDLÉ & HOUART, 1992: 106, fig. 89 [as *Morula* (*Spinidrupa*) *porphyrostoma*]

Habromorula spinosa (H. & A. Adams, 1853)

TRÖNDLÉ & HOUART, 1992: 106, fig. 91 [as *Morula* (*Spinidrupa*) *spinosa*]

The three species, formerly included in *Morula* are now classified in *Habromorula*, a genus which differs from *Morula* in having a more elongate and usually more spiny, rather than nodulose shell, a narrower aperture, and more numerous, narrower, spiral cords and/or threads (HOUART, 1995a).

III. NEW RECORDS

Subfamily **MURICINAE** Rafinesque, 1815

Pterynotus elongatus (Lightfoot, 1786)

Murex elongatus Lightfoot, 1786: 65

A specimen of that species was recently collected in the Manihi Atoll, Tuamotu Archipelago. Two other specimens were collected at Arue, Tahiti Island (M. Boutet, in litt.). *P. elongatus* was not yet signalized from French Polynesia.

Subfamily **MURICOPSINAE**
Radwin & D'Attilio, 1971

Murexiella rosamiae (D'Attilio & Myers, 1985)

Favartia rosamiae D'Attilio & Myers, 1985: 58, figs 1-6

The species was collected in Nuku Hiva, Marquesas Islands (coll. O. Simonet). *M. rosamiae* is known from many localities in the Indo-West Pacific. It is here recorded from French Polynesia for the first time.

Subfamily **ERGALATAXINAE**
Kuroda & Habe, 1971

Orania simonetae Houart, 1995
Figs 1-2

Orania simonetae Houart, 1995b: 272, figs 140-141

The species is known from Nuku-Hiva, Marquesas Islands, living at 30 m (type locality). It was originally compared with *O. serotina* (A. Adams, 1853), *O. xuthedra* (Melvill, 1893), *O. archaea* Houart, 1995, and *O. mixta* Houart, 1995. The original description is here retranscribed from HOUART (1995b).

Description.

Shell small, up to 12.7 mm in length at maturity, weakly spinose, squamous. Spire high, acute, with 3+ protoconch whorls (incomplete) and up to 6 weakly convex, narrow teleoconch whorls with weakly adpressed suture. Protoconch conical, smooth. Terminal varix unknown (eroded).

Axial sculpture consisting of moderately high axial ribs: 8 on first and second teleoconch whorls, 9 from third to fifth whorl, 7 or 8 on last whorl.

Spiral sculpture consisting of primary and secondary, squamous cords, and narrow threads between the cords. First whorl partly eroded, second to fifth whorl each with 3 cords; last whorl bearing 4 cords with one thread between first three adapical cords and two threads between third and fourth cords. Shoulder of early whorls smooth; last whorls occasionally with 2 or 3 low threads on shoulder.

Aperture ovate, moderately small. Columellar lip smooth, except two low nodes abapically, rim adherent. Anal notch broad, deep. Outer lip erect, crenulate, with 6 short, elongate nodes within.

Siphonal canal short, narrow, open, abaperturally bent, ornamented with squamous spiral cords.

Withish or light pinkish. Adapical part of shoulder and fourth abapical spiral cord of last whorl brown.

Aperture glossy white or light pink.

Radula unknown.

Subfamily **RAPANINAE** Gray, 1853
(Thaidinae Jousseau, 1888 in
TRÖNDLÉ & HOUART, 1992)

Morula angulata (Sowerby, 1894)
Figs 4-7

NOT *Morula angulata* - CERNOHORSKY, 1987: 100 (in part), figs 20-21 (only); TRÖNDLÉ & HOUART, 1992: 99, fig. 76 (= *Morula cernohorskyi* n.sp.)

Morula angulata (Sowerby, 1894) is a small species, not reaching 10 mm in length, originally described from Mauritius. Other specimens were recently collected in Tahiti (coll. Wargnier), and in Guam (coll. Schroeder). It was confused with another small species of *Morula* from French Polynesia by CERNOHORSKY (1987:100), and by TRÖNDLÉ & HOUART (1992: 99). However, TRÖNDLÉ & HOUART (1992: 100) observed some differences between the holotype of *Sistrum angulatum* Sowerby, 1893 and the Polynesian shell identified as *Morula angulata* by CERNOHORSKY (1987: 100) but the material examined was not sufficient and damaged. The shell, wrongly identified as *M. angulata* by these authors, is in fact a new species described farther.

Nassa sarta (Bruguière, 1789)
Fig. 11

Buccinum sertum Bruguière, 1789: 262, pl. 397, fig. 2

There are two specimens of *N. sarta* from Tubuai in the material examined by TRÖNDLÉ & HOUART (1992: 113), all other records are *N. tuamotuensis* Houart, 1996 (see below). However, these authors considered then the name *sarta* as a junior synonym of *Nassa francolina* (Bruguière, 1789). In a recent study HOUART (1996), demonstrated they are separate species. *N. sarta* differs constantly from *N. francolina* in being usually more narrowly ovate, and in having fewer, stronger, weakly nodular spiral cords (last whorl with 59-62 cords, compared to 98-102 in *N. francolina*, from sutural line to the extremity of the siphonal canal). Tubuai is also the eastern limit of the geographical distribution of *N. sarta*.

Nassa tuamotuensis Houart, 1996
Figs 8-10

Nassa francolina - TRÖNDLÉ & HOUART, 1992: 113, fig. 13 (not Bruguière, 1789).

Nassa tuamotuensis Houart, 1996: 56, figs 7, 31-41. The species is known from the Cook Islands and several localities in the Tuamotu and the Society Archipelagos (French Polynesia). Its original

description and remarks are here partly retranscribed from HOUART (1996).

Description.

Shell up to 63.7 mm in length at maturity (Faaone, Tahiti), heavy. Subsutural area of teleoconch whorls weakly to strongly concave, spire high, acute. Up to 7 teleoconch whorls. Suture strongly adpressed. Terminal varix of protoconch erect, of sinusigera type, number of whorls unknown (broken).

Axial sculpture of teleoconch whorls consisting of low ribs: first to third whorl with 19 or 20 ribs, gradually decreasing in strength, obsolete from fourth whorl. Spiral sculpture of first to penultimate whorl of low, primary, secondary and tertiary cords, last whorl with low cords on subsutural area, on abapical part of whorl, and on the siphonal canal, periphery almost smooth.

Aperture large, elongate, broadly ovate. Columellar lip smooth with elongate, adapical ridge within the aperture, delineated anal notch. Outer lip smooth, edge weakly crenate within. Siphonal canal short, broad, open.

Creamy-white, light tan or golden-brown with darker coloured axial bands, occasionally with darker axial and spiral bands together. Aperture creamy-white inside, dark brown on outer apertural edge and on abapical part of columellar lip.

Operculum and radula unknown.

Remarks.

Nassa tuamotuensis has been usually confused with *N. francolina* (Bruguière, 1789), certainly because of its smooth shell surface. However, *N. francolina* is confined in the Indian Ocean, whereas *N. tuamotuensis* occurs in the Central Pacific, the usual geographical range of *N. sarta* (Bruguière, 1789). Strangely, *N. sarta* is known from many localities but is apparently absent from the localities occupied by *N. tuamotuensis*.

The shell of *N. tuamotuensis* is heavier and thicker than *N. francolina*, it is also more slender, and has a very peculiar spiral sculpture, different from any of the other species of *Nassa* (HOUART, 1996). It also differs in its concave subsutural area, occasionally present in other species, but in a very lighter way, and in its particular coloration, with narrow, axial brown bands.

IV. NEW SPECIES

Morula cernohorskyi n.sp.

Fig. 3

Morula angulata - CERNOHORSKY, 1987: 100 (in part), figs 20-21 (only); TRÖNDLÉ & HOUART, 1992: 99, fig. 76 [not *Morula angulata* (Sowerby, 1894)], now the holotype of *M. cernohorskyi* n.sp.

Material examined.

French Polynesia, Tuamotu Archipelago, Mururoa Atoll, holotype and 3 paratypes MNHN, 1 paratype NMNZ M.272478, 2 paratypes coll. J. Tröndlé, 3 paratypes coll. R. Houart; Tuamotu Archipelago, Anaa, 1 paratype coll. J. Tröndlé; Society Archipelago, Tahiti, Afaahiti, 1 paratype coll. J. Tröndlé.

Type locality.

French Polynesia, Tuamotu Archipelago, Mururoa Atoll, 22.00' S, 140.00' W.

Description.

Shell small, up to 6.3 mm in length (paratype coll. J. Tröndlé), biconical, stout, weakly spinose. Spire high with 3-3.5 protoconch whorls, and up to 4 shouldered teleoconch whorls. Suture impressed. Protoconch conical, acute, smooth, glossy. Terminal varix strong, curved, of sinusigera type.

Axial sculpture of teleoconch whorls consisting of moderately high, strong ribs, with short, narrowly open spines: 9 ribs on first whorl, 9 or 10 on second, 10 on third, 8-10 on last. Spiral sculpture of strong, squamous, rounded cords: first to third whorl with a single, heavy, carinal cord; last whorl with 5, longitudinally striate, rounded cords, occasionally with a single thread between these. Shoulder with a single, shallow, broad cord, just below suture. Presence of short, open, blunt spinelets at intersection of axial ribs and spiral cords. Carinal spinelets longest.

Aperture small, narrow, ovate; columellar lip with 2 or 3 elongate, weak knobs abapically; rim adherent; anal notch broad, deep; outer lip smooth, with 4 strong denticles within, adapical denticle strongest. Siphonal canal short, straight, open, with 2 weak, spiral threads.

Light orange, yellow-tan or tan with carinal, third, fifth spiral cords, and tip of siphonal canal dark brown. Aperture of the same colour, with dark brown, narrow bands inside.

Radula and operculum unknown.

Remarks.

Morula angulata (Sowerby, 1894) (Figs 4-7) which was confused with *M. cernohorskyi* n.sp. is relatively larger, with four primary and two secondary, spinose, narrow, spiral cords on last whorl. The two secondary cords are situated between the shoulder, and next abapical primary cord. The last whorl is relatively broader, and more shouldered than in *M. cernohorskyi*. The colour is also different, milky-white with secondary, and last adapical primary cords dark brown or black.

In the same group of small species of Indo-Pacific *Morula*, there are other species, namely: *M. echinata* (Reeve, 1846) and *M. parva* (Reeve, 1846). Both species are larger than *M. cernohorskyi* relative to the number of teleoconch whorls, with narrower, more numerous spiral cords, and different coloration. They

have six spiral cords on last teleoconch whorl and one on the siphonal canal. *M. echinata* is milky-white or light tan with the first abapical spiral cord of last whorl punctuated with orange spots, two next abapical cords uniformly coloured, fourth, fifth, and sixth, or fourth and sixth, milky-white or brown, punctuated with orange spots. *M. parva* is milky-white and less spinose, with first, second, fourth and sixth spiral cords of last whorl being dark brown or black, third and fifth cords are punctuated with orange spots. *M. echinata* occurs in French Polynesia, and *M. parva* was recorded from Luzon, Philippine Islands (type locality), and from Ambon Island, Indonesia (Houart, in press).

Morula parvissima Cernohorsky, 1987, from French Polynesia, is narrower, not shouldered, with broader, nodose, spiral cords, and different coloration. It is milky-white with alternatively white and black spiral cords.

Etymology.

Named after Walter O. Cernohorsky, author of numerous papers and books on Indo-Pacific Mollusca.

Conclusion.

TRÖNDLÉ & HOUART (1992) cited 74 species of Muricidae from French Polynesia, of which three remained unidentified. Of these three species, two are now identified as *Favartia brevicula* (Sowerby, 1834) and *Pascula muricata* (Reeve, 1846).

The total number of Muricidae known by us from French Polynesia is now of 79 species, of which one remains unidentified.

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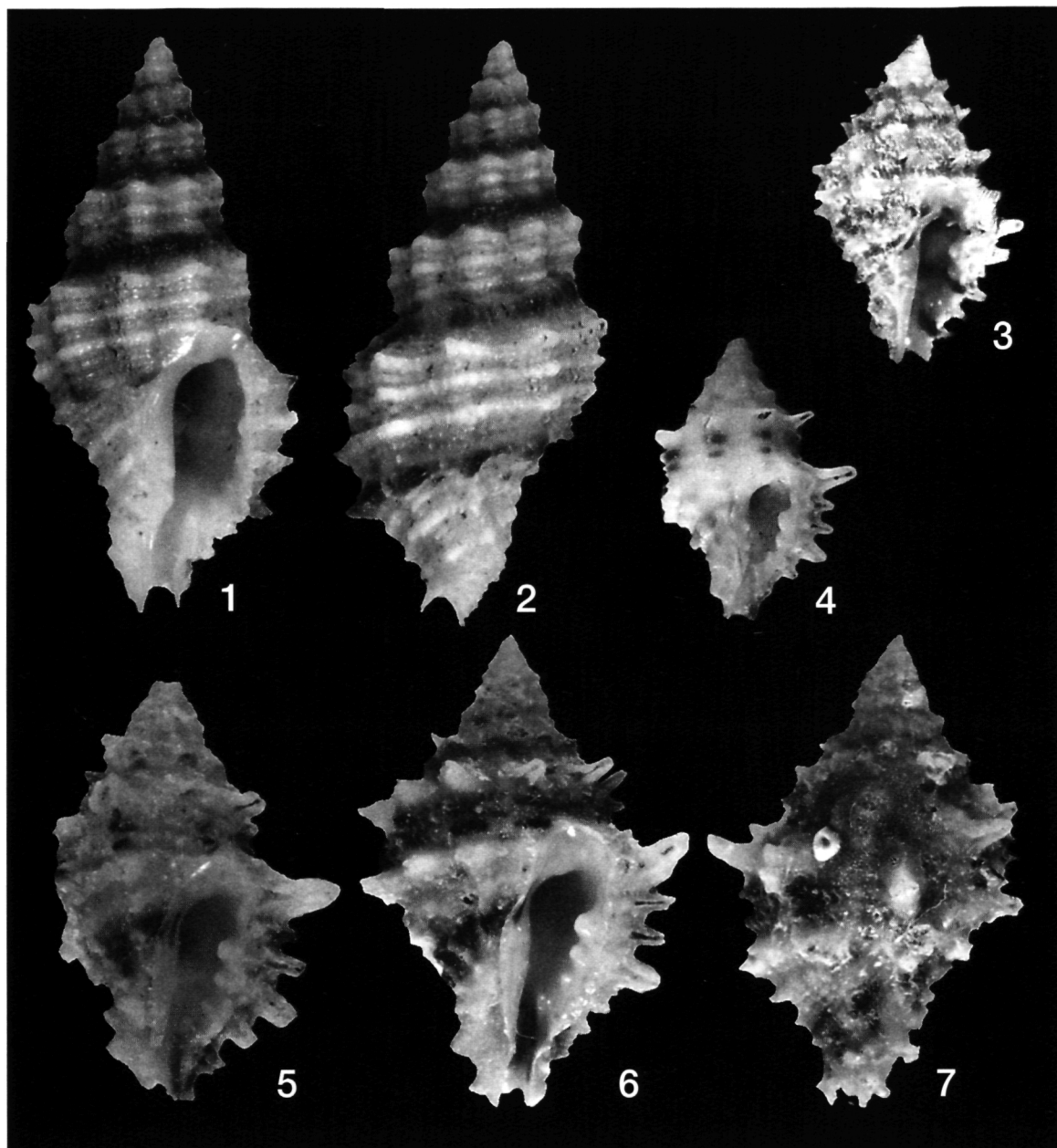
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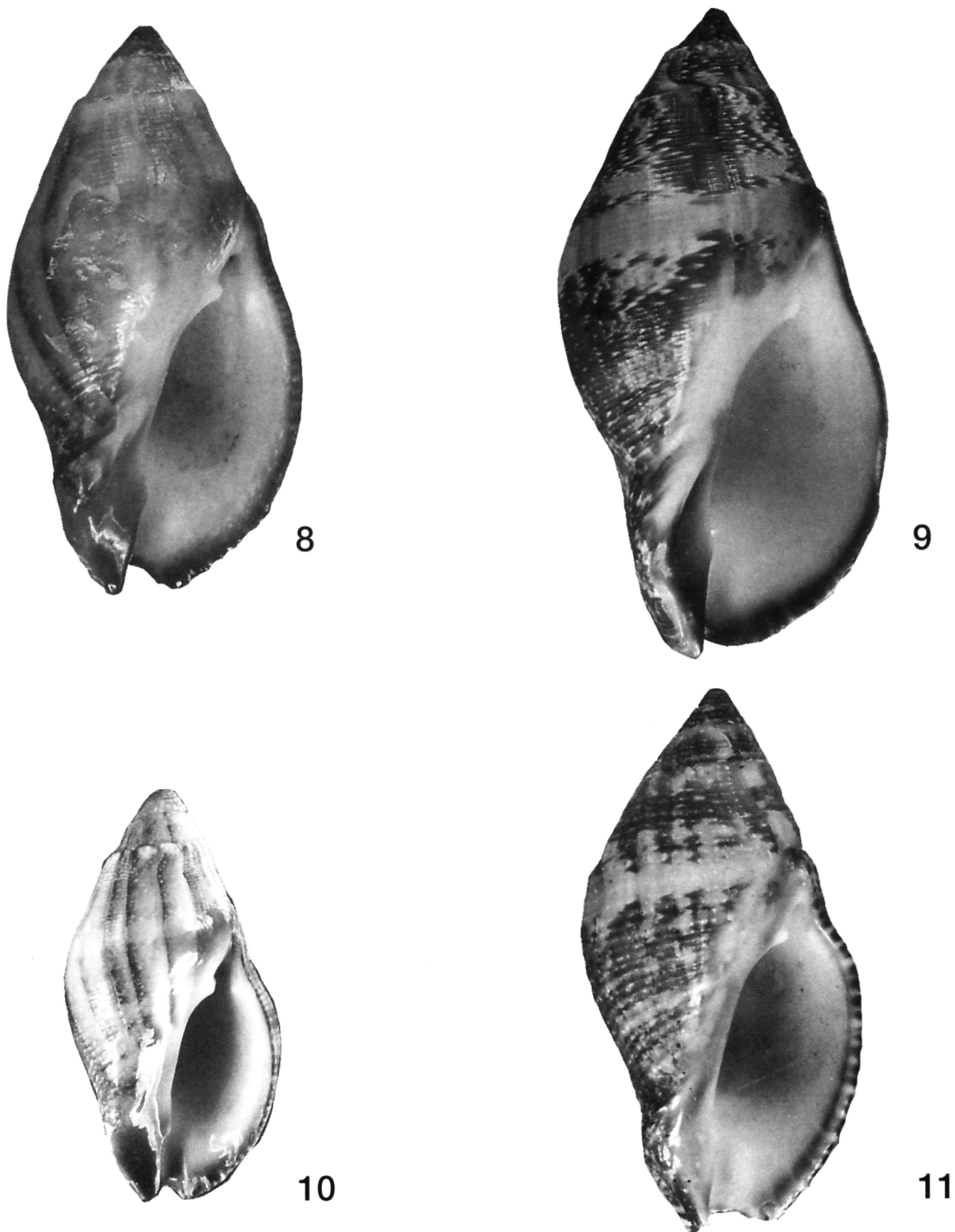


Figures 1-7

1-2. *Orania simonetae* Houart, 1995. Holotype MNHN, Nuku Hiva, Marquesas Islands, 12.5 mm

3. *Morula cernohorskyi* n.sp. Holotype MNHN, Tuamotu Archipelago, Mururoa Atoll, 6 mm

4-7. *Morula angulata* (Sowerby, 1894) ; 4. Holotype BMNH 1902.11.26.72, Mauritius, 6.8 mm ; 5. Society Archipelago, Tahiti, west coast, coll. Wargnier, 6.7 mm ; 6-7. Guam, Pita Reef, coll. Schroeder, 8.2 mm.



Figures 8-11

8-10. *Nassa tuamotuensis* Houart, 1996 ; **8.** Holotype MHNG 1101/59, Indian Ocean (erroneous), 48 mm ; **9.** Society Archipelago, Tahiti, Faaone, coll. Tröndlé, 63.7 mm ; **10.** Tuamotu Archipelago (no other data), IRSNB IG10591, 47.2 mm.

11. *Nassa sarta* Bruguière, 1789. Tubuai, coll. J. Tröndlé, 44.6 mm.