

Description of three new species of Terebridae (Gastropoda: Conoidea) from remote island groups

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Abstract: *Terebra mauricejayi* sp. nov., *Hastula palauensis* sp. nov. and *Punctoterebra marquesana* sp. nov. are hereby described and compared with their morphologically closest relatives.

Introduction: A number of species were brought to our attention over the past few years, all originating from remote islands in the Indian and Pacific Ocean. They were carefully compared with their morphological relatives and are hereby described as new.

Abbreviations:

FN: Private collection Frank Nolf, Belgium
GH: Private collection Guy Hoarau, Réunion Island
GP: Private collection Gianluigi Pellifroni, Italy
JR: Private collection José Rosado, Portugal
LSL: Linnean Society of London, England
MfN: Museum für Naturkunde, Berlin, Germany
MNHN: Muséum national d'Histoire naturelle, Paris, France
NHMUK: Natural History Museum of the United Kingdom, London, England
SG: Private collection Sandro Gori, Italy
SH: Private collection Steve Hubrecht, Belgium
WF: Private collection of Willem Faber, The Netherlands
YT: Private collection Yves Terryin, Belgium

Systematics: The systematics for the species described and discussed in the present paper follows the systematics as proposed by Fedosov et al. (in prep.). For

information on the types held in the NHMUK, we refer to Salvador & Pickering (2017).

Class **GASTROPODA** Cuvier, 1797
 Order **NEOGASTROPODA** Wenz, 1938
 Superfamily **CONOIDEA** Fleming, 1822
 Family **TEREBRIDAE** Mörch, 1852
 Subfamily **Terebrinae** Mörch, 1852
 Genus ***Punctoterebra*** Bartsch, 1923

Punctoterebra marquesana sp. nov.

Pl. 1, Figs 1-2

Type Material: **Holotype:** MNHN-IM-2000-34302, 6.9 mm. **Paratypes:** all from the type locality: **Paratypes 1-9:** YT, 7.6-10.7 mm; **Paratype 10:** JR, 9.2 mm; **Paratype 11:** GP, 9.4 mm; **Paratype 12:** SG, 9.3 mm; **Paratype 13:** UA, 8.7 mm; **Paratype 14:** MM, 8.1 mm.

Type locality: Marquesas Islands, Ua Huka, off Hemeni Islet. Dived in shell grit at 30m.

Description (holotype): Shell moderately shiny, light-brown coloured with darker areas above the suture and below the periphery and a lighter subsutural band with a greyish hue. Conical protoconch of about 4.0 whorls, transition to teleoconch clearly marked with the first protoconch whorls darker than later ones. Axial sculpture consisting of sharp, somewhat arcuate ribs which tend to be wider in early teleoconch whorls and finer and stretched in mature whorls. Subsutural band ornamented with elongated nodes, as many as axial ribs on the remainder of the whorl; bordered by a shallow groove which appears as a smoothed depression; axial sculpture extends through it in moderated coarseness. Spiral sculpture consisting of numerous fine, continuous incisions, stretching over the axial ribs; numbering 12 on the remainder of the penultimate whorl, and 2-3 on the

subsutural band. Columella about straight, tinged with brown. Aperture elongate-quadrate.

Additional information: The largest specimen known measures 10.7 mm (paratype 10). Density and coarseness of axial sculpture variable, even in a single specimen but the number averages around 15 ribs on the penultimate whorls of the largest specimens. Colour varies from light fawn to dark purplish brown. Subsutural furrow variable: ranging from deep and wide, clearly incised to a mere soft slope or nonexistent.

Distribution: Only known from the type locality.

Comparison and discussion: The species is conservatively, yet tentatively placed in the genus *Punctoterebra* Bartsch, 1923 1966 (see Fedosov et al., in prep.) pending further (molecular) analysis which may prove this placement to be incorrect. The species shares some overall shell features comparable with members of the genus *Partecosta* Dance & Eames, 1966, as well as *Duplicaria* Dall, 1908 (subfamily Pervicaciinae Rudman, 1969) and *Gradaterebra* Cotton & Godfrey, 1932 to a certain extent, which perfectly illustrates the taxonomic difficulties faced in **Terebridae**.

P. marquesana sp. nov. is shell-morphologically comparable with *Punctoterebra turschi* (Bratcher, 1981) (Pl. 1, Fig. 3): they have a comparable adult size, sculpture and protoconch, but *P. marquesana* sp. nov. has rounded whorls instead of the characteristic, turreted outline of *P. turschi* and a less coarse spiral sculpture.

Furthermore, *P. marquesana* sp. nov. shares features with *Punctoterebra arabella* (Thiele, 1925): a comparable protoconch and similar general sculpture, yet the axial ribs of *P. arabella* are wider spaced and coarser, and the species has a more regular-spaced spiral sculpture, which is macroscopic.

P. marquesana sp. nov. is furthermore comparable with *Partecosta fuscobasis* (E. A. Smith, 1877) (Pl. 1, Fig. 5), *Partecosta tantilla* (E. A. Smith, 1873) (Pl. 1, Fig. 4) and *Partecosta padangensis* (Thiele, 1925) (Pl. 1, Fig. 5) but is most comparable with *P. fuscobasis*, a species only known from the Persian Gulf and adjacent waters. The overall sculpture of wide-spaced, axial ribs is characteristic of both species. The fine spiral sculpture of *P. marquesana* sp. nov., although microscopic, is very evident, while it is virtually obsolete in *Partecosta fuscobasis*. Yet, the apical angle is much narrower and the colour is a constant reddish brown in *P. marquesana* sp. nov., opposed to a white base colour with hints of a reddish-coloured spiral band in *P. fuscobasis*. The axial sculpture is less coarse, which tends to be irregular in its

coarseness (even on the same shell) in *P. marquesana* sp. nov. The latter feature is stable in *P. fuscobasis*.

Derivatio nominis: The species *P. marquesana* is named after the type locality, the Marquesas Islands.

Genus *Hastula* H. & A. Adams, 1853

Hastula palauensis sp. nov.
Pl. 1, Figs 6-9

Type material: **Holotype:** MNHN-IM-2000-34301, 30.5 mm. **Paratypes:** **Paratype 1:** SG, from the type locality, 20.1 mm; **Paratype 2:** YT, idem, 13.2 mm; **Paratype 3:** SG, Republic of Palau, Koror State, Ngemelis Island, SW entrance of German Channel, 07°07'08 N-134°16'03"E, -20 m, 33.5 mm; **Paratype 4:** YT, "Palau", no further data, 39.7 mm.

Type locality: Republic of Palau, Koror State, Ngerchong Island, Coral Gardens, 07°08'09"N – 134°18'29" E, -14 m.

Description (holotype): Shell shiny, colour light yellow-orangish tan with a diffuse whitish coloured band below the suture. Protoconch glassy white, bulbous, consisting of about 1.5 whorls, transition to teleoconch gradual. Outline of whorls straight. Spiral sculpture absent. Axial sculpture consisting of round, flattened, almost straight and broad ribs, only minorly fading abapically, as does the coloration. Aperture narrow, elongate; columella straight and short, siphonal canal curved.

Additional information: Largest specimen known measures 39.7 mm (paratype 4). Although the majority of specimens have a pale, yellowish or light cream coloration; a single specimen (paratype 1) shows some darker yellowish/orangish coloration. The sculpture is constant throughout the type series. The protoconch consists of about 1.5 whorls, consistent with a probably restricted range for a *Hastula*; the aperture is remarkably narrow and elongated for the group/genus.

Distribution: Only known from the Republic of Palau, Micronesia. The species is most probably endemic to the Republic of Palau.

Comparison and discussion: It is shell-morphologically a remarkable species, showing characteristic features of

both species within the *H. strigilata* and *H. albula* complex. It is differentiated from *H. strigilata* and related species by the lack of regularly-spaced brown spots on the subsutural area, yet it possesses similar, rounded and flattened axial ribs from suture to suture. On the other hand, the pale colour scheme is reminiscent of *H. albula* and related species, yet those with rounded and flattened axial ribs never have them stretching from suture to suture. Moreover, the short-whorled (1.5 whorls) protoconch and the remote locality add to the general differences.

Derivatio nominis: The species *H. palauensis* is named for the type locality, the Pacific island state of Palau.

Genus *Myurella* Hinds, 1845

Myurella mauricejayi sp. nov.

Pl. 2, Figs 1-3

Drivas & Jay, 1987: pl. 48, fig. 45 (as *Terebra mactanensis*)

Type material: Holotype: MNHN-IM-2000-25246, 27.4 mm. **Paratypes: Paratype 1:** YT, from type locality, 29.3 mm; **Paratype 2:** GP, idem 21.8 mm; **Paratype 3:** GH, Réunion Island, St Paul Bay, 60 m, 48.8 mm; **Paratype 4:** YT, idem 29.5 mm; **Paratype 5:** SG, Réunion Island, Ravine des Trois Bassins, 90-100 m, 26.4 mm; **Paratypes 6:** WF, idem, 22.4 mm; **Paratype 7:** SH, Mauritius, off Port Louis, dredged at 150 m, 54.7 mm; **Paratype 8:** FN, Mauritius, Trou aux Biches, dredged at 105 m, 28.2 mm; **Paratype 9:** JR, Mozambique, from 30 km S of Inhaca Island, Ponta Mucombo area, dredged 80-90 m, 54.1 mm; **Paratype 10:** YT, N Mauritius, dredged at 90-110 m, 40.2 mm (fragment); **Paratypes 11-13:** JR, idem, 28.2 mm - 48.9 mm; **Paratype 14:** JR, Mozambique, NE off Inhaca Island, dredged at 104-116 m, 38.4 mm.

Type locality: Réunion Island, off Saline les Bains, 90-110 m, leg. Guy Hoarau.

Description (holotype): Overall outline of shell straight, but individual whorls convex. Protoconch of about 2.5 clear, white, conical whorls. Subsutural band only defined by a lateral incision constrained between the axial ribs, which is somewhat deeper and wider than the incisions on the remainder of the whorl. Axial structure of straight, widely-spaced ribs, 16 ribs on the penultimate whorl of the holotype. Ribs stretch from suture to suture

and continue onto basal area. Spiral structure consisting of 3-4 evenly spaced incisions, slightly more distant from the subsutural band demarcation. Below the periphery, spiral sculpture of densely set, faint ribs. Aperture elongate, columella straight.

Colour pattern shiny white with brown flecks between the nodes on the subsutural band, which are sometimes faded or occasionally absent.

Distribution: Known from off Reunion Island, Mauritius and Mozambique, between 60 and 110 m.

Comparison and discussion: *Myurella mauricejayi* sp. nov. was already figured in Maurice Jay's and Jean Drivas' book "Coquillages de La Réunion et de l'île Maurice" (1987) and identified as *Terebra mactanensis* (Pl. 2, Fig. 7), referring to a so-called "white form" of the latter. Yet, this 'white form' (*sensu* Bratcher & Cernohorsky, 1982) was in fact found to be *Myurella fortunei* (Deshayes, 1857) (see Terryn, 2017). However, *M. fortunei* (Deshayes, 1857) (Pl. 2, Fig. 5), *M. multistriata* Schepman, 1913 (Pl. 2, Fig. 6) and *M. joelbartschi* (Poppe, Tagaro & Goto, 2018) (Pl. 2, Fig. 4) lack this typical brown coloration, which is well defined and constantly constraint between the axial sculpture on the subsutural band, but they are admittedly similar in overall shell sculpture, hence the tentative placement of the present new species in *Myurella* (*fide* Fedosov et al., in prep.)

Derivatio nominis: During the previous decades, the marine molluscs of Réunion were made known to the world by Maurice Jay. A long-time resident on the island, Dr Jay discovered many new species (e.g. Drivas & Jay, 1998; Jay & Drivas, 2002), published a popular guide (Drivas & Jay, 1988), developed connections with malacologists worldwide, and encouraged and provided advice to local collectors. Dr Jay passed away in 2008 and donated his collection to MNHN. It is most fitting that a new terebrid from Réunion is named after him. The late Guy Hoarau, who collected the type material and accompanied him on many dredging and diving trips, joins the authors in this homage to a passionate conchologist.

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Bibliography:

- Bratcher, T. & Cernohorsky, W.O.**, 1987. *Living Terebras of the World*. Madison Publishing Associates, New York, NY, USA. 240 pp.
- Jay, M. & Drivas, J.**, 1987. *Coquillages de La Réunion et de l'île Maurice. Collection Les Beautés de la Nature*. Delachaux et Niestlé: Neuchâtel. 159 pp.
- Drivas, J., Jay, M & Dijkstra, H.H.**, 1998. *Réunion: Pectinidae & Proppeamussidae, Strombidae, Cassidae, Terebridae, Fasciolaridae, Turbinidae, Planaxidae, Atlantidae*. La Conchiglia, Suppl. 289. 48 pp., num. figs.
- Fedosov, A., Malcolm, G., Terryn, Y., Gorson, J., Modica, M. V., Holford, M. & Puillandre, N.**, in prep.. Phylogenetic classification of the family Terebridae (Gastropoda: Mollusca).
- Hinds, R.B.**, 1844. Monograph of the genus *Terebra*; Bruguière. In: Sowerby G. B. *Thesaurus Conchyliorum*. G. B. Sowerby, London England. Pp. 147-1920, pls 41-45.
- Jay, M. & Drivas, J.**, 2002. The Cerithiopsidae (Gastropoda) of Reunion Island (Indian Ocean). *Novapex* 3(1): 1-45.
- Poppe, G. T., Tagaro, S.P. & Goton Y.**, 2018. New Marine species from the Central Philippines. *Visaya* 5(1): 91-135.
- Salvador, A. & Pickering, J.**, 2017. Type catalogue of Terebridae (Mollusca, Gastropoda, Conoidea) in the Natural History Museum, London, U.K. *Zootaxa* 4250(2): 101-142.
- Terryn, Y.**, 2007. *Terebridae, a Collectors Guide*. Conchbooks, Hackenheim, Germany & NaturalArt, Gent, Belgium. 57 pp. + 65 colour pls.
- Terryn, Y.**, 2017. Notes on *Clathroterebra fortunei* (Deshayes, 1859) and *Clathroterebra multistriata* (Schepman, 1913). *Gloria Maris* 56(3): 90-93.

Plate 1

1-2: *Punctoterebra marquesana* sp. nov.

Marquesas Islands, Ua Huka, off Hemeni Islet.

Dived at 30 m in shell grit.

1a: Holotype, MNHN-IM-2000-34302, 6.9 mm.

1b: Detail of protoconch and first teleoconch whorls (x 2).

1c: Detail of aperture and body whorl(x 2).

2: Paratype 9, YT, 10.5 mm.

3: *Punctoterebra turschi* (Bratcher, 1981)

Paratype, NHMUK 198020, Hansa Bay, north coast Papua, New Guinea, 36 metres (04°06'S, 144°22'E), 12.0 mm.

4: *Partecosta tantilla* (E. A. Smith, 1873)

Lectotype of *Myurella pumilio* E. A. Smith, 1873 (junior synonym), NHMUK 1979141/1, no locality given, 11.0 mm.

5: *Partecosta fuscobasis* (E. A. Smith, 1877)

Lectotype, NHMUK 1873.7.5.8/1, "Persian Gulf", 11.3 mm.

6-9: *Hastula palauensis* sp. nov.

6: Holotype, MNHN-IM-2000-34301, Palau, Koror State, Ngerechong Island, Coral Gardens, 07°08'09"N – 134°18'29" E, -14 m, 30.5 mm.

7: Paratype 1, SG, idem, 20.1 mm.

8a: Paratype 2, YT, idem, 13.2 mm; **8b:** detail of protoconch and first teleoconch whorls.

9: Paratype 24, YT, "Palau", no further data, 39.7 mm.

10: *Hastula acumen* (Deshayes, 1859), lectotype, MNHN, no type locality originally given - Indonesia, Alor Island (SD by Bratcher & Cernohorsky, 1987), 21.2 mm.

11: *Hastula strigilata* (Linnaeus, 1758), probable syntype of *Hastula strigilata* (Linnaeus, 1758), LSL, "in O. Asiatico" – Indo-Pacific, 27.2 mm.

12: *Hastula casta* (Hinds, 1844), lectotype, NHMUK 1968242/1, Philippines, Panay, Ilo-Ilo Island, 29.0 mm.

13: *Hastula albula* (Menke, 1843), figure taken from Hinds in Sowerby, 1844 (estimated relative size).

14: *Hastula bipartita* (Deshayes, 1859)

Lectotype, NHMUK 197981/1, "Sandwich Isl." (Hawaiian Islands), 22.3 mm.

Plate 1

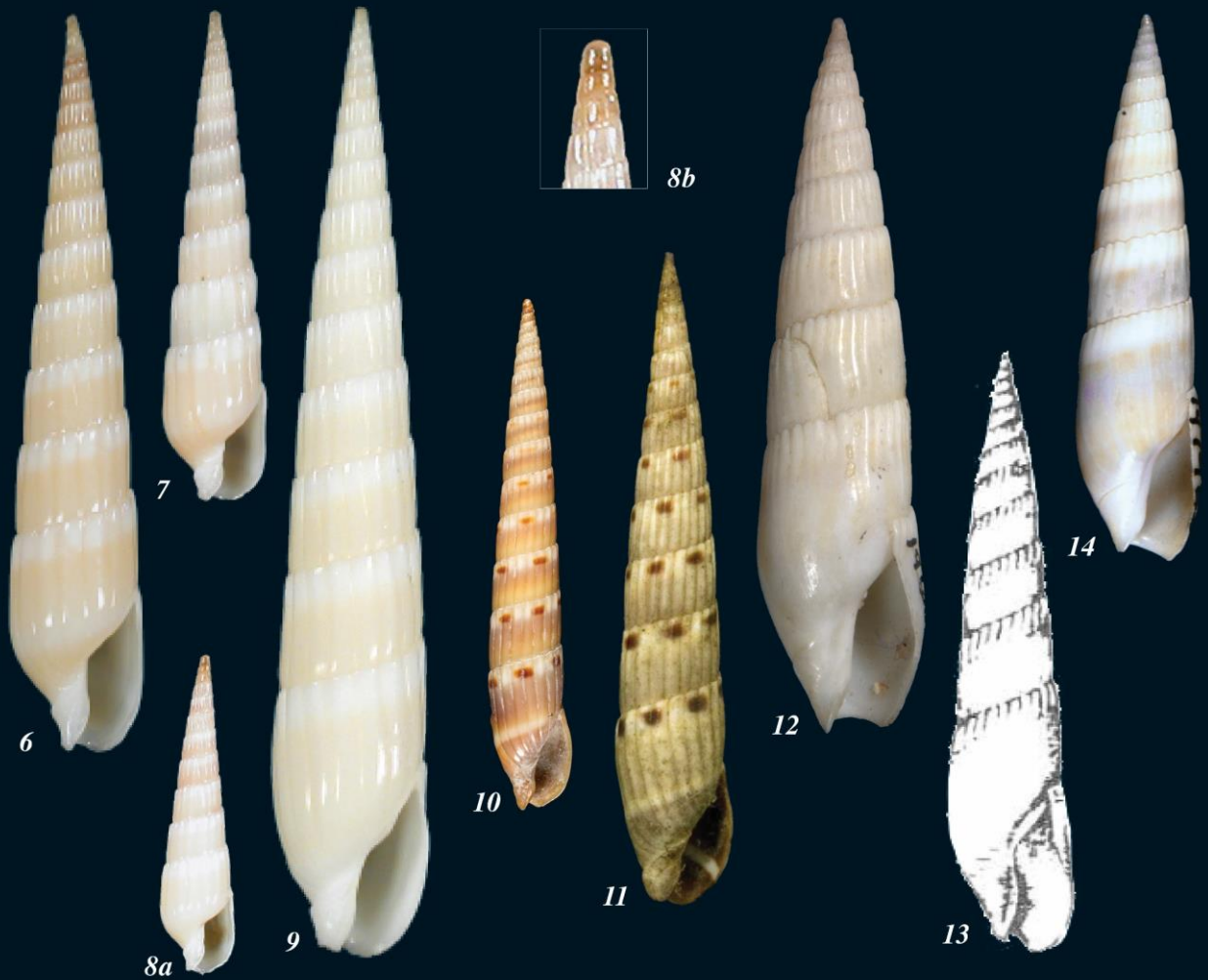


Plate 2**1-3: *Myurella mauricejayi* sp. nov.**

1a: Holotype, MNHN-IM-2000-25246, Réunion Island, off Saline les Bains, 90-110 m, 27.4 mm.

1b: Detail of aperture and body whorl(x 2);

1c: Detail of protoconch and first teleoconch whorls (approx. x 2).

2: Paratype 1, YT, idem, 29.3 mm.

3: Paratype 7, SH, Mauritius, off Port Louis, dredged at 150 m, 54.7 mm, idem, 29.3 mm.

4: *Myurella joelbartschi* (Poppe, Tagaro & Goto, 2018)

Holotype, Conchology, Inc., Philippines, Mactan Island, Punta Engano, 400 m, 30.4 mm.

5: *Myurella fortunei* (Deshayes, 1857)

YT, Philippines, Balicasag Island, tangle nets at 100-150 m, 32.3 mm.

6: *Myurella multistriata* (Schepman, 1913)

YT, Philippines, Mactan Island, Punta Engano, trawled off Amisa at 70 m, 38.8 mm.

7: *Myurella mactanensis* (Bratcher & Cernohorsky, 1982)

YT, Philippines, Balicasag Island, tangle nets at 100-150 m, 68.4 mm (x 0.5).

Plate 2

