

Description of a new species of *Terebra* (Mollusca: Gastropoda: Terebridae) from French Polynesia

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ABSTRACT. *Terebra vappereani* sp. nov. is described from French Polynesia and is compared with its closest relatives *Terebra consobrina* Deshayes, 1857, *Terebra ligata* Hinds, 1844, *Terebra subulata* Linnaeus, 1767 and *Terebra achates* Weaver, 1960.

RÉSUMÉ. Une nouvelle espèce *Terebra vappereani* sp. nov. est décrite de Polynésie française et est comparée à *Terebra consobrina* Deshayes, 1857, *Terebra ligata* Hinds, 1844, *Terebra subulata* Linnaeus, 1767 et *Terebra achates* Weaver, 1960.

INTRODUCTION

The group of "spotted" *Terebra* s.s. [excluding the spotted *Oxymeris areolata* (Link, 1807)] is a homogenous group of shells characterised by a beaded subsutural area in early whorls and two rows of usually dark brown spots. They are distinguishable from one another mainly by the texture on the remainder of the whorl and transformation of the beading on the subsutural band. The last to be described in this group is *Terebra achates* (Weaver, 1960), an endemic of the Hawaiian Islands (Terryin, 2011). Besides the latter, also *Terebra ligata* Hinds, 1844 is an endemic species, to the Marquesas Islands (Tröndlé & von Cosel, 2005). *Terebra consobrina* Deshayes, 1857 was thought to be limited to the Red Sea but is occasionally found in the Indian Ocean. Reports from elsewhere remain rare, doubtful and unconfirmed. *Terebra subulata* Linnæus, 1767 on the otherhand, is a rather common species throughout the Indian and Pacific Ocean, present in all archipelagos of French Polynesia (Salvat & Rives, 1975; Tröndlé & Boutet, 2009).

Although plausible that besides the Hawaiian Islands and Marquesas Islands, also the Polynesian Archipelago could harbor an endemic species, it was

to our great surprise that a unknown, large, spotted *Terebra* was brought to our attention. The species is here described as new to science in honor of its discoverer.

Abbreviations

CRIOBE: Centre de Recherches Insulaires et Observatoire de l'Environnement, Moorea, Polynésie française.

EPHE: École Pratique des Hautes Études, Perpignan, France.

IRSNB : Institut royal des Sciences naturelles de Belgique, Bruxelles, Belgique.

JT: Collection Jean Tröndlé.

MB: Collection Michel Boutet.

MNHN: Muséum national d'Histoire naturelle, Paris, France.

NHMUK: Natural History Museum, United Kingdom.

PV: Collection Patrick Vappereau.

YT: Collection Yves Terryin.

SYSTEMATICS

Species here discussed and described are arranged according to the system proposed by Terryin (2007).

Family **TEREBRIDAE** Mörch, 1852

Genus *Terebra* Bruguière, 1789

Type species: *Buccinum subulatum* Linnaeus, 1767, by monotypy, Lamarek, 1799.

Comment: The species is described in the genus *Terebra* s. s. [sensu Terryin (2007)], not s.l. [sensu Bratcher & Cernohorsky (1987)]

Terebra vappereau sp. nov.

Figs 1-8, 20-21

Type material. Holotype: MNHN 26059, 89.8 mm. Paratypes: Paratypes 1-2: MNHN 26060, 43.0 mm (only specimen with protoconch intact) & 83.7 mm; Paratype 3: JT, 80.7 mm; Paratype 4: CRIOBE, 81.1 mm; Paratype 5: PV, 80.1 mm; Paratype 6: YT, 78.5 mm; Paratype 7: IRSNB 1G 32410 / MT.2833, 71.9 mm; Paratype 8: YT, 71.8 mm; Paratype 9: JT, 61.2 mm (fragment, protoconch and bodywhorl damaged or not present); Paratype 10: CRIOBE, 34.8 mm.

Other material examined. MB, 87.1 mm and 91 mm.

Type locality. 20 m, Pirae, Tahiti, French Polynesia, 17°31'15" S - 149°33' W.

Range. Only known from the type locality.

Description. Shell up to 91 mm (MB). Slender, white with two rows of smudged brown spots; one on the subsutural band, one above the suture, somewhat alternating, and coalescing on the earlier whorls into a zigzag or inverted S-shaped pattern. Overall outline of shell straight, only slightly indented at the suture, individual whorls straight. Protoconch of about 1.5

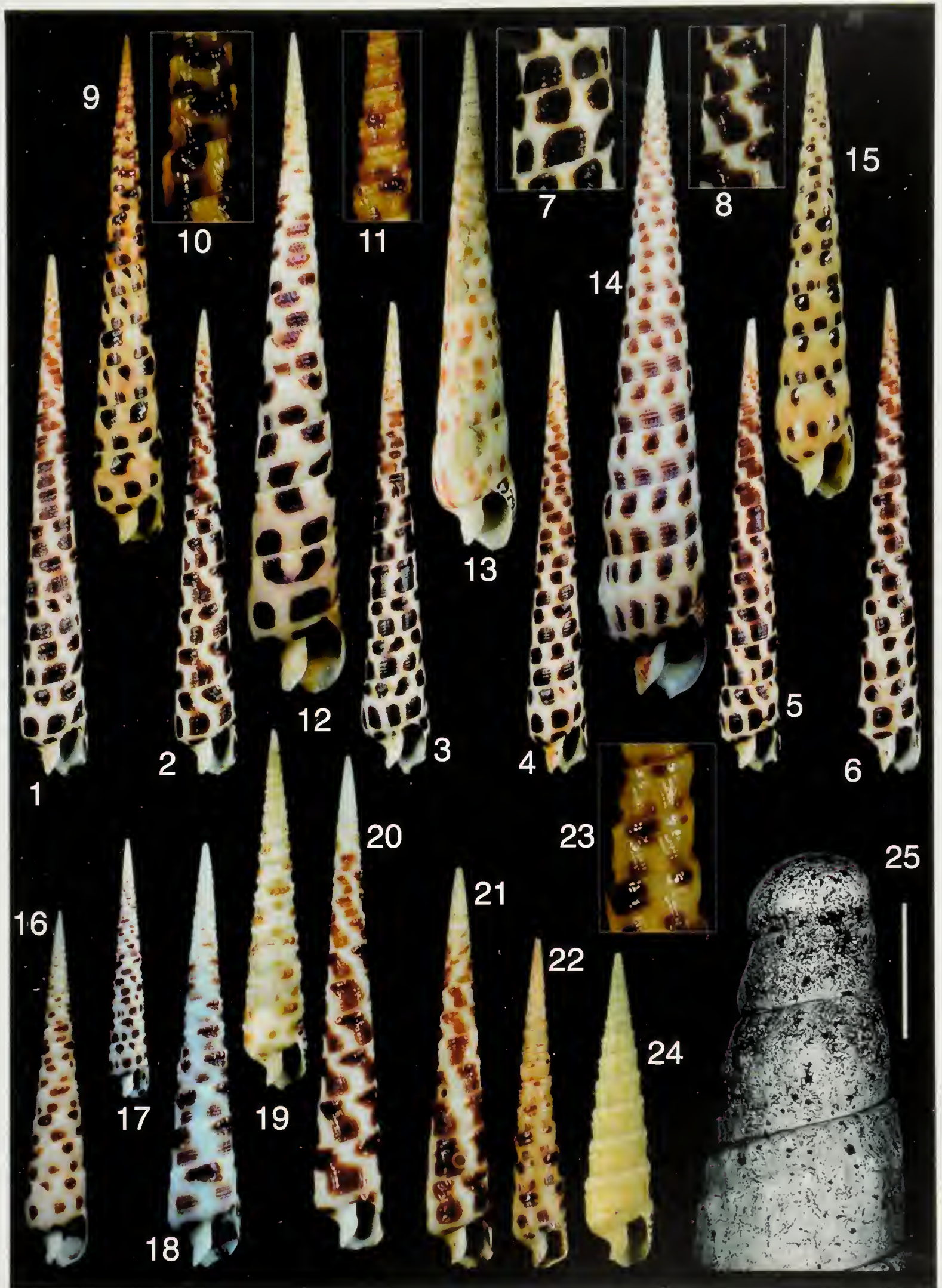
whitish conical whorls. Subsutural band bordered by a shallow, weakly punctate, continuous groove and decorated by thicker ends of axial striae which continue onto the remainder of the whorl in a faded manner. Here they appear as axial growth striae. Below the border of subsutural band, there is a somewhat thickened band about half the size of the subsutural one, which appears to be smooth except for the shallow axial striae. Spiral structure on the remainder of the whorl consists of 6 spiralling rows of small dots. The general sculpture tends to fade in adults and only the faint axial striae from suture to suture and spiral incisions on the remainder of the whorls are discernable. Aperture elongate quadrate, columella curved. Animal and operculum unknown.

Comments. In many groups of Terebridae it is rare to find mature specimens with intact protoconch, this particular new species is no exception. Of the up to now 13 known specimens, only a single subadult was found with the protoconch present. The number of protoconch whorls, establishable on this single specimen, could not be conclusively determined as the transition protoconch to teleoconch was only vaguely discernable due to the status of that part of the shell. We estimate it here to be about 1.5, as further on the whorl becomes slightly angular at about midwhorl, which is already an indication of the teleoconch early sculpture.

Comparative notes. *Terebra vappereau* sp. nov. is compared with its closest relatives: *Terebra consobrina* Deshayes, 1857, *Terebra ligata* Hinds, 1844, *Terebra subulata* Linnaeus, 1767 and *Terebra achates* Weaver, 1960.

Figures 1-25

1-8. *Terebra vappereau* sp. nov., 20 m, Pirae, Tahiti, French Polynesia: **1.** Holotype, MNHN 26059, 89.8 mm. **2.** Paratype 3, 80.7 mm. **3.** Paratype 4, 81.6 mm. **4.** Paratype 5, 80.1 mm. **5.** Paratype 6, 78.5 mm. **6.** Paratype 2, 83.7 mm. **7.** Detail of midwhorls of holotype (not scaled). **8.** Detail of upper midwhorls of paratype 1, MNHN 26060 (not scaled); **9-11.** *Terebra subulata* Linnaeus, 1767, 20 m, Pirae, Tahiti, French Polynesia: **9.** JT, 88.1 mm. **10.** Detail of midwhorls (not scaled). **11.** Detail of upper midwhorls (not scaled); **12-13.** *Terebra consobrina* Deshayes, 1857: **12.** Dived, off Tuléar Madagascar, YT, 113.6 mm. **13.** NHMUK 197956, lectotype, Red Sea, 89.4 mm; **14.** *Terebra achates* Weaver, 1960: Dived at 4 m, S of naval airstrip beach, Sand Island, Midway, Hawaiian Archipelago, YT, 114.6 mm; **15.** *Terebra subulata* Linnaeus, 1767, MNHN, SANTO2006, Stn FR42, Palikulo Bay, dived between 3 and 31 m on a snadly slop with small coral reefs, 80.9 mm; **16.** *Terebra* species, in shallow water, Colette Bay, Nuku Hiva, Marquesas Islands, GP, 61.4 mm; **17-19.** *Terebra ligata* Hinds, 1844: **17.** MNHN, Stn DW1217, Hiva Oa, Marquesas Islands, 44.7 mm. **18.** MNHN, Musorstom 9, Stn DW1154, Eiao, 36.4 mm. (x 2) **19.** NHMUK 1844.6.7.79, syntype, Marquesas Islands, 31.1 mm. (x 2); **20-21.** *Terebra vappereau* sp. nov., 20 m, Pirae, Tahiti, French Polynesia: **20.** Paratype 1, MNHN 26060, 43.0 mm. (x 2) **21.** Paratype 10, 34.8 mm. (x 2); **22-23.** *Terebra subulata* Linnaeus, 1767, 20 m, Pirae, Tahiti, French Polynesia: **22.** JT, 28.6 mm. (x 2) **23.** Idem, detail of midwhorls (not scaled); **24.** *Terebra tessellata* Gray, 1834, NHMUK 1979120, holotype, Gulf of Aden (by SD Bratcher & Cernohorsky, 1987), 27 mm. (x 2); **25.** *Terebra vappereau* sp. nov., MNHN 26060, paratype 1, detail of protoconch. Scale bar = 500 µm.



Terebra consobrina: The species was described from the Red Sea (Fig. 13) and long thought to be endemic to that region. In recent decades, *T. consobrina* was also retrieved in shallow water off Madagascar (Fig. 12). There are however unconfirmed reports from its presence in the Philippine Islands and elsewhere in the Pacific Ocean. Besides being much wider in outline, having a heavier shell, the spiral sculpture of *T. consobrina* is much coarser (elongate punctate) and remains either very visible on later whorls or disappears completely (holotype). The subsutural band is rather flattened and wide; the band below the subsutural demarcation is not thickened. All specimens of *T. vappereaui* sp. nov. shows only spiral grooves and axial (growth) striae on the sculpture of the later whorls of adults. They always show a sculptured subsutural band and the band below the sutural demarcation is always somewhat swollen.

Terebra ligata: This enigmatic species was long time only known from the syntype (Fig. 19) until subadults (up to ca. 40 mm) were rediscovered amongst material retrieved by the MNHN from the Marquesas Islands (Musorstom 9, see figs 17-18). The species is in general very comparable to *T. vappereaui* sp. nov. but the sculpture on the subsutural band of the first teleoconch whorls consists of a heavy beading instead of axial riblets and the sculpture on the remainder of the whorl gives a reticulated impression.

Terebra subulata: *T. subulata* was found to co-exist in the same area (Figs 9-11 & 22-23) where *T. vappereaui* sp. nov. has been found and was easily distinguishable to the naked eye from another. The main difference that makes juveniles of both species stand out is that even the early whorls and general outline in *T. vappereaui* sp. nov. is straight-sided where in *T. subulata* this is somewhat turreted because of the relatively swollen and wide subsutural band. *T. subulata* has in general a more discrete spotted pattern and the whorls are increasingly convex, with a somewhat recurved columella.

Terebra aches: The species is only recorded from the Hawaiian Islands (Fig. 14) and has a number of features comparable to *T. vappereaui* sp. nov. The features as described for *T. vappereaui* sp. nov. are almost identical to that of *T. aches* but are relatively always coarser (ribbing on subsutural band), larger (whorls, spiral sculpture on remainder of whorl) and wider (outline, subsutural band).

We here mention for completeness *Terebra tessellata* Gray, 1834 because it is a spotted terebrid with a range supposedly extending from the Gulf of Aden to

the Austral Islands. But the holotype of the species and the very few specimens known have characteristics which would exclude it from *Terebra* s.s. and placement in the genus *Oxymetis* Dall, 1903 would be more justified. This is best illustrated by the widened shape of the bodywhorl of the specimen from Djibouti figured by Bratcher & Cernohorsky (1987: 36, pl. 2, figs 5d-e) and the relatively heavy shells. The same can be observed in *Terebra aches* from Hawaii, but both are here conservatively considered as *Terebra* s.s. pending future molecular results.

Derivatio nominis: The species is dedicated to Mr Patrick Vappereau who collected the first specimens and who brought the species to our attention.

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REFERENCES

- Bratcher, T. & Cernohorsky, W. O. 1987. *Living Terebras of the world*. Madison Publishing Associates, New York, NY, USA. 240 pp.
- Salvat, B. & Rives C., 1975 *Coquillages de Polynésie*. Les Editions du Pacifique. Papeete. Tahiti. 391 pp.
- Terryin, Y. 2007. *Terebridae, a Collectors Guide*. Conchbooks, Hackenheim, Germany & Natural Art, Gent, Belgium. 57 pp. + 65 colour pls.
- Terryin, Y. 2011. The family Terebridae. In: Severns, M.: *Shells of the Hawaiian Islands: The Sea Shells*. ConchBooks, Hackenheim Germany. pp. 370-380, pls 168-173.
- Tröndlé, J. & Cosel, R. von 2005. Inventaire bibliographique des mollusques marins de l'Archipel des Marquises (Polynésie Française). *Atoll Research Bulletin*, 542: 265-340.
- Tröndlé, J. & Boutet, M. 2009. Inventory of marine molluscs of French Polynesia. *Atoll Research Bulletin*, 570: 265-340.