

Secondary collecting method of molluscs, with the description of a new species of *Punctoterebra* from the Philippines

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Keywords: TEREBRIDAE, *Punctoterebra*, Philippines, *Euplectella aspergillum*, *Punctoterebra reperta* sp. nov., shell morphology.

Abstract: *Punctoterebra reperta* sp. nov. is proposed and described as new to science and compared with its morphological relatives.

Introduction: Terryin (2018) already highlighted the amazing potential of the indirect collecting method by studying the attachments of *Xenophora pallidula* (Reeve, 1842), whereby collecting these relatively large and easy to obtain gastropods yields a number of rare and/or small species of terebrids otherwise not collected by conventional and legal methods in certain areas. As dredging operations are no longer advised in the Philippines, we solely rely on tangle nets and lumun-lumun nets as the sole bottom collecting methods in waters with the seafloor beyond the reach of conventional diving operations in recent decades. Yet, both entangling methods are of course not able to retrieve all gastropods in a sampled area. Therefore, secondary methods, such as attachments of xenophorids can widen the scope. Here a second method was tested: washing the muddy sediment between the root-system of the hexatinellid sponge *Euplectella aspergillum* Owen, 1841, which are collected at great depths (100-500 m) by means of tangle nets or trawling. The muddy sediment is often rich in shell fragments, and occasionally species of *Terebra* are observed (see Pl. 1, Fig. 7 – *Terebra* species cemented in the mud and root-system) besides a plethora of shells from other families (an indicative listing is given as an addendum and illustrated on Pl. 2). Whether some of these molluscs actually live in and around the root-system or if the juveniles of these sponges settle on small (fragments of) shells (as secondary hard bottom) and accrete the surrounding mud with fragments during their growth, or a combination of both, is unknown. A new species of **Terebridae** is described here, of which the

samples originate from both root-washings from recently collected sponges and conventional dredging operations around Siquijor Island, Philippines during the mid-seventies.

Abbreviations:

NHM: Natural History Museum, London, UK

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

YT: Private collection Yves Terryin, Belgium

Systematics: The systematics for the species described and discussed in the present paper follow the systematics as proposed in Fedosov et al. (2020). 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 reperta sp. nov.

Pl. 1, Figs 1-3

Type Material: Holotype: MNHM-IM-2000-35034, 14.3 mm. **Paratypes: Paratypes 1-2:** YT, Philippines, Siquijor, dredged between 150 and 250 m, 14.0-14.6 mm.

Type locality: Philippines. Off Siquijor. Ca. 400 m deep.

Description (holotype): Shell length 14.3 mm. Base colour whitish with roseate first teleoconch whorls; depression below subsutural band stained light brown,

becoming intenser on later whorls; purplish brown below the periphery, shining through in the aperture. Protoconch of about 1.5 whorls, with broad nucleus. Outline of whorls convex with an indentation of the border of the subsutural band. Axial sculpture of arcuate ribs, from suture to suture, 13 on the penultimate whorl, broadened and appearing to be beaded on the subsutural band. Spiral sculpture restricted to the remainder of the whorl, consisting of 5 evenly spaced flat ribs, crossing over the axial sculpture. Columella curved, protruding; aperture elongately quadrate.

Animal unknown.

Habitat: All specimens were retrieved from a fine greyish mud bottom. The holotype was retrieved from fine greyish silt, tending to pteropod ooze, stuck between the root-system of a specimen of *E. aspergillum*.

Distribution: Only known from the type locality.

Remarks: The features of the holotype are constant throughout the studied material. The species shows little variability in shape, sculpture, colour or pattern. Background colour varies from off-white to yellowish white. Paratype 2 only has a brown coloration below the periphery, while the holotype and paratype 1 also portray a yellowish hue below the suture to about midwhorl. Only the holotype has a complete, yet somewhat eroded protoconch, transition to teleoconch clear through the presence of the axial sculpture. The somewhat eroded first whorls of the teleoconch only possess axial sculpture.

Comparison and discussion: The species is tentatively (see Fedosov et al., 2020 for discussion) placed in the genus *Punctoterebra* Bartsch, 1923 for obvious morphological similarities with species such as *Punctoterebra polygyrata* (Deshayes, 1859) (Pl. 1, Fig. 5) and *Punctoterebra turschi* (Bratcher, 1981) (Pl. 1, Fig. 4) but *P. reperta* differs from all other members by its very convex whorls, colour/pattern and sculpture.

Remarkably, *P. reperta* sp. nov.'s general appearance is similar to a shallow water species, restricted to Venezuela, *Terebra angelli* (J. Gibson-Smith & W. Gibson-Smith, 1984) (Pl. 1, Fig. 6). *T. angelli* has a similarly-shaped and sized protoconch, a coarser axial sculpture, 4 spiral rows of irregularly shaped ribs and shorter whorls with an even more convex outline.

Derivatio nominis: *Punctoterebra reperta*, derived from the Latin *repertus* (adj.), meaning “finding”, “well-

found”, “artfully found” or “skillfully found”, referring to the idea to look for molluscan specimens between the root-system of the hexatinellid sponge *Euplectella*, as a ‘secondary’ collecting method.

Acknowledgements: The following persons are thanked for their kind and generous contributions: Mrs Virginie Héros and Dr Philippe Bouchet for allowing access to the type and general **Terebridae** collection of the MNHN and for continuous support; Mrs Andreia Salvador, NHMUK, for allowing access and study of both the general and type collection of **Terebridae** held at the NHMUK.

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Plate 1

- 1-3: *Punctoterebra reperta* sp. nov.**
1: Holotype, MNHN-IM-2000-35034, Philippines, off Siquijor, approx. 400 m, 14.3 mm.
2: Paratype 1, YT, Philippines, off Siquijor, dredged between 150 and 250 m, 14.0 mm.
3: Paratype 3, idem, 14.6 mm.
- 4: *Punctoterebra turschi* (Bratcher, 1981)**
 Paratype, NHMUK 198020, Papua New Guinea, Hansa Bay, 36 m, 10 mm.
 (©The Trustees of the Natural History Museum, London)
- 5: *Punctoterebra polygyrata* (Deshayes, 1859)**
 Lectotype, NHMUK, 19790109, Philippines, 11 mm.
 (©The Trustees of the Natural History Museum, London)
- 6: *Terebra angelli* Gibson-Smith & Gibson-Smith, 1984.**
 YT, Venezuela, off Isla Coche, dived at 10 m, 12.4 mm.
- 7: *Euplectella aspergillum* Owen, 1841 with *Terebra* species cemented in root-system, YT, Philippines, Siquijor, 250 m, total length 295 mm.**

Plate 2: Addendum

- 8A-V:** Part of the result after washing, sieving and selecting the aggregated mud between the root-system of 10 specimens of *Euplectella aspergillum* Owen, 1841 originating from off Ormoc, Philippines, retrieved from about 400 m.
A: Two fragments of sunken wood.
B: A small (juvenile) Echinoida.
C: Pteropods: **Clioidae** (*Clio polita* Pelseneer, 1888, 1 *Cl. pyramidata* Linnaeus, 1767, *Creseis acicula* (Rang, 1828), *Cr. conica* (Eschscholtz, 1829) and *Limacina inflata* (d'Orbigny, 1835)).
D: Pteropods: **Cavolinidae** (*Cavolina globulosa* (Gray, 1850), *C. uncinata* (Rang, 1829), *C. tridentina* (Forsskål in Niebuhr, 1775), *Diacavolina pacifica* van der Spoel, Bleeker & Kobayasi, 1993, *Diacra* sp.) + 2 *Clio pyramidata* fragments and 1 *Clio polita*.
E: A wide variety of Foraminifera.
F: Cocculiniformes (Gen. sp.).
G: **Seguenziidae** (*Seguenzia* sp.) + 2 eulimids.
H: **Costelariidae** (2 *Pusio* sp., 1 *Thala* sp.).
I: **Architectonicidae** (*Spirolaxis* sp.) and **Epitoniidae** (*Epitonium* sp.).
J: **Rissoinidae**: *Rissoina* sp.
K: **Vitrinellidae** (Gen. sp.), **Pyramidellidae** (*Pyrgiscus* sp., *Odostomia* (?) sp.) and **Ringiculidae** (*Ringiculina* sp.).
L: **Turritellidae** (1 *Turritella* (?) sp. (juv.)), **Pyramidellidae** (1 *Odostomia* (?) sp., **Cystidae** (1 *Cystus* sp.), **Tornidae** (6 *Circulus* sp.) and **Vitrinellidae** (2 *Pseudoliotia* sp.) + 1 small eulimid.
M: **Cylichnidae** (*Adamnestia* sp., Gen. sp., a.o.) and **Retusidae** (*Pyrunculus* sp., a.o.),
N: **Atlantidae** (*Atlanta* sp. cf. *peroni* Lesueur, 1817).
O: **Nuculanidae** (*Nuculana* sp.),
P: **Nucinellidae** (*Nucinella* sp.), **Nuculidae** (*Acila* sp. (cf. *insignis* (Gould, 1861)) and **Malletiidae** (Gen. sp.).
Q: **Arcidae** (*Hawaiarca* sp., *Bathyarca* sp., *Acar* sp., a.o.).
R: **Propeamussidae** (two *Parviamussium* sp.).
S: Gen. sp.
T: several Gen. sp.
U: Polyplacophoran valve.
V: and many others.... (**Cerithiidae**, **Caecidae**, **Cerithiopsidae**, **Columbellidae**, **Colubrariidae**, **Nassariidae**, **Clathurellidae**, **Horaiclavidae**, **Mangeliidae**, **Amathinidae**, **Scaphopoda**, ...).

Plate 1



Plate 2 Addendum

