

A review of Western Atlantic *Hastula* (Conoidea: Terebridae), with the description of a new species from Mexico

Yves Terryn

Honorary associate MNHN, France and RBINS, Belgium, Kapiteinstraat 27, 9000 Gent, Belgium
yves@naturalart.be

Keywords: Terebridae, *Hastula*, *Terebra*, *Hastula cinerea*, *Hastula luctuosa*, *Hastula tobagoensis*, *Hastula salleana*, *Hastula imitatrix*, *Hastula maryleeae*, *Terebra laurina*, *Terebra castanea*, *Terebra jamaicensis*, *Hastula exacuminata*, *Hastula willemfaberi* sp. nov.

Abstract: A short and iconographic review of the Western Atlantic species of *Hastula* is produced and a new species honouring a Dutch malacologist is described.

Introduction: After the discovery that the taxon *Terebra castanea* Kiener, 1839 was incorrectly linked to the synonymy of *Hastula hectica* by Cernohorsky & Bratcher (1987) (see Terryn & Keppens, 2020), a preliminary review was undertaken to further clarify the status of Western Atlantic *Hastula* species. The study revealed the dubious status of a number of taxa, or the incorrect synonymy of another (*Hastula luctuosa*, (Hinds, 1844) - *Hastula tobagoensis* (Usticke, 1969)) and highlighted those types that need further study to clarify their status. During the revision, a species that was hitherto undescribed was discovered in collections and it is hereby proposed as new to science.

Abbreviations:

ANSP: The Academy of Natural Sciences of Drexel University, Philadelphia, USA.
MNHN: Muséum national d'Histoire naturelle, Paris, France.
NHMUK: Natural History Museum, London, UK.
DL: Private collection Dominique Lamy, Guadeloupe.
DM: Private collection David Monsecour, Belgium.
SG: Private collection Sandro Gori, Italy.
WF: Private collection Willem Faber, The Netherlands.
YT: Private collection Yves Terryn, Belgium

Systematics:

Class: Gastropoda Cuvier, 1797
 Order: Neogastropoda Wenz, 1938
 Superfamily: Conoidea Fleming, 1822
 Family: Terebridae Mörch, 1852
 Subfamily: Terebrinae Mörch, 1852
 Genus *Hastula* H. Adams & A. Adams, 1858

The systematics for the species described and discussed in the present paper follows the systematics as proposed in Fedosov et al. (2020).

Notes on Western Atlantic *Hastula* taxa:

Hastula cinerea (Born, 1778)
Pl. 1, Figs 2-8

Notes on synonymy: Based on the synonymy as listed by Bratcher & Cernohorsky (1987):

Terebra laurina Hinds, 1844: One of the main features of *H. cinerea* is missing: the whorls are apparently not beset with numerous spiral rows of minute punctations in *T. laurina*. The type locality is noted as 'Western Africa', the shell is comparatively larger and rather elongate (Pl. 1, Fig. 1) in comparison to the general appearance of *H. cinerea* (or *H. exacuminata* for that matter). It is doubted whether *T. laurina* is an Atlantic taxon. **The status of *T. laurina* should at this point be regarded as questionable.**

Terebra luctuosa Hinds, 1844: historically and generally accepted synonymous to *H. cinerea*, but this W Central American (not Caribbean) taxon **should be regarded as separate from *H. cinerea***, pending molecular data. *Hastula luctuosa* (Hinds, 1844) (Pl. 1, Figs 12-15) is only known from W Central America, is predominantly dark-brown coloured, has a slenderer apical angle and much finer and denser-set spiral rows of minute punctations

than *H. cinerea*. Both have an elongated multispiral protoconch of about 4-5 whorls, but the whorls of the protoconch of *H. luctuosa* are broader and more bulbous.

Terebra jamaicensis C. B. Adams, 1850: the description and status of the type is at this point confusing. **More investigation of this matter is needed to clarify the status, which is at best considered questionable at present.**

Terebra exacuminata Sacco, 1891 (nom. nov. pro *Terebra acuminata* Reeve, 1860: **regarded as a valid species *Hastula exacuminata* (Sacco, 1891)** (see Terryn & Ryall, 2014) **pending molecular data**, as the E Atlantic *H. exacuminata* complies virtually completely with the W Atlantic *H. cinerea*.

Terebra castanea Kiener, 1839 was added to the synonymy of *H. cinerea* (see Terryn & Keppens, 2020), previously incorrectly in the synonymy of *Hastula hectica* (Linnaeus, 1758).

Hastula maryleeae R. D. Burch, 1965
Pl. 2, Figs 6-9

Notes on the types and synonymy: The holotype and paratypes (Pl. 2, Figs 7-9) considerably differ in general morphology. Numerous paratypes were 'dispersed to various major institutions'. For example, the two paratypes held at the NHMUK considerably differ and one of them is in fact most probably a juvenile *Hastula salleana* (Deshayes, 1859) (Pl. 2, Fig. 7), while another (Pl. 2, Fig. 9), held at the MNHN, is too eroded to see the key features of the original description. Nonetheless, the description (most probably based on the holotype alone) is very detailed and offers enough information on its discriminative features setting it apart from other species. Based on the holotype and description, a specimen (GP) is completely complying with the description is figured here (Pl. 2, Fig. 6). Great care should be taken how to interpret the paratypes in various institutions.

Probably due to this poor figuration and quality of the paratypes, Cernohorsky & Bratcher (1987) readily, but incorrectly, synonymized *Terebra tobagoensis* Usticke, 1969 with *H. maryleeae*, a species from Tobago Island, well separable from the latter by its characteristic colour and pattern and discrete axial sculpture, limited to the upper half of the whorls. ***Hastula tobagoensis* (Usticke, 1969) is here regarded as a separate species** (Pl. 2, Figs 3-5).

Hastula salleana (Deshayes, 1859)
Pl. 1, Figs 16-18 & Pl. 2, Fig. 1

Generally speaking, this species has a coarser axial sculpture, even at juvenile stage, a protoconch of about 3.5 whorls, it generally attains a smaller adult size than *H. cinerea* and has coarser, wider-spaced punctations on the whorls.

Hastula imitatrix Auffenberg & Lee, 1988
Pl. 1 Figs 9-11 & Pl. 2 Fig. 2

An uncommon species from Brazil (Rio Grande do Norte, Ceara and Piaui State), easily recognisable by its axial sculpture of rounded, wavy ribs that cover the complete whorl, setting it apart from any other W Atlantic species.

In keeping with the above review, one species of *Hastula* could not be assigned to any of the above-mentioned taxa and is hereby described as new:

Hastula willemfaberi sp. nov.
Pl. 2 Figs, 10-14

Type material: Holotype: MNHN IM-2000-35807, leg. YT, 16.7 mm. **Paratypes: Paratype 1:** WF, 17.2 mm; **Paratypes 2-8:** YT, 14.6- 18.3 mm; **Paratype 9:** DM, 16.8 mm; **Paratype 10:** SG, 13.8 mm. All paratypes from type locality.

Additional material: YT, Mexico, Yucatan, Playa del Carmen, Punta Xcalacoco, 3 sps, 18.2-18.6 mm.

Type locality: Mexico, E Yucatan, Playa del Carmen, in sand in splash zone/ shallow water.

Description (holotype): Yellowish paucispiral protoconch consisting of about 1.5 whorls, with a broad nucleus. Shell colour is shiny yellowish white. Outline of whorls straight. Spiral sculpture absent, except for minute stress/growth lines. Axial sculpture consists of widely-spaced riblets, half as wide as interspaces, confined to the apical half of the whorls; sculpture increasingly fading in maturity. Aperture elongate, with a flared lip; columella simple, short and straight.

Distribution: Only known from the type locality.

Comparison: Due to its general shape, colour and sculpture, the species should only be compared to a limited number of species. It is comparable to juveniles of *H. cinerea*, but *H. willemfaberi* sp. nov. has a shorter protoconch and lacks the typical pitted surface of the shell. *H. willemfaberi* sp. nov. can easily be distinguished from *H. maryleae*, which has concave whorls and a noded sculpture on the periphery. *H. willemfaberi* sp. nov. is closest in general appearance to *H. tobagoensis*, but has a larger-sized protoconch, a constant overall uniform yellowish-white colour and the axial sculpture is confined to the upper half of the whorl, while *H. tobagoensis* has an intricate colour pattern (see Pl. 2, Figs 3-5) and the juvenile sculpture covers the whole width of the early whorls, only to fade to an almost smooth surface in maturity.

Derivatio nominis: The species gratefully honours Mr Willem Faber (The Hague, The Netherlands), close and long-time friend of the author and fellow enthusiast on Terebridae, who has in recent years specialized in the cataloguing of the vast numbers of specimens and literature of both Recent and fossil Terebridae in his collection, next to expanding an ever-growing collection of both shells and shells on stamps. For long, he has been editor of the magazine ‘*Spirula*’ and a major driving force of the Dutch Malacological Society, of which he has been a member since 1963.

Acknowledgments: Sincere gratitude is due to the following people (listed in alphabetical order) for help during the different stages of the study: Dr Philippe Bouchet, Virginie Heros & Philippe Maerstrati (MNHN), Paul Callomon (collection manager, ANSP), Koen Fraussen (Belgium), Steve Hubrecht (Belgium), David Monsecour (Belgium), Dominique Lamy (France), Gianluigi Pellifroni (Italy) and Andreia Salvador (NHMUK).

Bibliography:

Bratcher, T. & Cernohorsky, W. O. (1987) *Living Terebras of the world*. Madison Publishing Associates, New York, USA. 240 pp.

Fedosov, A., Malcolm, G., Terryn, Y., Gorson, J., Modica, M. V., Holford, M. & Puillandre, N. (2020) Phylogenetic classification of the family Terebridae (Neogastropoda: Conoidea). *Journal of Molluscan Studies*. DOI: 10.1093/mollus/eyz004

Hinds, R. B. (1844) Monograph of the genus *Terebra* Bruguière. In: Sowerby, G. B.: *Thesaurus Conchyliorum*. London, England. Pp. 147-190, pls 41-45.

Terryn, Y. (2007) *Terebridae, a collectors guide*. Conchbooks, Hackenheim & NaturalArt, Gent.

Terryn, Y. & Keppens, M. (2020) A re-evaluation of the taxa *Hastula hectica* (Linnaeus, 1758) and *Hastula bacillus* (Deshayes, 1859) (Gastropoda: Conoidea: Terebridae), with

the description of a new species and reassessment of four historical synonyms. *Gloria Maris* 58 (4): 125-136.

Terryn, Y. & Ryall, P. (2014) West African Terebridae Revisited, with the Description of a New Species from the Cape Verde Islands. *Conchylia* 44 (3-4): 27-47.

Plate 1

1: *Terebra laurina* Hinds, 1844

Lectotype, NHMUK 1968229/1, ‘Western Africa; in sandy mud’, 67.8 mm.

2-8: *Hastula cinerea* (Born, 1778)

2: DL, Martinique, 43.7 mm.

3: DL, Martinique, 45.1 mm.

4: YT, Brazil, 45.6 mm.

5: YT, Brazil, S Bahia State, Trancosa, low tide, 45.2 mm.

6: DL, Guadeloupe, 35.2 mm.

7: DL, Guadeloupe, 40.8 mm.

8: YT, Brazil, S Bahia State, Trancosa, low tide, 36.7 mm.

9-11: *Hastula imitatrix* Auffenberg & Lee, 1988

9: Holotype, ANSP 369293, Brazil, Rio Grande do Norte, sand island at mouth of the inlet at Area Branca, 27.5 mm.

10: YT, Brazil, Ceara, Cacocim, 32.2 mm.

11: YT, Brazil, Ceara, Fortaleza, Juacana, 19.3 mm.

12-15: *Hastula luctuosa* (Hinds, 1844)

12: YT, Panama, Veraguas, Hicaco, 39.9 mm.

13: Lectotype, NHMUK 1968246/1, Costa Rica, Gulf of Nicoya, Puerto Portrero, 12 fms, 36.2 mm. (©The Trustees of the Natural History Museum, London)

14: YT, Panama, Veraguas, Hicaco, 36.1 mm.

15: YT, Costa Rica, Nicoya, Playa Hermosa, 23.3 mm.

16-18: *Hastula salleana* (Deshayes, 1859)

16: Lectotype, NHMUK 1979111/1, ‘Mexico’, 23.9 mm. (©The Trustees of the Natural History Museum, London)

17: YT, USA, Florida, Jacksonville, Mayport Naval Station, 34.4 mm.

18: GP, USA, Florida, Wabasso Beach, 41.9 mm.

Plate 1



Plate 2



1



3



4



5



2



6



7



8



9



10b



10a



11



12



13



14

Plate 2

1: *Hastula salleana* (Deshayes, 1859)
USA, Texas, Corpus Christi, 13.2 mm.

2: *Hastula imitatrix* Aufenberg & Lee, 1988
Brazil, Piaui State, 17.3 mm.

3-5: *Hastula tobagoensis* (Usticke, 1969)
Tobago Island, Mount Irvine Bay, by hand dredge at
1-2 m.

3: YT, 17.3 mm.

4: YT, 16.6 mm.

5: YT, 17.2 mm.

6-9: *Hastula maryleeae* R. D. Burch, 1965

6: GP, USA, Texas, Freeport, 20.8 mm.

7: Paratype, NHMUK 1966193/2, USA, Texas,
Freeport, Surfside Beach, 21.9 mm. (©The
Trustees of the Natural History Museum, London)

8: Paratype, NHMUK 1966193/1, USA, Texas,
Freeport, Surfside Beach, 19.6 mm. (©The
Trustees of the Natural History Museum, London)

9: Paratype, MNHN, USA, Texas, Freeport, Surfside
Beach, 19.6 mm

10-14: *Hastula willemfaberi* sp. nov.

Mexico, Yucatan, Playa Carmen

10a: Holotype MNHN-IM-2000-35807, 16.7 mm.

10b: Detail of protoconch and first teleoconch
whorls.

11: Paratype 1, WF, 17.2 mm.

12: Paratype 8, YT, 18.3 mm.

13: Paratype 7, YT, 18.1 mm.

14: YT, 14.6 mm.