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A new species of *Hastula* (Gastropoda: Terebridae) from Indonesia

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Keywords: GASTROPODA, TEREBRIDAE, *Hastula*, Indo-Pacific, *Hastula engi* sp. nov., shell morphology.

Abstract: *Hastula engi* sp. nov. is here proposed and described as new to science and compared to its closest relatives.

Introduction: A number of **Terebridae** specimens were collected at Koslot Island, within the Kangean Islands group off the east coast of Java in 2009. They were found intertidally in sand and are readily recognisable by their unique colour pattern and glossy appearance. In this article, they are named *Hastula engi* sp. nov. and are compared to several similar species including *Hastula strigilata* (Linnaeus, 1758), *Hastula acumen* (Deshayes, 1859) and *Hastula alboflava* Bratcher, 1988.

Abbreviations:

LKCNHM: Zoological Reference Collection (ZRC) of the Lee Kong Chian Natural History Museum National University of Singapore.

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

NHMUK: Natural History Museum of the United Kingdom, London, UK

GM: Private collection of Gavin Malcolm, UK

NHE: Private collection of Ng Hiong Eng, Singapore

YT: Private collection Yves Terryin, Belgium

SYSTEMATICS

Class **GASTROPODA** Cuvier, 1797

Order **NEOGASTROPODA** Wenz, 1938

Superfamily **CONOIDEA** Fleming, 1822

Family **TEREBRIDAE** Mörch, 1852

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

Type species: *Hastula strigilata* (Linnaeus, 1758)
= *Buccinum strigilatum* Linnaeus, 1758
(subsequent designation)

Hastula engi sp. nov.

Pl. 1, Figs 1-6

Type Material: Holotype: MNHN IM-2000-32900, Koslot Island, Kangean Islands, Java, Indonesia, 09/2009, leg. NHE, 21.3 mm. **Paratypes: Paratypes 1-2:** LKCNHM, ZRC.MOL.8588, 18.0 & 18.1 mm; **Paratypes 3, 7:** GM, 18.3 & 25.0 mm; **Paratypes 4-6:** YT, 16.5-20.6-21.1 mm; **Paratypes 8-9:** 17.4-17.8, Bogor Zoological Museum, Indonesia; **Paratypes 10-15:** NHE, 16.2-22.0 mm.

All types from the type locality.

Additional material: All NHE.

Type locality: Indonesia, East Java, Kangean Islands, Koslot Island.

Description: Shells narrow, shiny, up to 25 mm. Paucispiral protoconch consisting of 1.5 clear whorls (Pl. 1, Fig. 6). The plain background colour is of intense orange with a spiral band of intermittent closely set white spots, separate from the suture on the adapical part of the whorl by a distance as wide as the white-coloured band. A lighter hazy white band at the periphery, which shows

through into the aperture. Outline of whorls is straight to slightly convex. Axial structure consisting of circa 22 slightly obliquely set straight rounded ribs of equal width to the interspaces. The ribs stretch from suture to suture, but become flattened and widened abapically, narrowing the interspace to the point where it is no longer visible (feature present in mature whorls). No subsutural or spiral structure is present. The aperture is orange, elongate with a strongly twisted white basal fold to the columella of mature specimens creating a distinct ridge.

Animal: Unknown. The specimens were preserved dry with the animal inside and can be made available for further anatomical study.

Habitat: Intertidal in sand. The species was found to be living sympatrically with *H. acumen*.

Distribution: Only known from the type locality. The paucispiral protoconch suggests direct development and could imply a limited distribution.

Comparative material: During description and comparison with closely related species, specimens of the following species were studied, both type material (of the nominal species and current synonyms) and specimens in the authors' collections: *H. strigilata* (Linnaeus, 1758), *H. acumen* (Deshayes, 1859) and *H. alboflava* Bratcher, 1988. A specimen of *Hastula acumen* (Deshayes, 1859) (*sensu* Bratcher & Cernohorsky, 1987) collected at the same locality was also included in the study.

Comparison and discussion: *H. strigilata* and *H. acumen* (*sensu* Bratcher & Cernohorsky, 1987) (Pl. 1, Figs 13-14) cover a wide range of forms which most likely constitute different species of which the species boundaries are presently inconclusive based on shell morphology and recent preliminary molecular findings.

Both *H. strigilata* and *H. acumen* (*sensu* Bratcher & Cernohorsky, 1987) and other cryptic species (MNHN, under study) share similar shell features being ribs which run over the periphery down across the basal area and a pattern of a band of large white and brown spots, below or adjacent to the suture. These features are not shared with *H. engi*.

The shell of *H. engi* shares many features with *H. alboflava*, particularly the structure of the ribs and whorls and the small paucispiral protoconch. *H. alboflava* Bratcher, 1988 has a base colour in bands of light to golden yellow and a wide white band adjacent to the suture. This contrasts with the rich orange of *H. engi* with

a narrow band of white offset from the suture. Its ribs on the middle whorls are weaker and less defined than the ribs on *H. engi*. Following the transition from the protoconch, the first two early whorls are toroidal (Pl. 1, Fig. 11) whereas in *H. engi* (Pl. 1, Fig. 6) they are straight-sided. The differences in protoconch and early whorl structure clearly shown in a SEM analysis.

Etymology: The name *H. engi* is chosen in recognition of Ng Hiong Eng, a Singaporean shell collector who collected and brought the specimens to the authors' attention and made them available for study.

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Plate:**1-6: *Hastula engi* sp. nov.**

Indonesia, E Java, Kangean Islands, Koslot Island.

1: Paratype 7, GM, 25.0 mm.

2: Paratype 6, YT, 21.1 mm.

3: Paratype 5, YT, 20.6 mm; a. detail at similar level of development as 9a.

4: Paratype 3, GM, 18.3 mm.

5: Holotype, MNHN IM-2000-32900, 21.3 mm.

6: SEM-picture of the protoconch of the holotype.

13: *Hastula acumen* (Deshayes, 1859)

Lectotype MNHN, no type locality originally given, Indonesia, Alor Island (SD by Bratcher & Cernohorsky, 1987), 21.2 mm.

14: *Hastula acumen* / *strigilata* sensu Bratcher & Cernohorsky, 1987

NHE, Indonesia, E Java, Kangean Islands, Koslot Island, 18.1 mm.

7-12: *Hastula alboflava* Bratcher, 1988

Philippines, Bantayan Island, except 12.

7: GM, 26.3 mm.

8: GM, 23.4 mm.

9: GM, 21.7 mm; a. detail at similar level of development as 3a.

10: GM, 23.6 mm.

11: SEM-picture of the protoconch of specimen here figured on 10.

12: Paratype, NHMUK, 1986261, Philippines, Cebu, off Sogod, 24.7 mm.

