

Six New Species of Terebridae (Mollusca: Gastropoda) from Panama and the Indo-West Pacific

by

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Abstract. Six new species of Terebridae are described: *Terebra rancheria*, Isla Rancheria, Gulf of Chiriqui, Panama; *T. paucincisa*, Grand Récif South, New Caledonia; *T. albocancellata*, Chesterfield-Bellona Plateau, Coral Sea; *T. macleani*, East Cape, East London, South Africa; *Hastula alboflava*, Sogod, Cebu, Philippine Islands; and *H. colorata*, Lighthouse Beach, Western Australia.

Six new species of Terebridae have come to my attention too late to be included in the book *Living Terebras of the World* (BRATCHER & CERNOHORSKY, 1986). To date 267 valid species have been described in the Terebridae, which has world-wide tropical and temperate zone distribution, with the majority of species living in the warmer waters of the tropics. They live in sand or sandy mud from the intertidal zone to a depth of about 1000 m.

It has been 15 yr since a new Panamic terebrid has been described. In 1986 Carol Skoglund brought to my attention one dredged off Isla Rancheria, a small islet near the large Coiba Island, which houses Panama's penal colony. Since then additional lots have been dredged in the same general area.

Seven lots of a new species of *Terebra* were among material collected by 250 dredge hauls made in New Caledonia. This material was sent for identification by Dr. Philippe Bouchet of the Muséum National d'Histoire Naturelle of Paris. Shortly after noting the new species, I received additional specimens of the same species collected in Fiji by Brian Parkinson.

Along with the New Caledonian material sent by Dr. Bouchet were some lots from the Chesterfield Islands, between New Caledonia and Queensland. These contained two lots of another new species.

Dr. Richard Kilburn of the Natal Museum in South Africa sent another new species dredged from the Agulhas Bank, an area that contains predominately endemic mollusks.

For the past 15 yr I have had specimens of an unusually shiny undescribed species of *Hastula* that are colored in clear pastels of pink, peach, lavender, yellow, and white. I have

postponed describing the species until I could see a live-collected specimen or at least a good beach specimen. The species appears to be endemic to southwestern Australia. Both the Australian Museum at Sydney and the Western Australian Museum at Perth had many specimens of this species, but all were damaged. On a recent trip to Western Australia I failed to find anyone who had collected this species alive, but Wendy Anson kindly gave me some beach specimens in fine condition, of which the holotype is part.

Another new species of *Hastula* was brought to my attention by the Philippine collector Fernando Dayrit.

ABBREVIATIONS

Abbreviations have been used for a number of institutional collections cited in this paper, as follows.

AMNH—American Museum of Natural History, New York

AMS—Australian Museum, Sydney

ANSP—Academy of Natural Sciences of Philadelphia

BM(NH)—British Museum (Natural History), London

CAS—California Academy of Sciences, San Francisco

LACM—Los Angeles County Museum of Natural History

MCZ—Museum of Comparative Zoology, Harvard University, Cambridge

MORG—Museu Oceanografico de Rio Grande, Brazil

NM—Natal Museum, South Africa

SDMNH—San Diego Museum of Natural History, San Diego

WAM—Western Australian Museum, Perth

TEREBRIDAE Mörch, 1852

Terebra Bruguière, 1789*Terebra rancheria* Bratcher, sp. nov.

(Figures 6, 8)

Diagnosis: Small (maximum length 17 mm) *Terebra* with purplish black below the periphery of the body whorl, including the columella and siphonal fasciole.

Description: Shell small for the genus with 11 whorls of the teleoconch; protoconch of 1.5 pale mamillate whorls; outline of whorls almost straight; subsutural band flat, marked by deep punctations between ribs; axial ribs curved, indistinct, narrower than interspaces, 27 on penultimate whorl; spiral grooves weak, not crossing ribs, 4 rows on penultimate whorl; body whorl with broken spiral grooves coalescing into continuous grooves at periphery; aperture semi-elongate; columella straight; color grayish white with a few early whorls of dark amber and area beginning anterior to periphery of body whorl dark purple, including columella and siphonal fasciole.

Dimensions: Holotype 16.9 × 4.0 mm; paratypes from 12.5 × 3.1 mm to 15.6 × 3.4 mm.

Type locality: Off Isla Rancheria, Gulf of Chiriqui, Panama (7°38'N, 81°44'W), 3.5 m, white sand bottom with some broken shell.

Type material: Holotype LACM 2261; paratypes AMNH 222586 (1); ANSP (1); BM(NH) 1986259 (1); CA S(1); MORG 24.808 (1); SDMNH 29522 (1); USNM 859147 (1); Bratcher coll. (4); Koch coll. (4); Skoglund coll. (10).

Discussion: On most species of *Terebra* with dark stains on the anterior of the shell, the stain begins at the periphery of the body whorl. The stain on this species begins anterior to the periphery. Of the 26 specimens, the only variation is that several are slightly darker with lighter subsutural bands, and one lacks the dark purple anterior. It has a light brownish stain in that area.

The only species with which *Terebra rancheria* can be compared is *T. churea* Campbell, 1964, from which it differs by having a flatter outline, flatter subsutural band, fewer spiral grooves, and a blackish-purple anterior.

The name of the species is derived from Isla Rancheria, the type locality.

Terebra paucincisa Bratcher, sp. nov.

(Figure 4)

Diagnosis: A moderately small (maximum length 24 mm) *Terebra* with features somewhat resembling *T. nitida* Hinds, 1844, and *Duplicata raphanula* (Lamarck, 1822) with occasional spiral grooves and a paucispiral protoconch.

Description: Shell moderately small, slender, with 12 shiny whorls of the teleoconch; protoconch of 1.5 bulbous trans-

lucent whorls; outline of whorls slightly curved; subsutural band beginning on 4th whorl, defined by deep punctations between ribs; axial ribs narrower than interspaces, unbroken from suture to suture on early whorls and later becoming thickened slightly on subsutural band; spiral sculpture of occasional faint grooves between some ribs, 2 on penultimate whorl; body whorl with axial ribs becoming almost obsolete on final one-half of whorl; aperture elongate; columella with heavy parietal callus and with narrow brown line on inner edge; siphonal fasciole with sharp keel; color warm beige with brown nebulous streaks and a narrow light stripe on periphery of body whorl visible through aperture.

Dimensions: Holotype 19.7 × 4.0 mm; paratypes from 19.1 × 3.8 mm to 23.9 × 4.8 mm.

Type locality: Grand Récif South, New Caledonia, 22°37'S, 166°51'E, 17 m.

Type material: Holotype and 12 paratypes MNHNP; other paratypes AMNH 222587 (1); AMS C15234 (1); BM(NH) 1986260 (1); CAS (1); LACM 2260 (1); MCZ 296165 (1); USNM 859148 (1); Bratcher coll. (9); Parkinson coll. (6); Cernohorsky coll. (2).

Distribution: New Caledonia to Fiji and the Philippine Islands.

Discussion: The color varies from almost black to cream with a few darker or brownish blotches. Two individuals from Fiji and two from New Caledonia are grayish white with few brownish blotches and with the edge of the siphonal fasciole and inner lip outlined in gold. Many of the light-colored shells have a dark blotch on the dorsum of the body whorl. Most of the black specimens were found living in black volcanic sand in Fiji. The color of the protoconch varies from blackish brown on the holotype to translucent cream, some with an opaque dark stripe within. The axial ribs become more obsolete on some specimens than on others. The grooves are usually discontinuous, often very short and faint or almost missing.

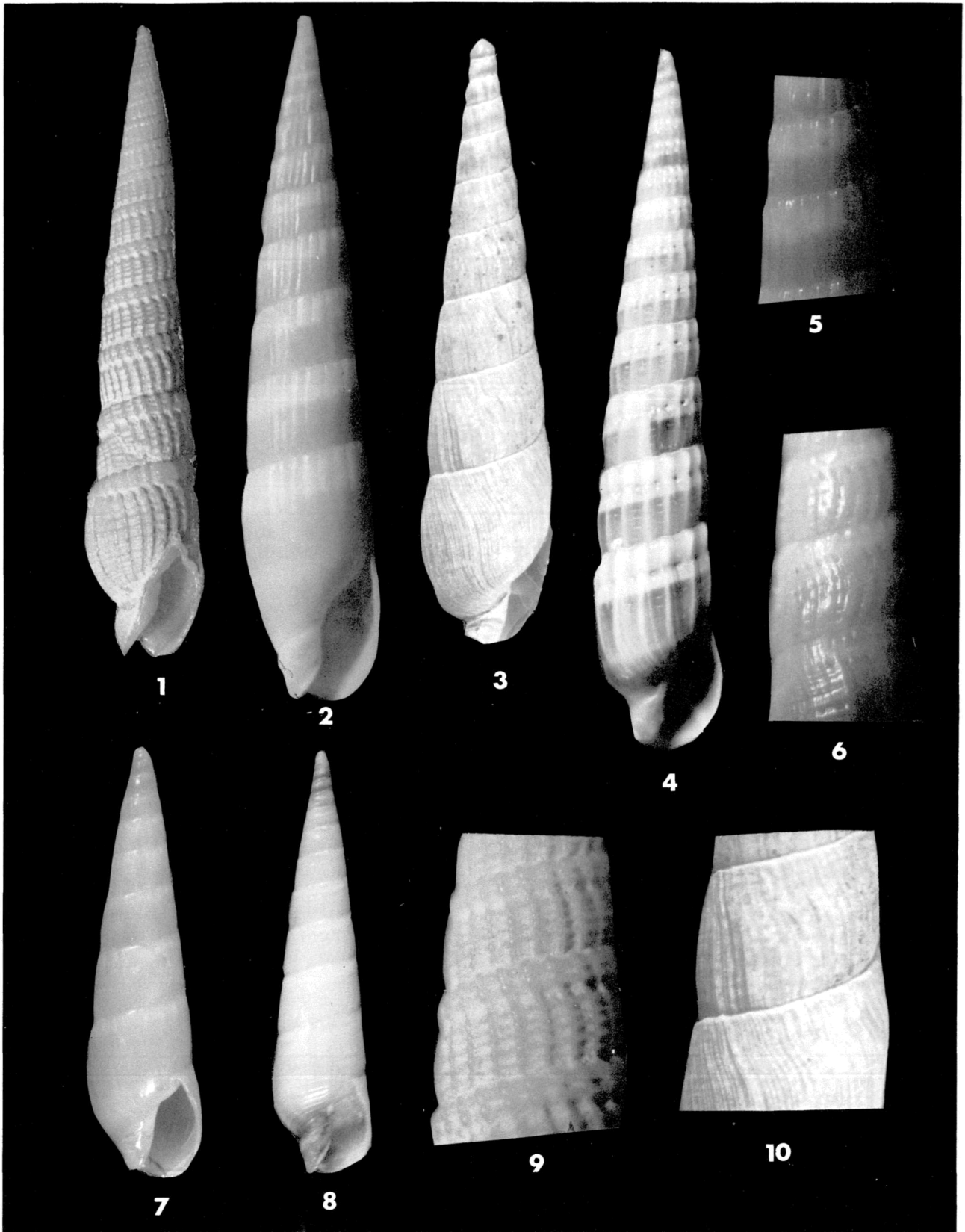
This species bears some resemblance to both *Terebra nitida* and *Duplicaria raphanula*, both of which have larger shells with slender multi-whorled protoconchs in contrast to the short bulbous protoconch of this species. In addition, *D. raphanula* may be separated from this species by its more irregular axial ribs, which sometimes fade below the subsutural band. *Terebra nitida* has more widely spaced ribs than this species.

The name is derived from the Latin *paucus*, meaning "few," and *incise*, meaning "cut into."

Terebra albocancellata Bratcher, sp. nov.

(Figures 1, 9)

Diagnosis: A slender, dull-white Indo-Pacific *Terebra* with cancellate sculpture, small for the genus, maximum length 18.8 mm.



Description: A slender, small *Terebra* with teleoconch of 12 whorls; protoconch of 3.5 conical whorls; outline of whorls straight; subsutural band defined by groove cutting through riblets; axial riblets fine, narrow, numerous, slanting to right on subsutural band, curving to left on remainder of whorl, 34 on penultimate whorl; spiral threads, 5 on penultimate whorl, crossing riblets to form cancellate sculpture with small pustules forming at intersections; body whorl with cancellate sculpture continuing to siphonal fasciole; aperture semi-elongate; columella with heavy parietal callus; color dull white.

Dimensions: Holotype 18.8 × 3.4 mm; paratypes from 14.8 × 3.4 mm to 15.0 × 3.8 mm.

Type locality: Plateau Chesterfield-Bellona Chalcal, Coral Sea, 36°42'S, 158°59'E.

Type material: Holotype and 1 paratype MNHNP; 1 paratype Bratcher coll.

Distribution: Chesterfield Islands, Coral Sea (between New Caledonia and Queensland, Australia).

Discussion: Three specimens were dredged from two localities in the Chesterfield Islands. These show almost no variation. There is no other small white cancellate Indo-Pacific species with which this could be confused. An immature specimen of *Terebra conspersa* Hinds, 1844, bears a slight superficial resemblance, but does not have the spiral grooves crossing the axial ribs, and it does not have a parietal callus. Also *T. conspersa* is a warm beige with a few tiny brown dots and with a brownish stain anterior to the periphery of the body whorl in contrast to the white of *T. albocancellata*.

The name for this species is from the Latin *albus*, meaning "white," and *cancellatus*, meaning "lattice-like."

Terebra macleani Bratcher, sp. nov.

(Figures 3, 10)

Diagnosis: A moderately small *Terebra* with no subsutural band and sculpture of axial striae only.

Description: Shell of medium size for the genus (maximum length 22.8 mm) with no subsutural band and sculpture of axial striae only.

Description: Shell of moderate size for the genus with 9 dull-surfaced whorls of teleoconch; protoconch of 1.5 large mamillate pale amber whorls. Outline of whorls slightly convex; suture well marked; no subsutural band; axial sculpture of very fine crowded striae running from suture to suture; no spiral sculpture; body whorl elongate with axial striae unbroken from suture to siphonal fasciole; aperture quadrate; columella almost straight; operculum yellowish amber; color dull amber.

Dimensions: Holotype 22.8 × 5.1 mm; paratype 21.9 × 5.2 mm.

Type locality: E. Cape of East London, South Africa, 33°04.9'S, 27°54.0'E, muddy sand with lumps of black mud.

Type material: Holotype NM D473/3687; 1 paratype NM D4809/T3688.

Distribution: This species is known only from the type locality.

Discussion: Compared to this species, *Terebra albida* Gray, 1834, has a more inflated body whorl and a very weakly indicated subsutural groove. Also, the range appears to be confined to Victoria and Western Australia.

This species is named in honor of Dr. James McLean for his contributions to malacology.

Hastula alboflava Bratcher, sp. nov.

(Figures 2, 5)

Diagnosis: A yellow *Hastula* of moderate size for the genus (maximum length 27.3 mm) with a white subsutural band marked by color rather than sculpture and with ribs below the suture fading anteriorly.

Description: Shell of moderate size for the genus with 13 shiny whorls of teleoconch; protoconch of 1.25 bulbous whorls; outline of whorls straight; subsutural band defined only by a white band, no subsutural groove or punctations; axial ribs about equal to interspaces, running from suture to suture on early whorls, fading anteriorly on later whorls; no spiral sculpture; body whorl with ribs becoming obsolete below white subsutural band; aperture elongate; siphonal fasciole exceptionally large for size of shell; color golden yellow with white band below suture.

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Explanation of Figures 1 to 10

Figure 1. *Terebra albocancellata* sp. nov., holotype, 18.8 × 3.4 mm.

Figure 2. *Hastula alboflava*, holotype, 24.8 × 4.9 mm.

Figure 3. *Terebra macleani*, holotype 22.8 × 5.1 mm.

Figure 4. *Terebra paucincisa*, holotype 19.9 × 4.0 mm.

Figure 5. Same shell as Figure 2, close-up of middle whorls.

Figure 6. Same shell as Figure 8, close-up of middle whorls.

Figure 7. *Hastula colorata*, holotype, 14.9 × 4.3 mm.

Figure 8. *Terebra rancheria*, holotype, 16.9 × 4.0 mm.

Figure 9. Same shell as Figure 1, close-up of middle whorls.

Figure 10. Same shell as Figure 3, close-up of middle whorls.

Dimensions: Holotype 24.8 × 4.9 mm; Paratypes from 16.3 × 3.4 mm to 27.3 × 5.4 mm.

Type locality: Off Sogod, Cebu, Philippine Islands, 15.5 m.

Type material: Holotype LACM 2262; paratypes AMNH 222588 (1); AMS C15235 (1); ANSP (1); BM(NH) 1986261 (1); CAS (1); MCZ 196166 (1); MORG 24.809 (1); NM 758/13690 (1); MNHNP (1); SDMNH 92523 (1); USNM 859149 (1); Bratcher coll. (4); Cernohorsky coll. (1); Dayrit coll. (41); Marquet coll. (1).

Distribution: Cebu, Philippine Islands.

Discussion: This species bears a resemblance to *Hastula albula* (Menke, 1843), which has a protoconch of 4.5 often blackish-purple conical whorls. The protoconch of *H. alboflava* has 1.25 bulbous whorls. *Hastula albula* is variable in color, usually in the same lot, while all 59 examined specimens of *H. alboflava* are golden yellow with a white subsutural band. Except for minimal differences in size, there is almost no intraspecific variation in the specimens examined.

The name of this species is from the Latin *albus*, meaning "white," and *flavus*, meaning "golden yellow," the colors of the shell.

Hastula colorata Bratcher, sp. nov.

(Figure 7)

Diagnosis: A shiny, small, bright pastel or white *Hastula* with no visible sculpture.

Description: Shell with glassy shine, 9 whorls in teleoconch; protoconch of 1.25 short bulbous, bright pink whorls, larger than following whorls; outline of whorls straight; no subsutural band or groove; no axial sculpture except for faint striae under extreme magnification; no spiral sculpture; body whorl with no sculpture; aperture quadrate; columella straight; color bright pink.

Dimensions: Holotype 14.9 × 4.3 mm; paratypes from 11.1 × 2.9 mm to 19.6 × 4.6 mm.

Type locality: Light House Beach, Augusta, Western Australia, 34°20'S, 115°10'E, beach.

Type material: Holotype WAM 514-86 (pink); paratypes AMNH 222984 (1 light pink); AMS C153006 (1 white); ANSP (1 lavender); BM(NH) 1986283 (1 pink); CAS (1 white); LACM 2263 (1 pink); MCZ 296167 (1 pale pink); MORG 24.810 (1 pale lavender); NM K175/T3689 (1 pale pink); SDMNH 92524 (1 light peach); USNM

859218 (1 purple); Anson coll. (2); Bratcher coll. (4); Buick coll. (1); Cernohorsky coll. (1); Marrow coll. (4).

Distribution: Southwest Australia.

Discussion: This is the only *Hastula* species that has been found in so many clear pastel colors: white, yellow, peach, rose lavender, and purple, all monochromatic. All 14 type specimens and many others examined in museums were beach specimens. As far as is known, no one has collected a live specimen.

This species differs from *Terebra albida* by being shiny, smaller, more slender, and by lacking the inflated body whorl. It also lacks the indication of a subsutural band found on *H. albida*. *Hastula colorata* does not resemble juvenile *H. albida* (W. Anson, personal communication).

The name is from the Latin *coloratus*, meaning "color or tinge," because of the many colors in which the species is found.

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