

Ten New Species of Tropical Eastern Pacific Turridae

BY

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(1 Plate)

INTRODUCTION

THE NUMBER OF UNDESCRIBED species of Turridae from the tropical Eastern Pacific may seem to many observers to be limitless. Despite the diligent collecting efforts of Cuming, Hinds, Reigen, C. B. Adams, The U.S. Bureau of Fisheries, Zetek, Lowe, and others, many new species continue to be recognized from collections made by contemporary collectors.

Generic relationships of the Turridae have been poorly understood. Dr. James McLean's current work is shedding considerable light into this area.

The classification followed in this paper follows that proposed by McLEAN in this issue of *The Veliger*.

Abbreviations for type repositories mentioned in the text are as follows:

AHF	Allan Hancock Foundation (collection on loan to LACM)
AIM	Auckland Institute and Museum, Auckland, New Zealand
AMNH	American Museum of Natural History, New York
ANSP	Academy of Natural Sciences, Philadelphia
CAS	California Academy of Sciences, San Francisco
LACM	Los Angeles County Museum of Natural History
SDMNH	San Diego Museum of Natural History
SU	Stanford University, Stanford, California
USNM	United States National Museum of Natural History, Washington, D.C.

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1. *Doxospira hertleini* Shasky, spec. nov.

(Figure 1)

Description: Shell rather large, fusiform; color yellowish white with weak yellowish brown bands on some specimens just superior to the suture; shell covered with a rather adherent brownish gray periostracum; protoconch of 4 eroded conical whorls; subsequent whorls about 12; suture a shallow indistinct groove; whorls separated by a wide subsutural channel which on the body whorl is sculptured with fine incremental lines that radiate out like wavelets from the anal fasciole; these are obscured adapically by fine spiral threads; axial sculpture of 7 short ribs on the early whorls, increasing to 9 longer ribs on the body whorl; spiral sculpture of major and minor threads that alternate, there generally being 3 major and 2 minor threads on the early whorls; however the minor threads are obscured on some specimens; aperture glistening white; outer lip thin, gently flaring, smooth within and with a moderate stromboid notch at the lower end; columella straight and smooth; siphonal canal short and slightly recurved; anal fasciole open and wide with a thick callus at the sutural angle. Dimensions of holotype: height

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41.8 mm, diameter 16.6 mm, length of aperture 18.5 mm.
Type Locality: Holotype and 8 paratypes from 77–112 m, 14 miles SSE of Judas Point, Costa Rica, 9°19'32" N, 84°29'30" W, CAS locality 17974. Leg. Wm. Beebe, March 1, 1938.

Type Material: Holotype, CAS 13288, 3 paratypes, CAS 13289, 13290, 13291, 1 paratype, LACM 1565, single paratypes, SDMNH, AMNH, USNM, and Shasky collection.

Referred Material: CAS 27557, 1 specimen, 91–110 m, Punta Arenas, Costa Rica; CAS 17986, 1 specimen, 64 m, Gulf of Chiriqui, Panama; CAS 17996, 1 specimen, 73 m, Hannibal Bank, Panama; AHF 854-38, 1 specimen, 73–110 m, Gorgona Island, Colombia; AHF 213-34, 3 specimens, 13–18 m, La Plata Island, Ecuador.

Discussion: This species is monotypic for *Doxospira* McLean, 1971. On shell characters *Doxospira hertleini* seems closest to *Compsodrillia bicarinata* (Shasky, 1961). *C. bicarinata* is a more slender shell with fewer and sharper spiral cords and chocolate brown color bands. Immature specimens of *Doxospira hertleini*, which lack the anal callus, might be confused with species of *Knefastia*.

It is a pleasure to dedicate this species to Dr. Leo Hertlein of the California Academy of Sciences, San Francisco.

2. *Miraclathurella mendozana* Shasky, spec. nov.

(Figure 2)

Description: Shell of moderate size for the genus, brown, biconic; nucleus of 3 glossy, brown whorls, smooth except for a single peripheral keel; the first nuclear turn somewhat flattened; remaining whorls 6–7; the first 3 mature whorls have strong axial ribs and the continuing peripheral keel; on succeeding whorls the axial sculpture progressively becomes weaker and the spiral threads stronger, which renders these whorls finely cancellate; there are about 23 axial riblets and 5 spiral threads on the penultimate whorl and 27–33 axial riblets on the body whorl; suture impressed, with an adjacent strong subsutural cord; between the subsutural cords and the adapical spiral threads is a shallow channel with fine opisthocyrt growth lines; aperture smooth and glossy, of creamy-brown color; outer lip arcuate, sharp-edged, slightly crenulate, edentulous and varicose, with a shallow stromboid notch; columella smooth and gently curved; siphonal canal open, short, and slightly recurved; anal notch deep, with moderate subsutural callus. Dimensions of holotype: height 16.1 mm, diameter 5.3 mm, height of aperture 7.8 mm.

Type Locality: Holotype and 4 paratypes from 37–73 m, mud bottom, Gulf of Tehuantepec, Mexico, 15°43' N, 96°07' W, San Juan Expedition station G-5. Leg. Donald Shasky, July 14, 1963.

Type Material: Holotype, LACM 1566, single paratypes, CAS, SDMNH, USNM, Shasky Collection.

Referred Material: Shasky Collection. Gulf of Tehuantepec, San Juan Expedition, 3 specimens from station E-3, 73 m; 1 specimen from station E-9, 146 m; NW side Espiritu Santo Island, Gulf of California, Ariel Expedition, 1 specimen, 146 m; LACM 38-6, Chamela Bay, Jalisco, Mexico, 1 specimen, 27–73 m; LACM 38-9, Gatulco Bay, Oaxaca, Mexico, 11 specimens, 73–128 m; AHF bottom sample station 548, Cupica Bay, Colombia, 1 specimen, 22 m.

Discussion: *Miraclathurella mendozana* is closest to *M. woodringi* (Pilsbry and Olsson, 1941) described as a Pliocene fossil from the Canoa Formation, Punta Blanca, Ecuador. Most notable difference is the greater number of axial riblets on the body whorl of *M. mendozana* (27–33 as compared to 21 for *M. woodringi*). They may be only subspecifically different. It is named in honor of Capt. Xavier Mendoza von Borstel, of Mexico City.

3. *Strictispira stillmani* Shasky, spec. nov.

(Figure 3)

Description: Shell of medium size for the genus, biconic; color dark brown on the early whorls, shading to black on subsequent whorls; nucleus of 3 smooth, glistening, conical whorls; remaining whorls 7; suture shallowly channelled; axial sculpture of 16 sigmoid ribs occupying about $\frac{2}{3}$ of the abapical portion of the whorl, except on the body whorl where they are much longer; ribs abapically touching the suture; spiral sculpture a single strong subsutural keel, terminating at the callus of the anal sulcus; most specimens fail to show spiral threading until the penultimate whorl and frequently not until the body whorl; spiral threads commence as faint striae that do not cross the ribs, becoming stronger on the mid-portion of the body whorl where they cross over the ribs, and terminally becoming strong enough to obliterate the ribs entirely; aperture glistening, with outer lip, anterior canal, and columella chocolate brown, abruptly changing to gray in the throat; outer lip undulate; anterior canal short and open, hardly distinct from the aperture; anal sulcus constricted at the opening by a thick subsutural callus; the sulcus expands into a rounded canal that is nearly at right

angles to the long axis of the shell; periostracum thin, dark, slate-blue. Dimensions of holotype: height 14.7 mm, diameter 5.8 mm.

Type Locality: Holotype and 71 paratypes at low tide from Venado Island, Panama Canal Zone, 8°53' N, 79°36' W, LACM locality 70-15. Leg. James McLean and Donald Shasky, March 8-11, 1970.

Type Material: Holotype, LACM 1567, 18 paratypes, LACM 1568, 2 paratypes each to AIM, AMNH, ANSP, CAS, SDMNH, SU, USNM, and S. S. Berry collection, 39 paratypes, Shasky collection.

Referred Material: Shasky collection: Punta San Felipe, Baja California, 74 specimens; Agua de Chale, Baja California, 24 specimens; Puertocitos, Baja California, 4 specimens; Mazatlan, Sinaloa, 6-7 m, 2 specimens; Cuastecomate, Jalisco, 8-15 m, 2 specimens. LACM: specimens from San Felipe, Puertocitos, Point Arena, and Cape San Lucas, Baja California, and Banderas Bay, Jalisco.

Discussion: *Crassispira* (*Striospira*) *xanti* Hertlein and Strong, 1951, has axial ribs, a subsutural keel and a color similar to *Strictispira stillmani*, but the biconic shape of *S. stillmani* and the shallow, broad anal notch of *C. xanti* help to rather easily separate these species.

I have previously distributed a few specimens of *Strictispira stillmani* under the name *Crassispira paxillus* (Sowerby, 1834). The published figures of *C. paxillus*, which was described from an unknown habitat, suggested this possibility. A photograph of the type of *C. paxillus*, supplied by Dr. Myra Keen, removed it from further consideration as it is a chunkier shell with more and weaker axial ribs, and the apparent absence of a subsutural keel. The new taxon is named for Dr. S. Stillman Berry of Redlands, California.

4. *Zonulispira chrysochildosa* Shasky, spec. nov.

(Figure 4)

Description: Shell medium size, dark brown, whorls 10½; nucleus flat-topped, of 2½ shiny whorls; the first 1½ smooth, the next with about 11 oblique riblets that disappear at the beginning of the succeeding whorl; arising on the first postnuclear whorl is a strong suprasutural, sharply nodose, yellow-gold, spiral carina, which on later whorls migrates to the center of the whorl; this terminates at the edge of the outer lip abapical to the anal notch; a second weaker, subsutural, undulating carina also commences on the first postnuclear whorl, which is dark brown but gradually becomes golden; it ends at

the anal callus; on the antepenultimate whorl a third somewhat nodular golden carina appears just above the suture; this terminates in the outer lip just abapical to the strongly nodose carina; on the body whorl there are 10 golden smooth or nodose bands, including the 3 previously described; the nodes of the primary carina are arranged in axial rows with 9 on the penult and 10 on the body whorl; numerous fine spiral threads and even finer intersecting growth lines fill the spaces between the carinae; the suture is a shallow undulating groove; aperture elongately oval, smooth, brown, shading to gray in the throat; outer lip coarsely crenulate; columella smooth; anterior canal short, open, slightly recurved; anal notch with a strong callus that partially constricts the opening. Dimensions of holotype: height 20.9 mm, diameter 8.1 mm.

Type Locality: Holotype and 44 paratypes collected at low tide, Venado Island and adjacent Veracruz Beach, Panama, 8°53' N, 79°36' W. Leg. Donald Shasky, December 3, 1967; Donald Shasky and James McLean, March 8-11, 1970.

Type Material: Holotype, LACM 1569, 20 paratypes, LACM 1570, single paratypes, AIM, AMNH, ANSP, CAS, SDMNH, SU, and USNM, 17 paratypes, Shasky collection.

Referred Material: USNM 55468, 1 specimen, Panama, Stearns collection; USNM 216940, 1 specimen, Panama, leg. Zetek; AHF 214-34, 1 specimen, 4 m, Cape San Francisco, Ecuador.

Discussion: *Zonulispira chrysochildosa* resembles *Z. grandimaculata* (C. B. Adams, 1852) and *Z. zonulata* (Reeve, 1843), but is broader than either and all the spiral cords of the base are slightly marked, rather than only the peripheral and one basal cord. It is evidently common at Panama at present. Surprisingly, the only specimens found in old collections are the 2 USNM lots mentioned above.

The name is derived from the Greek words, *chryso*—gold, and *childosis*—ornamentation.

5. *Pilsbryspira* (*Pilsbryspira*) *garciacubasi* Shasky, spec. nov.

(Figure 5)

Description: Shell of medium size, turreted, of light gray to slate to black color, and with orange carinae and beads; protoconch whorls 3½, glossy, dark brown, last 1½ whorls with diagonally slanted axial ribs, 13 per whorl; post-

nuclear whorls 9; axial ribs do not appear until the penultimate or body whorl where they occupy the middle of the whorl; they are weak and number about 17; spiral sculpture of a strong row of orange interconnecting beads over the abapical third of the whorls which terminates at the abapical edge of the anal notch; beads bifid on early whorls, but single on later whorls; additional spiral sculpture of 2 grayish-white carinae that gradually become orange; the first of these is subsutural and commences on the first postnuclear whorl and terminates just adapical to the anal notch; the second, which undulates, begins on the sixth to eighth postnuclear whorl, terminating in the outer lip after becoming beaded on the body whorl; on the body whorl, arising at the inner lip and ending at the outer lip margin, are 6-7 parallel rows of interconnected beads or carinae, which are usually of less color intensity than the previous spiral sculpture; spaces between all carinae are densely packed with microscopic spiral lines that are faintly cut by opisthocyt growth lines; on some specimens below the main row of beads on the body whorl these fine spirals are much more strongly and regularly cut with orthocline growth lines, rendering this area delicately cancellate; aperture elongately oval, varying from white to gray, to black or combinations of these colors; inner lip smooth; outer lip coarsely crenulate; anterior canal short, open; anal notch a short, open slit; anal callus moderate. Dimensions of holotype: height 13.3 mm, diameter 4.5 mm.

Type Locality: Holotype and 10 paratypes from 2-15 m, under rocks, Cuastecamate Cove, Jalisco, Mexico. 19° 13'45" N, 104°44'53" W. Leg. Donald Shasky, August 8-9, 1965; Donald Shasky and James McLean, October 13-21, 1968.

Type Material: Holotype, LACM 1571, 3 paratypes, LACM 1572, single paratypes, AMNH, ANSP, CAS, SDNHM, USNM, 2 paratypes, Shasky collection.

Referred Material: LACM 68-2, 7 specimens, Santa Cruz, Nayarit, Mexico; LACM 70-7, 8 specimens, Punta Mita, Nayarit, Mexico; LACM 67-23, 1 specimen, Acapulco, Guerrero, Mexico; Shasky collection, 1 specimen, Bahia Santa Cruz, Oaxaca, Mexico.

Discussion: *Pilsbryspira loxospira* (Pilsbry and Lowe, 1932), and *P. garciacubasi* are similar in color patterns, size and habitat. *P. garciacubasi* has a straight rather than "bent" axis, 17 rather than 10-11 axial ribs, much weaker growth lines, and a less contracted opening to the anal notch. *Pilsbryspira collaris* (Sowerby, 1834), also of similar coloration, has fewer spiral threads, bifid peripheral beading on the final whorl, and is a smaller chunkier shell than *P. garciacubasi*.

This new taxon is named for Dr. Antonio Garcia-Cubas, Jr., micro-zoologist of the Instituto de Biología, Universidad Nacional Autónoma de México.

6. *Glyphostoma (Glyphostoma) myrae* Shasky, spec. nov.

(Figure 6)

Description: Shell of medium size for the genus, whorls 8½-9; nuclear whorls 2½-3, brownish, inflated, smooth except for a central carina; adult whorls with elevated axial ribs, 11 on the body whorl, but progressively diminishing in number adapically; ribs attenuated or obscured on the base; spiral sculpture of numerous threads, stronger over the ribs; 12 threads on the penultimate whorl and about 30 on the body whorl; microscopic axial riblets cross the first 2-3 subsutural spiral threads of the penultimate and body whorls; virtually the entire external surface of the shell, except the nucleus, is studded with microscopic granules; suture indistinct, undulate; aperture narrowly elongate, white within except for brown stains on the alveolar ridge and the columellar lip; outer lip crenulate, varicose, flaring, and with 7-8 denticles, the adapical and abapical the strongest; columellar lip with 8 plicae; anterior canal relatively long, open, recurved, anal notch open and moderately callused; color yellowish-white with a yellowish-brown subsutural band on all of the whorls below the nucleus, and another similarly colored band on the body whorl diffuses into a lighter still brownish shade on the base. Dimensions of holotype: height 12.9 mm, diameter 6.8 mm.

Type Locality: Holotype and 1 paratype from 46 m off Jicarita Island, Panama, 7°12' N, 81°47' W. Leg. Capt. Fred Lewis, 1937.

Type Material: Holotype, LACM 1573; 1 paratype, Shasky collection.

Referred Material: AHF 423-35, 2 specimens, 37 m, off Port Utria, Colombia; AHF bottom sample station 505, 1 specimen, 59 m, Gorgona Island, Colombia.

Discussion: *Glyphostoma myrae* has a characteristic color pattern and should not be confused with any known Eastern Pacific *Glyphostoma*. It is a pleasure to dedicate this species to Dr. Myra Keen, of Stanford University.

7. *Kurtziella (Rubellatoma) powelli* Shasky, spec. nov.

(Figure 7)

Description: Shell small, fusiform, 7 whorled; nucleus of 3 dome-shaped helicoid whorls, the first 2 smooth, the

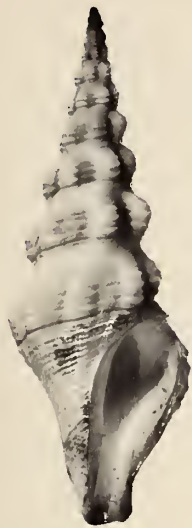


Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10

- Figure 1: *Doxospira hertleini* Shasky, spec. nov. Holotype, X 1.6
 Figure 2: *Miraclathurella mendozana* Shasky, spec. nov. Holotype, X 3.0
 Figure 3: *Strictispira stillmani* Shasky, spec. nov. Holotype, X 3.0
 Figure 4: *Zonulispira chrysochildosa* Shasky, spec. nov. Holotype, X 2.1
 Figure 5: *Pilsbryspira (Pilsbryspira) garciacubasi* Shasky, spec. nov. Holotype, X 3.4
 Figure 6: *Glyphostoma (Glyphostoma) myrae* Shasky, spec. nov. Holotype, X 3.4
 Figure 7: *Kurtziella (Rubellatoma) powelli* Shasky, spec. nov. Holotype, X 7.8
 Figure 8: *Agathotoma (Vitricythara) klastmidia* Shasky, spec. nov. Holotype, X 8.6
 Figure 9: *Agathotoma (Vitricythara) secalis* Shasky, spec. nov. Holotype, X 7.0
 Figure 10: *Pyrgocythara emersoni* Shasky, spec. nov. Holotype, X 6.2

