

LOS
ANGELES
COUNTY
MUSEUM

CONTRIBUTIONS IN SCIENCE

NUMBER 188

MAY 4, 1970

FOUR NEW TEREBRID GASTROPODS FROM
EASTERN PACIFIC ISLANDS

By TWILA BRATCHER AND R. D. BURCH

CONTRIBUTIONS IN SCIENCE is a series of miscellaneous technical papers in the fields of Biology, Geology and Anthropology, published at irregular intervals by the Los Angeles County Museum of Natural History. Issues are numbered separately, and numbers run consecutively regardless of subject matter. Number 1 was issued January 23, 1957. The series is available to scientific institutions and scientists on an exchange basis. Copies may also be purchased at a nominal price. Inquiries should be directed to Virginia D. Miller, Los Angeles County Museum of Natural History, 900 Exposition Boulevard, Los Angeles, California 90007.

ROBERT J. LAVENBERG
Managing Editor

INSTRUCTIONS FOR AUTHORS

Manuscripts for the LOS ANGELES COUNTY MUSEUM, CONTRIBUTIONS IN SCIENCE may be in any field of Life or Earth Sciences. Acceptance of papers will be determined by the amount and character of new information. Although priority will be given to manuscripts by staff members, or to papers dealing largely with specimens in the Museum's collections, other technical papers will be considered. All manuscripts must be recommended for consideration by the curator in charge of the proper section or by the editorial board. Manuscripts must conform to those specifications listed below and will be examined for suitability by an Editorial Committee. They may also be subject to review by competent specialists outside the Museum.

Authors proposing new taxa in a CONTRIBUTIONS IN SCIENCE must indicate that the primary type has become the property of a scientific institution of their choice and cited by name.

MANUSCRIPT FORM.—(1) The 1964 AIBS Style Manual for Biological Journals is to be followed in preparation of copy. (2) Double space entire manuscript. (3) Footnotes should be avoided if possible. Acknowledgments as footnotes will not be accepted. (4) Place all tables on separate pages. (5) Figure legends and unavoidable footnotes must be typed on separate sheets. Several of one kind may be placed on a sheet. (6) An abstract must be included for all papers. This will be published at the head of each paper. (7) A Spanish summary is required for all manuscripts dealing with Latin American subjects. Summaries in other languages are not required but are strongly recommended. Summaries will be published at the end of the paper. (8) A diagnosis must accompany any newly proposed taxon. (9) Submit two copies of manuscript.

ILLUSTRATIONS.—All illustrations, including maps and photographs, will be referred to as figures. All illustrations should be of sufficient clarity and in the proper proportions for reduction to CONTRIBUTIONS page size. Consult the 1964 AIBS Style Manual for Biological Journals in preparing illustration and legend copy for style. Submit only illustrations made with permanent ink and glossy photographic prints of good contrast. Original illustrations and art work will be returned after the manuscript has been published.

PROOF.—Authors will be sent galley proof which should be corrected and returned promptly. Alterations or changes in the manuscript after galley proof will be billed to the author. Unless specifically requested, page proof will not be sent to the author. One hundred copies of each paper will be given free to each author or divided equally among multiple authors. Orders for additional copies must be sent to the Editor at the time corrected galley proof is returned. Appropriate order forms will be included with the galley proof.

VIRGINIA D. MILLER
Editor

FOUR NEW TEREBRID GASTROPODS FROM EASTERN PACIFIC ISLANDS

By TWILA BRATCHER¹ AND R. D. BURCH²

ABSTRACT: Four new terebrids are described from Eastern Pacific islands: *Terebra hertleini*, *T. jacquelineae*, and *T. purdyae* from the Galápagos Islands, Ecuador, and *T. stohleri* from Socorro Island, Mexico.

While examining the terebrid collections dredged by the R/V *Valero III* during the Allan Hancock Foundation Pacific Expeditions and by the expeditions of California Academy of Sciences to the Eastern Pacific islands, we discovered three new species of *Terebra*; the fourth was brought to our attention by Mrs. Jacqueline DeRoy, who dredged specimens at Academy Bay in the Galápagos Islands.

The following abbreviations are used in the text: AHF, Allan Hancock Foundation (material on loan to LACM); AMNH, American Museum of Natural History; ANSP, Academy of Natural Sciences of Philadelphia; B&B, Bratcher and Burch collection; BM(NH), British Museum (Natural History); CAS, California Academy of Sciences; LACM, Los Angeles County Museum of Natural History; MCZ, Museum of Comparative Zoology, Harvard University; SB, Santa Barbara Museum of Natural History; SD, San Diego Museum of Natural History; SU, Stanford University; USNM, United States National Museum; WAM, Western Australia Museum.

ACKNOWLEDGMENTS

We wish to express our appreciation to Drs. James H. McLean of the Los Angeles County Museum of Natural History, Leo G. Hertlein of the California Academy of Sciences, and Harald Rehder and Joseph Rosewater of the U.S. National Museum for their cooperation and loan of materials. We thank Ben and Ruth Purdy of San Diego, California, and Laura Shy of Westminster, California, in whose collections additional specimens of some of the new species were found, for making their collections available to us. We are indebted to Mrs. Jacqueline DeRoy for sending material from the Galápagos Islands for study. We also wish to thank Maurice Giles of the California Academy for preparing several of the photographs and Mrs. Margaret Hanna for retouching them.

***Terebra hertleini*, sp. nov.**

Figures 1-2

Diagnosis: A small species distinguished from other small terebrids by turreted whorls and large subsutural nodes.

¹Research Assistant in Invertebrate Zoology, Los Angeles County Museum of Natural History, 8121 Mulholland Terrace, Los Angeles, California 90046.

²Formerly Research Assistant in Invertebrate Zoology, Los Angeles County Museum of Natural History. (Deceased, February 22, 1970.)

Description of holotype: Size small; color white, whorls flat, turreted, ten in number plus two glassy, convex nuclear whorls; first postnuclear whorl constricted; sculpture of three spiral cords per whorl and obsolete axial ribs beginning in large nodes anterior to suture (nine on penultimate whorl); sculpture on body whorl of three spiral cords crossing obsolete ribs that end in faint nodes at periphery, these nodes being less prominent than those at suture; anterior to periphery spiral cords cross minute axial striations; aperture semi-quadrate; outer lip thin, white within; columella straight with one weak plication; siphonal fasciole well developed with sharp keel; anterior canal of medium length, recurved. Length, 11.8 mm; diameter, 5.0 mm.

Type locality: Academy Bay, Santa Cruz (Indefatigable) Island, Galápagos Islands, Ecuador, 08° 46' 16" S, 90° 19' 38" W, CAS loc. 27536, 3.5-5.5 fms, dredged, 45 specimens. Most of the specimens are very small and appear not to have been live taken as they have a chalky appearance.

Type material: Holotype, CAS 13222. Paratypes: AMNH 157281; ANSP 316670; B&B 741; BM(NH); CAS 13223-13227; LACM-AHF 1288; SB 27147; SD 51962; SU 9996; USNM 680212. The LACM paratype is from AHF station 168-34, 15-25 fms, and was live collected, Academy Bay.

Discussion: This species shows variation in the spiral cords being well developed in some specimens and almost obsolete in others. The nodes at the periphery of the body whorl are inconspicuous in some individuals. *Terebra hertleini* has a superficial resemblance to *T. jacquelinae* sp. nov., but is a much smaller species. The holotype of the former with ten whorls measures 11.8 mm in length while that of the latter with 13 whorls measures 33.2 mm. *Terebra jacquelinae* has a row of large nodes posterior to the suture which are absent in *T. hertleini*.

Terebra hertleini is named for Dr. Leo G. Hertlein of the California Academy of Sciences in appreciation of his encouragement and assistance in our work on the eastern Pacific Terebridae.

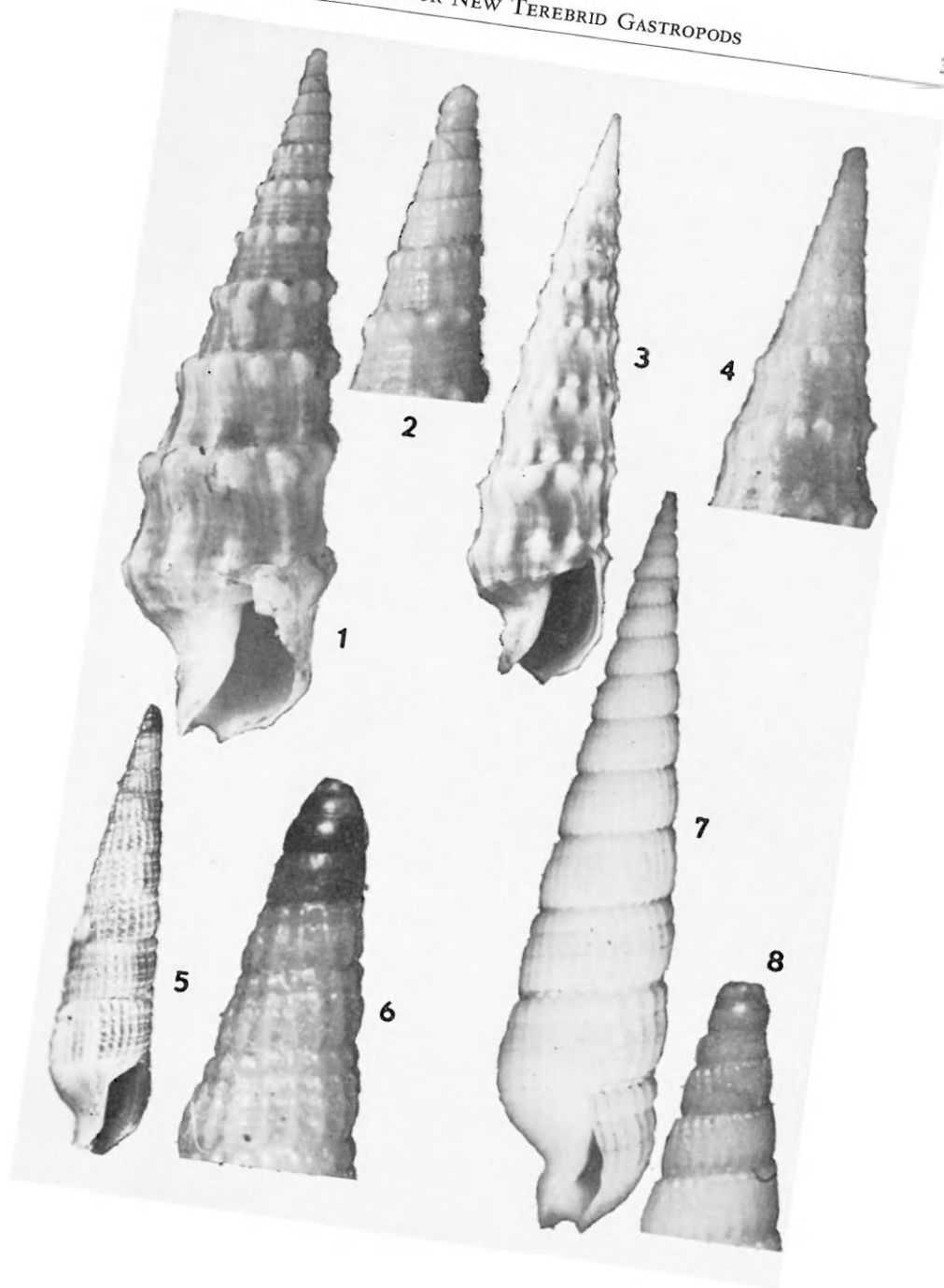
***Terebra jacquelinae*, sp. nov.**

Figures 3-4

Diagnosis: A species differing from other west American terebrids in having extremely concave whorls and axial ribs that fade at the center of the whorl and become large nodes at each end.

Description of holotype: Size medium; color shiny cream; first four postnuclear whorls flat, remainder of whorls very concave, 13 in number plus 1.5 shiny, opaque, somewhat bulbous nuclear whorls; sculpture on first five

Figures 1-8. 1. *Terebra hertleini* sp. nov. Holotype, CAS 13222. X 9. 2. *T. hertleini*, early whorls of holotype. 3. *T. jacquelinae* sp. nov. Holotype, CAS 13215. X 2.5. 4. *T. jacquelinae*, early whorls of holotype. 5. *T. purdayae* sp. nov. Holotype, LACM-AHF 1182. X 5. 6. *T. purdayae*, early whorls of holotype. 7. *T. stohleri* sp. nov. Holotype, LACM-AHF 1180. X 5.5. 8. *T. stohleri*, early whorls of holotype. Photos 1-5 by Maurice Giles; 6-8 by Twila Bratcher.



postnuclear whorls of weak axial ribs ending in small nodes at suture and of obsolete spiral grooves that cross the ribs; apical angle increases after sixth postnuclear whorl and ribs begin to fade at center of whorl while nodes at rib endings become more prominent, those anterior to suture being slightly more prominent than posterior ones; interspaces on later whorls contain minute striae, body whorl of medium length with 12 obsolete ribs ending in nodes at periphery; anterior to periphery weakly incised spiral grooves cross equally weak axial grooves; aperture elongate, white within; columella white, straight, with one rounded plication that continues to become keel of well developed siphonal fasciole; anterior canal short, recurved. Length, 33.2 mm; diameter, 8.4 mm.

Type locality: Academy Bay, Santa Cruz (Indefatigable) Island, Galápagos Islands, Ecuador, 0° 46' 16" S, 90° 19' 38" W, CAS loc. 39585, about 10 fathoms, on hard packed coralline sand bottom, collected by Allyn G. Smith and André and Jacqueline DeRoy, February, 1964, holotype and four paratypes.

Type material: Holotype, CAS 13215; 4 paratypes, CAS 13216-13219. Additional paratypes are all from Academy Bay. CAS Templeton Crocker Expedition, May, 1932, loc. 27536, 3.5-5.5 fms., 11 specimens, distributed as follows: 8 paratypes, CAS 13220; 1 paratype, BM(NH); 1 paratype, SU 9997; 1 paratype, USNM 680213. Hancock Expeditions, AHF sta. 807-38, 10-25 fms., January, 1938, 28 specimens, distributed as follows: 26 paratypes, LACM-AHF 1179; 1 paratype, MCZ 271946; 1 paratype, SD 51963. Thirteen additional paratypes were dredged by the DeRoys, 5-6 fms., 6 remain in the DeRoy collection, others distributed as follows: 1 paratype, AMNH 157282; 1 paratype, ANSP 316671; 1 paratype, SB 27148; 1 paratype, WAM; 3 paratypes, B&B.

Referred material: Numerous specimens of this species were among material taken by the Hancock and California Academy of Sciences expeditions and by the DeRoys at collecting stations in the vicinity of Santa Cruz (Indefatigable), San Salvador (James), and Baltra (Seymour) Islands in the Galápagos Islands at depths of 2-20 fathoms.

Discussion: Although there is little variation among mature individuals of this species except that some are more slender than others, occasional immature specimens have the peripheral nodes forming a sharp keel that differs in appearance from that of adults. Most of the specimens examined are of a light cream color, but a number of specimens, most of which were collected at San Salvador Island, range in color from beige to light brown with cream colored nodes. The largest specimen examined measures 36.3 mm in length and 10.8 mm in width and is in the DeRoy collection. This species should not be confused with *Terebra frigata* Hinds, 1844, which has less concave whorls, pronounced spiral sculpture, a more slender profile, and ribs that are continuous from suture to suture. The Gulf of Mexico species, *T. concava* (Say, 1827), is a smaller and much more slender species with definite spiral sculp-

ture, having small sharp nodes at the subsutural band and periphery of the body whorl.

Terebra jacquelinae is named for Mrs. Jacqueline DeRoy of Isla Santa Cruz, Galápagos Islands, who first brought this species to our attention.

***Terebra purdyae*, sp. nov.**

Figures 5-6

Diagnosis: A small slender species that differs from other west American species in having finely cancellate sculpture and a straight columella.

Description of holotype: Size small, slender; color shiny pale cream with weak fulvous blotches; whorls almost flat, 11 in number plus four purple-beige convex nuclear whorls; suture fairly well defined; barely evident subsutural band of beading, slightly more prominent than beading on remainder of whorl; sculpture finely cancellate, remarkably consistent from second postnuclear whorl through body whorl, consisting of axial ribs (29 on penultimate whorl) crossed by cords (four on penultimate whorl) giving a beaded effect; axial ribs about equal to interspaces; body whorl of medium length with sculpture continuing anterior to periphery but less well defined; aperture elongate and slender; columella straight with no plication; faint siphonal fasciole with posterior keel; anterior canal short, recurved. Length, 13.9 mm; diameter, 3.3 mm.

Type locality: North of Santa Maria (Charles) Island, Galápagos Islands, Ecuador, 0° 59' S, 90° 25' W, 70-80 fms., sand and rock bottom, AHF station 195-34, January 29, 1934, 2 specimens.

Type material: Holotype, LACM-AHF 1182; 1 paratype LACM-AHF 1183. An additional paratype, CAS 13221, is from Post Office Bay, of the same island, 8-10 fms., sand and rock and algae bottom.

Referred material: LACM, Hill coll. 1363, Costa Rica, 2 specimens; AHF 201-34, Panama, 4 specimens; USNM 192963, Panama, 4 specimens.

Discussion: The sculpture of this species resembles that of *Terebra shyana* Bratcher and Burch, 1970, but *T. purdyae* is a smaller species having a nucleus of four whorls and a straight columella with no plication. *Terebra shyana* has a nucleus of three whorls and a slightly curved columella with a faint plication. *Terebra panamensis* Dall, 1908, also has cancellate sculpture, but it is a heavier, broader shell with coarse sculpture.

Terebra purdyae is named for Ruth Purdy of San Diego, California, in recognition of her generosity in sharing specimens, not only with us in our work on Terebridae, but with those studying other families of mollusks.

***Terebra stohleri*, sp. nov.**

Figures 7-8

Diagnosis: A sturdy, medium-small, ivory colored species with little resemblance to other species of *Terebra*.

Description of holotype: Size medium-small; color shiny ivory with slightly darker blotches; whorls convex, 14 in number plus remaining 2.5 (part missing) glassy convex nuclear whorls; suture deeply channeled, constricted; subsutural band inconspicuous; whorls slightly shouldered anterior to suture; sculpture of slightly curved axial ribs (28 on penultimate whorl), about equal to interspaces and of evenly spaced spiral grooves (three including subsutural groove), the two whorls posterior to body whorl having an additional groove immediately posterior to suture; body whorl of medium length; sculpture posterior to periphery remains constant; anterior to periphery axial ribs continue and spiral grooves become more numerous and close set (seven between periphery and siphonal fasciole); aperture elongate; outer lip thin with sculpture pattern showing through; columella straight with no plication; siphonal fasciole striate; anterior canal short, recurved. Length, 21.4 mm; diameter, 5.1 mm.

Type locality: Braithwaite Bay, Socorro Island, Mexico, 18° 42' 20" N, 110° 56' 15" W, sand and red mud bottom, March 17, 1939, AHF station 922-39, 1 specimen.

Type material: Holotype, LACM-AHF 1180; 1 paratype, LACM-AHF 1181. The paratype is from Cape Rule, Socorro Island, AHF station 291-34, 4-10 fms.

Referred material: LACM A. 5498, Galápagos Islands, 1 specimen; LACM, Hill coll. 1365, Chamela Bay, Mexico, 2 specimens; LACM A. 375, Tres Marias Islands, Mexico, 1 specimen; Shy collection, Manzanillo, Mexico, 1 specimen.

Discussion: There is no other species with which this beautifully sculptured, shiny species can be easily confused.

This species is named in honor of Dr. Rudolph Stohler who has given so much of his time, his personal finances, and himself to the publishing of *The Veliger*, for the advancement of conchology and malacology.

RESUMEN

Se describen cuatro nuevos terébridos procedentes de las Islas del Pacífico Este: *Terebra hertleini*, *T. jacquelineae* y *T. purdyae* procedentes de las Islas Galápagos, Ecuador, y *T. stohleri* de la Isla Socorro, México.

LITERATURE CITED

- BRATCHER, TWILA, AND R. D. BURCH. 1970. Five new species of *Terebra* from the Eastern Pacific. *Veliger* 12(3):295-300, pl. 14.
- DALL, W. H. 1908. Reports on the dredging operations off the west coast of Mexico, and in the Gulf of California. . . . XIV. The Mollusca and the Brachiopoda. *Mus. Comp. Zool. Harvard, Bull.* 43(6): 205-487, pls. 1-22.
- SAY, THOMAS. 1827. Descriptions of marine shells recently discovered on the coast of the United States. *Acad. Nat. Sci. Philad., Journ.*, ser. 1, 5:207-208.

Accepted for publication December 30, 1969