

Muséum National d'Histoire Naturelle  
LABORATOIRE DE MALACOLOGIE  
55, Rue de Buffon  
75 - PARIS (5<sup>e</sup>)  
Tél. 331.38.95

CONTENTS

**Harry S. Ladd**  
New Pleistocene Neogastropoda from the New Hebrides ..... 127

**Clifford M. Nelson**  
The Type-Species of *Neptunea* Röding, 1798  
(Gastropoda: Buccinacea)..... 139

**Mary G. Curry and Malcolm F. Vidrine**  
New Fresh-Water Mussel Host Records for the Leech *Placobdella Montifera*,  
with Distributional Notes ..... 141

**Brian R. Rivest and Larry G. Harris**  
*Eubranchus Tricolor* Forbes in the Western Atlantic..... 145

**Helen M. Garlinghouse**  
William Seward Teator (1860-1930)..... 148

**Douglas G. Smith**  
Abnormal Shells of *Gyraulus Parvus* (Planorbidae)..... 150

**Lyle D. and Sarah C. Campbell.**  
Sinistral Specimens of *Olivella*, *Prunum*, and *Granulina* from the Pliocene of  
Virginia and North Carolina..... 151

**Fred G. Thompson**  
Land Snails from Monito Island, West Indies ..... 152

## NEW PLEISTOCENE NEOGASTROPODA FROM THE NEW HEBRIDES

Harry S. Ladd

Department of Paleobiology  
National Museum of Natural History  
Smithsonian Institution  
Washington, D. C. 20560

## ABSTRACT

*One new genus and eleven new species, representing six families of neogastropod mollusks, are described from the highly fossiliferous beds of the Navaka sands on the island of Santo. Also included is a highly decorated cone, possibly identical with a living species. The fossiliferous sediments were deposited at moderate depths in an off-reef environment.*

## INTRODUCTION

Several recent publications have cited the occurrence on the island of Santo, New Hebrides, of richly fossiliferous Pleistocene sediments (Mallick, 1971, 1973, 1974, 1975; Mallick and Greenbaum, 1975; Greenbaum, 1974, 1975). Collections of fossils made by Messrs. Mallick and Greenbaum of the New Hebrides Condominium Geological Survey were sent to the U.S. National Museum for identification starting in 1970. They proved of such interest that Thomas Waller of that institution and Warren Blow of the U.S. Geological Survey visited the island in 1974 to collect bulk samples. As work on all of these collections proceeds, it becomes apparent that the Santo sediments contain perhaps the richest and most diversified and certainly the best preserved fauna of fossil mollusks yet discovered in the islands of the Pacific, possibly in all of the Indo-Pacific region. Recently I described two new volutes from the area (Ladd, 1975). Since that time eleven other new species of mollusks have appeared, a surprisingly large number in view of the demonstrated Pleistocene age of the beds. The entire molluscan assemblage is being studied, but it will necessarily be years before a comprehensive report is published. The purpose of the present paper is to describe the additional new forms that have appeared.

## LOCATION

Localities where fossils were collected are shown on Fig. 1. SM242 on the Kere River is  $166^{\circ}$

$55.74^{\circ}$ E,  $15^{\circ}34^{\circ}$ S at an altitude of 70 meters. U.S. Geological Survey Cenozoic locality numbers 25715 and 25718 cover the same spot. SM43 on the Navaka River is  $166^{\circ}51.04^{\circ}$ E,  $15^{\circ}36.08^{\circ}$ S at an altitude of 50 meters. U.S. Geological Survey Cenozoic locality numbers 25731, 25736 and 25742 are in the same outcrop area. All are on the island of Santo, New Hebrides.

A collecting locality SG79 is mentioned in the text but does not appear on the map. It includes float from a tributary to the Sarakata River 20 km. northeast of SM242.

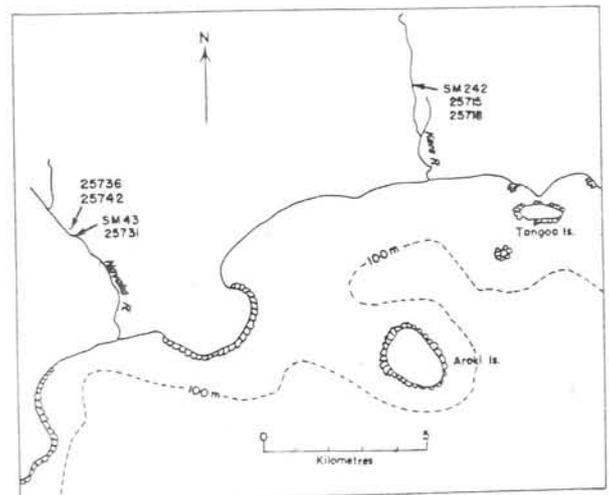


FIG. 1 Part of south Santo, New Hebrides, showing the location of fossil sites on the Navaka and Kere Rivers (after Mallick and Greenbaum, 1975). Numbers without prefix are USGS Cenozoic locality numbers.

**Kenyonia cf. chiangi** (Azuma)

Figs. 21-22

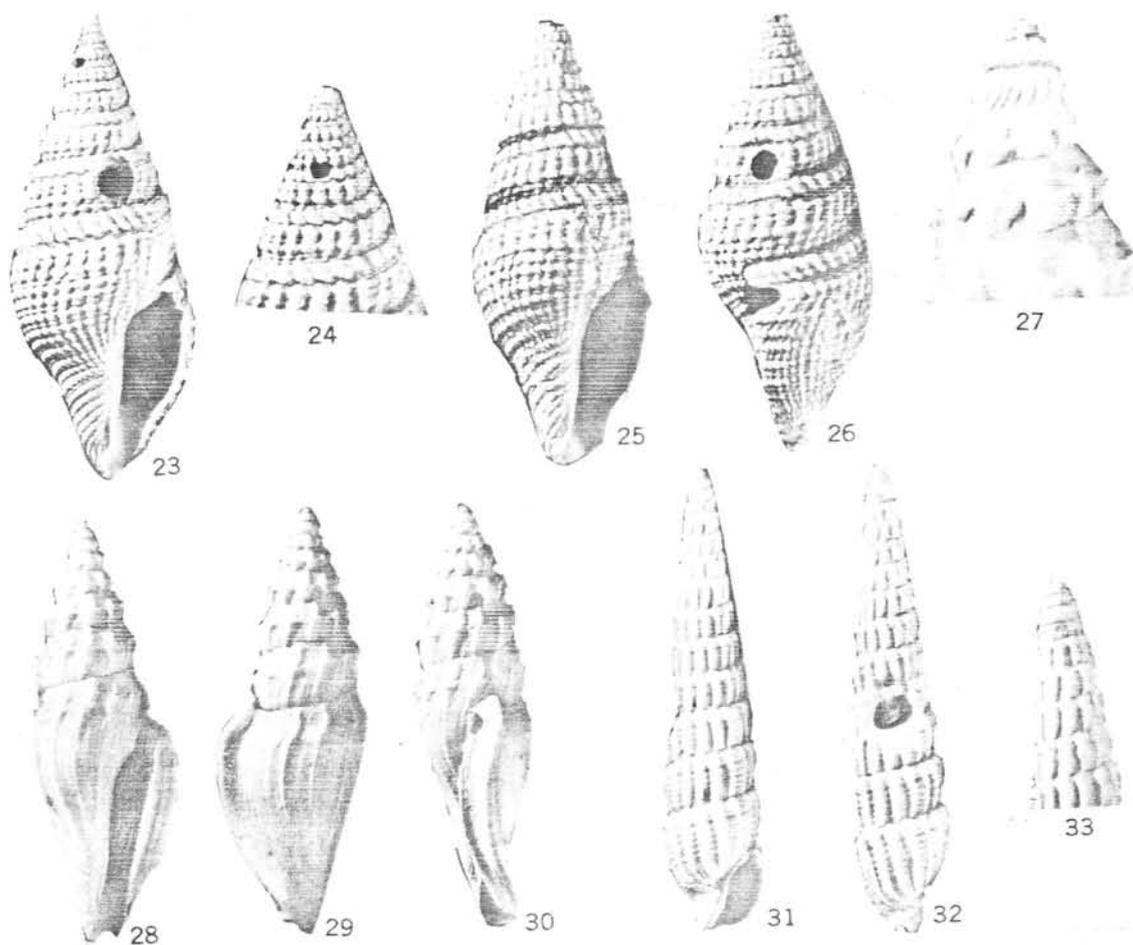
Shell, small, conical, with a low spire culminating in a protoconch of at least two slightly convex glassy whorls. Shoulder sharply angled, bearing a series of elevated triangular plates that form cup-like structures opening inward and forward; fifteen cups on body whorl; cups give shell a stellate appearance when viewed apically. Whorls of spire with close-set spiral grooves that are overridden by finer, curved, axial threads. Body whorl with shallow wavy grooves and finer irregularly spaced axial lines.

Aperture elongate; columella slightly concave near base; outer lip thin, straight. Much of the lower third of the body whorl is faintly tinged with brown color.

Measurements of the figured specimen, USNM 214291: length 10.4 mm, diameter 5.9 mm.

The fossil may be conspecific with the species described by Azuma as *Taranteconus chiangi* (1972, p. 59, figs. 5, 6) and recently figured by Okutani (1975, p. 194, pl. 10, fig. 27) but the fossil is more slender anteriorly and may have stronger spiral sculpture.

The fossil has many of the unusual features described for the type species, *K. pulcherrima*, but



FIGS. 23-26 *Epidirona greenbaumi* new species 23 Holotype, USNM 214306.  $\times 3$ . 24 Apex of holotype.  $\times .5$ . 25, 26 Paratype.  $\times 3$ . 27-30 *Euclathurella santoensis* new species 27 Apex of holotype. (slightly retouched).  $\times 14$ . 28-29 Holotype, USNM 214337.  $\times 4$ . 31-33 *Terebra* (*Microtrypetes*) *kerensis* new species 31, 32 Holotype, USNM 214340.  $\times 6$ . 33 Apex of holotype. (slightly retouched).  $\times 10$ .



the fossil is smaller by one-third, is proportionately wider, has a lower spire, fewer peripheral plates and a straight outer lip. These two New Hebrides shells differ greatly from other cones and from most turrids. The fossil here described may be ancestral to the Holocene shell described by Brazier (1896, p. 346); unfortunately, Brazier's single shell has apparently been lost.

*Occurrence:* A single specimen from USGS locality 25731 on the Navaka River. Azuma's type was collected on the South China Sea at a depth of 200 fathoms (365 meters) Okutani found living specimens fairly common on banks at depth of 150-190 meters in Japanese waters.

Family **Terebridae**

Genus **Terebra** Bruguière

Bruguière, 1789, *Ency. méthodique, Histoire naturelle des Vers*, vol. 1, p. 15 (genus without species).

Type (by monotypy): Lamarck, 1799, *Soc. Histoire Nat. Paris, Mém.* p. 79: *Buccinum subulatum* Linnaeus. Holocene, western Pacific.

Subgenus **Microtrypetes** Pilsbry and Lowe

Pilsbry and Lowe, 1932, *Proc. Acad. Nat. Sci. Phil.*, vol. 84, p. 43.

Type (by original designation): *Terebra iola* Pilsbry and Lowe. Holocene, west coast of America.

**Terebra (Microtrypetes) kerensis** *new species*

Figs. 31-33

Small, very slender; a protoconch of about three smooth whorls is followed by eleven sculptured whorls that are flat-sided but slightly shouldered. Sculpture consisting of sharp, straight axial ribs, sixteen present on penultimate whorl, and narrow spiral grooves, 4-5 on each whorl; one groove close to the suture is larger than the others, suggesting the boundary of a subsutural band. Aperture lenticular, drawn out to form the anterior canal; columella with a single low fold.

Measurements of the holotype, USNM 214340: height 10.0 mm, diameter 2.0 mm.

This little species resembles *T. spei* described by Brown and Pilsbry (1913, p. 497, fig. 1) from the Pleistocene of Panama but is more slender, has less curvature in its axials and its whorls are slightly shouldered; also, the subsutural groove on the species here described is less developed than on the shells of the Panama species. *T. kerensis* is more slender than *T. iola*, type of the subgenus and has fewer spiral grooves than that species.

*Occurrence:* Many specimens from USGS locality 25715 on the Kere River.

ACKNOWLEDGMENTS

I am deeply indebted to Dr. D. I. J. Mallick and Dr. David Greenbaum of the New Hebrides Condominium Geological Survey and Dr. Thomas Waller and Warren Blow of the Smithsonian Institution. All four of these geologists studied the fossiliferous deposits in the field and made extensive collections of mollusks. Warren Blow skillfully prepared the material collected by him and by the others mentioned; this included the specimens of *Bathynassa* photographed by Dr. Waller with the Scanning Electron Microscope. Druid Wilson of the U. S. Geological Survey, Dr. Harald A. Rehder of the Smithsonian Institution and Dr. R. Tucker Abbott of the Delaware Museum of Natural History gave helpful suggestions during the course of my study.

LITERATURE CITED

Azuma, Masao. 1972. Descriptions of four new gastropods from South China Sea, *Venus*, 31, no. 2: 55-60, 10 figs.  
Beu, A. G. 1970. Review of the species of *Concholepas* (Gastropoda, Muricidae), *Jour. Malacol. Soc. Australia* 2(1): 39-46.  
Brazier, John. 1896. A new genus and three new species of Mollusca from New South Wales, New Hebrides, and Western Australia. *Proc. Linnaen Soc. New South Wales*. 21: 345-347.  
Brown, Amos P. and Henry A. Pilsbry. 1913. Two collections of Pleistocene fossils from the Isthmus of Panama. *Proc. Acad. Nat. Sci. Philadelphia* p. 493-500.  
Cernohorsky, W. O. 1972. Indo-Pacific Nassariidae (Mollusca: Gastropoda). *Records Auckland Inst. and Mus.* 9: 125-194.  
Dall, William Healey. 1907. Descriptions of new species of

FIGS. 34-40 *Bathynassa bolangoi* *new genus and new species*. Figures 38-40 taken by Scanning Electron Microscope. 34, 35 Holotype, USNM 214343. X 6. 36, 37 Paratype A, USNM 214344. X 6. 38 Paratype B, USNM 214345. X 21. 39 Paratype B, USNM 214345. X 26. 40 Paratype C, USNM 214346. X 72.

37