VISAYA
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NOTES ON THE NERITID SPECIES: *NERIPTERON CARIOSUM* (J.E. GRAY, 1827) FROM THE ISLAND OF MAUI, HAWAII

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Notes on the Neritid species *Neripteron cariosum* (J.E. Gray, 1827) from the Island of Maui, Hawaii

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Additional notes are presented on the neritid species *Neripteron cariosum* (Gray, 1827) from the island of Maui. An in-depth study of the shell and its characters is included

INTRODUCTION

Shell morphology and characters are examined in this paper, expanding on my 2006 paper published on Visaya.net (an unpublished university research paper or Bachelor of Science thesis). There is an urgent need to revisit the original research site. Climate change and environmental pressures may make it increasingly difficult for this neritid species to survive. The most suitable times for a survey would be fall and spring, although the stream in question flows year-round. Alterations or human-made improvements place undue pressure on the species' survival

SUBJECTS, MATERIALS AND METHODS

SYSTEMATIC

Family **Neritidae** Rafinesque, 1815

SYNOPSIS

The family comprises 13-16 genera, depending on the authority, and includes the subfamily Neritinae. Members of the family, commonly known as nerites, can tolerate changes in salinity. There are about 300 valid species in the family. Some species are colorful and have distinctive patterns.

Genus ***Neripteron*** Lesson, 1831
Type species ***Neritina auriculata*** Lamarck, 1816, accepted as ***Neripteron auriculatum*** (Lamarck, 1816)

SYNOPSIS

Species within the genus are usually auriculate or wing-like, hence the genus name. The genus was established in 1831 and encompasses small brackish-water and freshwater species throughout the Indo-Pacific region that tolerate changes in salinity. Species in this genus have an operculum. Between 24 and 27 species are recognized or accepted within the genus.

Species ***Neripteron cariosum*** (J. E. Gray, 1827)
Hawaiian name: Pipi'wai
Text figure; Figs. 1-4; Plate 1

SYNOPSIS

The shell is auriculate or winged, moderately lightweight, and brown to charcoal gray. The genus is characterized by an auriculate shell. The chitinous operculum completely covers the aperture when the animal is retracted within the shell. The aperture is large, occupying approximately 50% of the shell. The columellar shelf is solid, the inner lip is thickened, and the outer edge is weak. Overall, the shell and aperture are approximately equal in proportion.

DESCRIPTION

SCULPTURE
The shell is moderately lightweight and typically shows deformities and erosion. This specimen displays the usual growth striae and is of moderate or average size for the species. The shell measures: 20.24 mm in length, 20.11 mm in width, and 9.80 mm in height.

APERTURE
The aperture is wide and flared, occupying the entire base of the shell and approximately 50% of its area. The outer lip is weak, and the inner lip is thickened. The posterior is squared. The columellar shelf is solid and tan or grayish. The shelf has a pronounced indentation and a low, raised projection, probably for the operculum peg. The inner lip is bright white or bluish-tinged. Aperture depth is 7.83 mm. The opening measures 11.71 mm in width and 5.97 mm in length.

COLOR
Dark brown to charcoal gray, with scattered, intermittent, tiny off-white triangular markings. Most specimens are covered with growth striae or growth marks.

OPERCULUM
The operculum measures 10.89 mm in length, 6.34 mm in width, and 3.00 mm in height, including the peg. It is black, with a gray or tan underside. It is chitinous but solid, with a weak anterior edge.

PROTOCONCH
Bent downward toward the left and impressed, with an indistinct number of nuclear whorls. At times, it is flush with the body whorl.

LOCALITY
20°46'12" N, 155°59'39" W; Kapi'a Stream, Hana, Maui.

RANGE
This endemic brackish-water species is known from the major Hawaiian Islands of Hawai'i, Maui, Moloka'i, O'ahu, and Kaua'i. It is not known whether the species occurs on Kaho'olawe or Ni'ihau. The author conducted extensive research on the diadromous mollusks of Hawai'i, particularly this species.

OPTICS
A 12-megapixel camera with a close-up diopter was used to photograph the specimen's protoconch.

MEASUREMENT DEVICE
A digital micrometer with a millimeter scale was used to measure length and depth. A depth gauge was used inside the aperture.

RESULTS
The morphological characters of the species were examined and recorded. The species is difficult to find and, because it is now threatened, has become even more difficult to locate.

CONCLUSION
There is an urgent need to revisit the research area, reassess the species' threatened status, and evaluate the overall environmental conditions.

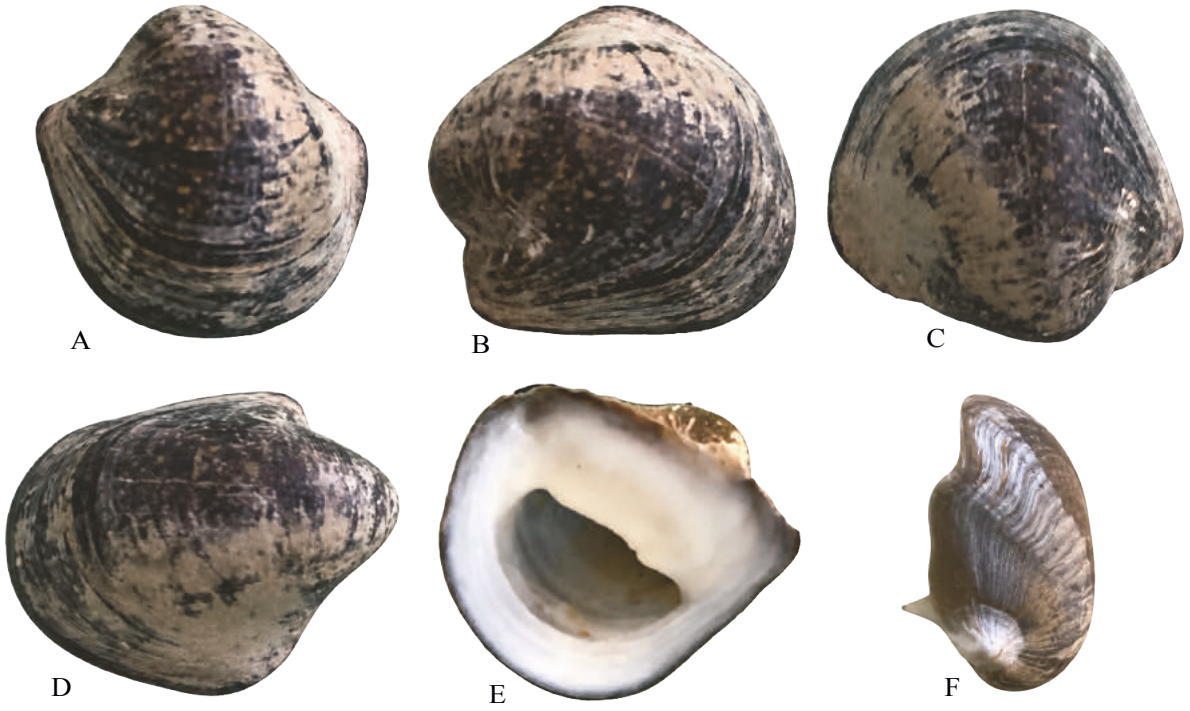
REFERENCE
Goodwin, D. R.

2006 The Discovery of *Neritina* (*Theodoxus*) *cariosa* (Wood, 1828) on the Island of Maui, Hawaii (Gastropoda: Neritidae). VISAYA.net, Volume 18, December 2, 2006, research paper no. 011. Based on a Bachelor of Science thesis.

Neripteron cariosum (J. E. Gray, 1827)

Maui, Hawaii, 1986

Daniel R. Goodwin

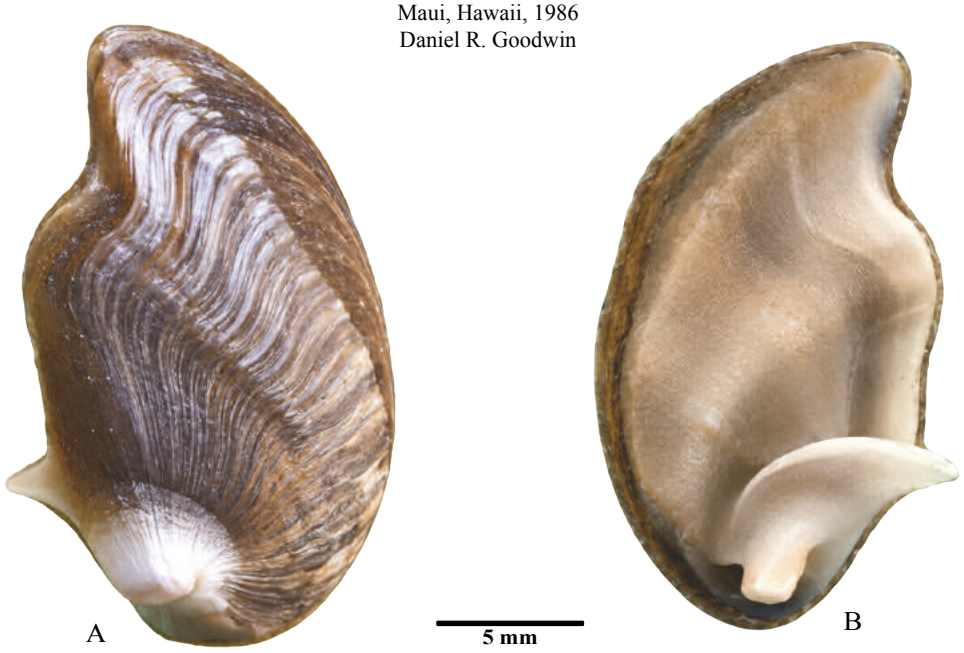


Notes on the Neritid species: *Neripteron cariosum* (J. E. Gray, 1827) from Maui, Hawaii

Neripteron cariosum (J. E. Gray, 1827)

Maui, Hawaii, 1986

Daniel R. Goodwin



Dorsal view Ventral view

Figure 1. Operculum of *Neripteron cariosum* (J. E. Gray, 1827) from Maui, Hawaii, 1986.
A. Dorsal view. **B.** Ventral view. Daniel R. Goodwin.

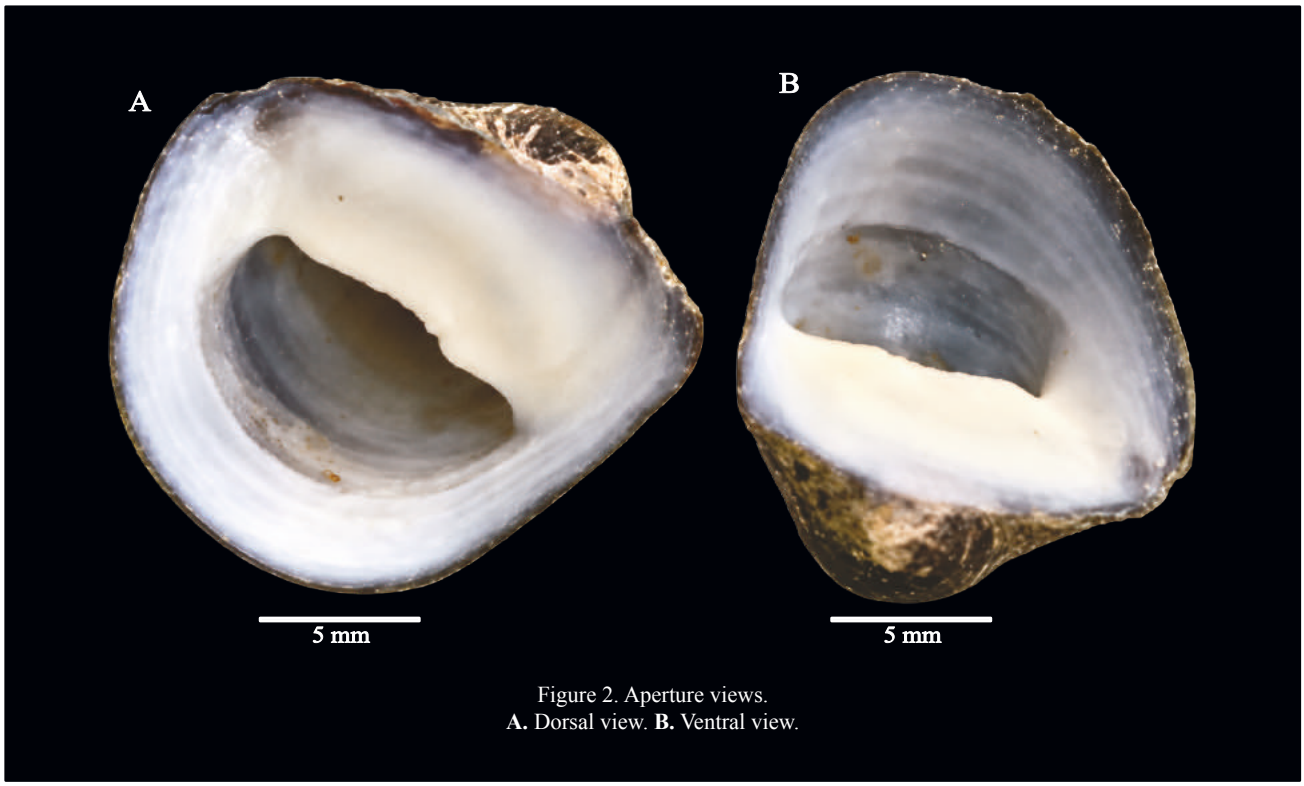


Figure 2. Aperture views.
A. Dorsal view. **B.** Ventral view.

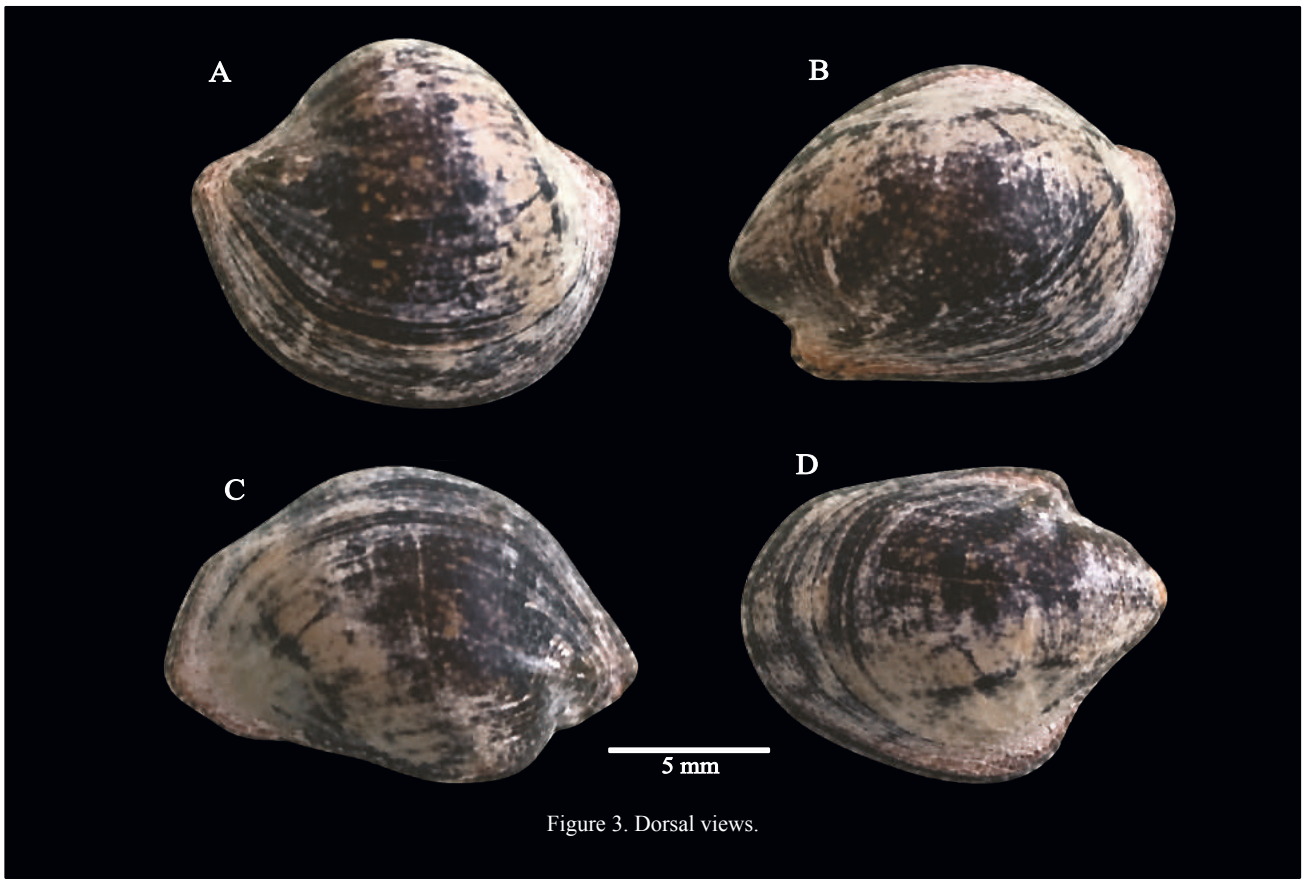


Figure 3. Dorsal views.

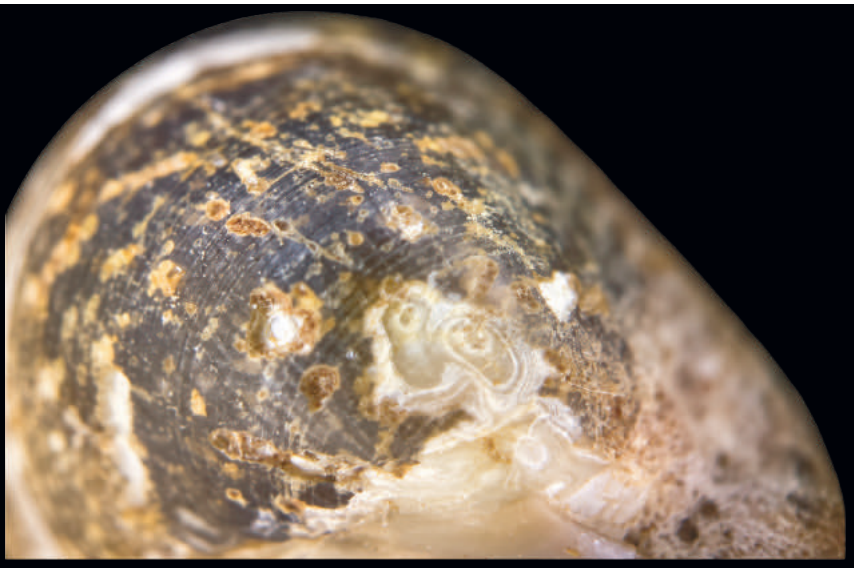


Figure 4. Protoconch view.
Neripteron cariosum (J. E. Gray, 1827)



Neripteron cariosum (J. E. Gray, 1827)

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