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A NEW HALIOTID FROM GUADALUPE ISLAND, MEXICO (MOLLUSCA:GASTROPODA)

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DAVID K. CALDWELL
Editor

A NEW HALIOTID FROM GUADALUPE ISLAND, MEXICO (MOLLUSCA:GASTROPODA)

By ROBERT R. TALMADGE[1]

ABSTRACT: A new subspecies of *Haliotis corrugata* Gray 1828, is described from Guadalupe Island, Baja California, Mexico. It differs from the nominate race in size, shape, and sculpture, and is endemic to the island.

During October, 1965, the Los Angeles County Museum of Natural History sponsored an expedition to Guadalupe Island off the Pacific Coast of Baja California, Mexico. Among the specimens obtained was a series of shells of *Haliotis corrugata* Gray, 1828. This species had been known to occur at the island, and it was also known that specimens differed in shape and size from mainland examples. However, the few previously available specimens from Guadalupe Island were so heavily encrusted that details of the shell sculpture could not be examined. Based upon the original specimens it was anticipated that a large clean series would exhibit differences warranting a subspecific ranking. The large series of shells collected by R. S. Owen, Lawrence Thomas, and Dean Tyler substantiated this hypothesis.

The necessary scientific collecting permit was arranged by Lic. Jorge Echaniz R. of the Dirrecíon General de Pesca e Industrias Conexas, de la Secretaría de Industria y Comercio. I am especially grateful to Dr. James H. McLean of the Los Angeles County Museum of Natural History for making these specimens available for study and for providing aid in the preparation of the manuscript. Photographs are by Mr. Armando Solis, Museum photographer.

Haliotis corrugata oweni, new subspecies

Figures 1 and 2

Description: shell auriform, deeply arched, nearly circular with the inset apex lower than the dorsal surface. On the holotype there are three open siphonal pores, each on an elevated projection. The sculpture is very dense, consisting of rather coarse cording having small, sharply formed nodes, which form a diagonal series of ridges across the surface of the shell. The exterior coloration is a dull pinkish-tan, similar to weathered brick. The nacreous interior is tinted with pink, green, and blue, but often with an overwash of yellow. The holotype measures: long. 146, lat. 125, alt. 55 mm.

As in specimens of the typical *Haliotis corrugata*, juvenile specimens (less than 45 mm. in length) neither exhibit the deep arching, nor the dense nodes. Most subspecies in the genus *Haliotis* have juveniles that differ but slightly (Talmadge, 1962). The diagnostic features appear when the animals are at

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Figure 1. Haliotis corrugata oweni, new subspecies, holotype (LACM). Long. 146, lat. 125, alt. 55 mm.

Figure 2. Haliotis corrugata oweni, new subspecies, paratype (LACM). Long. 105, lat. 84, alt. 42 mm.

least subadult, as the muscle scar begins to develop. In shells of this subspecies the muscle scar begins to form when the shell attains a length of 65 to 70 mm. At a length of 80 to 90 mm., the muscle scar is well formed and the shell has a mature appearance.

Type Material: Holotype, Los Angeles County Museum of Natural History No. 1147 (Fig. 1); paratype, No. 1148 (Fig. 2). Additional paratypes to be deposited and numbered by recipients in the collections of: San Diego Natural History Museum, Stanford University, California Academy of Sciences, United States National Museum, and the collections of R. S. Owen (Pescadero, California), and Robert R. Talmadge (Willow Creek, California).

Type Locality: Guadalupe Island, Baja California, Mexico, between a small offshore reef and the shore at the west anchorage, depth 20 feet, collected by Mr. R. S. Owen, October 27-29, 1965.

Discussion: This subspecies appears to be endemic to Guadalupe Island, as the diagnostic features (dwarfed, more highly arched, denser sculpture) have not been noted in populations from the mainland or other coastal islands. The soft parts were identical to those of other populations in the same species. In the haliotids, the recognized subspecies have similar or identical soft parts (Talmadge, 1964).

Haliotis corrugata oweni is dwarfed, possibly due to scarcity of food, or perhaps due to lack of living space–the shore of Guadalupe Island is steeply sloping, leaving a rather limited intertidal and shallow subtidal area. Owen's field notes indicate that the subspecies is more prevalent on the western or exposed side of the island, where stronger wave action may create a more favorable habitat.

The dimensions of Guadalupe Island populations were compared to those of mainland populations by determining ratios. The ratios of the Guadalupe Island shells based upon length = 1000 are: length, 1000; width, 850; height, 350. Mainland populations of similar size can not be compared because they are not mature and thereby are more depressed. Adult specimens from the mainland, twice the length of the Guadalupe Island specimens, yielded a ratio of: length, 1000; width, 800; height, 300. The greater height of the Guadalupe Island population is apparent.

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