

*Octolasmis californiana*, spec. nov., A Pedunculate Barnacle  
from the Gills of the California Spiny Lobster

by

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(Plate 2)

Specimens of *Panulirus interruptus* (Randall, 1839) purchased from a local fish market were found to contain the small pedunculate barnacle *Octolasmis* attached to their gills. This discovery is of particular zoogeographic interest; for this genus, although widely distributed throughout the warm seas of the world, has not heretofore been reported from the west coast of North America.

Genus *Octolasmis* Gray, 1825Subgenus *Octolasmis* Pilsbry, 1907

*Octolasmis* (*Octolasmis*) *californiana*,  
spec. nov.

Deposition of types: Holotype U. S. N. M. Cat. No. 104425; Paratypes U. S. N. M. Cat. No. 104426. Additional material sent to Dr. Huzio Utinomi, Seto Marine Biological Laboratory, Wakayama-Ken, Japan.

Locality: Coastal waters of southern California and Mexico, attached to the gills and branchial chamber of *Panulirus interruptus* (Randall, 1839). Nineteen specimens were removed from the gills of two lobsters that are reported by the fish dealer to have been taken north of San Diego, California, in the vicinity of San Clemente Island (type locality; approximately 32°50' West Long.; 118°20' North Lat.). One hundred and eleven specimens were removed from the gills and branchial chambers of two additional lobsters reported to have been taken from the Gulf of California in the vicinity of Mazatlan.

Description: Capitulum ovoid in profile, laterally compressed; integument translucent, white. Valves five in number, white in color. Carina with basal portion produced into a two-pronged fork. Scutum variable, of two arms at 60° to 80° to one another; basal arm above and usually overlapping basal arm of carina. Tergum extremely variable, "U" shaped or "V" shaped; occludent arm usually less well developed or vestigial. Individuals with "V" shaped

terga occasionally have tergal arms slightly overlapping the occludent arm of scutum (Plate 2E). Mandible (Plate 2G) with five teeth; third, fourth and fifth tooth bifid, fifth tooth rudimentary; inferior angle of two strong triangular spines or points. Inner maxilla (Plate 2F) notched, spines above notch in tridentate cluster, inferior margin below the notch supporting seven spines. Outer maxilla rectangular, broadly rounded, supporting long setae along the superior and inner margins. Crest area of labrum with few scattered short bristles and a row of 10 to 13 small, sharp, triangular teeth. Palps oblong, with long setae along the superior margin and tip. Cirri densely setose; setae occurring in seven or eight pairs on the intermediate segments of the lesser curvature of the sixth cirrus, the greater curvature supporting clusters of five or six long setae at each articulation. Caudal appendage as long as the peduncle of the sixth cirrus and supporting a cluster of about seven long setae at its tip. A single mature specimen had the following articles on the rami of the cirri:

Cirrus:	I	II	III	IV	V	VI
Inner Ramus:	6	13	12	12	12	12
Outer Ramus:	6	13	12	11	11	12

Penis (Plate 2H, I) tapering gradually throughout its length, surface smooth, marked by fine closely spaced transverse folds in the cuticle, clothed heavily with long soft setae arranged single file in six longitudinal rows from slightly below the apex for approximately half its length. Apex (Plate 2I) truncate, supporting a terminal tuft of short bristles.

Size: (Holotype)

Capitulum: height, 3.39 mm.; width, 1.57 mm.; depth, 2.4 mm.

Peduncle: length, 4.2 mm.; greatest diameter, 1.15 mm.

Discussion: The species described here is very similar to Octolasmis lowei (Darwin, 1851). The species O. lowei includes a number of synonyms, several of which are based on incomplete descriptions and all of which occur on the gills and in the branchial chambers of decapod crustacea. The O. lowei "group or complex" has been investigated by a number of workers, including Annandale (1909), Nilsson-Cantell (1927), Hiro (1937), and more recently by Brian and Darteville (1954) and Newman (1960b). Aside from the work of Hiro (1937) which succeeded in separating O. aymonini from the complex, no real progress has been made, and many of the proposed synonyms are of doubtful status. The problem, at least in part, is that many of the species descriptions have been primarily concerned with the configurations of the capitular plates. Unfortunately, these structures, although fairly constant in form in free-living species, are subject to much degenerative variability and cannot be relied upon. The appendages, on the other hand, show a marked constancy of form. This fact is the basis for the synonyms and accounts for the alleged cosmopolitan distribution of O. lowei.

The species described here is no exception in regard to the variability in form of the valves. The terga are the most variable, yet are, except for the elongate "V" shape (Plate 2E), similar to the forms seen in Octolasmis lowei. The chaetotaxis and trophi are also well within the limits ascribed for O. lowei. The labrum has considerably more teeth than O. lowei, although the range of variation in O. lowei is not known. The structure that is most different in the two species is concerned with reproduction and is therefore believed to have considerable systematic value. I have examined specimens of O. lowei from Kapingamarangi Atoll in the western Pacific (Newman, 1960b) and from Kaneohe Bay, Oahu, Hawaii, in the central Pacific (Newman, 1960a; see p. 93, code no. 3). The penis of individuals from these two relatively isolated localities conforms to that described for O. lowei: it tapers gradually throughout its length, is finely folded transversely, is clothed sparsely with short setae, and has a tuft of fine soft bristles just below the terminal languet or apex. Under oil immersion it can be seen that the short setae that clothe the penis have

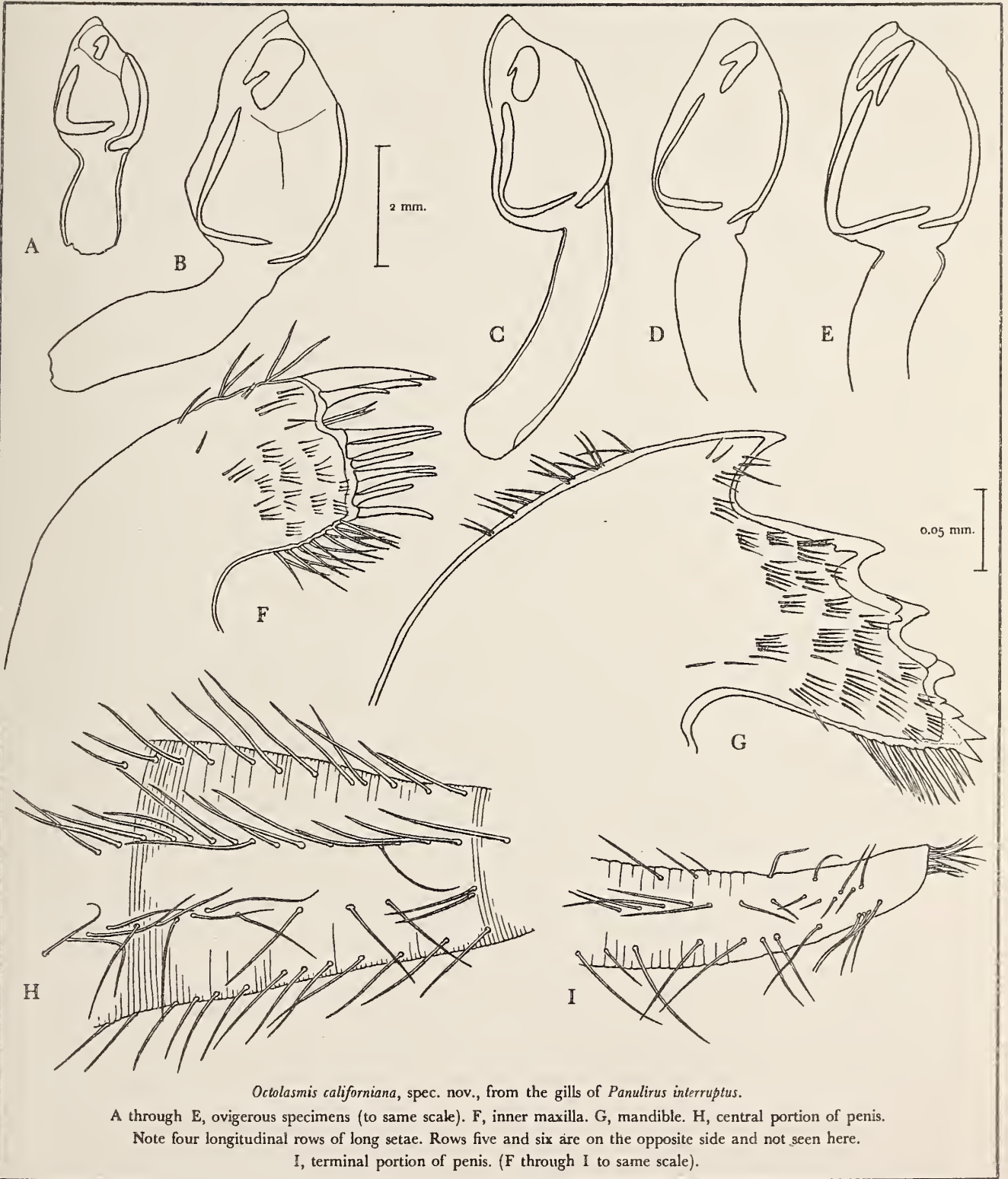
a tendency to be arranged in longitudinal rows in the distal quarter of its length. This arrangement tends to be haphazard and proximal to this region it disappears entirely. In O. californiana, on the other hand, the apex of the penis is truncate, the sensory tuft of bristles is terminal, and the setae clothing the penis are remarkably long and are arranged single file in six distinct longitudinal rows for at least half its length. This character is readily ascertainable and is so striking that it cannot be easily overlooked. The character is exactly the same in barnacles from both southern California and the Gulf of California, and is clearly different from the condition seen in specimens of O. lowei from Hawaii in the subtropical central Pacific, from Kapingamarangi Atoll in the equatorial western Pacific, and from the descriptions of O. lowei in the literature.

It is clear that the species described here is closely related to Octolasmis lowei and is on the "systematic fringe" of the O. lowei complex. When it becomes possible for an investigator to carefully work over representatives of O. lowei from different parts of the world, it may be found that the characters described here occur elsewhere. It would then seem appropriate to award the California form subspecific status.

Since this paper went to press, Dr. Huzio Utinomi of Seto Marine Biological Laboratory informed me that he has examined specimens of Octolasmis californiana and has compared them with two species of Octolasmis from Japan O. lowei f. neptuni Hiro, 1937 and O. aymonini (Lesson & Tapparone-Canefri, 1874). Dr. Utinomi has been kind enough to write me that Octolasmis californiana is clearly distinct from the Japanese forms in a number of ways, especially in regard to the structure of the penis, and that he concurs with the evidence that establishes O. californiana as a distinct species. I am very grateful to Dr. Utinomi for his consideration of this matter.

I would like to thank Dr. Rudolf Stohler of this Department and Dr. J. W. Durham of the Department of Paleontology for their consultation in regard to the systematic status of this barnacle. I am especially grateful to Dr. R. I. Smith for his advice and helpful criticisms and for reading the manuscript of this paper.





*Octolasmis californiana*, spec. nov., from the gills of *Panulirus interruptus*.

A through E, ovigerous specimens (to same scale). F, inner maxilla. G, mandible. H, central portion of penis.

Note four longitudinal rows of long setae. Rows five and six are on the opposite side and not seen here.

I, terminal portion of penis. (F through I to same scale).