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A REDESCRIPTION OF THE AMPHIURID BRITTLESTAR
OPHIOCNIDA CUBANA A. H. CLARK, 1917¹

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Ophiocnida cubana A. H. Clark, 1917 was described from a specimen, with a disc 4.3 mm in diameter, collected at Ensenada de Santa Rosa, Cuba. Austin Clark's unillustrated description unfortunately lacks any mention of color or color pattern; however, Hubert Lyman Clark (1933: 55, Plate 7) published two photographs of the type showing the color pattern of the arms. The latter author suggested that the specimen was a young one, basing his opinion, no doubt, on the presence of primitive plates and the fan-shaped dorsal arm plates. Since its description 47 years ago no further material of *Ophiocnida cubana* has been reported.

In 1958 I found a specimen of an apparently undescribed *Ophiophragmus* tangled in *Thalassia* roots in about one foot of water at Coral Harbor, St. John, Virgin Islands. I examined a second specimen, also from the Virgin Islands, at the U. S. National Museum in 1960, and at the same time made an unsuccessful attempt to locate the type of *Ophiocnida cubana* (C. E. Cutress, of the National Museum, informs me that the type has since been found). In the summer of 1961 I examined two specimens of *Ophiocnida cubana* at the Museum of Comparative Zoology at Harvard. These had been identified by Ailsa M. Clark of the British Museum (N. H.) after H. L. Clark labeled them "*Amphiodia* Sp. Nov. A." Examination of these specimens and the photographs of the type revealed that

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Ophiocnida cubana is the juvenile of the large *Ophiophragmus* from the Virgin Islands.

The following descriptions are intended to clarify the systematic position of this inadequately described species. In addition, new distribution records from Florida and the Virgin Islands are given.

I am indebted to Charles E. Cutress, Associate Curator, Division of Marine Invertebrates, U. S. National Museum, and to Elisabeth Deichmann, Curator of Marine Invertebrates, Museum of Comparative Zoology at Harvard, who offered assistance on a number of occasions.

The material at Harvard was studied during the tenure of a visiting curatorship under National Science Foundation Grant G-5183. The material at the National Museum was examined during a trip supported by the National Geographic Society, and the material from St. John, V. I., was collected during a trip supported by the National Science Foundation (Grant No. G-5941) and Dingell-Johnson project funds (Project No. F-2-R-2).

Ophiophragmus cubanus (Clark, 1917) new combination
(Figs. 1-3)

Ophiocnida cubana A. H. Clark, 1917: 69.—H. L. Clark, 1933: 55, Pl. 7, Figs. a, b.

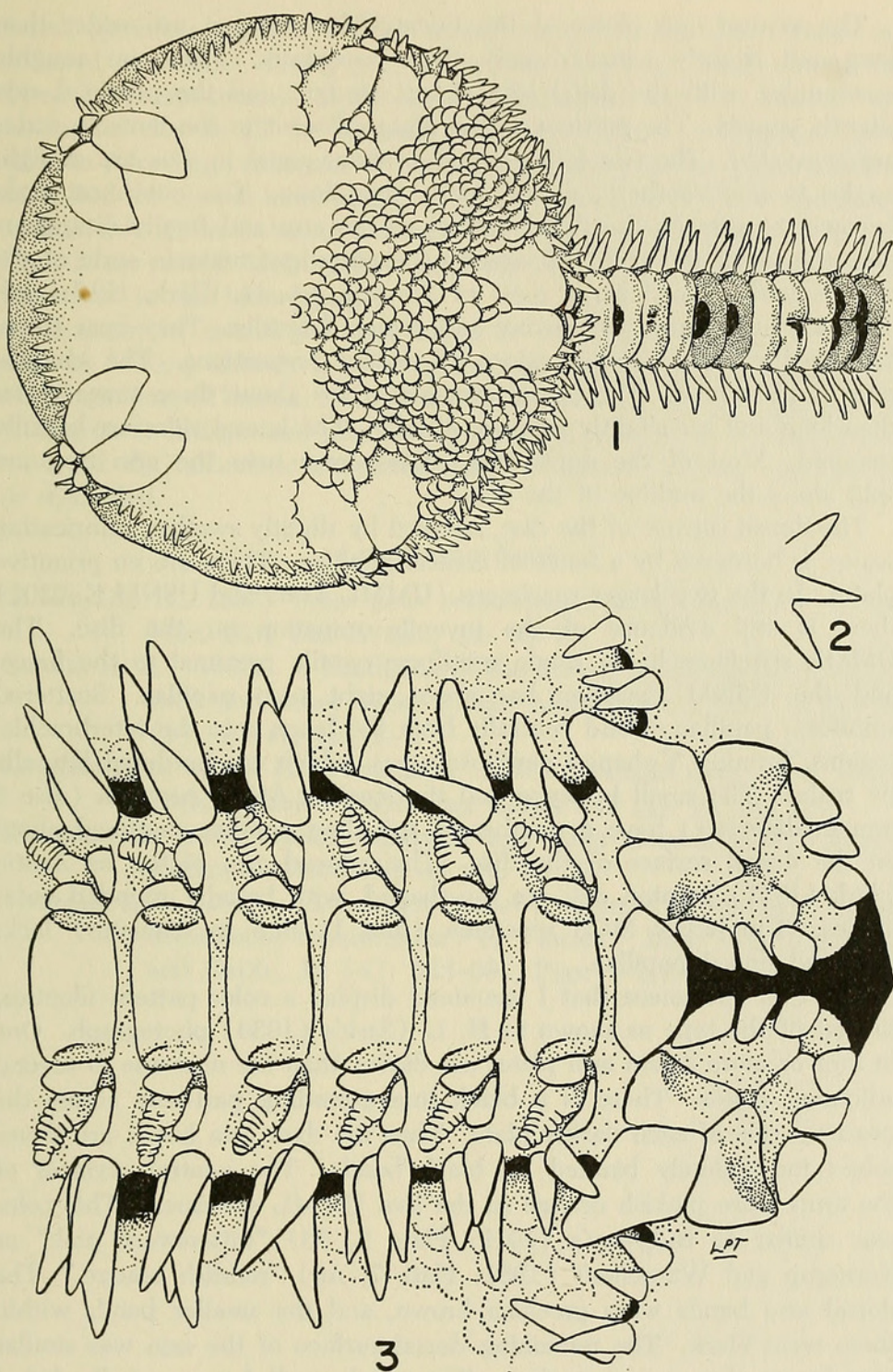
Material examined: 1 spec., disc 11.2 mm in diameter; Coral Harbor, St. John, Virgin Islands; 1 m; 20 December 1958; S. B. and L. P. Thomas; UMML 41.69.

1 spec., disc 14.1 mm in diameter; Gorda Sound, Virgin Gorda, Virgin Islands; 14 April 1956; W. L. Schmitt; USNM E. 9302.

2 spec., discs 6 and 11 mm in diameter; White Shoal, the Dry Tortugas, Florida; 16-18 m; 24 July 1931; W. L. Schmitt; MCZ 4735.

Description: A specimen with a disc 14.1 mm in diameter has arms approximately 145 mm long.

Each jaw bears three pairs of oral papillae. The papillae of the infradental pair are blocklike and widely separated; those of the middle pair are the smallest and are often truncate on their outer sides, and those of the distal pair are the largest and are almost twice as wide as the middle ones. The oral shields are long and narrow. They are pointed proximally, widening distally for about two-fifths of their length, then gradually narrowing to their rather broadly rounded distal ends. The adoral shields meet proximally and are roughly triangular or tear-drop shaped, with a pronouncedly concave proximal face. The half jaws are



FIGS. 1-3. *Ophiophragmus cubanus*, new combination. Fig. 1—Dorsal surface of disc and one arm. Fig. 2—Arm spines. Fig. 3—Ventral surface of arm base showing two jaws.

as wide, between the second papillae, as they are long. Both the oral and adoral plates are swollen rather than tabulate.

The ventral arm plates at the twenty-fifth segment are wider than long and slightly wider distally than proximally. They are roughly rectangular, with the distal side almost straight and the proximal side slightly convex. The portions of the plate adjacent to the tentacle scales are excavated. The two tentacle scales, about equal in size, are at right angles to one another and are wider than long. The outermost scale becomes smaller on the distal quarter of the arm and finally disappears near the tip of the arm. Apparently the outermost tentacle scale of the type is undeveloped along most of the arm (A. H. Clark, 1917: 70). The side arm plates are narrow and project laterally. They bear three, slightly flattened, pointed spines of similar proportions. The tentacle pore is prominent. The dorsal arm plates are about three times wider than long and are slightly concave distally. The lateral sides are broadly rounded. Most of the dorsal arm plates, even near the arm tips, are split along the midline of the arm.

The dorsal surface of the disc, covered by slightly swollen, imbricating scales, is bordered by a fence of conical papillae. There are no primitive plates. In the two larger specimens (UMML 41.69 and USNM E. 9302) there is still evidence of the juvenile spination on the disc. The UMML specimen has a single spiniform papilla proximal to the fence, and the USNM specimen has about eight such papillae. Scattered spiniform papillae extend ventrally from the fence onto the interbrachial regions, forming V-shaped papillose areas, which are bordered laterally by scales. The small holotype and the smallest MCZ specimen (disc 6 mm in diameter) have a number of spinulose papillae scattered about on the dorsal surface of the disc. Their dorsal arm plates, as Austin Clark (1917) pointed out, are fan-shaped, with broadly rounded outer angles. The larger MCZ specimen (disc 11 mm in diameter) lacks scattered dorsal papillae.

The four specimens that I examined display a color pattern identical to that of the type as shown in H. L. Clark's (1933) photograph. One to four or more dorsal arm plates are darker than the next one to several adjoining plates. There is a black line extending part-way across the proximal side of each darker plate. Thus the dark arm bands are themselves incompletely banded by black bands. The ventral surfaces of the arms were pinkish orange in the live UMML specimen. This color was similar to Ridgway's (1912: Plate 2, 9d) "bittersweet pink" or Kornerup and Wanscher's (1961: Plate 7, A6) "reddish orange." The dorsal arm bands were greenish brown, and the smaller bands within these were black. The remaining dorsal surface of the arm was similar in color to the ventral surface. These colors all have partially faded in alcohol.

Type: Ensenada de Santa Rosa, western Cuba, 1-3 fathoms; USNM 34,763.

Distribution: The Dry Tortugas, Florida; Cuba; and the Virgin Islands.

Discussion: The holotype and the smaller MCZ specimen have scat-

tered, spinulose papillae on the dorsal surface of the disc. These are reduced in number during growth and are either rare or absent in the three larger specimens. However, a well-defined fence of papillae encircles the disc in all the material examined. Hence it becomes impossible to refer large examples of *Ophiocnida cubana* to the genus *Ophiocnida*, and the species must be placed instead in the genus *Ophiophragmus*.

Ophiophragmus cubanus is similar to *O. filigraneus* (Lyman) in that both have ventral interbranchial papillae. These are smaller and more numerous in the latter species.

Variation in spination is not unknown in *Ophiophragmus*. A fence may be lacking entirely in *Ophiophragmus pulcher* (H. L. Clark) and *O. filigraneus* (Thomas, 1962: 640, 672). As more information dealing with growth changes and phenotypic variation is obtained it is likely that many of the taxonomic characters used at present will be reevaluated or discarded.

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