

PROISOCRINUS, A NEW GENUS OF RECENT CRINOIDS.

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The work of the U. S. Bureau of Fisheries steamer *Albatross* among the Philippine Islands has just brought to light one of the most interesting species of recent stalked crinoids yet discovered. It is not certain whether the new genus which it represents should be referred to the Apioocrinidae or to the Pentaerinitidae; the general structure of the calyx and arm bases is that of *Bathycrinus*; of the arms and pinnules that of the Pentaerinitidae; of the proximal part of the stem that of the Pentaerinitidae, but of most of the stem that of *Calamocrinus*. Its resemblance to certain species of *Millerocrinus*, in particular to *M. nodotianus*, is undoubtedly more than superficial, and it is quite possible that it should be considered as congeneric with them. In general terms it may be said to hold exactly the same relation to the Pentaerinitidae as *Thiollicrinus* does to the Comatulida.

The height of this new form without the root is somewhat over 40 inches, so that it is much the tallest recent fixed crinoid yet discovered. Its color is a vivid scarlet, midway between the purple or green of the Pentaerinitidae and the yellow of the Apioocrinidae and Bourguetierinidae in significance.

The new genus may be known as

PROISOCRINUS, new genus.

The characters of this genus are included with those of the single species which it contains.

*Genotype*.—*Proisocrinus ruberrimus*, new species.

PROISOCRINUS RUBERRIMUS, new species.

The stem is 843 mm. in length,<sup>a</sup> and contains 112 columnars; it is broken at the base, but was undoubtedly firmly fixed by a large root, probably like that of *Phryocrinus* or *Calamocrinus*.

The upper part of the stem (fig. 1) is 6 mm. in diameter; it is composed of pentalobate columnars, generally alternating in size, but

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<sup>a</sup>The total length of the entire animal is 1 meter, 18 millimeters.

showing intercalated columnars in all stages of growth, and at intervals

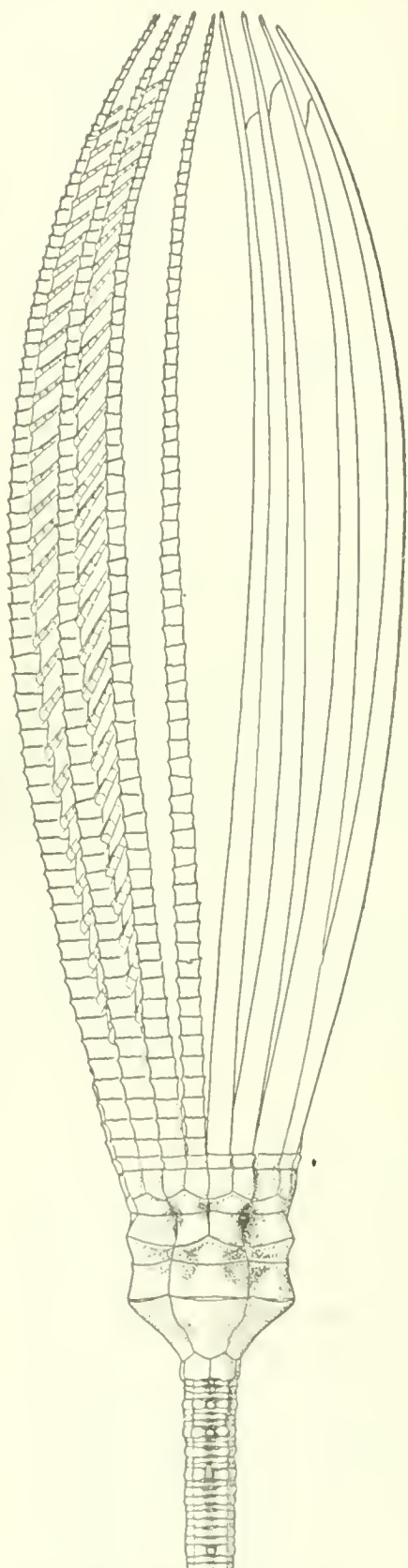


FIG. 1.—PROISOCRINUS RUBERRIMUS;  
CROWN AND UPPER PART OF COLUMN;  
FROM THE TYPE.

a large nodal bearing five cirri. The interval between these nodals rapidly increases as a result of extensive intercalation of new columnars; correlatively the nodals progressively lose their individuality (fig. 2), the cirri, which are never more than rudimentary, drop off, and the nodals become indistinguishable from the other segments. The ten internodes possess the following numbers of columnars, the first being that just beneath the basals: 1 (intercalated), 1 (intercalated), 3 (2 intercalated), 4 (3 intercalated), 5, 8, 14, 25 (there are no cirri at this nodal and the cirrus sockets are partially obliterated), 38 (all of the same size; the difference between this nodal and the internodals above it is not great; the cirrus sockets are indistinct); 38 (all of the same size; the nodal is scarcely distinguishable from the columnars on either side of it, and the cirrus sockets can only just be made out); this last nodal is 151 mm. from the crown (fig. 2); below this point the stem is cylindrical, 5 mm. in diameter (having decreased in diameter very gradually as the segments lost their pentalobate outline), each segment being 1.5 mm. high, and all of equal size; the ends show a depressed central area surrounded by a rim about 1.5 mm. broad with 15 coarse radial crenellæ (fig. 3); distally the stem very slowly increases in diameter, the broken end being 11 mm. across; the last few columnars are 3.5 to 4 mm. in height. As the distalmost part of the stem enlarges with slightly greater rapidity than the remainder, the stem was undoubtedly broken off close to the root. The cirri are all

broken; but they appear never to have exceeded 5 mm. in length.

Basals 5, equal in size, broadly pentagonal, 3.6 mm. broad and 3.7 mm. high, the anterior apex forming an angle of about  $120^\circ$  (fig. 1); the basal circle has a diameter of about 6.4 mm.; its outer sides are parallel with the dorso-ventral axis of the animal.

Radials large, trapezoidal, the dorsal surface 7.5 mm. long and 9 mm. in maximum (distal) width; the outer sides of the radial circle make an angle of about  $45^\circ$  with the dorso-ventral axis of the animal.

The primibrachs are very closely united, apparently by syzygy; the first primibrach occupies proximally the entire distal border of the radials; it is approximately oblong, with moderately concave distal and convex proximal edges, and straight lateral edges which are entirely free, but are in close apposition with those of the neighboring first primibrachs, and are sharply flattened. The median length is 3.7 mm., the lateral length 3.5 mm.; the second primibrach (axillary) is considerably smaller than the first, but of equal width; it is 3.3 mm. in median and 2 mm. in lateral length; the anterior angle is rather obtuse; the outer edges of the primibrachs are parallel with the dorso-ventral axis of the animal.

The secundibrachs are two in number, united by syzygy like the primibrachs; the first is much larger than the second, and is in close apposition with its fellow interiorly, though not united to it.

The twenty arms are 155 mm. long, moderately slender; the first brachial is large, approximately square in external view; the second brachial is united to the first by syzygy; it is oblong, about twice as broad as long, and about one-half the size of the first; the following brachials are approximately square, with concave sides and slightly projecting and spinous distal ends, becoming longer than broad distally; the terminal ten or twelve brachials bear no pinnules. There are no brachial syzygies.

The pinnules are not very different from those of the pentaerinites, but the lower segments have produced and strongly denticulate edges, this dying away

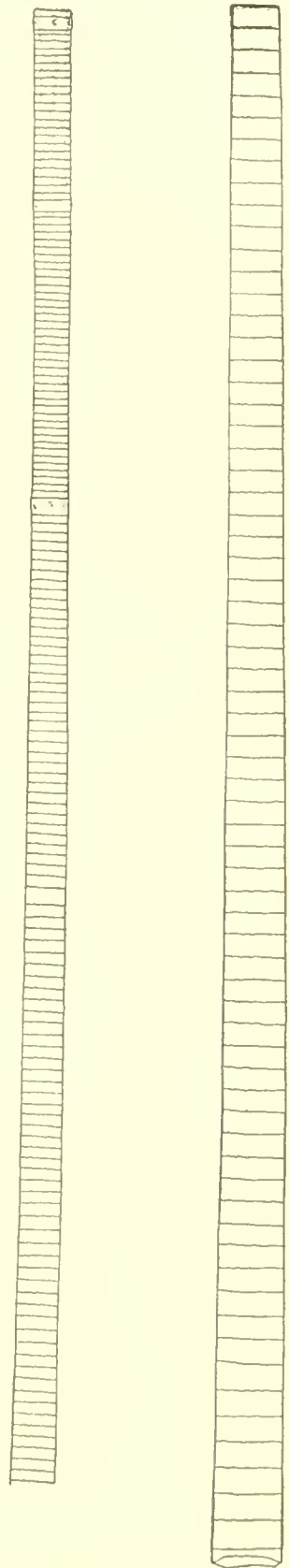


FIG. 2.—PROISOCRINUS RUBERRIMUS; PROXIMAL AND DISTAL PORTION OF COLUMN.

gradually in the outer half of the pinnules; there are large covering plates, but no definite side plates. The pinnules are 17 or 18 mm. long in the middle and outer part of the arm, somewhat shorter proximally: the first pinnule is on the second brachial.

*Color* (in life).—"Brilliant uniform scarlet" (F. M. Chamberlain).

*Type-specimen.* Cat. No. 24308, U.S.N.M., from *Albatross* station 5439.

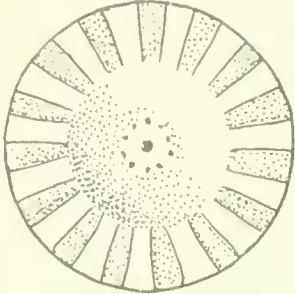


FIG. 3.—ARTICULAR FACE OF A COLUMNAR FROM ABOVE THE MIDDLE OF THE STEM.

The genus *Proisocrinus* is most nearly related to *Carpentrocrinus*, a genus which I created not long ago for the reception of the curious species called by Carpenter *Pentacrinus mollis*. This species is very imperfectly known, the type and only known specimen being a mutilated calyx with a few columnars attached which is now in the British Museum. The characters which it

presents appear to warrant generic differentiation from *Proisocrinus ruberrimus*, though undoubtedly the two are closely allied. It is interesting to note that both in *Carpentrocrinus* and *Proisocrinus* one of the rays is smaller than the other four.