

arm. Before figure 1 of this plate had been made much of this blackened bed had been removed from the interradii 1 and 2 in order to photograph the arms from the side.

The specimen is so perfectly preserved and so free from distortion that we are not warranted in supposing that any large portion of the oral surface could be lost. The thick blackened layer is so loosely constructed and filled with minute flakes or grains of calcite (although these or many of them may be due to subsequent infiltration and crystallization) that we are obliged to interpret it as the remains of a thick leathery integument reminding us of the muscular integument of the Holthuroidea or more properly of the aboral integument of most of the Streptophiuræ and of the Cladophiuræ.

Further development may yet reveal traces of the radials and perhaps genitals but this should be undertaken only by some person whose knowledge of both the Asteroidea and Ophiuroidea is extensive, whose authority would be unquestioned and whose skill would be adequate for the task. Very valuable evidence might easily be destroyed and lost forever. It is possible that the plate here called "torus," belongs to an aboral circlet. Interradius 1 with its pieces composing the secondary jaw displaced and showing that they were not fixed to either the "torus?" or the first pair of adambulacra but were bound to each other, should be left as it is. Interradius 2, with the secondary jaw in normal position, and interradius 3, with its first epineurals but slightly displaced, should also be left as they are. Interradius 5 should have the secondary jaw carefully removed to see if the "torus?" really rested against the oral ends of the adambulacra and to fully reveal the oral aspect of the latter. Search should also be made for the madreporite of this species.

TAXONOMY.

There is enough now clearly shown by this specimen to make it very manifest that we are dealing with an unrecognized and very archaic morphological type which links the Edrioasteroidea with the Stellerioidea. Were it not for evidence I have yet to present as to habit, I should unquestioningly place this specimen with the Edrioasteroidea for it is almost as simple in its elements as *Cystaster*, Hall. On account of its stelleroid habit and the fact that we have described Stellerioidea which are closely related to it I feel that it should be retained in the latter class. In either case the type should be recognized.

EOSTELLEROIDAE, ORD. NOV.

This order is proposed for those Stellerioidea in which true ambulacra (in the sense in which the term is used in this class)