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CURRENT STATUS OF AGASSIZOCRINUS HEMISPHERICUS WORTHEN FROM RANDOLPH COUNTY, ILLINOIS

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ABSTRACT

A hypotype specimen is recorded from the Menard Formation, Elviran Stage, Chesterian of Randolph County, Illinois and the species referred to Mantikosocrinus hemisphericus (Worthen) in the family Cromyocrinidae. Possible affinities are discussed.

The species Agassizocrinus hemisphericus Worthen (1882) was described from a single specimen collected from "Chester limestone in Randolph County, Illinois." The specimen is currently housed in the Repository of the Illinois State Geological Survey, Urbana, Illinois, catalogue no. ISGS (ISM) 2451 and designated as the holotype. The only additional specimen of the species, known to this writer, has been recovered from an exposure flanking the access road to the Menard Prison Medical Facility on the west edge of Chester, Randolph County, Illinois. It is from the Menard Formation (Elviran) catalogued SUI 44065, Geology Department Repository, The University of Iowa, Iowa City. Indications are the original specimen might have come from the same horizon, probably from the old quarry at the nearby Menard State Prison. The species is very distinctive; it does not belong to the genus Agassizocrinus.

Wachsmuth & Springer (1886, p. 264) stated "...his [Worthen's] A. hemisphericus, in which the underbasals [infrabasals] do not extend beyond the column, is either Eupachycrinus or Scytalocrinus, probably the latter." The infrabasals of Worthen's specimen are damaged so that no columnar cicatrix is preserved. In the hypotype specimen the infrabasals (IBB) do extend beyond the small column scar, not that it makes any difference in generic assignment. Eupachycrinus has a pronounced basal concavity (downflared infrabasals) and typically Scytalocrinus has a shallow basal concavity so that neither genera are considered here to be closely related. Moore & Plummer (1940) listed the species as Dicromyocrinus hemisphericus (Worthen). Bassler & Moodey (1943, p. 291) synonymized it with Agassizocrinus papillatus Worthen (1882); however, A. papillatus is elsewhere accepted as a discrete species. Wright & Strimple (1945) assigned it as Mooreocrinus hemisphericus (Worthen) which assignment was followed by Webster (1973).

Infrabasals of the holotype of hemisphericus are damaged as noted above but the present hypotype has five discrete infrabasals which

form a planate or slightly convex base. There is no evidence of fusion or of stereom build-up such as found in the base of Agassizocrinus. Therefore, A. hemisphericus is assigned to Mantikosocrinus as Mantikosocrinus hemisphericus (Worthen), new combination, for the following reasons. Mantikosocrinus Strimple (1951) has previously been represented by a single species, M. castus Strimple (1951), type species of the genus, from the upper few feet of the Fayetteville Formation which is correlative with the lower part of the Menard Formation, according to Furnish & Saunders (1971, text-fig. 1).

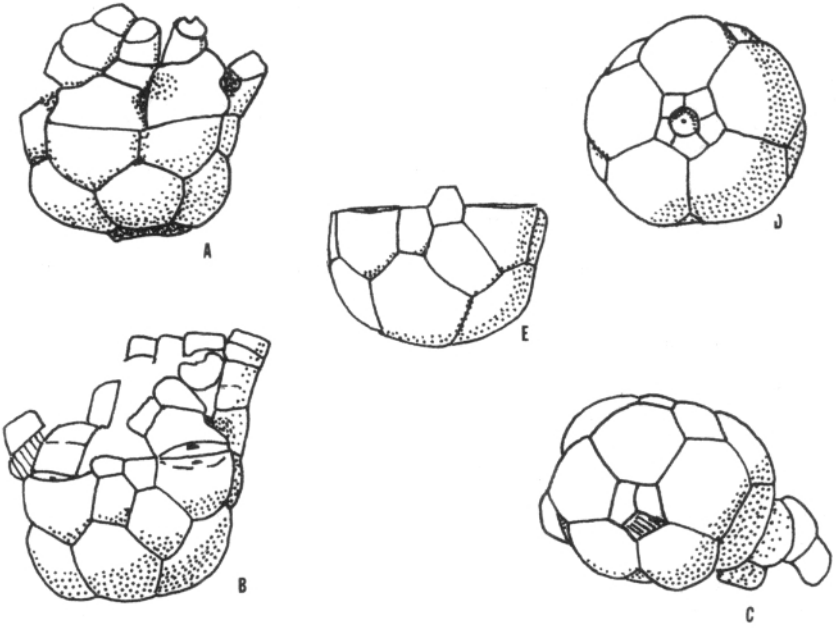

Fig. 1. Camera lucida drawings of Mantikosocrinus hemisphericus (Worthen): a, b, c, Holotype, ISGS (ISM) 2451, viewed from anterior, posterior and base; d, e, Hypotype SUI 44065, viewed from base and posterior, X6.

The cup of Mantikosocrinus castus is more globose than that of M. hemisphericus. The latter has a broad base with erect lateral sides. Individual cup plates, other than infrabasals, are more tumid in M. hemisphericus, which also has a very small columnar attachment cicatrix.

In the absence of arms positive identification at the generic level remains somewhat questionable. The cup shape and plate tumidity of M. hemisphericus is somewhat like that of Exochocrinus tumulosus (Miller),

(see Burdick & Strimple, 1969, pl. 1, fig. 7). Exochocrinus and Staphylocrinus are older (Gasperian age) but both genera exhibit fusion of the infrabasals. Staphylocrinus has thickened infrabasal plates but not much more so than other cup plates (see Burdick & Strimple, 1969, text-fig. 2, for cross section of cup). Close relationship between Mantikosocrinus and the Staphylocrinus-Exochocrinus lineage does not seem likely but it cannot be ruled out.

Mantikosocrinus is thought to be chronologically the oldest genus of the Cromyocrinidae Bather (1890), (see Moore, Lane & Strimple, 1973). It is therefore not surprising that M. hemisphericus has been assigned at various times to younger (Pennsylvanian) genera of cromyocrinids (i.e. Dicromyocrinus, Mooreocrinus).

The small size of Mantikosocrinus hemisphericus leads to speculation about the stage of growth, that is, whether it is full grown or not. There are now two specimens, found at different times and perhaps from different exposures, of the species and there are no larger specimens known with comparable gross characteristics. They are judged to be young adults because the brachials are not as elongated as might be expected were the specimens juveniles.

Measurements in millimeters:	Holotype	Hypotype
Cup height	5.3	5.7
Cup diameter (posteroanterior)	7.3	8.8
(right to left)	8.2	8.2
Diameter of IBB circlet	2.3	2.8
Diameter of columnar cicatrix	?	1.5

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