James (U. P.) Compliments of the Author

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DESCRIPTIONS OF FOSSILS FROM THE CINCINNATI GROUP.

By U. P. JAMES.

Genus LINGULA, Bruguire.

LINGULA NORWOODI, James (Pl. X., fig. 1).

Lingula norwoodi, James. Cin. Quar. Jour. of Science, vol. ii., p. 10, Jan. 1875.

Shell long, suboval in outline; beak obtusely pointed; outward rounding slopes, rather sudden at first from the beak, then more gentle at the sides, to about $\frac{3}{4}$ths of the entire length, where the curve is more abrupt but even around the front margin. Regularly and evenly convex transversely; surface marked by distinct but delicate concentric lines of growth. Length of the specimen used for this description a little over two lines, breadth about one line.

Found by the writer embedded in subcrystalline limestone on the left bank of the Ohio river, opposite the lower part of Cincinnati, about 30 feet above low water mark. Other specimens have been found similarly embedded, about the same average size, none larger.

Named in honor of Prof. J. G. Norwood, of Columbia College, Mo.

The object in republishing this species is to give a fuller description and better figure than the originals.

Genus MONTICULIPORA, D'Orbigny.

MONTICULIPORA DYCHEI, James (Pl. X., figs. 2, 2*a*, 2*b*, 2*c*, 2*d*, 2*e*).

Monticulipora dychei, James. The Paleontologist, page 52, Sept. 12, 1882.

The corallum of the type specimen of this species is subfusiform in general outline, with rough, nodular swellings, and low compressed ridges, and annular constrictions: *parasitic*, a crinoid stem the central or subcentral object, upon and around which it is grown: tapering at each end to a little more than the size of the stem—about three eighths of an inch at one end, and one fourth of an inch at the other. When found, the specimen was broken into five pieces, exhibiting clearly the parasitic habit, the stem seen as passing entirely through, from end to end. The corallites radiate from the central object, and have a slight upward inclination at first, then curve directly in a slightly wavy course to the outer surface. Slightly raised, rounded monticules,

about one line apart from center to center, irregularly distributed over the surface, occupied by calices somewhat larger than the average. Margins of cell apertures thin and sharp: no interstitial tubes observed. Calices polygonal and averaging about eight to ten in the space of one line.

A microscopic section of the *interior* shows the tubes to be thin-walled throughout, of a somewhat duplex character, and *very few*, remote, indistinct tabulæ. A tangential section shows the angular calices and peculiar cruciform divisions in the tubes, which may be seen in some other species; no spiniform corallites noticed. A longitudinal section of a lateral projection shows the tubes springing from a medial axis, taking a sloping direction at first, then a wavy course to the surface, at nearly right angles.

The specimen used for this description is seven inches long, over two inches in diameter at the thickest swelling, and one half to three fourths of an inch at the narrowest constriction.

Found by Dr. T. D. Dyche, in company with the writer, near Lebanon, Warren Co., O. The only entire (apparently) specimen known to the writer, but many fragments of smaller examples have been collected at the same locality, and on the hill tops at Cincinnati. Named in honor of the discoverer.

The interior structure of this species resembles M. sp. *clavacoidea*, James, but in other features it differs widely in habit of outward growth and otherwise. The central object around which the tubes grow and radiate of *dychei* is a crinoid column, whilst in sp. *clavacoidea* it is the tapering end of an Orthoceras, or some similar form.

A question has been raised as to the central object in *clavacoidea* being an Orthoceras. The writer has specimens in his cabinet showing the Septa clearly, placing this feature of such specimens beyond doubt; in other specimens the organic structure of the Orthoceras has disappeared, and the space occupied by calcite or clay, or left as a vacant tube, but the outline remains, always more or less sharply tapering, corresponding with Orthoceras. The evidence is positive in some cases, and the reasonable inference strong in others, that the central object is Orthoceras.

PLATE X.

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Fig. 1. LINGULA NORWOODI, James. Enlarged about two diameters, . . 235

Fig. 2. MONTICULIPORA DYCHEI, James. Natural size, ... 235

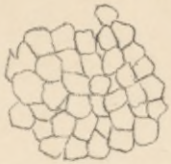
2*a* and 2*b*. Transverse sections of upper and lower ends. Natural size.

2*c*. Part of a tangential section. Magnified 16 diameters.

2*d*. Transverse section (longitudinal of the tubes) of a part of a small specimen. Magnified 18 diameters.

2*e*. Part of a longitudinal section of a lateral projection. Magnified 18 diameters.

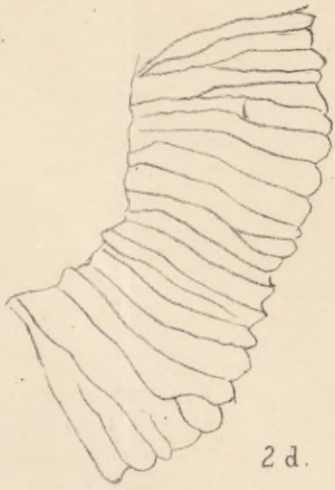
2a.



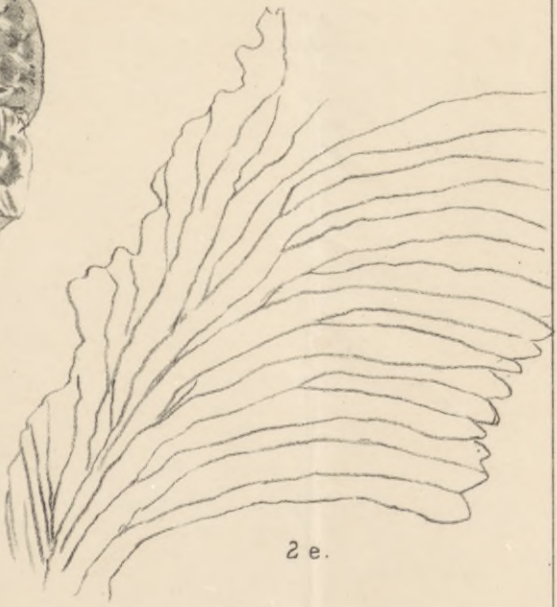
2c.

1

2



2d.



2e.

2b.