ART. XIII.—*Exposition of the true nature of Pleurodyctium problematicum*; by CARL ROMINGER, M. D.

UNDER the above name I have long kept in my cabinet a specimen, collected at Kirchweiler in the Eifel mountains. After having identified it with the fossil described by Goldfuss, I laid it aside, and only recently, twenty years afterwards, when I happened to look over it again, the first glance convinced me that the *Pleurodyctium problematicum* is merely the cap of a *Favosites*,

or more accurately speaking, of a *Michelinia*. I have subsequently found that Milne-Edwards had already recognized the family affinity between *Favosites* and *Pleurodyctium*, without however suggesting a generic identity of the two.

The fossil from Kirchweiler is represented by a lenticular cavity, a little over one inch in diameter and scarcely half an inch deep. To one side of this cavity are attached the bases of conical subangular columns, three or four millimetres thick at the lower ends; between these are interpolated a good many smaller and shorter columns. They all rapidly converge toward the centre of the opposite concavity. Their sides are longitudinally striated and covered with punctiform impressions. Numerous small cross-bars connect the columns, which are otherwise isolated from each other by a narrow intervening space.

The opposite side of the cavity, which forms the roof over the convergent smaller ends of the columns, is free, but closely approximated to them, and bears the impression of fine concentric rings of growth. This latter character is not very plain in my specimen, but Goldfuss has given a very good figure of it. He thought it to be the impression of the inner surface of a membranaceous envelope, instead of taking it for what it is,—the impression of the epitheca, surrounding the lower side of the corallum.

The vermicular body, frequently noticed adhering to or penetrating the root end of *Pleurodyctium*, is also seen in my specimen.

I was greatly surprised at observing the same vermicular perforation in some small specimens of *Michelinia*, which also in all other respects appear to be specifically identical with the coral of which the European *Pleurodyctium* is a cap.

The specimens were found in the shales of the Hamilton group, Cayuga county, New York, and are in the possession of Prof. Winchell of Ann Arbor. They form small cakes of not much over one inch in diameter. The lower side is almost flat, covered with a concentrically wrinkled epitheca; the upper side is semi-globular, and shows the mouth-ends of conical subangular tubes, the larger ones of which measure from 4 to 5 millimetres.

On the polished vertical sections of the coral, longitudinal striæ and rows of spinules, together with numerous side-pores, are visible along the walls of the tubes.

The upper part of the tubes is generally filled with calcareous matter, and shows no diaphragms, which are only preserved in the lower ends, and are in part simple, straight; in part vesicular.

The vermicular channel traverses the substance of the corallum, irrespective of the direction of the tubes, and seems to cut straight through them. After some flexures it ascends to the

upper surface and opens there with a round mouth, while the other tubes are more or less angular. It is improbable that this perforating channel has anything to do with the organism of the coral, and is more likely the work of a parasitic animal; but after all it is still strange to see the majority of specimens of so distant localities attacked in the same way by a boring animal.

In the Corniferous limestone at Port Colborne, on Lake Erie, I lately found a cap exhibiting all the characters of *Pleurodyctium*. In its association numerous specimens of *Michelinia favositoides* (Billings) are found, and there remains no doubt that this cast originates from a young specimen of this latter species.

In the 12th Annual Report of the Regents of the University of New York, Mr. Hall describes his genus *Leptocælia*, but, misguided by an imperfect specimen, he gives us an incorrect idea about the form of the crura, which are in reality spirals, with three or four loose outward-turned volutions.

Some distance from their origin, the crura are divided into an exterior branch, which is spiral, and an interior, which, after running obliquely towards the front, soon bends inward and unites itself with the opposite branch. At the bend the angle projects as a little horn.

I observed this organization in translucent specimens of *Leptocælia concava*, Hall. A perfectly similar structure is also found in *Terebratula lepida*, Goldfuss. Specimens of the latter are found in the Eifel. *Leptocælia concava* is frequently found in our Devonian boulders.

The annexed figure is a specimen of *Lept. concava* from which the shell has been removed, the dorsal side being directed upwards.

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Translucent specimen of *Leptocælia concava*. Shell removed, upper side. The dark line in the middle is the impression left by the elevated crest in the upper valve.