

Crinoid. Did it appear, it would only be in the way, and have to undergo resorption to a greater or less extent, just as the dorsocentral of many Urchins is more or less completely resorbed after the appearance of the anus.

As regards the recent Crinoids, therefore, the embryological evidence clearly indicates that the basals of the abactinal system are represented in the actinal system by the orals. The former are within the ring of radials and next to the dorsocentral; and it seems therefore only natural to regard the six proximal interradial plates surrounding the central piece (orocentral) in the vault of a Palæocrinoid as representing oral plates.

Wachsmuth admits that Zittel was right in regarding the interradial plates which form the dome of *Haplocrinus* as representing the orals of Neocrinoids; and he takes the same view of the interradial plates in the dome of *Symbathocrinus*. I should have thought therefore that he would have given a similar interpretation of the summit plates in *Platycrinus* and *Culicocrinus*. Those of the latter genus were described by Müller as follows:—"Der Scheitel besteht aus 5 Tafeln, welche dicht an einander schliessen durch Nähte und anderseits bis an die Arme und die Interradialia reichen, sie stehen übrigens interradial, so dass jedes Interradiale zu einem der fünf Scheitelstücke stimmt. Der Mund (*cf.* anus) befindet sich seitlich in einem Interradius zwischen dem Interradiale und entsprechenden Scheitelstück. Auf jeder der 5 Scheiteltafeln erhebt sich ein kurzer Dorn."¹ Wachsmuth calls these "Scheitelstücke" of Müller's the proximal vault pieces, and suggests that "probably his largest plate includes four plates, the spiniferous central vault piece, the two proximal vault pieces, and a small anal plate between them. The four large proximal vault pieces, each crowned with a spine, are no doubt correctly represented. Those few plates occupy the greater part of the summit, leaving but little space for the radial dome plates, which as yet are unknown."²

I think myself that this suggestion is totally unnecessary; for the five summit plates appear to me to form a closed oral pyramid in which the plate on the anal side is somewhat wider than its fellows, but not divided into two as in the Actinocrinidæ and Platycrinidæ.

Culicocrinus has the proximal dome plates resting against the calyx interradials, just as the orals do in *Coccocrinus*. But no distal ring of radial dome plates is known in this genus. This advance in complexity is presented by certain forms of *Platycrinus* from the Carboniferous limestone, both at Burlington and at Bolland. Müller gave some figures of the latter under the name of *Platycrinus ventricosus*, Goldfuss, which is certainly wrong;³ and I have examined several specimens in the British Museum collection which are in this comparatively primitive condition. The proximal dome plates rest directly against the calyx interradials,⁴ that on the posterior side being represented by two small plates with the anus between them; while there is a more or less tubercular

¹ *Verh. d. Naturhist. Verein. d. preuss. Rheinl.*, Bd. xii., Jahrg. 1855, p. 23.

² Revision, part ii. p. 62.

³ *Bau des Pentaerinus*, *loc. cit.*, Taf. vi. figs. 1a, 1b.

⁴ It is only just to Mr. Wachsmuth for me to state here that he was the first to direct my attention to the fact that Platycrinidæ exist with the proximal dome plates resting directly against the calyx interradials, two individuals in this