superficial, as the lateral grooves in *Coccocrinus* were evidently closed by additional plates as in other Platycrinidæ, while they are open" in Neocrinoids. But the existence of these additional plates does not seem to me so evident as it does to him. He attempts to support his position by reference to a "close resemblance" between the summit of *Coccocrinus* and that of the Cyathocrinidæ, which he describes as follows:[1]—"Calyx surmounted by five large oral plates, with a central opening between them, and forming at their sutures five shallow ambulacral grooves converging toward the centre. Central opening covered by the apical dome plates, and the five grooves arched over by two rows of small immovable pieces alternately arranged."

The so-called oral plates of this description are those which Wachsmuth had previously called "consolidating plates," thinking them to be homologous with the plates of the same name in *Cupressocrinus*. He subsequently came to the conclusion, as did Zittel about the same time, that they are homologous with the orals of the Pentacrinoid; and he therefore also spoke of them by this name. He likewise regarded the deltoid pieces of the Blastoids in the same way. I must plead guilty to having also adopted this view, which had much to recommend it at first sight. I did not do so, however, without considerable hesitation, on account of one morphological difficulty which it involved. For the ambulacra would then pass *over* and not *between* the edges of the oral plates, which would bear a double row of marginal pieces or covering plates continuous with those on the arm-grooves. This, as pointed out above, is contrary to the nature of the oral plates of Neocrinoids; and the result of the correspondence on the subject between Mr. Wachsmuth and myself is that we can no longer regard either the deltoid pieces of the Blastoids or "the principal vault pieces" of *Cyathocrinus* (as Meek and Worthen call them) as representing the orals of Neocrinoids. I am now disposed to consider that "*Cyathocrinus* and the Blastoids have but one interradial plate, which reaches up to the peristome." Mr. Wachsmuth's first criticism of this statement was that "it expresses exactly my views."

I believe, however, that his views have since undergone some further modifications, as he will himself explain in the forthcoming part (iii.) of his Revision.

But the question of the structural resemblance between *Coccocrinus* and *Cyathocrinus* is independent of the nomenclature of the plates. It is one of some importance in its bearing on the belief of Zittel and myself on the condition of the mouth in the former type and its relation to that of Neocrinoids. In the first place, as pointed out by Wachsmuth and Springer,[2] *Cyathocrinus* has only one plate resting "against the incurved upper margins of the radials;" while in *Coccocrinus* the primary interradial bears a triangular plate, which they now consider as a second interradial, though formerly regarding it as an oral plate, as do Zittel and myself. The central opening in *Cyathocrinus* is much larger than in *Coccocrinus*, owing to the truncation of the

[1] Revision, part i. p. 68.

[2] *Ibid.*, part ii. p. 17.