

form, as in *Nannoaulema* (according to Hyatt's observations) the endosiphuncle communicated for a time with the exterior, viz from the time of the destruction of the protoconch to that of the plugging of the canal between the first and second endocones. At the time of the burial of the shell in mud, this short end of the canal

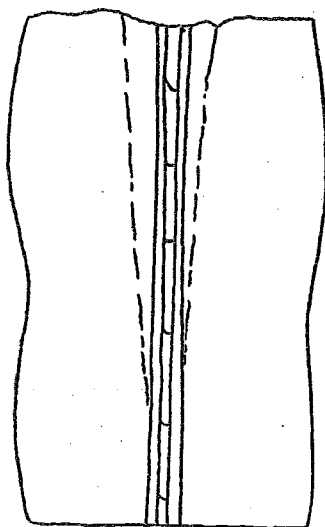


Fig. 1 *Endoceras crassisiphonatum* Whiteaves. Shows apparent dissepiments in endosiphuncle. (Copy from Whiteaves)

was still open and the surrounding mud could enter it. In the remaining portion of the endosiphuncle there has nowhere been found any matrix, in our material, not even directly behind the Spiess, which is always filled to near its tip with mud. Holm comments on this fact, but states that longitudinal sections through the endosiphuncle nowhere suggested the presence of any transverse partitions and assumes that soft parts of the decaying animal, remaining in the "Spiess" prevented the mud from entering the endosiphuncle, which apparently was through the lifetime of the animal in open connection with the latter.¹ In

Nannoaulema however, as mentioned above, Hyatt observed a closing of the tube in front of the first endocone. Partition lines, forming acute angles with the endosiphon, leave no doubt that also the apical cone of *Cameroeras brainerdi* was provided with endocones though no traces of the same have been observed close to the apex.

¹Whiteaves [Roy. Soc. Can. Proc. & Trans. 1891, 9:79] has recorded that in one specimen of *Endoceras* (*E. crassisiphonatum*) from the Trenton limestone of Manitoba, "the interior of the narrow posterior end of the siphuncle (endosiphuncle) appears to be portioned off by a few transverse concave dissepiments" [see text fig. 1]. Since there exists an early genus (*Diphragmoceras* Hyatt) in which the siphuncle is divided by tabulae alternating with the septa of the camerated shell, it is quite as possible that the endosiphuncle also may have been tabulated in some forms, though Whiteaves's observation seems to stand quite alone at the present time. The observations of both Hyatt and Whiteaves would seem to support Zittel's view that the siphuncle has no particular function but is only a residual.