

British Museum. But the disc is sufficiently well preserved to show that the additional ray is inserted between the two of the right side (D and E).

The facts above mentioned may be usefully compared with similar variations which have been noticed in other Echinoderms. In the only six-rayed Blastoid that I have seen<sup>1</sup> there are but five ambulacra, though a pseudo-radial plate without a sinus is intercalated between radials C and D, so that the dorsal surface of the calyx is very regularly hexagonal.

On the other hand Blastoids with only four ambulacra are more common; but the dorsal part of the calyx is more or less distinctly pentagonal, the fifth radial not being incised for an ambulacrum. The two postero-lateral and the right antero-lateral one (C, D, E) are the rays in which this modification has been noticed, C showing it twice and the other two once each.

Two tetraradiate examples of *Encrinus liliiformis* have recently been observed by von Koenen;<sup>2</sup> but it is curious that variations from the normal pentamerous symmetry are rare among the Pelmatozoa, except in the genus *Rhizocrinus*. Four- and six-rayed Urchins are not uncommon; while Ludwig<sup>3</sup> found half a dozen six-rayed individuals of *Cucumaria planci* in a collection of one hundred and fifty. In all cases the sixth ray was intercalated between the two forming the bivium, a fact which may be compared with the absence of the middle ray of the trivium in the three Comatulæ with abnormally interradiial mouths mentioned above.

<sup>1</sup> See Etheridge and Carpenter, Catalogue of the Blastoidea in the Geological Department of the British Museum (Natural History), London, 1886, pp. 40, 41.

<sup>2</sup> Beitrag zur Kenntniss der Crinoiden des Muschelkalks, *Abhandl. d. k. Gesellsch. d. Wiss. Göttingen*, 1887, Bd. xxxiv. p. 23 (of separate copy).

<sup>3</sup> Ueber Sechstrahlige Holothurien, *Zool. Anzeiger*, 1886, Jahrg. ix. p. 476.