

Although in sections through the lower part of the basal ring the limits of its component joints may be traced by the grouping of the five ligaments referred to above, yet the interbasal sutures do not become clearly visible till the level of the lowest part of the chambered organ is reached. Here they appear as actual gaps in the otherwise continuous network of nucleated connective tissue which forms the organic basis of the skeleton, so that in a stained preparation they are shown as five radiating white lines on a coloured ground (Pl. VIIb. fig. 2). They do not, however, reach the outer edge of the section where the connective tissue network forms a complete ring, and this accounts for the absence of any sutural lines upon the exterior of the composite basal piece (Pl. VIIa. fig. 13). The sutural union between this piece and the stem-joints below it appears to be closer than that between the basals and radials, so that the head has a considerable tendency to break away from the stem at the basiradial suture. This was unfortunately the case with one of the two individuals of *Bathycrinus gracilis* which were met with by the "Porcupine's" dredge in 1869, and the head was consequently not brought to the surface. On the other hand, only the head of *Bathycrinus campbellianus* is now known (Pl. VIII. figs. 1, 2. Woodcut, fig. 15 on p. 239), the stem with the basals having separated from it; while Danielssen and Koren figure an isolated head of *Bathycrinus carpenteri* which has lost its basals.<sup>1</sup> But the most remarkable case of this kind was met with at Station 146, in the Southern Ocean, where the dredge must have passed over a small forest of *Bathycrinus aldrichianus*.

About a dozen tolerably perfect individuals were obtained, together with a considerable number of stems retaining the basal ring at their upper ends. This fact is one of no little importance from the light which it throws on the supposed composition of the calyx in the fossil genus *Eugeniocrinus* and its allies *Phyllocrinus* and *Tetracrinus*. These genera are very common in the Jurassic and Lower Cretaceous rocks, especially of the Continent; but by far the greater number of calyces which are met with consist of the radials alone, just like that of *Bathycrinus campbellianus* (Pl. VIII. figs. 1, 2), and the family has accordingly been described as distinguished by the absence of basals. De Loriol<sup>2</sup> says, for example, "Le calice est formé de pièces radiales seulement sans pièces basales." Occasionally, however, a calyx is met with still retaining a portion of the stem attached to it. But no sign of sutures is visible in what appears to be its uppermost joint immediately beneath the radials. This joint, with a portion of the stem attached to it below, is also sometimes met with separate from the radials, as in the case of *Bathycrinus aldrichianus* and *Bathycrinus gracilis*. But the absence of sutures, as shown by the condition of an adult *Bathycrinus*, is no proof that the piece in question does not consist of a ring of closely united basals, a point as to which I have no doubt whatever.<sup>3</sup>

The fibres which effect the synostosis of the basals with the radials above them are

<sup>1</sup> *Nyt Mag. f. Naturvidensk.*, Bd. xxiii. Tab. i. fig. 6.

<sup>2</sup> *Paléont. Franç.*, *loc. cit.*, p. 74.

<sup>3</sup> *Ann. and Mag. Nat. Hist.*, 1883, ser. 5, vol. xi. pp. 327-334.