

mentioned figure; and it is too small to show the very numerous water-pores piercing the plates, some of which have as many as twelve or fifteen openings. They are much less abundant in *Metacrinus cingulatus* and *Metacrinus angulatus* (Pl. XXXIX. fig. 2), while the plates are also smaller.

The disk of *Metacrinus* differs from that of *Pentacrinus* in the greater irregularity of its ambulacra, the branches of which proceeding to the large lower pinnules often come off directly from the primary groove-trunks, or even from the peristome itself. This is especially well shown in *Metacrinus angulatus* and *Metacrinus nobilis* (Pl. XXXIX. fig. 2; Pl. XLIII. fig. 3).

Another point of difference is the relatively larger size of the anal tube in *Metacrinus*, which is well shown in *Metacrinus nodosus* (Pl. L. fig. 2). It may occupy the whole of the interpalmar area in which it lies, and is often considerably inflated, so as to be a somewhat prominent object on the surface of the disk. It is erroneously represented as perfectly bare in the figure of *Metacrinus nodosus*, and this actually seems to be the case at first sight. Closer examination shows, however, that its apparent bareness is really due to the smoothness and very close approximation of the plates which cover it.¹ They are thinner than the corresponding plates in the other interpalmar areas, and form a smooth continuous pavement over the whole of the lower part of the tube, becoming more nodular and irregular towards the top. The whole appearance of the anal tube in this species forcibly recalls Buckland's well known figure of the "abdominal integument" of *Extracrinus briareus*.² There are indications of this close pavement on the anal tube of *Metacrinus nobilis* (Pl. XLIII. fig. 3); and it is better shown in a curious specimen of *Metacrinus angulatus* (Pl. XXXIX. fig. 2), which has a smaller supplementary anal tube by the side of the larger one.

The plates of the pinnule-ambulacra in *Metacrinus* are better differentiated on the whole than those of *Pentacrinus*. For in the outer parts of the pinnules, at any rate, the covering plates rest upon a row of distinct side plates (Pl. XLVII. fig. 11; Pl. LI. figs. 11, 12; Pl. LII. figs. 5, 6), and not upon an almost undivided band of limestone as in most species of *Pentacrinus* (Pl. XIII. fig. 15; Pl. XXXVII. fig. 23).

In the lower parts of the rays and arms the anambulacral plating of the disk extends outwards at the sides of the ambulacra, in which the arrangement of plates is confused and indefinite (Pl. XLI. fig. 13). Farther out, however, where the zig-zag course of the ambulacrum (still distinctly above the arm-groove) is more marked, and the ambulacral plates less abundant, the elongated shape of the plates immediately bordering the groove is more distinctly visible (Pl. XLI. fig. 4). In most species their extremities gradually become bifid, as is well shown in *Metacrinus angulatus* and *Metacrinus murrayi* (Pl. XXXIX. fig. 13; Pl. XLI. fig. 14). Both of these, especially the former, have the

¹ See the remarks on the disk of *Pentacrinus wyville-thomsoni*, *ante*, p. 76.

² *Geology and Mineralogy*, vol. i. p. 439; vol. ii. pl. 51. fig. 2.