

almost entirely limited, is presented by the four species *Pentacrinus mülleri*, *Pentacrinus maclearanus*, *Pentacrinus wyville-thomsoni*, and *Pentacrinus alternicirrus*. The nearest approach to *Pentacrinus asteria* is to be found in *Pentacrinus mülleri* (Pl. XVII. fig. 9), as might be expected for various reasons. The arm-groove is narrower, but the covering plates which rest on its edges pass up on to the pinnules alternately from opposite sides very much as in *Pentacrinus asteria*; though the successive groups do not overlap one another so much as in that type, and there is more differentiation of the side plates upon the pinnules (Pl. XV. figs. 7, 8). In *Pentacrinus wyville-thomsoni* the arm-groove is still narrower, and the ambulacrum almost entirely withdrawn into it (Pl. XVII. fig. 4). The plates bordering it are smaller and more irregular than in *Pentacrinus mülleri*, and more distinctly limited to the pinnule-bearing side of the arm; while the intervals between the joints are larger and covered by small irregular plates as in *Pentacrinus naresianus* and *Pentacrinus blakei*. The plating of the pinnules is limited at first to their outer sides (Pl. XVII. fig. 3); but it eventually appears on the inner sides as well, and becomes differentiated into covering plates resting on a limestone band which is sometimes imperfectly separable into side plates (Pl. XVII. fig. 2).

A further reduction in the width of the arm-groove and in the size of the plates at its edges appears in *Pentacrinus alternicirrus* (Pl. XXVII. fig. 6). The intervals between successive joints which are occupied by the muscular bundles are larger than in *Pentacrinus wyville-thomsoni*, and are more distinctly plated. The rudimentary covering plates are limited to the origins of the pinnule-ambulacra, and a short distance behind them; so that between every two pinnule-ambulacra of one side there is a short space of unprotected arm-groove. As in *Pentacrinus wyville-thomsoni*, the bases of the pinnule-ambulacra are plated on the outer side only, and in their distal portions the lateral band on which the covering plates rest is not divided into side plates (Pl. XXVII. fig. 5).

Lastly, in *Pentacrinus maclearanus* the arm-groove is extraordinarily narrow, and bounded by little else than the broad plate-like upper surfaces of the component joints (Pl. XVII. fig. 1), while the covering plates are almost entirely limited to the pinnules (Pl. XVI. figs. 2, 3). They are relatively small, and the lateral band supporting them, though broad at first, soon narrows away considerably.

The disk of *Metacrinus* presents much the same variations in the extent to which it is plated as that of *Pentacrinus* does. In *Metacrinus nobilis* (Pl. XLIII. fig. 3) there is a tolerably continuous pavement with well defined ambulacral ridges. These are bounded by about four rows of plates, those of the two inner rows being transversely elongated, and alternating with one another. In other types the anambulacral plates are more isolated as in *Pentacrinus decorus*, being more closely set, however, along the sides of the ambulacra, which are covered by longish plates. This is the case in *Metacrinus angulatus* (Pl. XXXIX. fig. 2), *Metacrinus cingulatus*, and *Metacrinus nodosus* (Pl. L. fig. 2). The scattered arrangement of the anambulacral plates is not well represented in the last