ambulacra well above the level of the arm-grooves; and there are no other plates on the arm than the covering plates which really belong to the pinnule-bases, while the muscular bundles are freely visible at the sides of the ambulacra. But in other species, such as *Metacrinus nobilis* (Pl. XLI. fig. 11), the food-groove is more concealed within the arm-groove, and the forked covering plates are less abundant at the pinnule-bases.

Farther out on the pinnule, the proximal half of the fork becomes gradually less and less prominent; and it is eventually absorbed into the basal part of the plate, which thus represents a side plate; while the distal half of the fork, becoming larger and better defined, separates itself off as a rounded covering plate (Pl. XLI. fig. 12; Pl. XLVII. fig. 11).

The branches of the ambulacra which pass on to the massive basal joints of the prismatic lower pinnules are usually but little plated, as is the case in *Pentacrinus asteria* (Pl. XIII. fig. 16; Pl. XLI. figs. 4, 12, 13; Pl. XLVII. fig. 13; Pl. LI. fig. 12). But beyond the first two joints the plating reappears; and the four rows of plates become gradually developed from the irregular plates at the sides of the groove, which come to assume a definite form and break up into covering plates and ill defined side plates.

The gradual differentiation of side and covering plates upon the pinnules from the single forked plates at the sides of the brachial ambulacra takes place in this way in most species of *Metacrinus;* but the four rows are never so distinctly separable as in the Comatulæ (Pl. LIV. figs. 4, 6–9).

A slight variation of this process occurs in *Metacrinus costatus* (Pl. XLVII. fig. 13; Pl. XLIX. figs. 6, 7); while *Metacrinus murrayi* and *Metacrinus nodosus* (Pl. XLI. fig. 12; Pl. LI. fig. 12) are the intermediate links between this species and the other types of *Metacrinus.* The bases of the pinnule-ambulacra just beyond the wide lower joints are bordered by a series of rounded plates, which are deeply hollowed in the centre so that their edges stand up rather prominently. The first eight or ten of these are attached to the pinnule-joints on each side by a continuous band of limestone. This gradually becomes absorbed into the raised proximal edges of the rounded plates so as to form the side plates; while the distal halves eventually separate themselves off as the covering plates (Pl. XLVII. fig. 13). The side plates only become properly differentiated in the outer parts of the lower pinnules, and in the later pinnules on the arms (Pl. XLIX. figs. 6, 7); but they retain a more or less prominent backward process, which is the remains of the raised hinder edge of the rounded plates on the proximal parts of the ambulacra.

Although there are no side plates on the arms and pinnule-bases of *Hyocrinus*, yet they are large and well developed on the enlarged portions of the pinnules which contain the genital glands (Pl. Vc. fig. 10, *sp*). The proximal ones, taking the place of numerous small anambulacral plates, are smaller than their successors, which considerably increase the depth of the body-cavity within the pinnule. Distally, the side plates gradually diminish in size and finally disappear altogether, so that the covering plates come to rest directly on the edges of the pinnule-joints (Pl. Vc. figs. 8, 9).