Pl. LVI. fig. 5), or it may be entirely bare to the naked eye, although microscopic examination usually reveals the presence of calcareous spicules at the sides of the ambulacra. Its thickness and consistency vary greatly, more particularly in the arms. In *Thaumatocrinus* (Pl. LVI. figs. 2, 4), *Atelecrinus*, *Promachocrinus*, some species of *Eudiocrinus*, in many of the ten-armed *Antedons* of the temperate and Arctic Seas, and also in those from the greatest depths (1000 to 2900 fathoms), the ventral perisome of the arms is quite thin and delicate, except in the median line, where it is occupied by the ambulacra. These are consequently brought close down upon and between the muscular bundles, which are distinctly visible through the thin layer of perisome that covers them. In *Actinometra*, however (Pl. LV. figs. 1, 2; Pl. LVI. fig. 7), and also in the larger tropical *Antedons*, the ventral perisome of the arms is relatively thick and substantial, and no muscular bundles show through it at the sides of the ambulacra. These pass over the arm-bases on to the disk, where they are usually raised, sometimes considerably so, above the general level of its ventral surface. They converge towards the radial centre, where they unite into a smooth flattened space, the peristome; and somewhere in this space, though not necessarily in its centre, is the opening of the mouth.

In all recent Crinoids, with the single exception of the large Comatulid genus *Actinometra*,[1] the peristome is situated at or near the centre of the disk (Pl. III. fig. 2; Pl. VI. fig. 4; Pl. VII. fig. 3; Pl. XVII. figs. 6, 10; Pl. XXVI. figs. 1, 2; Pl. XXXIV. fig. 2; Pl. XXXIX. fig. 2; Pl. XLIII. fig. 3; Pl. LV.; Pl. LVI. figs. 5, 6). The same was doubtless the case, both in the fossil species of these genera, and also in the allied but extinct genera of Neocrinoids, *e.g.*, *Cotylecrinus*, *Eugeniacrinus*, *Apiocrinus*, *Marsupites*, &c.; while the Blastoids and most, if not all, of the Palæocrinoids present the same character.

In all the Comatulæ which have a central mouth, five primary ambulacra diverge from the peristome and fork more or less frequently according to the number of arms which they have to supply (Pl. LV. figs. 3–7). This may also be the case in the Pentacrinidæ, more especially in those species which have a small number of arms (Pl. XVII. fig. 6; Pl. XXX. fig. 2; Pl. XXXIII. fig 7; Pl. XXXIV. fig. 2; Pl. L. fig. 2). But in the multiradiate species the ambulacra of the disk are often quite irregular in their arrangement (Pl. XVII. fig. 10; Pl. XXVI. figs. 1, 2); and in the case of *Metacrinus* the ambulacra of the large lower pinnules sometimes start directly from the peristome or from one of the large primary groove-trunks, instead of from one of the subdivisions of the latter (Pl. XXXIX. fig. 2; Pl. XLIII. fig. 3; Pl. L. fig. 2).

The brachial ambulacra of the regular Crinoids, which have no very great development of limestone in their ventral perisome, are usually well defined and bounded laterally by elevated folds of the perisome. The edge of each fold is cut out into a series of minute marginal leaflets; while at the base of each of these, and to some extent

[1] See Appendix, Note C.