

tubercles generally crowded towards the upper part of the plate, with secondary and miliary tubercles towards the lower edge (Pl. XXV. fig. 3); the edges of the plates are, however, left quite free from tubercles, the tubercles leaving bare lines to indicate the sutures on each side of them below the rudimentary petals; the tuberculation of the ambulacral area is similar to that of the interambulacral areas, only the tubercles are smaller.

The apical system is compact; the four genital openings large (Pl. XXV. fig. 5), placed close together, well above the ocular plates; the sutures of the genital plates are obliterated; the madreporic body extends into the posterior interambulacrum in a large horse-shoe shaped form, and extends also anteriorly between the four genital plates.

The ocular plates are triangular, rounded at the apex, with a prominent pit in which is placed the ocular pore. Seen from the interior, the apical system shows the great development of the abactinal part of the calcareous canal (Pl. XXV. fig. 8) with the slender ducts leading from the genital openings to the genital organs.

The ambulacral pores round the actinostome give passage to tufted ambulacral suckers; the ambulacra are simple pores from those to the lower extremity of the rudimentary petals formed by the narrow more elongate ambulacral plates perforated by pairs of pores; these petals flare slightly at the lower extremity, the posterior lateral pair flaring more widely and not extending quite so far towards the ambitus. The odd anterior ambulacrum is simple, and is not petaloid towards the abactinal system. On the abactinal side the primary spines of the interambulacral area are curved, moderately long, the whole test thickly covered with them and the intervening miliaries and secondaries. On the actinal side the spines are somewhat less stout. The spines of the ambulacral areas are smaller on the abactinal surface, and quite minute on the actinal side and in the petaloid region of the ambulacra.

The colour of the test when denuded is reddish-brown, the spines of a brownish-yellow colour, with occasionally lighter coloured spines.

In younger specimens of *Paleopneustes murrayi* the test is quite flattened, much as in *Maretia* proper; this is contrary to what is generally the case among Spatangoids, where, as in *Brissopsis*, *Spatangus*, *Hemiaster*, *Schizaster*, and young specimens of many other genera, the test is quite globular, and subsequently becomes flattened or assumes the outline of the adult; it is, however, what we have found to be the case in the Ananchytid-like genera such as *Cystechinus*, *Urechinus*, *Spatagocystis*, and also in *Genicopatagus*.

In young specimens measuring about 30 and 40 mm. in length, the ambulacral petals are quite straight, and do not flare at the extremity (Pl. XXXV.^b figs. 8, 9). The peripetalous fasciole is very distinct, but very thin, a mere line having much the same course as in older specimens such as are figured on Plate XXV. fig. 3, where it is also often reduced to a mere thread, and perhaps eventually disappears, as is the case in the Barbados' species (*Paleopneustes cristata*), in which we have no such fasciole, and in