

while the short posterior lateral ambulacral petals of *Schizaster* are replaced in *Aceste* by the three or four ambulacral plates perforated with simple pores, which are placed within the so-called peripetalous fasciole; this fasciole affecting in no way the structure of the ambulacral plates placed within its limits.

The general outline of the test as seen both in profile and from above is strikingly similar to that of the Schizasteridæ. In fact, this genus is of the greatest interest, showing as it does striking affinities on the one side to the Schizasteridæ and other Spatangina, such as *Brissopsis*, and on the other to the Pourtalesidæ, not only in the structure of its ambulacral system, but also from the position and shape of the actinostome, and the more or less cylindrical test modified in its outline from its Schizasterid affinities. This is well seen in the end views of the test (Pl. XXXIII.^a figs. 4, 5), the anterior part of which is more angular, as in the Schizasteridæ, while the posterior is more cylindrical, as in the Pourtalesidæ and *Brissina*.

Seen from above the tuberculation of the test is quite uniform (Pl. XXXIII.^a fig. 1), with the exception of the ambulacral zones within the fasciole, which consist of smaller tubercles. Seen from the actinal side the actinal plastron (Pl. XXXIII.^a fig. 2) is covered by large primaries with a flat areolar space, with large primary tubercles extending over the anterior part of the test mainly in the interambulacral areas adjoining the actinostome (Pl. XXXIII.^a figs. 3, 5). The tuberculation of the posterior part of the test is smaller, and the tubercles are more closely packed (Pl. XXXIII.^a figs. 2, 3, 4).

The anal system (Pl. XXXIII.^a figs. 2, 4) is placed on the steep sloping posterior extremity of the test about half-way from the level of the actinal plastron to the edge of the fasciole. It is circular, slightly pointed vertically; the anal opening is near the lower edge of the anal system. The anal system is covered with small elongated plates arranged in more or less irregular concentric rows round the anal opening. Seen from the actinal side the anal system appears on that side of the test (Pl. XXXIII.^a fig. 2). The largest specimen collected measured 27 mm. in length, the smallest 14 mm.

In *Aceste* there are in the broad odd ambulacral field within the poriferous zone of the abactinal system a few minute spines (Pl. XL. fig. 66), which are interesting as presenting a modification of the tip of the spine not hitherto observed. It is a change from the usual flattened, paddle-shaped, or club-shaped tip characteristic of the spines of so many Spatangoids to form an umbrella-like hood. This hood is formed by a ring of large serrations projecting far beyond the general outline, and gradually passing again both above and below into the regular reticulation of the spine. The only similar structure known in spines is that of the Ophiuran genera *Ophiohelus* and *Ophiotholia*, collected by the "Challenger" and by the "Blake," where, owing to the small number of cells composing the spine, this umbrella-like structure is more apparent than it is in *Aceste*. This peculiar spine of *Aceste* is also interesting as showing a possible transition from normal to more specialised spines, which may in part perform the functions of pedicellariæ.