extent even in *Pourtalesia laguncula*, the posterior interambulacral zone on the abactinal surface between the apical and the anal system is composed of nearly hexagonal plates, increasing very gradually in size from the abactinal system to the anal system. This uniformity of the plates is, however, in *Pourtalesia* entirely limited to the odd posterior interambulacrum, while in *Spatagocystis* the plates of the other zones become more uniform in size. This structural feature is also connected with the decrease in size of the actinal groove, as seen from *Spatagocystis*, *Echinocrepis*, *Urechinus*, and *Cystechinus*. The plates of the actinal plastron between the actinostome and the anal snout are also far less elongate than in *Pourtalesia* proper, though these plates are evidently the first to become differentiated, and appear to be the first trace of a passage between the Galeritidæ and the Spatangidæ proper, as far as we can trace this from the fossil genera. It is interesting in the recent Pourtalesiæ to compare the actinal plastrons of such genera as *Pourtalesia*, *Echinocrepis*, *Spatagocystis*, and *Cystechinus*, in connection with that of the Dysasteridæ, Galeritidæ, Hemiasteridæ, and Spatangina proper. Subanal fasciole indistinct.

**Spatagocystis challengeri* (Pls. XXVI.; XXVI.ª; XXXIX. fig. 37; Pl. XLI. fig. 40; Pl. XLII. figs. 10–12; Pl. XLV. figs. 37–43).

Spatagocystis Challengeri, A. Agassiz, 1879, Proc. Am. Acad., vol. xiv. p. 206.

The outline of the test seen from above (Pl. XXVI. figs. 3, 9) is regularly ovoid, slightly indented anteriorly, in profile arched, falling towards the posterior extremity (Pl. XXVI. fig. 1), and quite abruptly truncated anteriorly. The actinal floor is flattened anteriorly, with a prominent keel extending from the actinostome to the extremity of the anal snout (Pl. XXVI. figs. 1, 2), the ambitus gracefully arched. The test is thin, quite brittle.

All the specimens collected as well as the fragments of tests were of a pinkish-violet tint. The genital organs consist of large yellowish clusters hanging far down from the abactinal region by long slender ducts, the different clusters of the genital organs quite distinct. The lateral interambulacra are very broad (Pl. XXVI.ª fig. 9), the coronal plates are broad, and carry primary tubercles (Pl. XXVI.ª figs. 2, 4, 12, 15, 16) uniformly scattered over them, carrying fine slender spines (Pl. XXVI. figs. 1–5). The whole test closely covered with miliary and secondary spines.

On the actinal surface the spines are somewhat larger (Pl. XXVI. fig. 2); the actinostome is small and deeply sunken (Pl. XXVI. fig. 2; Pl. XXVI.ª fig. 2). The edges of the deeply-sunken actinal groove are quite well defined on the actinal side, the groove resembles the elliptical anal groove of *Echinobrissus*. Like the anal groove of some species of that genus it does not run indistinctly into a broad groove, and is limited to one side of the test.

In *Pourtalesia* proper the actinal groove passes very gradually into a broad anterior groove, which occupies the greater part of the anterior extremity of the test, while in