

with the narrow coronal plates of a lighter violet tint forming a most regular pavement on the actinal and abactinal surfaces of the test. The interstices between the coronal plates are even more developed in this species than in *Asthenosoma fenestratum*, extending as they do from the edge of the poriferous zone nearly to the extremity of the coronal plate in the median interambulacral space where they lap. The lapping of the plates is very marked in this species, even when seen from the outside (Pl. XIX.<sup>b</sup> fig. 2). The lapping of the ambulacral plates is not so well marked except in the older plates towards the ambitus on the abactinal surface. The encroachment of the interambulacral plates on the outer edge of the ambulacral plates is also shown from the exterior, the wings of the extremities of the plates covering the ends of the corresponding plates of adjoining areas, as has been already noticed by Thomson in *Asthenosoma hystrix*. On the actinal side this lapping is not well seen, the plates appearing externally to abut regularly both in the ambulacral and interambulacral areas (Pl. XIX.<sup>a</sup> fig. 1) as in the *Desmosticha* proper; but an examination of the interior of the test shows the lapping of both areas to be as prominent as in the figure of *Asthenosoma hystrix* given by Thomson (Porcup. Echin., Trans. Roy. Soc., 1874, pl. lxxv. fig. 2). The primary spines of this species are few in number (Pl. XIX.<sup>a</sup> fig. 1, Pl. XIX.<sup>b</sup> figs. 1, 2), and are limited to a few plates near the ambitus on the actinal and abactinal surfaces, in addition to the single prominent row extending from the actinostome a short distance over the ambitus, to the abactinal region (Pl. XII.<sup>a</sup> figs. 14, 15, Pl. XIX.<sup>a</sup> fig. 1, Pl. XIX.<sup>b</sup> fig. 2) along the outer edge of the interambulacral zone next to the poriferous zone. The other spines, secondary and miliary, are also few in number, and slender, and are irregularly arranged on the ambulacral and interambulacral plates; there are a number of miliary tubercles forcing their way through the cuticle, which appear as pits (Pl. XII.<sup>a</sup> figs. 14, 15). The gills in this species are large and prominent (Pl. XIX.<sup>a</sup> fig. 1). Judging from the single alcoholic specimen the ambulacral tentacles of this species must have been of an unusual size (Pl. XIX.<sup>a</sup> fig. 1, Pl. XIX.<sup>b</sup>), especially near the ambitus both on the actinal and abactinal surfaces. The sucking disks are not large even on the actinal surface, and on the abactinal surface they soon become, beyond the ambitus, more slender and pointed (Pl. XIX.<sup>b</sup> fig. 4). The abactinal system is comparatively smaller than in *Asthenosoma coriaceum*, and differs mainly in the position of the genital openings which are relatively more distant from the centre than in *Asthenosoma coriaceum*; the tuberculation of the anal system is also coarser in the latter species and is covered by larger plates. Compare Plate XIX.<sup>b</sup> fig. 3, and Plate XVII.<sup>a</sup> fig. 5.

Station 204. November 2, 1874. Lat. 12° 43' N., long. 122° 10' E.; 100 fathoms and 115 fathoms; mud.

\* *Asthenosoma gracile*, n.sp. (Pl. XVII.<sup>a</sup> figs. 1-4).

This species resembles *Asthenosoma hystrix* in having comparatively narrow elongated