the ovary, are passed along on the surface of the test towards the mouth, and the smaller slightly spathulate primary spines, which are articulated to about the first three rows of tubercles round the peristome, are bent inwards over the mouth, so as to form a kind of open tent, in which the young are developed directly from the egg without undergoing any metamorphosis, until they have attained a diameter of about 2·5 mm.; they are then entirely covered with plates, and are provided with spines exceeding in length the diameter of the test. Even before they have attained this size and development, the more mature or more active of a brood may be seen straying away beyond the limits of the 'nursery,' and creeping with the aid of their first few pairs of tentacular feet out upon the long spines of their mother; I have frequently watched them return again after a short ramble into the 'marsupium.'"

The specimen (Pl. II. fig. 2) shows the manner in which they are held in a sort of marsupium by the folding of the abactinal spines over the young crowded upon the abactinal system. This, as is shown in Plate II. fig. 7, cuts deeply into the median ambulacral and interambulacural spaces. The female genital openings are notched in the very edge of the genital plates.

From among the many young collected by the Challenger, I was able to obtain two most interesting stages of growth of this genus. Plate II. figs. 9, 10, represent from the actinal and abactinal sides a young *Goniocidaris*, in which we find as yet no separation of ambulacral or interambulacral plates. These areas are, however, most distinctly marked by the presence of large primary tubercles and spines in the latter area, and by the presence of three pairs of small tentacles in each ambulacral zone, surmounted by a huge odd terminal tentacle (Pl. II. figs. 9, 10, 18). The ambulacral tentacles are separated by a vertical row of tubercles carrying small primary spines, but the test is not subdivided into zones by plates; it is as yet composed only of more or less close reticulation and irregularly shaped plates, thickly covered with pigment spots. I attempted in vain to find the eye at the base of this huge odd terminal tentacle, the homologue of course of the odd terminal tentacle of the ray of the starfish, in which we can so easily trace the eye in very early stages. The mass of pigment covering the test, spines, and tentacles, made it impossible to observe the eye if it does exist. I have also failed to see the eye in the young Echinids of other genera[1] which I had occasion to examine, many of which were less advanced than the young of *Goniocidaris* here described. This stage is interesting as showing perhaps more plainly than in any other young Echinids I have seen, that the abactinal system is developed simultaneously with the coronal plates from the primary reticulation of the test, while the actinal system on the contrary is from the earliest stages separated as such from the coronal plates. In a view from the actinal side (Pl. II. fig. 9) the ten buccal tentacles are well

[1] See A. Agassiz, Mem. Am. Acad., vol. ix, 1864, Embryology of Echinoderms; and A. Agassiz, Embryology of the Starfish, 1864, in Agassiz's Cont. Nat. Hist. U. S., vol. v.; also Memoirs Mus. Comp. Zool., vol. v., No. 1, 1877.