many other genera. There are usually three to each side arm plate, and they grow thicker as they near the base of the arm, where they acquire the form of little, blunt, rough spines (figs. 10, 11, 12, *q*). Besides double tentacle hooks, there are others that are simple, and, from the grain on which they are mounted as a base, may be termed grain hooks. Those that first appear are simple spicules, bent or straight, standing on the side arm plates, above the tentacle hooks (figs. 8, 9). Then a granule is formed under them (fig. 13). More of such hooks grow on the grains or little swollen plates which occupy the position of upper arm plates among Ophiurans (fig. 10). Later there remain on the side arm plate only the true tentacle hooks, while the grain hooks stand on those double rows of raised grains which give the ringed or burred look to the small branches of Astrophytons (Pl. XXXV. fig. 19). As they approach the disk and thicker part of the arm these raised rows sink and their hooks disappear, and a coarse granulation overgrows the first layer of swelled plates, so that the surface of the arm becomes even. The side arm plates which began as ridges encircling the whole arm change their character rapidly. In the central depression between them, on the upper side of arm, a little upper arm plate begins to form (Pl. XXXVI. fig. 5), like a perforated lime crust. Then, as the arm enlarges, the side plates separate above, and between them are formed additional scales, which occupy the position of upper arm plates, but follow no rule in their growth (fig. 7). They do not even multiply by the irregular method of *Hemieuryale pustulata*.[1] These scales, at first thin (figs. 7, 15), afterwards thicken and become more rounded (figs. 10, 11), and some of them make the basis of the two annular rings of grains carrying the grain hooks, which afterwards drop off, so that at the base of an arm there appear (in a dry specimen) only the thickened skin, with a granular coat and a few irregular plates above the side arm plates. These last, early separated above (figs. 7, 15), maintain their union underneath (figs. 6, 12, 16, 17, 19, *i*). It follows that the growing arm rises more and more above them. They retain their simple form almost throughout, but, within the disk, in fully grown specimens they are broken in two (fig. 19, *i*). The under arm plates first appear about two forks from the tip of the arm; not, however, simple, but divided in three parts (fig. 12, *h*), which may still be seen inside the disk of young specimens (fig. 17, *h*, *h*).[2] In adults these plates, at the third fork of the arm, are in four triangular pieces, making together an oblong figure. Within the disk the number of pieces is considerable and their form irregular (fig. 19). In this respect there is a marked difference from Ophiurans, whose upper arm plates may be composed of several pieces developed under certain rules, but whose side and under plates are almost always simple, rarely of two pieces, and in one species only (*Ophiomyxa pentagona*) of three pieces.

[1] Bull. Mus. Comp. Zool., vol. iii., part 10, pl. v. figs. 8–11.

[2] Lutken's figures indicate that the young of *Gorgonocephalus eucnemis* has the under arm plate not divided (Addit. ad Hist. Oph., vol. i., pl. ii. figs. 17*b* and 17*b'*).