

which keep the microscopically small and transparent nurse swimming about freely in the sea. This fringe of cilia is marked in Fig *A 2—A 4*, on Plate VII., by the narrow alternately light and dark seam. The nurse then, in the first place, forms a perfectly simple intestinal canal for nutrition, mouth (*o*), stomach (*m*) and anus (*a*). Later, the windings of the fringe of cilia become more complicated, and there arise arm-like processes (Fig. *A 3—D 3*). In sea-stars (*A 4*) and sea-urchins (*C 4*) these arm-like processes, which are fringed with cilia, afterwards become very long. But in the case of sea-lilies (*B 3*) and sea-cucumbers (*D 4*), instead of this, the fringe of cilia, which at first, through winding in and out, forms one closed ring, changes subsequently into a succession of separate ciliated girdles, one lying behind the other.

In the interior of this curious nurse there then develops, by a non-sexual process of generation, namely, by the formation of internal buds or germ-buds (round about the stomach), the second generation of Star-fishes, which later on become sexually ripe. This second generation, which is represented on Plate IX. in a fully developed condition, exists originally as a stock or cormus of five worms, connected at one end in the form of a star, as is most clearly seen in the sea-stars, the most ancient and original form of the star-fishes. The second generation, which grows at the expense of the first, appropriates only the stomach and a small portion of the other organs of the latter, but forms for itself a new mouth and anus. The fringe of cilia, and the other parts of the body of the nurse, afterwards disappear. The second generation (*A 5—D 5*), is at first smaller or not much larger than the nurse, whereas, by growth, it afterwards becomes more than a hundred times, or even a thousand times, as large. If the ontogeny of the typical representatives of the four classes of Star-fishes be compared, it is easily seen that the original kind of development has been best preserved in sea-stars (*A*) and sea-urchins (*C*) by inheritance, whereas in sea-lilies (*B*) and sea-cucumbers it has been suppressed according to the laws of abbreviated inheritance (vol. i. p. 212).