

basket (respiratory cavity); (*l*) cavity of the body; (*m*) muscles; (*n*) testicle (in the ascidia united with the ovary into a hermaphrodite gland); (*o*) anus; (*p*) genital orifice; (*q*) well-developed embryos in the body cavity of the ascidia; (*r*) rays of the dorsal fin of the amphioxus; (*s*) tail-fin of the amphioxus; (*w*) roots of the ascidia.

Plate XII. shows the *Ontogenesis*, or the individual development of the *Ascidia* (*A*) and the *Amphioxus* (*B*) in five different stages (1-5). Fig. 1 is the egg, a simple cell like the egg of man and all other animals (Fig. *A* 1 the egg of the ascidia, Fig. *B* 1 the egg of the amphioxus). The actual cell-substance, or the protoplasm of the egg-cell (*z*), the so-called yolk, is surrounded by a covering (cell-membrane, or yolk-membrane), and encloses a globular cell-kernel, or nucleus (*y*), the latter, again, contains a kernel-body, or nucleolus (*x*); when the egg begins to develop, the egg-cell first subdivides into two cells. By another sub-division there arise four cells (Fig. *A* 2, *B* 2), and out of these, by repeated sub-division, eight cells (vol. i. p. 190, Fig. 4 *C*, *D*). By fluid gathering in the interior these form a globular bladder bounded by a layer of cells. On one spot of its surface the bladder is turned inwards in the form of a pocket (Fig. *A* 4, *B* 4). This depression is the beginning of the intestine, the cavity (*d* 1) of which opens externally by the provisional larval-mouth (*d* 4). The body-wall, which is at the same time the stomach-wall, now consists of two layers of cells—the germ-layers. The globular larva (Gastrula), now grows in length. Fig. *A* 5 represents the larva of the ascidia, Fig. *B* 5 that of the amphioxus, as seen from the left side in a somewhat more advanced state of development. The orifice of the intestine (*d* 1) has closed. The dorsal side of the intestine (*d* 2) is concave, the ventral side (*d* 3) convex. Above the intestinal tube, on its dorsal side, the neural tube, the beginning of the spinal marrow, is being formed, its cavity still opens externally in front (*g* 2). Between the spinal marrow and the intestine has arisen the spinal rod, or chorda dorsalis (Notochord) (*c*), the axis of the inner skeleton. In the larva of the ascidia this rod (*c*) proceeds