

by a continuous sheath of mesoderm, which is termed the **membranous vertebral column**. In this mesoderm the original segments are still distinguishable, but each is now differentiated into two portions, an anterior, consisting of loosely arranged cells, and a posterior, of more condensed tissue (Fig. 65, *A* and *B*). Between the two portions the rudiment of the intervertebral fibrocartilage is laid down (Fig. 65, *C*). Cells from the posterior mass grow into the intervals between the myotomes (Fig. 65, *B* and *C*) of the corresponding and succeeding segments, and extend both dorsally and ventrally; the dorsal extensions surround the neural tube and represent the future vertebral arch, while the ventral extensions extend into the body-wall as the costal processes. The hinder part of the posterior mass joins the anterior mass of the succeeding segment to form the vertebral body. Each vertebral body is there-

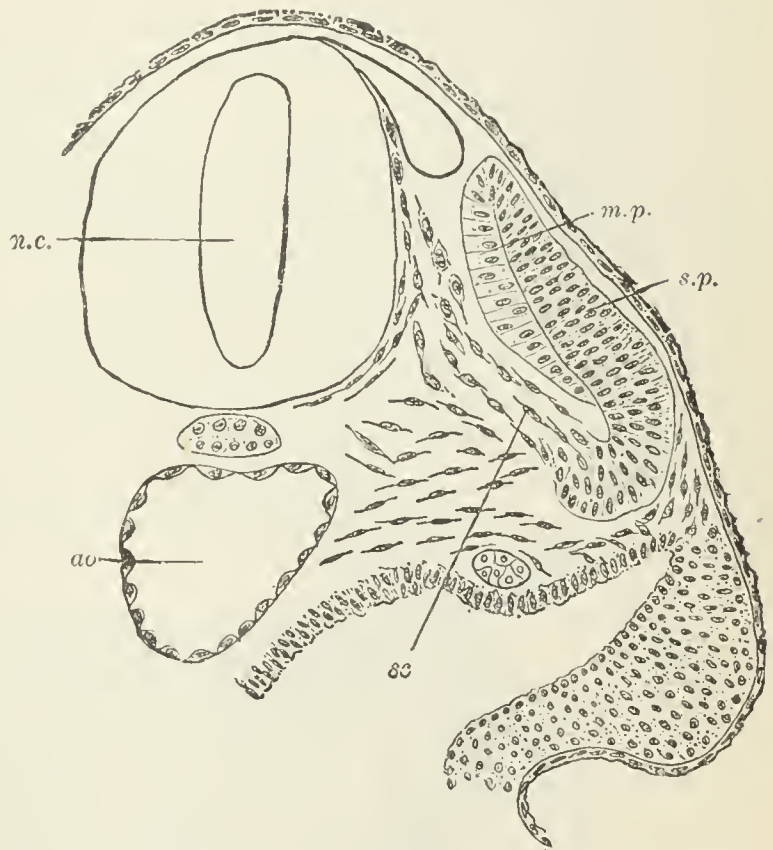


FIG. 64.—Transverse section of a human embryo of the third week to show the differentiation of the primitive segment. (Kollmann.) *ao.* Aorta. *m.p.* Muscle-plate. *n.c.* Neural canal. *sc.* Sclerotome. *s.p.* cutis-plate.

fore a composite of two segments, being formed from the posterior portion of one segment and the anterior part of that immediately behind it. The vertebral

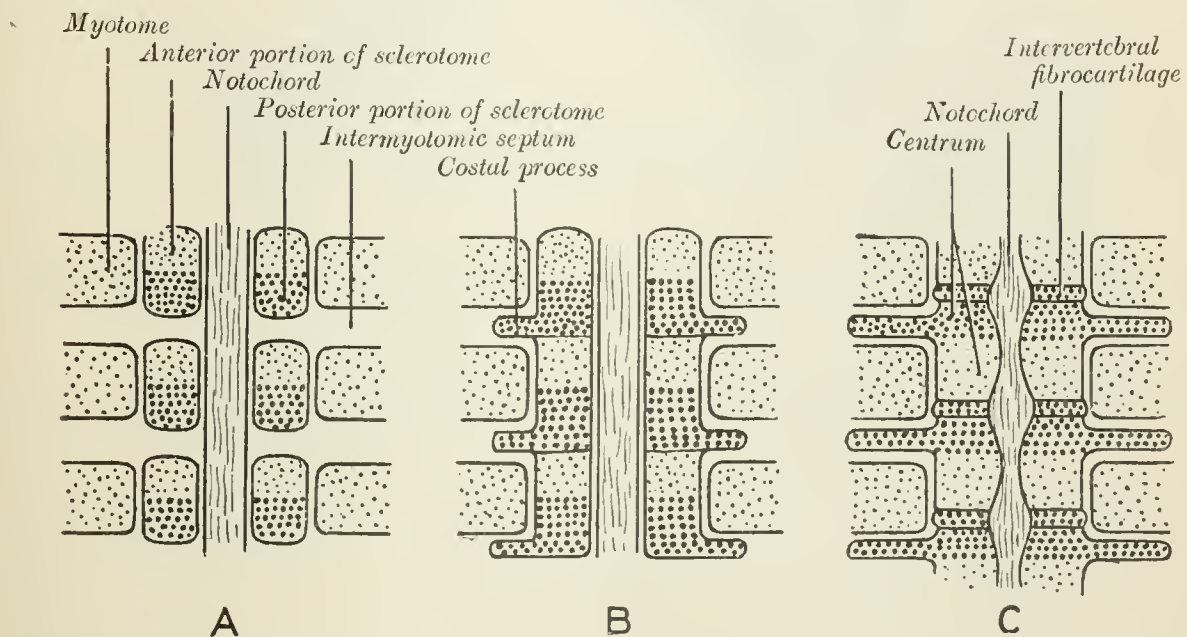


FIG. 65.—Scheme showing the manner in which each vertebral centrum is developed from portions of two adjacent segments.

and costal arches are derivatives of the posterior part of the segment in front of the intersegmental septum with which they are associated.