

17 Days

Stage 25 Fingers and Toes Joined Together

17 Days, 17–20 mm

External Features

The skin is wrinkled and thickened, and the subcutaneous veins are no longer distinctly visible (compare Figs. 256 and 245). The eyelids are fused and thickened. The fingers and toes are parallel. In all cases examined, the umbilical hernia has disappeared.

Length. There is considerable variation in length due to different degrees of curvature of the fetuses: 16.5–20 mm in the unfixed state.

Circulatory System

The pattern of the superficial veins has not changed since the previous stage, but is more difficult to recognize.

Intestinal Tract

The shape of the oral and nasal cavities has not changed much.

Endocrine derivatives. The *thyroid* is a bilobed organ, with a narrow isthmus. The solid, branched epithelial cords are beginning to form small well-vascularized follicles.

The *parathyroids* are forming compact clusters of cells on each side, which join the posterior margins of the thyroid lobes.

FIG. 255. Living fetus, frontal view, 17 days, 20 mm.
KT 908

FIG. 256. Living fetus, viewed from the left, 17 days, 20 mm.
KT 908

FIG. 257. Living fetus, viewed from the right. Same developmental stage, but one day older, 18 days, 20 mm.
KT 657. 4:1

FIG. 258. Eye, horizontal section, enlarged view of Fig. 260.

C = cornea, *I* = iris rudiment, *Cc* = corpus ciliare, *G* = ganglion layer of retina, *Pl* = punctum lacrimale (on inner surface of eyelid).

KT 724, 17 days. 105:1

FIG. 259. Pineal gland, sagittal section, 17 days.

V = vena cerebri interna.

KT 724. 105:1

FIG. 260. Low power view of eye, with nervus opticus and vicinity.

K = caput mandibulae, *gG* = ganglion Gasseri, *N* = nasal cavity.

KT 724, 17 days. 27:1

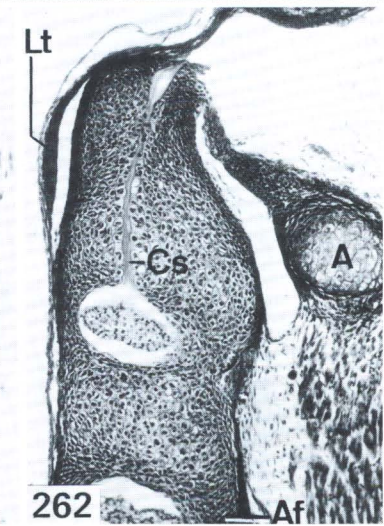
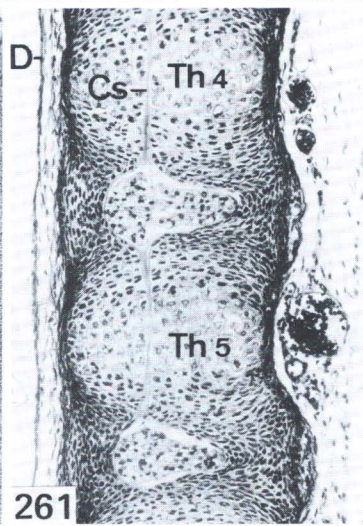
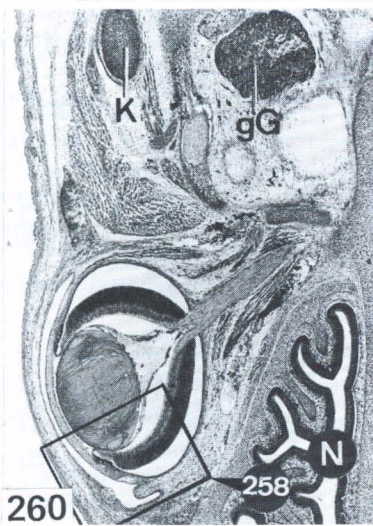
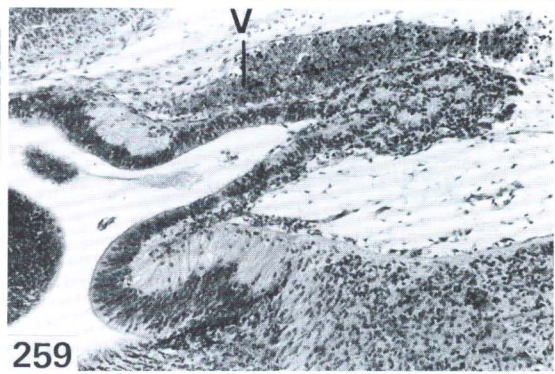
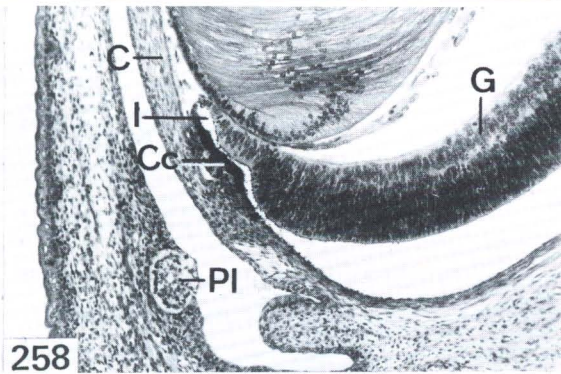
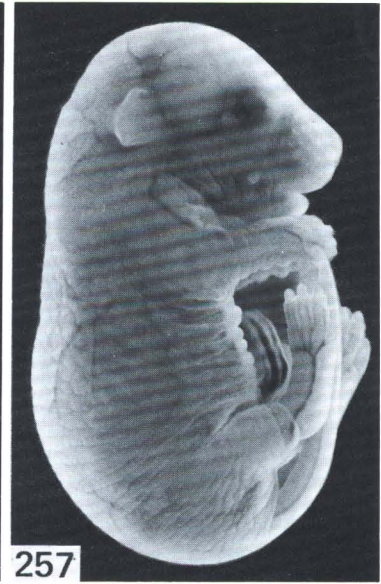
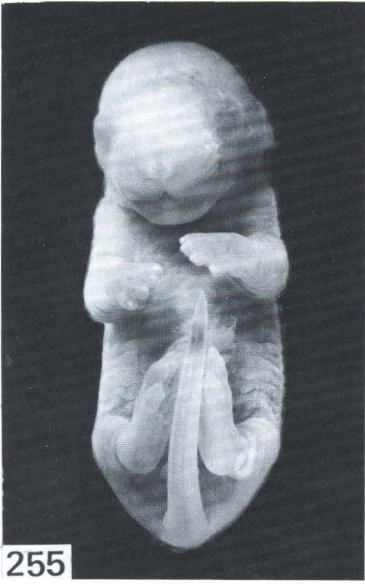
FIG. 261. Sagittal section through thoracic vertebrae 4 and 5 (*Tb₄* and *Tb₅*) +/+ fetus, 17 days.

Cs = notochord sheath, *D* = dura mater spinalis. 105:1

FIG. 262. Sagittal section through axis, 17 days.

A = anterior arch of atlas, *Af* = anulus fibrosus *C₂/C₃*, *Lt* = ligamentum transversum atlantis, *Cs* = notochord sheath.

KT 908. 100:1



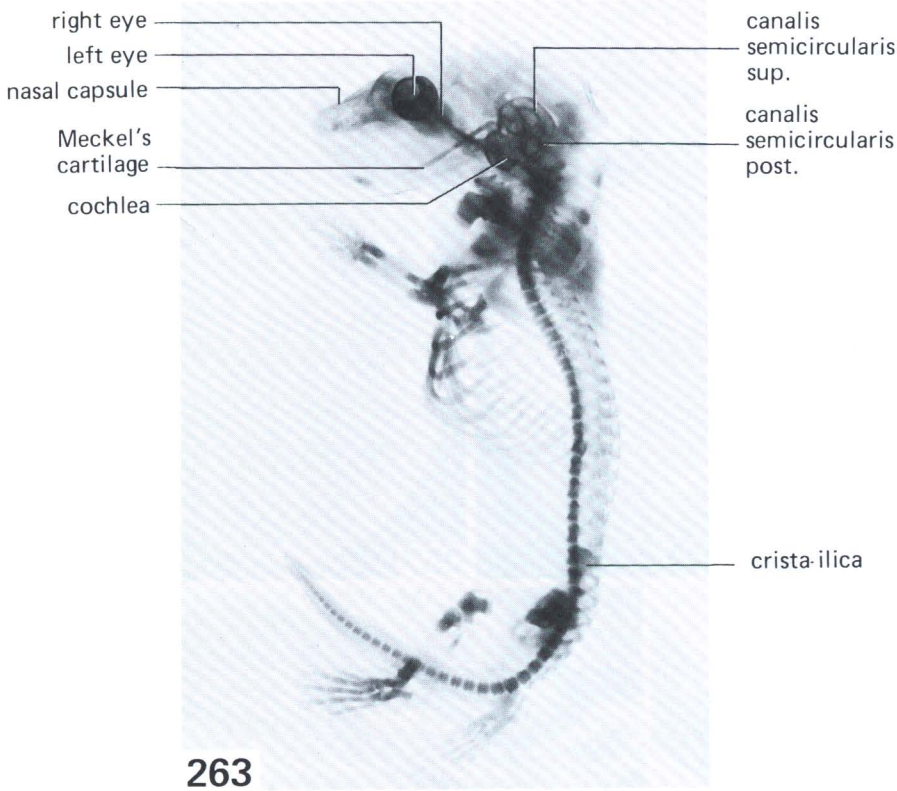
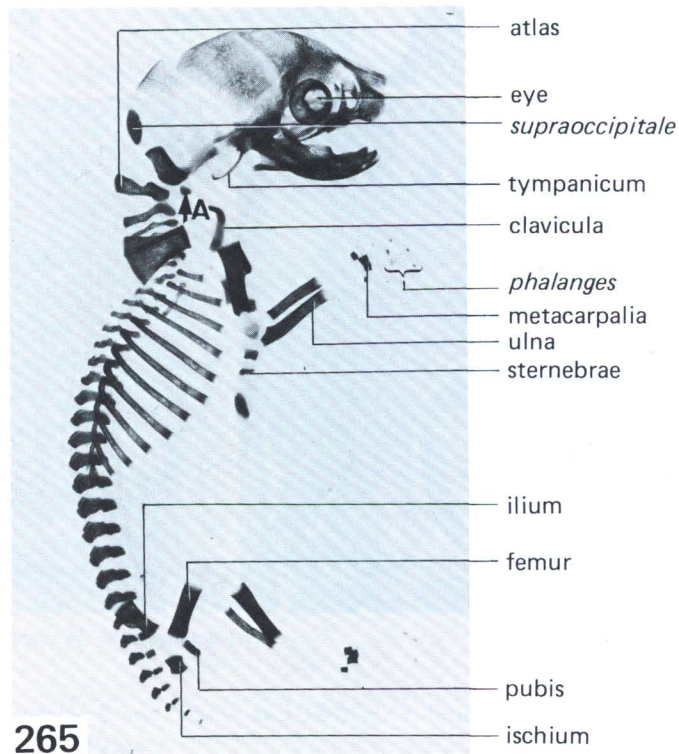
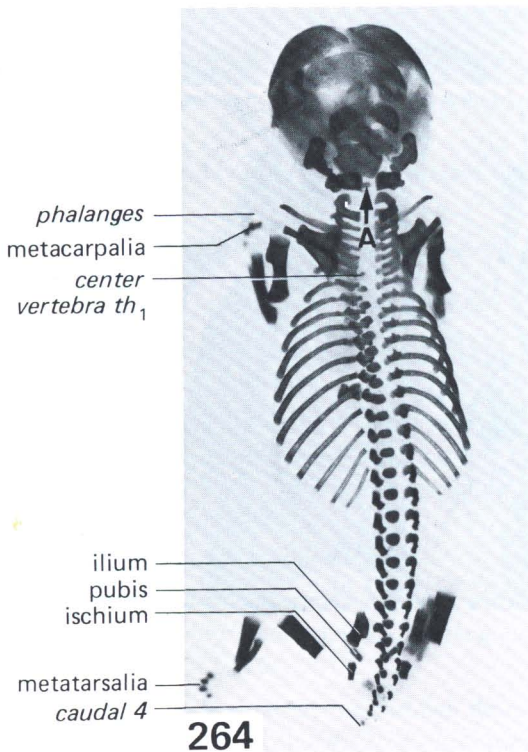


FIG. 263. Cartilaginous skeleton with 17 days. Cleared preparation, methylgreen. KT 776

FIG. 264. Alizarin cleared preparation, 17 days 23 h. Dorsal view. *New bones in italics.* A (arrow) indicates ossification center in anterior arch of atlas. KT 1028

FIG. 265. Right half of skeleton, same specimen as shown in Fig. 264.



The *thymus* is now a large organ, separated into two bilaterally situated main lobes containing numerous small blood vessels. Sometimes aggregations of reticulum may be seen, but there are no Hassal's corpuscles.

The structure of the *lungs* appears less compact now.

The respiratory pathways are extending peripherally.

The developing aveolar ducts are lined by cuboidal epithelium.

The *intestines* are quite similar to the previous stage.

The *spleen* is elongating rapidly. It contains, for the first time, lymphocytes.

The *adrenal glands* have a more continuous medullary region consisting of small pale cells, which differ sharply from the large, intensively stained cells of the cortex.

The *testes* have well formed tunicae albugineae. Numerous scattered interstitial cells are recognizable singly or in groups.

The *ovaries* contain many oocytes, often grouped together. They have entered the meiotic prophase.

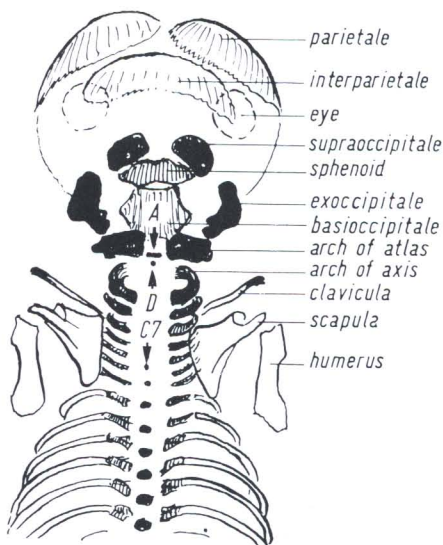


FIG. 266. Dorsal view of alizarin cleared preparation, cranial part, 17 days.

D = ossification center in basis of dens, newly arisen; *A* = anterior arch of atlas; *C7* = ossification center in body of 7th cervical vertebra.

KT 1028

Central Nervous System

Because of the gland-like budding of its epithelium (Fig. 259), the distal part of the lumen of the epiphysis is disappearing.

The eyelids are closed. The ciliary body is delineated (Fig. 258).

The capsule of the *labyrinth* has assumed its definite shape (Fig. 263).

Skeletal System

The skeletal system is best studied in cleared specimens (Figs. 264 and 265). Labels of new bones, which now stain with alizarin red S, are in italics in the legend, i.e., phalanges, etc. It should be pointed out that calcified cartilage may also be stained, and microscopically it is different from bone. Histologic sections of some vertebrae are illustrated in Figs. 261 and 262.

The ossification of the vertebral bodies begins in the lower thoracic region and has now proceeded forward to the first thoracic vertebra. The anterior arch of the atlas has already begun to ossify, and the basal ossification center of the dens is also developing at this early stage. The centrum of the dens axis is just appearing (Fig. 266). The centrum of the axis body will appear soon.

Material	Age	
KT 724-25	17 days	8 fetuses, 17-17.5 mm
KT 908	17 days	3 fetuses, 18-20 mm
KT 1052	17 days 2 h	8 fetuses, 18-20 mm
KT 1049-50	17 days 3 h	7 fetuses, 16.5-19.5 mm