

Stage 10 Amnion

7 Days

At 7 days, the shape of the extraembryonic part of the egg cylinder changes rapidly. A crescent-like *transverse fold* [41] temporarily appears, and pushes into the proamniotic cavity just caudal to the primitive streak. It was observed as a regularly occurring structure by Snell and Stevens [2]. It is perhaps a result of the rapid growth that occurs in the posterior wall of the egg cylinder at this time. It disappears in the following stage.

Formulation of Amnion

The tissue at the posterior end of the primitive streak bulges into the proamniotic cavity, and forms the *posterior amniotic fold*. It is continuous with the smaller lateral amniotic folds which unite to form the anterior amniotic fold. In this way, a continuous constriction forms around the middle of the egg cylinder, which is drawn tighter and tighter as the folds develop (Fig. 64). Finally, the lips of the folds will fuse and the amniotic cavity will be sealed off completely. In all embryos of this stage it is still open.

In the mesoderm of the posterior amniotic fold, small cavities appear between the cells, which coalesce to form a single large cavity, the *exocoelom*. The exocoelom is lined, except for the allantois, by a mesothelium.

Figs. 57–63: Formation of amnion: 7 days

FIG. 57. Low magnification of uterus, cross section.

U = remnant of uterine lumen, specimen between 76 and 77 days.

No extraembryonic transverse fold. 22.5:1

FIG. 58. Low magnification of uterus, cross section.

Zo = vascular zone developing. The section passes closely lateral to the connecting stalk of the egg cylinder.

KT 948, 7 days 3 h. 25:1

FIG. 59. Reconstruction, starting from a parasagittal section.

Dashed line indicates hidden lumen of egg cylinder, *K* = ectoplacental cone, *Q* = transverse fold, (*below*) the bulge of the amniotic fold.

KT 948, 7 days 3 h

FIG. 60. Egg cylinder.

KT 948, 7 days 3 h. 130:1

FIG. 61. Detail of Fig. 60.

C = lumen formation in mesoderm of the posterior amniotic fold, *Q* = extraembryonic transverse fold. 350:1

FIG. 62. Sagittal section through egg cylinder.

Embryo bt 76, 7 days. 90:1

FIG. 63. Detail of Fig. 62.

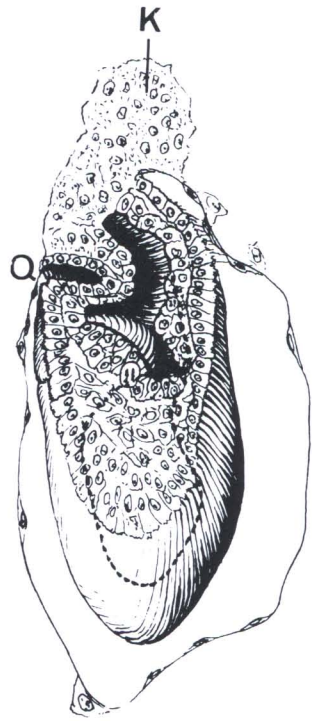
En = entoderm, *Ek* = ectoderm, *M* = mesoderm. 270:1



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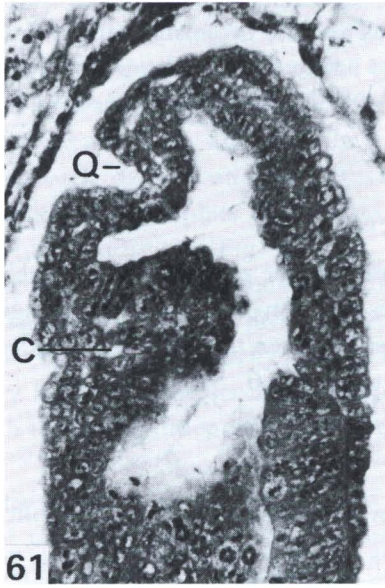
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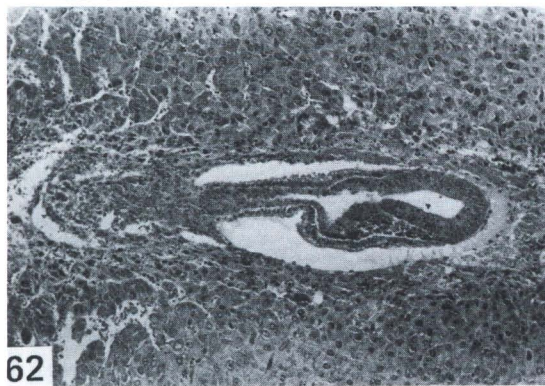
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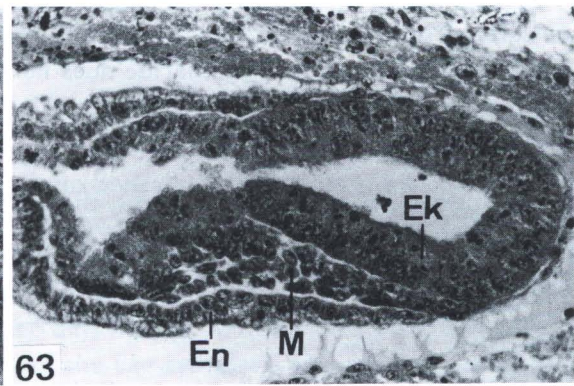
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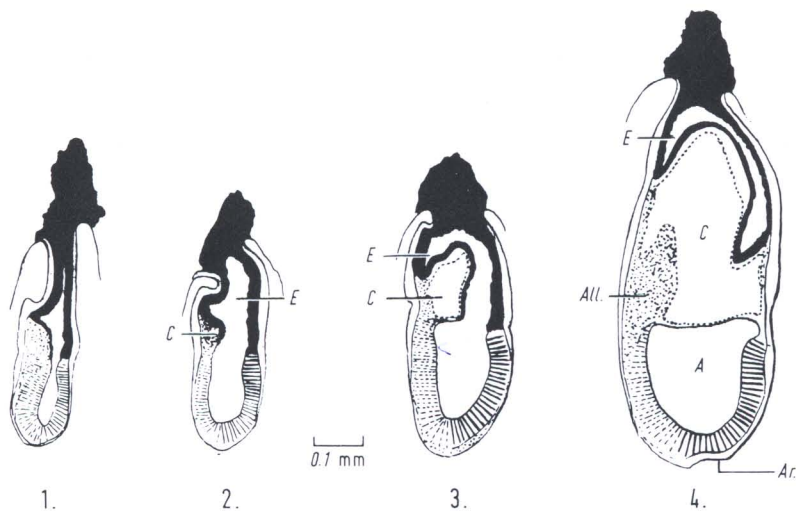


FIG. 64. Formation of amnion. (1) 7 days, (2) 7 days 3 h, (3) 7 days 10 h, (4) 7 days 20 h. The extraembryonic coelom is developing (3) by enlargement of the tiny lumina C (2). The coelomic mesothelium (*dashed line*) pushes between the amniotic cavity, A, and the ectoplacental cavity, E. The allantois (*All*) at first grows free into the coelom. *Black* = extraembryonic ectoderm, *Ar* = archenteron.

Formation of Mesoderm

The first mesoderm cells appear at the posterior end of the egg cylinder. As a consequence, its wall thickens and becomes three-layered (Fig. 63). In sagittal sections, the wedge-shaped head process may be observed between the flattened entoderm (*En*) and the ectoderm (*Ek*). The notochord cannot be yet identified.

Entoderm

Toward the ectoplacental cone, the cells of the visceral entoderm are cylindrical in shape and possess many vacuoles. These do not contain lipids or glycogen. However, in cryostatic sections very fine lipid droplets may be seen in the other parts of the cytoplasm. After fixation in Carnoy's solution, there is an intense PAS-reaction which is strictly limited to the superficial layer. The stained polysaccharide does not seem to be glycogen [29].

Endometrium

In the mesometrial side of the uterus, the capillaries enlarge and form distinct sinusoids (Fig. 58). The original *lumen of the uterus* is adjacent to this area, and is sometimes narrowed to a small continuous tube. The lumen becomes discontinuous in the next stage.

Material	Age	
KT 889	7 days 0 h	1 egg cylinder with extraembryonic transverse fold
KT 947/48	7 days 3 h	8 egg cylinders with extraembryonic transverse fold 1 young egg cylinder without extraembryonic transverse fold, without mesoderm
Bt 76	7 days	1 egg cylinder without extraembryonic transverse fold, but formation of mesoderm visible