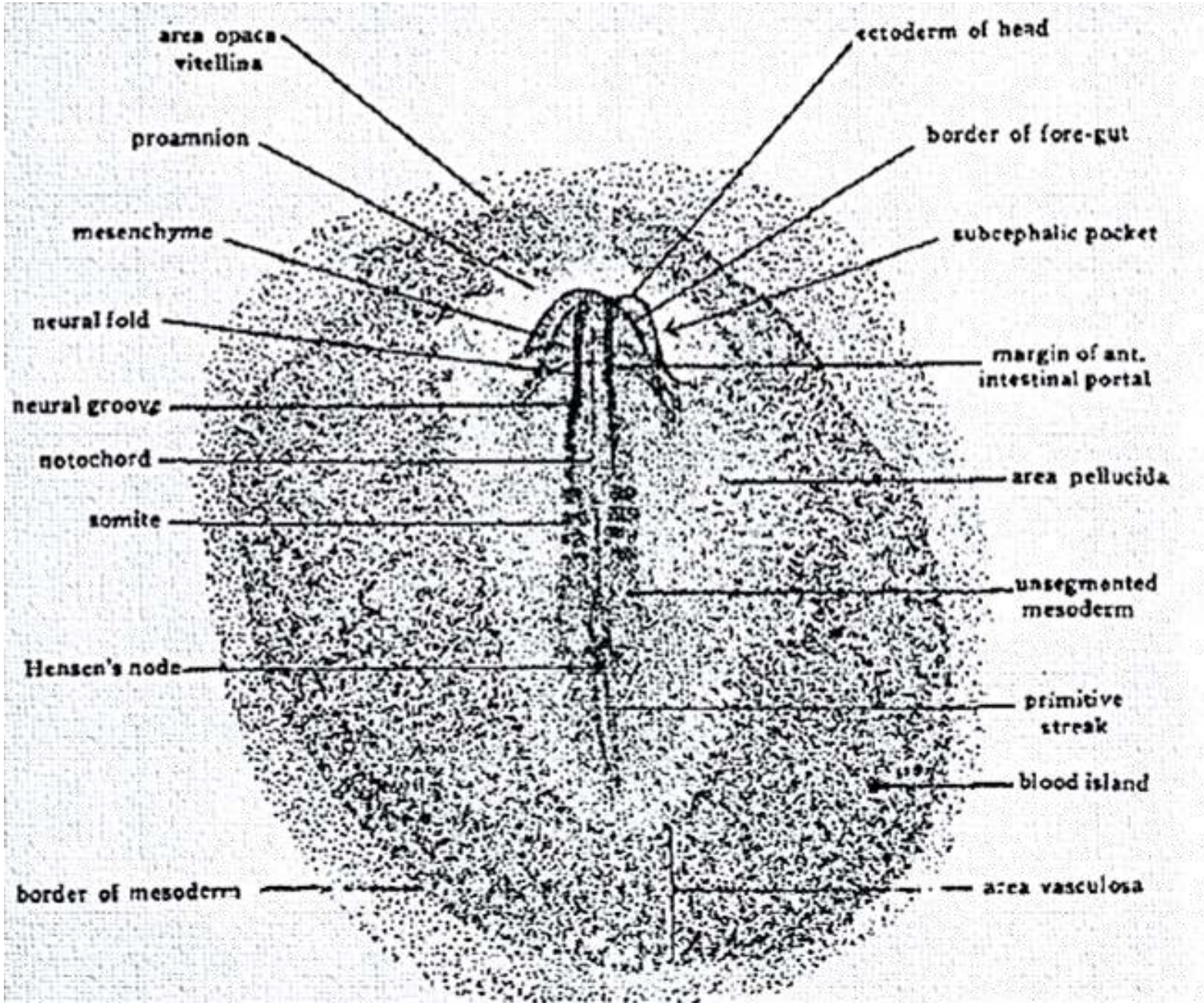
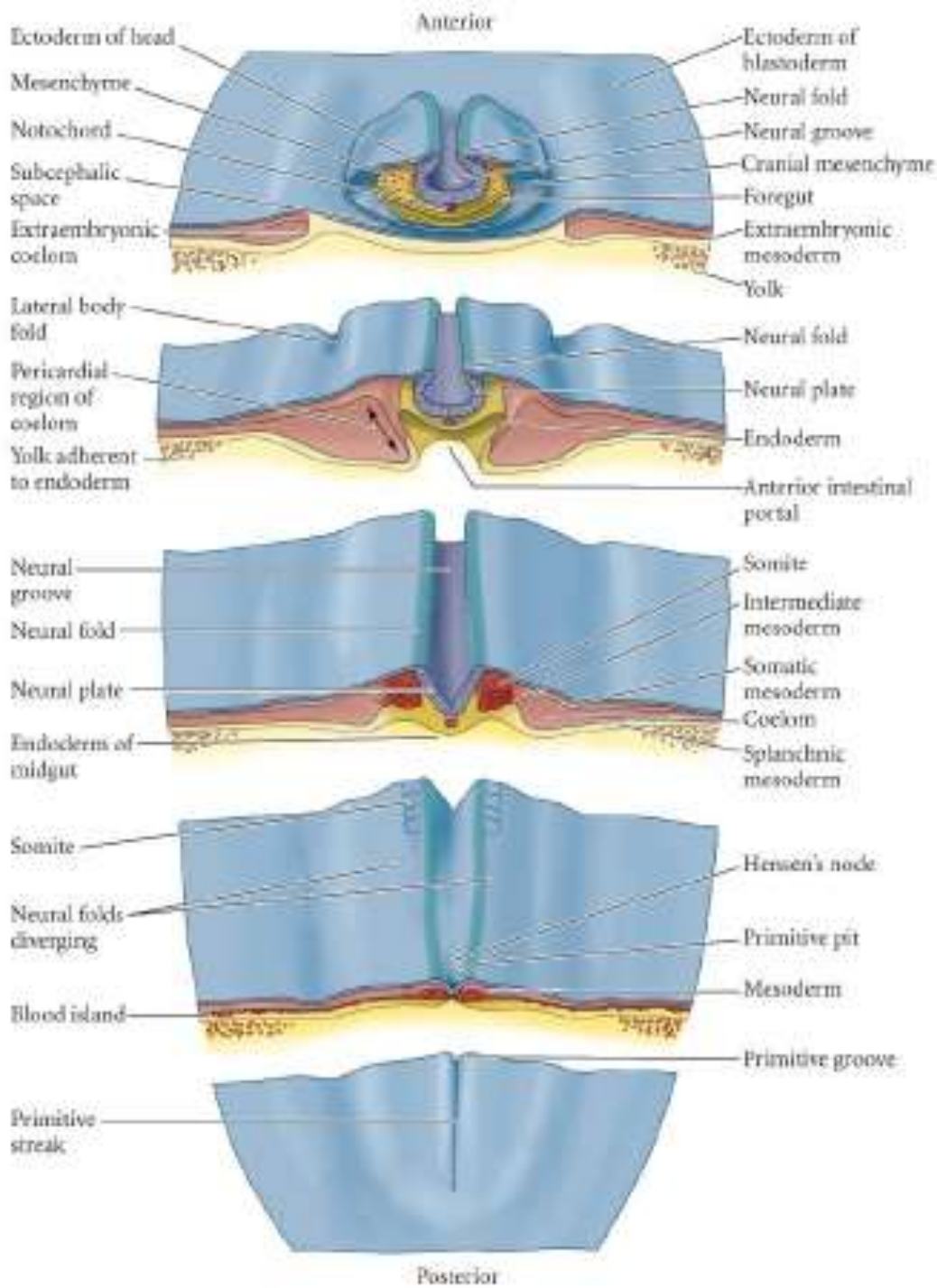
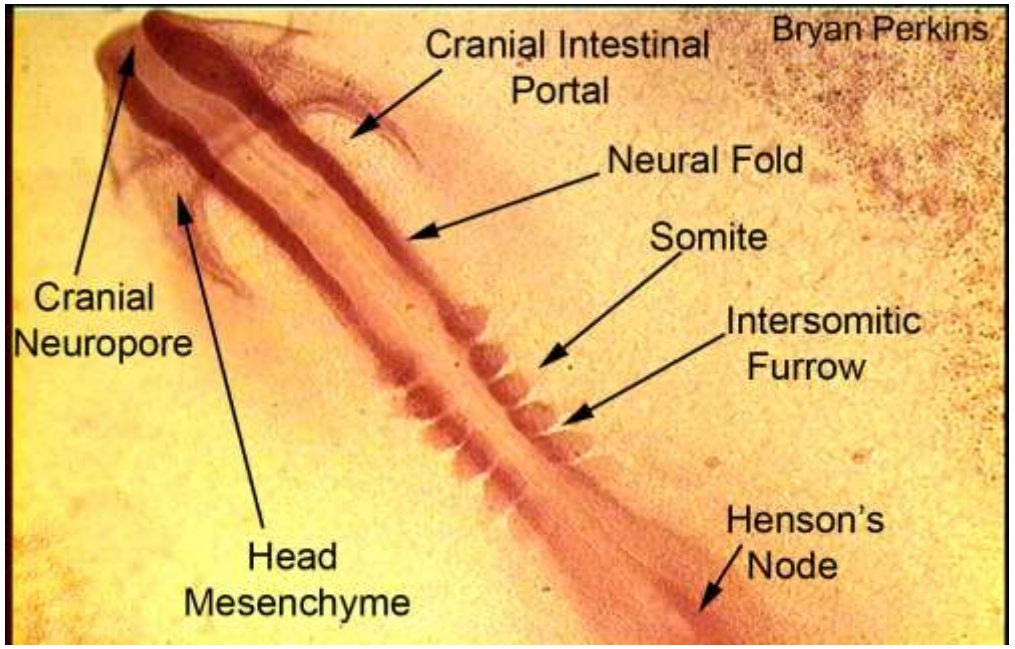
Developmental Biology

Stage 8


area opaca
vitellina
proamnion
mesenchyme
neural fold
neural groove
notochord
somite
Hensen's node
border of mesoderm
ectoderm of head
border of fore-gut
subcephalic pocket
margin of ant.
intestinal portal
area pellucida
unsegmented
mesoderm
primitive
streak
blood island
area vasculosa

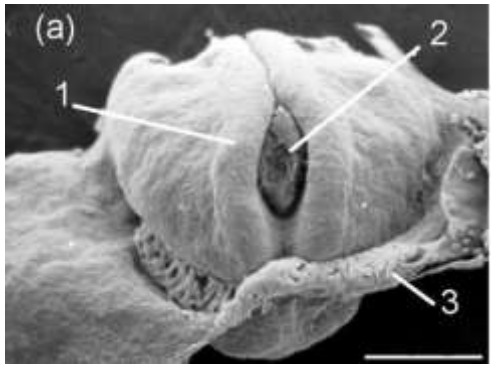

Anterior
Ectoderm of head
Mesenchyme
Notochord
Subcephalic space
Extraembryonic coelom
Ectoderm of blastoderm
Neural fold
Neural groove
Cranial mesenchyme
Foregut
Extraembryonic mesoderm
Yolk
Lateral body fold
Pericardial region of coelom
Yolk adherent to endoderm
Neural fold
Neural plate
Endoderm
Anterior intestinal portal
Neural groove
Neural fold
Neural plate
Endoderm of midgut
Somite
Intermediate mesoderm
Somatic mesoderm
Coelom
Splanchnic mesoderm
Somite
Neural folds diverging
Blood island
Hensen's node
Primitive pit
Mesoderm
Primitive groove
Primitive streak
Posterior



PC: eggrise.blogspot.com

Formation of the Head: Embryo of 21 to 22 hours the anterior part of the embryonal area is thickened and elevated above the level of the surrounding blastoderm, with a well defined crescentic fold marking its anterior boundary.

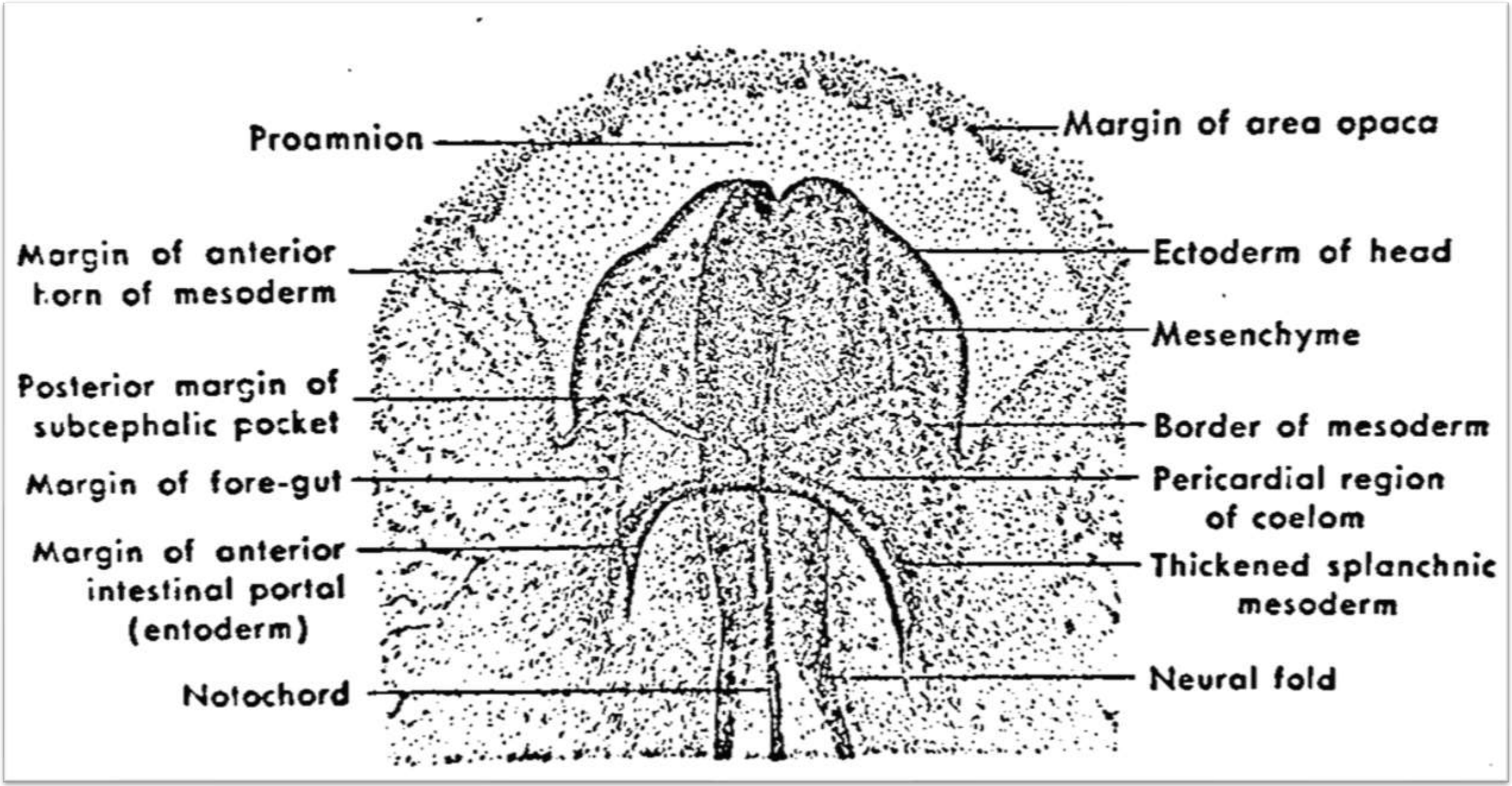
In the mid-line the notochord can be seen through the overlying ectoderm. It is larger posteriorly near its point of origin than it is anteriorly.



PC: Ruth Bellairs and Mark Osmond

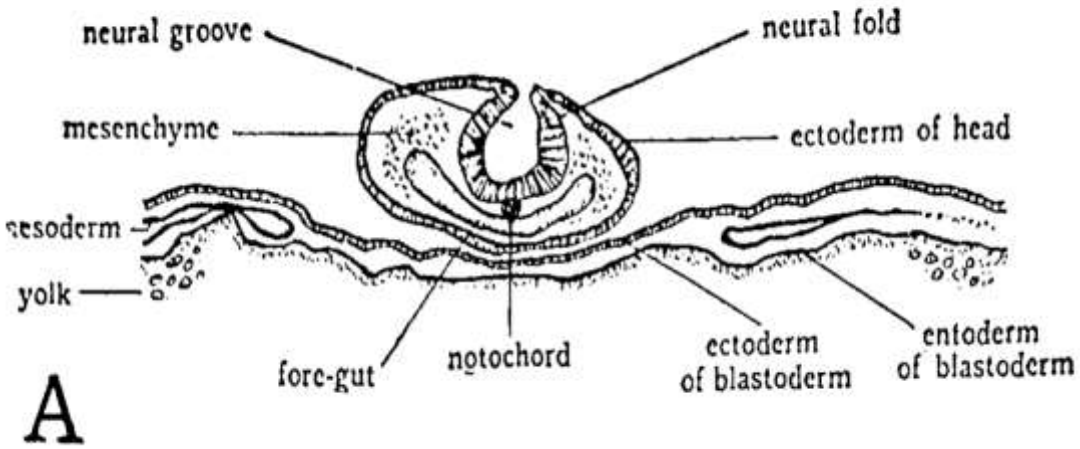
The Formation of the Neural Groove: At 24 hours of incubation the folding of the neural plate is much more clearly marked.

In a dorsal view of the entire embryo the neural folds appear as a pair of dark bands


Proamnion
Margin of area opaca
Margin of anterior horn of mesoderm
Ectoderm of head
Mesenchyme
Posterior margin of subcephalic pocket
Border of mesoderm
Margin of fore-gut
Pericardial region of coelom
Margin of anterior intestinal portal (entoderm)
Thickened splanchnic mesoderm
Notochord
Neural fold

- **The establishment of the Foregut**: The entoderm forms a pocket within the ectoderm, much like a small glove finger within a larger.
- This entodermic pocket, is the first part of the digestive tract to acquire a definite cellular floor.
- The posterior part of this region will form the mid gut.
- The opening from the mid-gut into the fore-gut is called the anterior intestinal portal
- The margin of the anterior intestinal portal appears as a well defined crescentic line

TS Of the Embryo

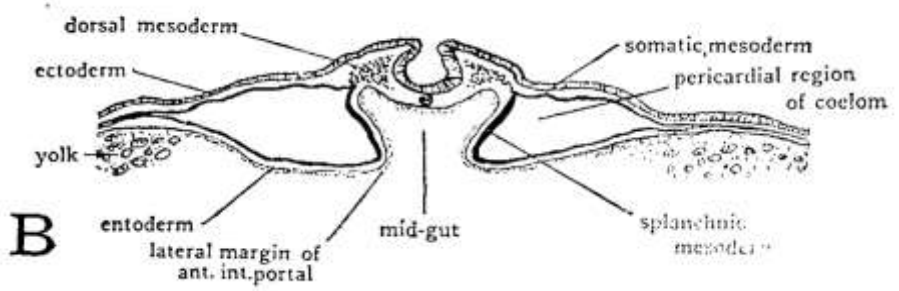


- A section passing through the head region shows the neural plate folded so it forms a nearly complete tube.
- Divisions of the Mesoderm: First metamerically arranged structures are the mesodermic somites.

- A section passing through the head region shows the neural plate folded so it forms a nearly complete tube.
- First metamerically arranged structures are the mesodermic somites.

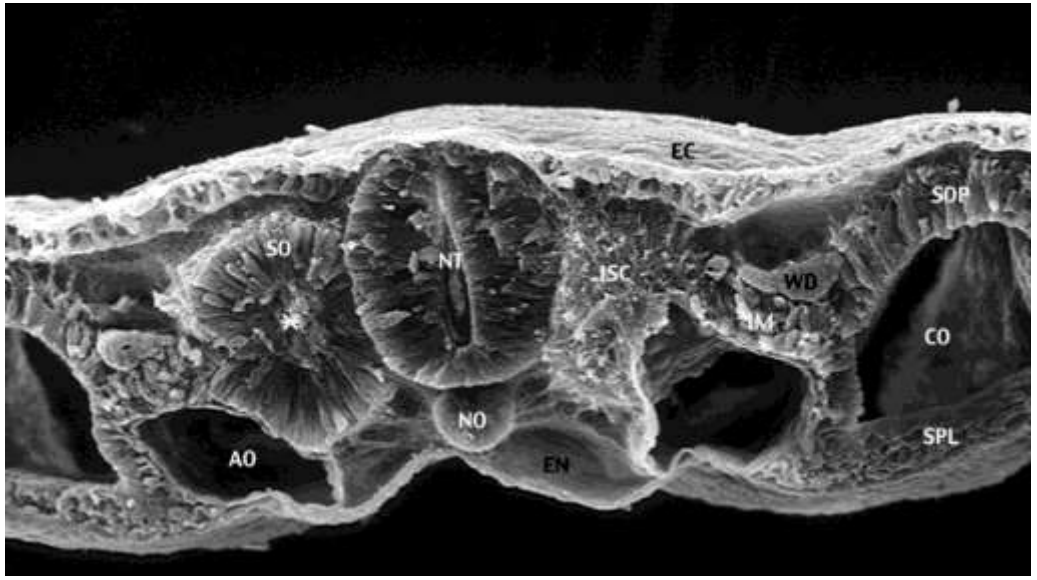
Mesoderm

- The somite's arise by division of the mesoderm of the dorsal or segmental zone to form block-like cell masses.
- Three somite's are defined completely, while the fourth if formed and but the posterior part is not formed completely.
  1. the dorsal mesoderm which at this level has been organized into somites,
  2. the intermediate mesoderm, a thin plate of cells connecting the dorsal and lateral mesoderm
  3. the lateral mesoderm which is distinguished from the intermediate by being split into two layers with a space between them.



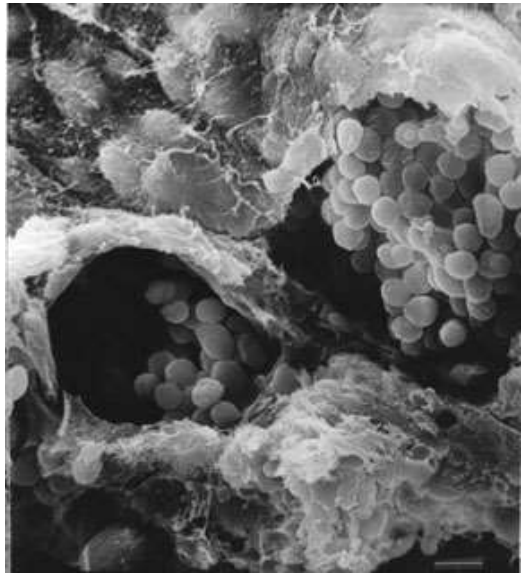
Somite

- Somite are compact structure of mesodermal origin.
- They lie on either side of the neural tube
- Somites after formation are solid but later show a minute cavity in it.
- Initially they are large, in due time period they compact



Area Vasculosa.

- A very marked difference between the proximal portion of the area opaca adjacent to the area pellucida
- Proximal region is much darker and has a somewhat mottled appearance to aggregation of mesoderm that will form blood islands.
- The distal zone is called the area opaca vitellina.



PC: https://academics.hamilton.edu/biology/smiller/embpix.html

- https://embryology.med.unsw.edu.au/embryology/index.php/Book_-_The_Early_Embryology_of_the_Chick
- Stockdale, F. E., Nikovits Jr, W., & Christ, B. (2000). Molecular and cellular biology of avian somite development. *Developmental dynamics: an official publication of the American Association of Anatomists*, *219*(3), 304-321.