

LABORATORIO - 2

ANATOMIA COMPARATA E BIOLOGIA DELLO SVILUPPO 029SV

Gabriele Baj gbaj@units.it

Giulia Romano giulia.romano@units.it

Dipartimento di Scienze della Vita
Via Licio Giorgieri, 5
Edificio Q, 2p, st.214
TRIESTE
040-5588676



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DI TRIESTE



Dipartimento di
Scienze della Vita

1. General Embryology

Lot-6392199 – Carolina

- 1.1 Starfish-Germinal Vesicle w.m. 31-1006 (E510)
- 1.2 Starfish Early Cleavage w.m. 31-1048 (E530)
- 1.3 Starfish Development w.m. 311126
- 1.4 Frog Egg Early Cleavage rep.sag.sec. 311242
- 1.5 Frog Late Cleavage rep.sa.sec. 31-1248
- 1.6 Frog Egg Blastula rep.sag.sec. 311254
- 1.7 Frog Early Yolk Plug rep. sag. Sec. 31-1266
- 1.8 Frog Late Yolk Plug rep.sag.sec. 31-1272
- 1.9 Frog Early Neural Groove c.s. 31-1278
- 1.10 Frog Late Neural Groove 31-1284(E1681)
- 1.11 Frog Early Neural Tube c.s. 311290
- 1.12 Frog Late Neural Tube c.s. 311296
- 1.13 Frog Embryo 5-7 mm w.m. C311332
- 1.14 Chick 27-29 hr w.m. 31-1550
- 1.15 Chick 33 hr w.m. 311562
- 1.16 Chick 48 hr w.m. 311592
- 1.17 Chick 48 hr rep. c.s. 31-1598
- 1.18 Chick 96 hr rep.sag.sec. E2590
- 1.19 Chick Composite rep.sag.sec. 31-1700
- 1.20 Pig 10 mm rep c.s. 31-1846
- 1.21 Pig 10 mm rep.sag.sec 311852

2. The Frog Embryology (*Rana temporaria*)

Set-8300 – Lieder

- 2.1 8301 - Morula, l.s. with macro- and micromeres
- 2.2 8302 - Blastula, l.s. shows blastocoel
- 2.3 8303 - Gastrula, sag.l.s. shows germ layers dorsal lip yolk plug
- 2.4 8304 - Neurula, t.s. primordium of notochord, primary intestinal cavity
- 2.5 8305 - Early tail bud stage, t.s.
- 2.6 8306 - Early tail bud stage, sag.l.s.
- 2.7 8307 - Hatching stage, t.s. through region of head or gills
- 2.8 8308 - Hatching stage, t.s. through region of midbody
- 2.9 8309 - Young tadpole, t.s. through head
- 2.10 8310 - Young tadpole, t.s. through thorax or abdomen



3. The Chicken Embryology (*Gallus domesticus*)

Set-8200 – Lieder

- | | |
|------|--|
| 3.1 | 8201 - 24 hour t.s. with neural groove |
| 3.2 | 8202 - 36 hour t.s. with neural tube |
| 3.3 | 8203 - 48 hours l.s. with differentiation of mesoderm and ectoderm |
| 3.4 | 8204 - 3 day t.s. through the body |
| 3.5 | 8205 - 3 day t.s. of head |
| 3.6 | 8206 - 3-4 day horizontal section of entire specimen |
| 3.7 | 8207 - 4-5 day t.s. through region of head |
| 3.8 | 8208 - 4-5 day t.s. through region of head |
| 3.9 | 8209 - 8 day sagittal l.s. through entire specimen |
| 3.10 | 8210 - Feather development sec. through wings in different stages |

4. The Pig Embryology (*Sus scrofa*)

Set-8600 – Lieder

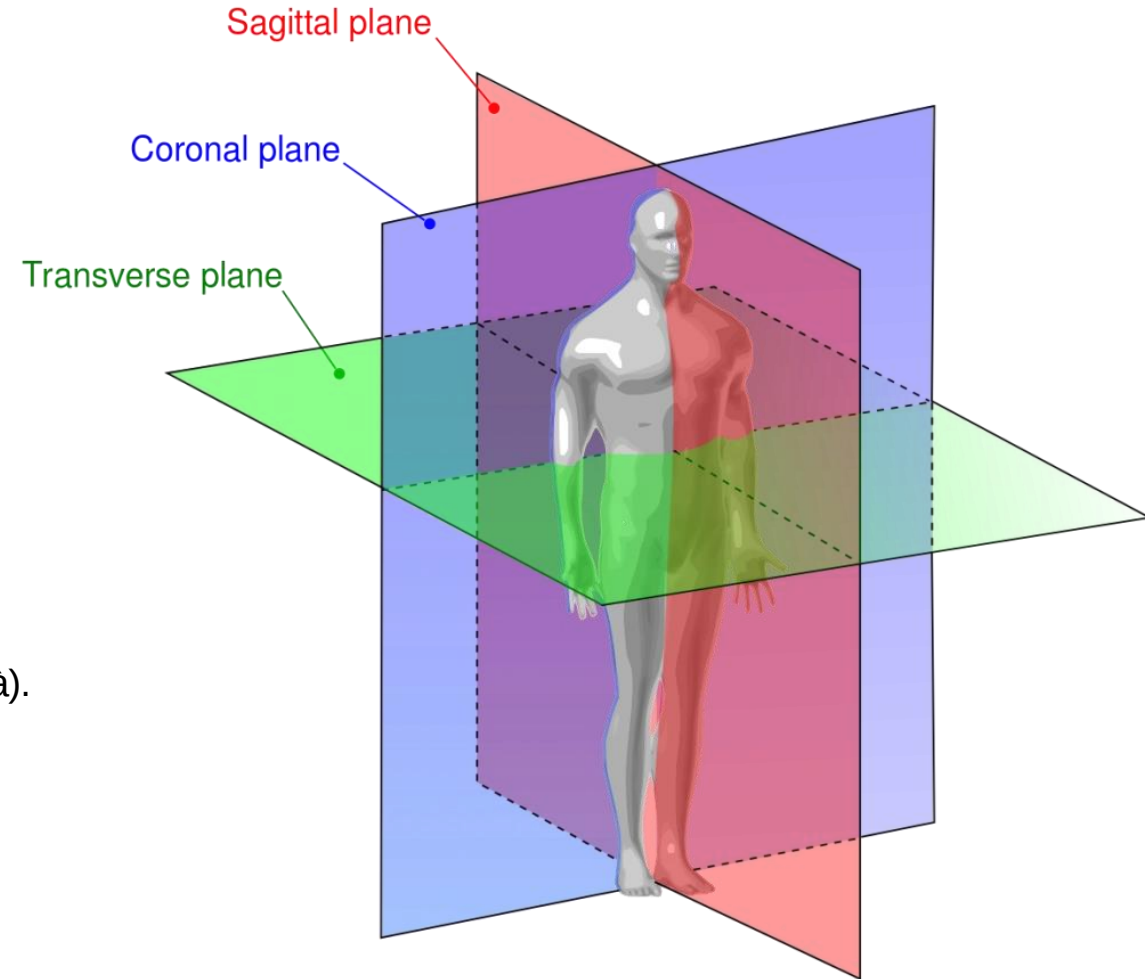
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|------|--|
| 4.1 | 8601 - 4-6 mm typical t.s. |
| 4.2 | 8602 - 7-9 mm sagittal l.s. |
| 4.3 | 8603 - 11-12 mm typical t.s. through region of head |
| 4.4 | 8604 - 11-12 mm typical t.s. through region of abdomen |
| 4.5 | 8605 - 15 mm typical t.s. through region of head |
| 4.6 | 8606 - 15 mm typical t.s. through region of thorax |
| 4.7 | 8607 - 15 mm typical t.s. through region of abdomen |
| 4.8 | 8608 - 15 mm sagittal l.s. |
| 4.9 | 8609 - 20-25 mm sagittal l.s. |
| 4.10 | 8610 - 20-25 mm frontal l.s. |

Termini di posizione

- **Piano sagittale**: divide il corpo in metà destra e sinistra.
- **Piano frontale (o coronale)**: divide il corpo in una parte anteriore (ventrale) e una posteriore (dorsale).
- **Piano trasversale (o assiale)**: divide il corpo in una parte superiore (craniale o cefalica) e una inferiore (caudale).

Termini di posizione relativi

- **Mediale**: vicino al piano mediano (la linea immaginaria che divide il corpo a metà).
- **Laterale**: lontano dal piano mediano.
- **Prossimale**: vicino al punto di origine o di attacco di un arto.
- **Distale**: lontano dal punto di origine o di attacco di un arto.
- **Anteriore (o ventrale)**: verso la parte anteriore del corpo.
- **Posteriore (o dorsale)**: verso la parte posteriore del corpo.
- **Superiore (o craniale o cefalico)**: verso la testa.
- **Inferiore (o caudale)**: verso la coda o la parte inferiore del corpo.
- **Superficiale (o esterno)**: vicino alla superficie del corpo.
- **Profondo (o interno)**: lontano dalla superficie del corpo.

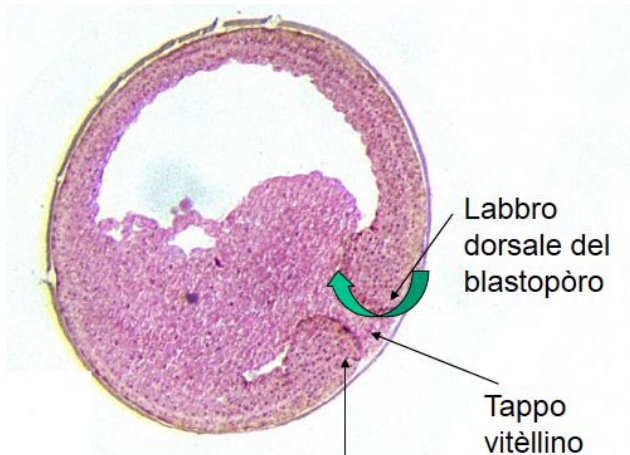


The Frog Embryology

2.3 8303 - Gastrula, sag.l.s.
shows germ layers dorsal lip
yolk plug

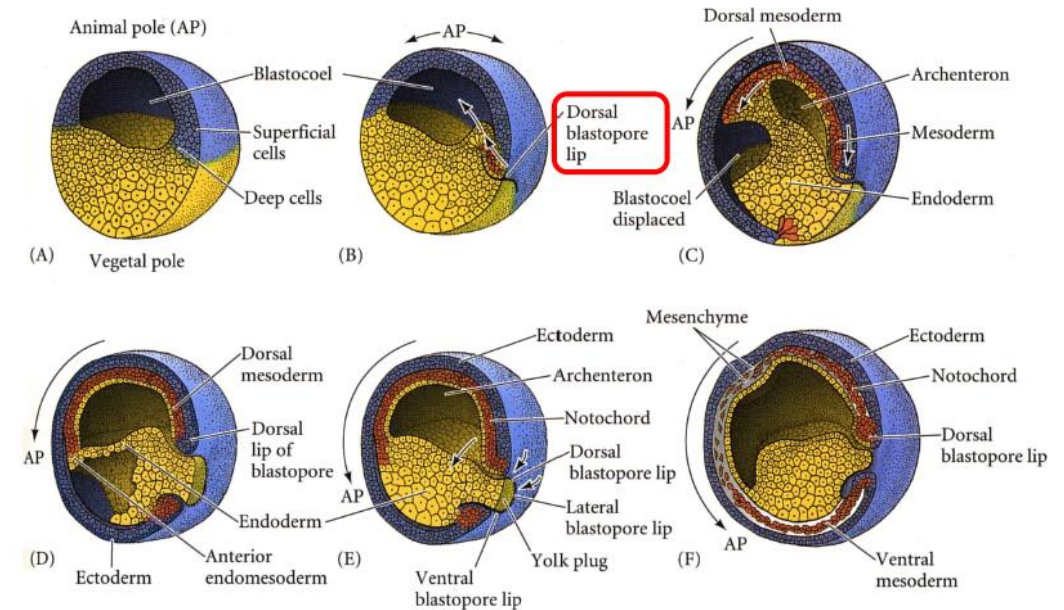


1.8 Frog Late Yolk Plug
rep.sag.sec. 31-1272



Labbro
ventrale del
blastoporo

Gastrulazione negli Anfibi



Summary

Blastula

Gastrula

Neurula

Organogenesi

Blastocyst
with inner cell
mass

Ectoderm

Mesoderm

Endoderm

Neuro-ectoderm

Epidermal-ectoderm

Notochord

Somites

Visceral plates

Endoderm

Brain, spinal cord, nerves

Epidermis, cutaneous glands, hairs, nails,
epithelium of sense organs, nasal cavity, mouth,
oral glands, anal canal

Notochord

Axial skeleton, striated muscle, adrenal
cortex

Smooth muscle, heart, vessels, kidney,
ureter gonads, genital ducts

Epithelium of respiratory organs, digestive
tube and associated glands, urethra



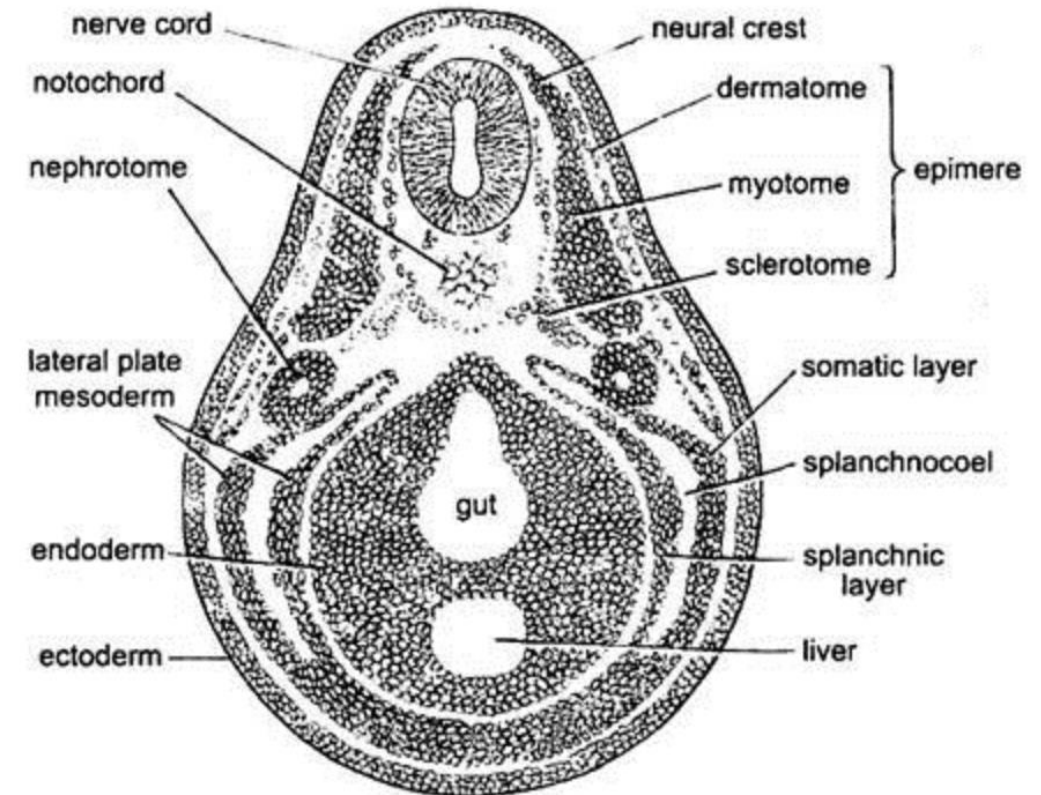
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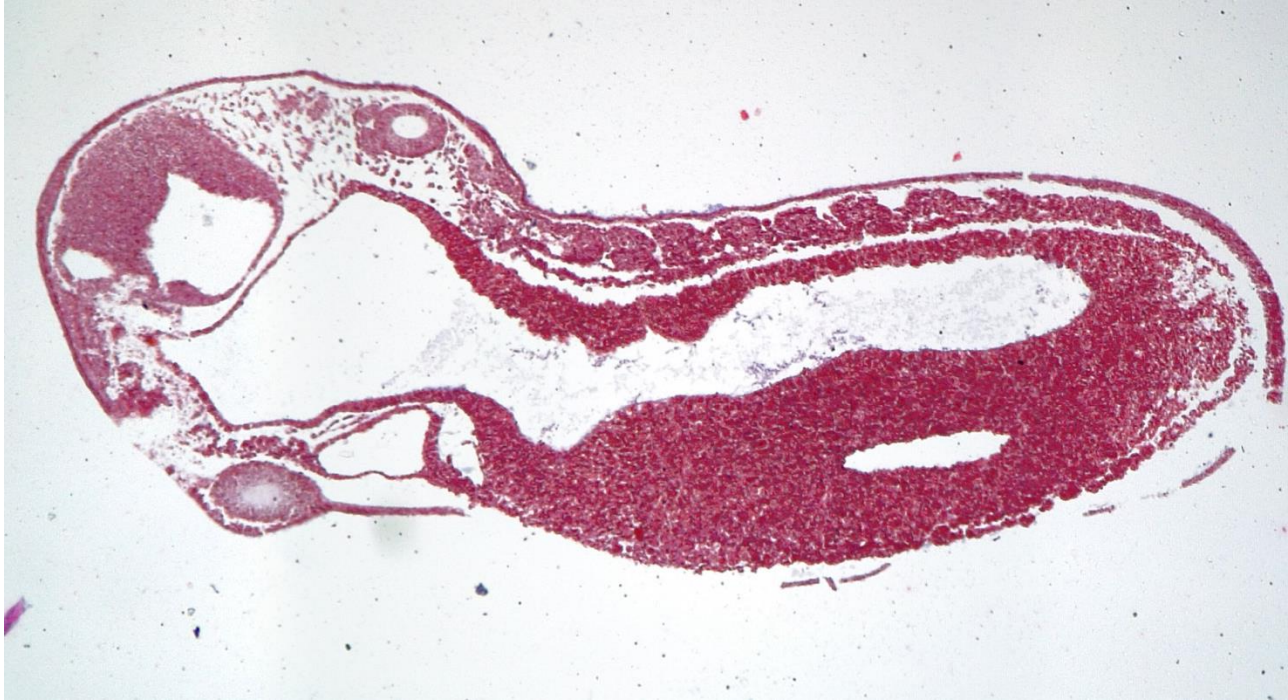
The Frog Embryology

2.5 8305 - Early tail bud stage, t.s.



The Frog Embryology

2.6 8306 - Early tail bud stage, sag.l.s.



Embrione di rana, in sezione longitudinale, allo stadio di gemma/abbozzo della coda. La testa in via di sviluppo è a sinistra, comprese le cavità della gola (grande) e del cervello (piccola). L'embrione alla fine si svilupperà in un girino e poi in una rana adulta completamente formata. L'intero processo dall'uovo all'adulto dura circa 16 settimane. Lo sviluppo dell'embrione avviene allo stadio di deposizione delle uova di rana e ci vogliono circa 10 giorni perché i girini si formino dalle uova fecondate.

The Frog Embryology

2.7 8307 - Hatching stage, t.s. through region of head or gills

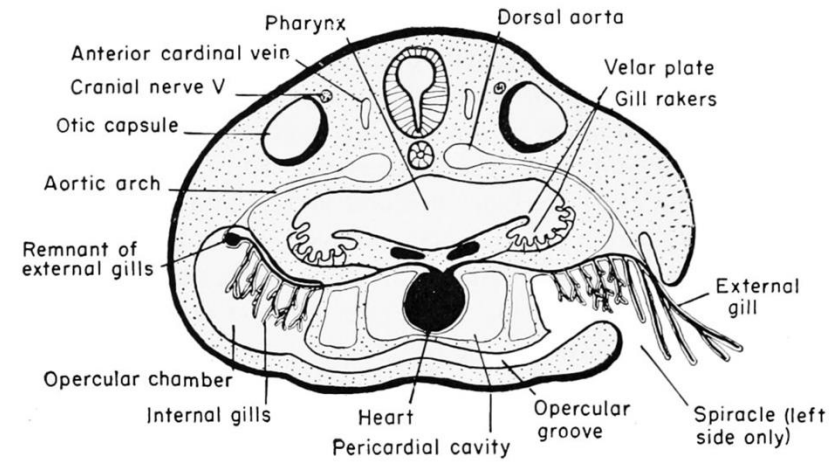


In una sezione trasversale tipica di un girino immediatamente dopo la schiusa si osserva la notocorda situata ventralmente al tubo neurale. Rivestita da una guaina secreta dalle cellule notocordali, essa presenta un aspetto di sostanza ialina con vacuoli. Lateralmente ad essa si evidenziano i somiti bilateralmente. In questo stadio, il cuore è costituito dall'endocardio avvolto dal spesso miocardio, che aderisce al mesoderma splanchnico tramite un mesocardio dorsale transitorio. Il cuore è localizzato nella cavità pericardica delimitata ventralmente e lateralmente dal mesoderma somatico.

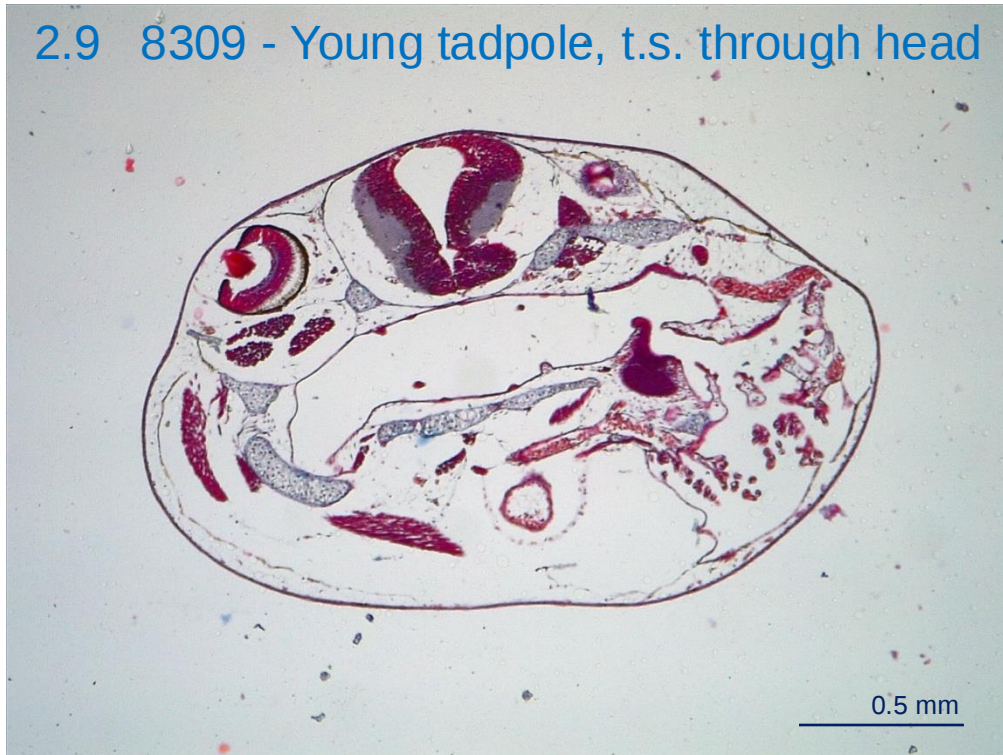
2.8 8308 - Hatching stage, t.s. through region of midbody



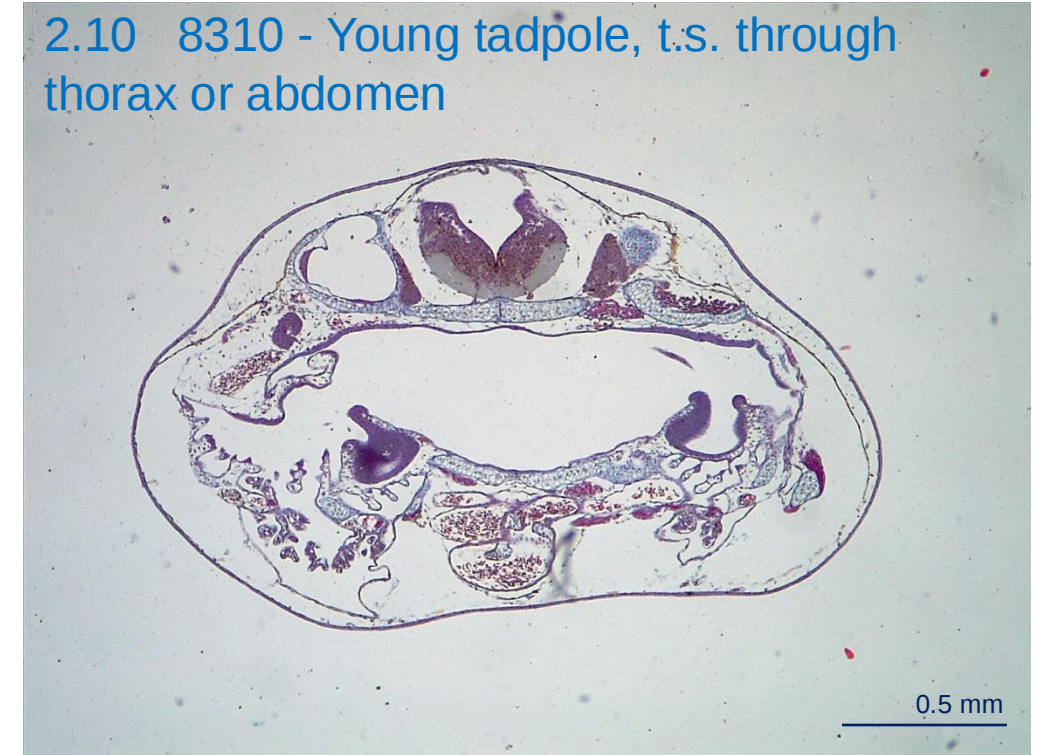
The Frog Embryology



2.9 8309 - Young tadpole, t.s. through head



2.10 8310 - Young tadpole, t.s. through thorax or abdomen



The Chicken Embryology

1.14 Chick 27-29 hr w.m. 31-1550



1. Neuroporo

2. Pliche neurali

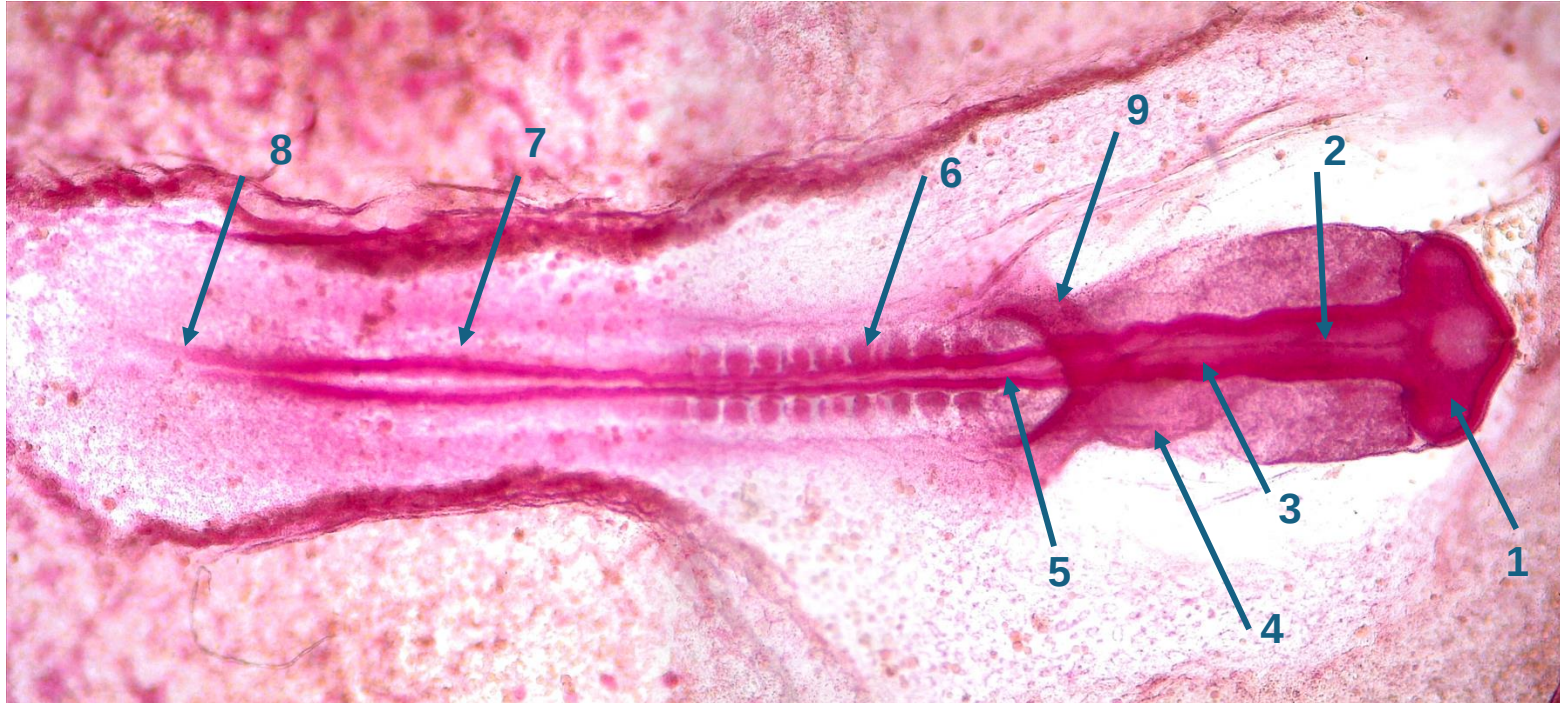
3. Somiti

4. Nodo di Hensen

5. Stria Primitiva

The Chicken Embryology

1.15 Chick 33 hr w.m. 311562



1. Tele+Diencefalo

4. Cuore

7. Placca Neurale

2. Mesencefalo

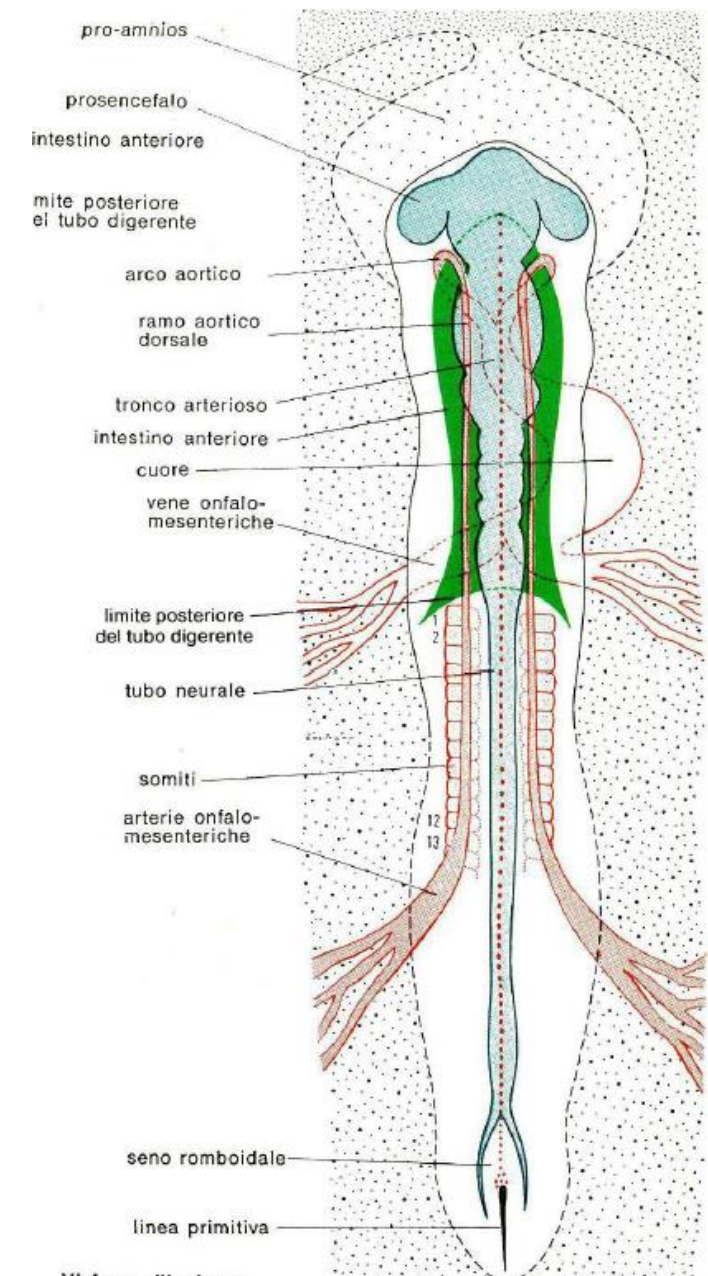
5. Midollo Spinale

8. Stria Primitiva

3. Rombencefalo

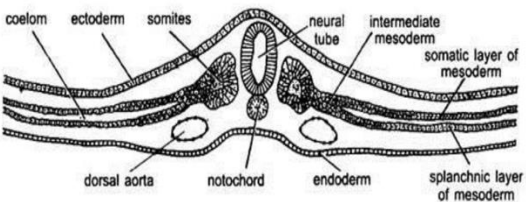
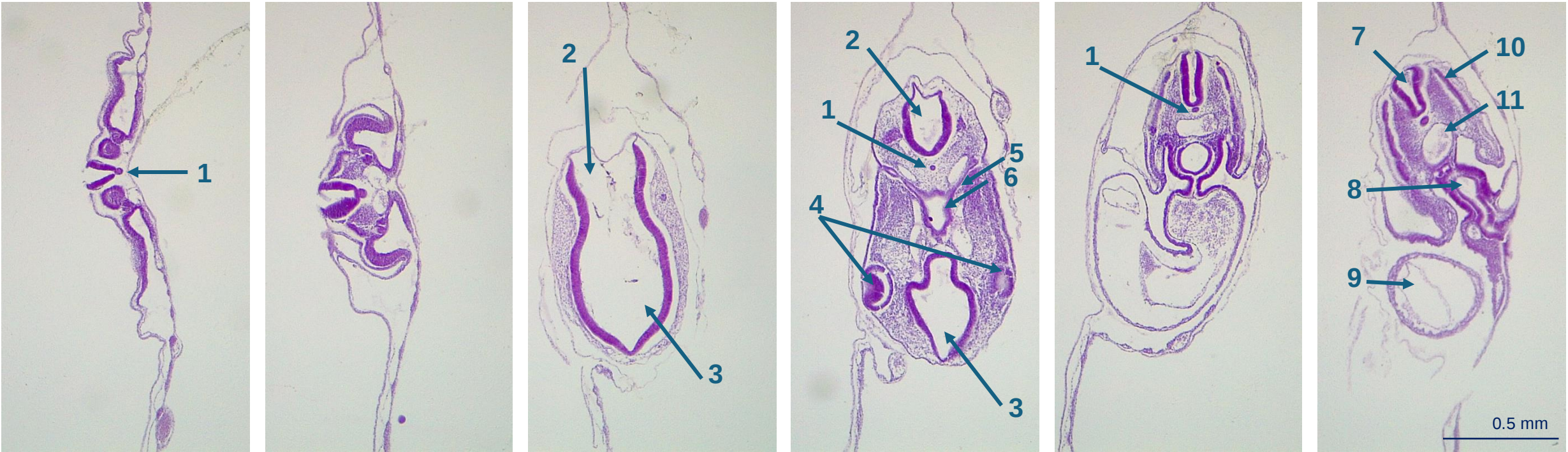
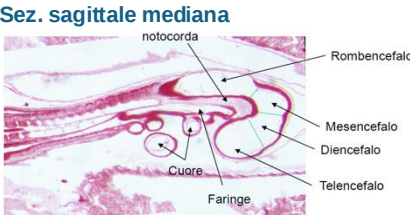
6. Somiti

9. Vene Onfalomesenteriche



The Chicken Embryology

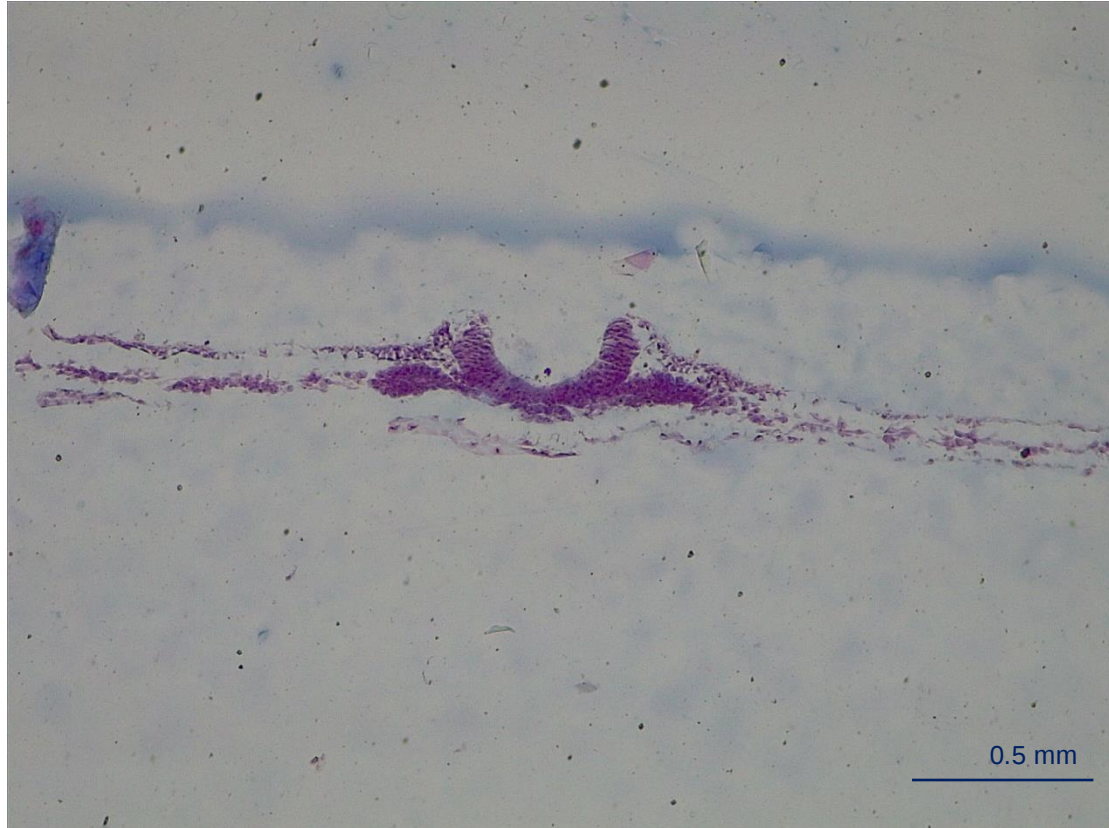
1.17 Chick 48 hr rep. c.s. 31-1598



- 1. Notocorda
- 2. Rombencefalo
- 3. Mesencefalo
- 4. Calice ottico/cornea
- 5. Vescicole otiche
- 6. Tetto della faringe
- 7. Midollo Spinale
- 8. Intestino
- 9. Cuore
- 10. Somiti
- 11. Aorta

The Chicken Embryology

3.1 8201 - 24-hour t.s. with neural groove



Canale neurale

3.2 8202 - 36 hour t.s. with neural tube



Tubo neurale, corda, differenziazione del mesoderma:
miotoma, nefrotoma, splancnotoma

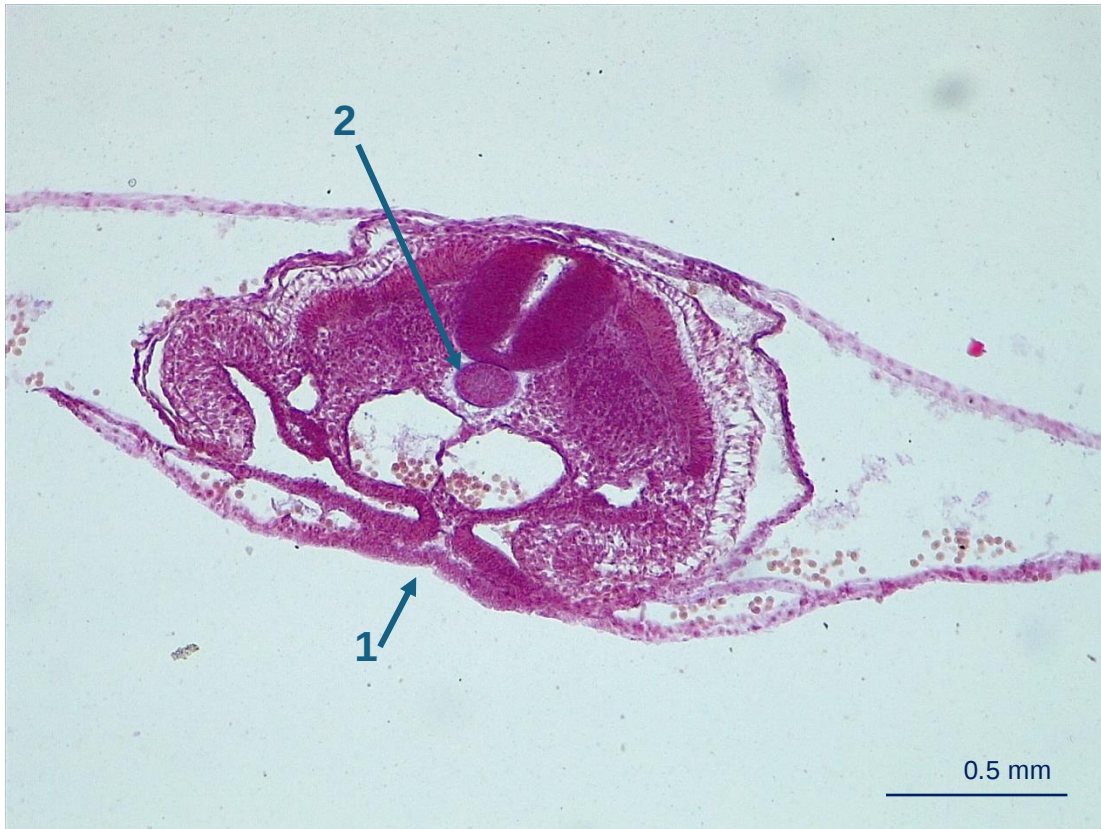
The Chicken Embryology

3.3 8203 - 48 hours I.s. with differentiation of mesoderm and ectoderm



The Chicken Embryology

3.4 8204 - 3 day t.s. through the body

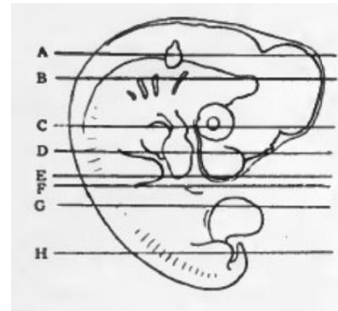
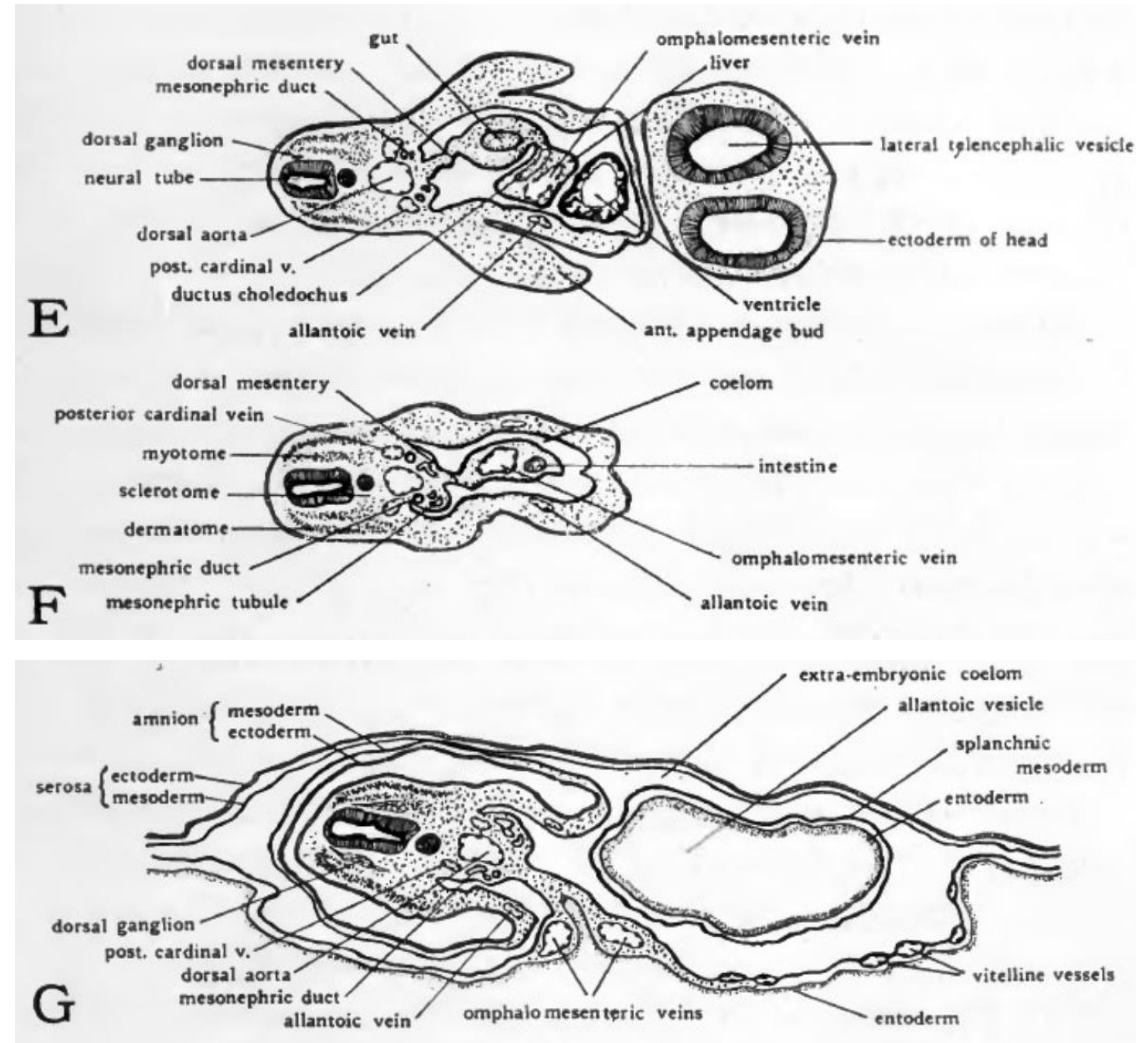
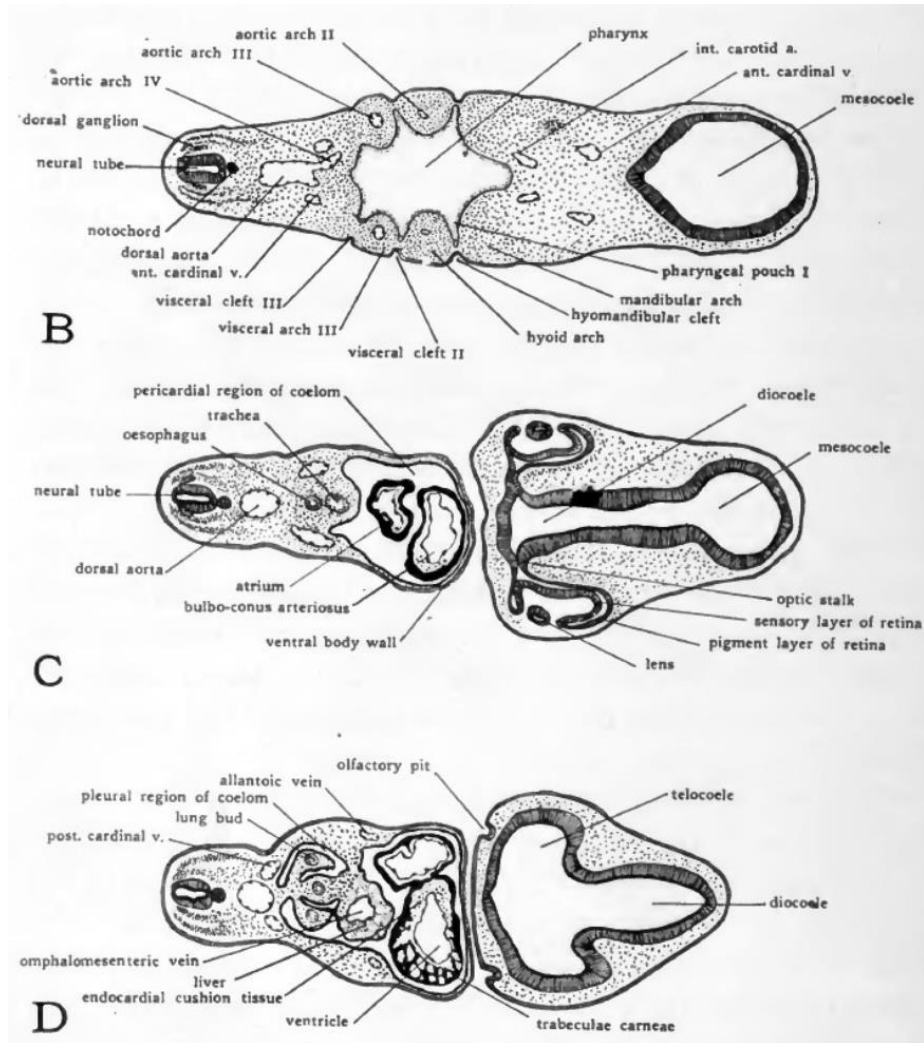


1. Endoderma
2. Notocorda

Amnio e siorosa, miotoma, abbozzo di rene, aorta, Sistema vascolare extraembrionale

The Chicken Embryology

3-4 day horizontal section of entire specimen



The Chicken Embryology

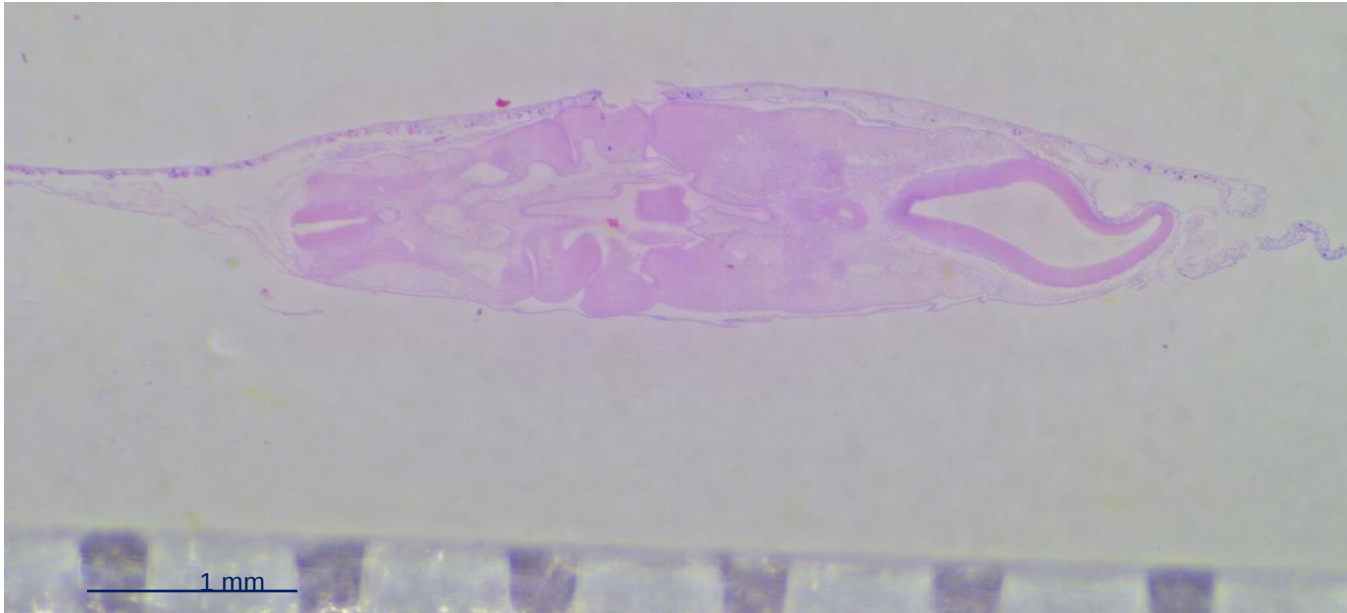
3.5 8205 - 3 day t.s. of head



Embrione di 3 giorni, regione del capo, trasversale: Abbozzo di occhi e cervello, cuore

The Chicken Embryology

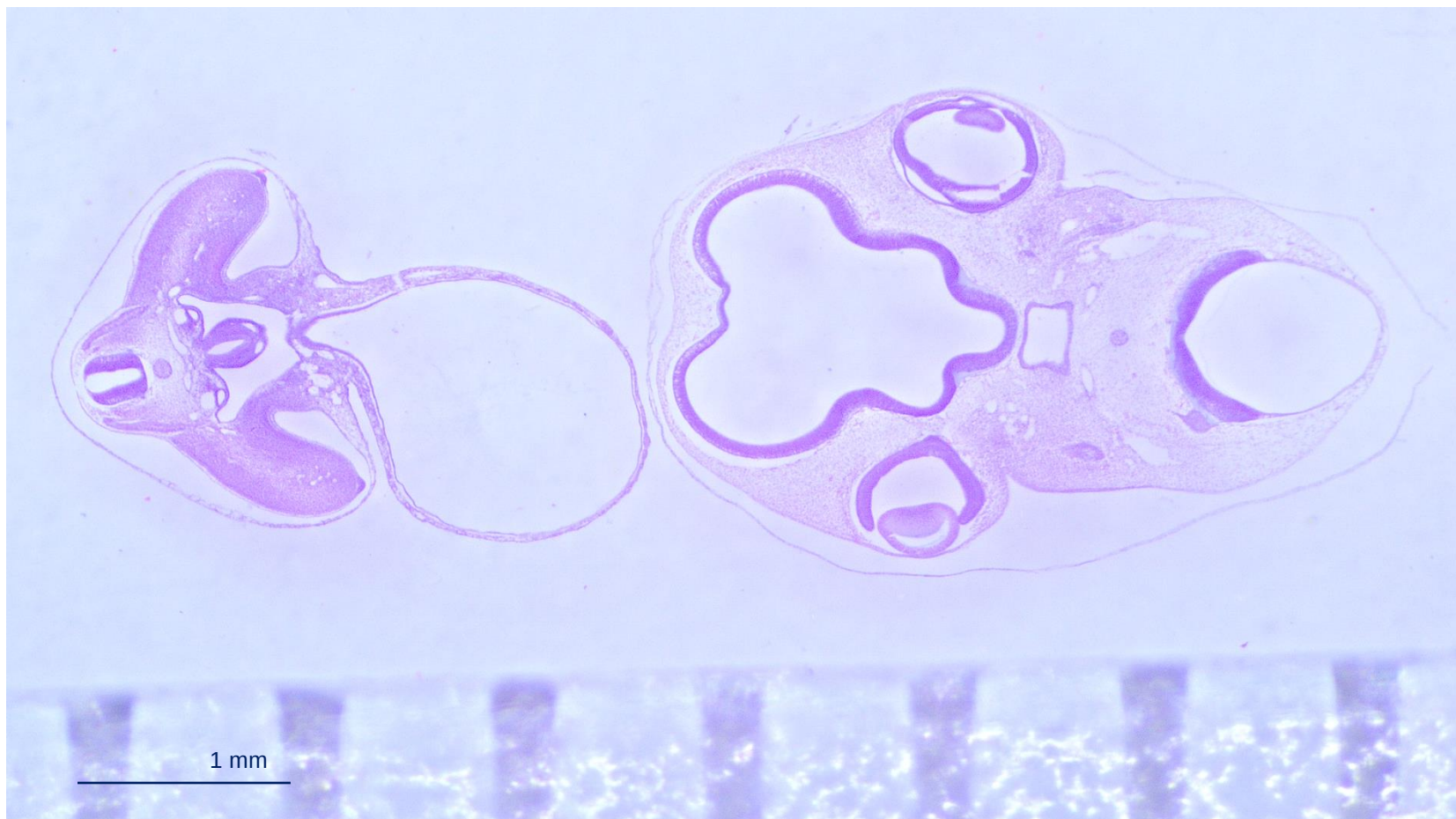
3.6 8206 - 3-4 day horizontal section of entire specimen



Disposizione degli abbozzi di organi, fenditure branchiali, vertebre primitive

The Chicken Embryology

3.7 8207 - 4-5 day t.s. through region of head



Regione del capo, trasversale: abbozzo del cervello, arco branchiale e vasi

The Chicken Embryology

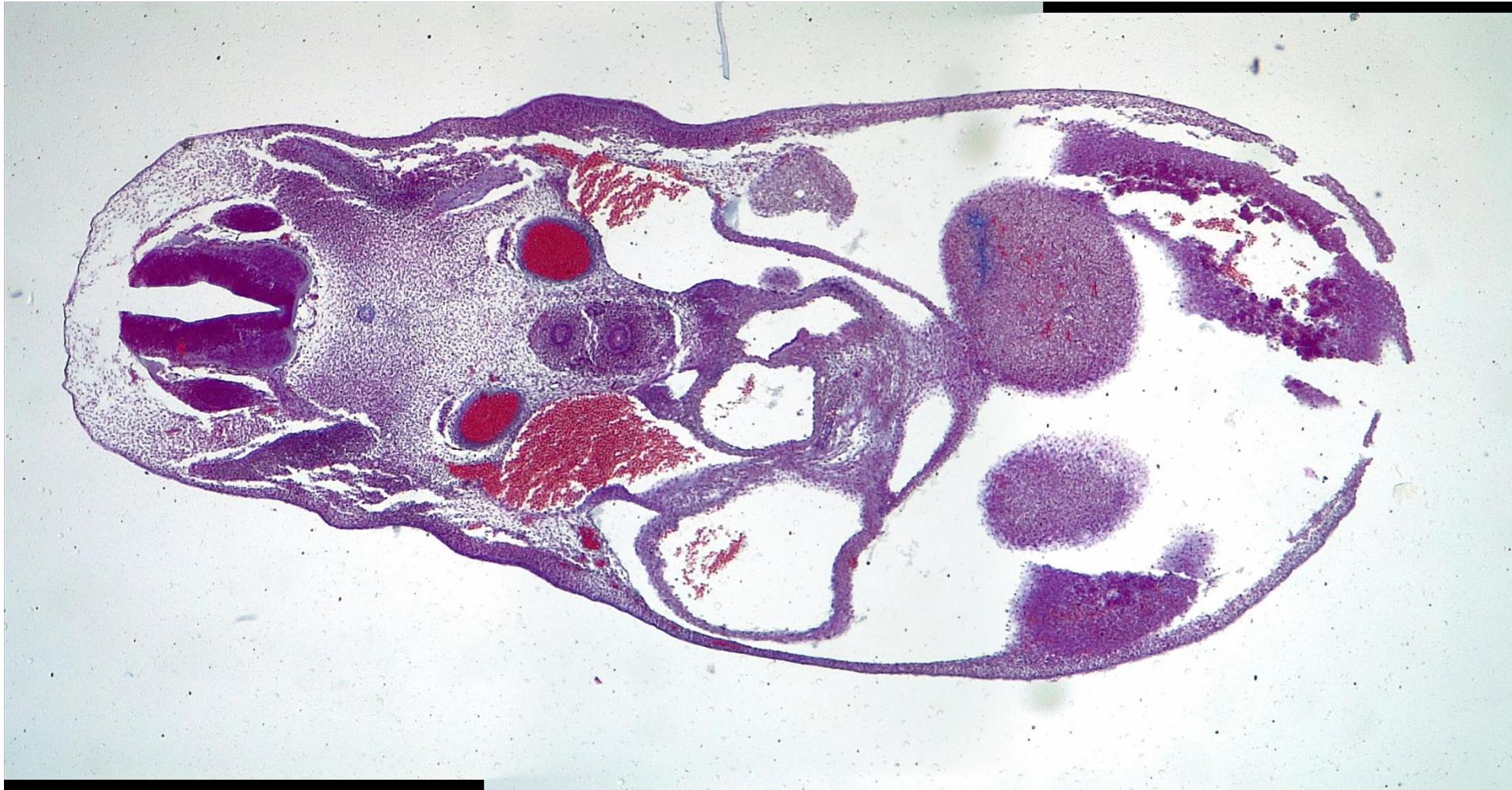
3.8 8208 - 4-5 day t.s. through region of head



Struttura del cuore, abbozzo di pomoni, formazione delle vertebre, differenziazione del midollo spinale

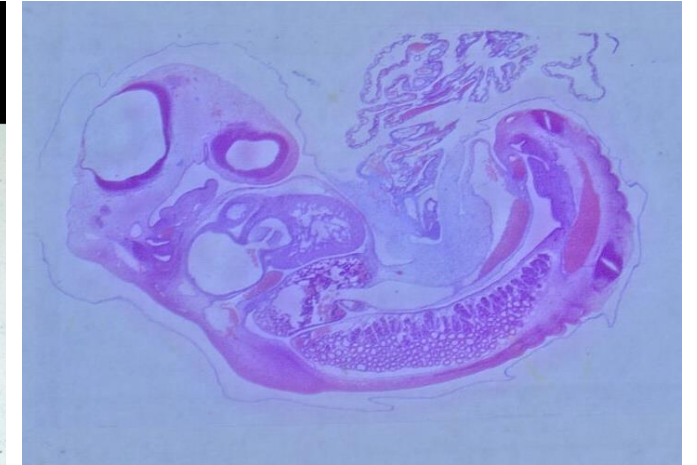
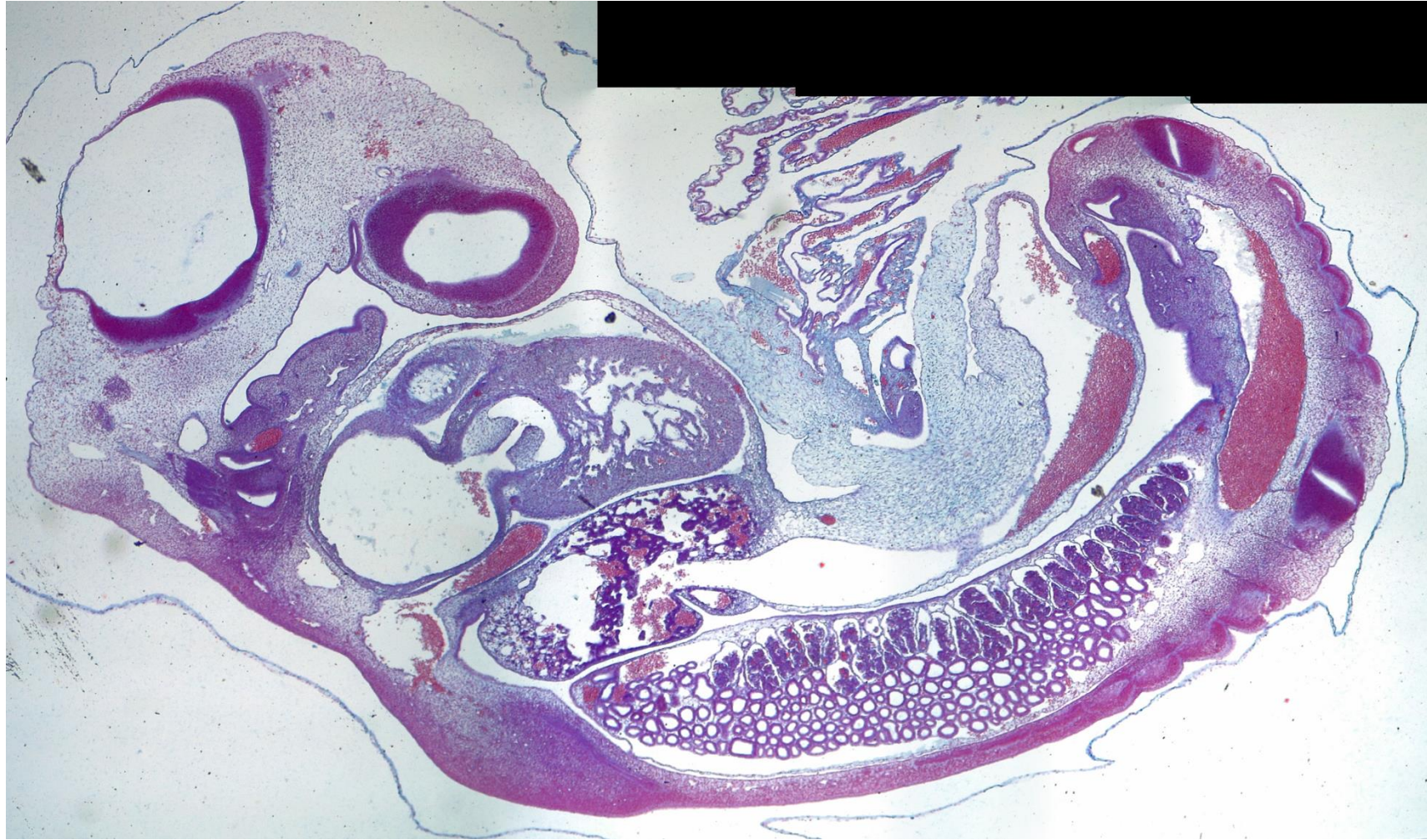
The Pig Embryology

4.1 8601 - 4-6 mm typical t.s.



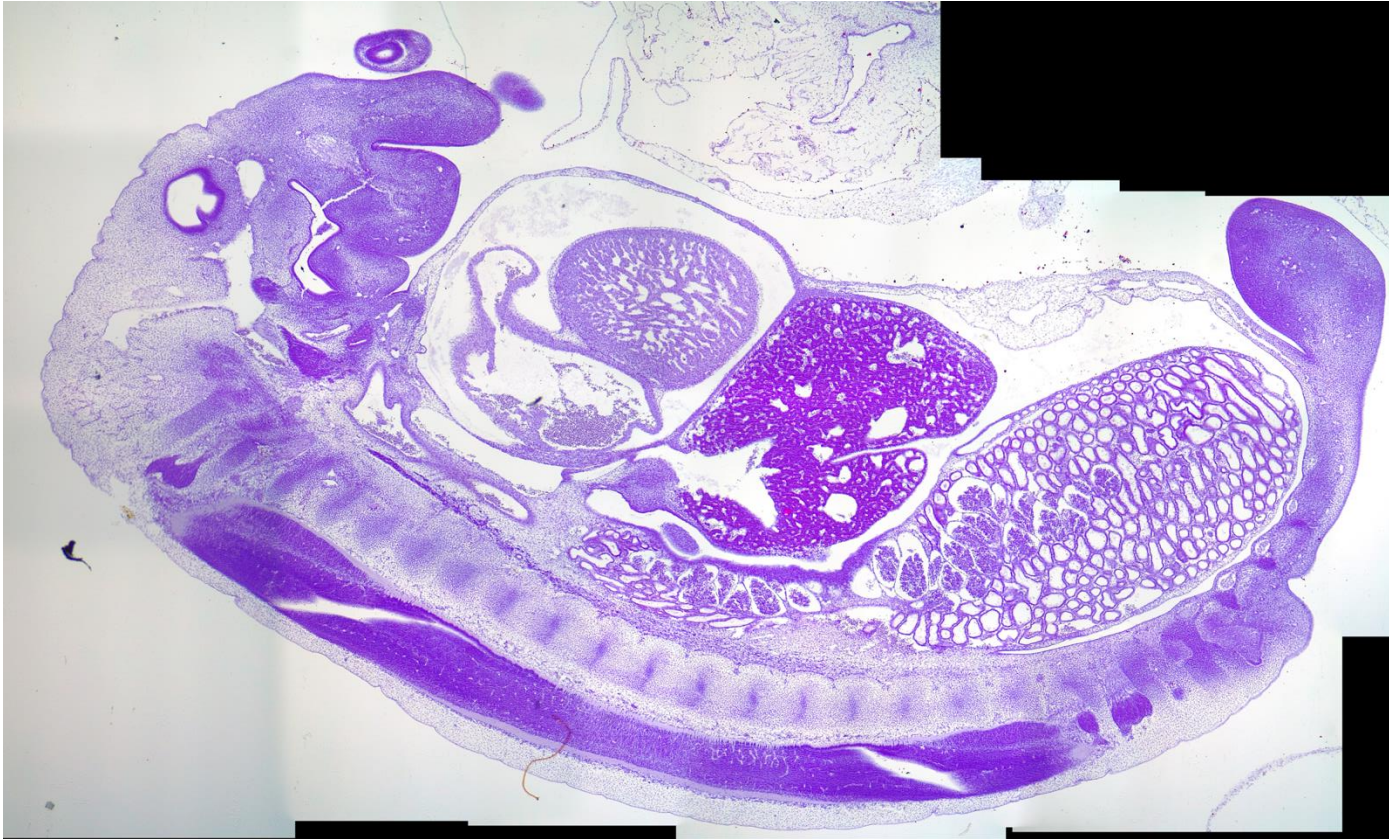
The Pig Embryology

4.2 8602 - 7-9 mm sagittal l.s.



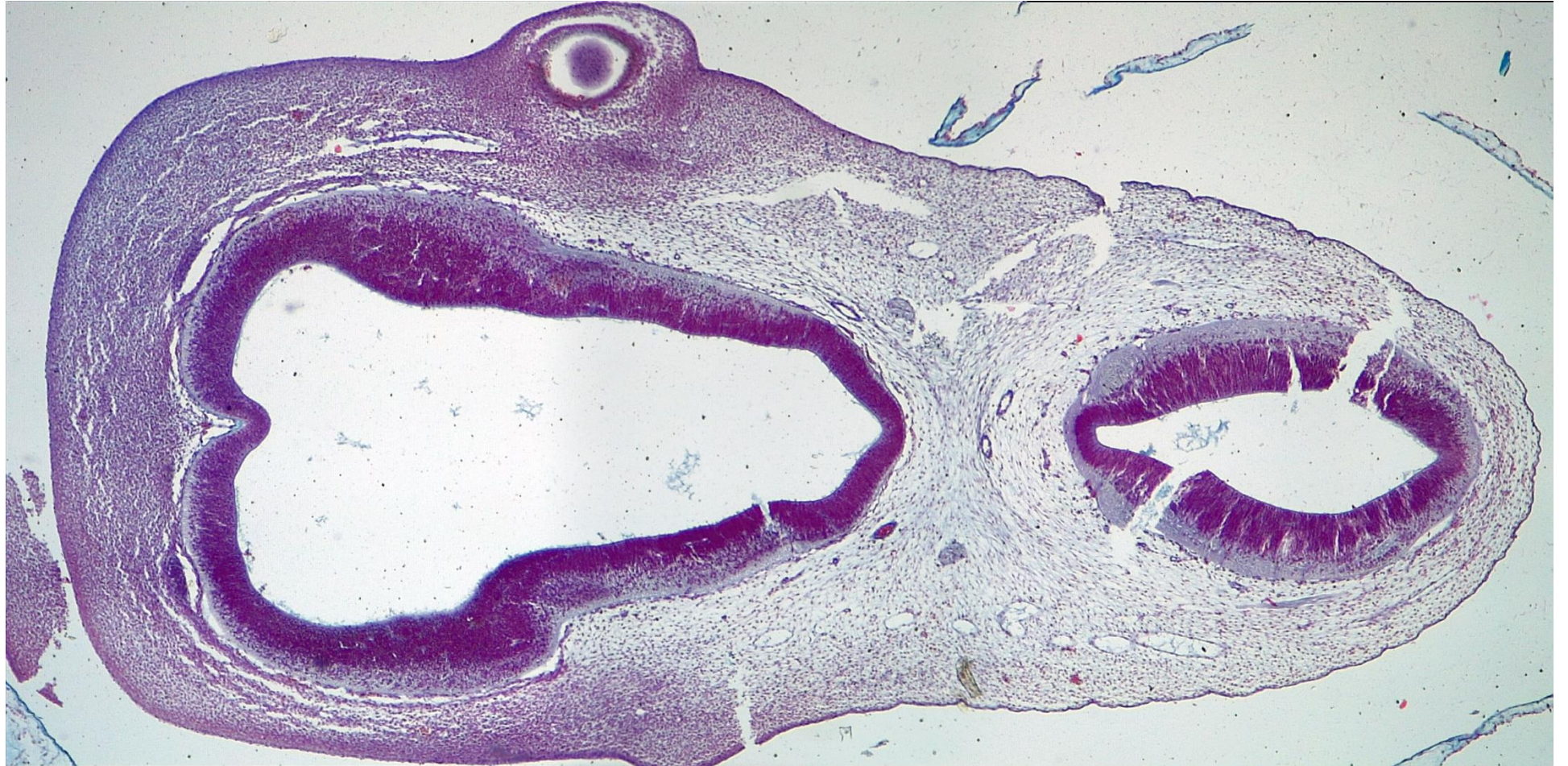
The Pig Embryology

1.20 Pig 10 mm rep c.s. 31-1846



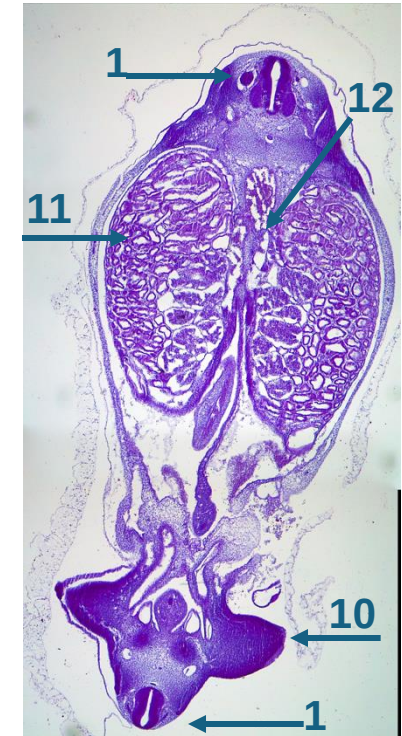
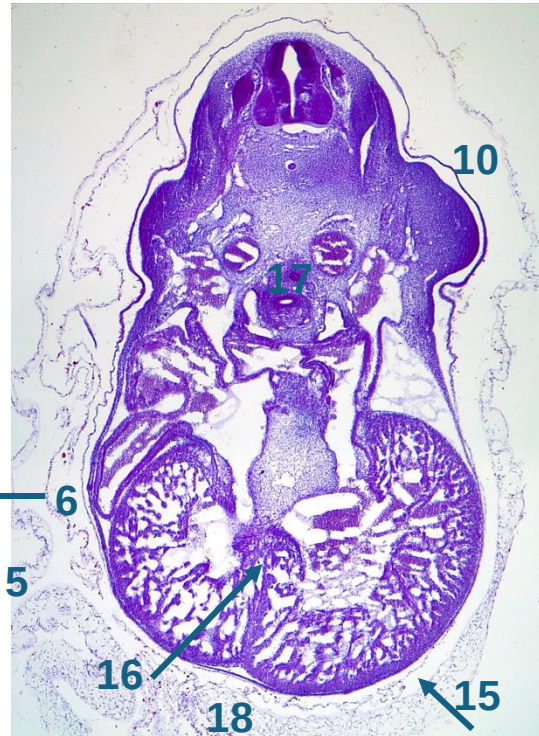
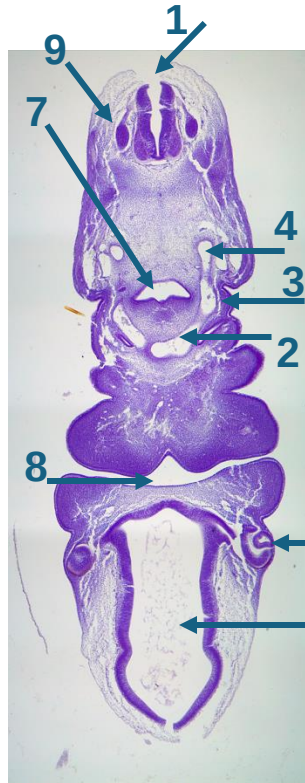
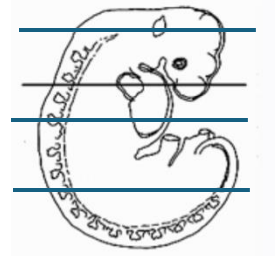
The Pig Embryology

4.3 8603 - 11-12 mm typical t.s. through region of head



The Pig Embryology

1.21 Pig 10 mm



1. Midollo spinale
2. Aorta ventrale
3. Arco aortico

4. Aorta dorsale
5. Diencefalo
6. Vescicole ottiche

7. Faringe
8. Bocca
9. Gangli dorsali

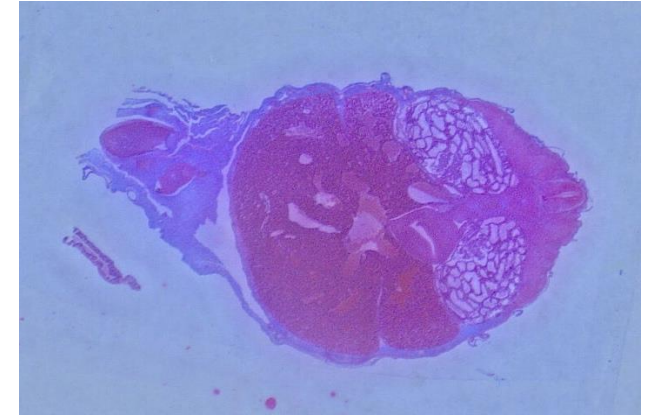
10. Abbozzo arto
11. Mesonefro
12. Cresta genitale

13. Abbozzo arto
14. Fegato
15. Cuore

16. Setto ventricolare
17. Abbozzo polmonare
18. Solco intraventricolare

The Pig Embryology

4.4 8604 - 11-12 mm typical t.s. through region of abdomen



The Pig Embryology

4.5 8605 - 15 mm typical t.s. through region of head

