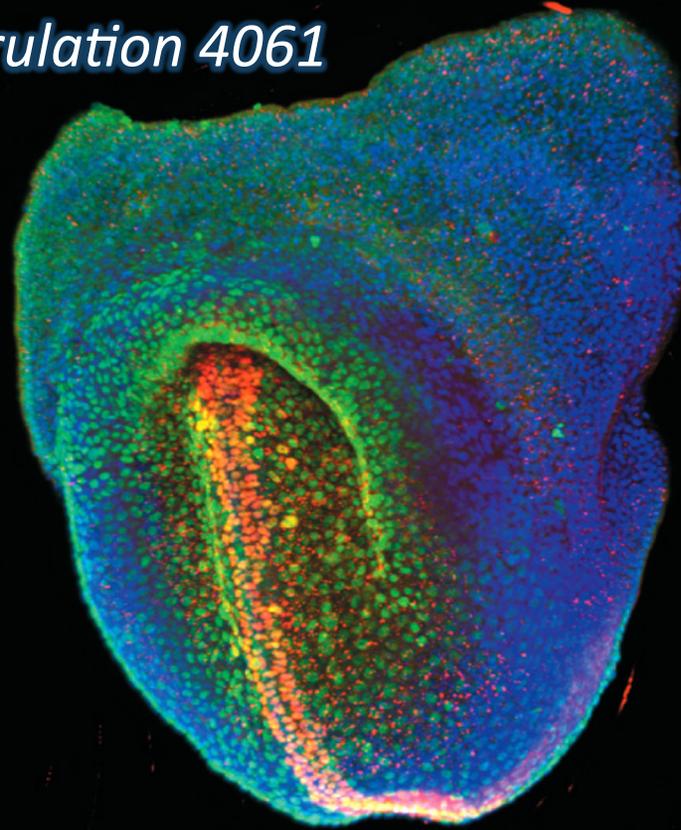


Amniote Gastrulation 4061



Ch 12 Birds and Mammals Ch 9 in 10e, Ch 8 in 10e

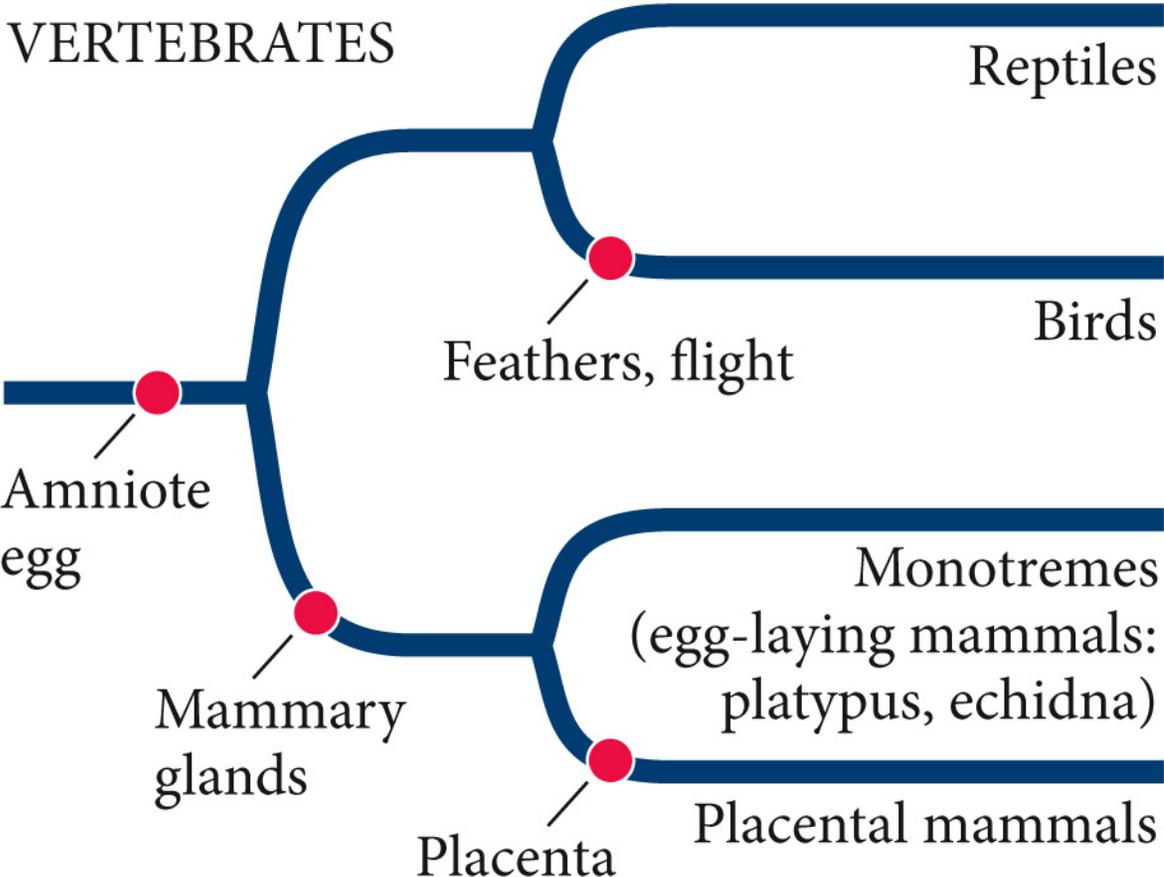
Gastrulation

- "the most important time of your life"
- laying down the primary body plan

Figure 12.1 The membranes of the amniote egg characterize reptiles, birds, and mammals

(A)

AMNIOTE
VERTEBRATES



Gallus gallus



Mus musculus

Figure 12.1 The membranes of the amniote egg characterize reptiles, birds, and mammals

(B)

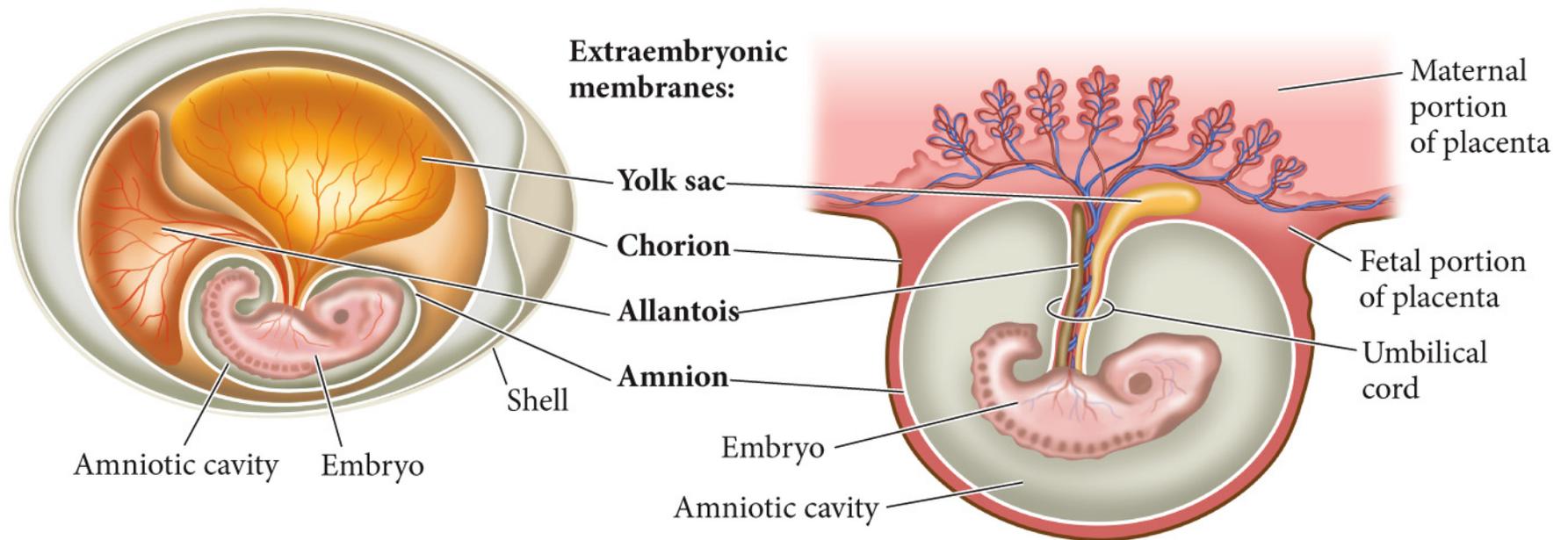


Figure 12.2 Discoidal meroblastic cleavage in a chick egg

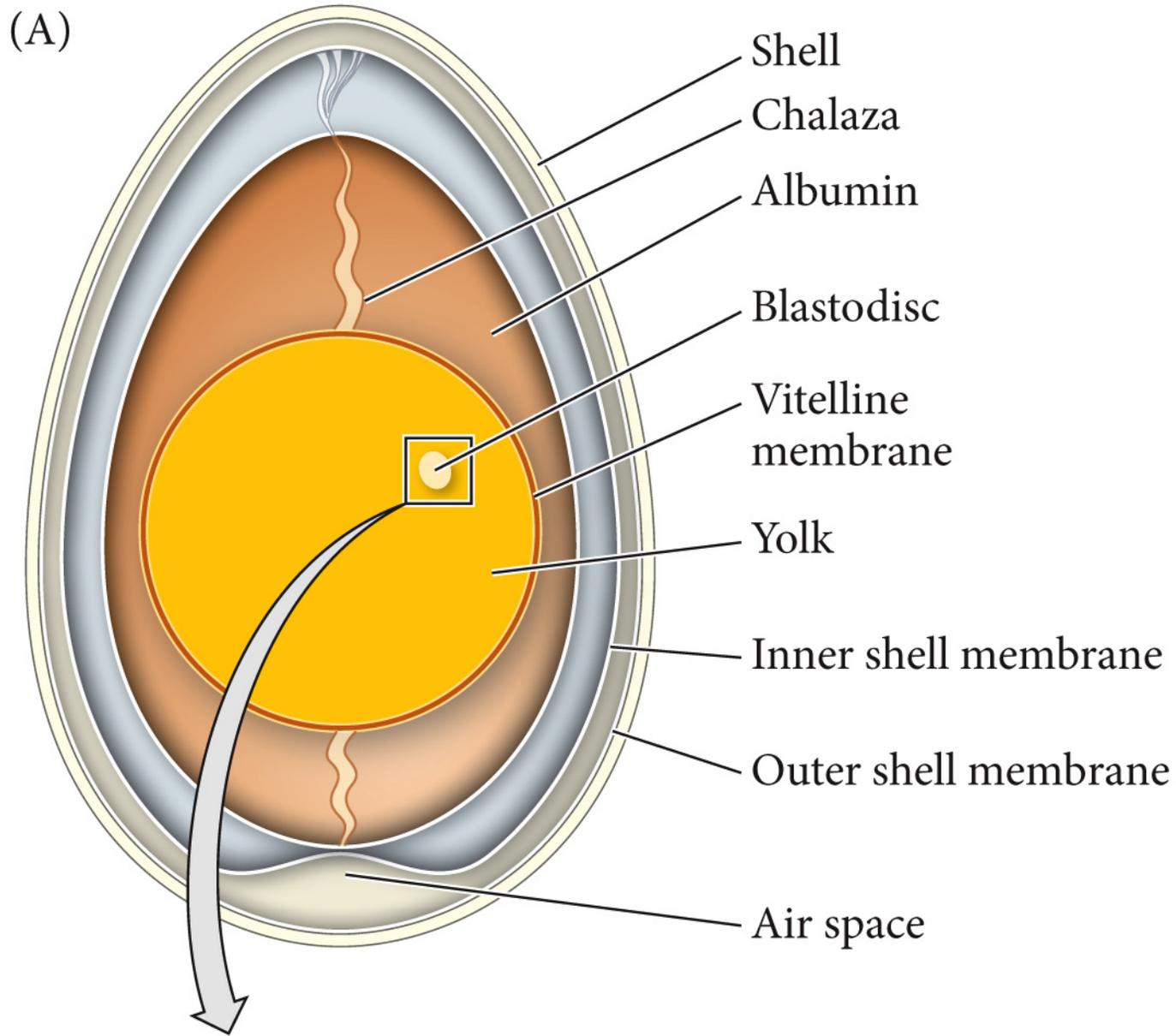


Figure 12.2 Discoidal meroblastic cleavage in a chick egg (Part 2)

(B)

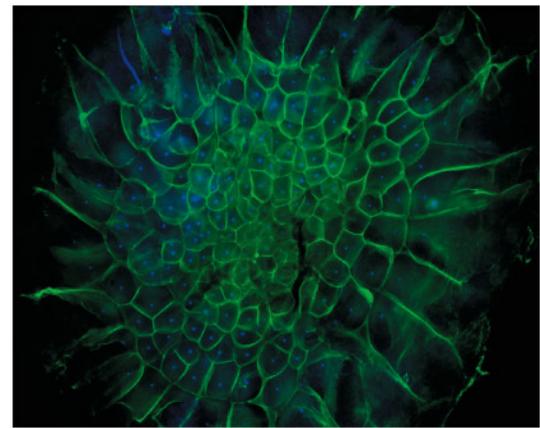
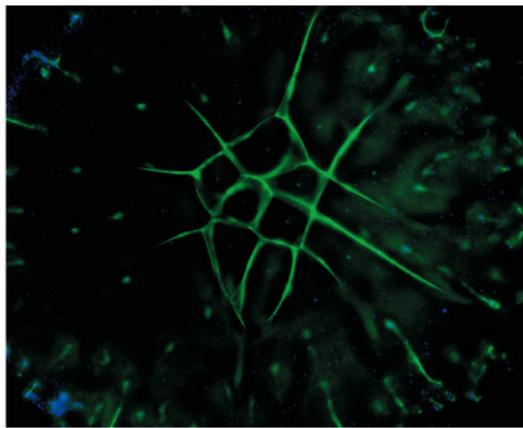
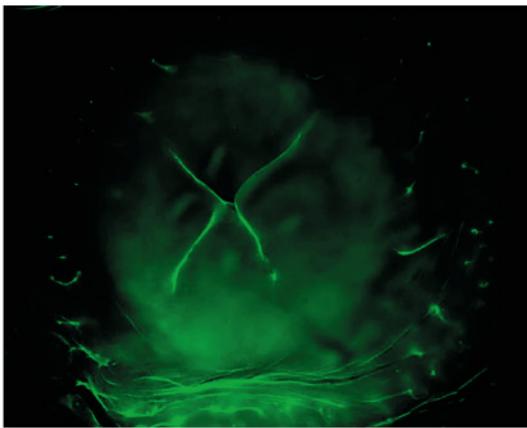
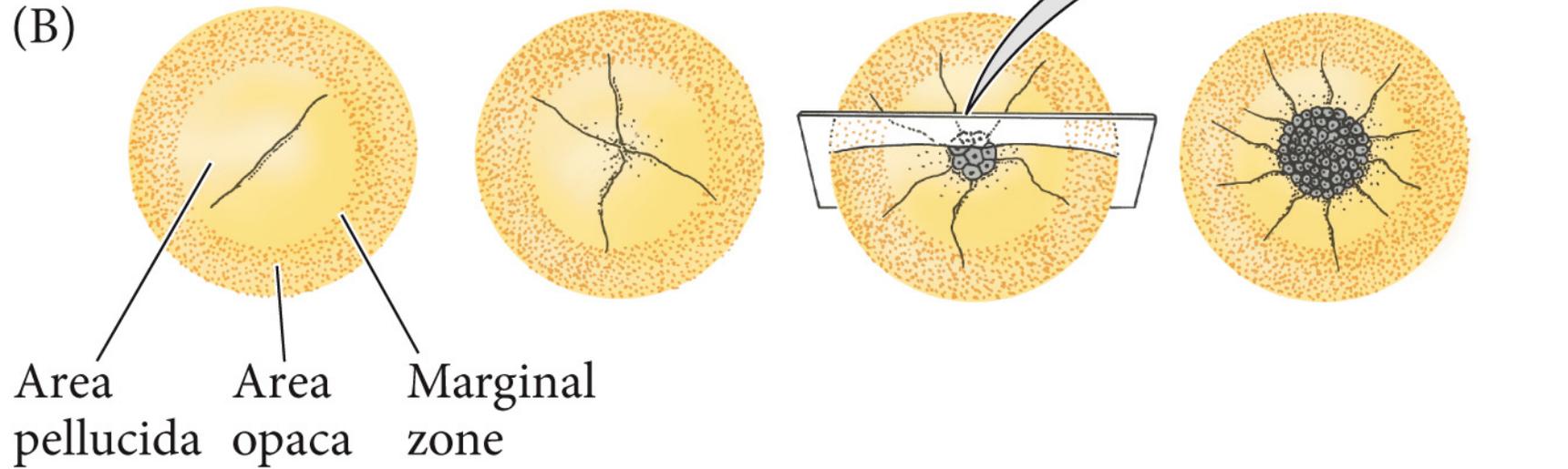


Figure 12.2 Discoidal meroblastic cleavage in a chick egg (Part 3)

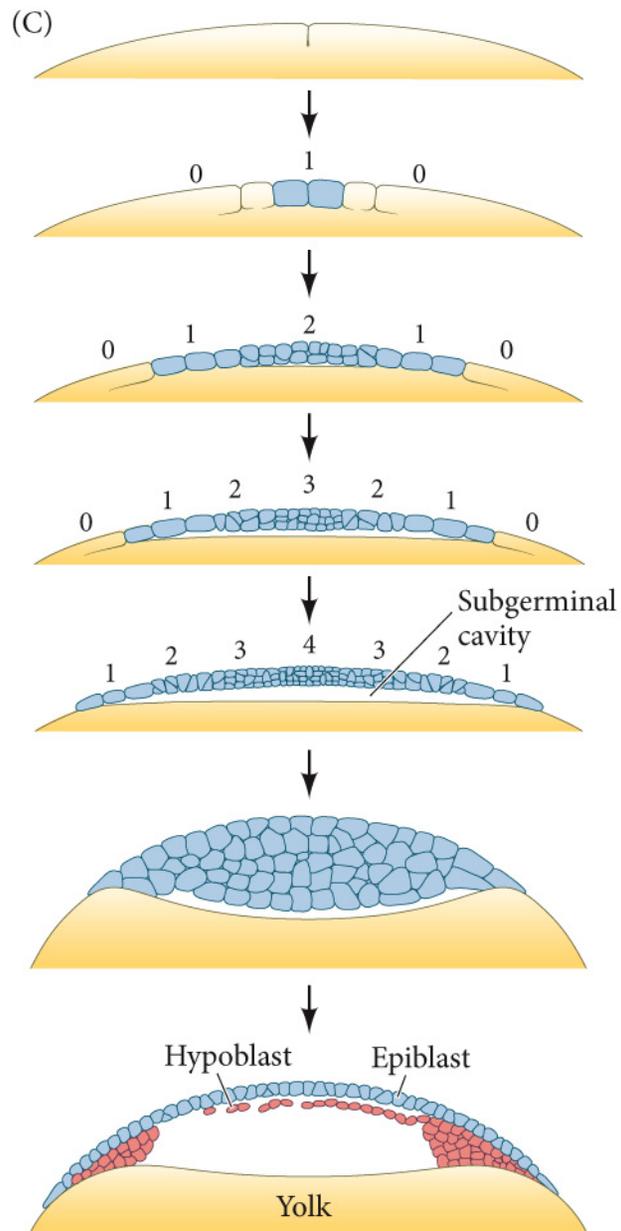


Figure 12.3 Formation of the chick blastoderm (Part 1)

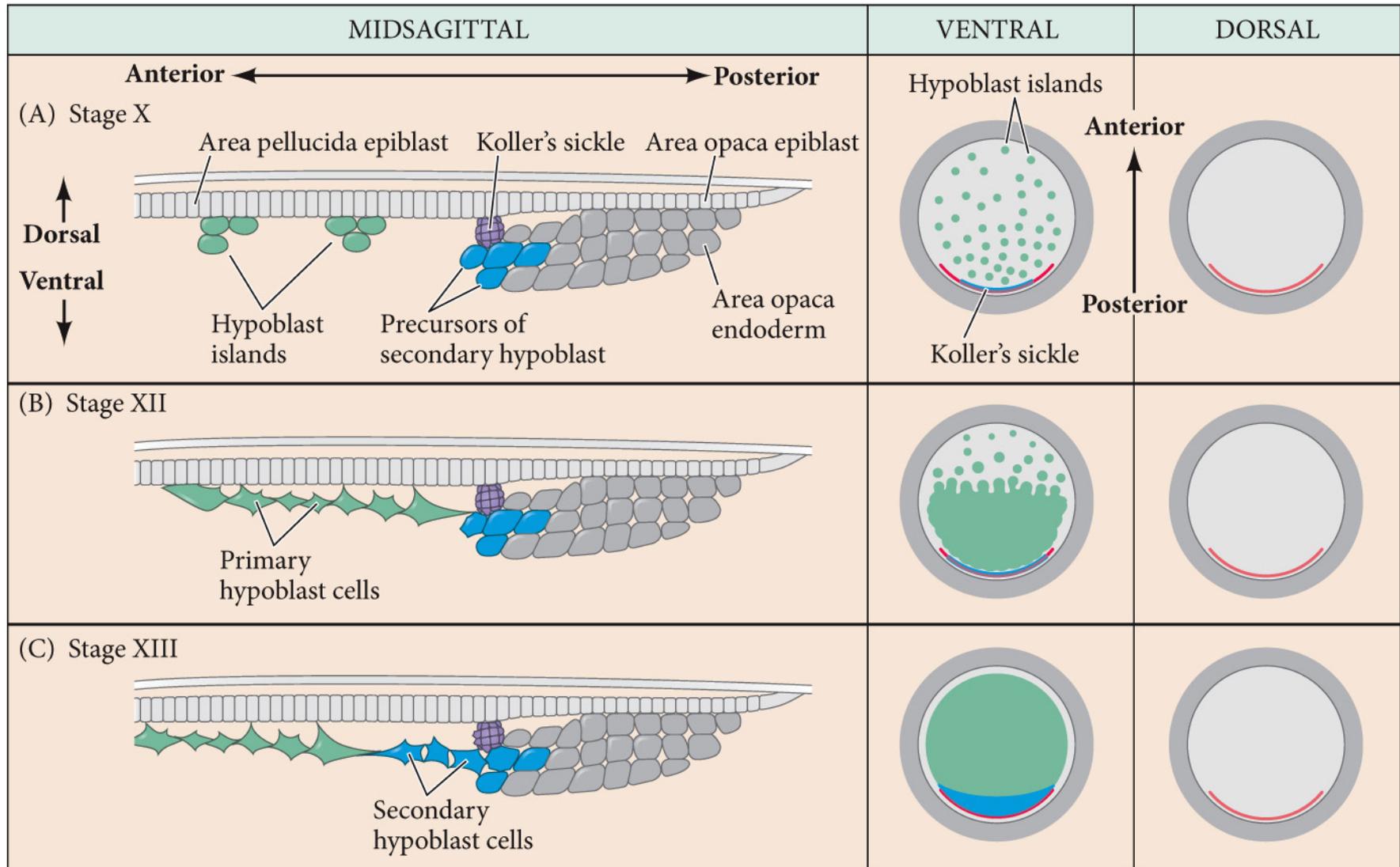


Figure 12.3 Formation of the chick blastoderm (Part 2)

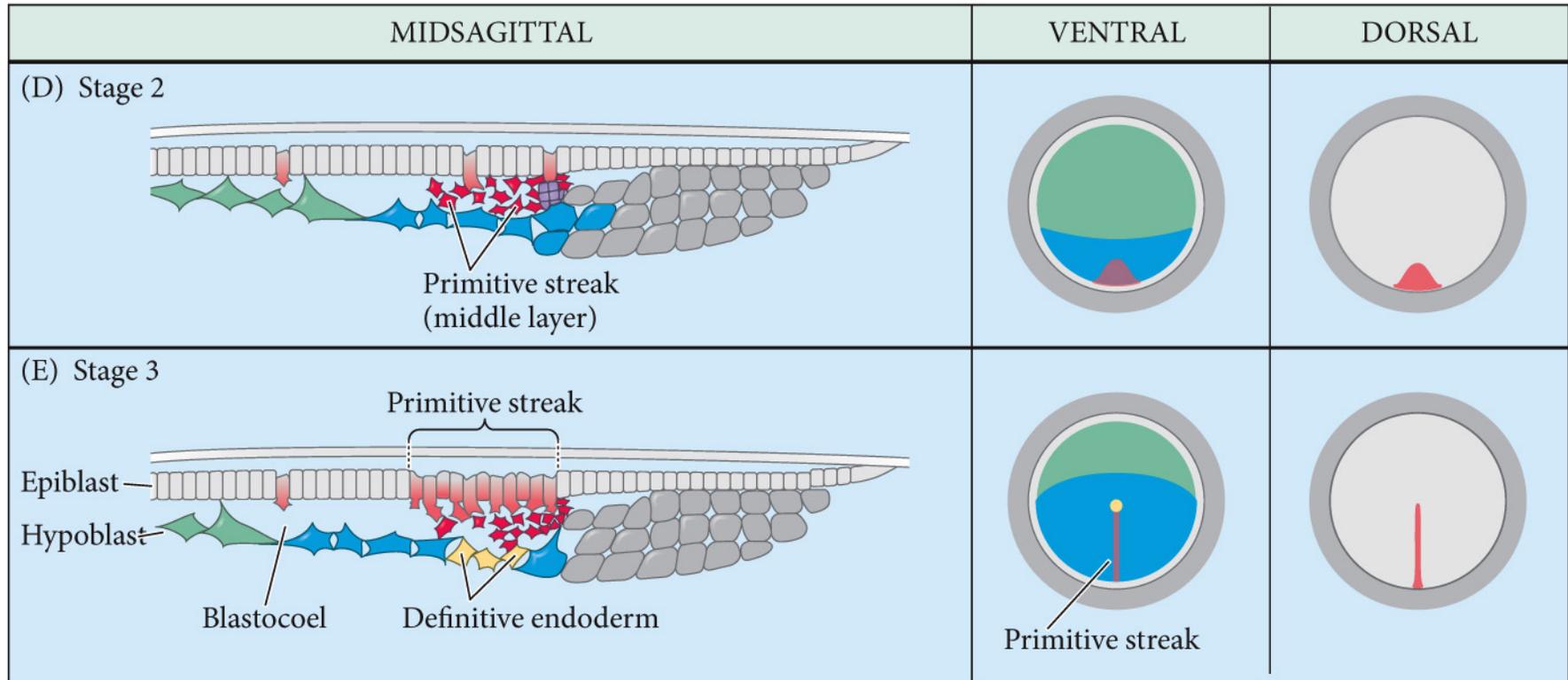


Figure 12.4 Cell movements of the primitive streak and fate map of the chick embryo (Part 1)

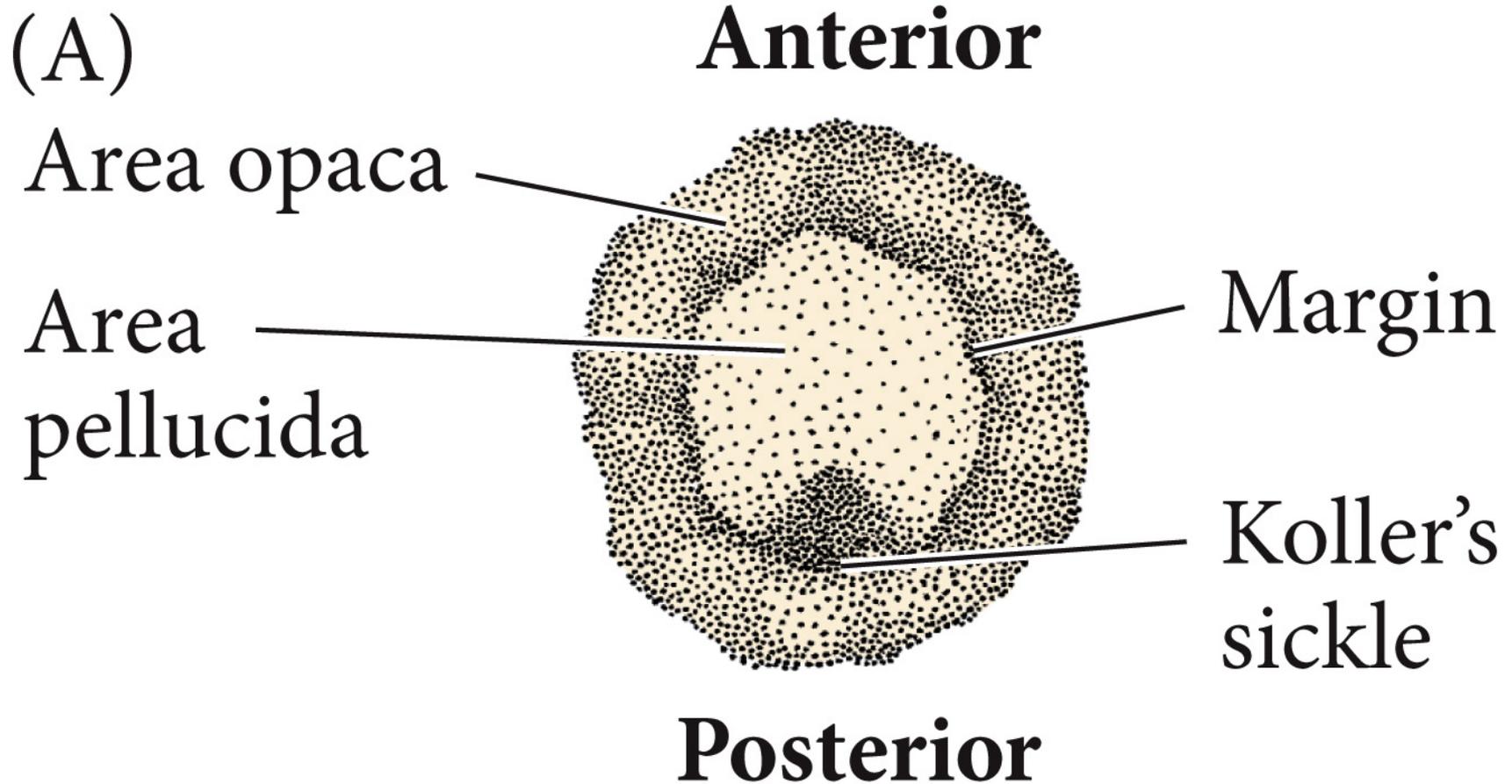


Figure 12.4 Cell movements of the primitive streak and fate map of the chick embryo (Part 2)

(B)

Area opaca

Area
pellucida

Primitive
streak
taking shape

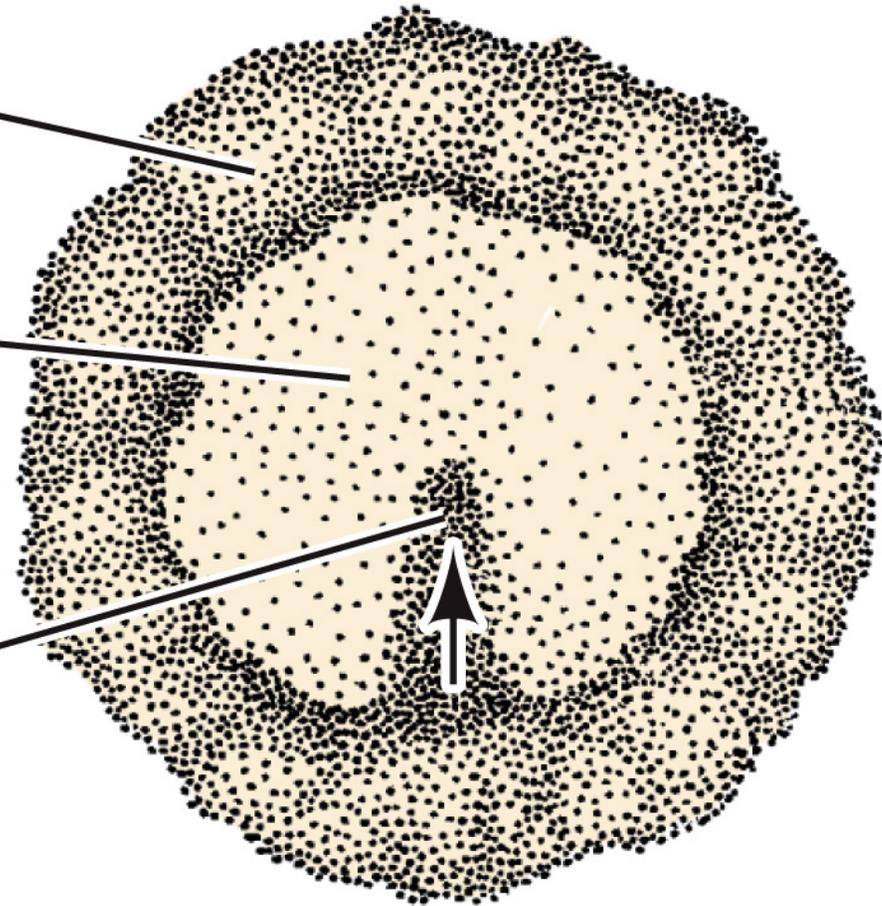


Figure 12.4 Cell movements of the primitive streak and fate map of the chick embryo (Part 3)

(C)

Hensen's
node

Area
pellucida

Area
opaca

Primitive
groove

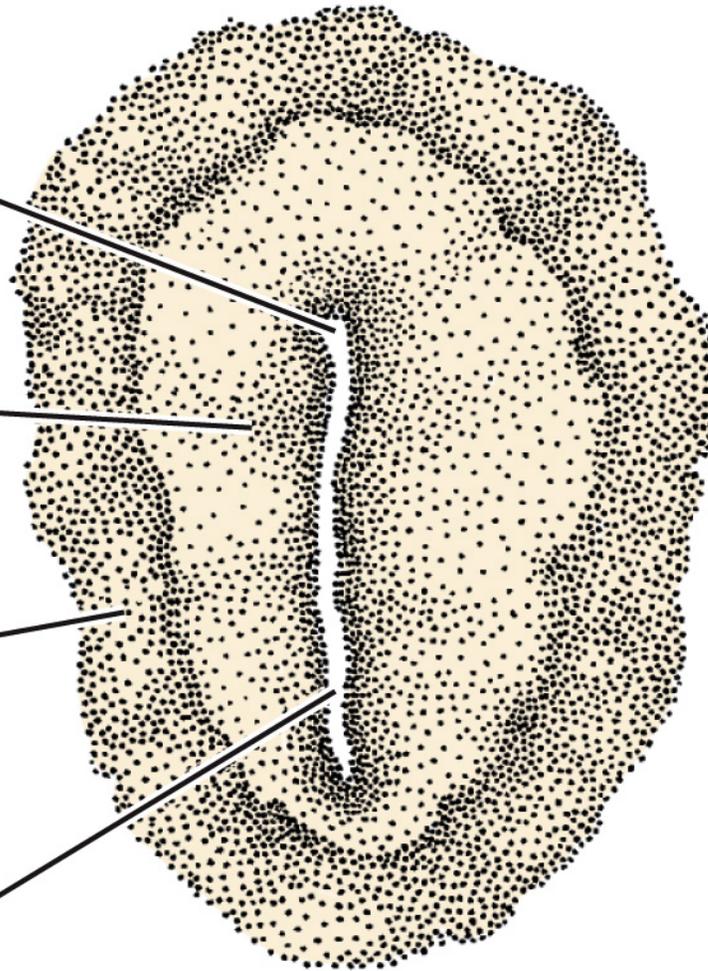


Figure 12.4 Cell movements of the primitive streak and fate map of the chick embryo
(Part 4)

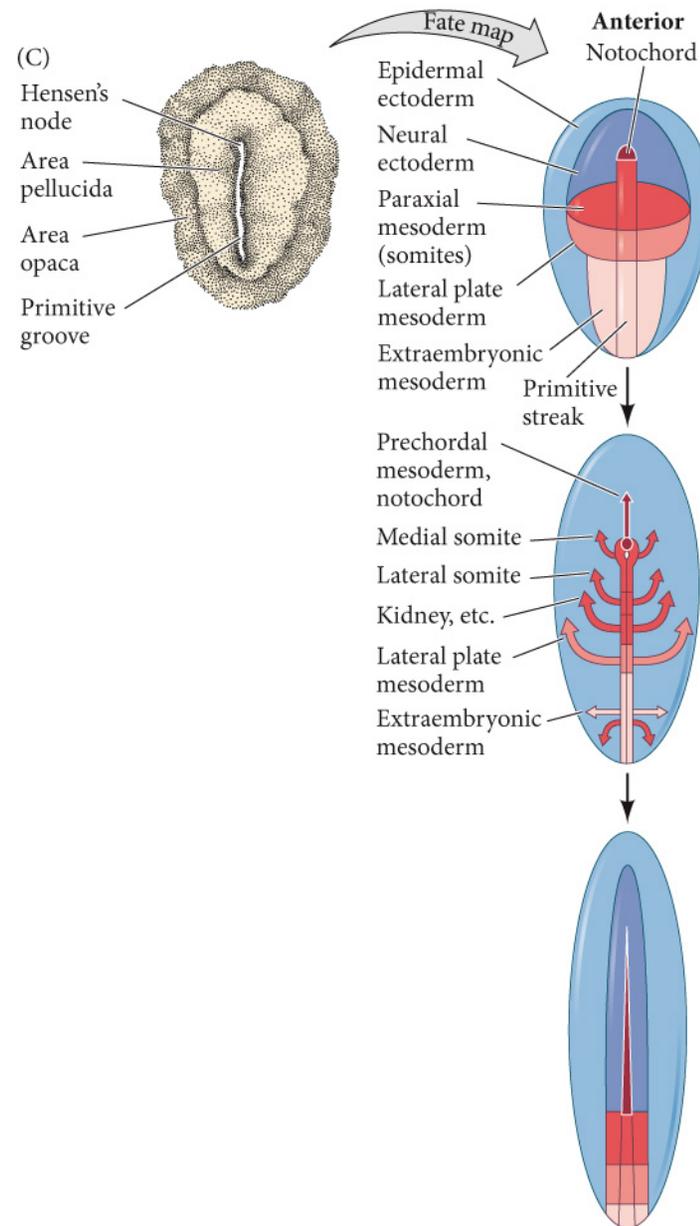


Figure 12.4 Cell movements of the primitive streak and fate map of the chick embryo (Part 5)

(D)

Head
process

Hensen's
node

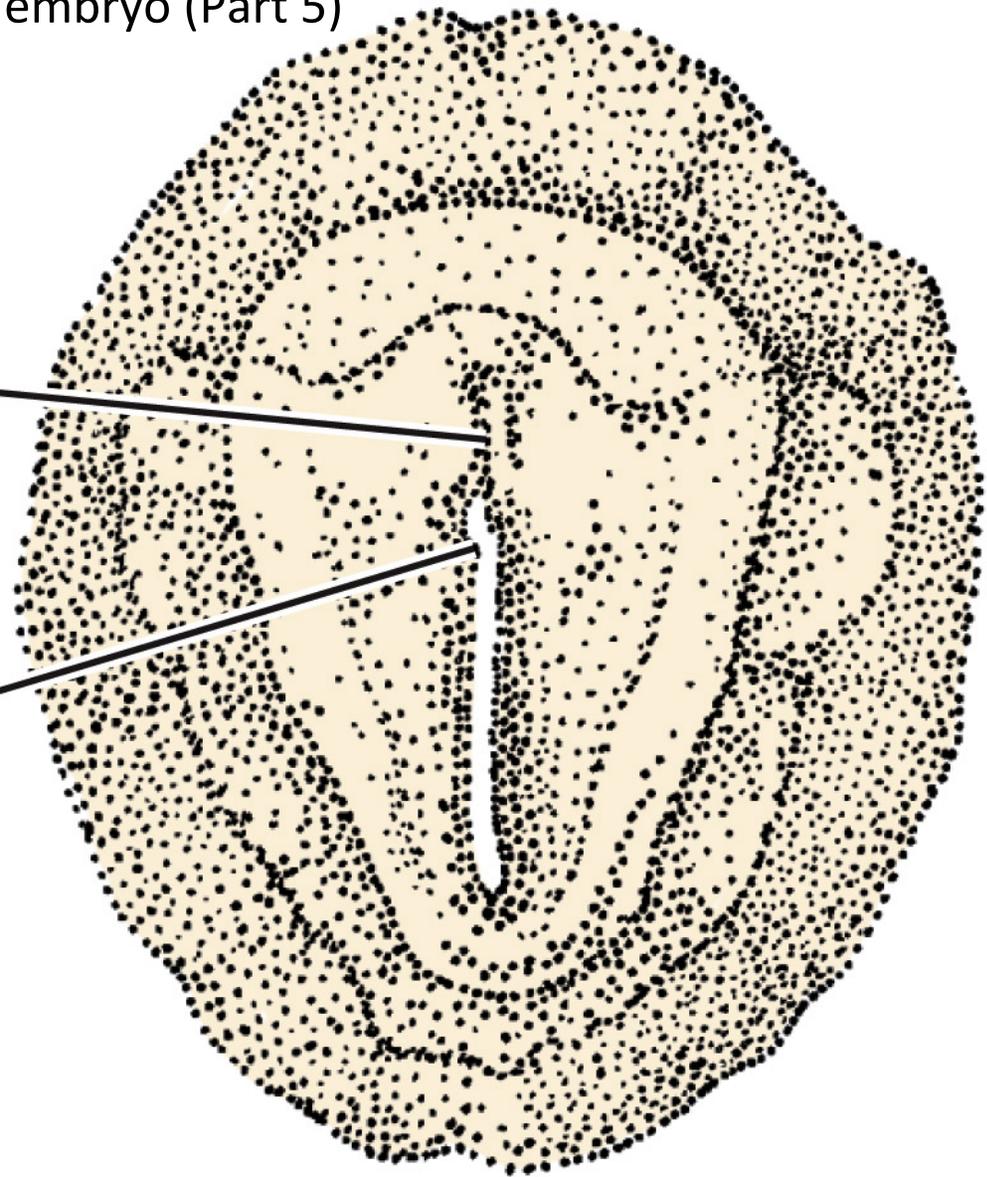


Figure 12.4 Cell movements of the primitive streak and fate map of the chick embryo (Part 6)

(E)

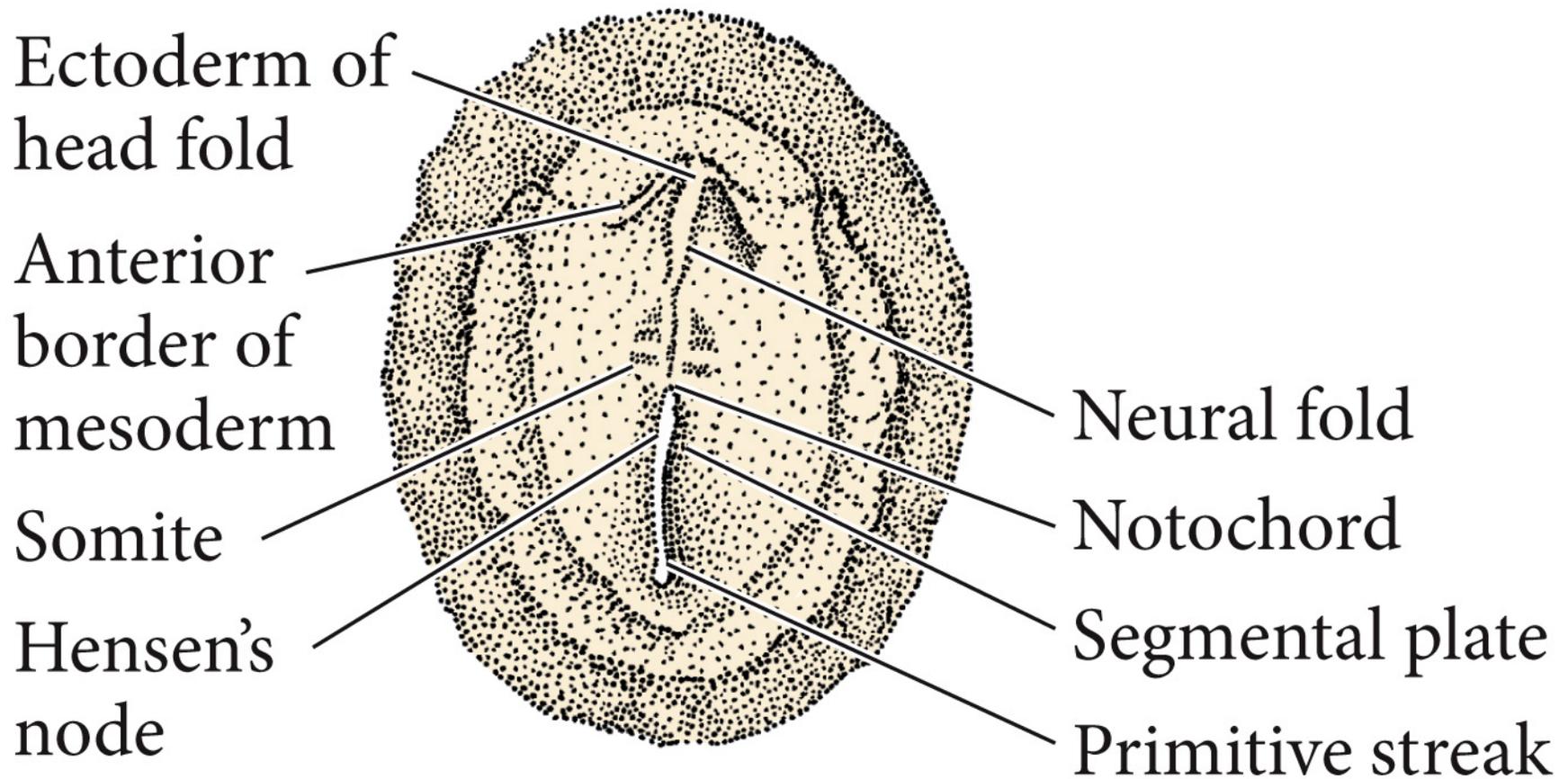
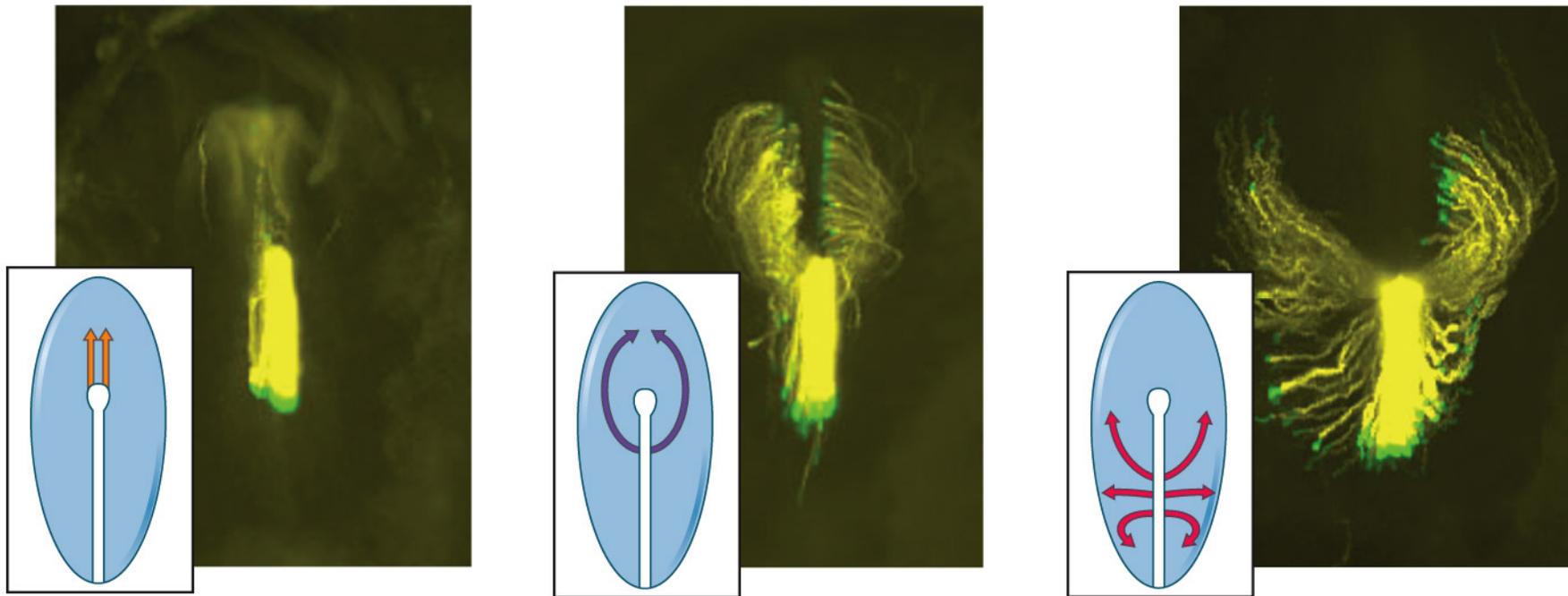


Figure 12.5 Migration of endodermal and mesodermal cells through the primitive streak (Part 1)



DEVELOPMENTAL BIOLOGY 11e, Figure 12.5 (Part 1)
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Figure 12.5 Migration of endodermal and mesodermal cells through the primitive streak

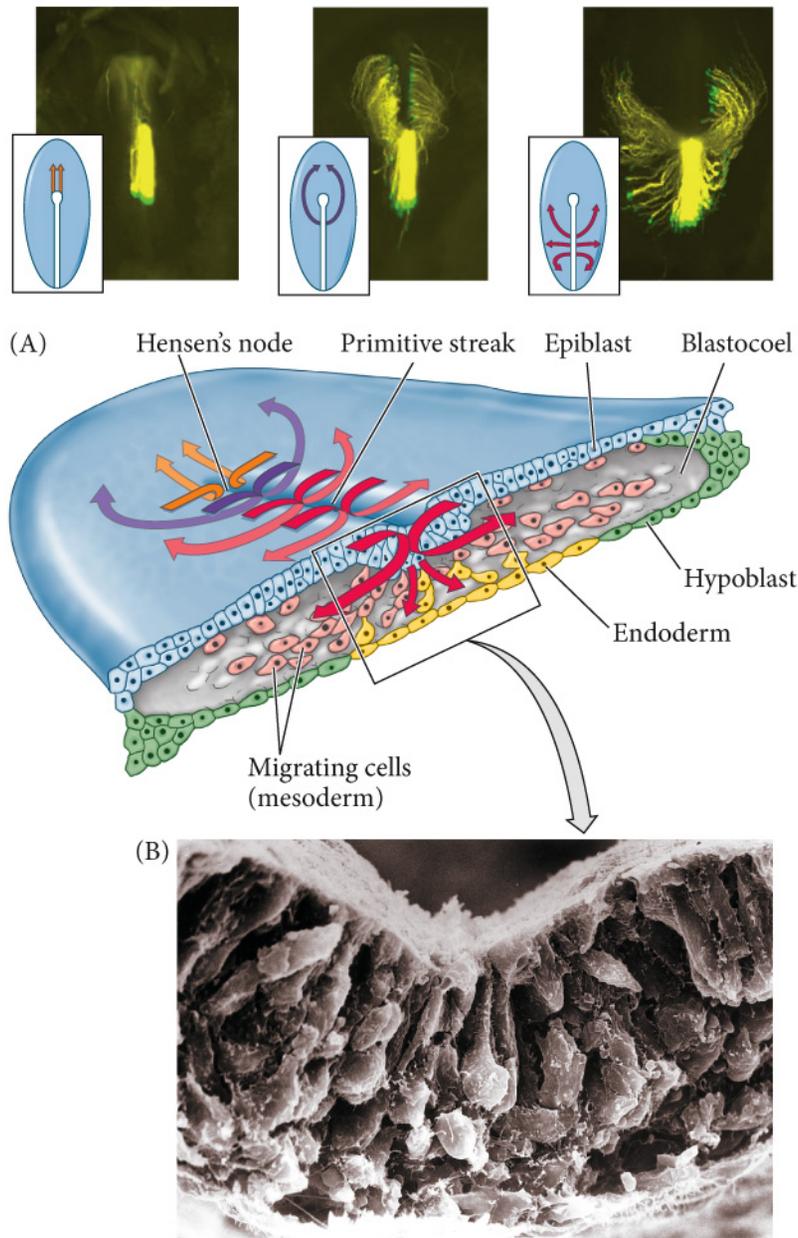
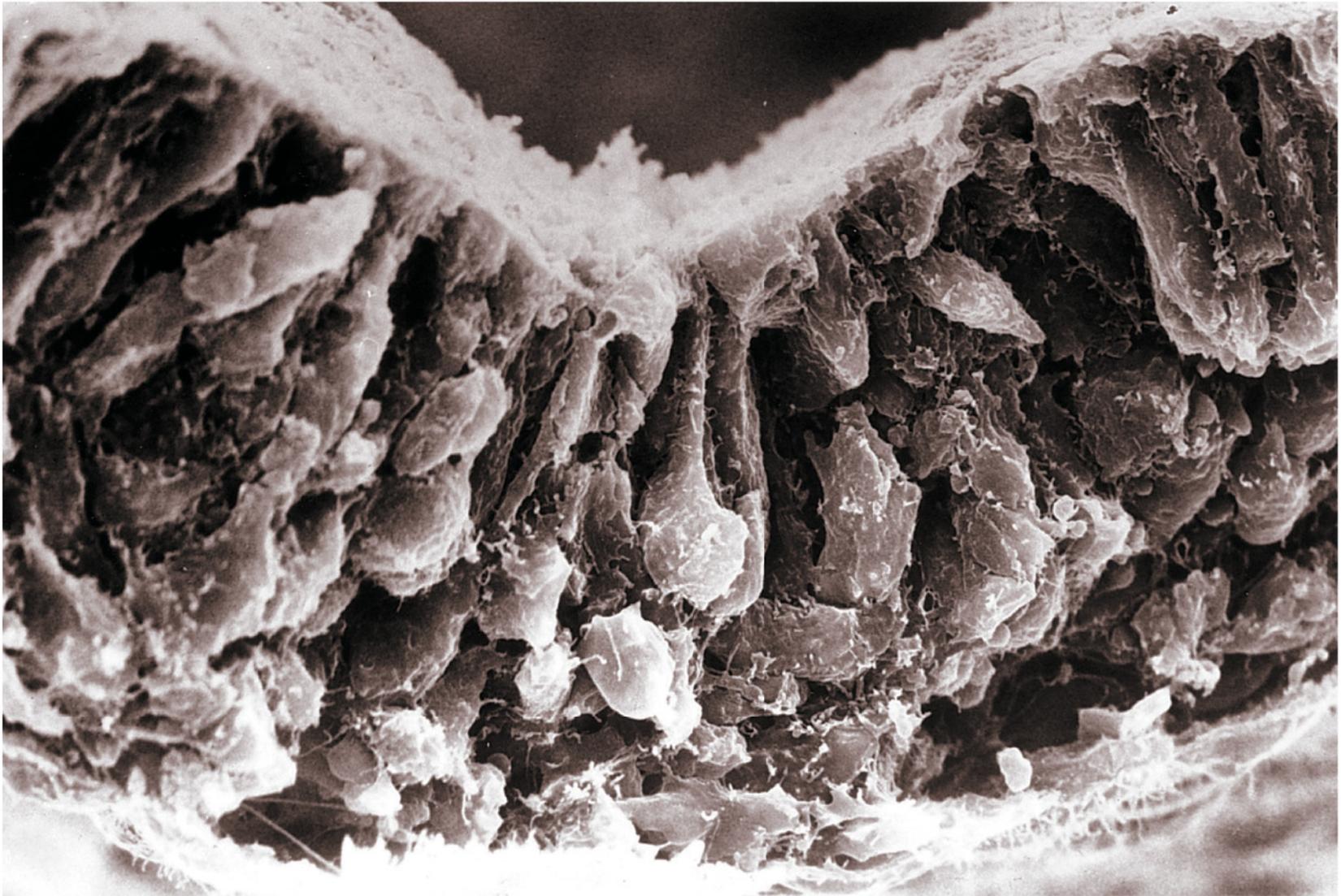


Figure 12.5 Migration of endodermal and mesodermal cells through the primitive strea
(Part 3)

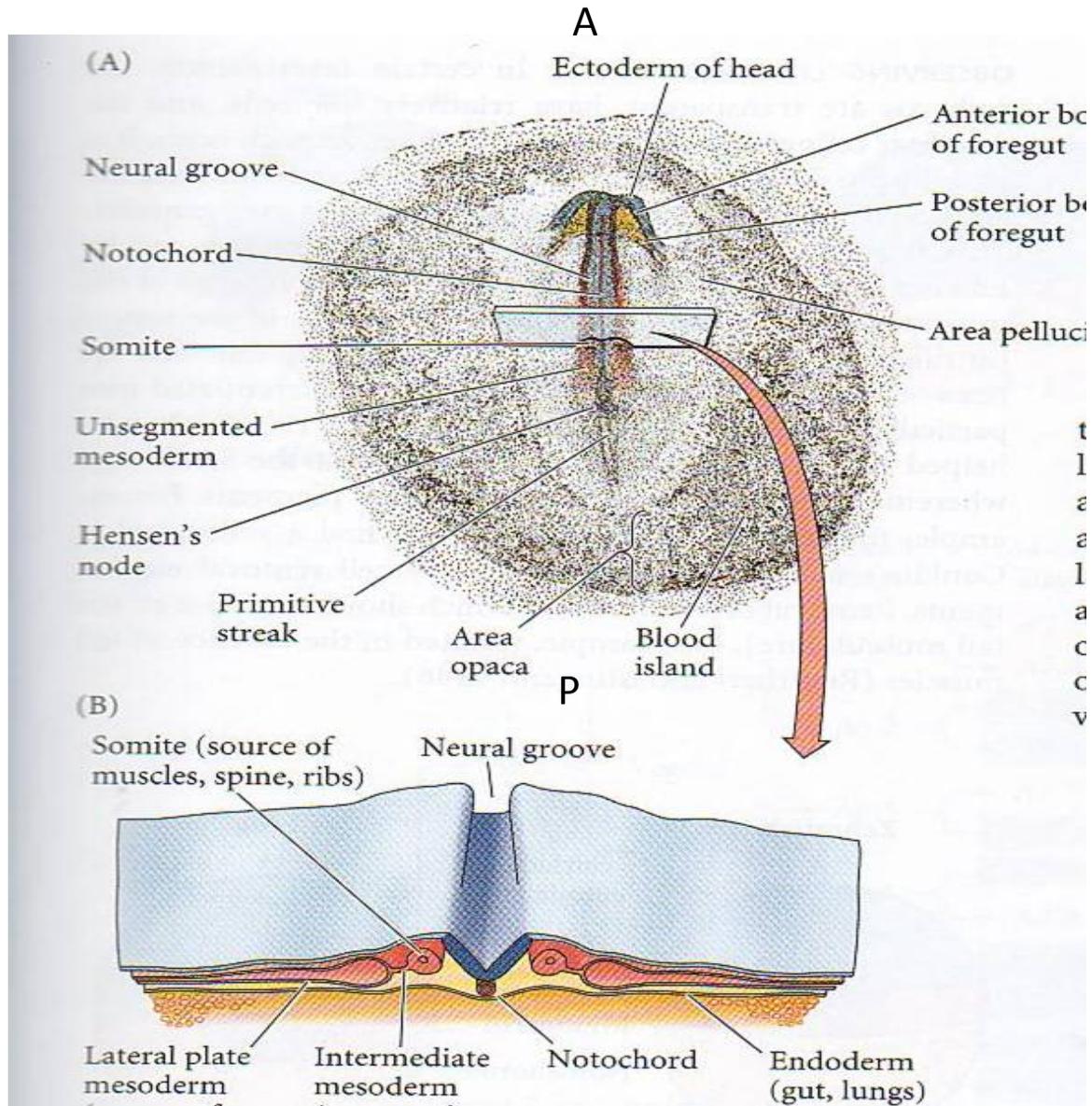
(B)



DEVELOPMENTAL BIOLOGY 11e, Figure 12.5 (Part 3)
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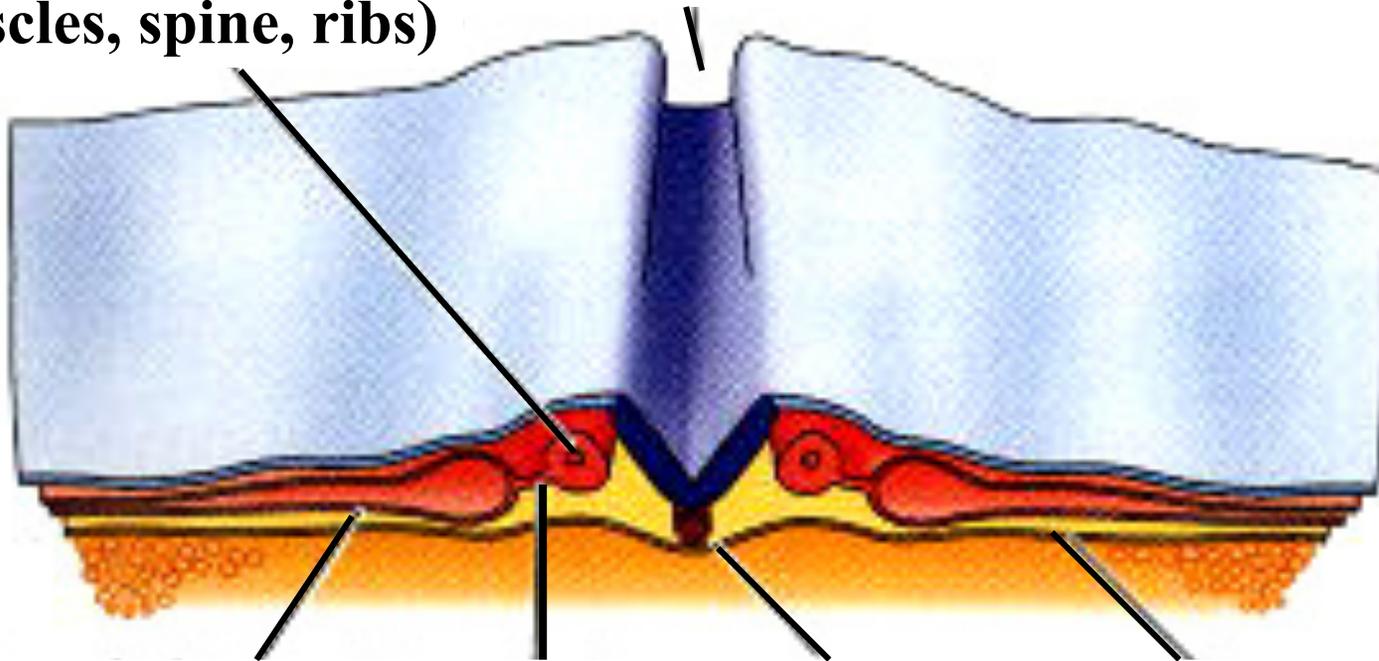
Origins of differentiated cell types

- Ectoderm: Outer surface eg. skin cells of epidermis, CNS –neurons of brain, Neural crest
- Mesoderm: Notochord, Heart and Skeletal muscle, Tubules of kidney, RBC, Facial muscle
- Endoderm: digestive tube, pharynx, respiratory tubes (alveolar cells)
- Germ cells Male sperm/female egg



Somite (source of muscles, spine, ribs)

Neural groove

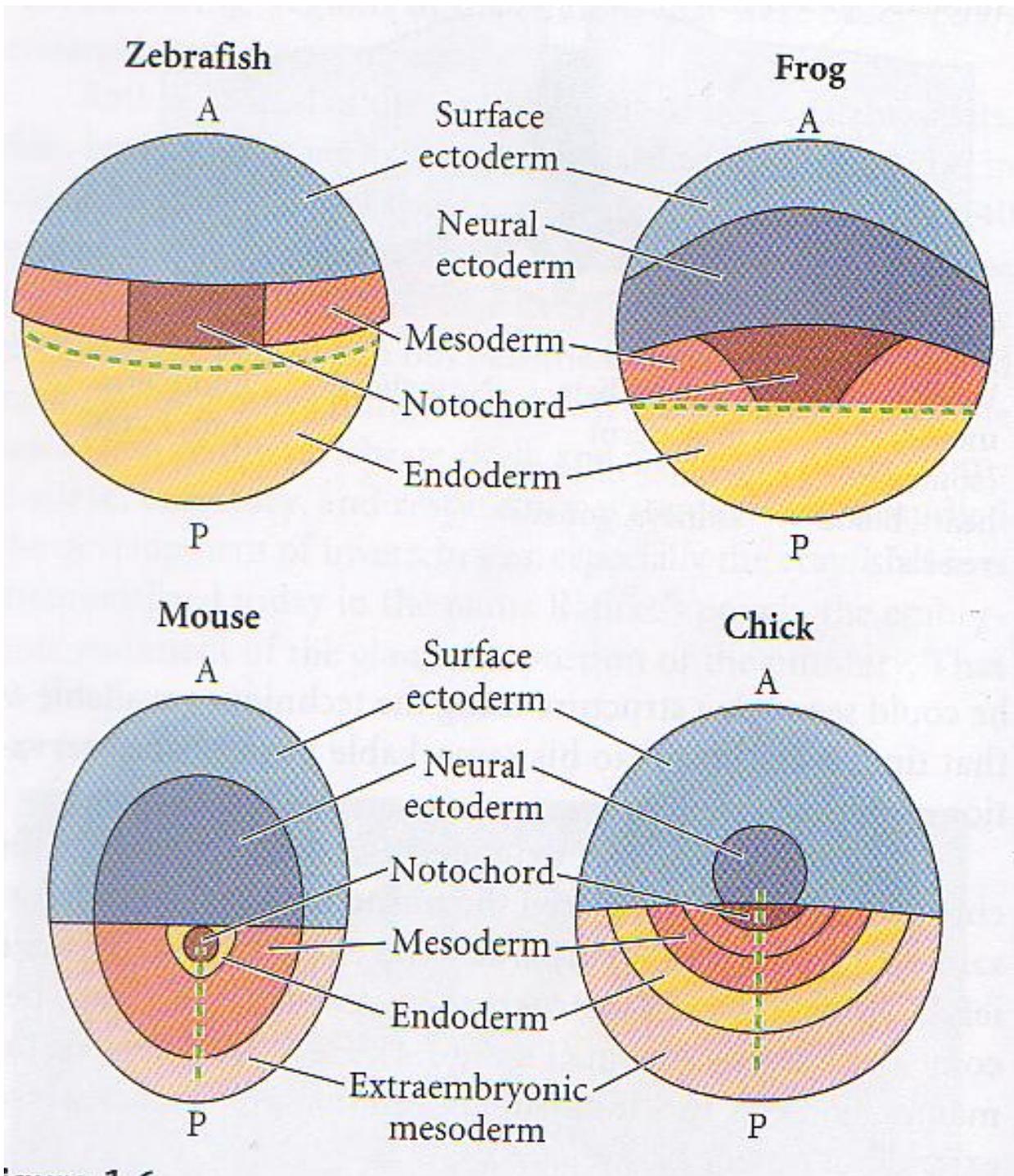


Lateral plate mesoderm (source of heart, blood vessels)

Intermediate mesoderm (source of kidneys, gonads)

Notochord

Endoderm (gut, lungs)



8.5 Axes of a bilaterally symmetrical animal

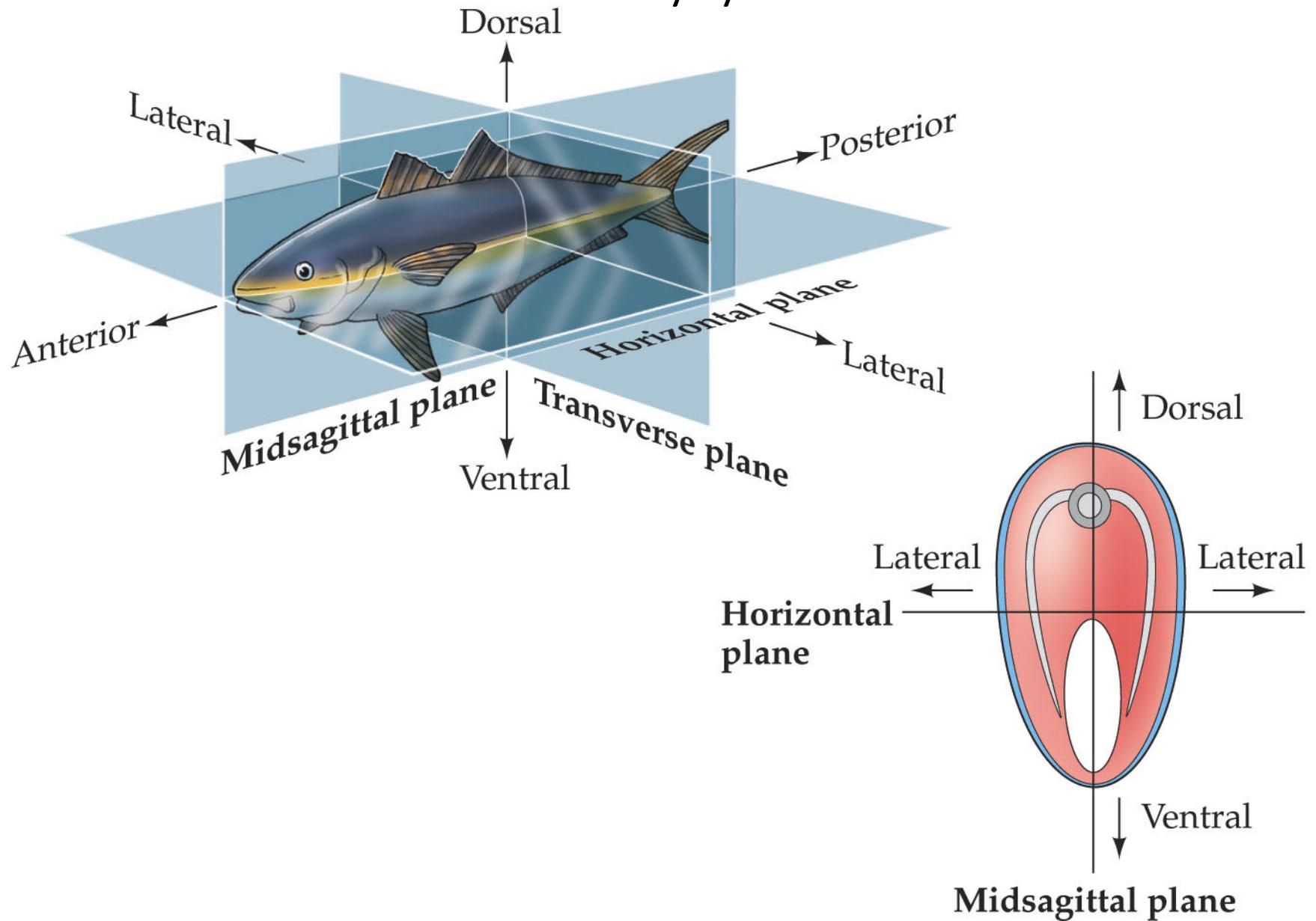
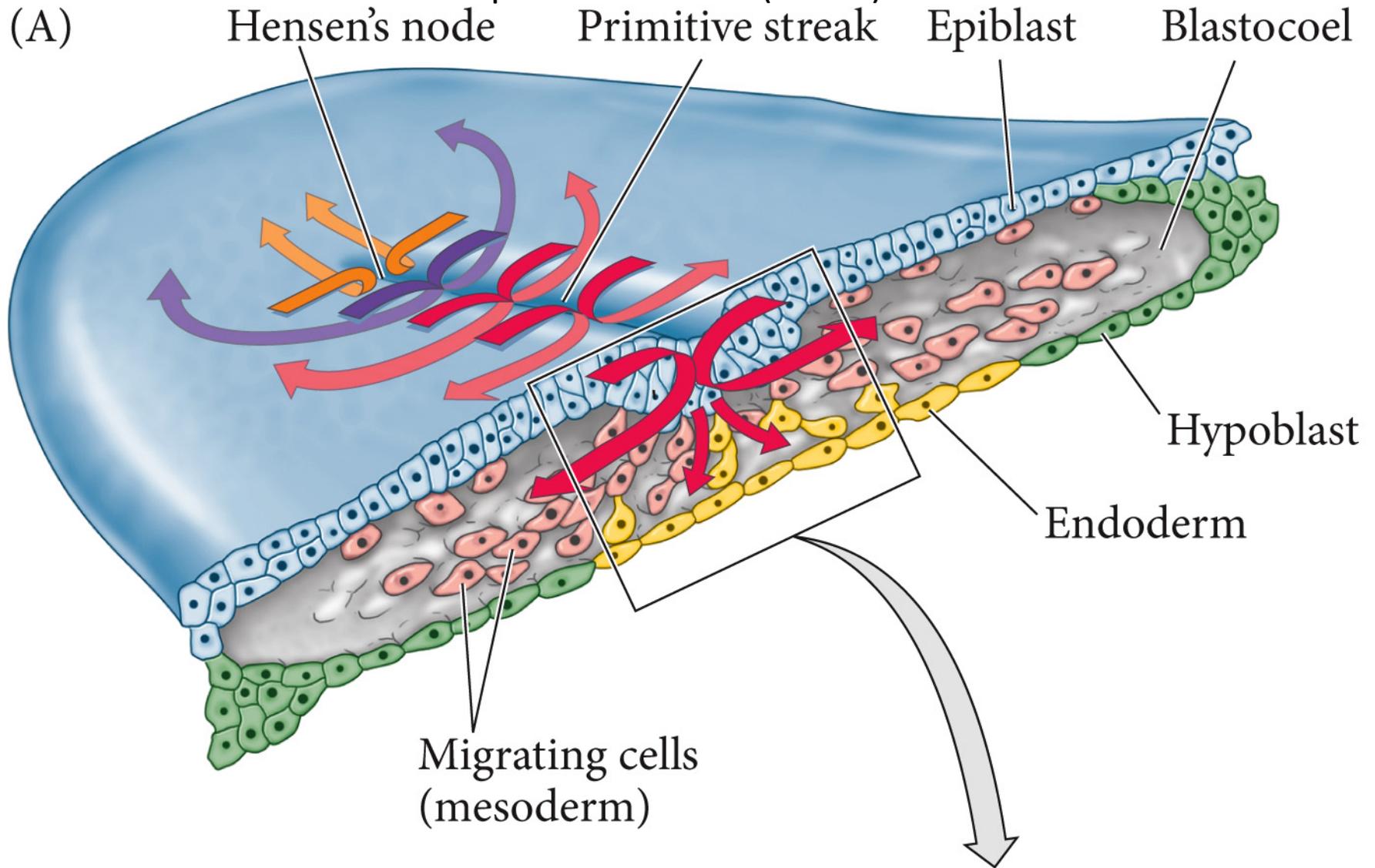
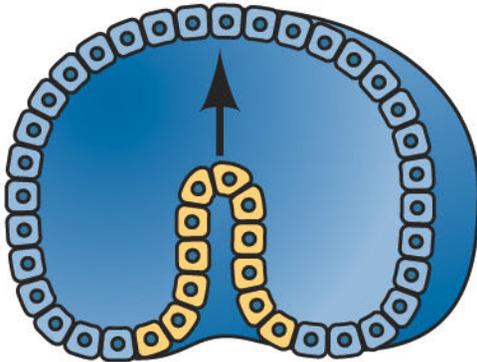


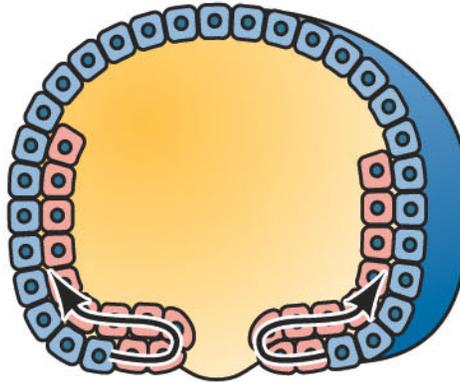
Figure 12.5 Migration of endodermal and mesodermal cells through the primitive streak (Part 2)



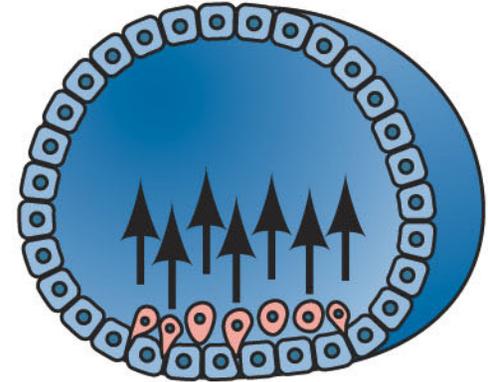
Invagination



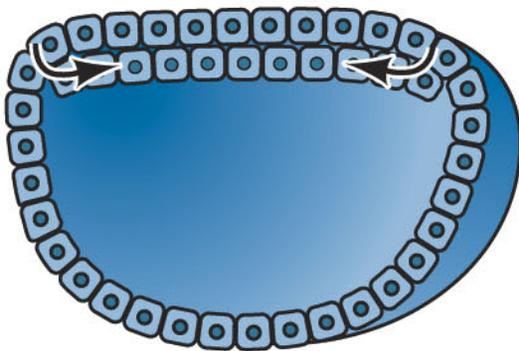
Involution



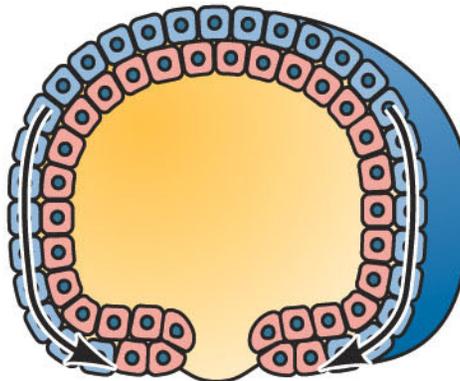
Ingression



Delamination



Epiboly



(A)

