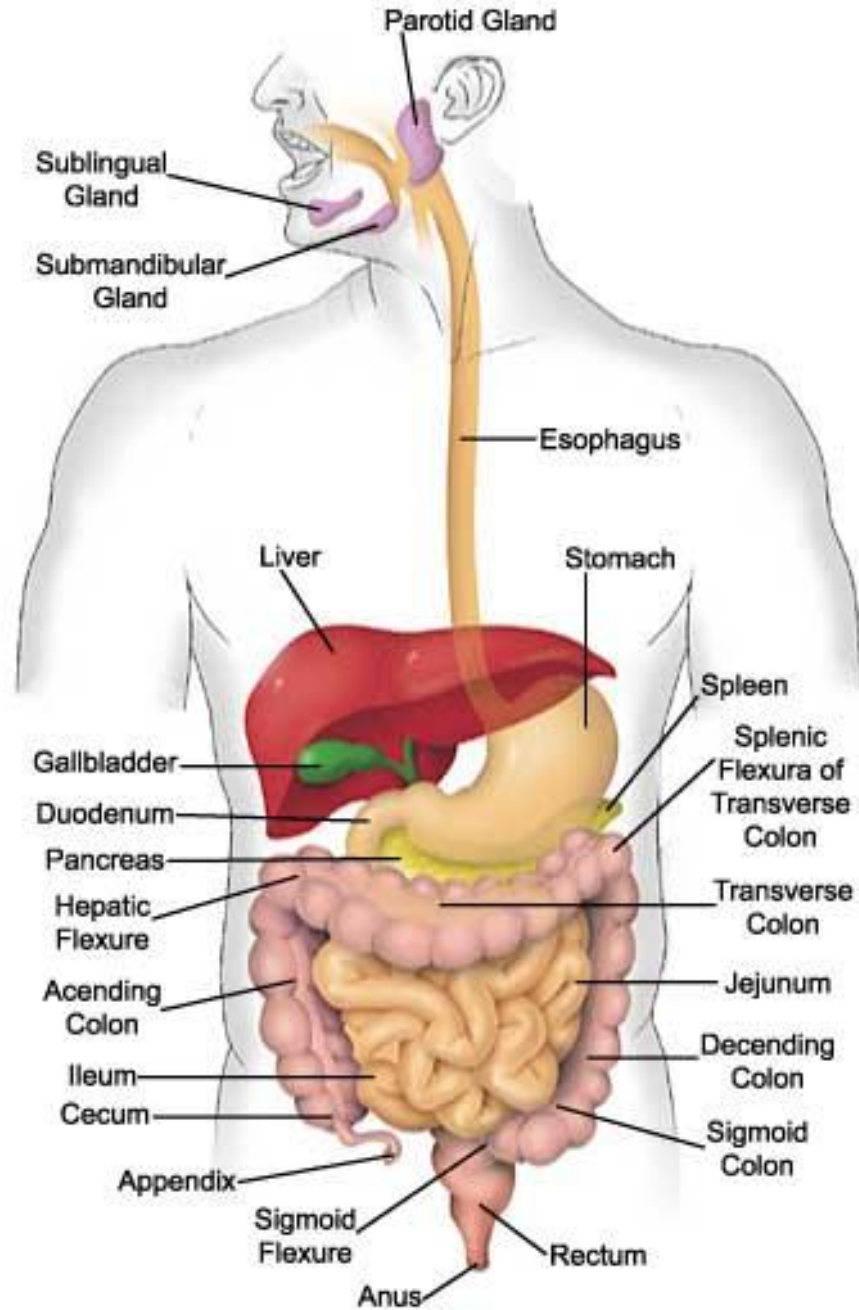
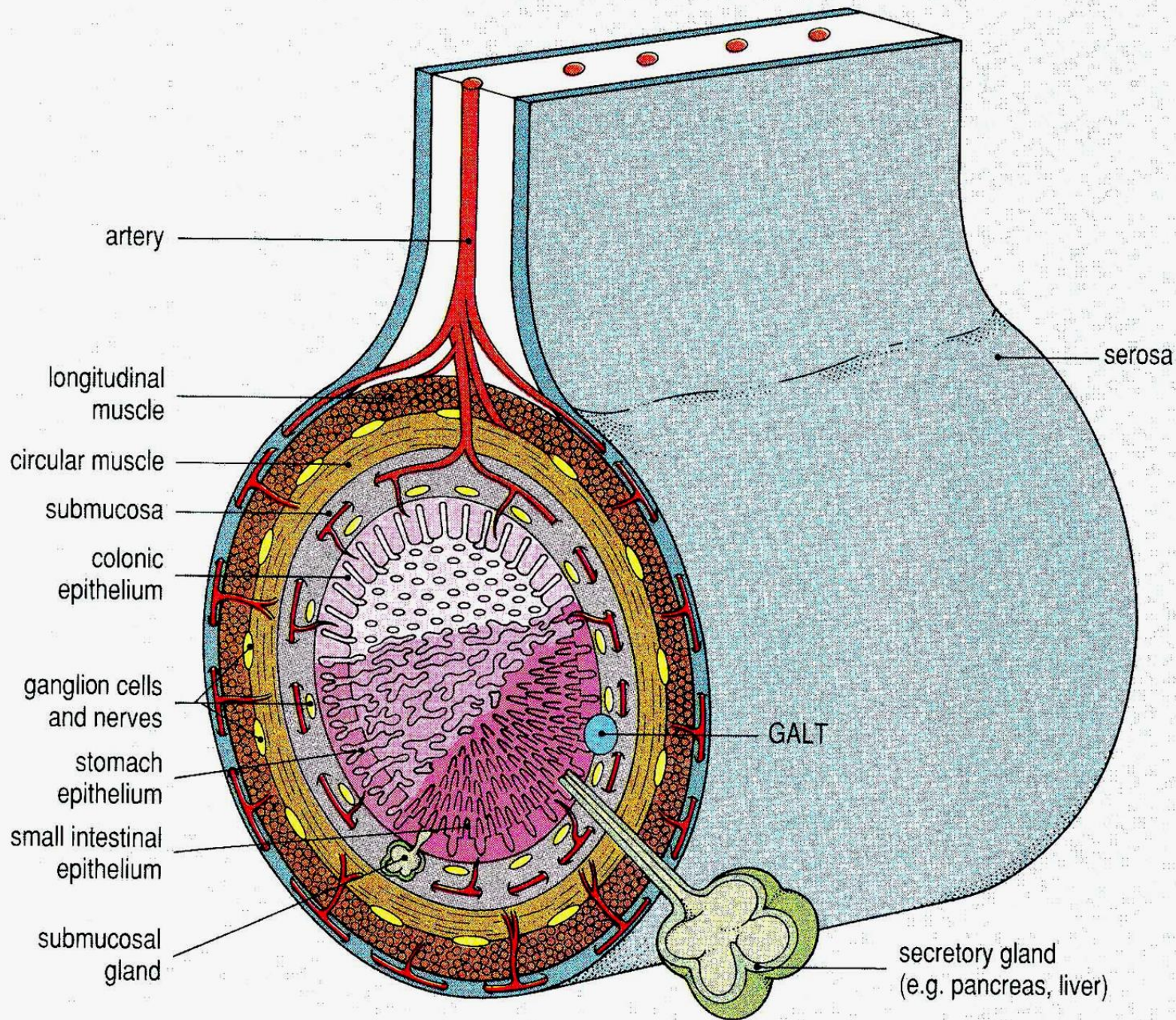


Digestive system 1

(general structure of GIT, oral cavity, tongue, teeth, esophagus and their development)





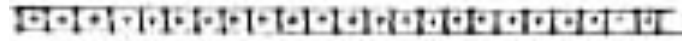
WALL OF DIGESTIVE TUBE

1. tunica mucosa

a) lamina epithelialis

b) lamina propria mucosae

c) lamina muscularis mucosae



vessels

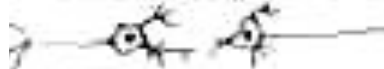


glands



inner circular layer

outer longitudinal layer



plexus submucosus Meissneri



vessels



glands

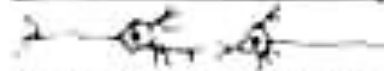
(oesophagus, duodenum)

2. tela submucosa



inner circular layer

3. tunica muscularis externa

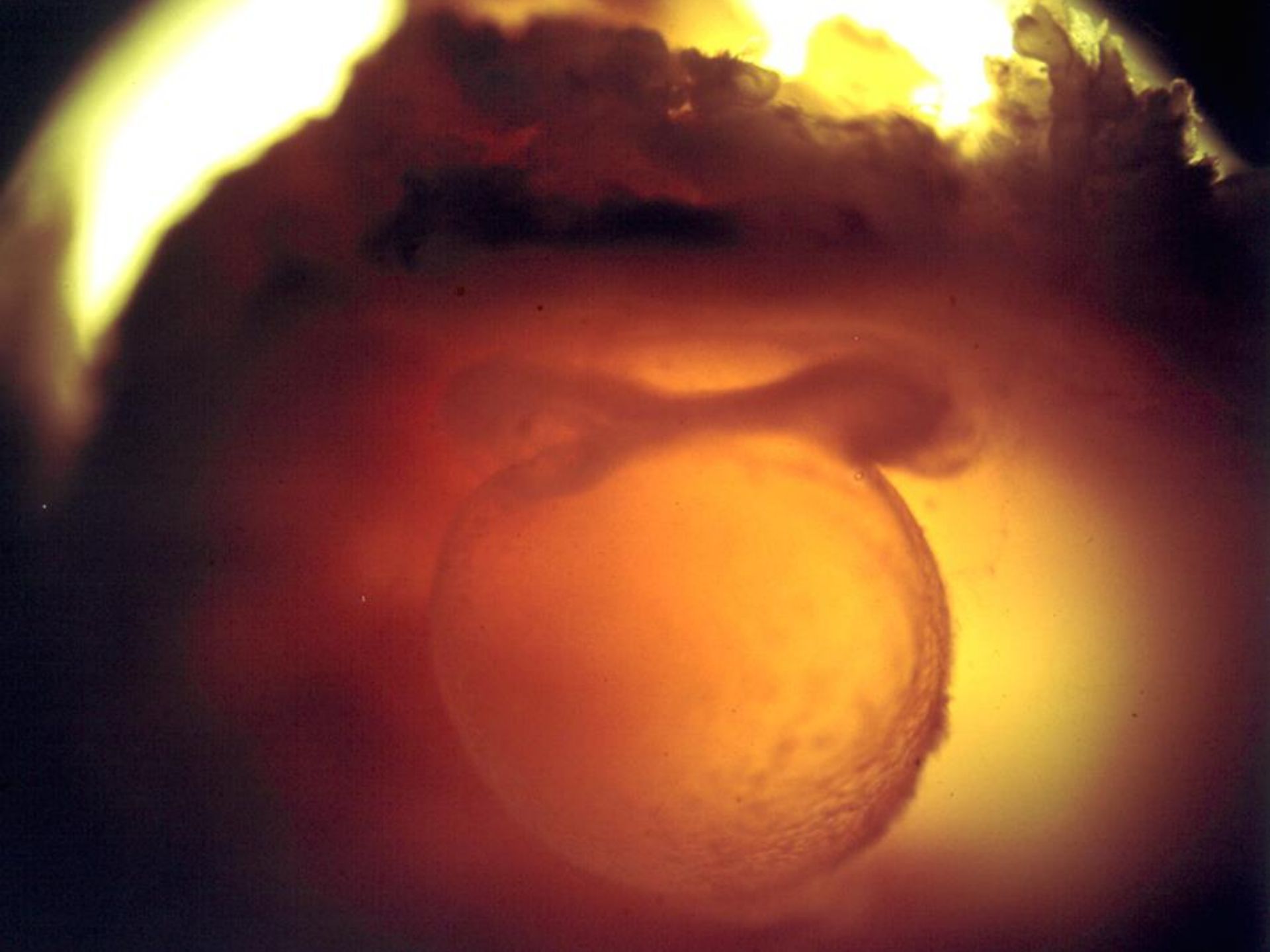


plexus myentericus Auerbachi

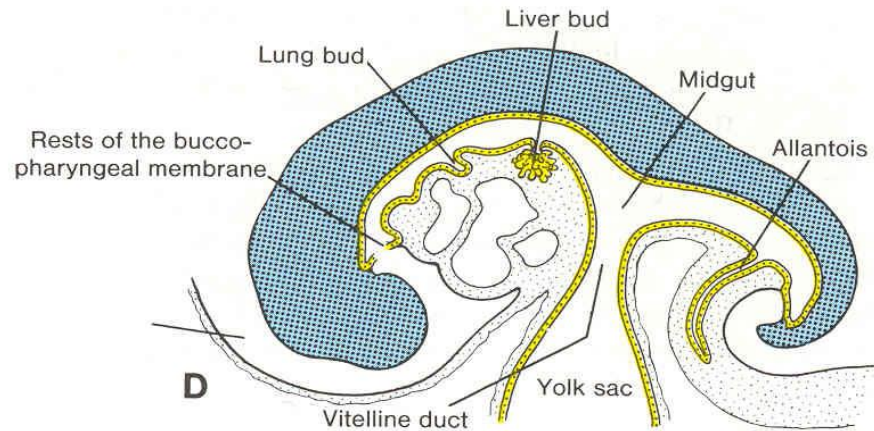
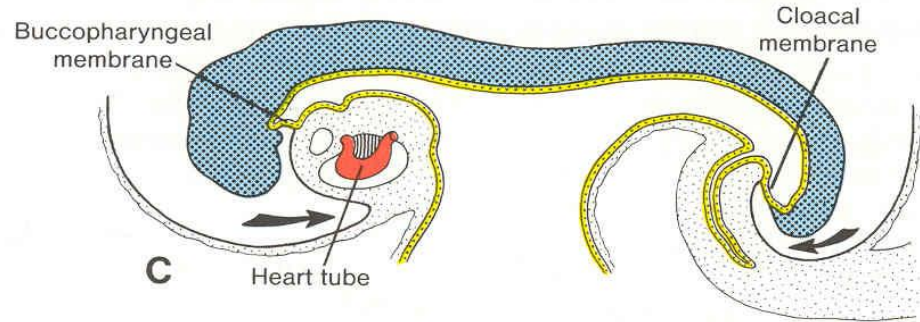
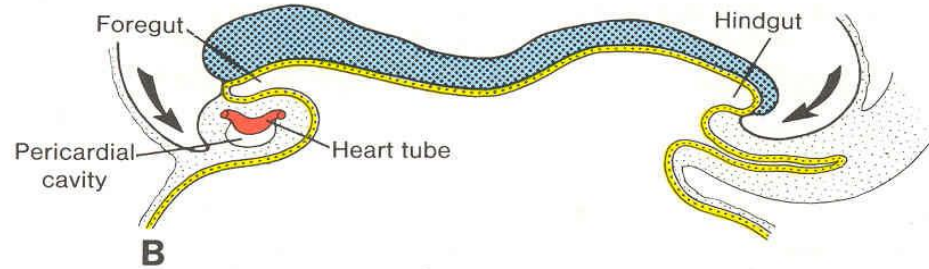
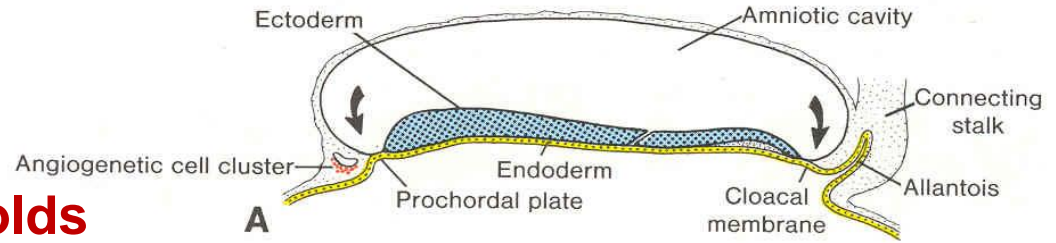


outer longitudinal layer

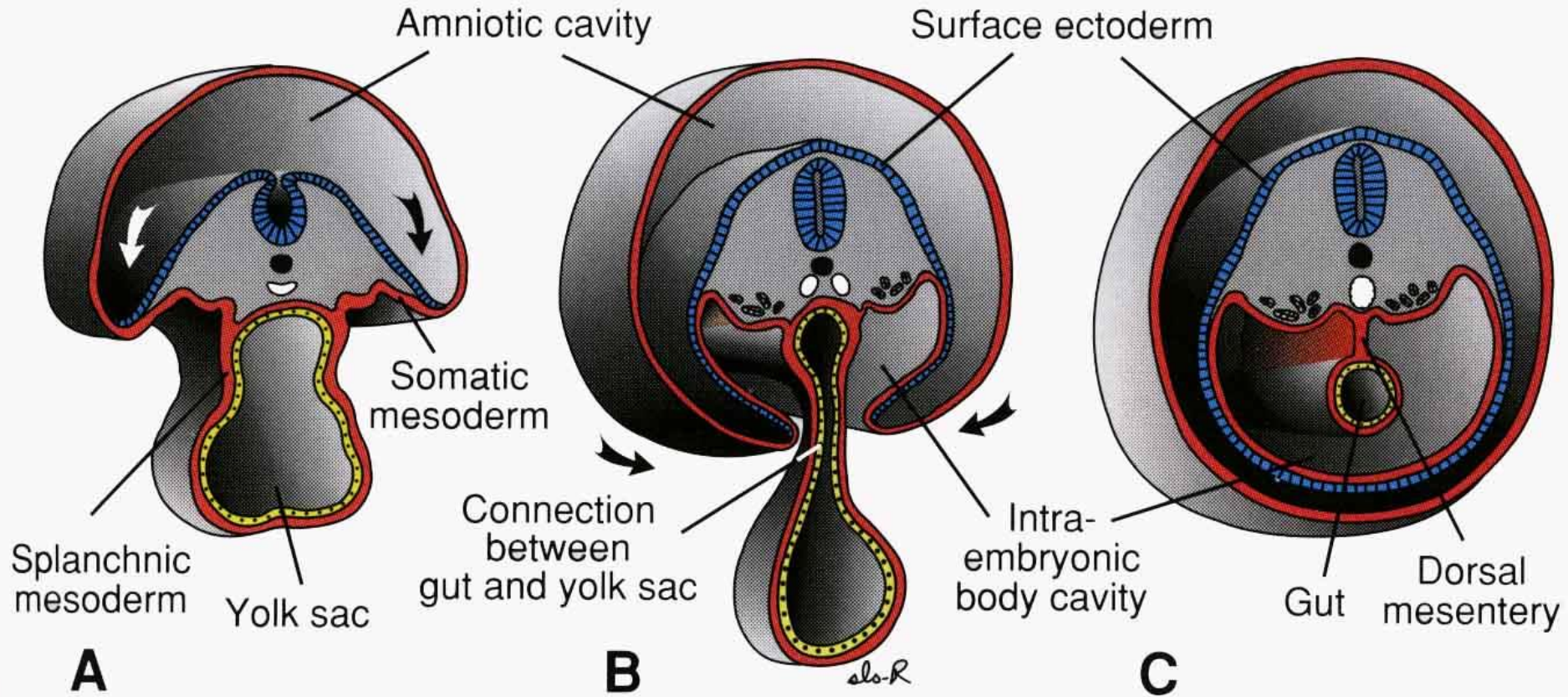
4. tunica serosa or adventitia

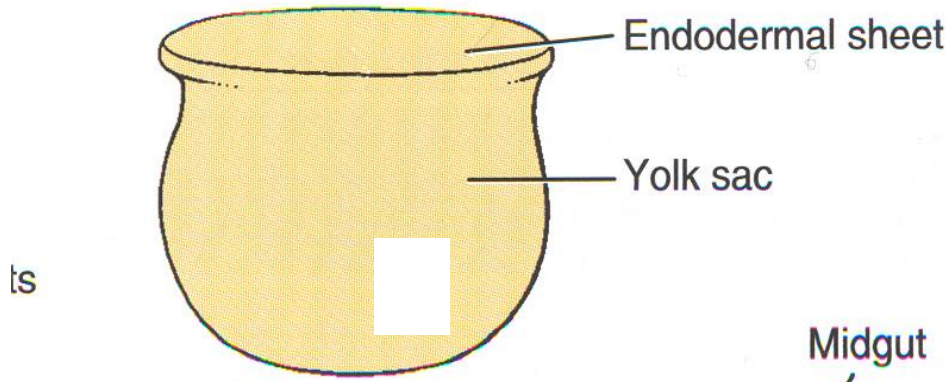


formation of amniotic folds
creates from trilaminar disc
the **three-dimensional tube**

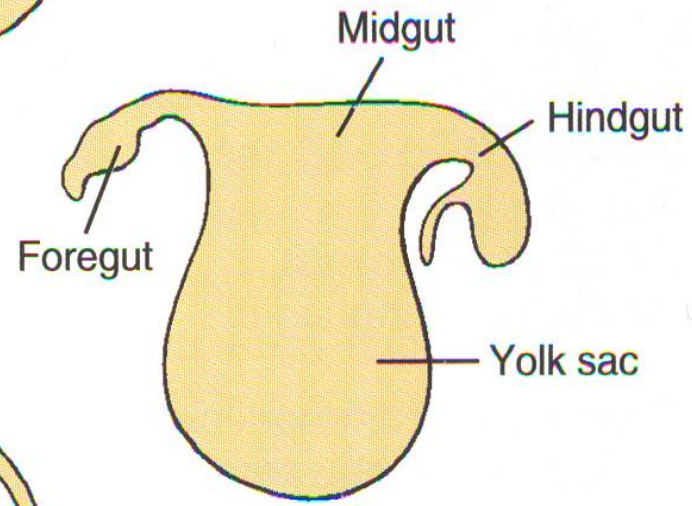


**yolk sac, formation of digestive tube
ductus omphaloentericus
gut closing, mesenterium, coelom**

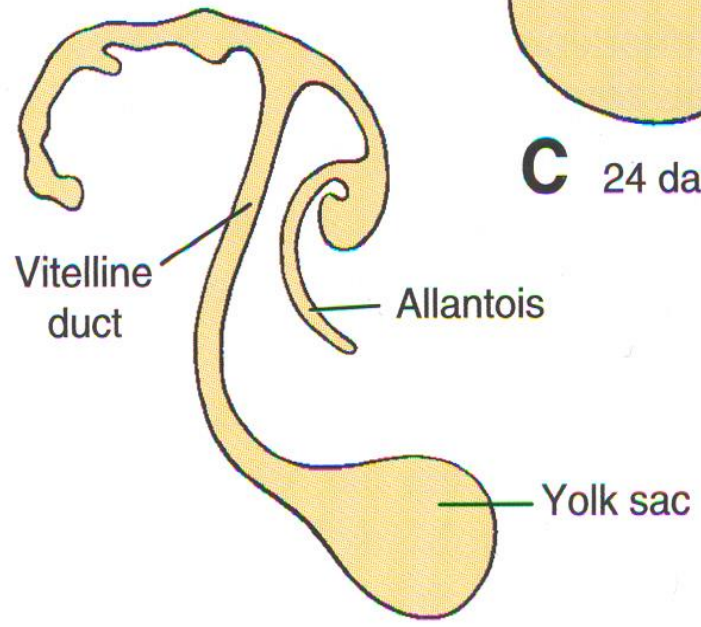




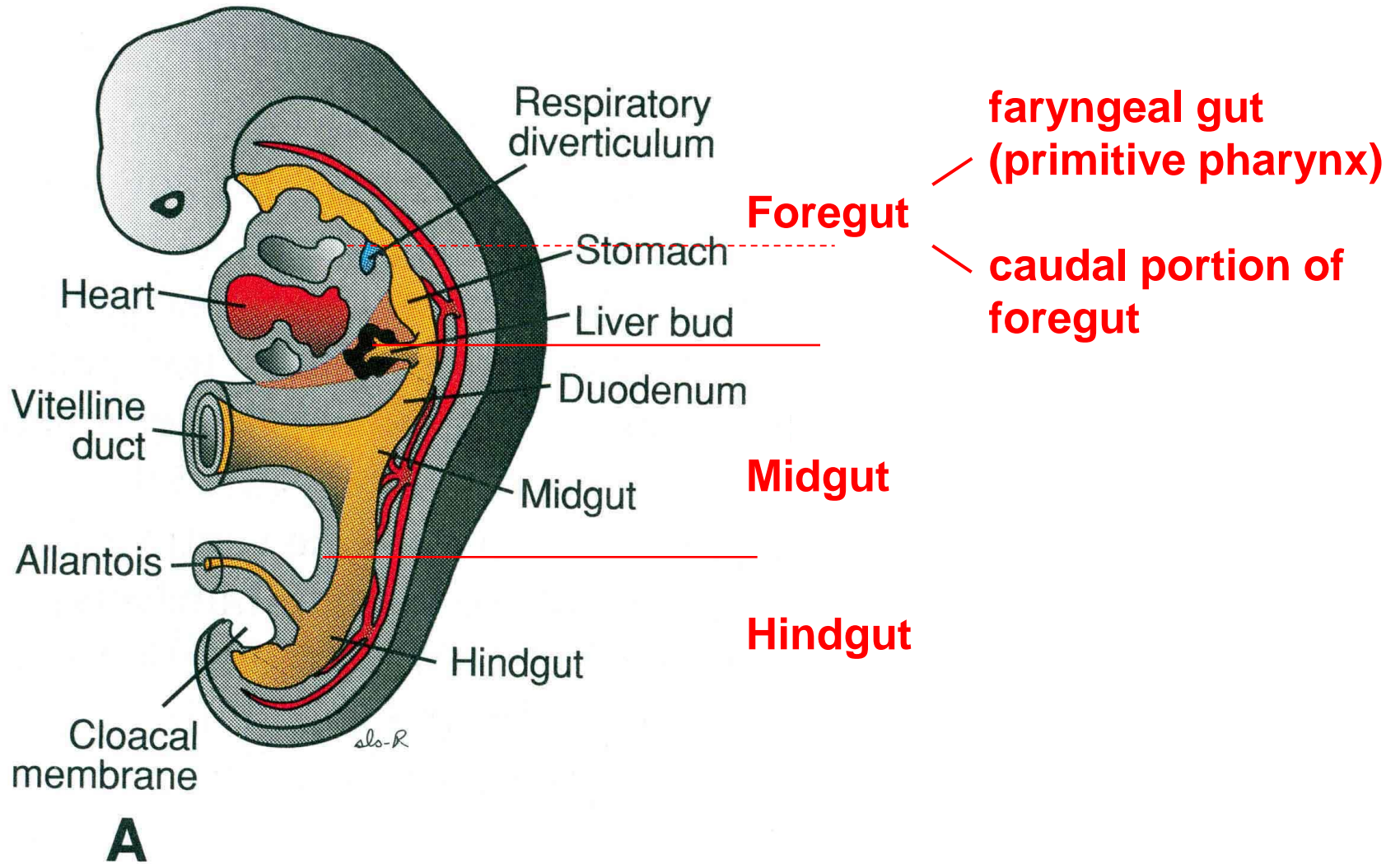
B 20 days



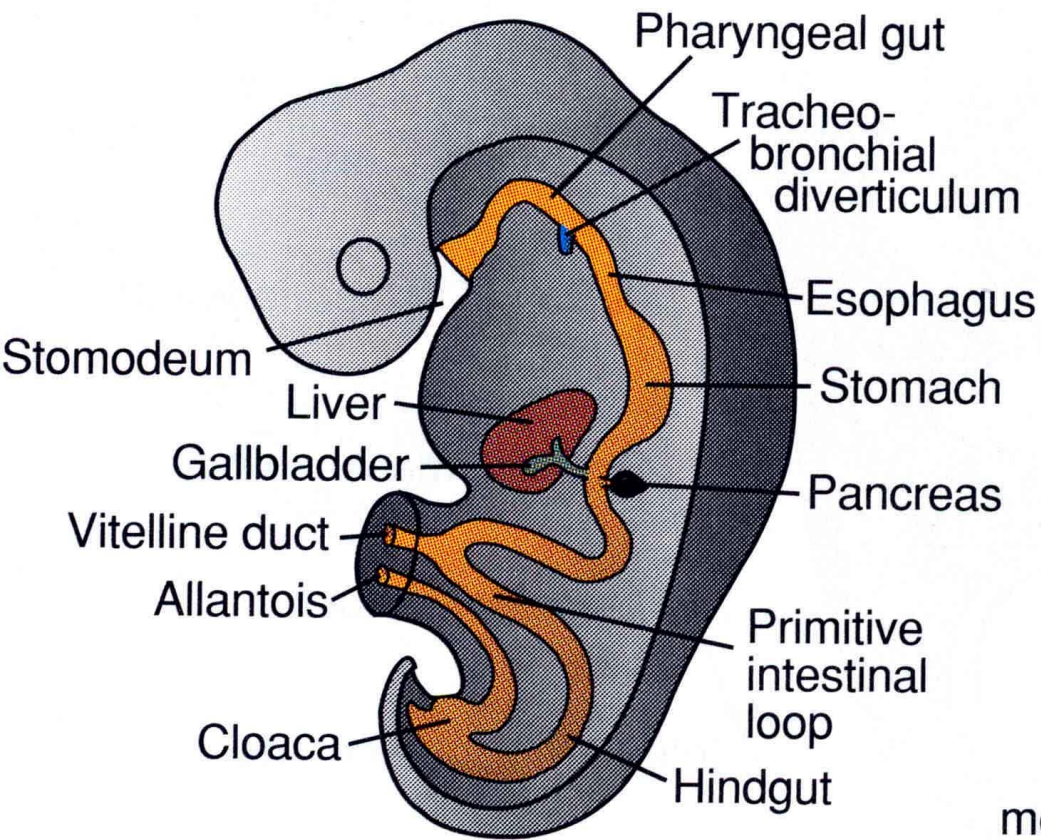
C 24 days



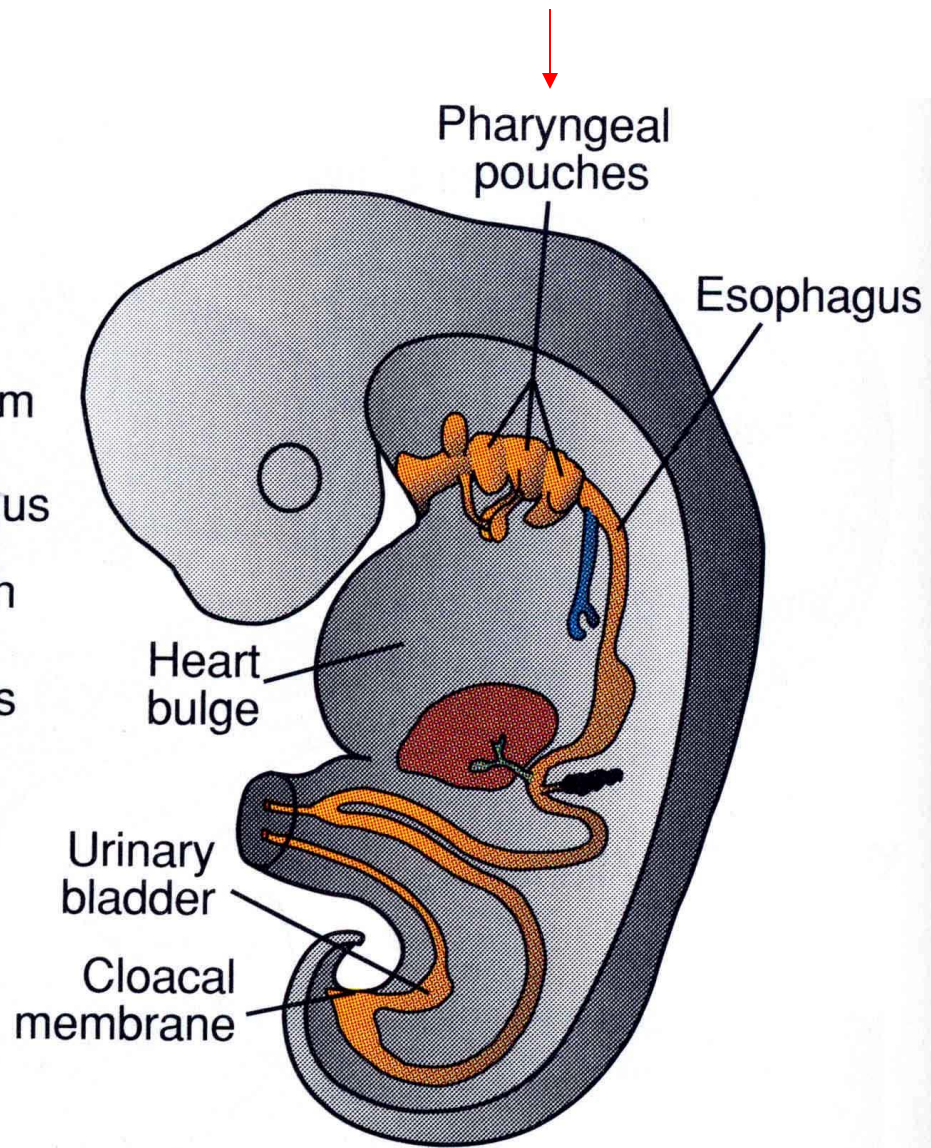
D 26 days



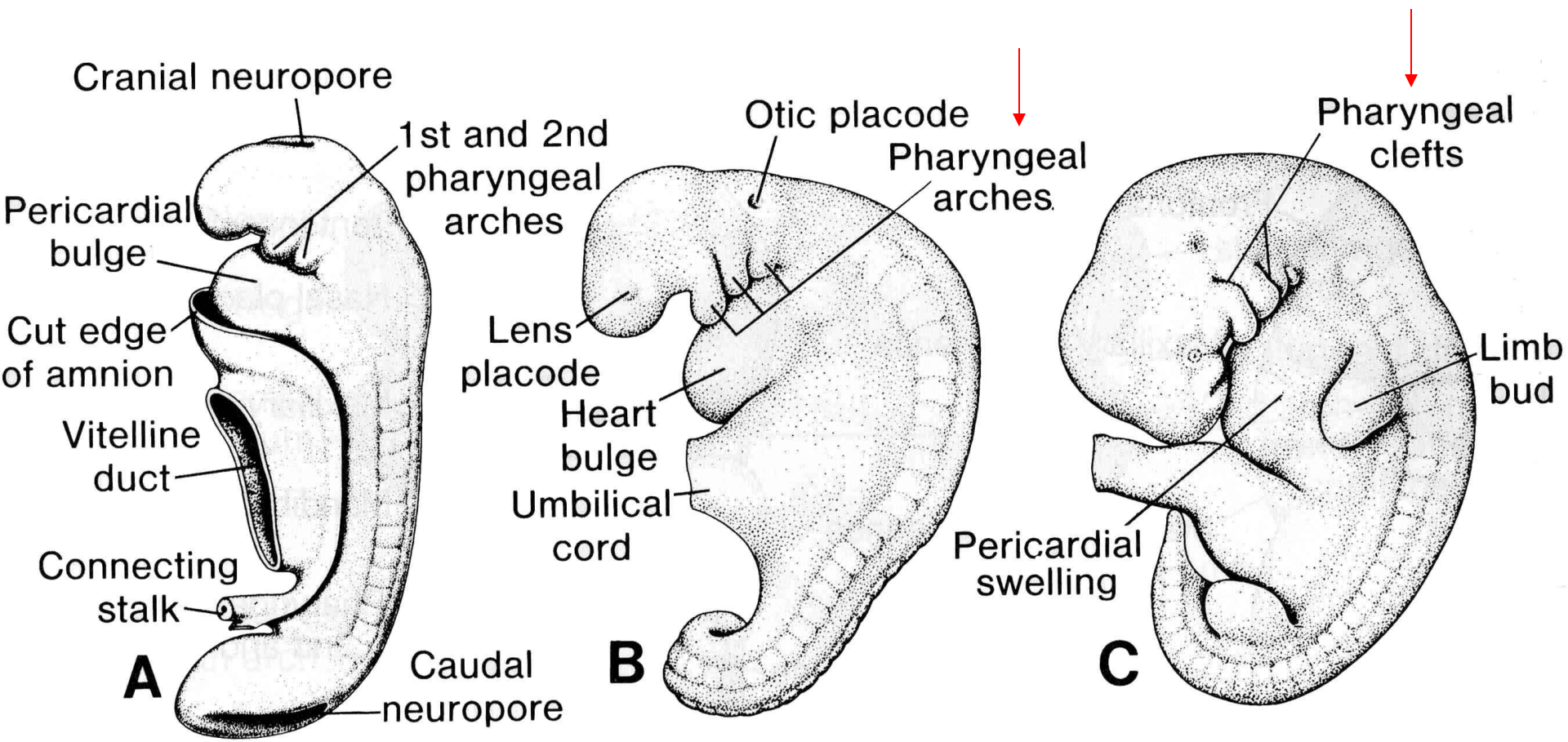
**DIFFERENTIATION OF THE PRIMITIVE
PHARYNX (PHARYNGEAL GUT),
PHARYNGEAL (BRANCHIAL) POUCHES,
CLEFTS AND ARCHES**



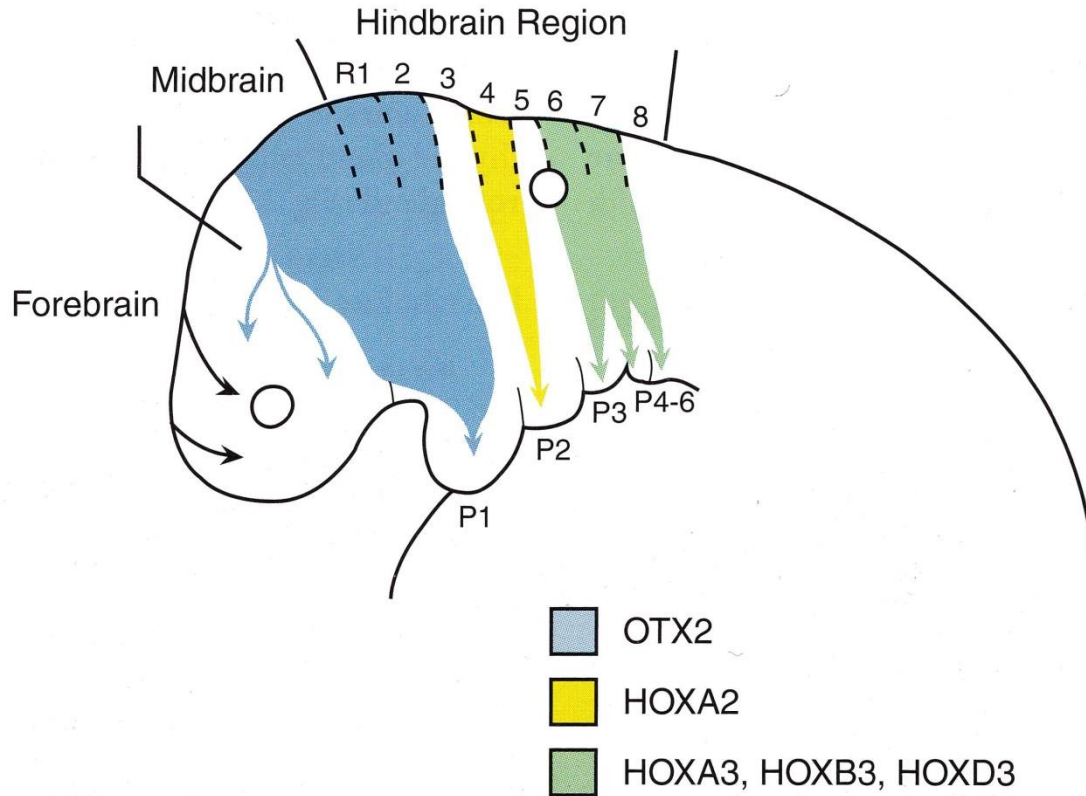
A



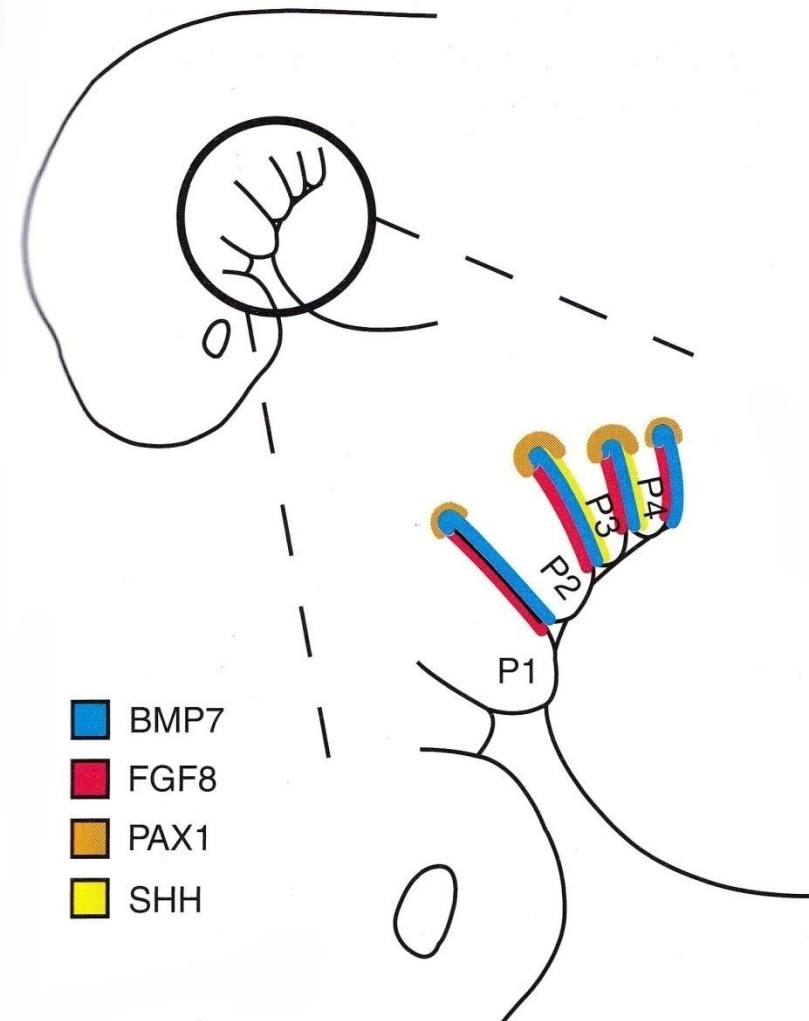
B



Molecular control of pharyngeal arches



expression of genes in migratory streams of neural crest cells

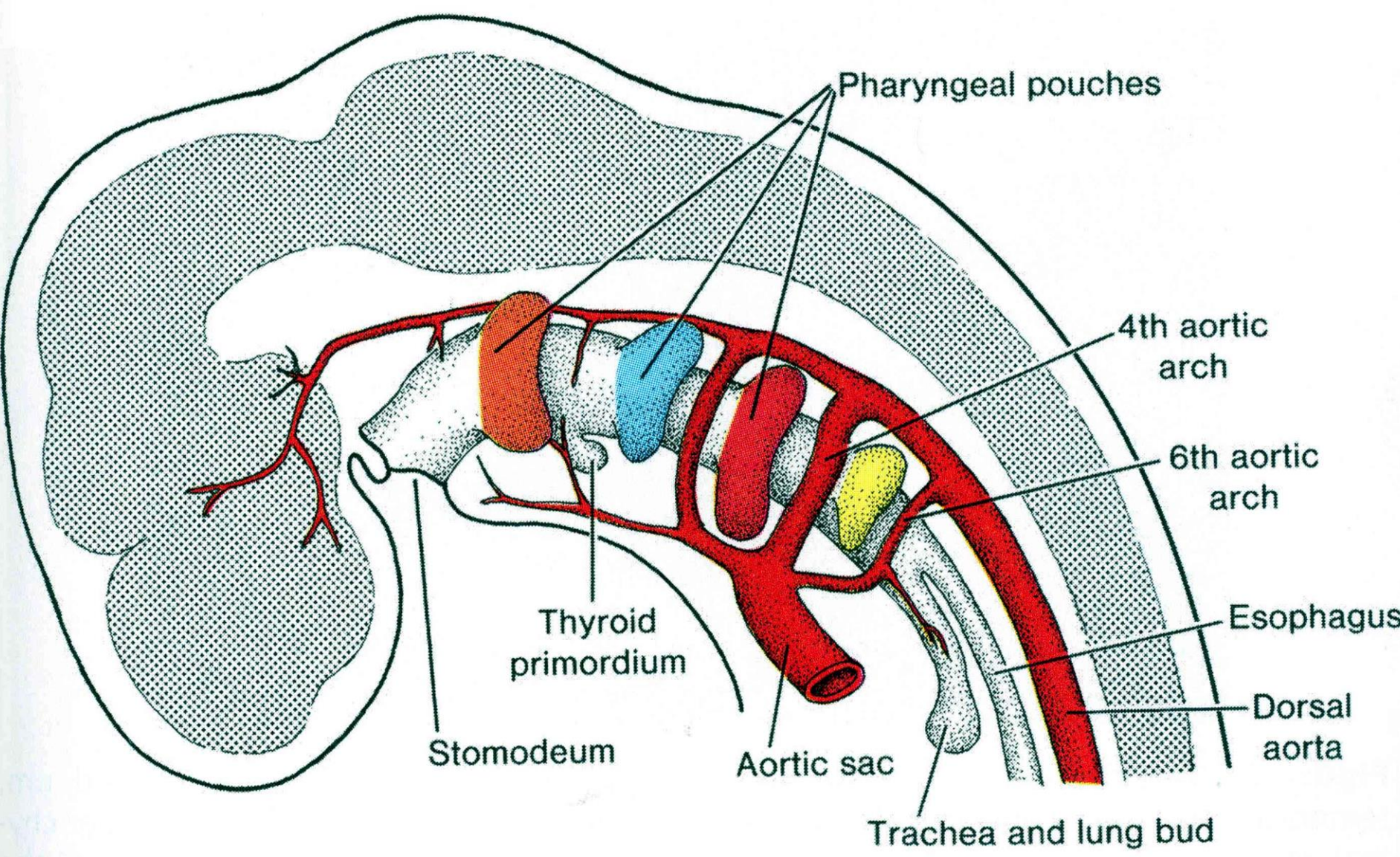


expression of genes in endoderm of pharyngeal pouches

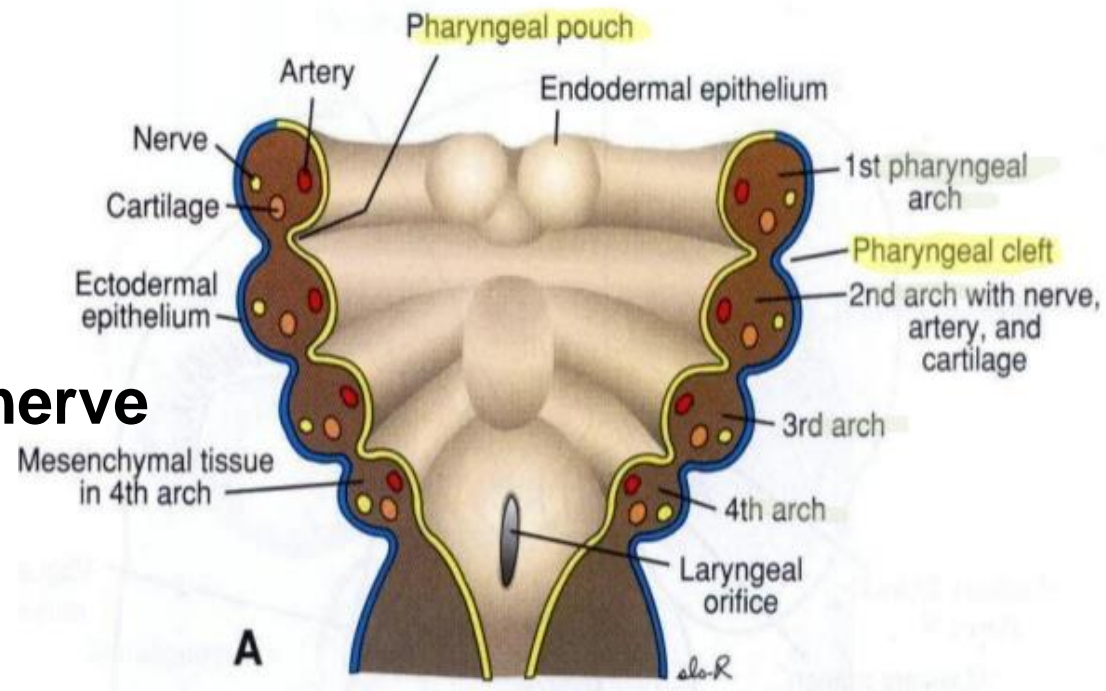
four pairs of
branchial arches
in the pike's
mouth

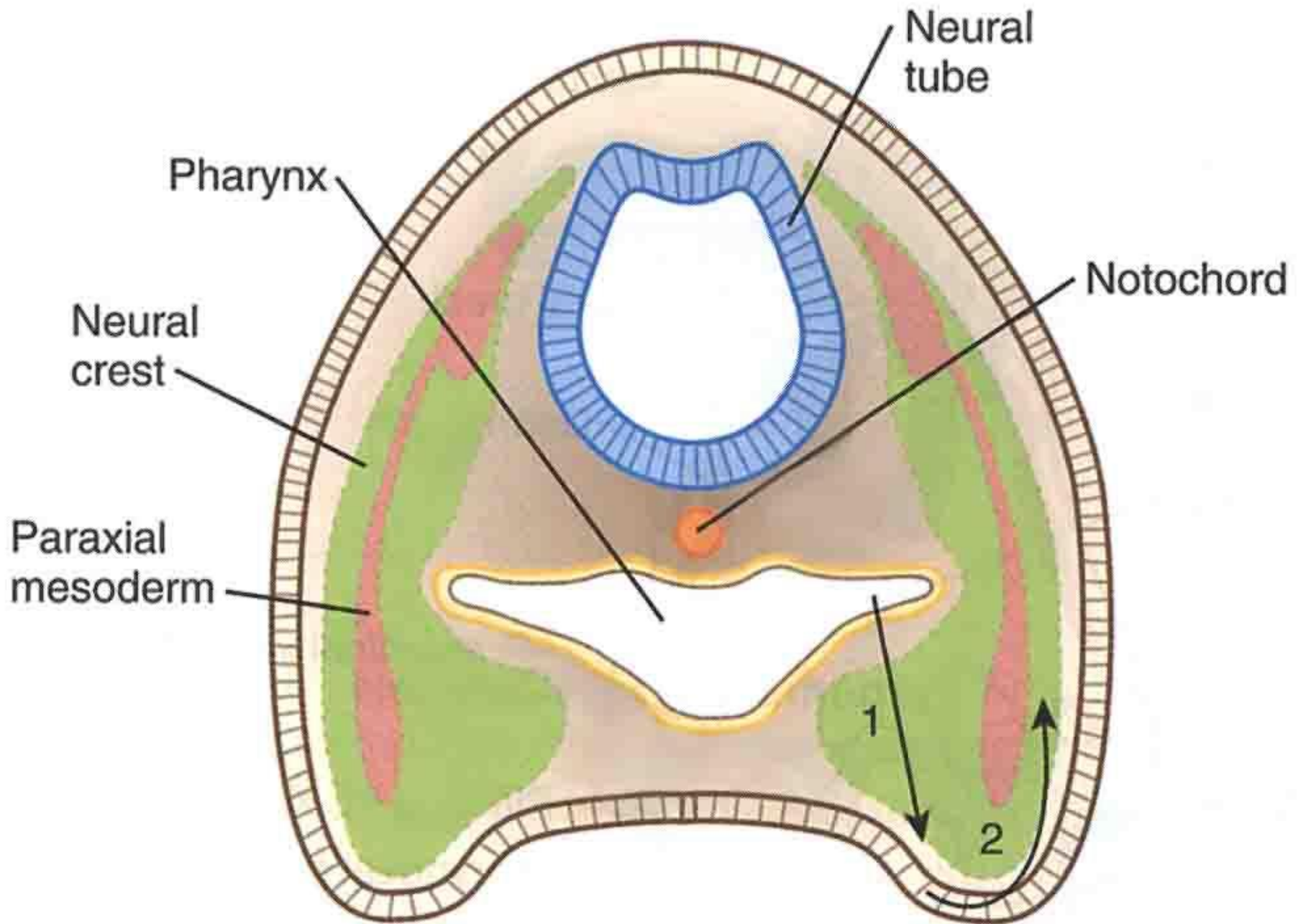


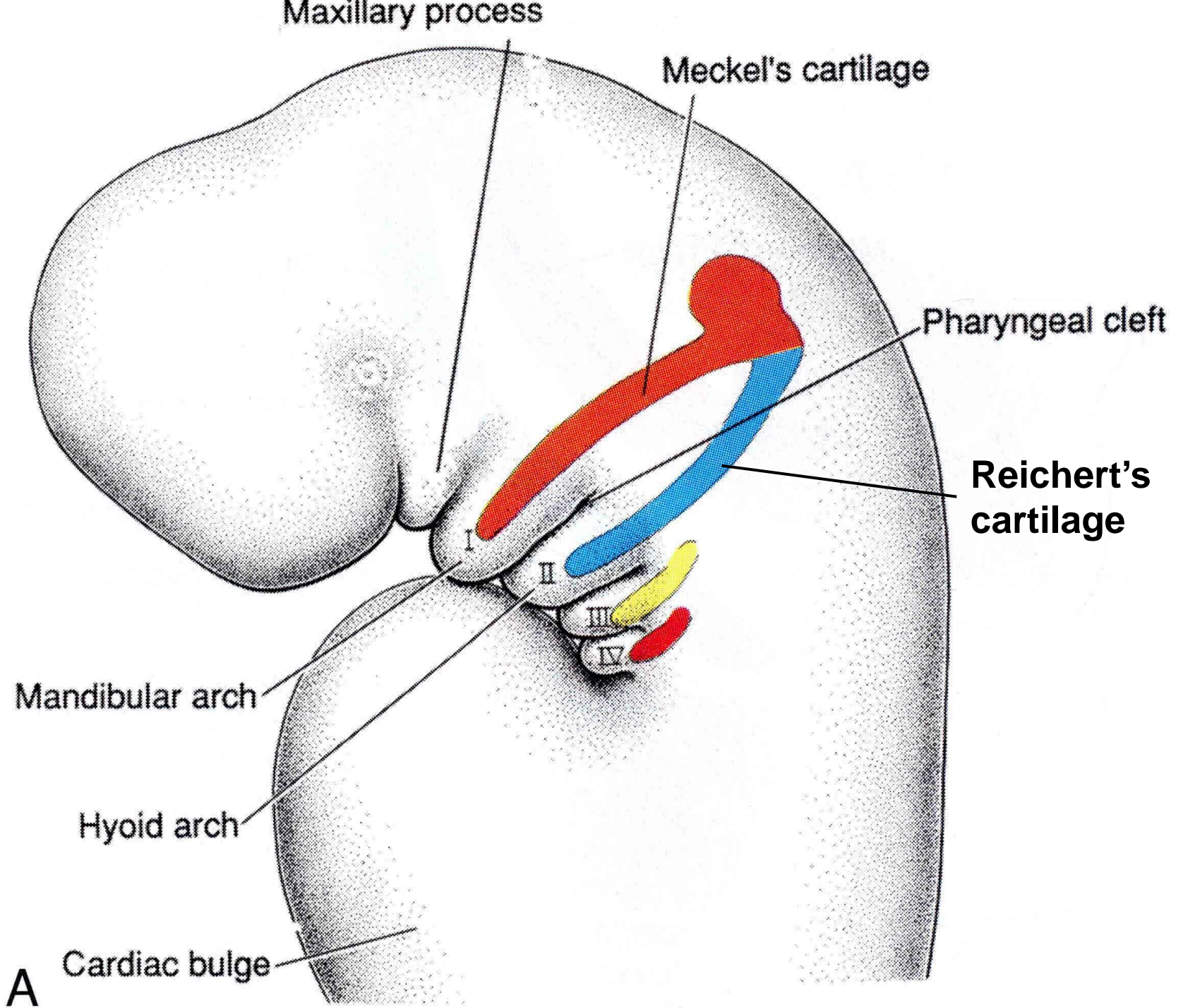


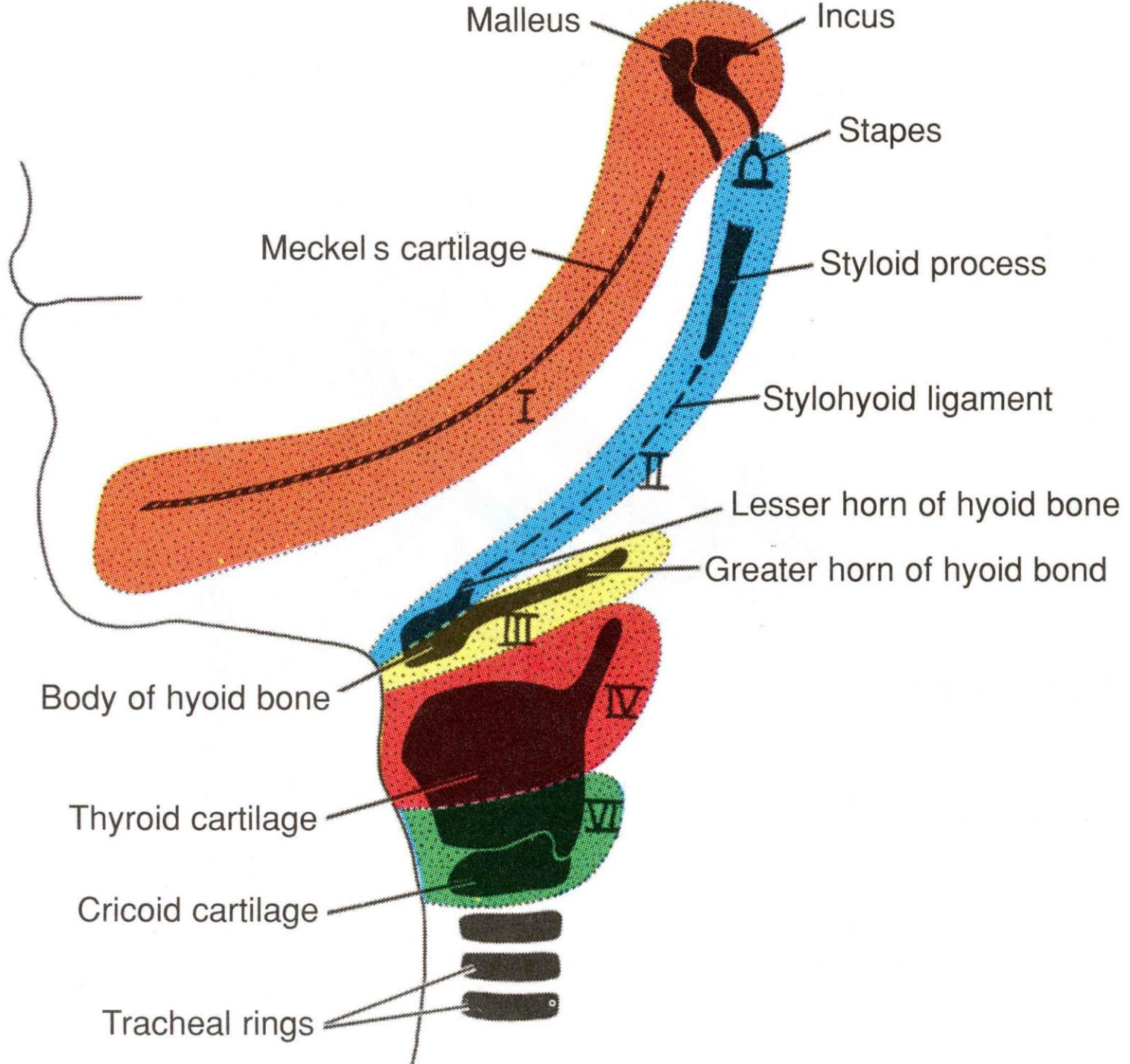


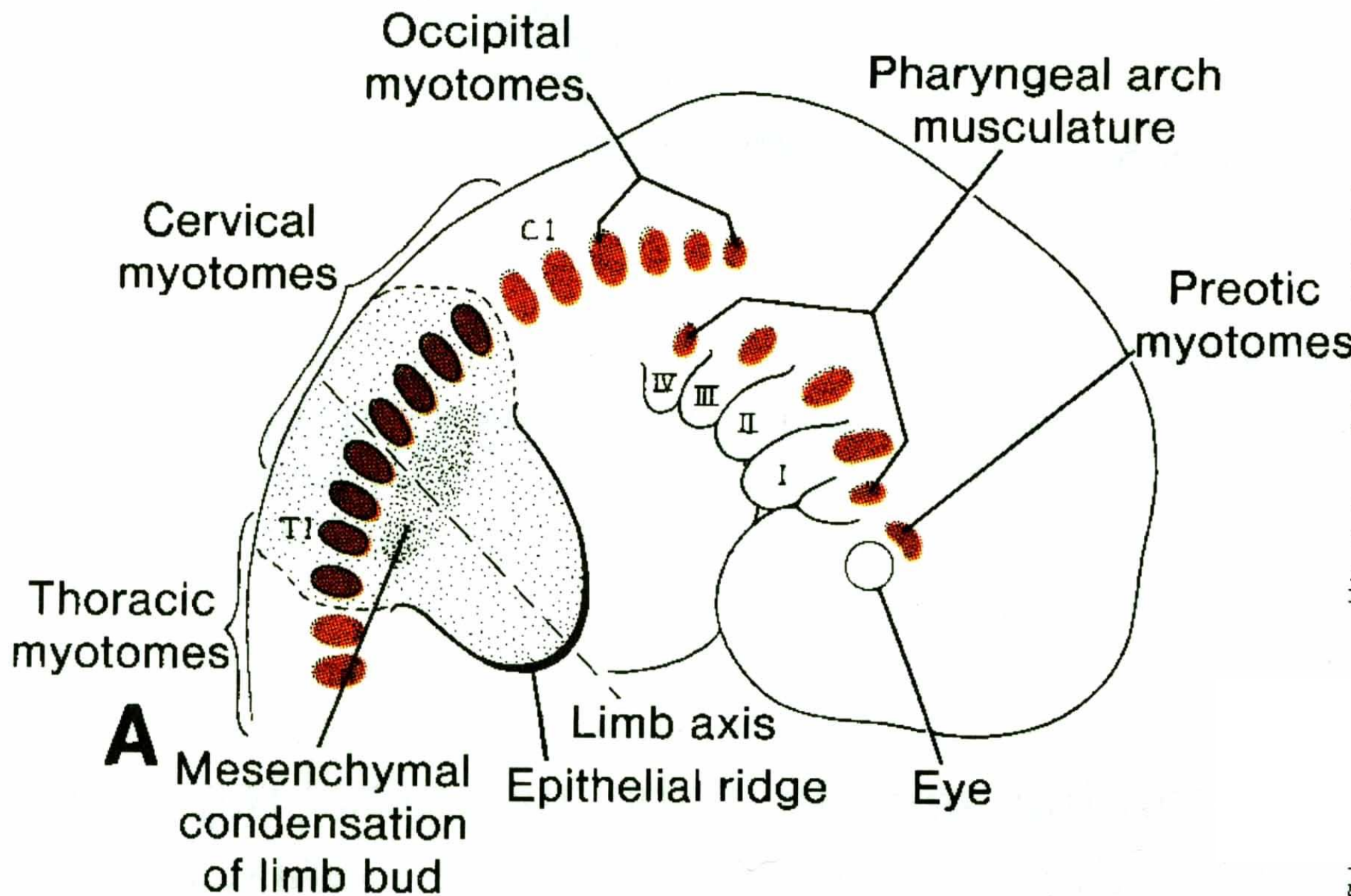
- Ectoderm on surface
- Mesenchymal core (mesoderm + neural crest cells)
- **artery**
- **cartillago**
- **muscle component**
- **inervated by specific nerve**
- Endoderm inside

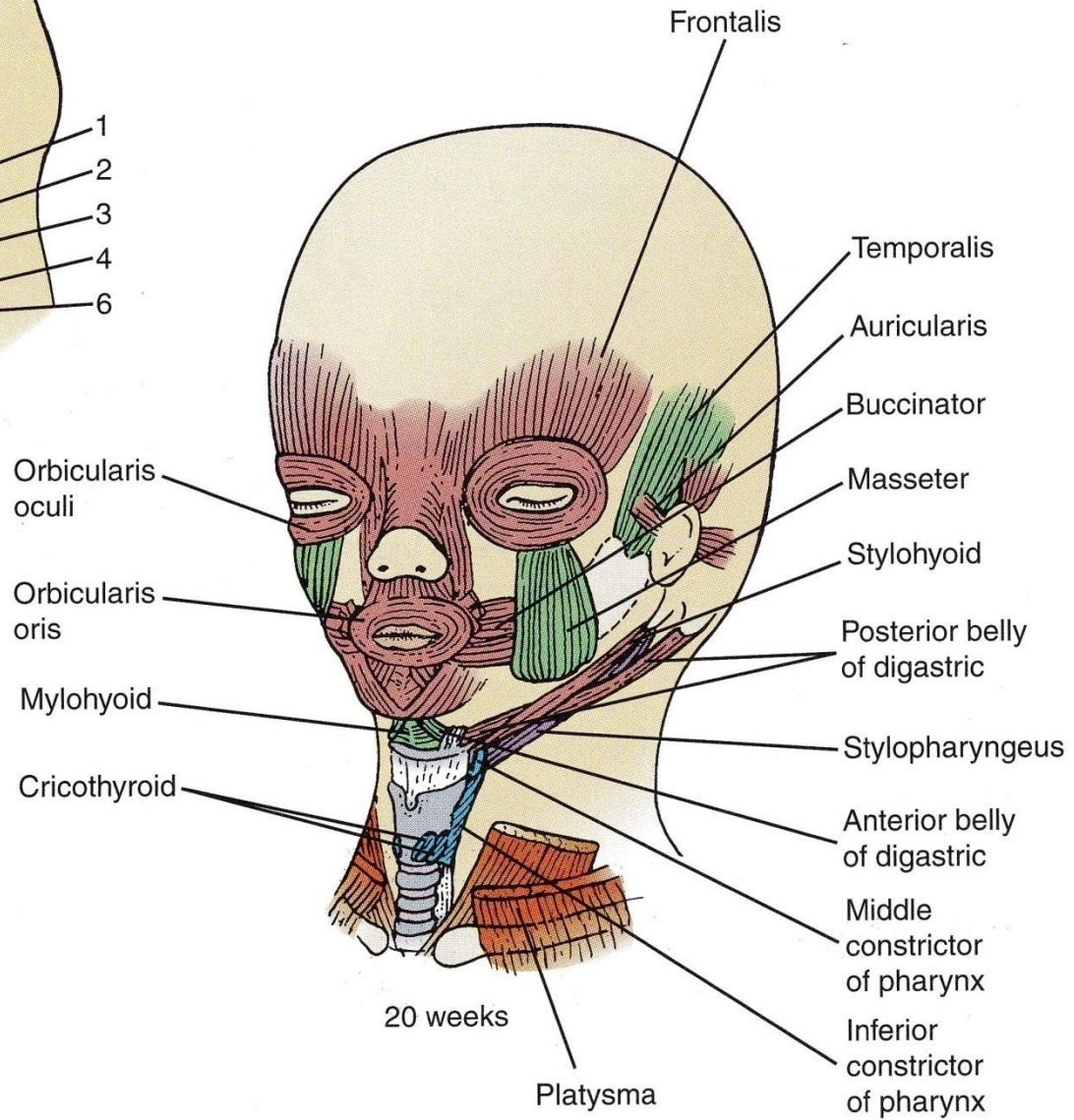
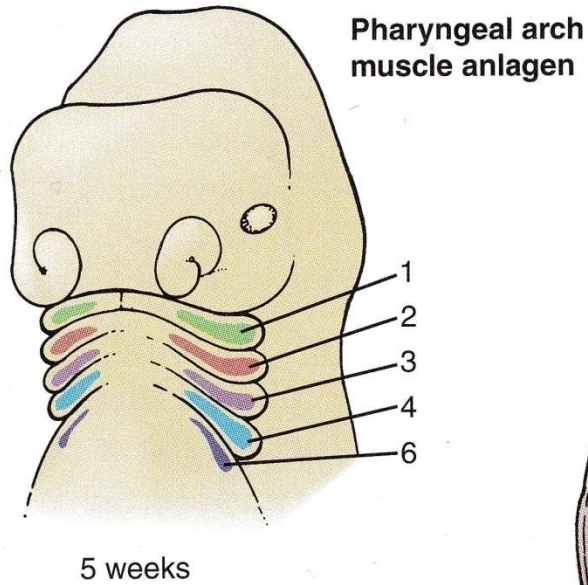


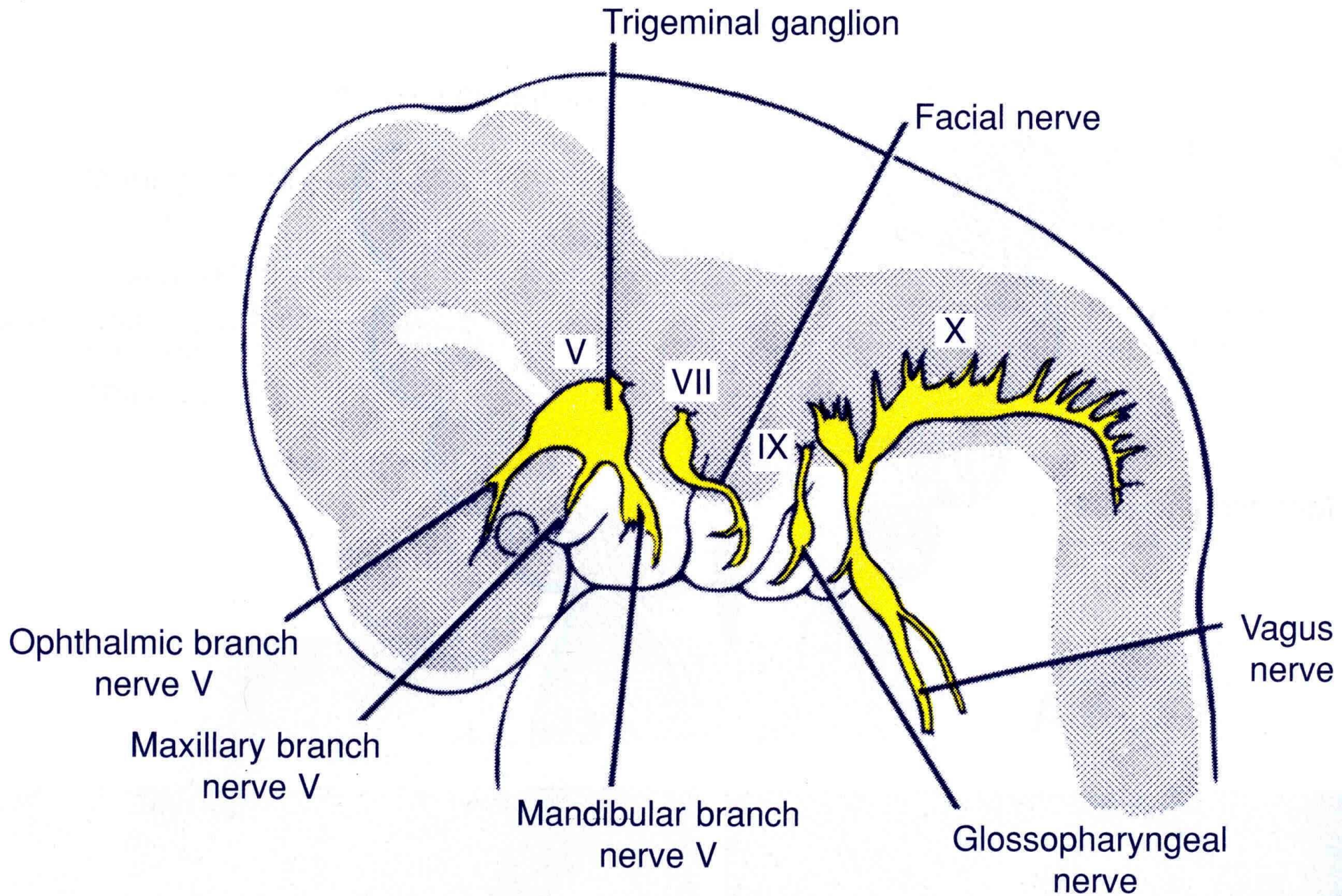


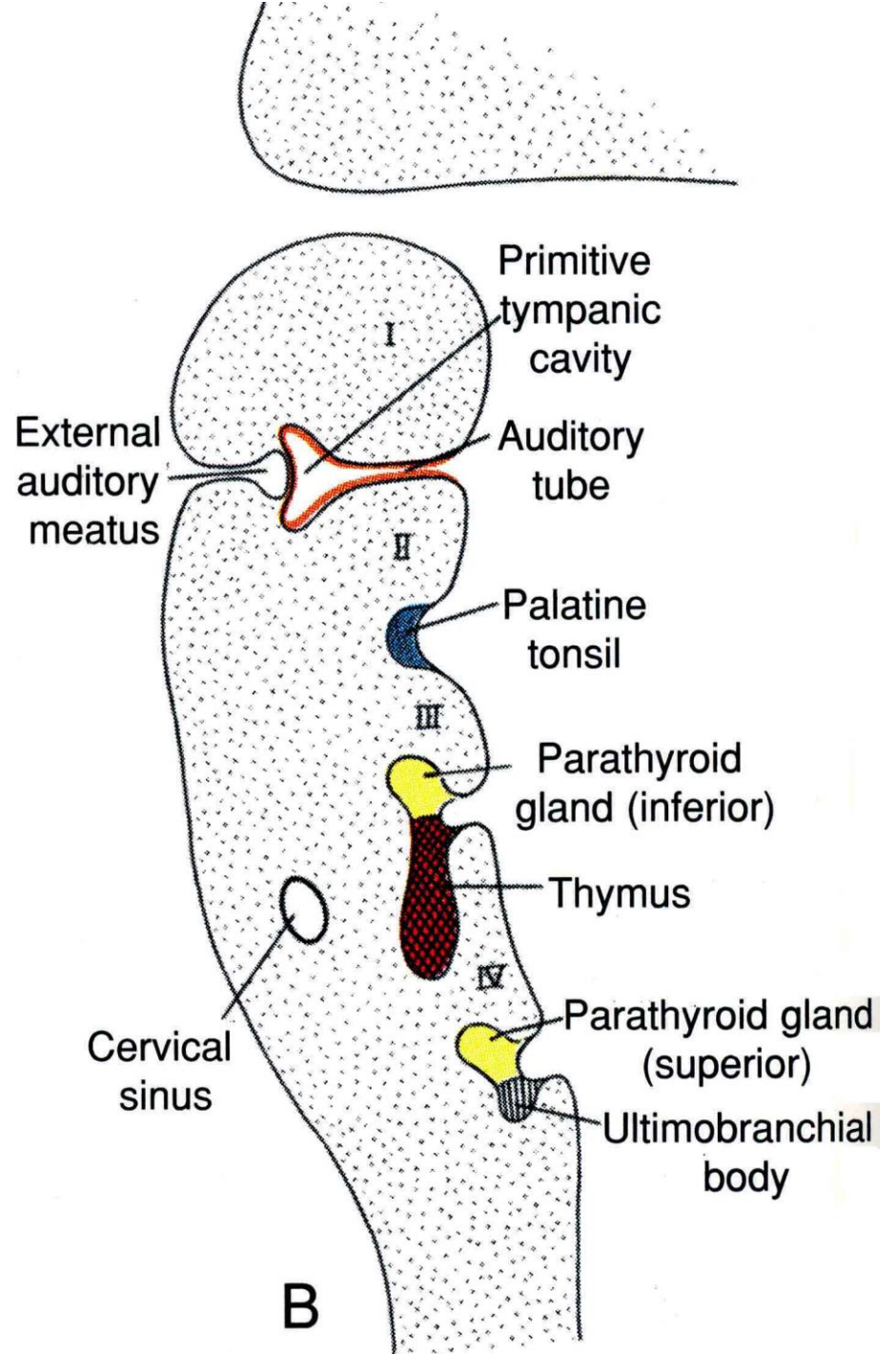
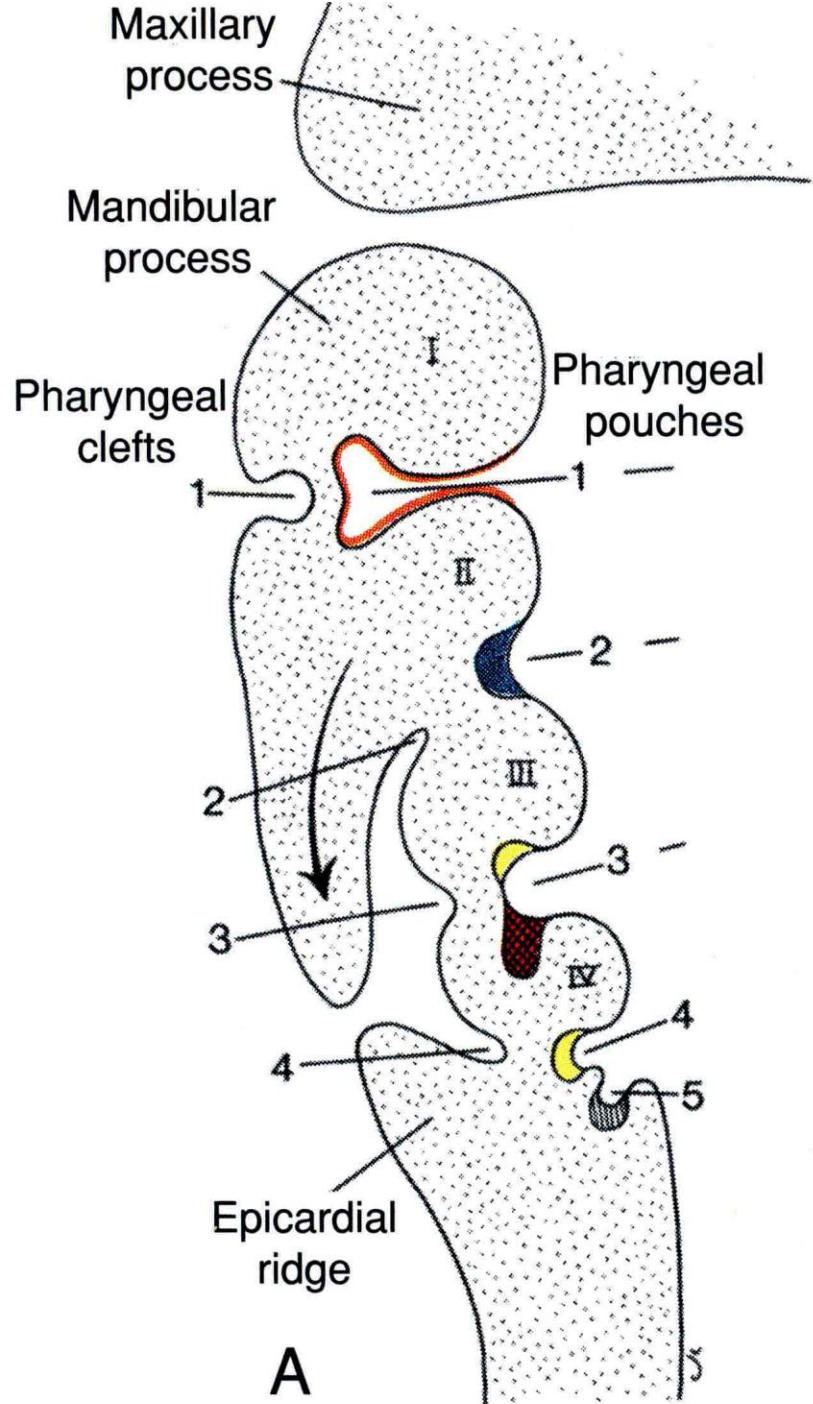


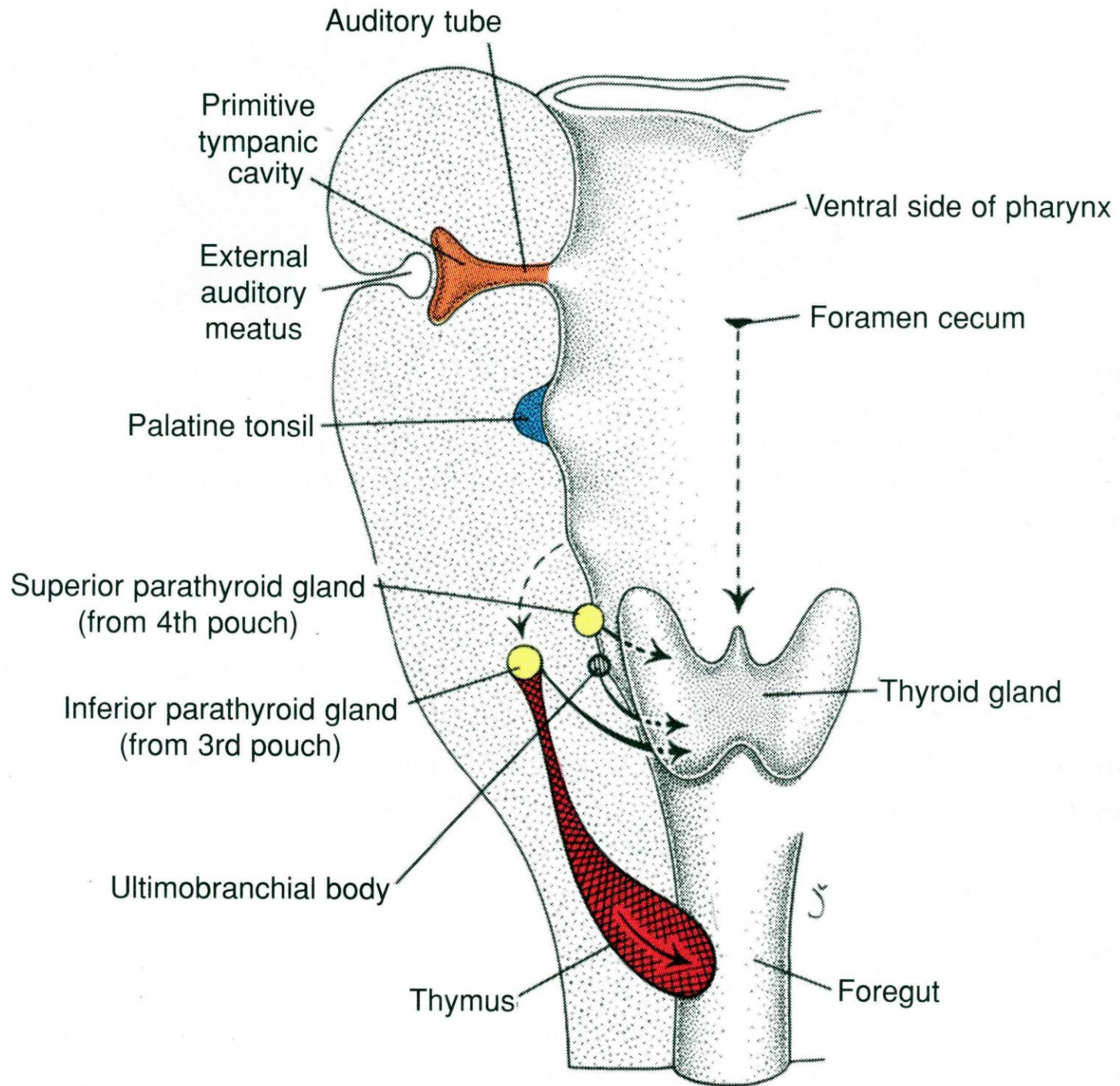






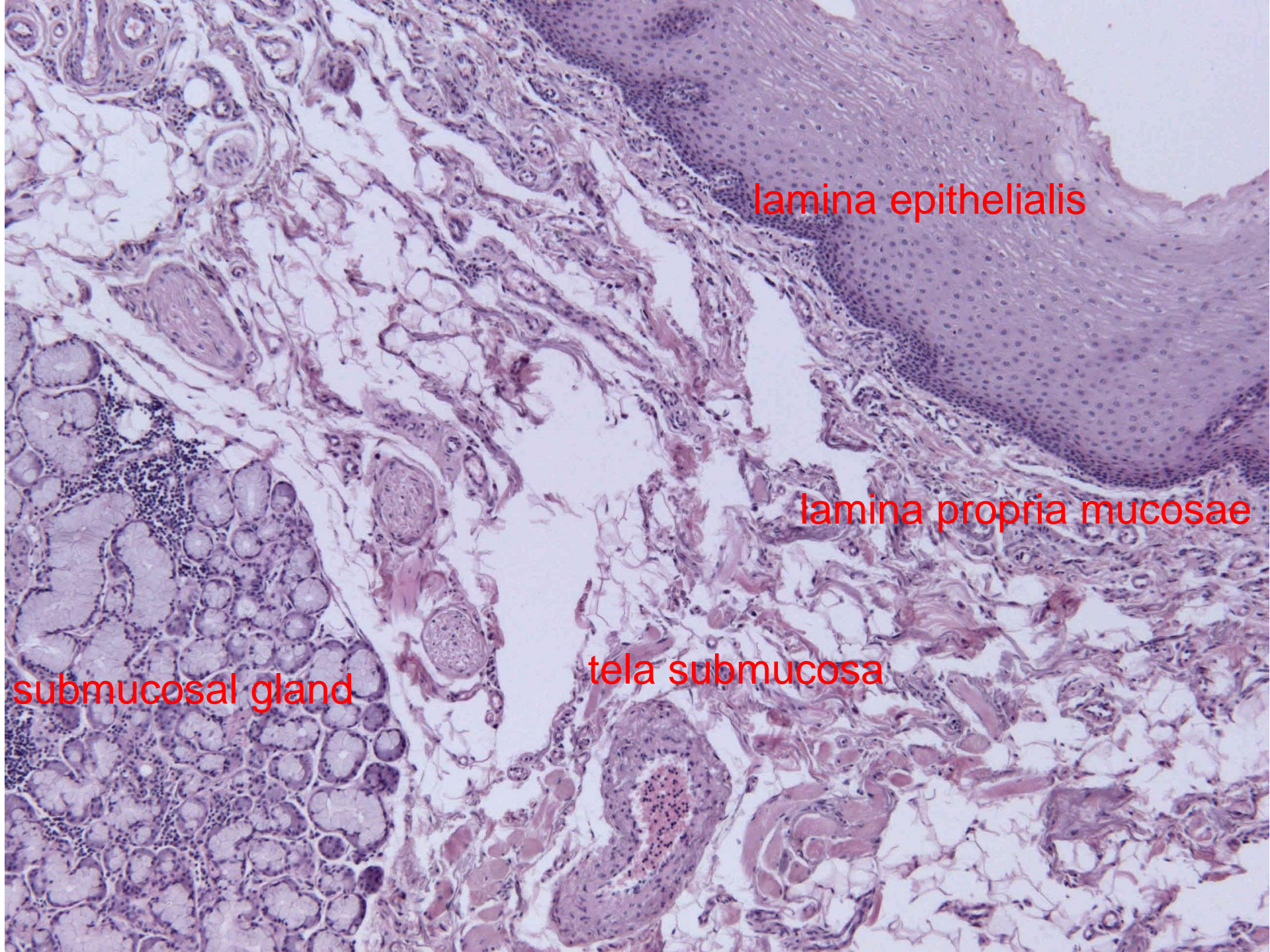






Derivates of pharyngeal folds	Arch number	Aortic arch	Cranial nerve	Examples of branchiomeric muscles	Skeletal derivates	Derivates of pharyngeal pouch
external auditory meatus	I mandibular	maxillary artery	V trigeminal	muscles of mastication etc.	malleus, incus spheno- mandibular lig. Meckel cart.	I middle ear auditory tube
	II hyoid	hyoid, stapedial artery	VII facial	muscles of facial expression etc.	stapes, styl. proc., stylohyoid lig., part of hyoid cart.	II supra- tonsillar fossa
neck	III	internal carotid artery	IX glosso- pharyng.	m. stylopha- ryngeus	parts of hyoid cart.	III thymus, parathyr. gland
	IV	right subclavian artery, aorta	X vagus	pharyngeal and laryngeal musculature	laryngeal cart.	IV parathyr. gland ultimobranch. body
	VI					

Oral cavity



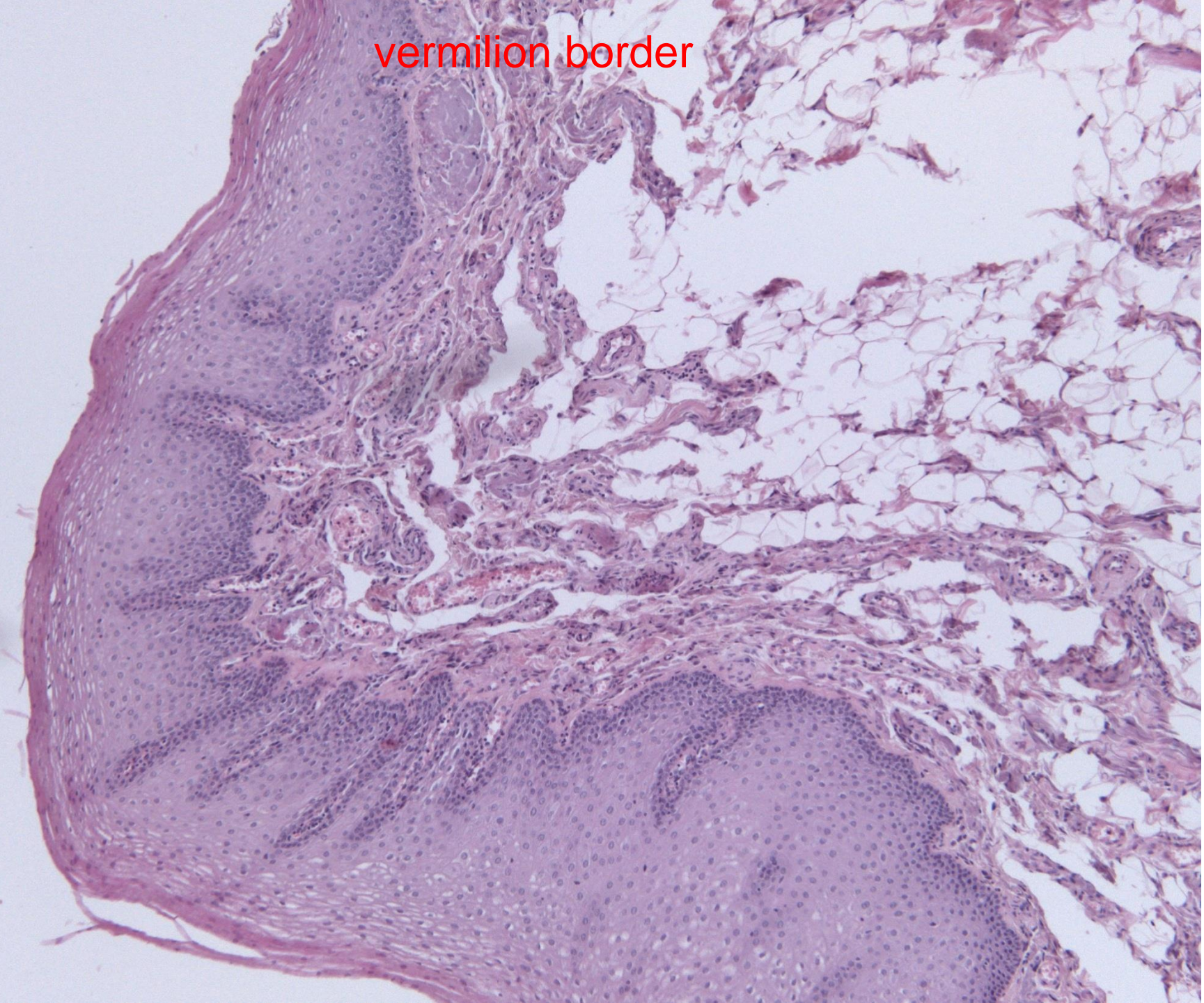
lamina epithelialis

lamina propria mucosae

tela submucosa

submucosal gland

vermilion border



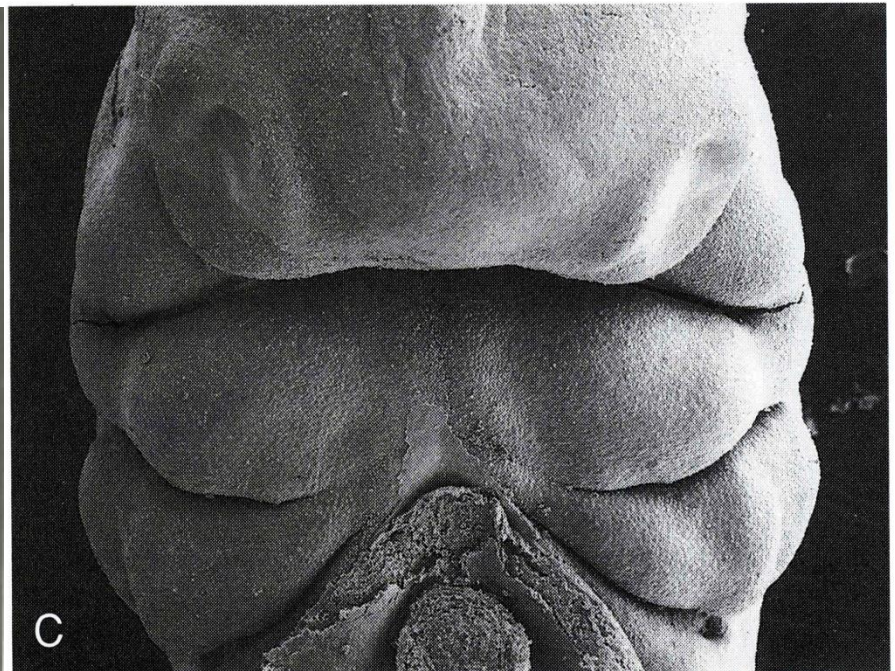
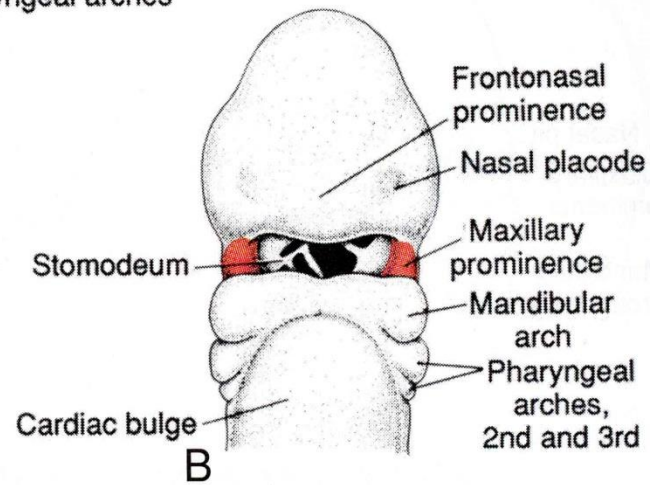
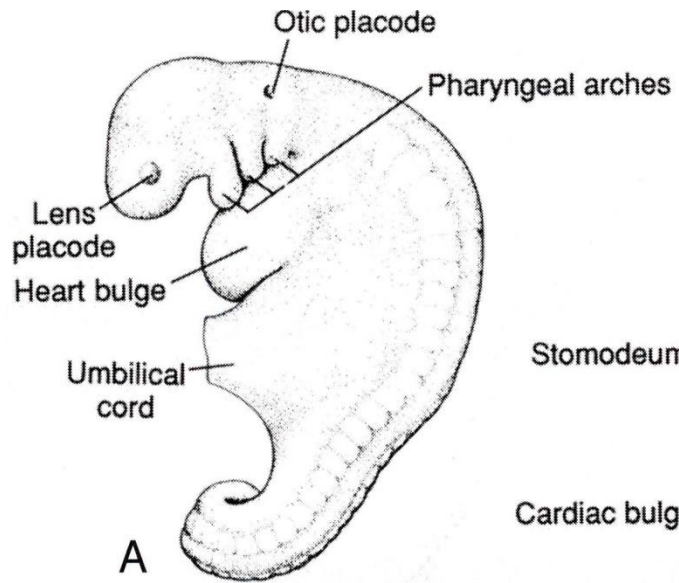
outer surface of lip

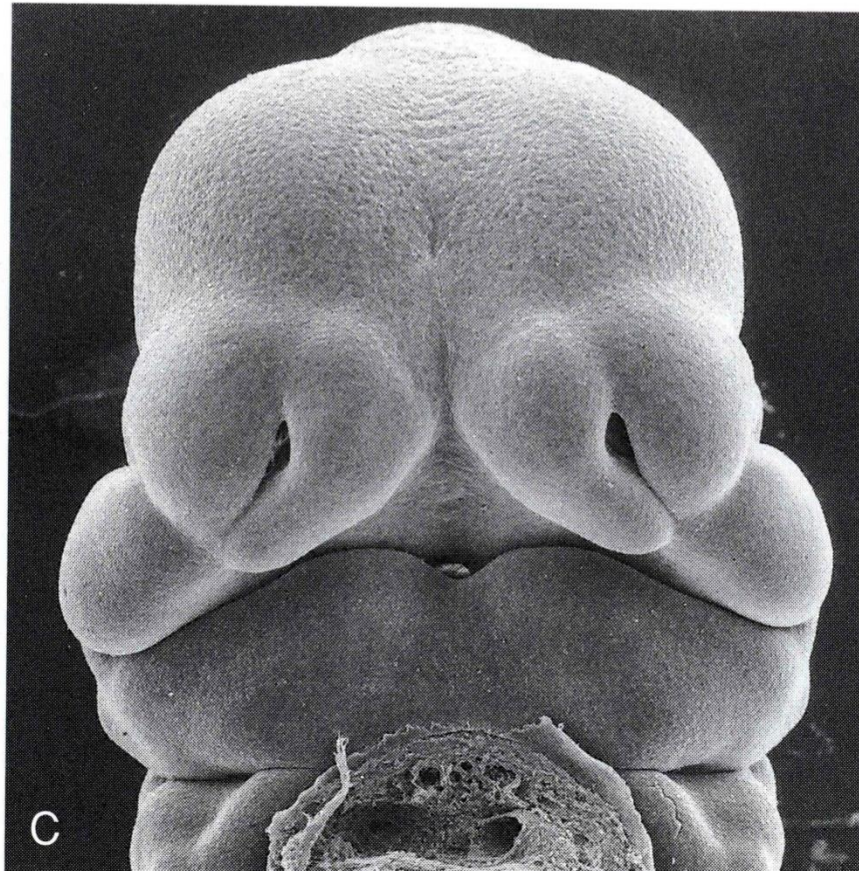
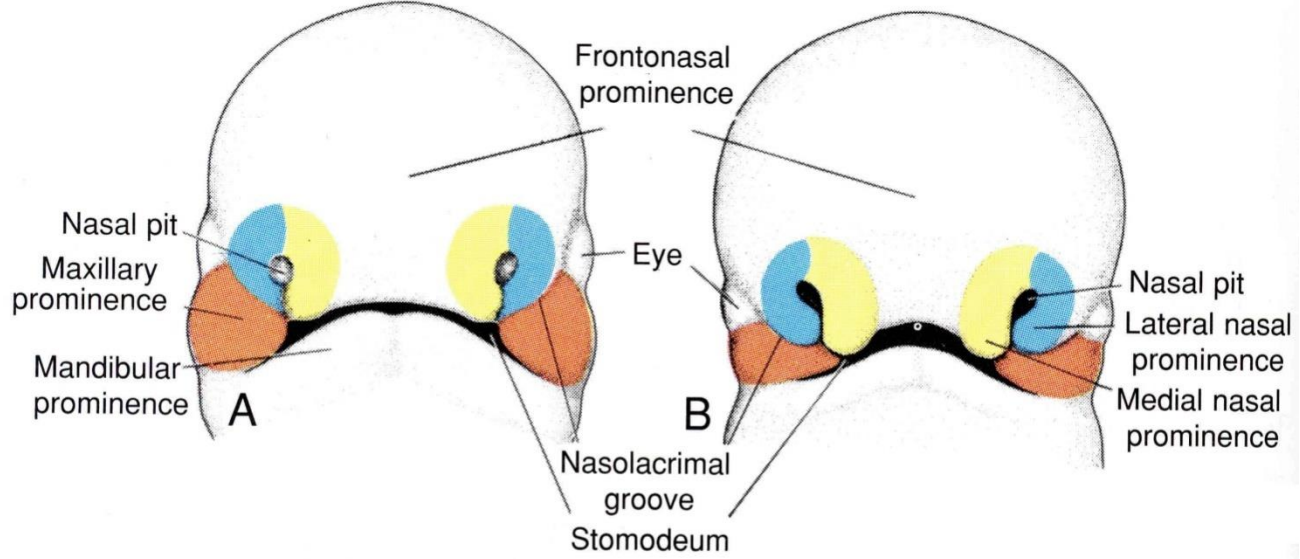


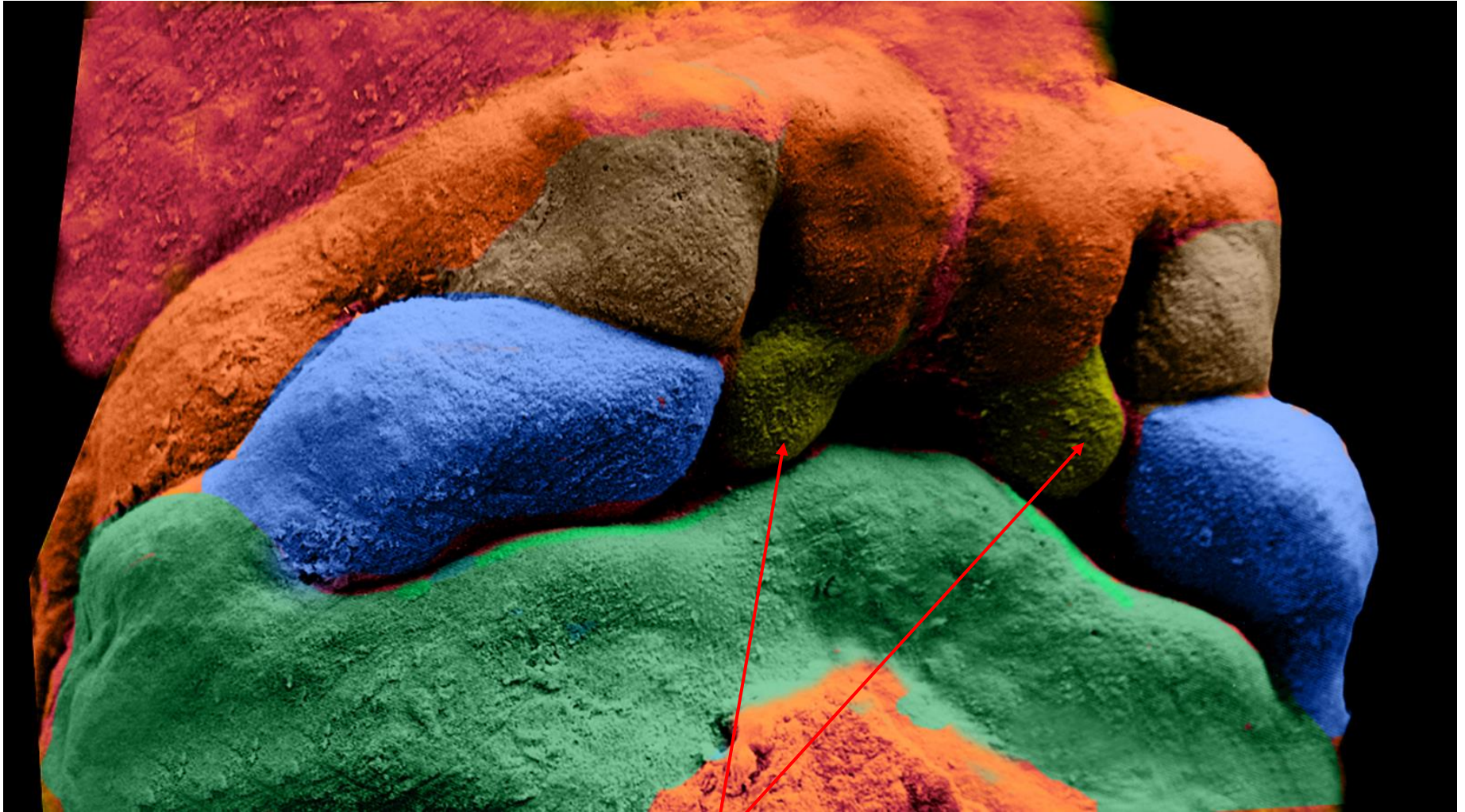
DEVELOPMENT OF FACE AND ORAL CAVITY



stomodeum

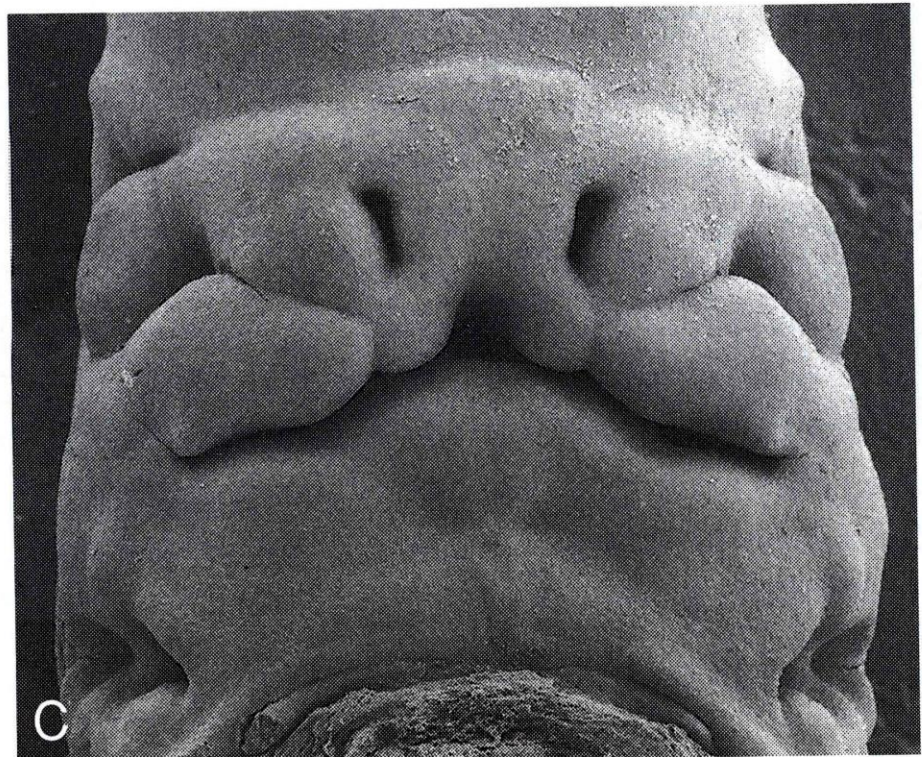
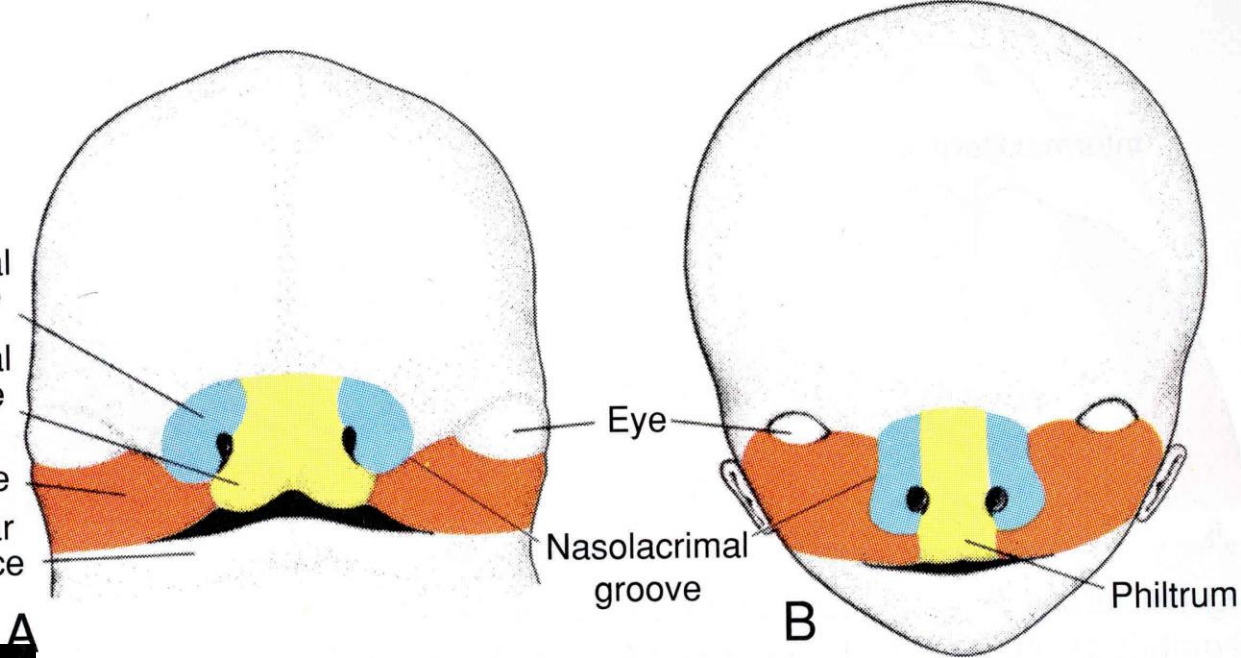






premaxillary processes

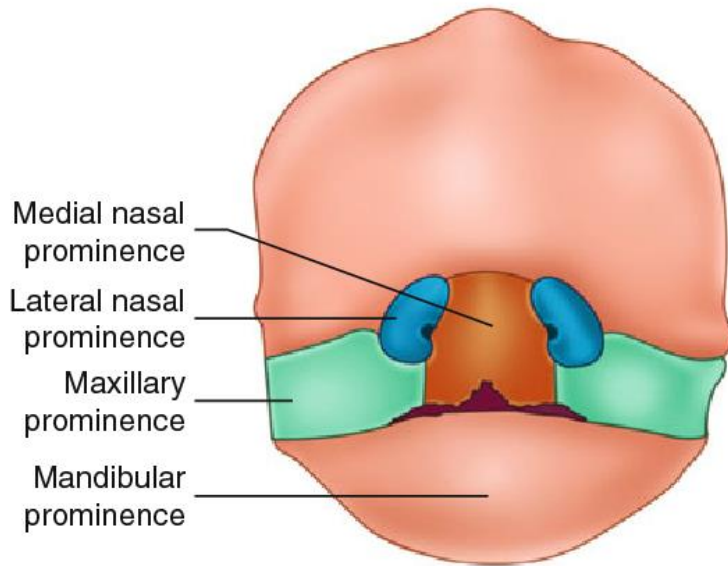
Lateral nasal prominence
Medial nasal prominence
Maxillary prominence
Mandibular prominence



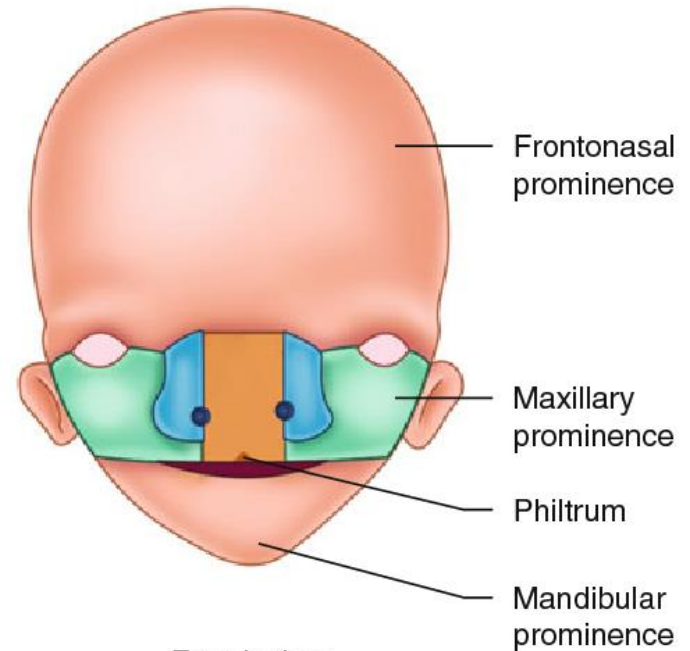
intermaxillar segment



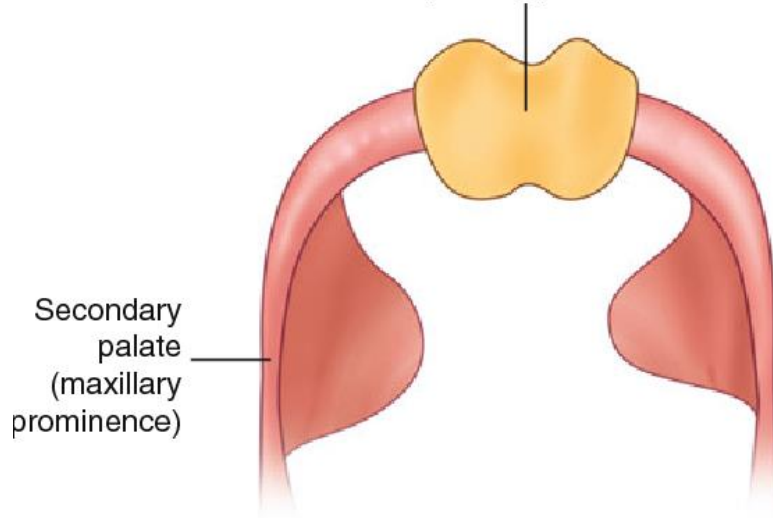
Face



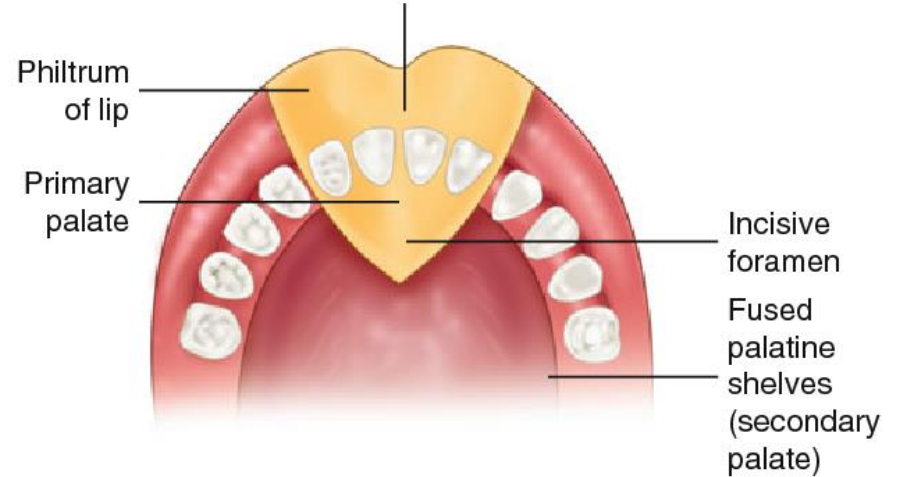
Development

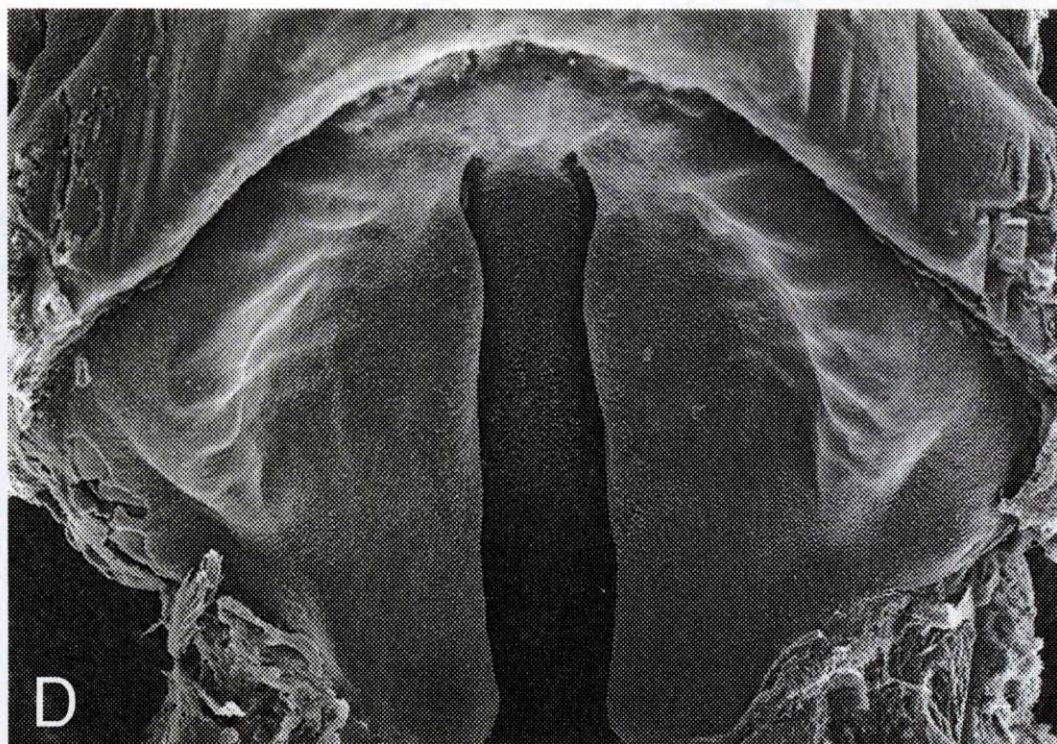
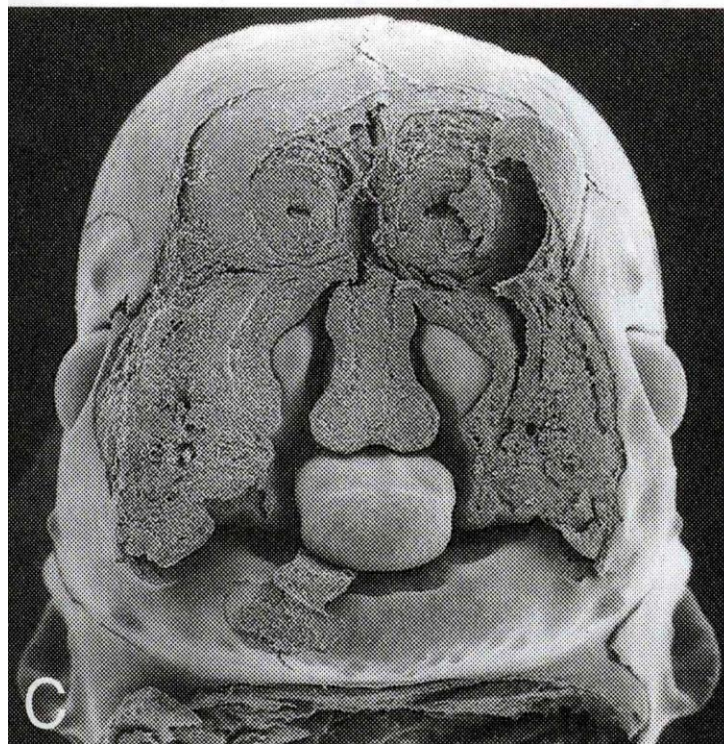
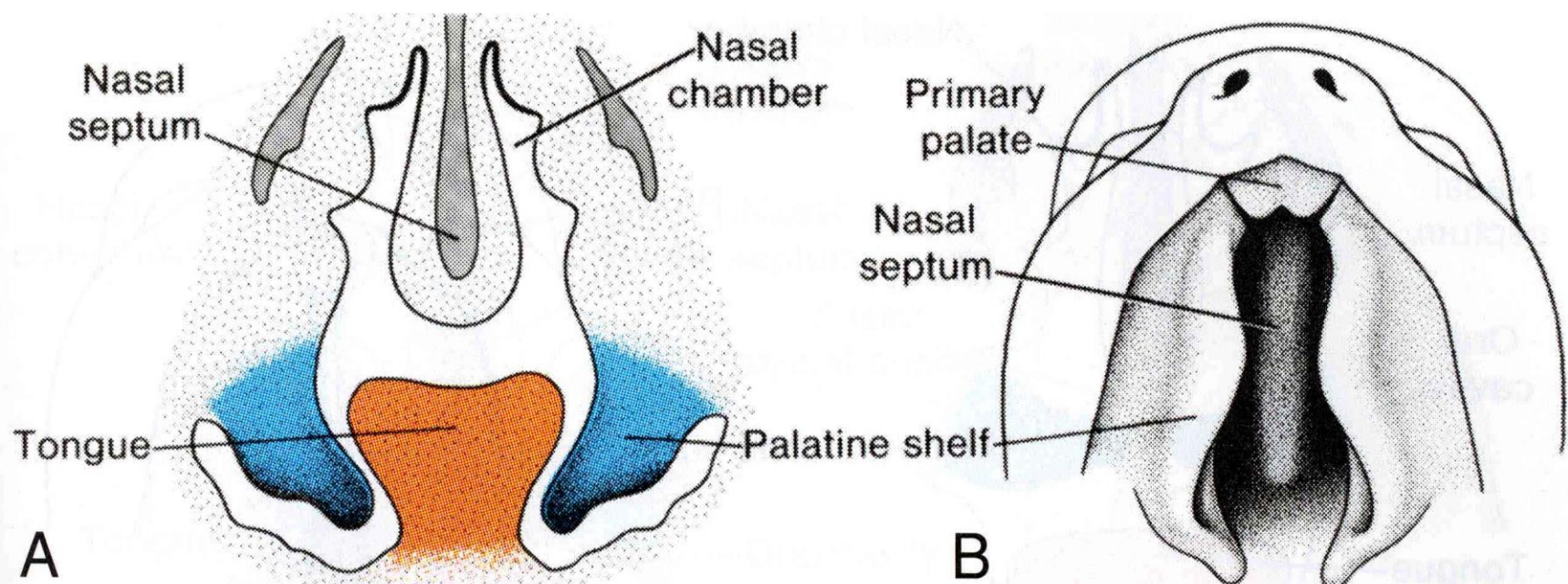


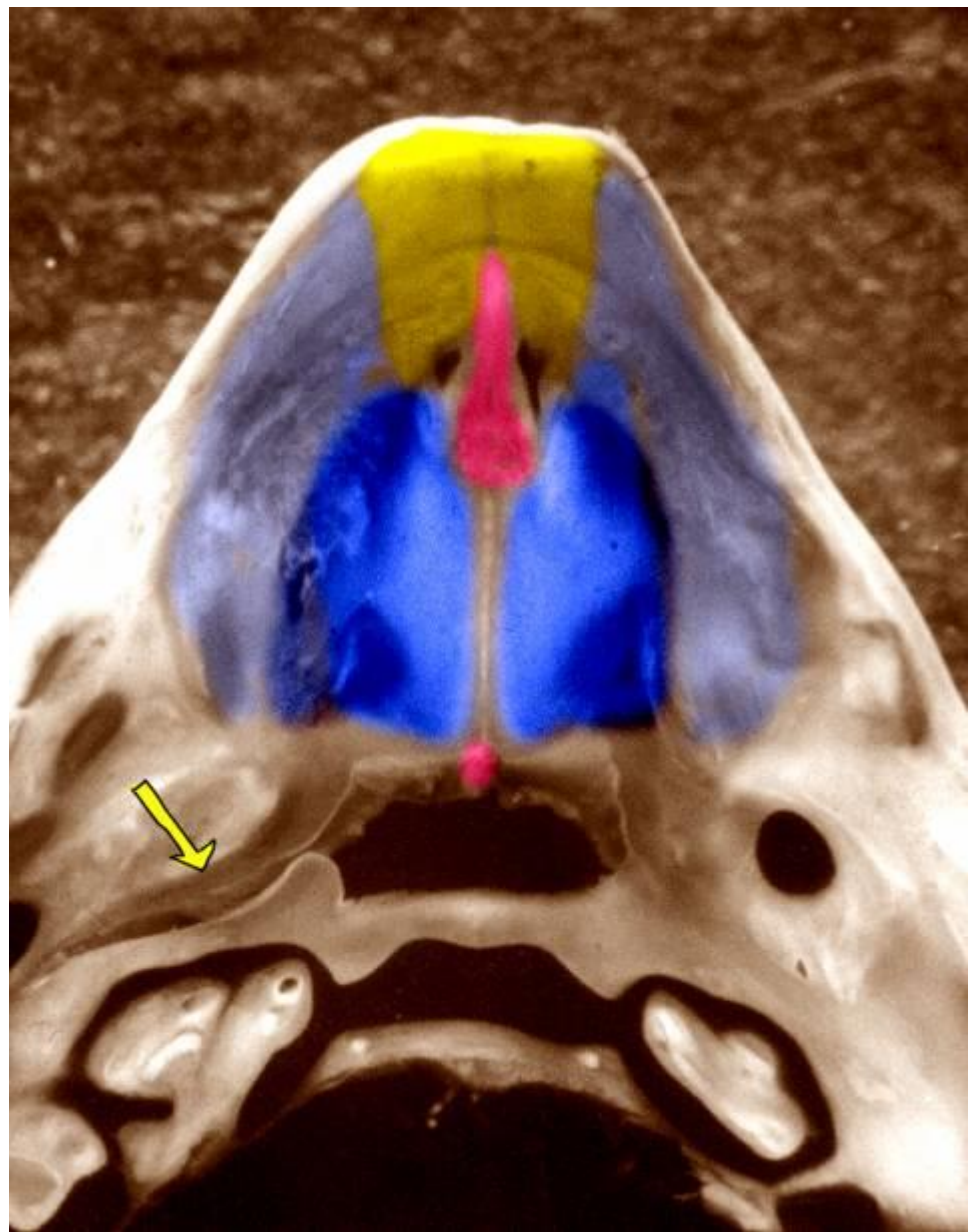
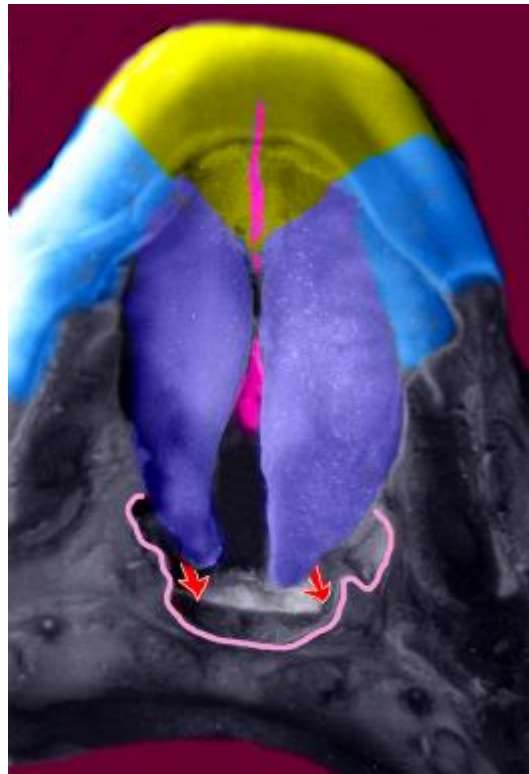
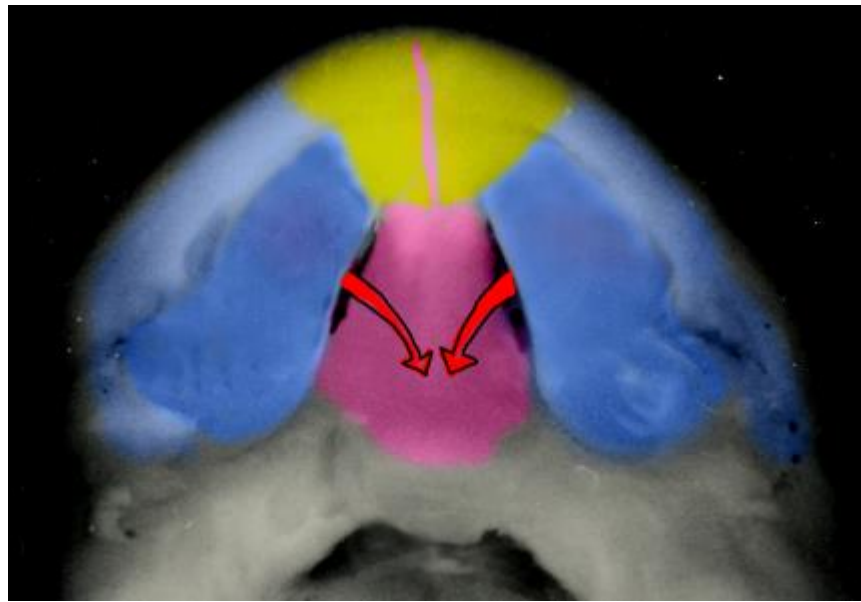
Intermaxillary segment primary palate



Four incisor teeth









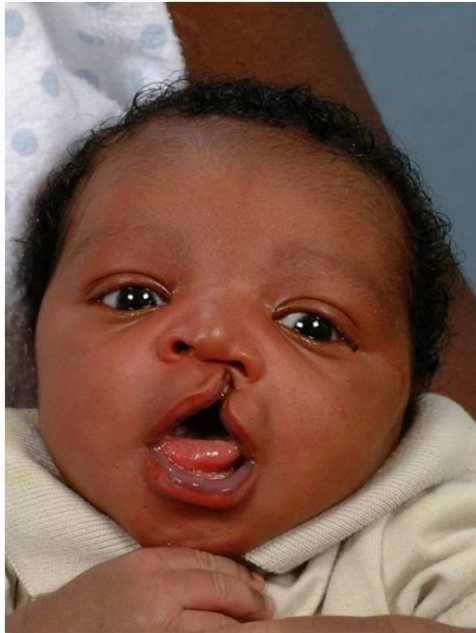
Unilateral Cleft Lip



Bilateral Cleft Lip



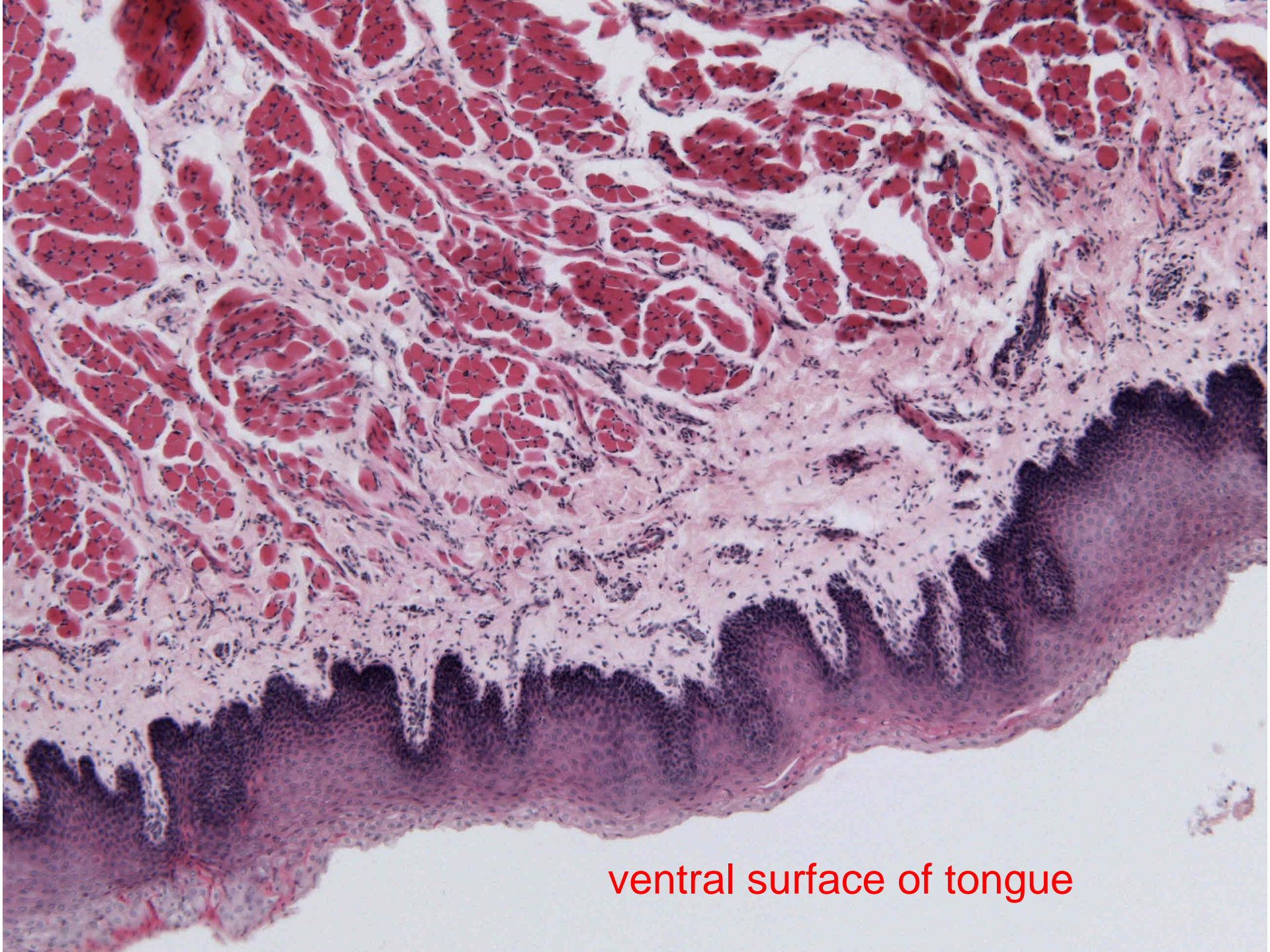
Cleft Palate



Tongue

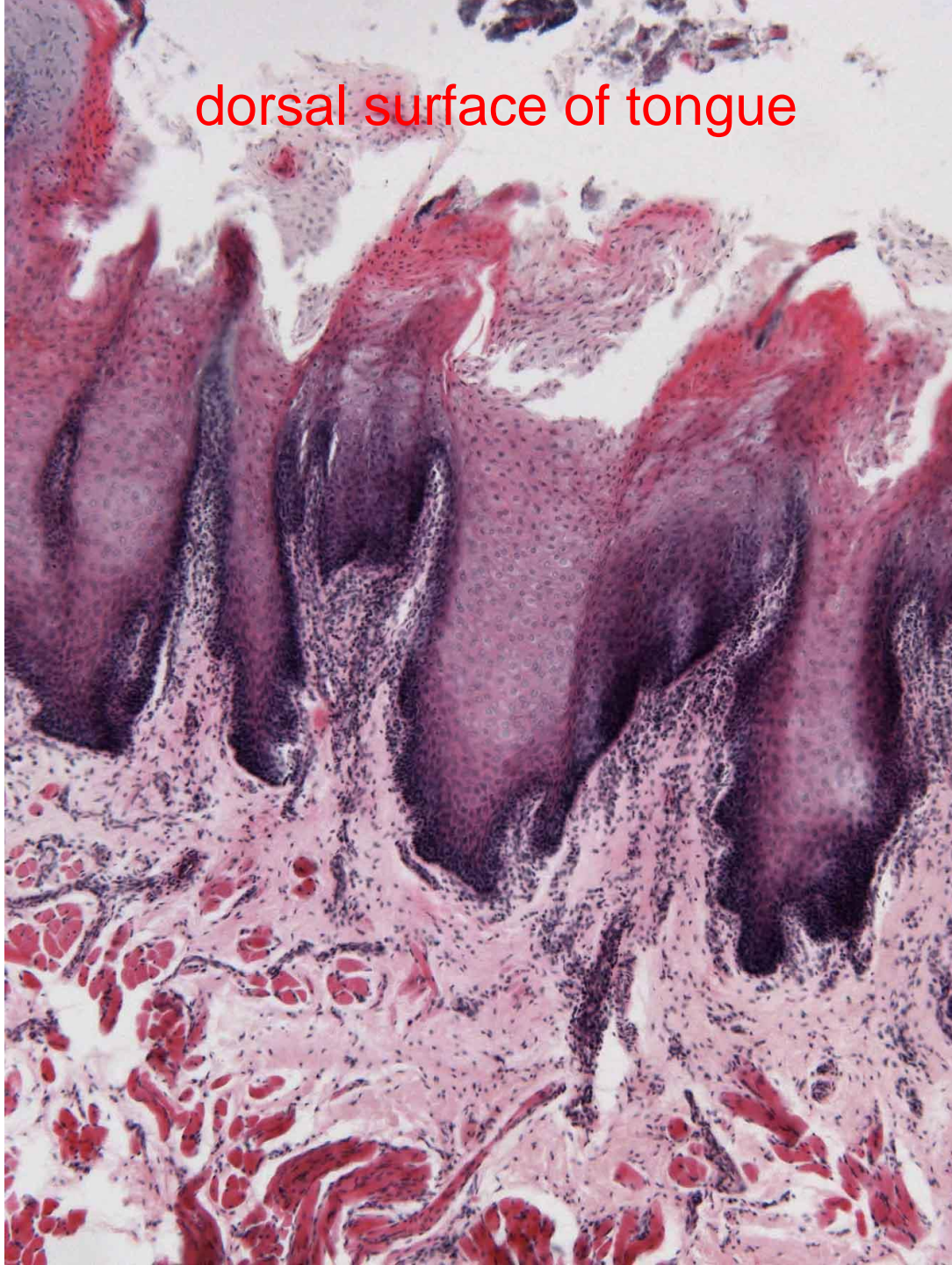


aponeurosis linguae

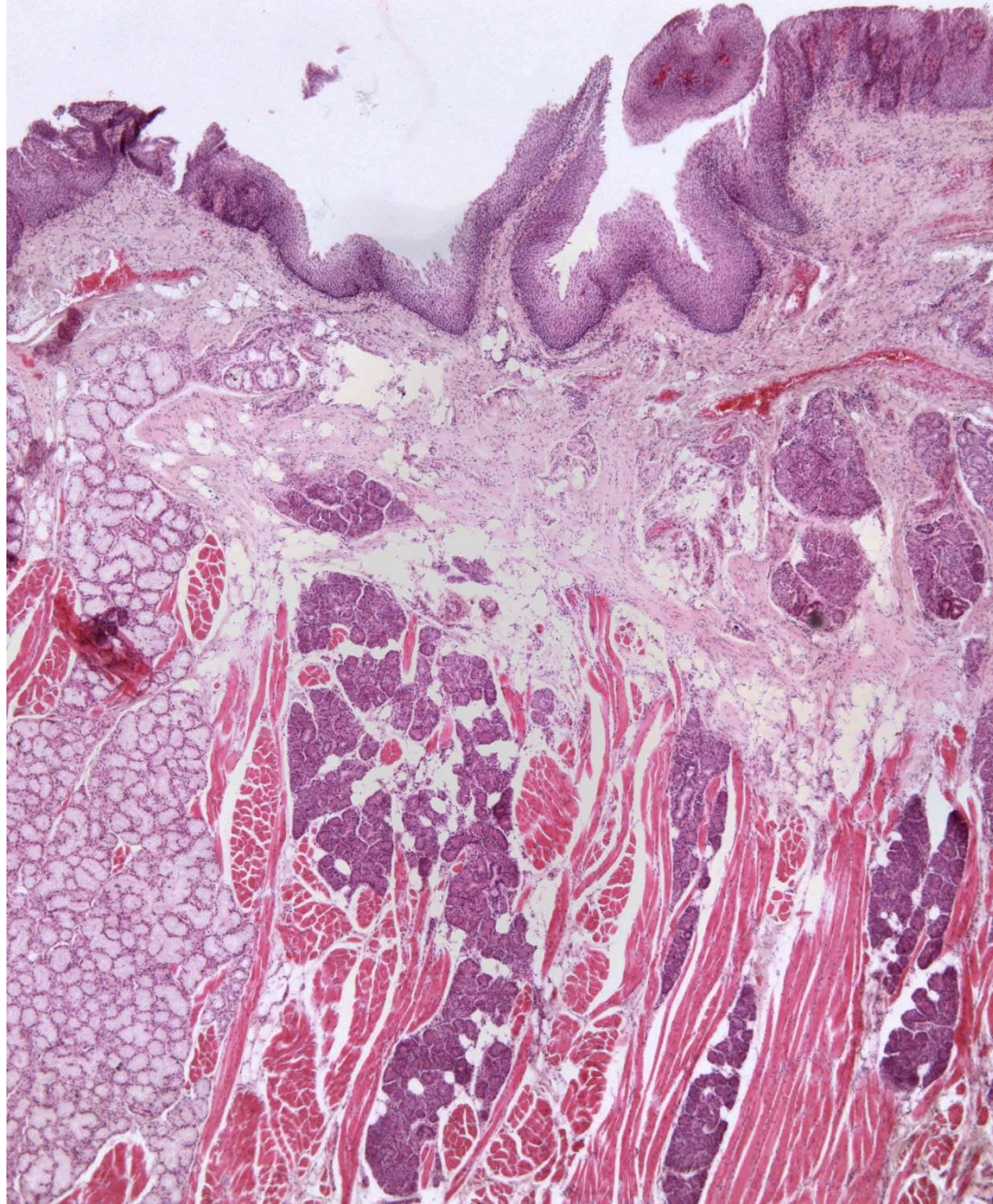


ventral surface of tongue

dorsal surface of tongue



root of tongue



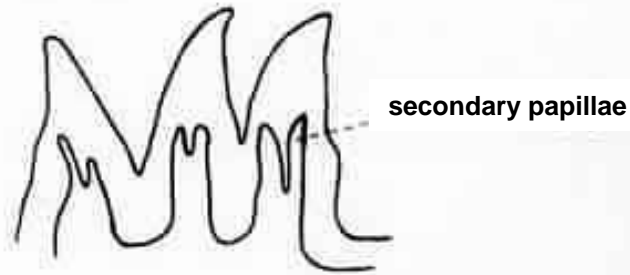


tonsilla lingualis

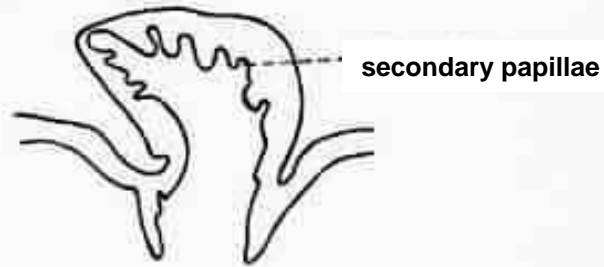
This histological image shows a cross-section of a tonsilla lingualis. The tissue is characterized by a dense population of lymphocytes, with numerous small, dark-staining nuclei. The structure is organized into crypts, which are visible as irregular, white spaces. The overall appearance is that of a highly cellular, lymphoid tissue. The text 'tonsilla lingualis' is overlaid in yellow in the center of the image.

LINGUAL PAPILLAE

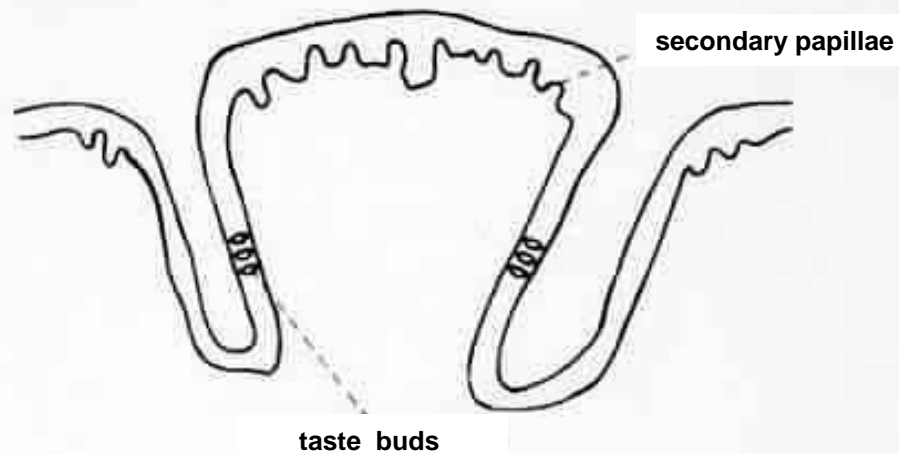
1. filiform papillae



2. fungiform papilla



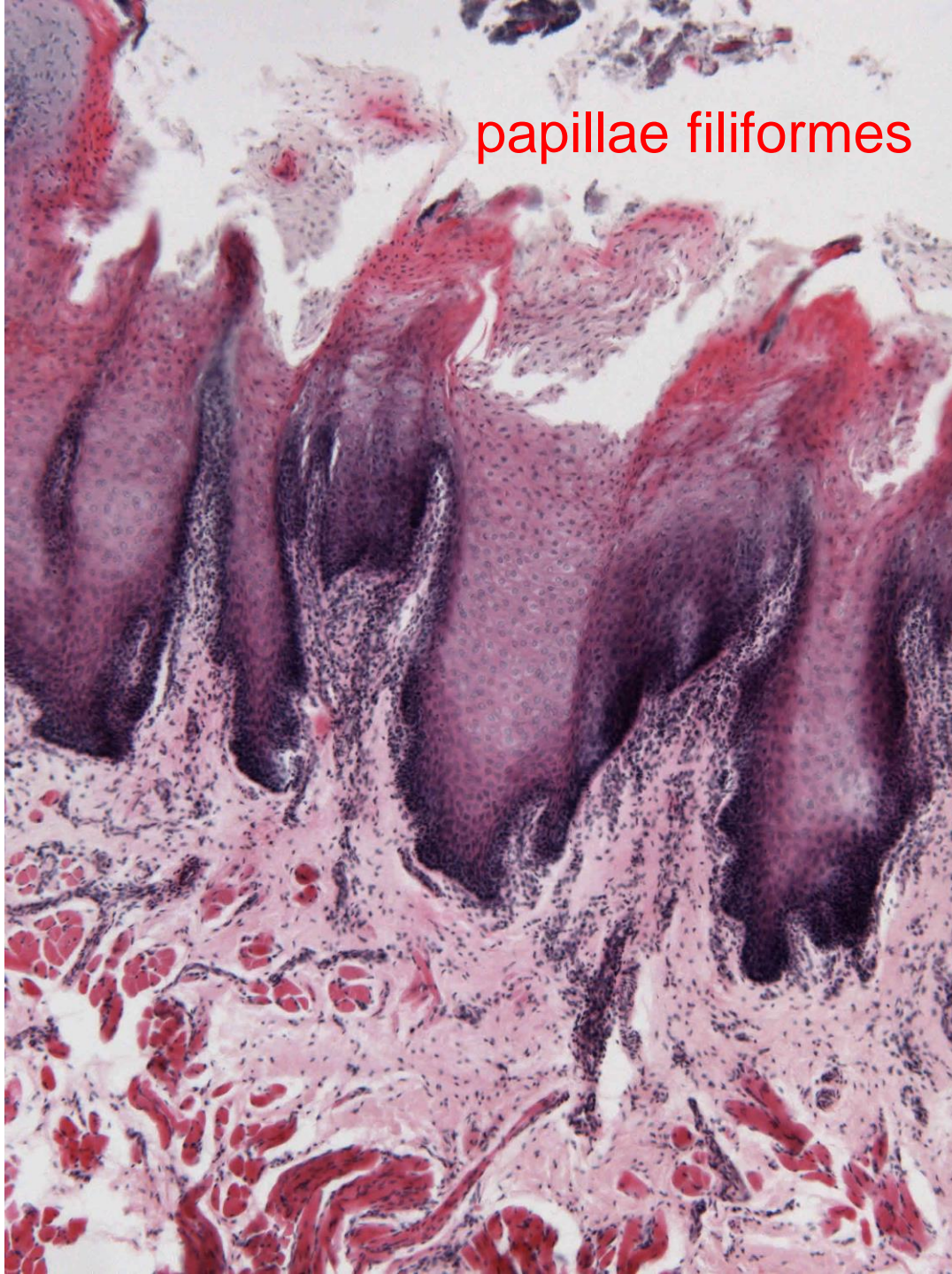
3. circumvallate (vallate) papilla

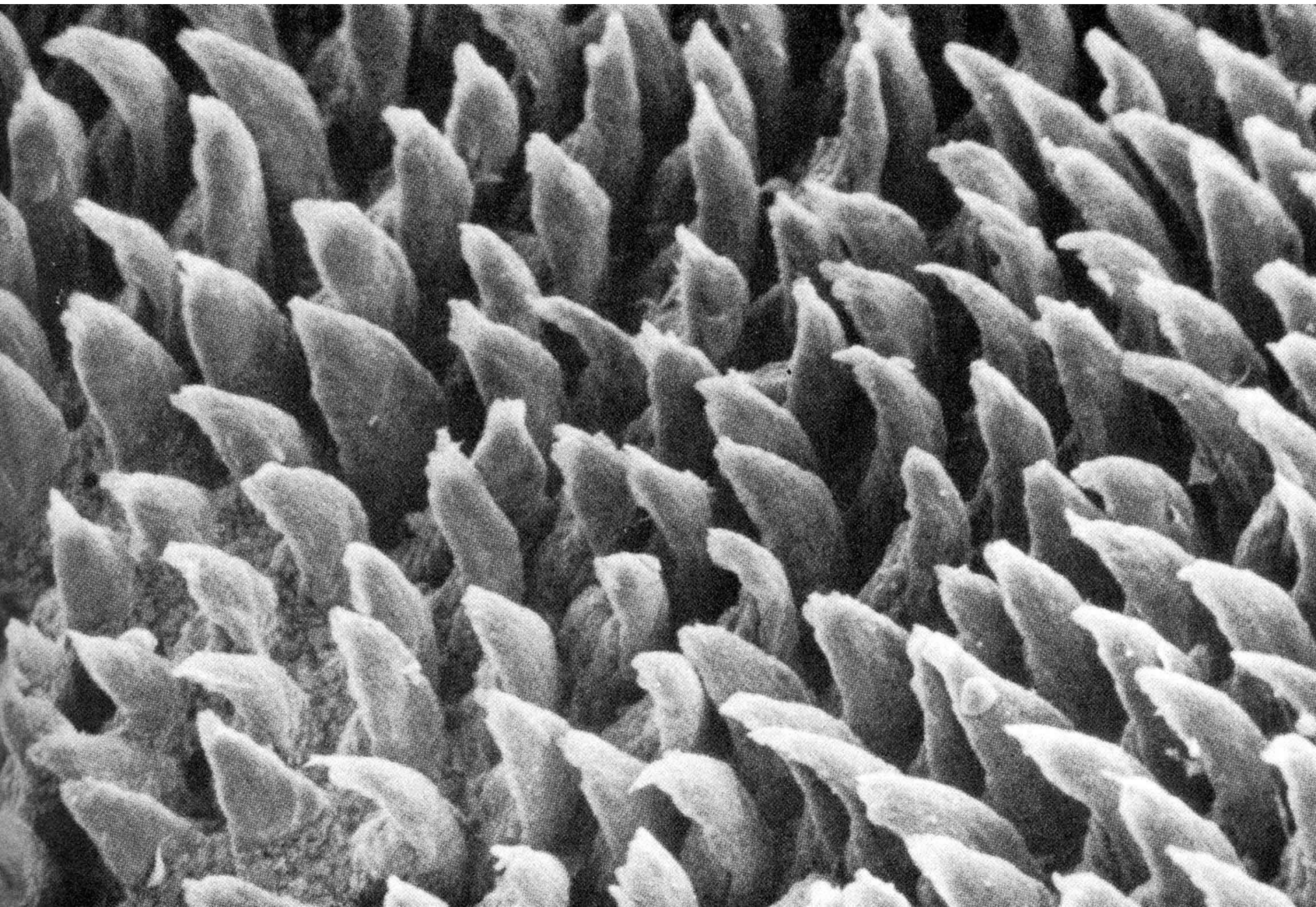


4. foliate papillae

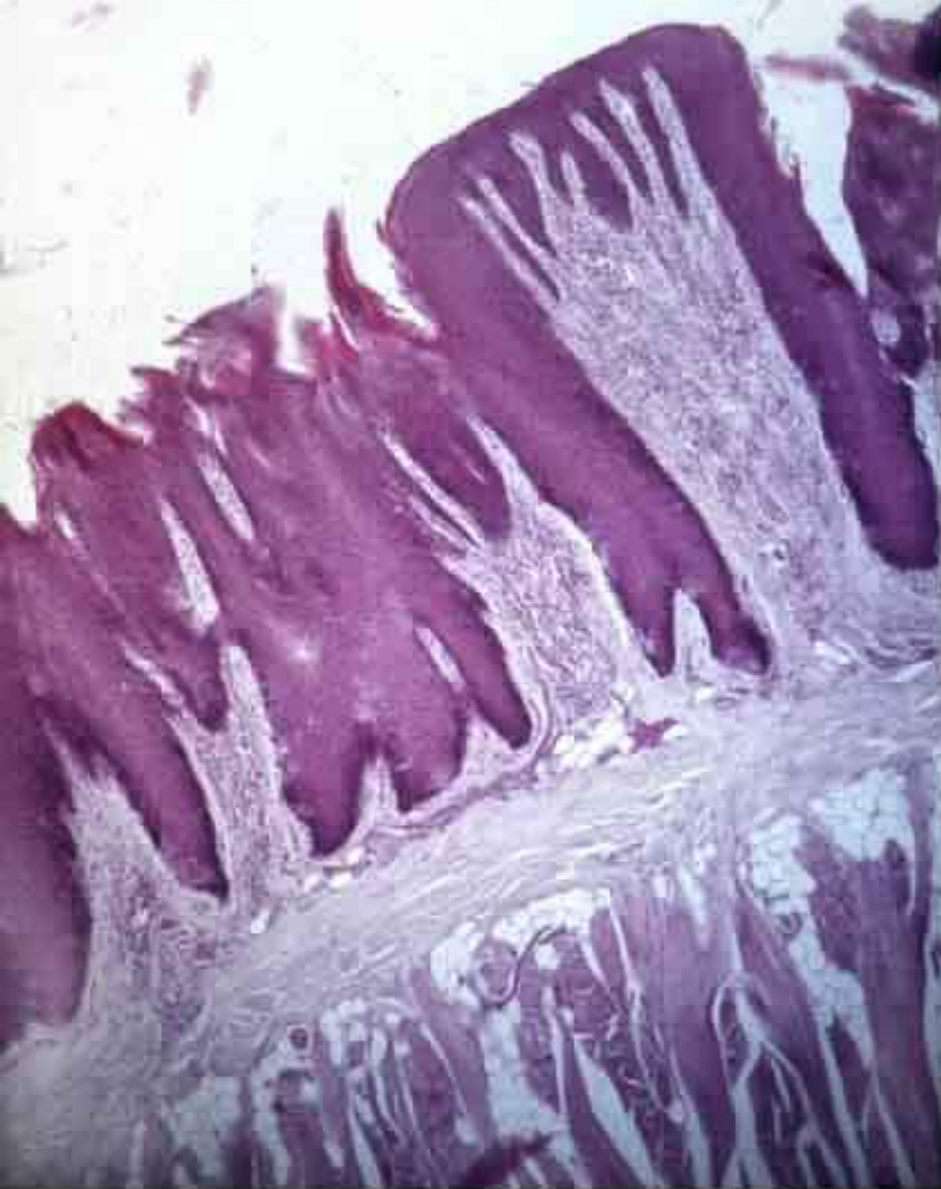
5. conic papillae

papillae filiformes



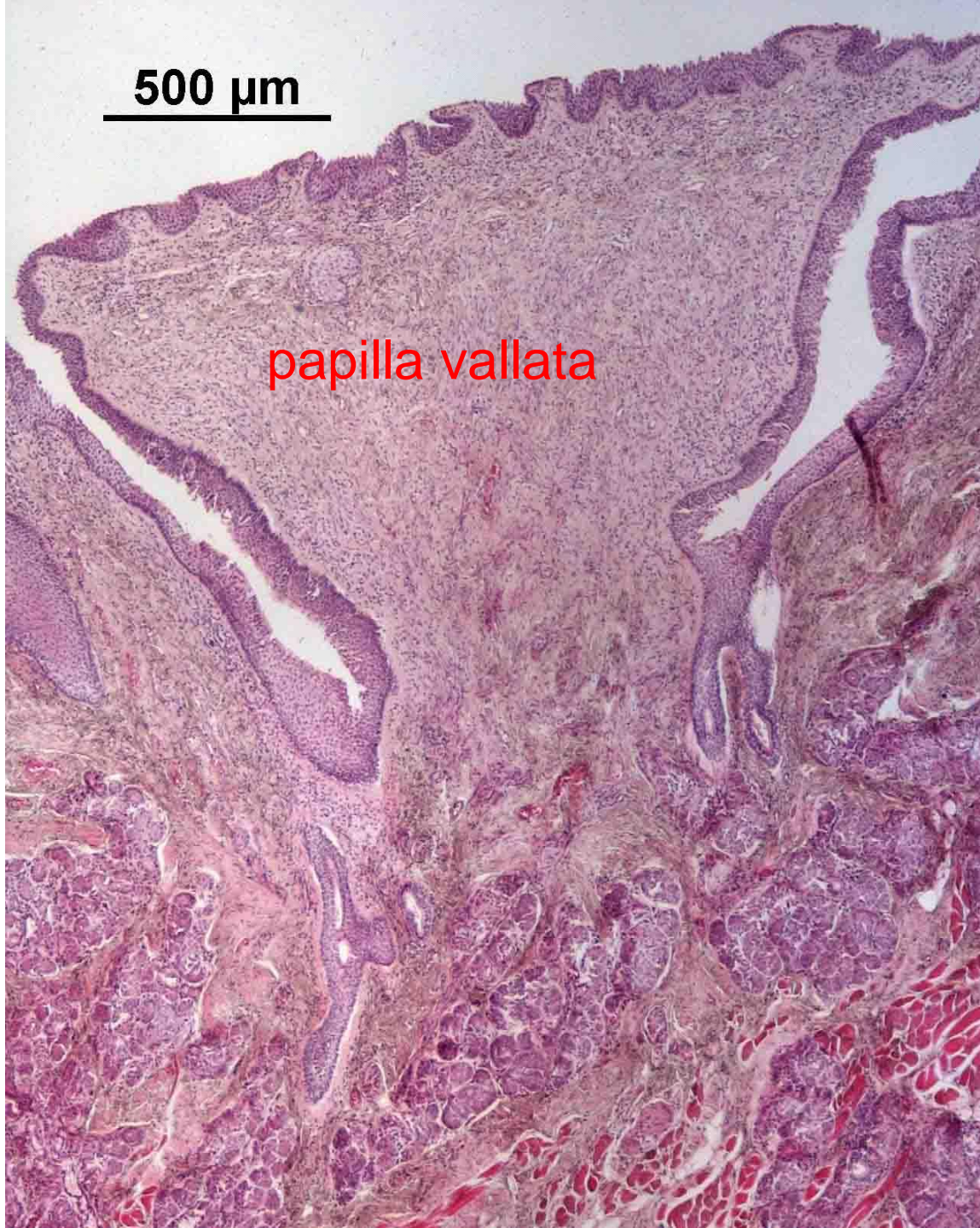


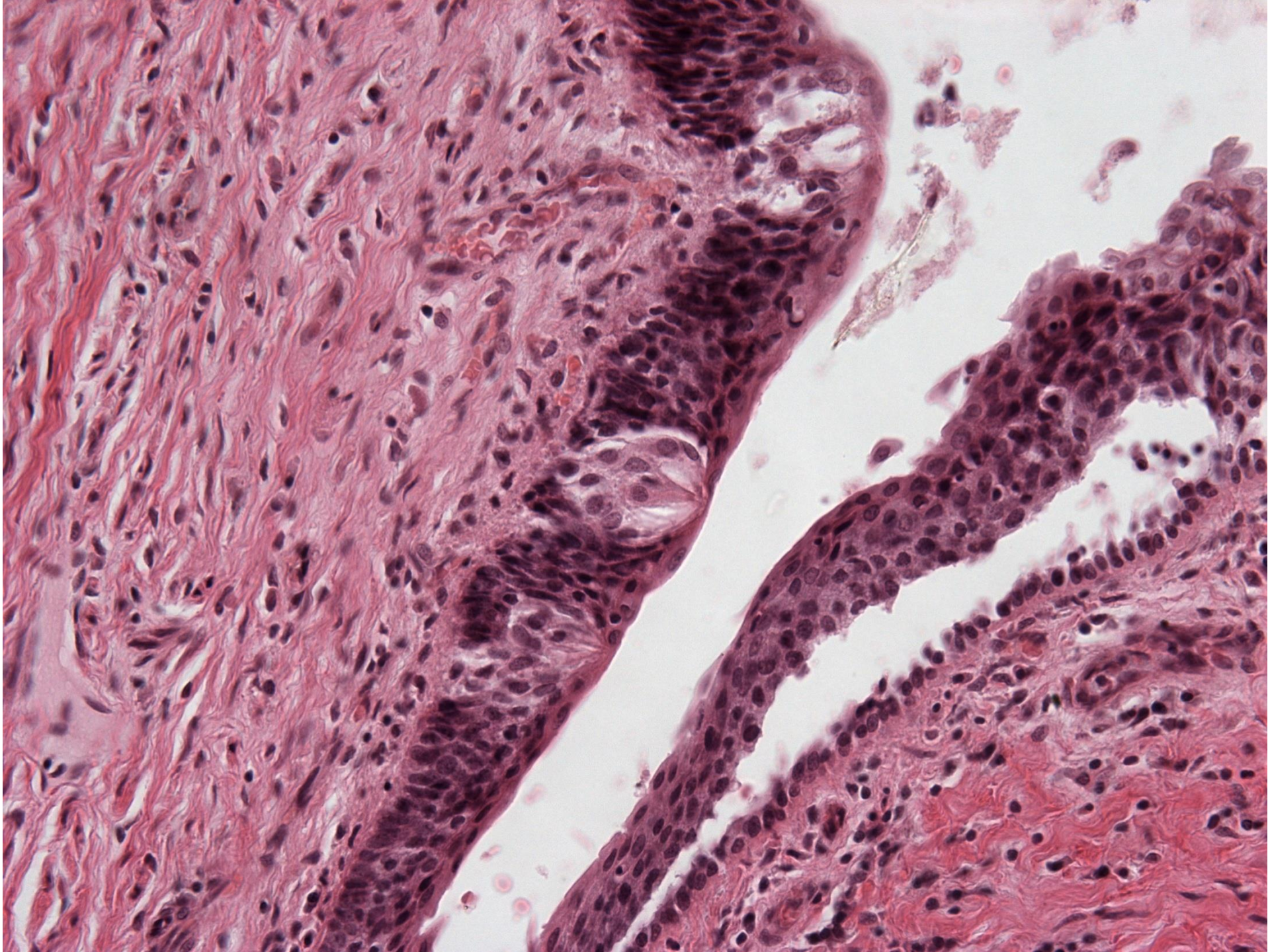
papillae fungiformes



500 μm

papilla vallata





Development of tongue

(Lateral lingual swelling)

Will form anterior two thirds of tongue

Foramen cecum

Terminal sulcus

Distal tongue bud

Foramen cecum

(Tuberculum impar)

Median tongue bud

Copula

1

2

3

4

A

Hypopharyngeal eminence (hypobranchial) 4 weeks

B

5 weeks

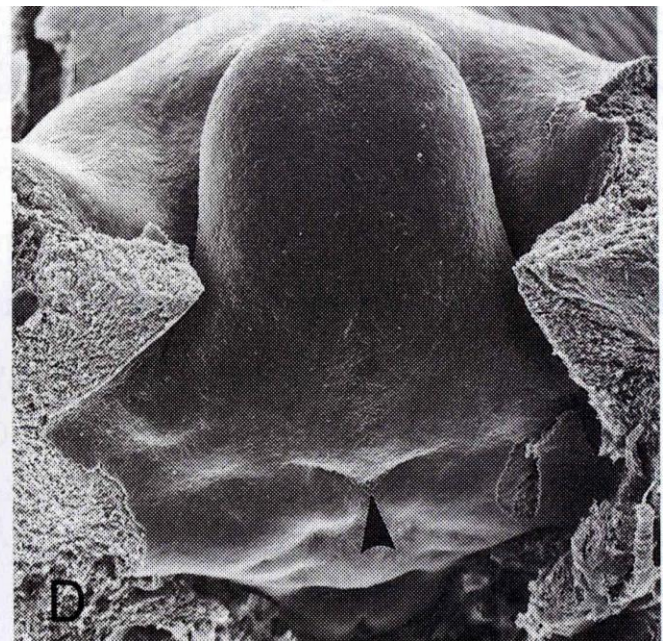
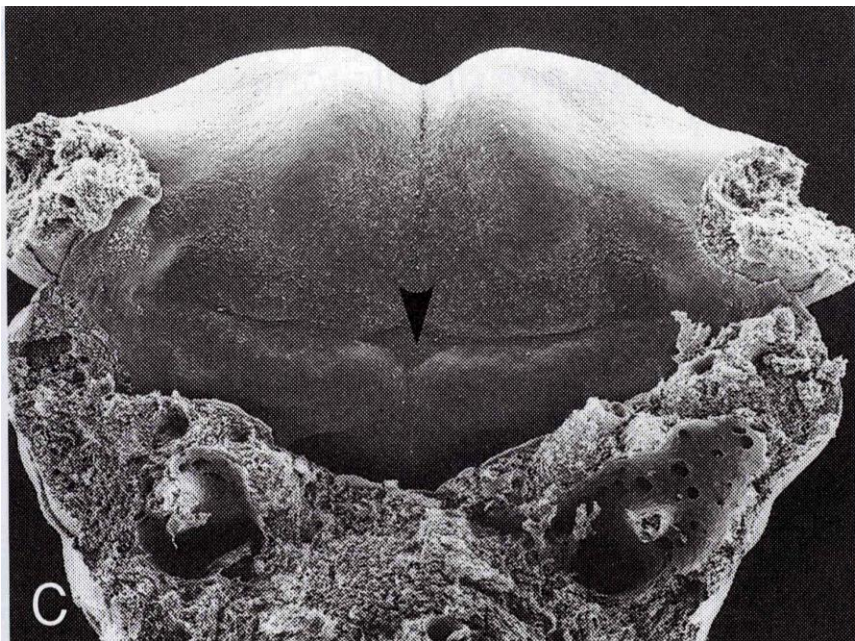
D

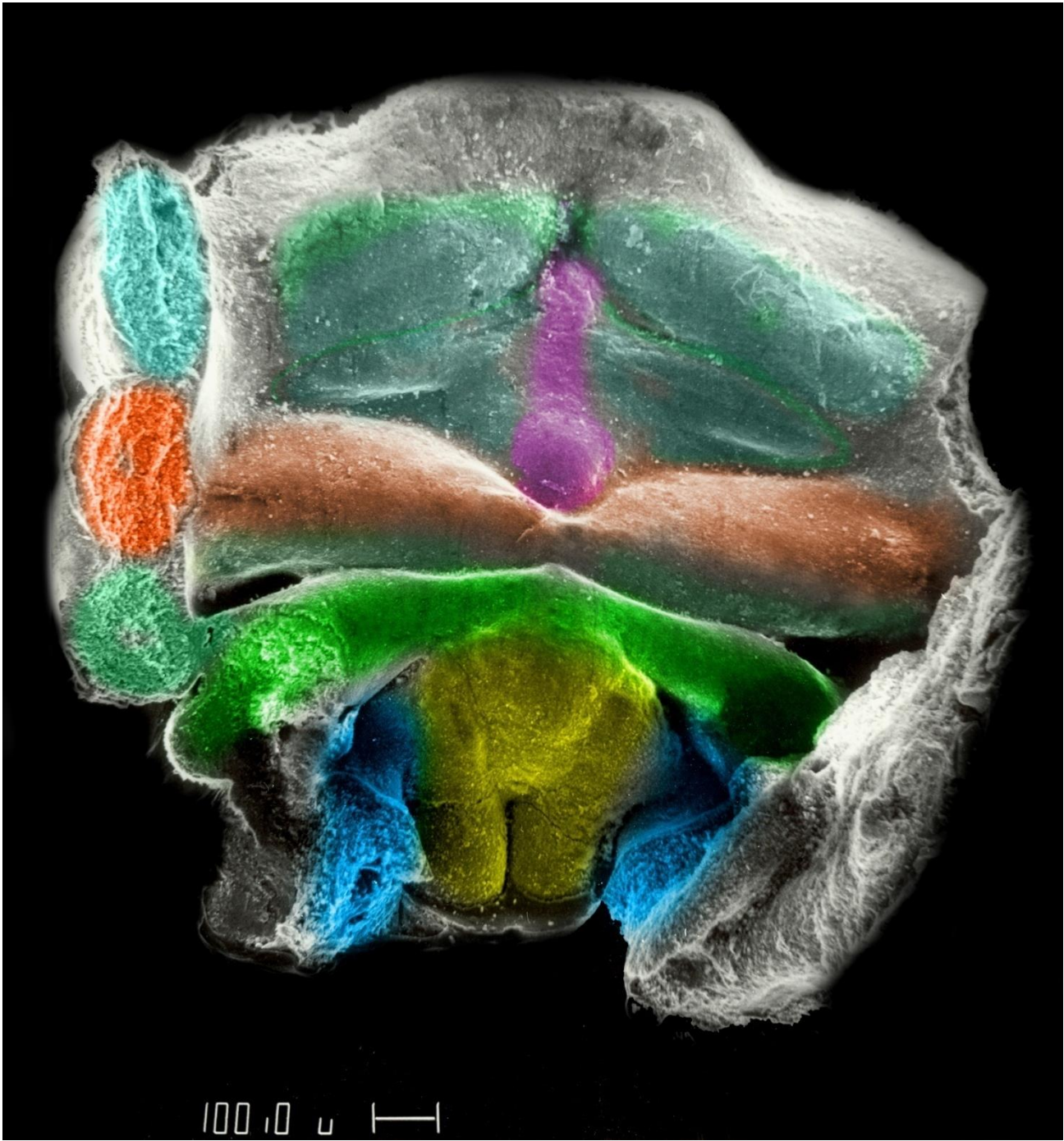
Will form posterior one third of tongue

6 weeks

Palatine tonsil

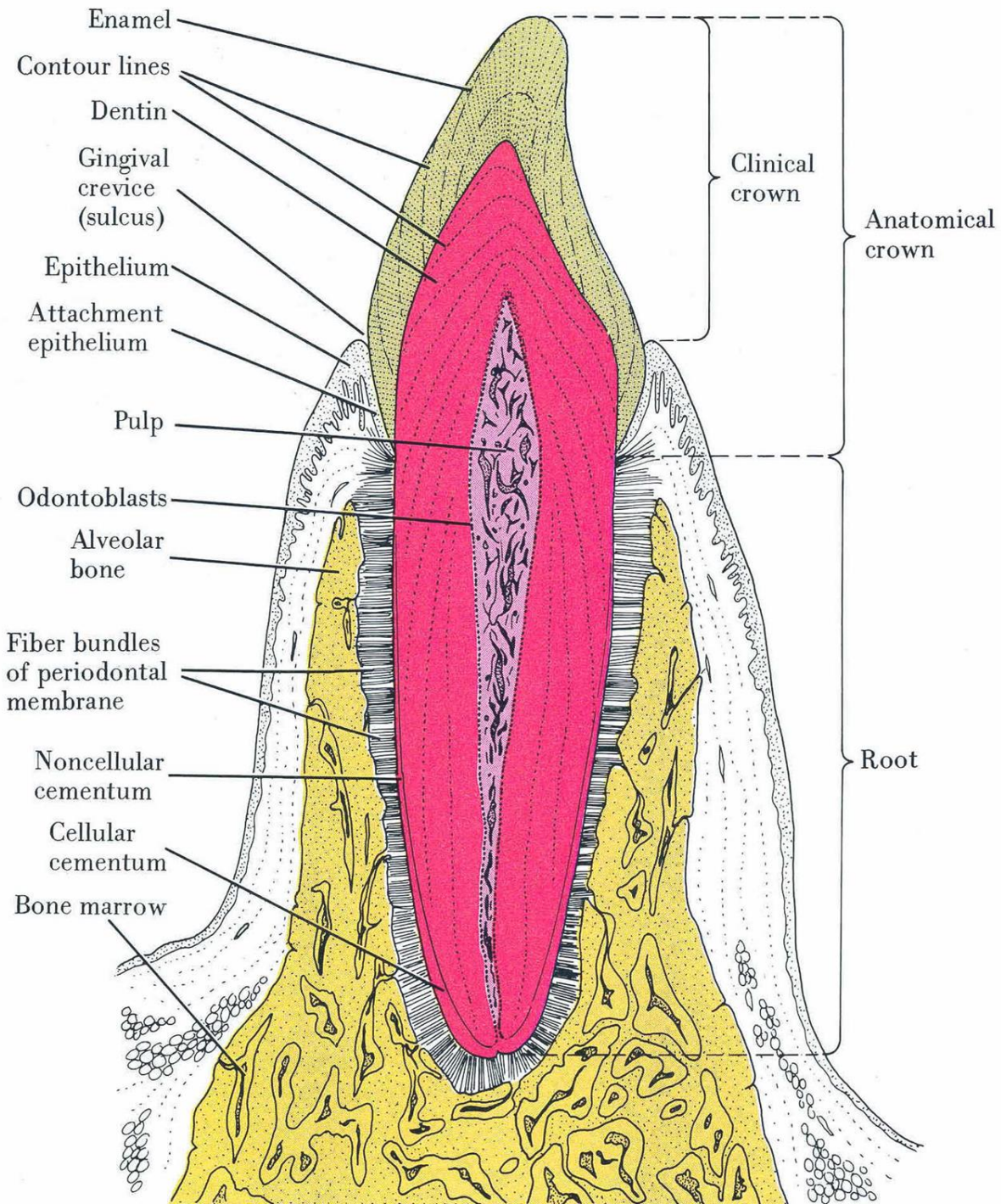
Epiglottis

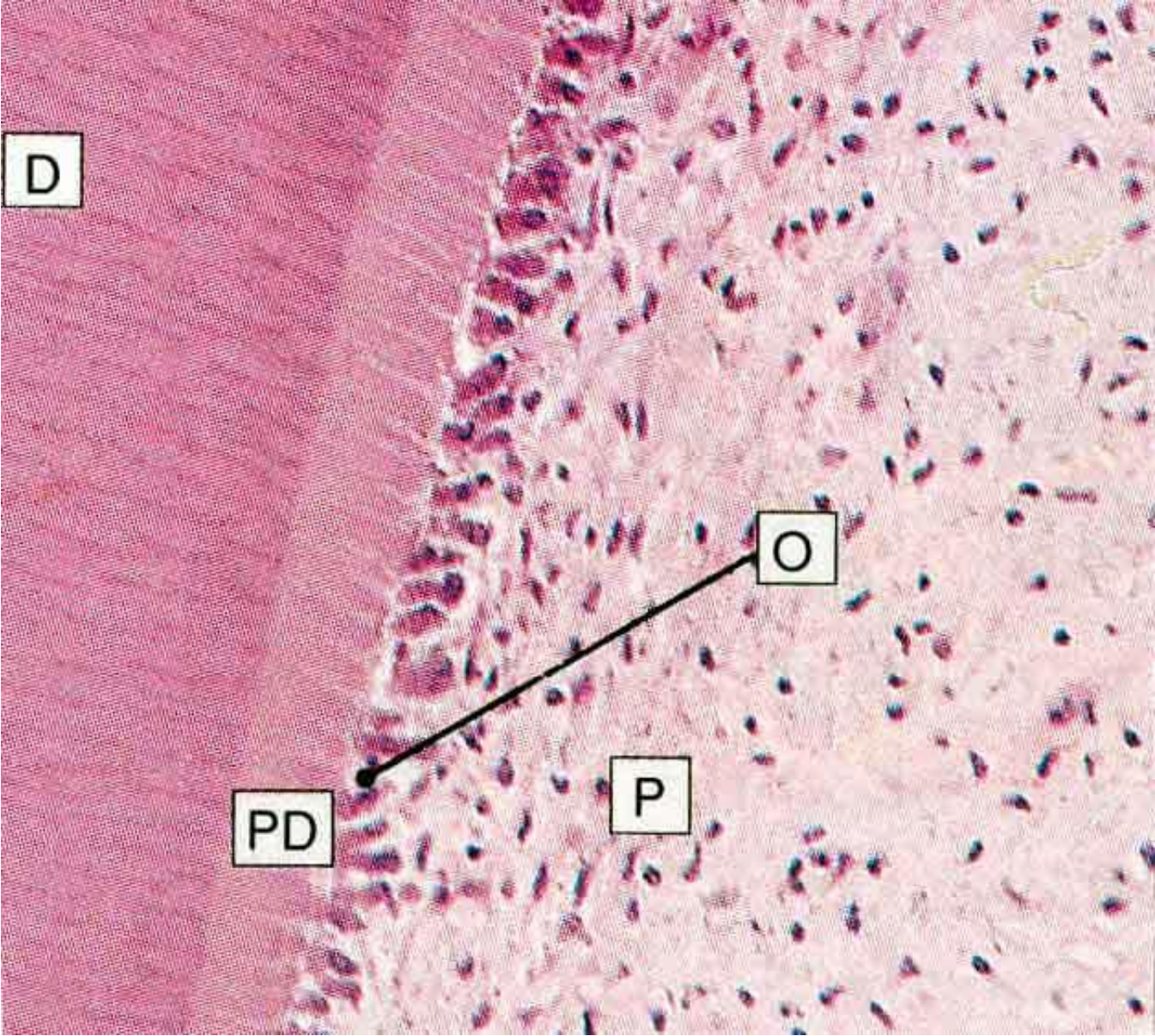
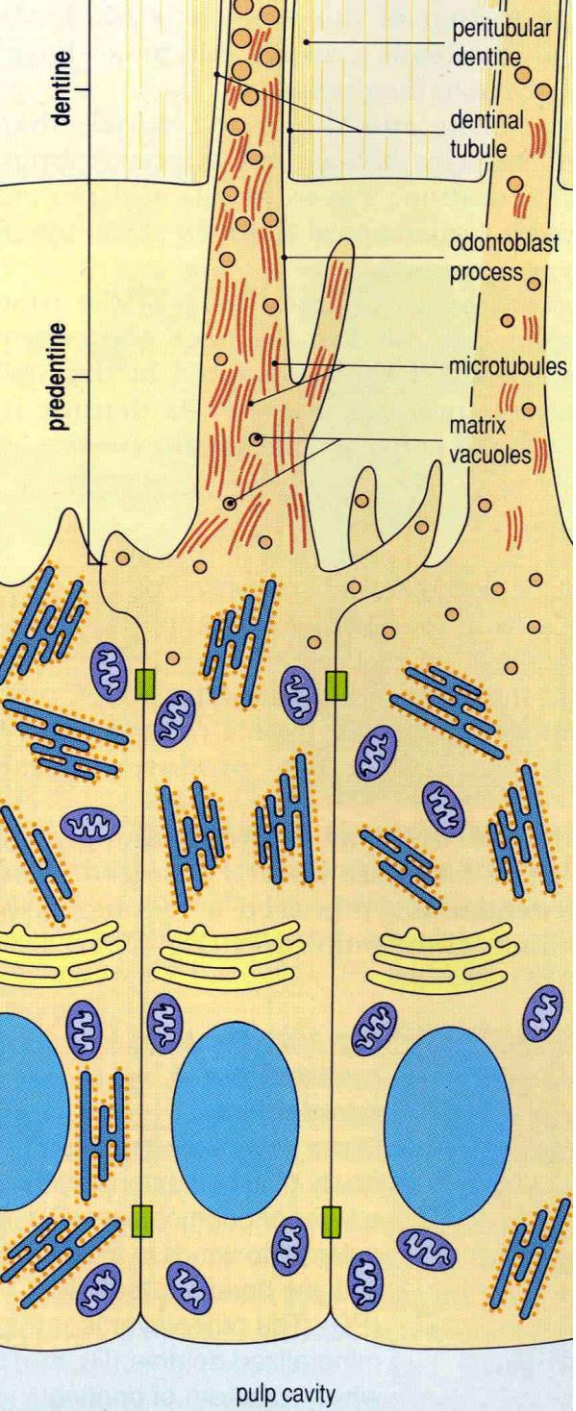




100.0 μm

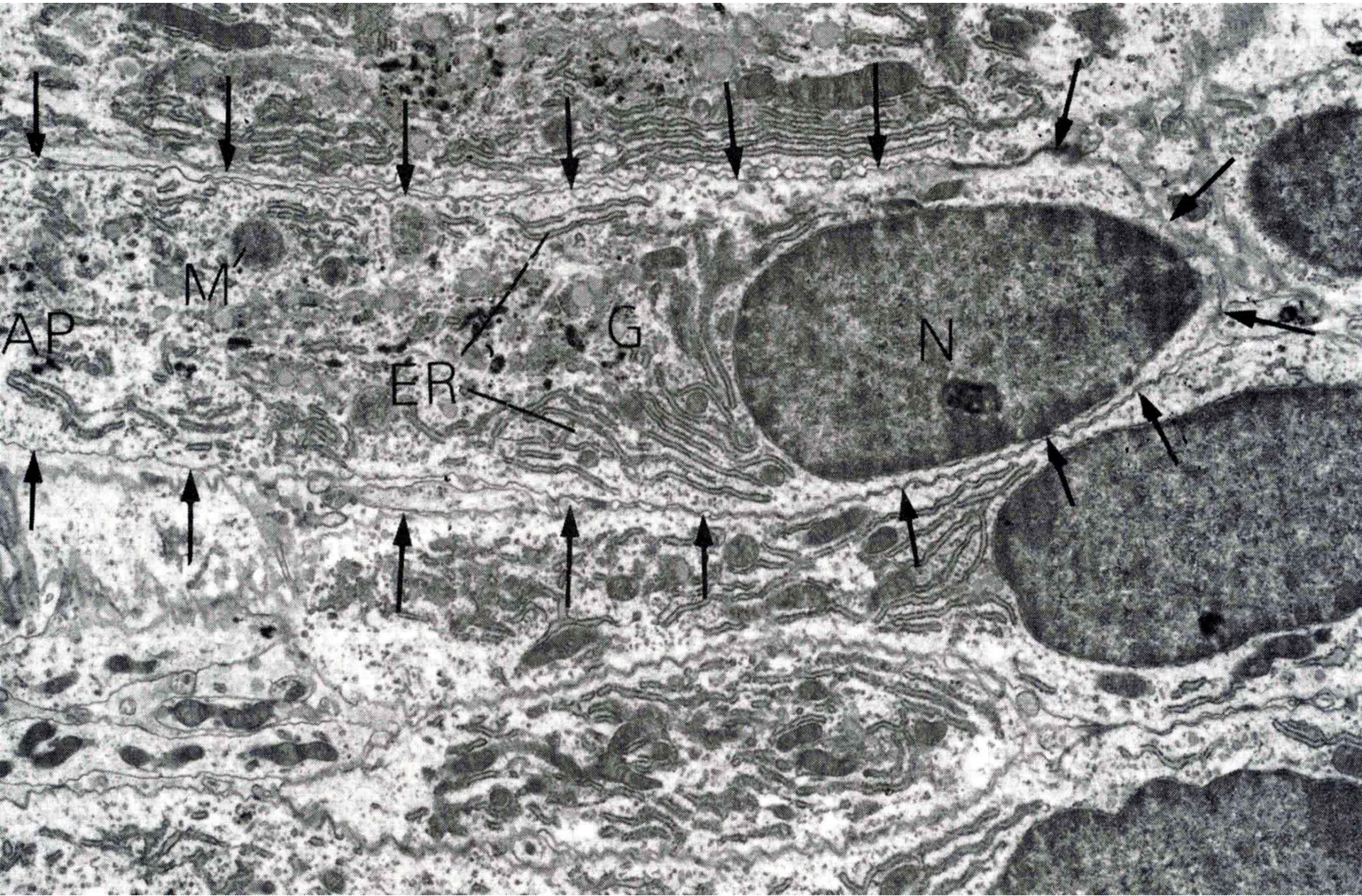
Teeth

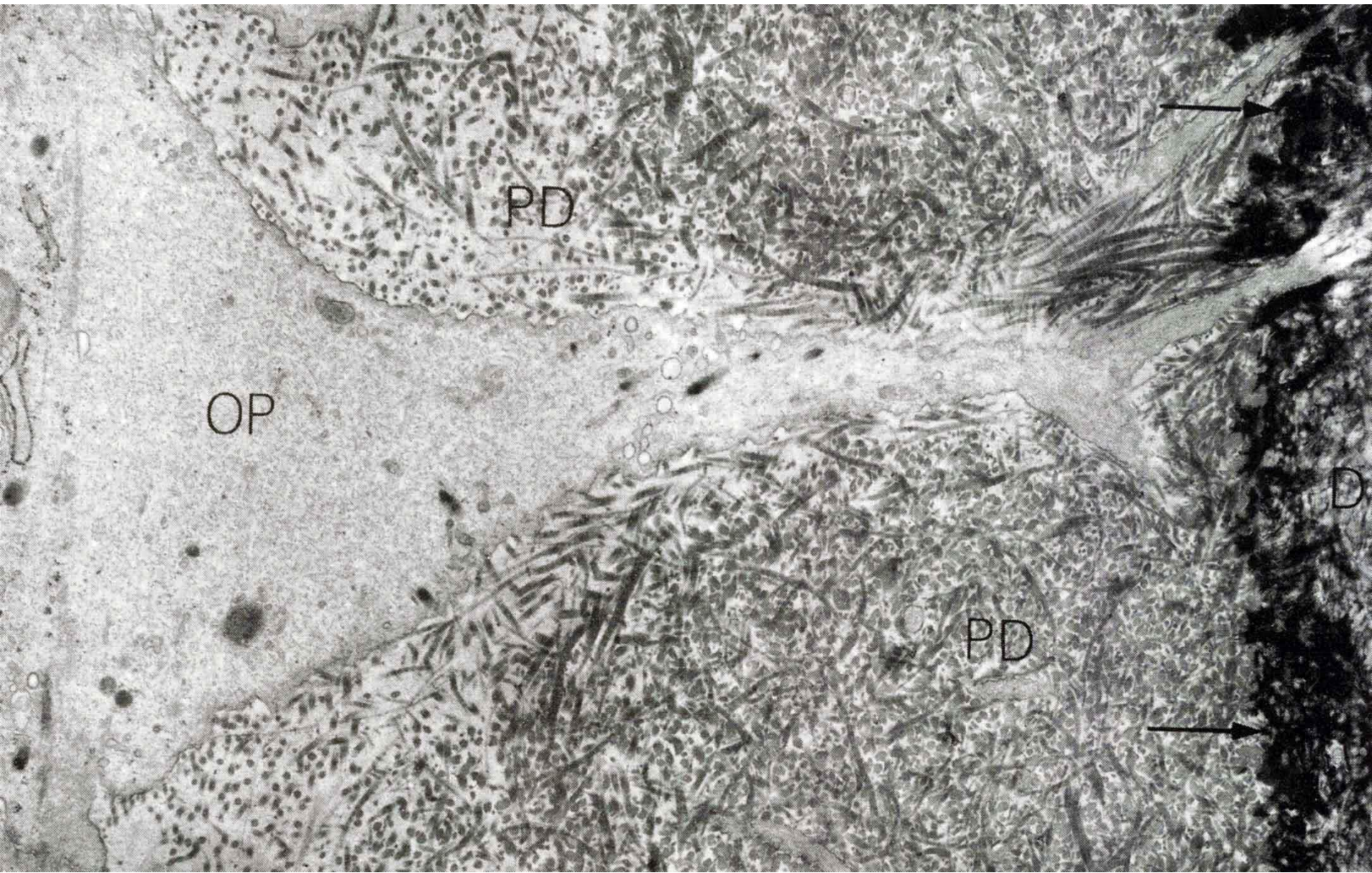


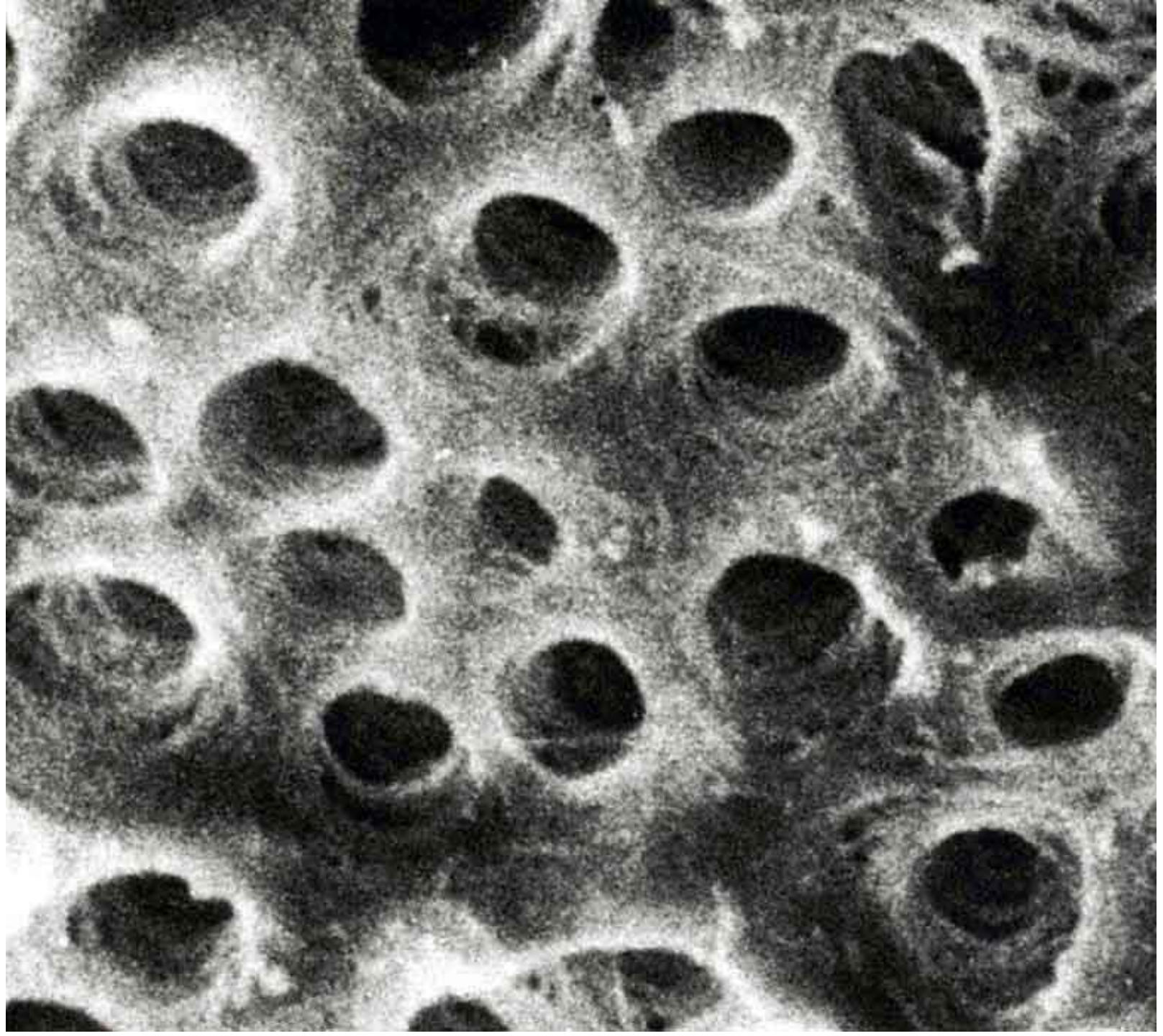


dentin
decorin, biglykan

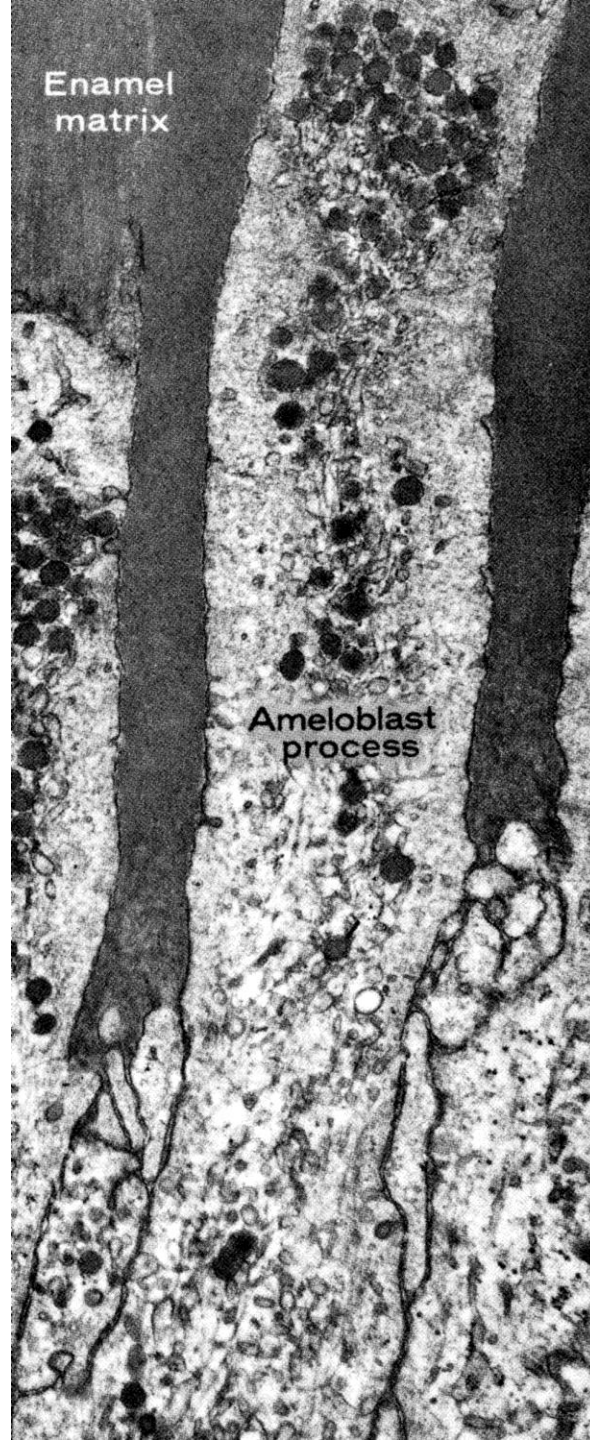
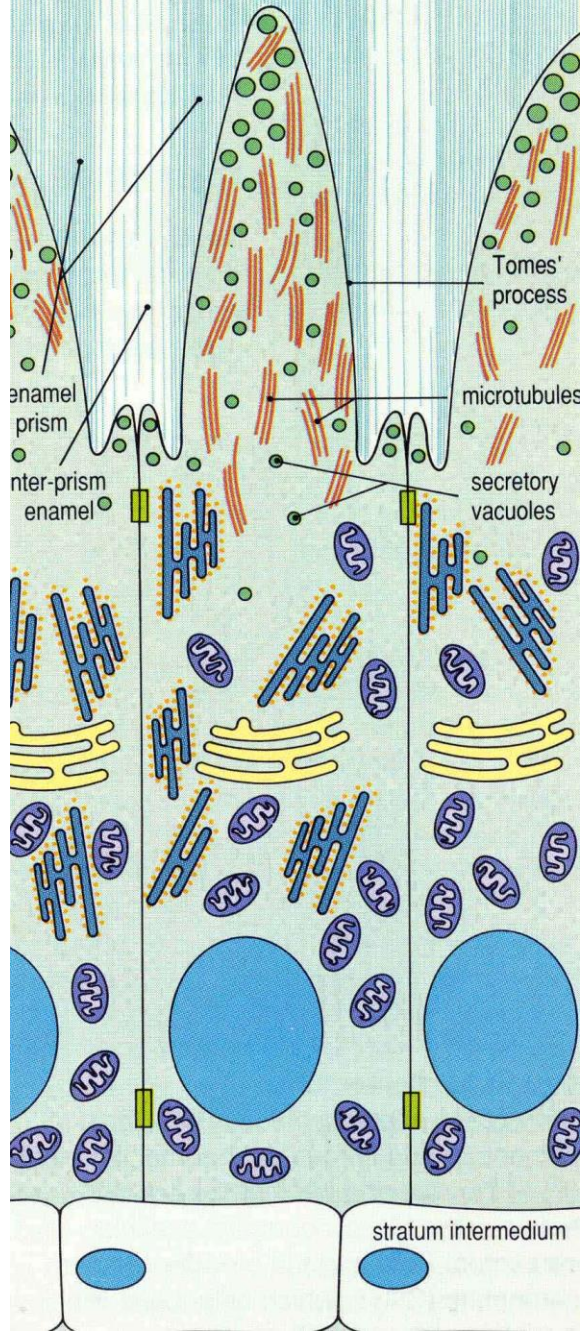
odontoblasts

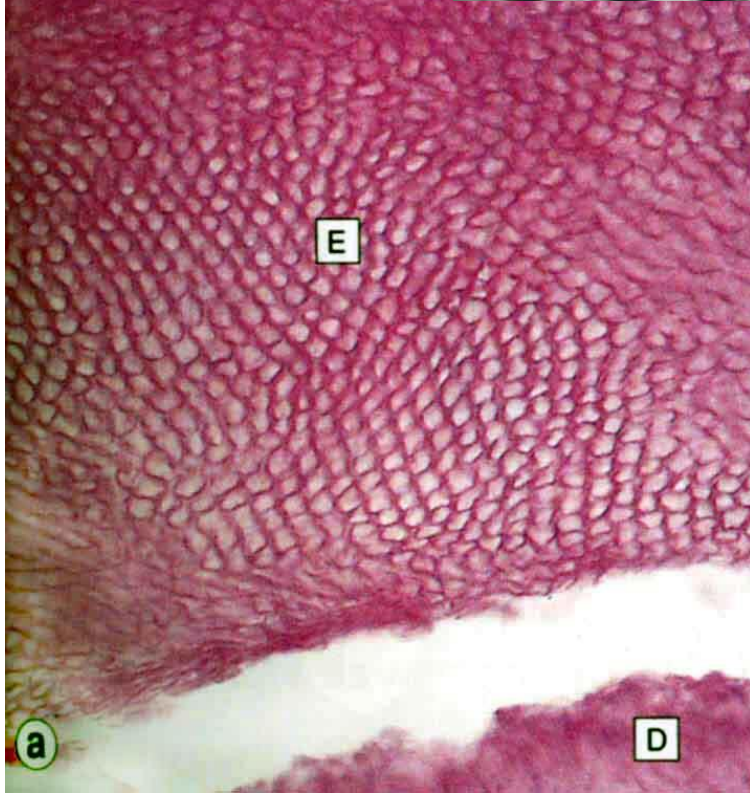
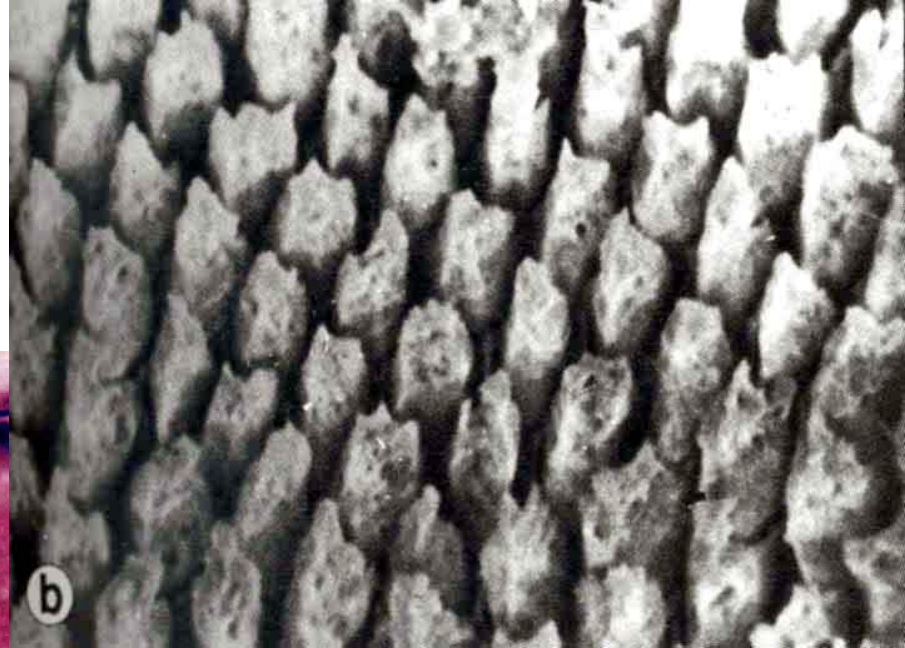
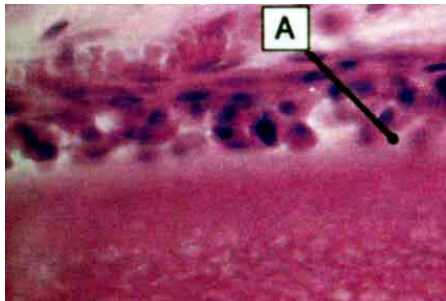
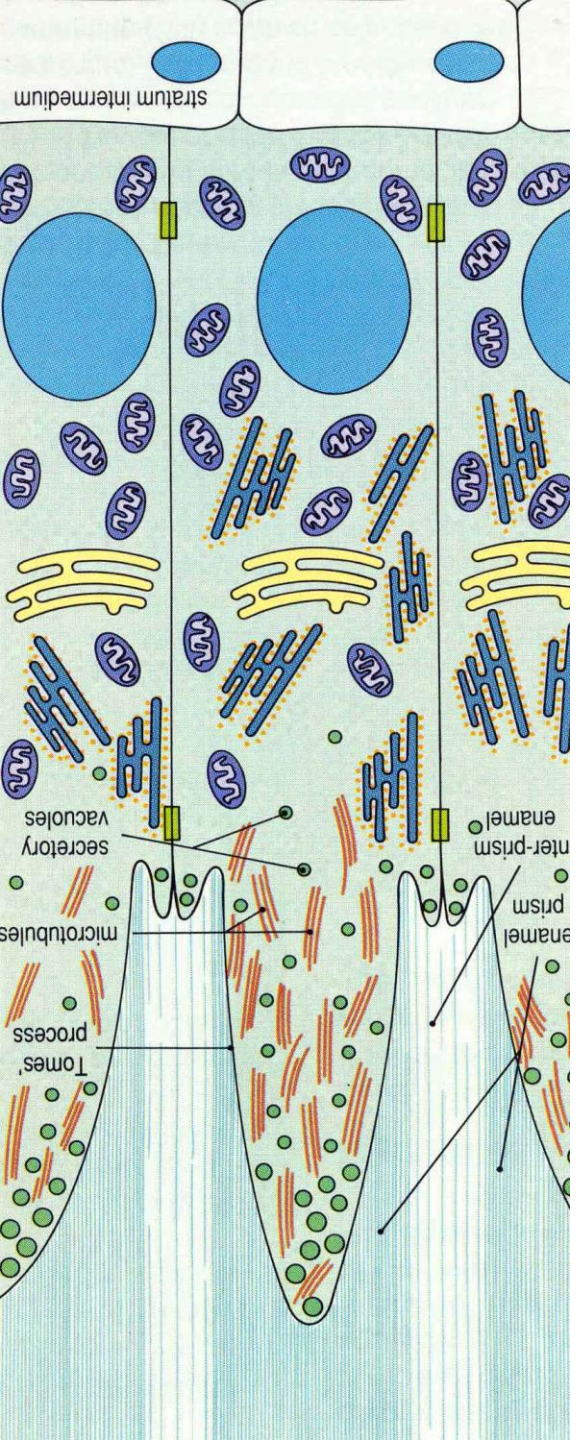




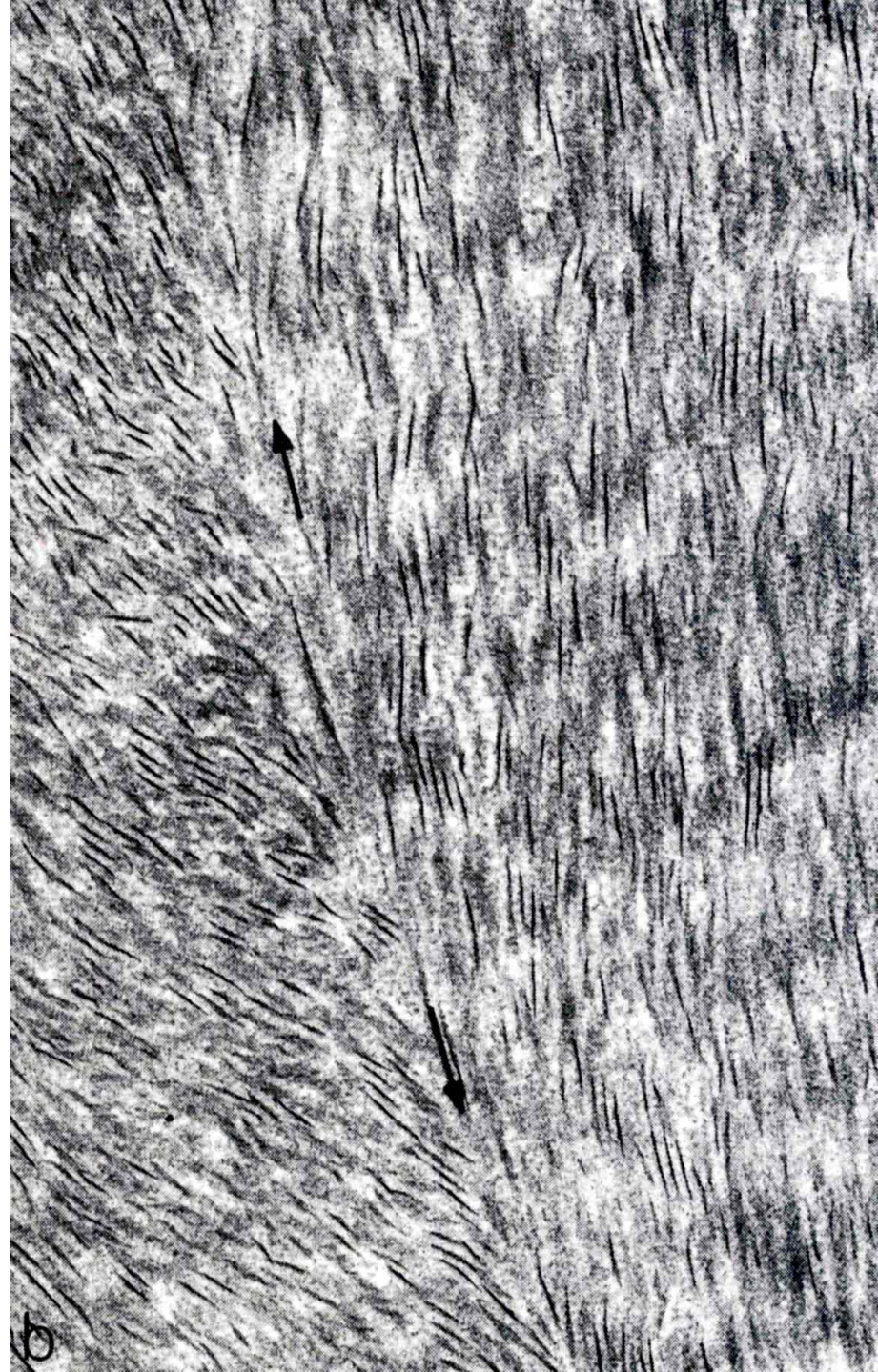
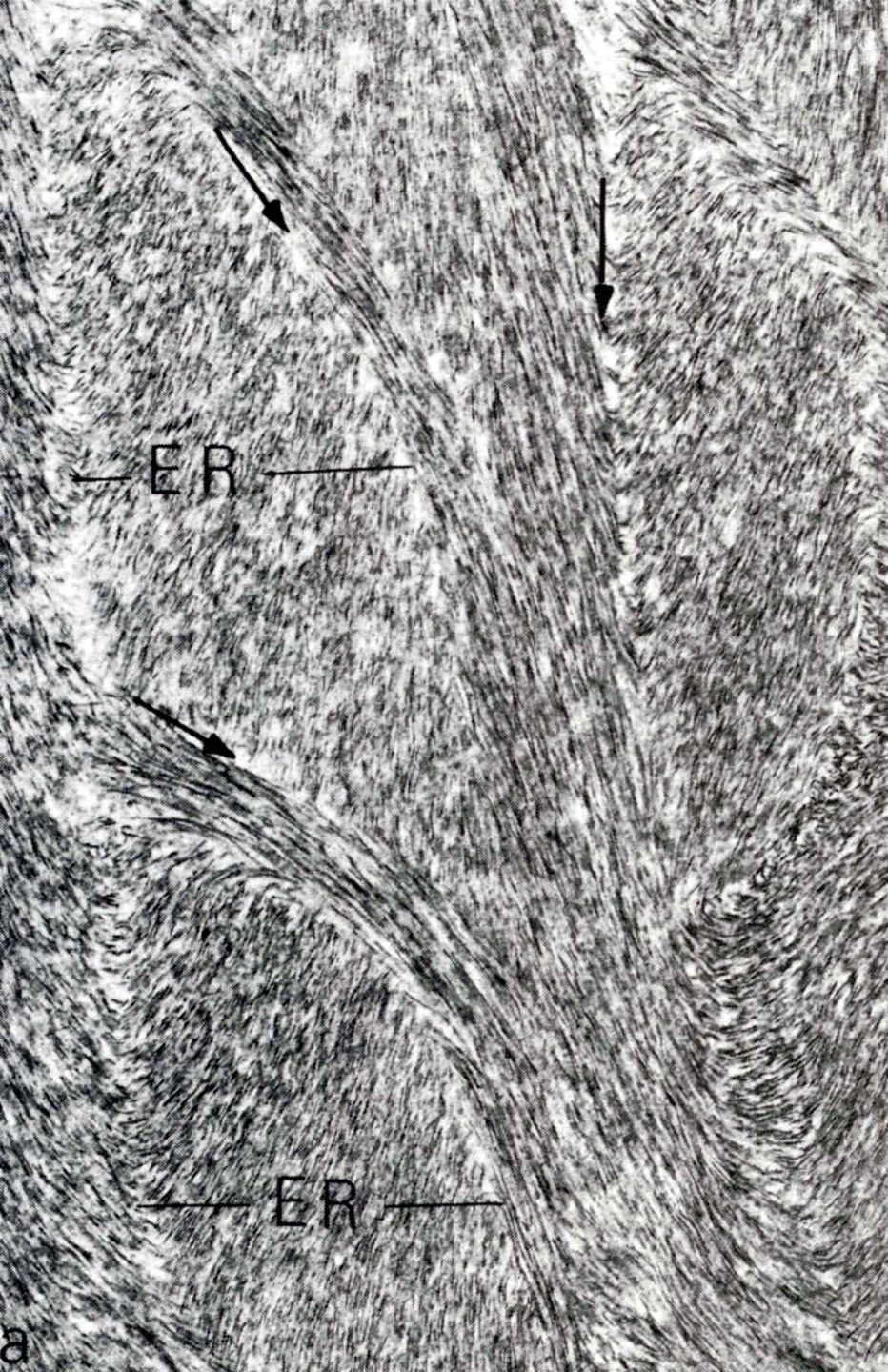


ameloblasts

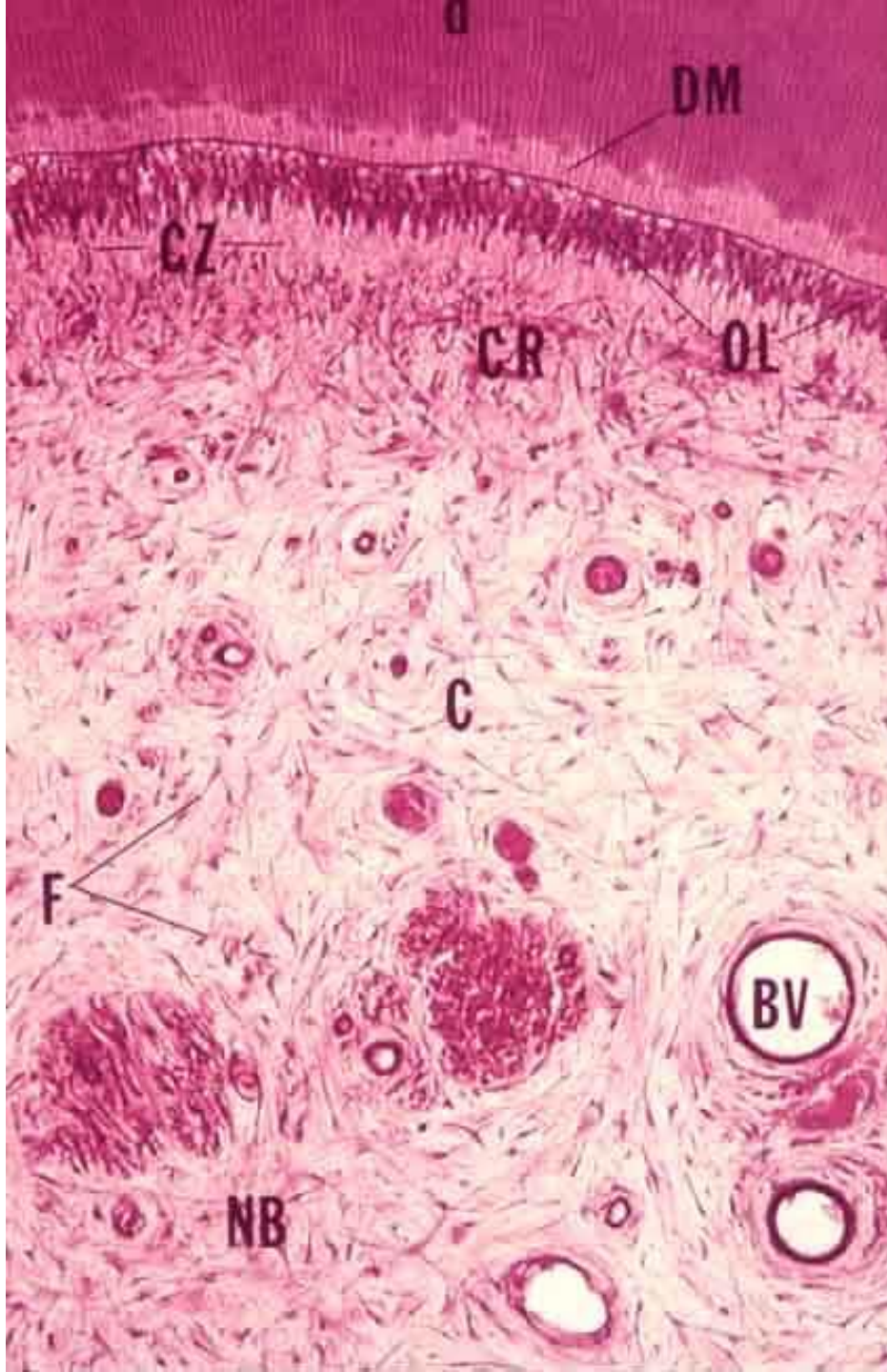




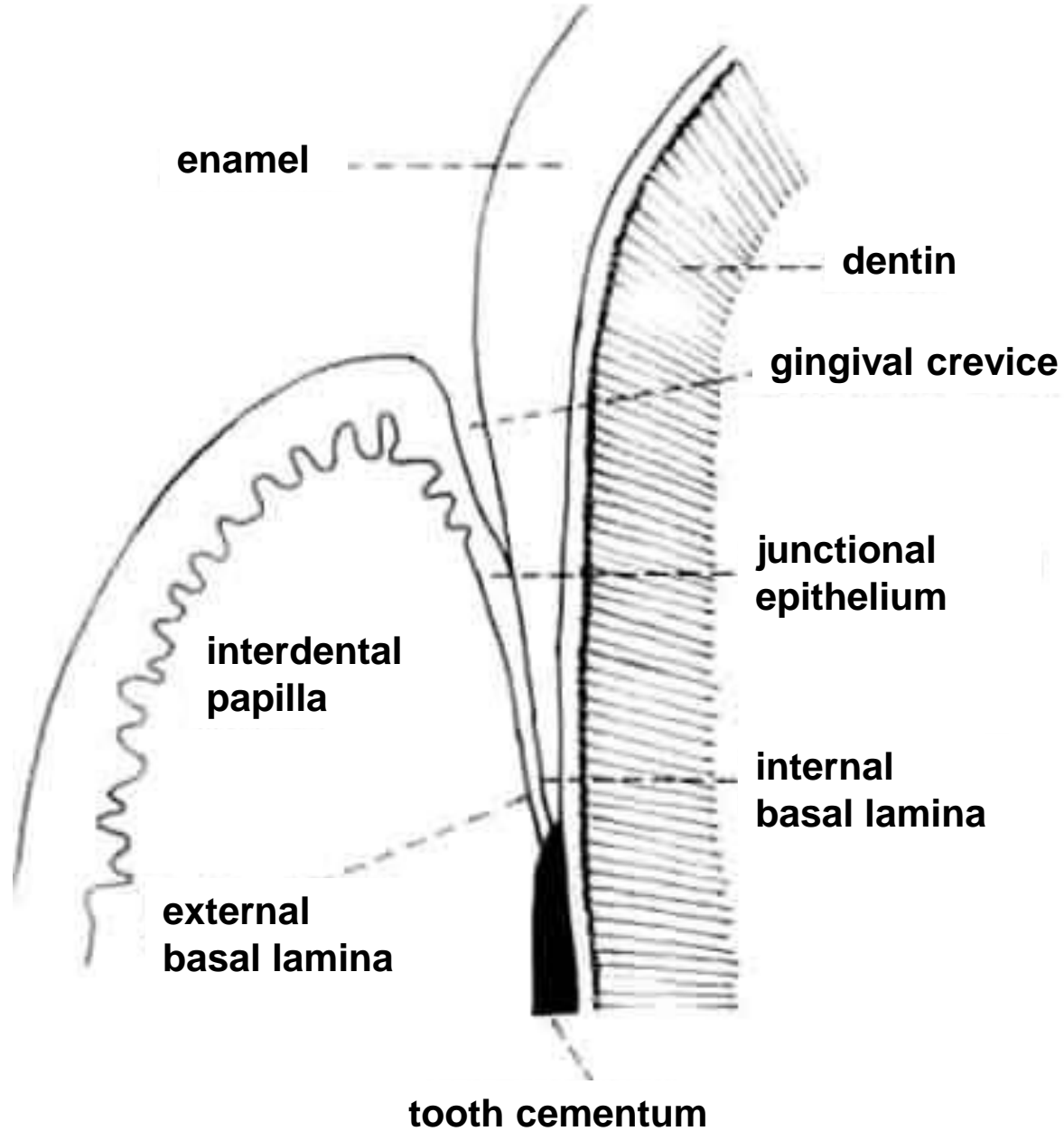
amelogenins
 ameloblastins
 enamelines
 tuftelins



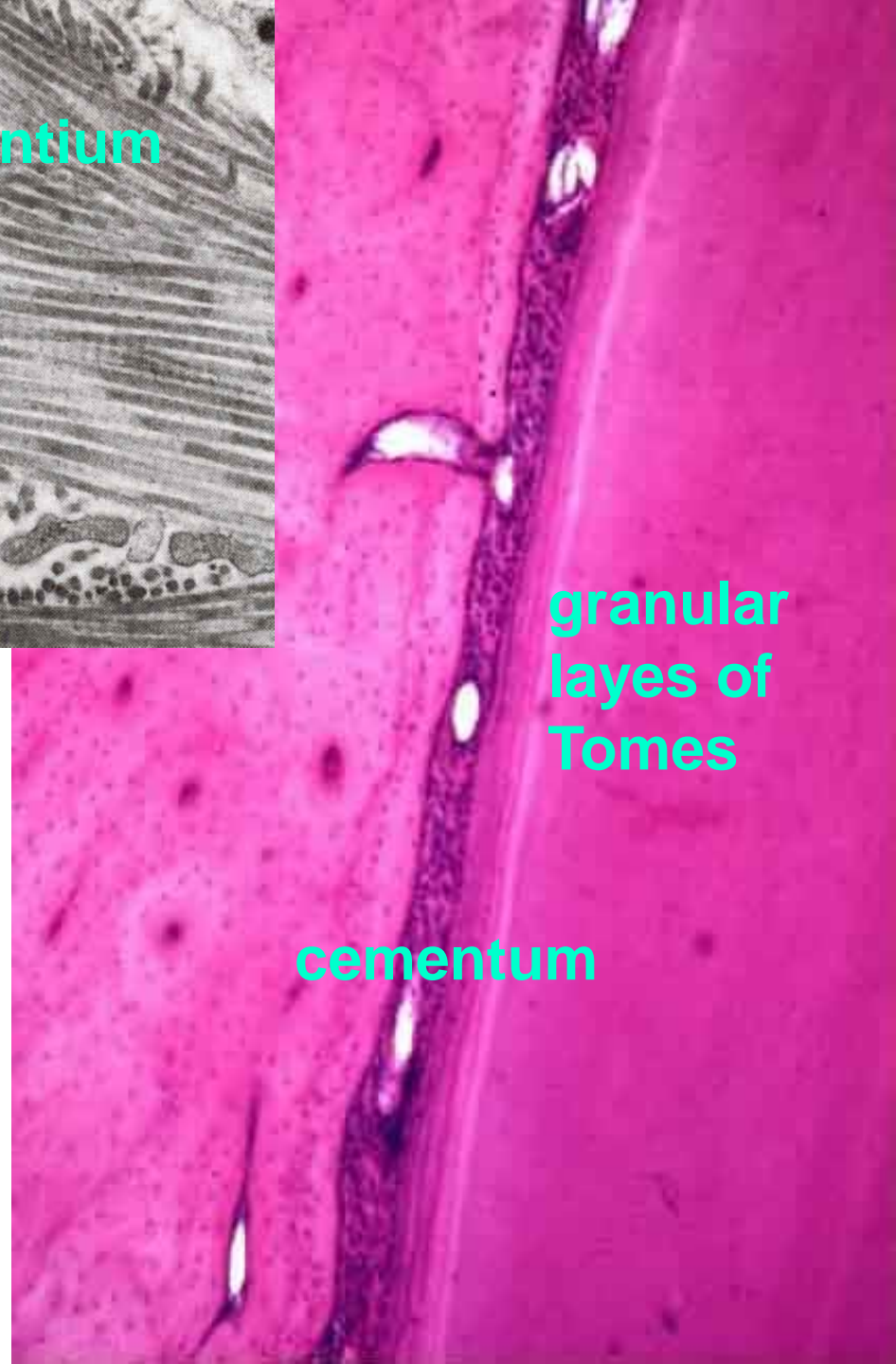
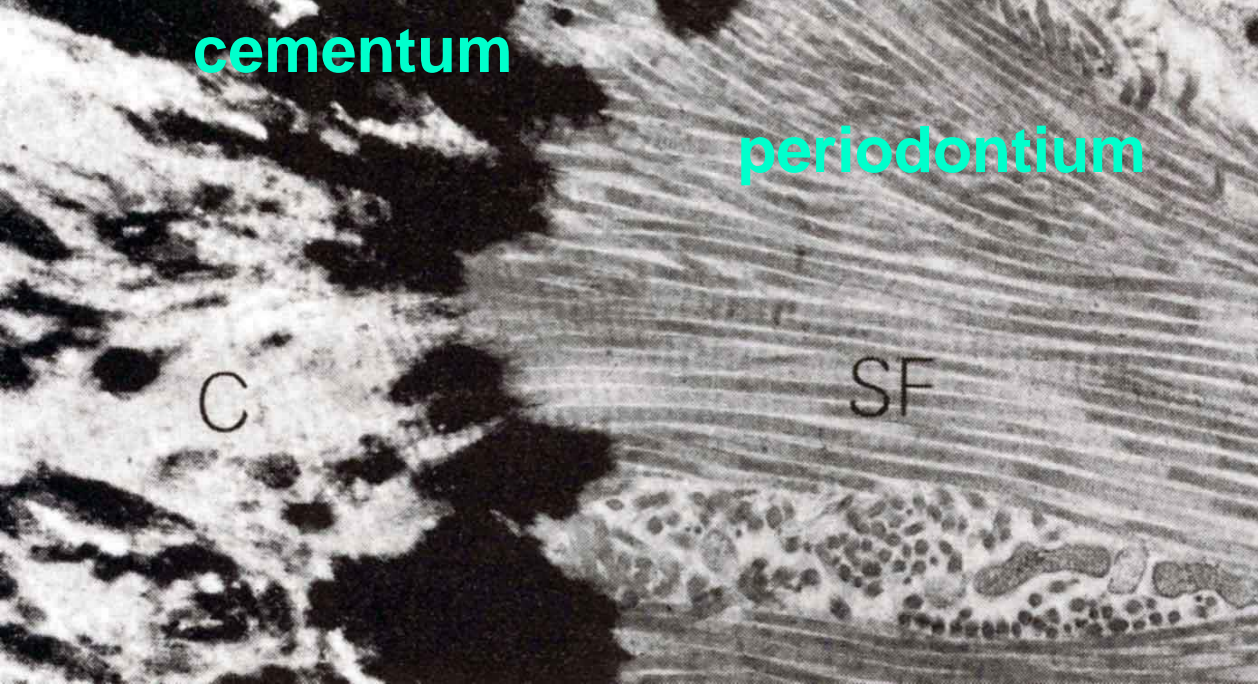
pulpa dentis

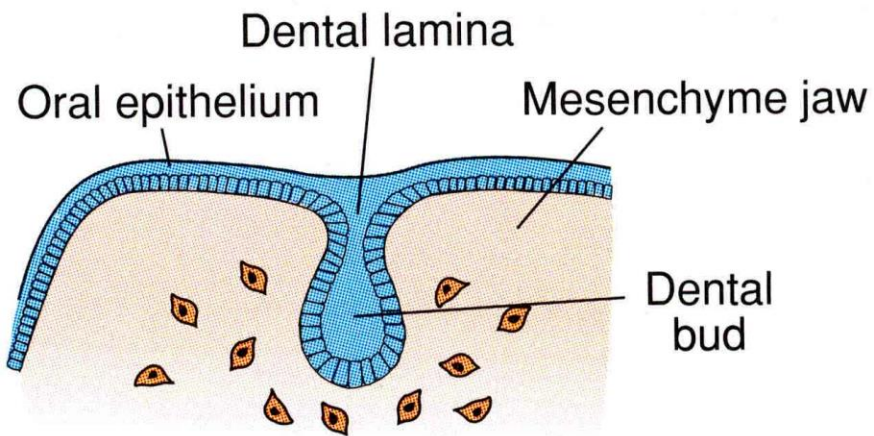


Epithelial attachment of Gottlieb

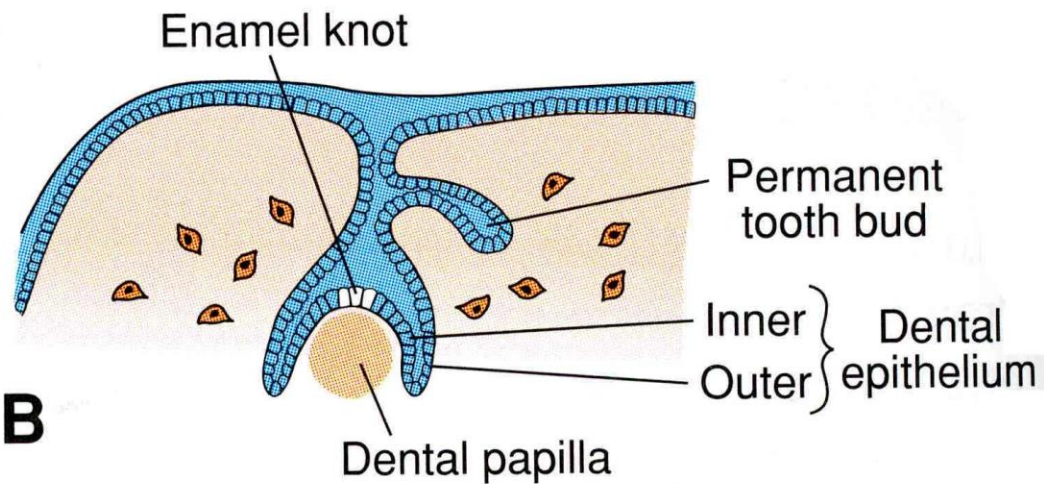




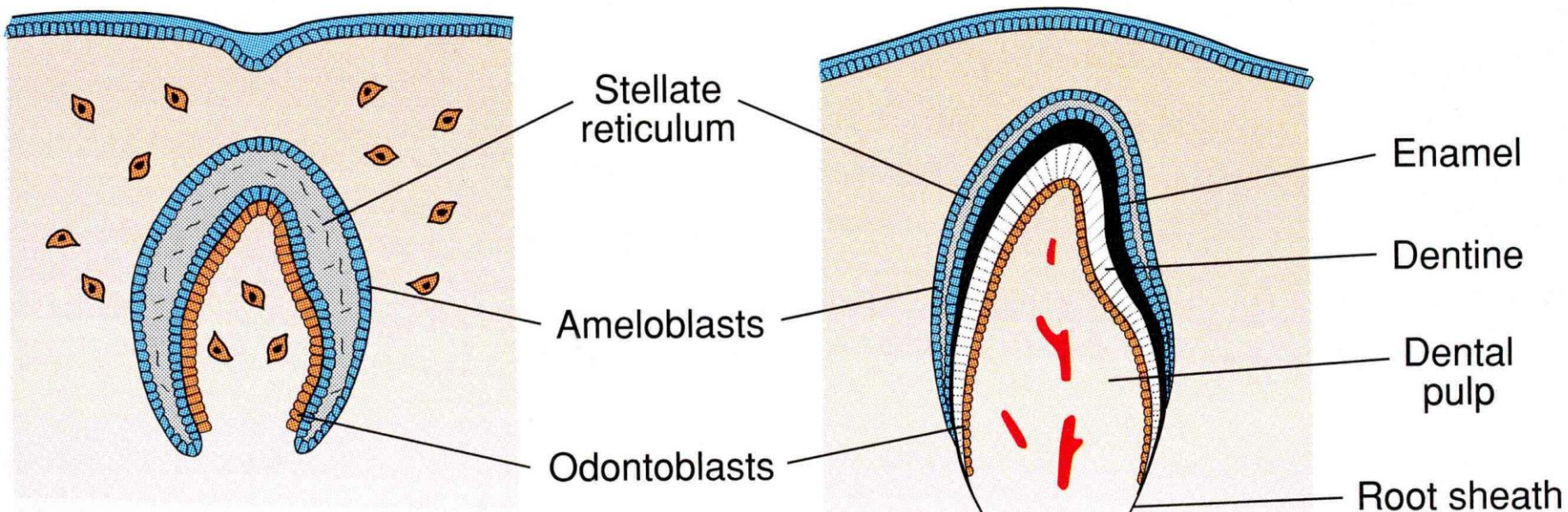




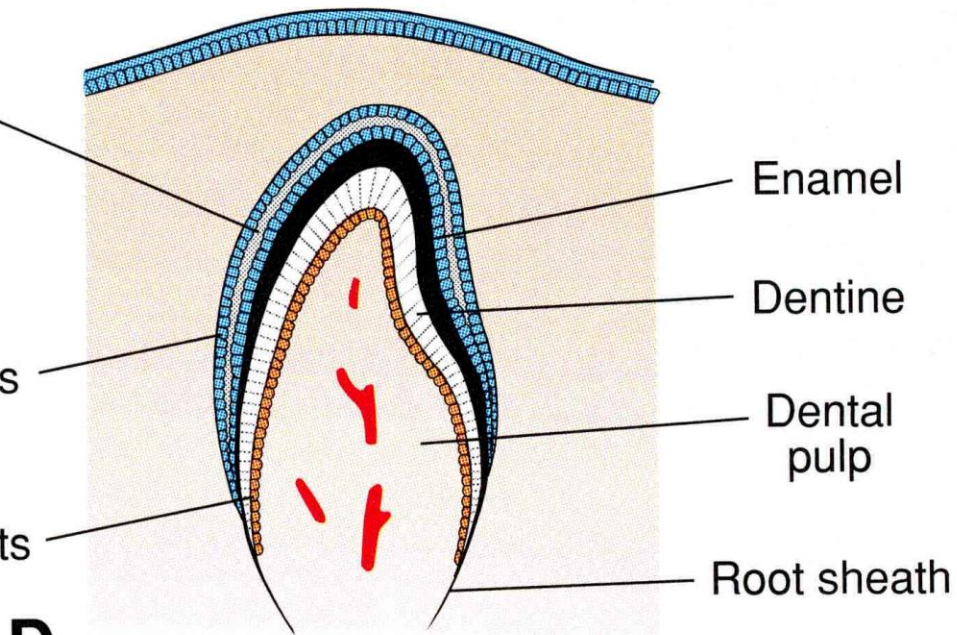
A



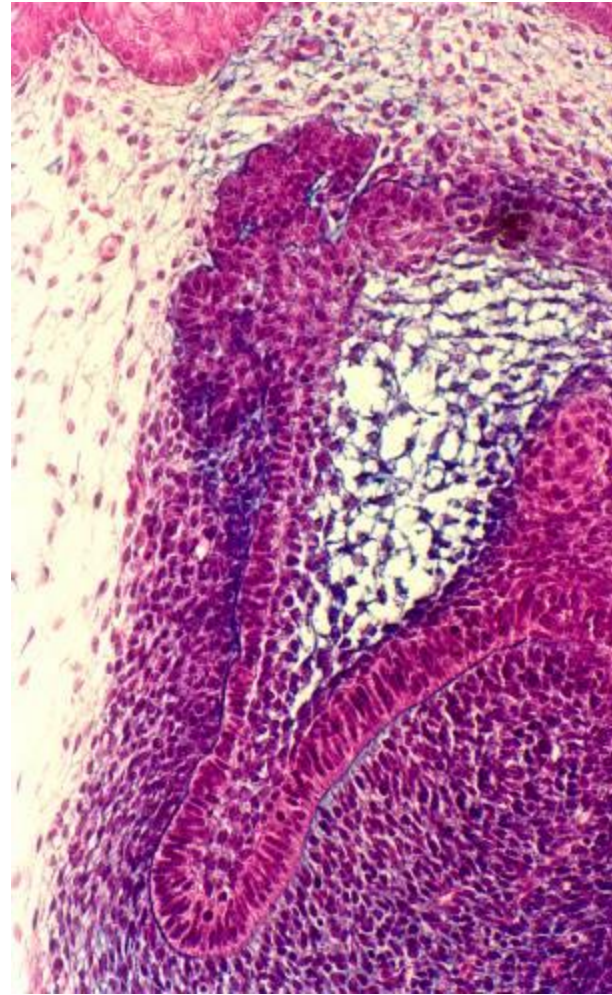
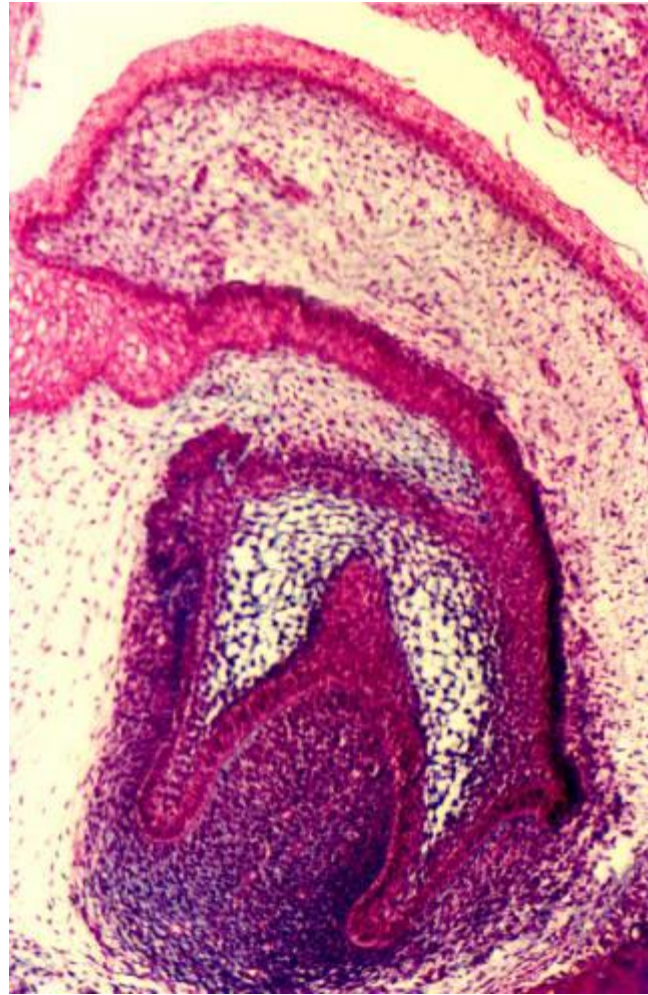
B



C

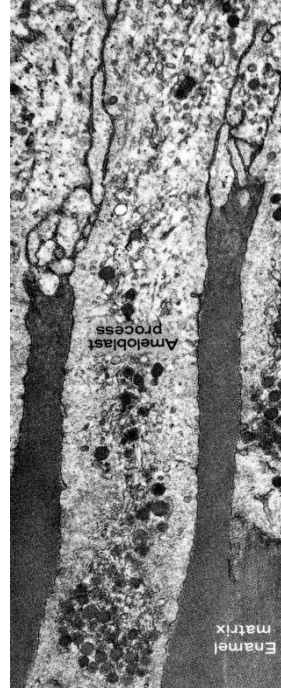
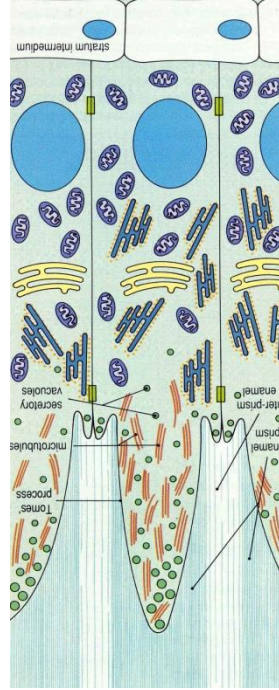


D

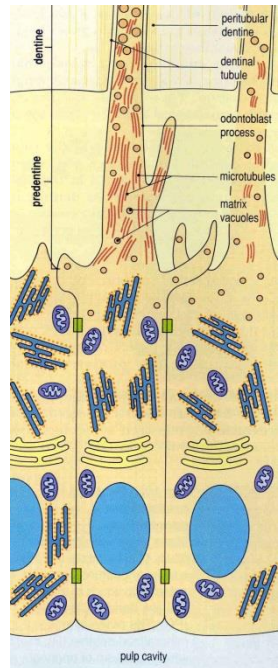


relative
position
of

ameloblasts



and odontoblasts



during the tooth
development

Oesophagus

