



SENSORY ORGANS

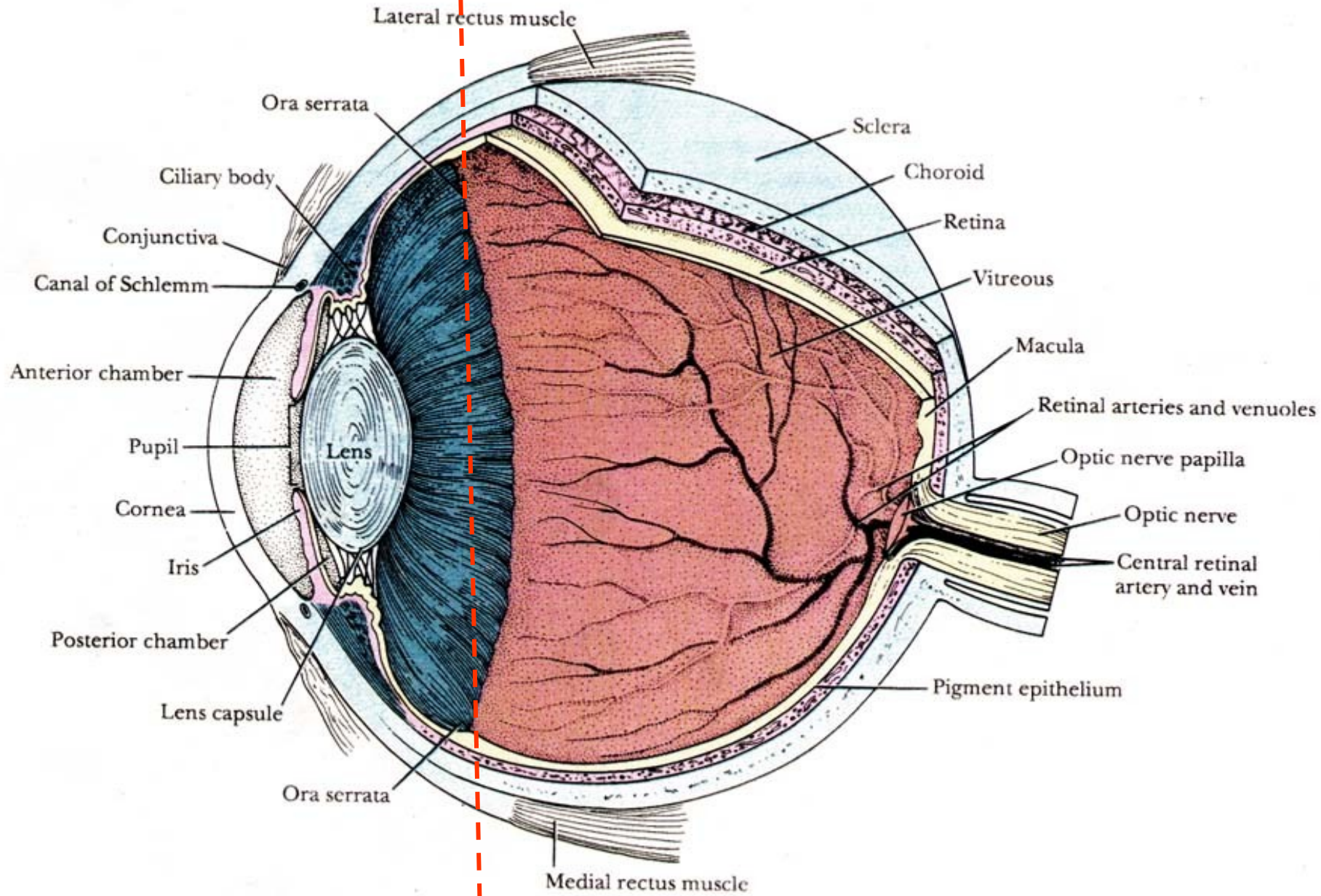
Organ of vision,
organ of balance and hearing
and accessory organs

Organ of vision

- Eyeball (bulbus oculi)
 - anterior segment of eye
 - posterior segment of eye
- Eyelid (palpebra)
- Tear gland (gl. lacrimalis)

Anterior segment

Posterior segment



The wall of eyeball

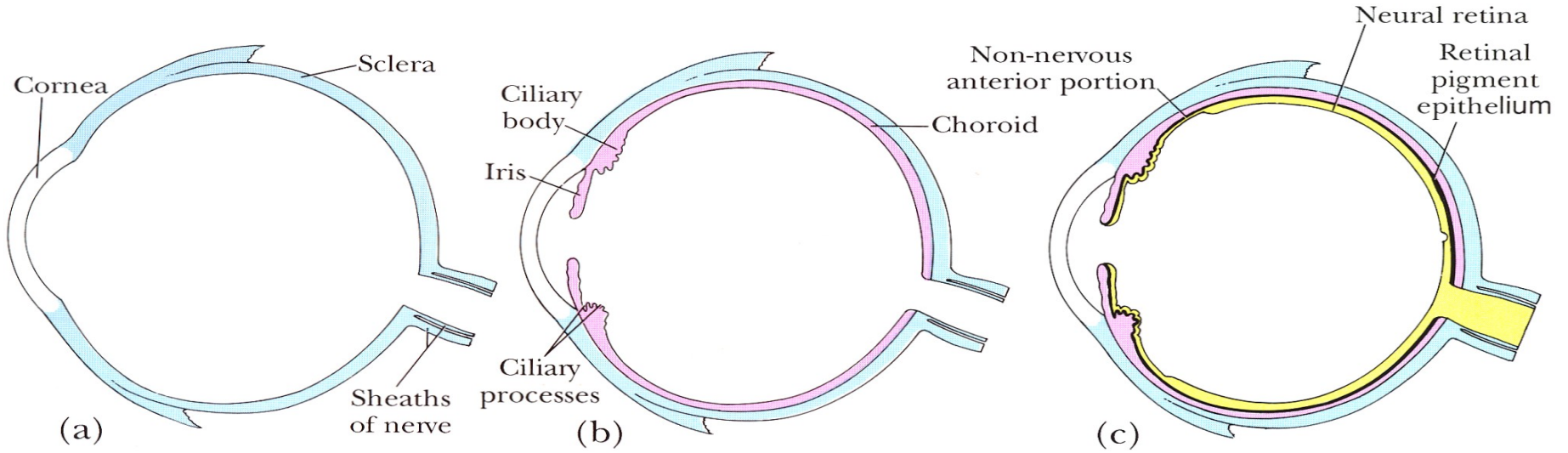
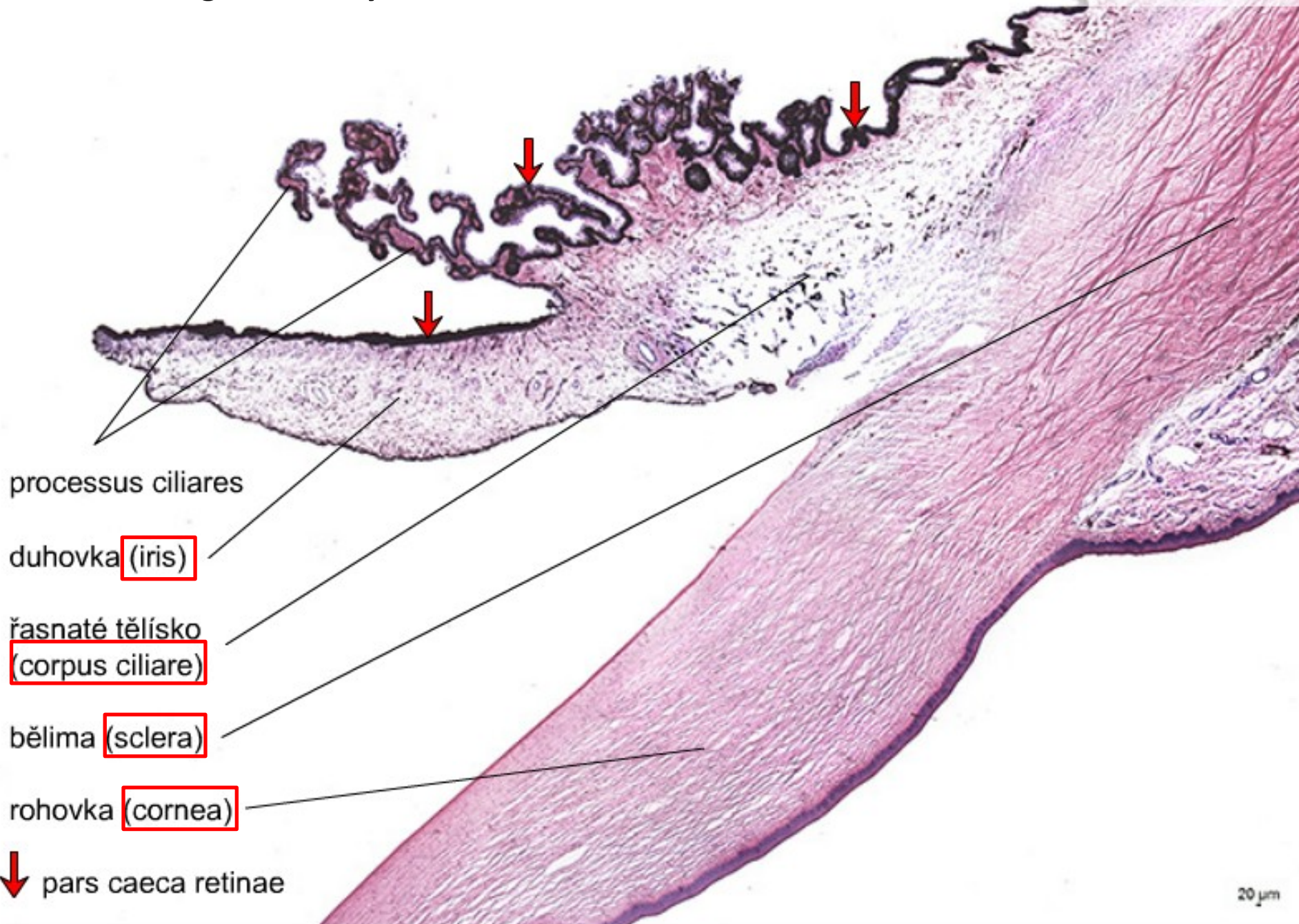


Figure 23.1. Schematic diagram of the layers of the eye. The layers are organized in three separate concentric layers: an outer supporting layer, the *corneoscleral*

coat (a), a middle vascular coat, the *uvea* (b), and an inner photosensitive layer, the *retina* (c).

	Tunica externa (fibrosa)	Tunica media (vasculosa)	Tunica interna (nervosa)
anterior segment	cornea	iris corpus ciliare	pars caeca retinae
posterior segment	sclera	choroidea	pars optica retinae

Anterior segment of eye



processus ciliares

duhovka (iris)

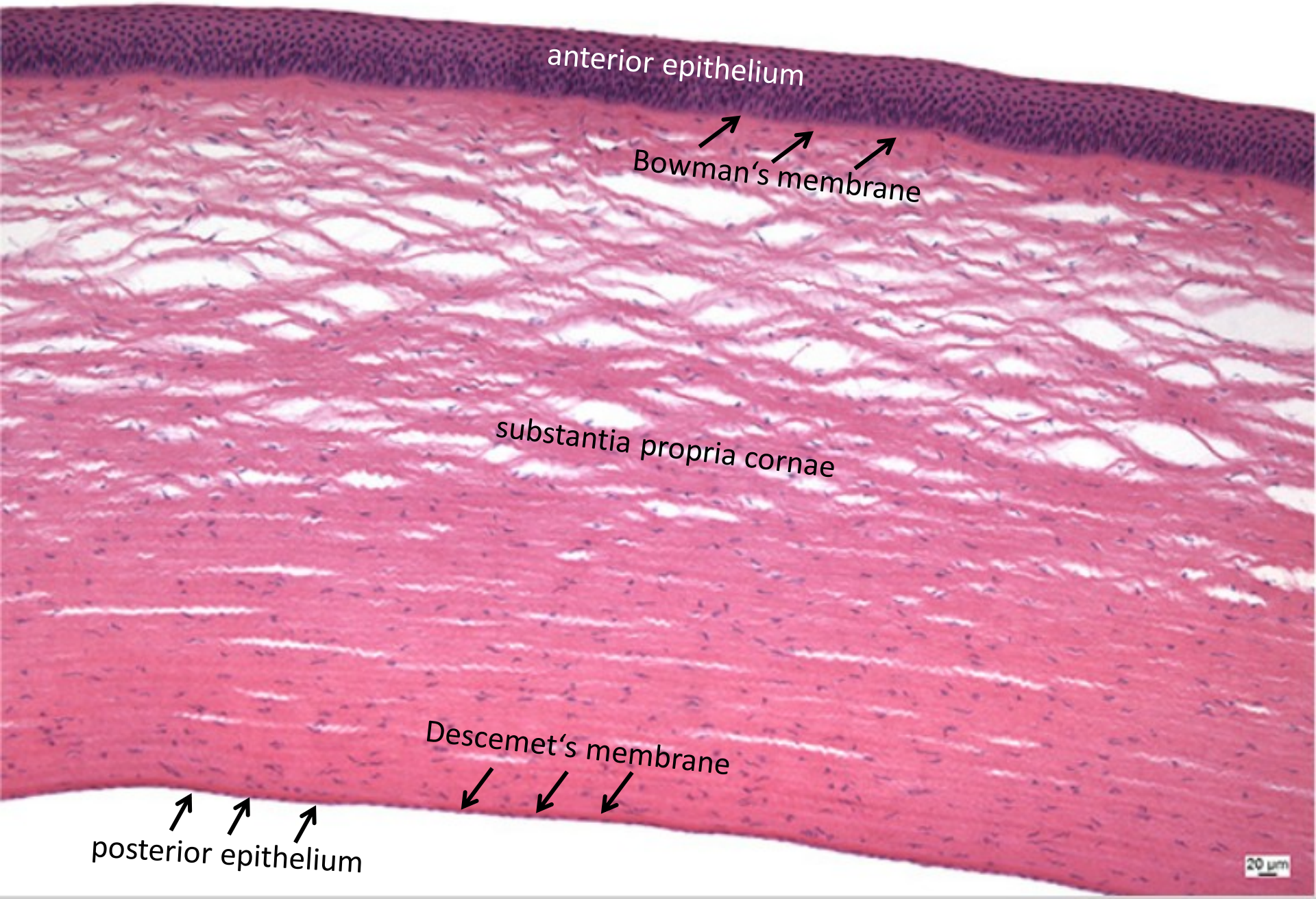
řasnaté tělísko
(corpus ciliare)

bělima (sclera)

rohovka (cornea)

↓ pars caeca retinae

Anterior segment of eye – cornea



anterior epithelium

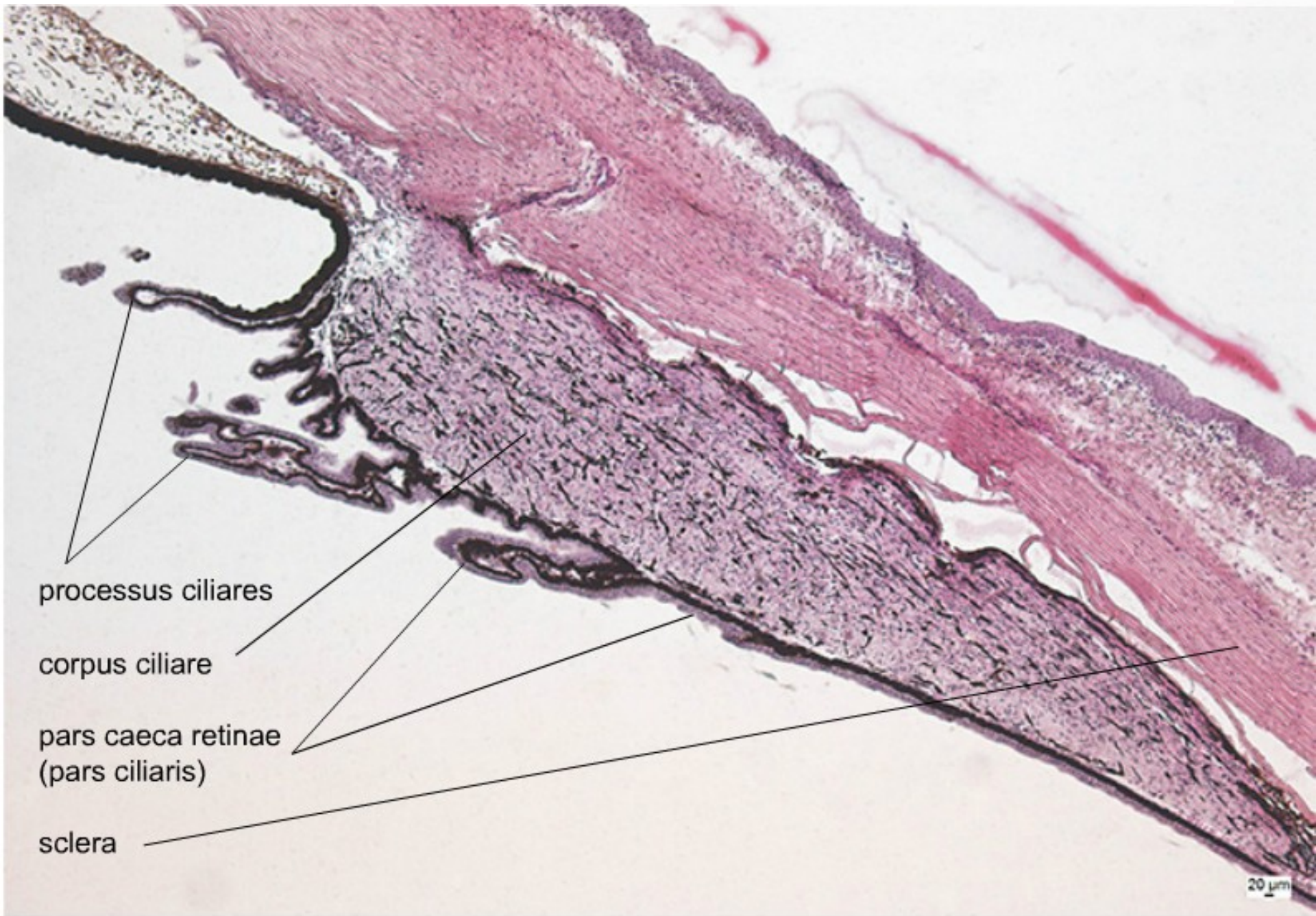
Bowman's membrane

substantia propria cornea

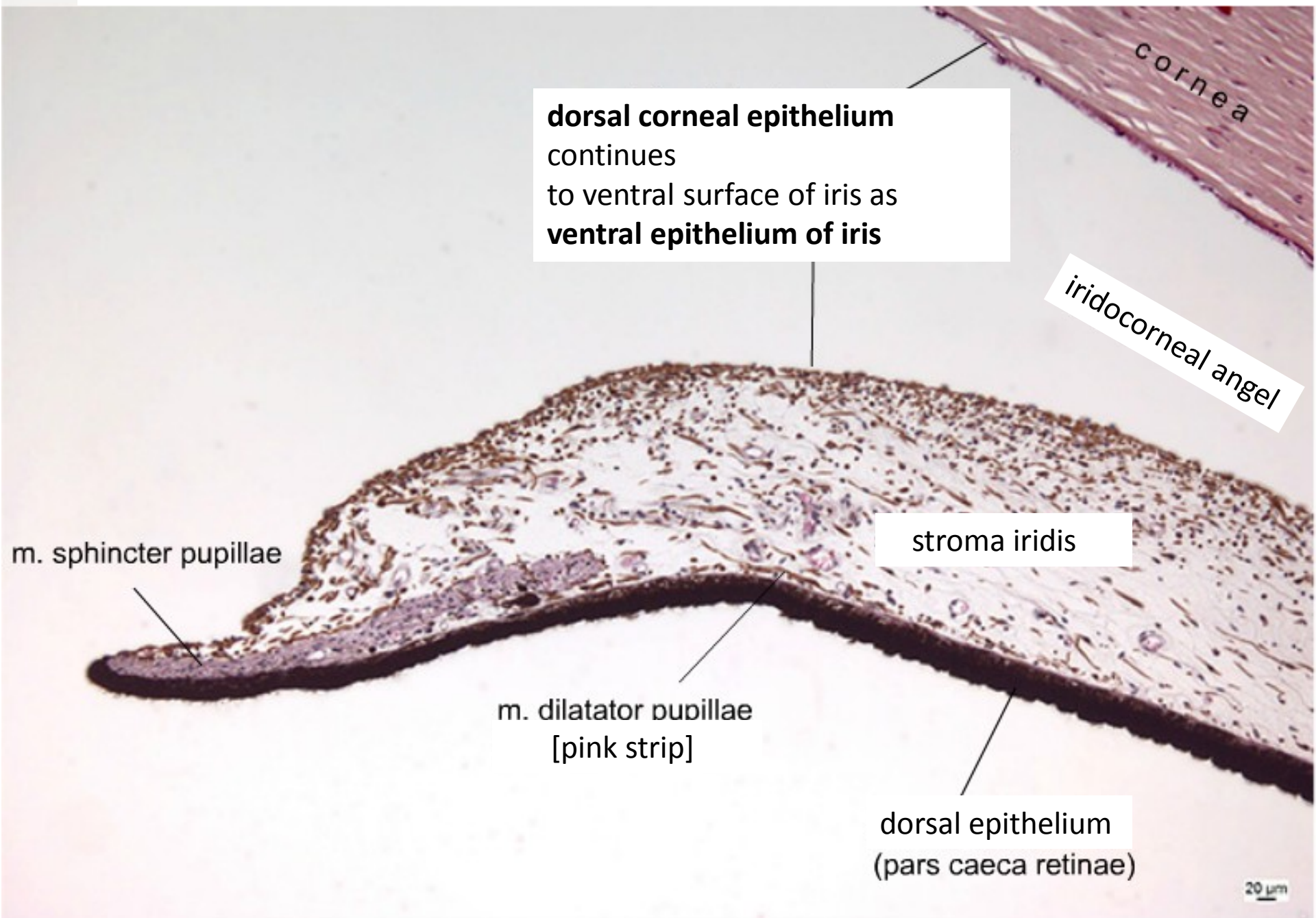
Descemet's membrane

posterior epithelium

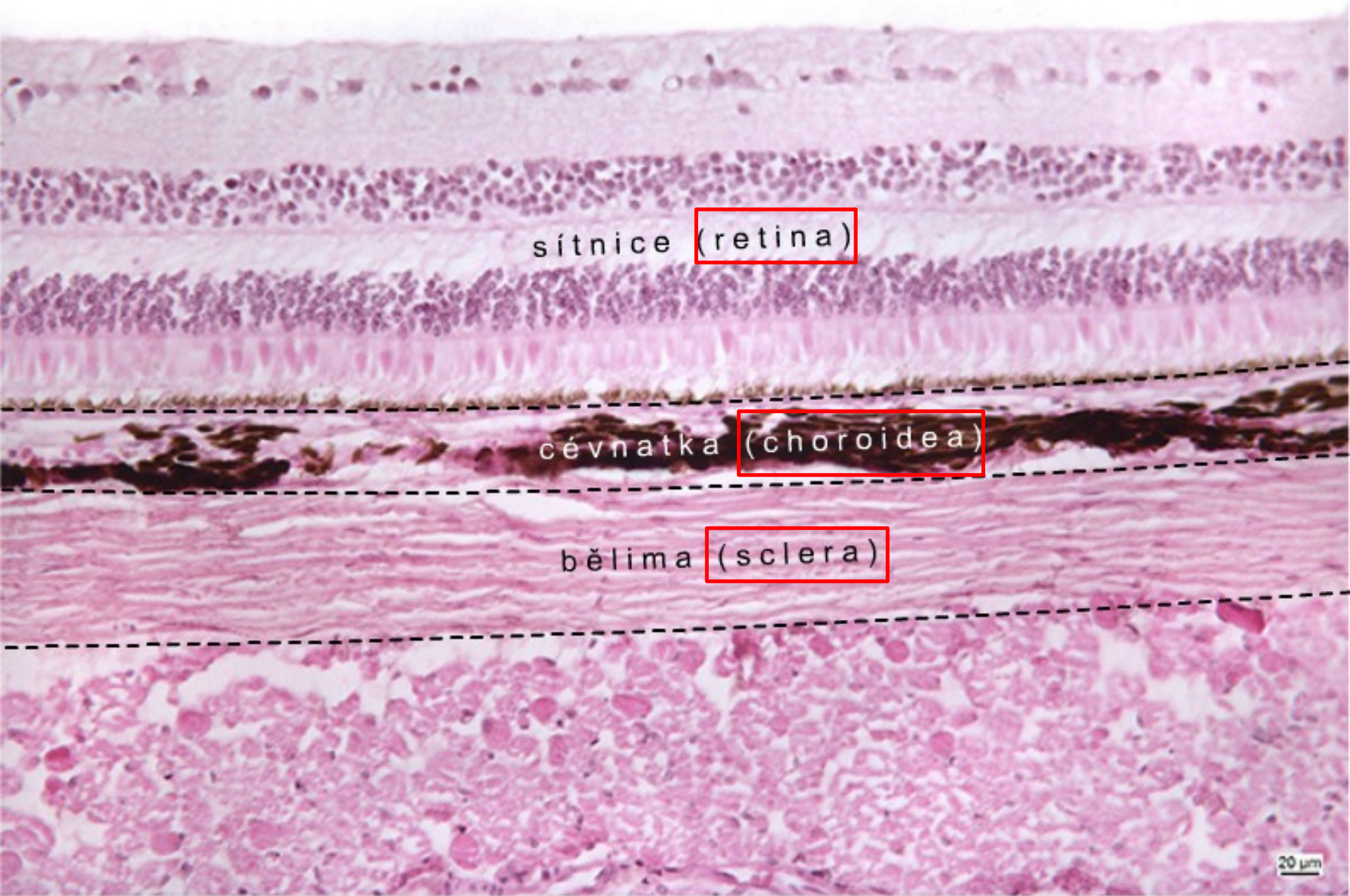
Anterior segment of eye – corpus ciliare



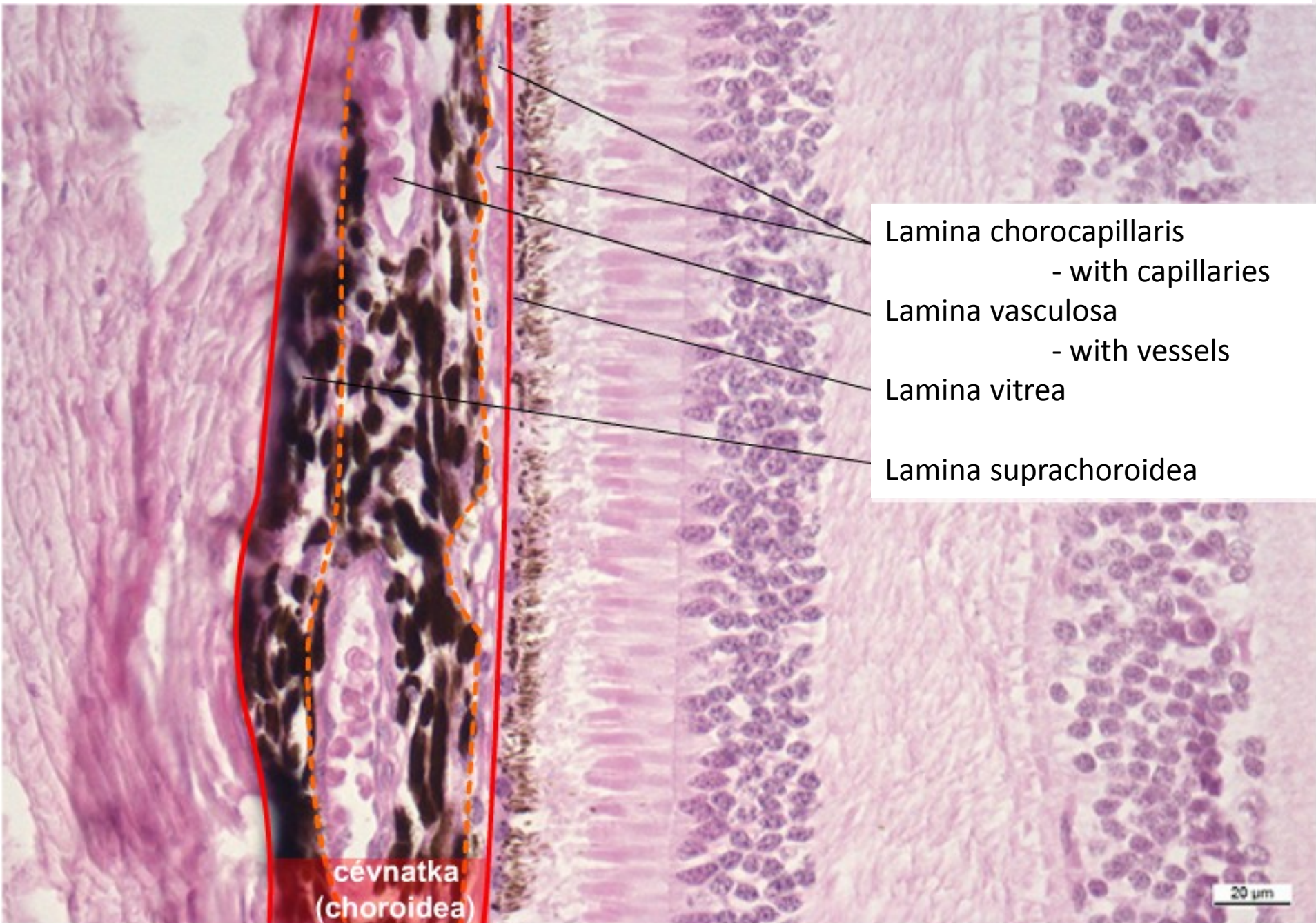
Anterior segment of eye – iris



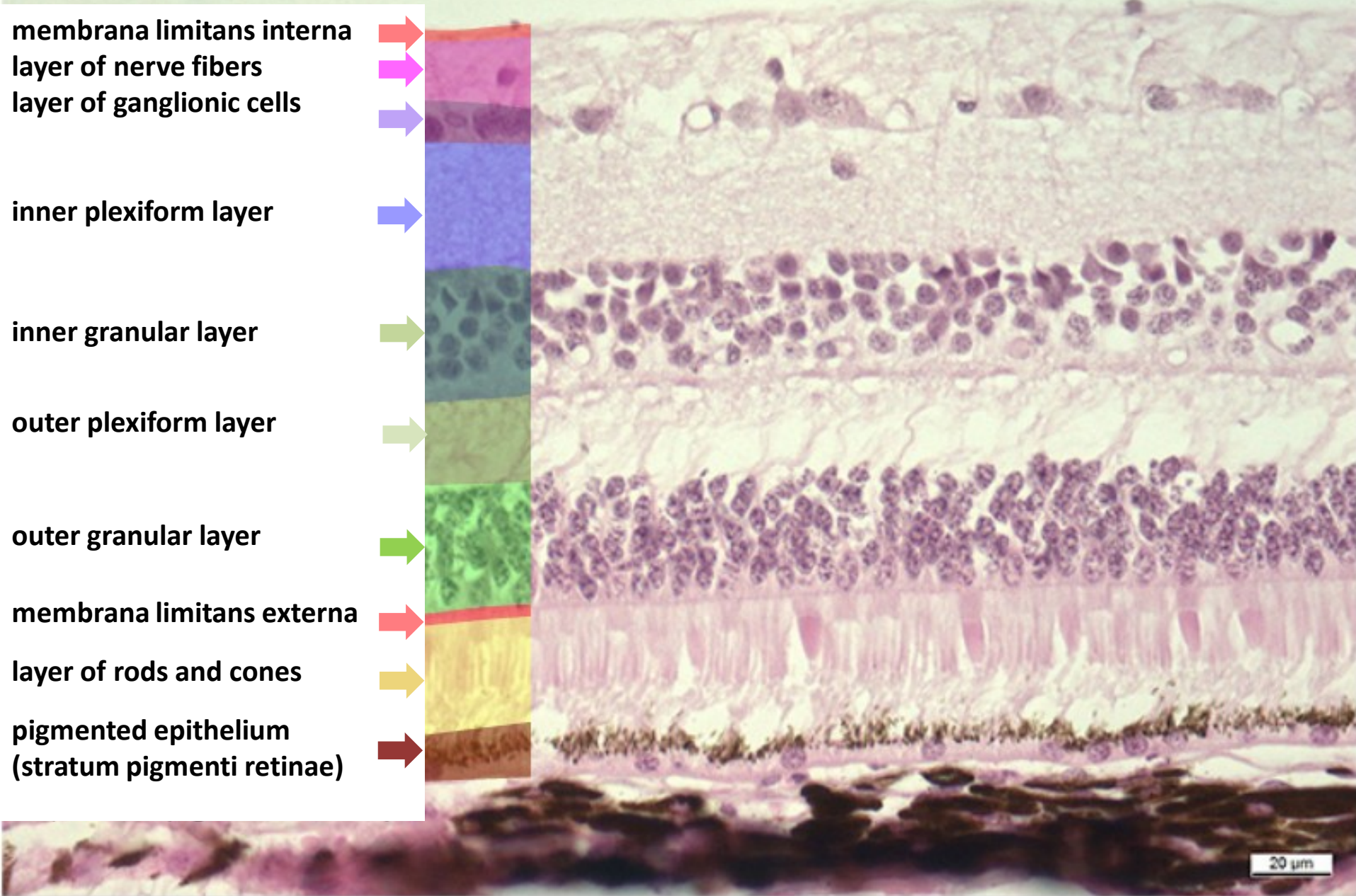
Dorsal segment of eye



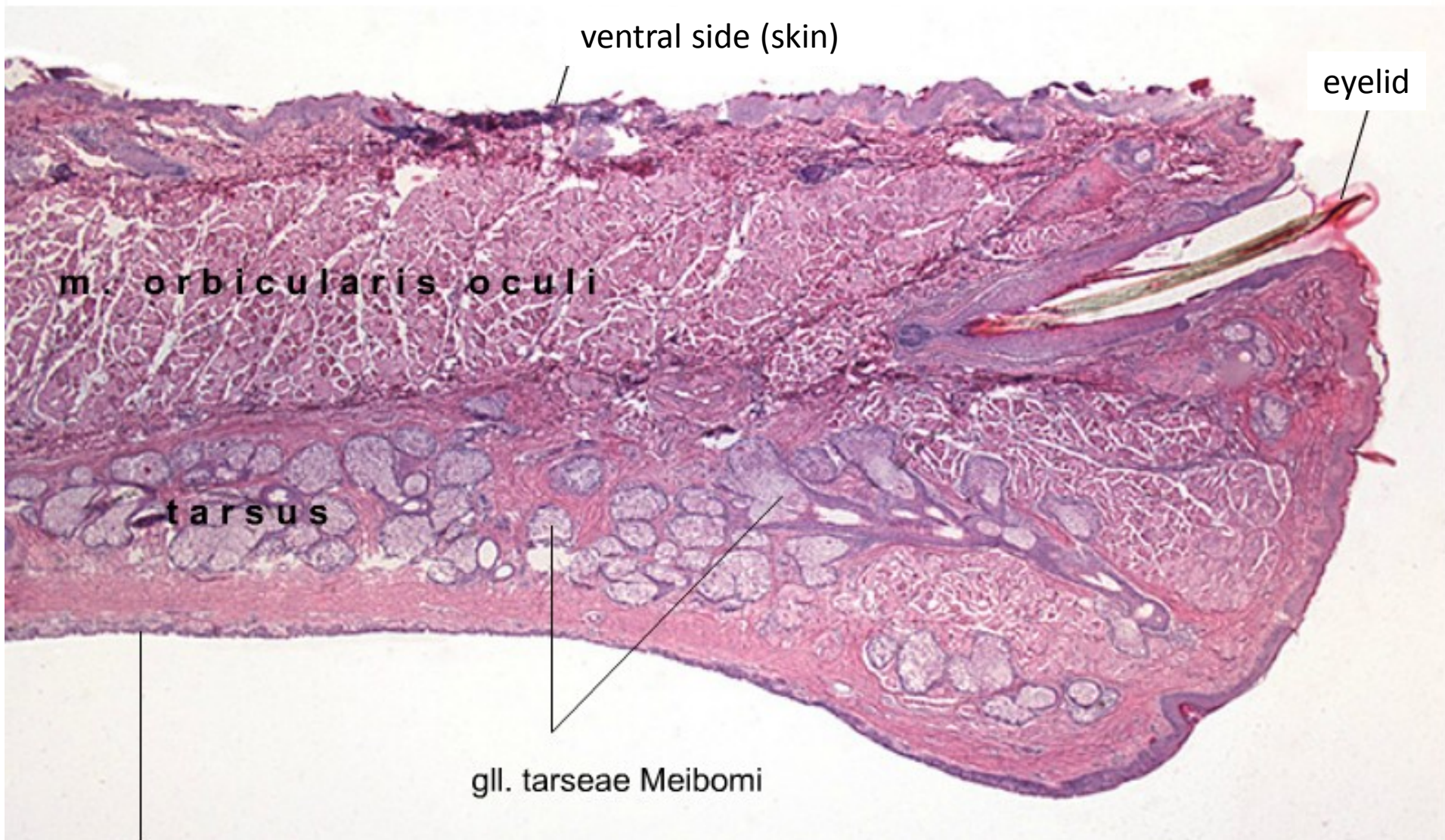
Posterior segment of eye – choroidea



Posterior segment of eye – retina



Palpebra



ventral side (skin)

eyelid

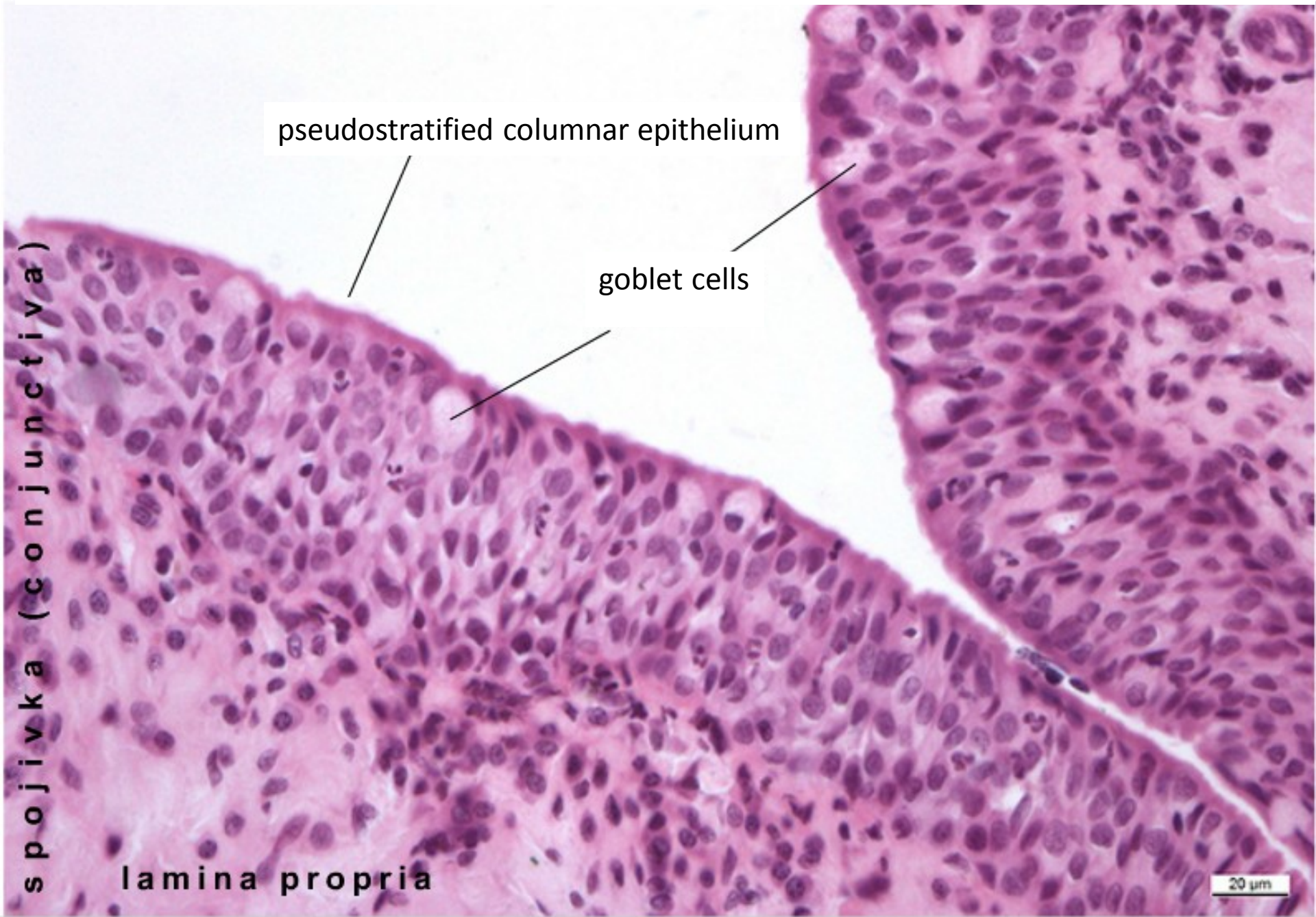
m. orbicularis oculi

tarsus

gll. tarseae Meibomi

dorsal side (conjunctiva)

Palpebra – conjunctival side



pseudostratified columnar epithelium

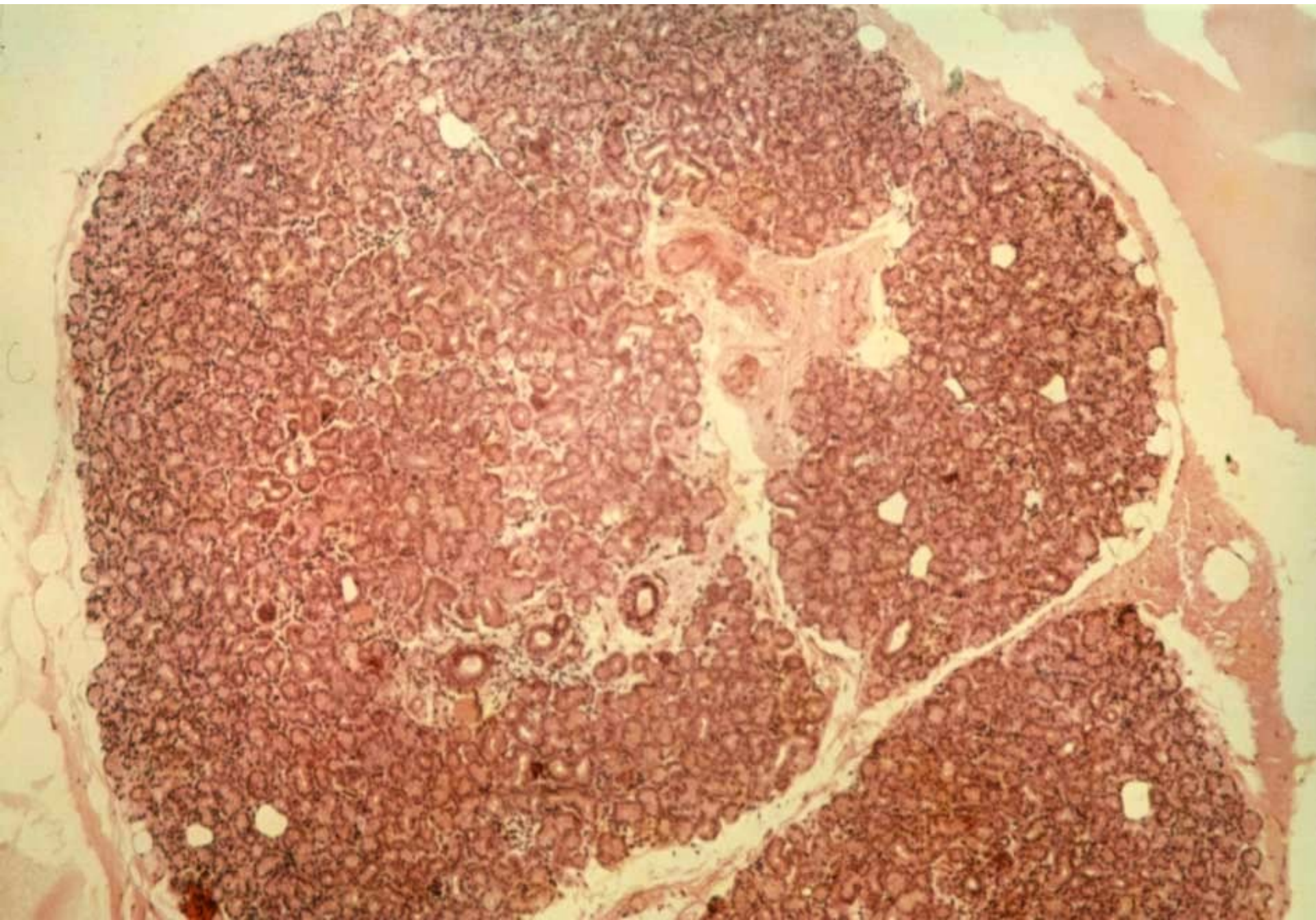
goblet cells

spojuvka (conjunctiva)

lamina propria

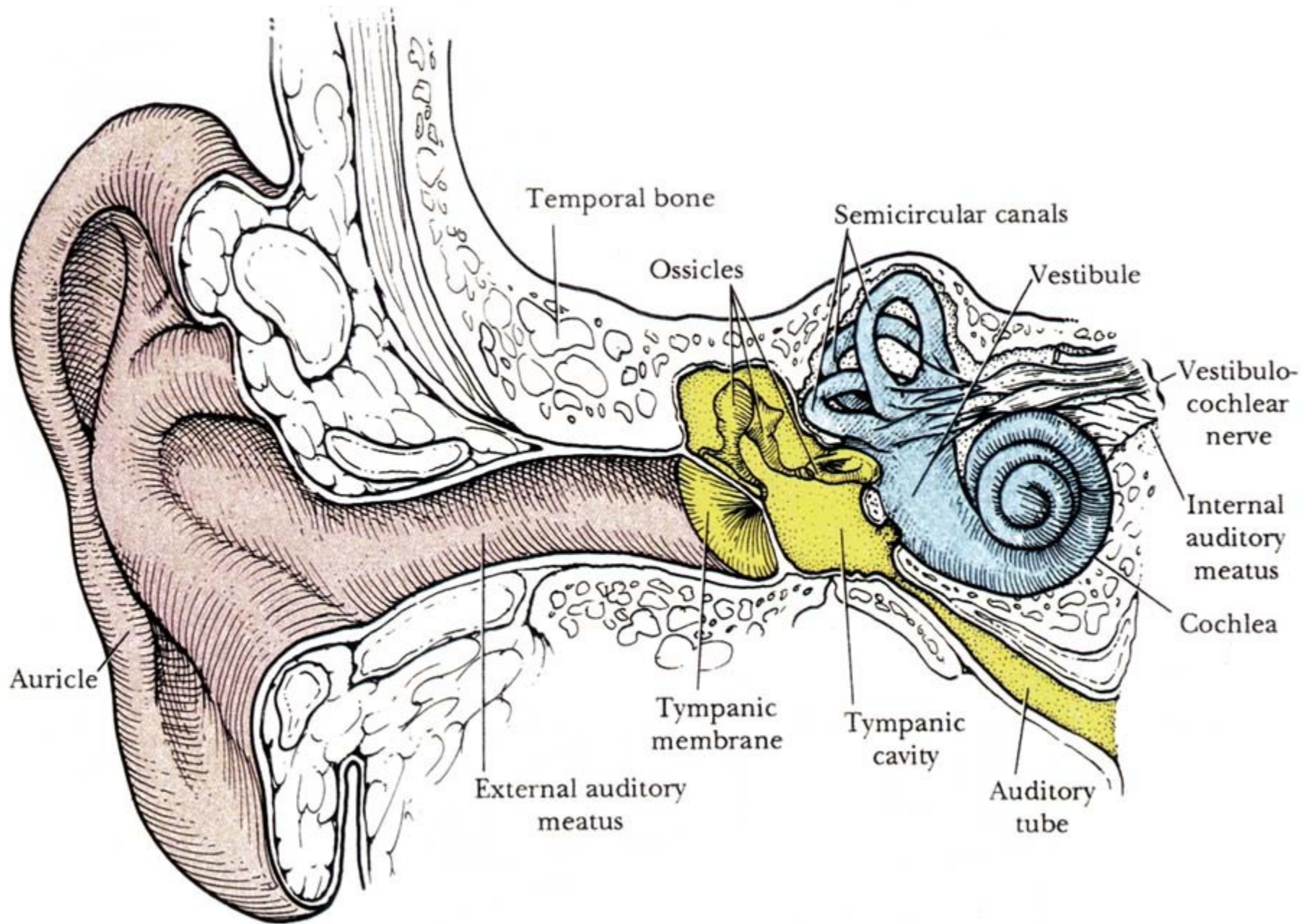
20 μm

Gl. lacrimalis



Organ of balance and hearing

- Outer ear
 - auricle (auricula)
 - auditory meatus (meatus acusticus ext.)
 - ear drum (membrana tympani)
- Middle ear
 - tympanic cavity (cavum tympani)
- Inner ear
 - sacculus – macula sacculi
 - utriculus – macula utriculi
 - ductus semicirculares – cristae ampullares
 - ductus cochlearis – organon Corti



Inner ear

(in pyramid of *ossis petrosus ossis temporalis*)

Bony labyrinth

- 1) vestibulum
- 2) canales semicirculares
- 3) cochlea

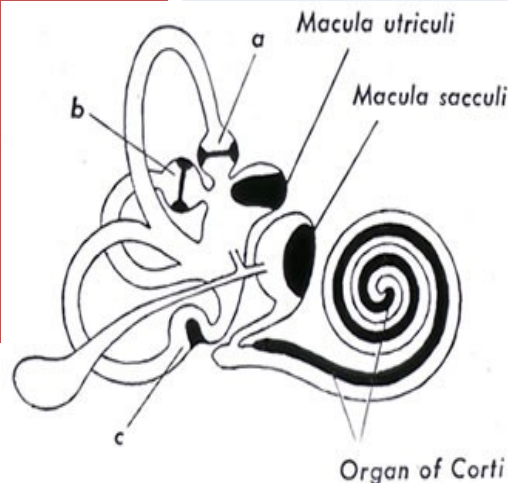
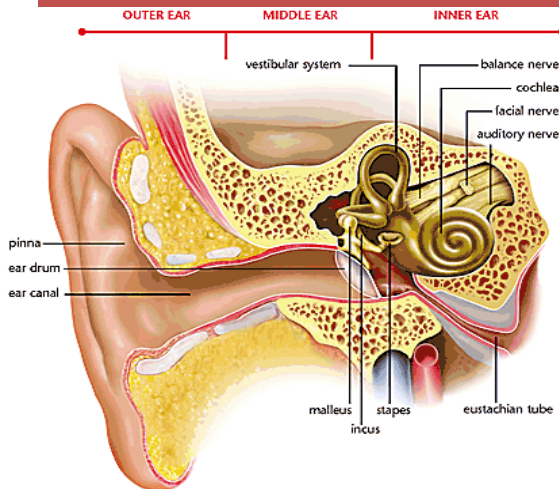
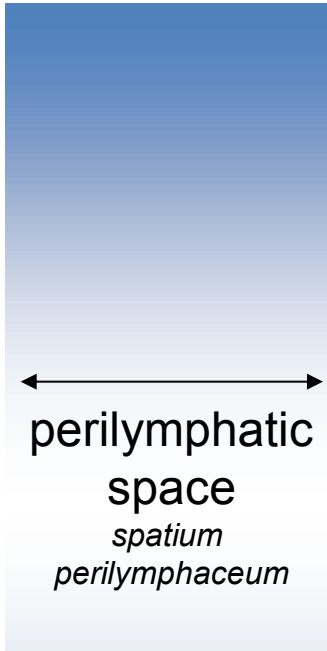
Membranous labyrinth

pars statica (1, 2)

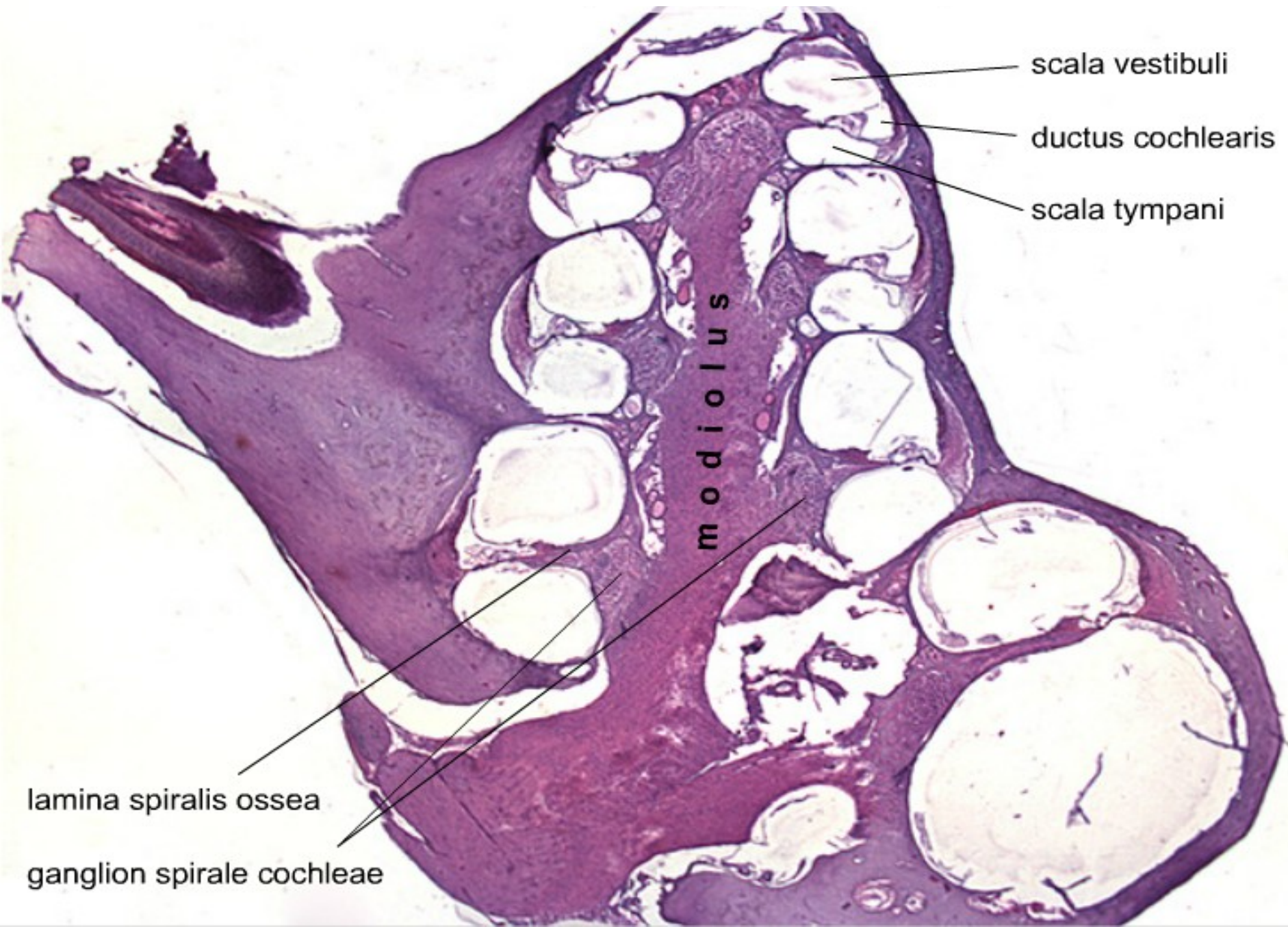
pars akustica (3)

- 1) sacculus
utriculus
saccus endolymphaticus
- 2) ductus semicirculares
- 3) ductus cochlearis

endolymph



Cochlea



scala vestibuli

ductus cochlearis

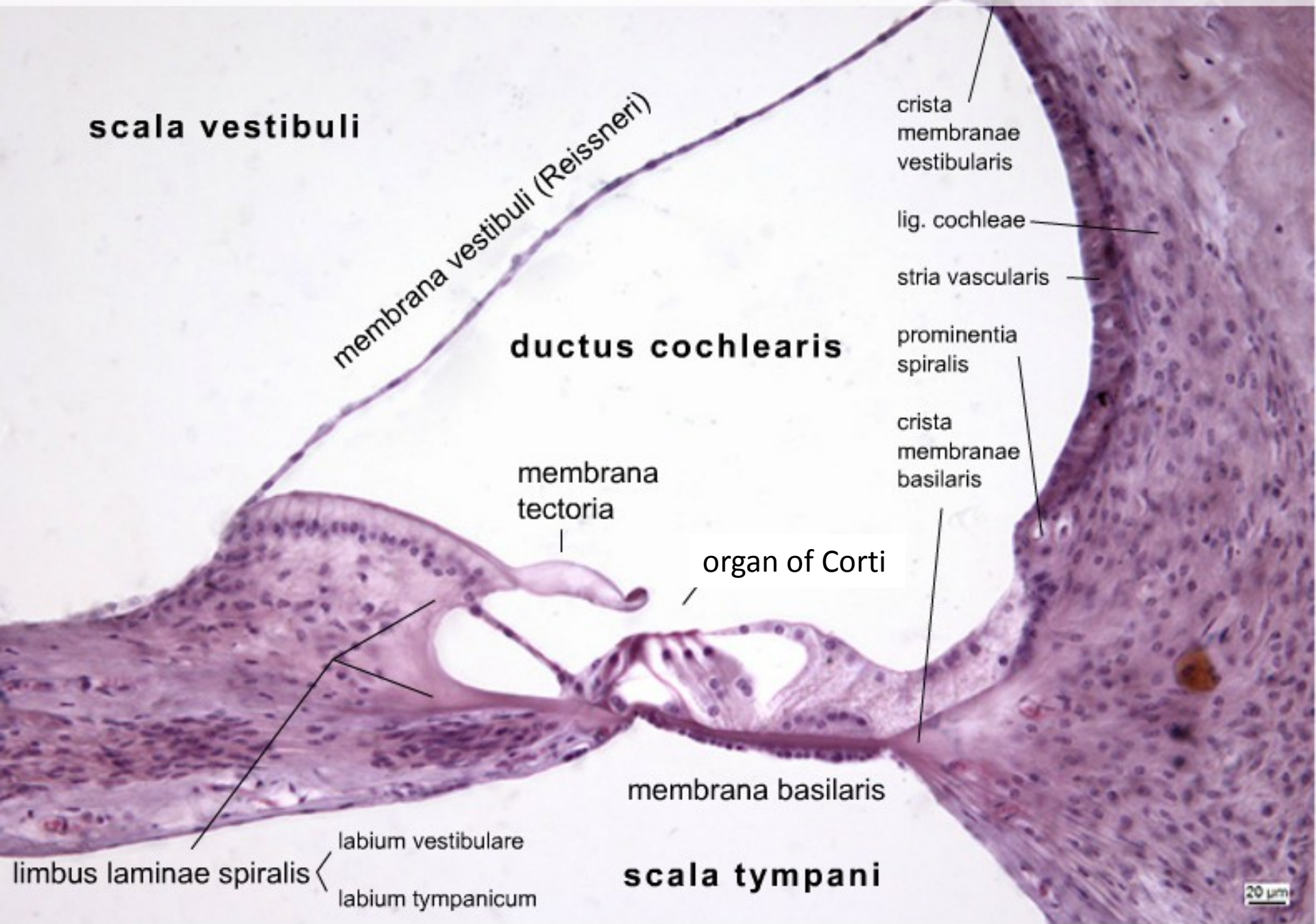
scala tympani

m o d i o l u s

lamina spiralis ossea

ganglion spirale cochleae

Cochlea – ductus cochlearis, (HE), objektiv 20×



scala vestibuli

membrana vestibuli (Reissneri)

ductus cochlearis

crista
membranae
vestibularis

lig. cochleae

stria vascularis

prominentia
spiralis

crista
membranae
basilaris

membrana
tectoria

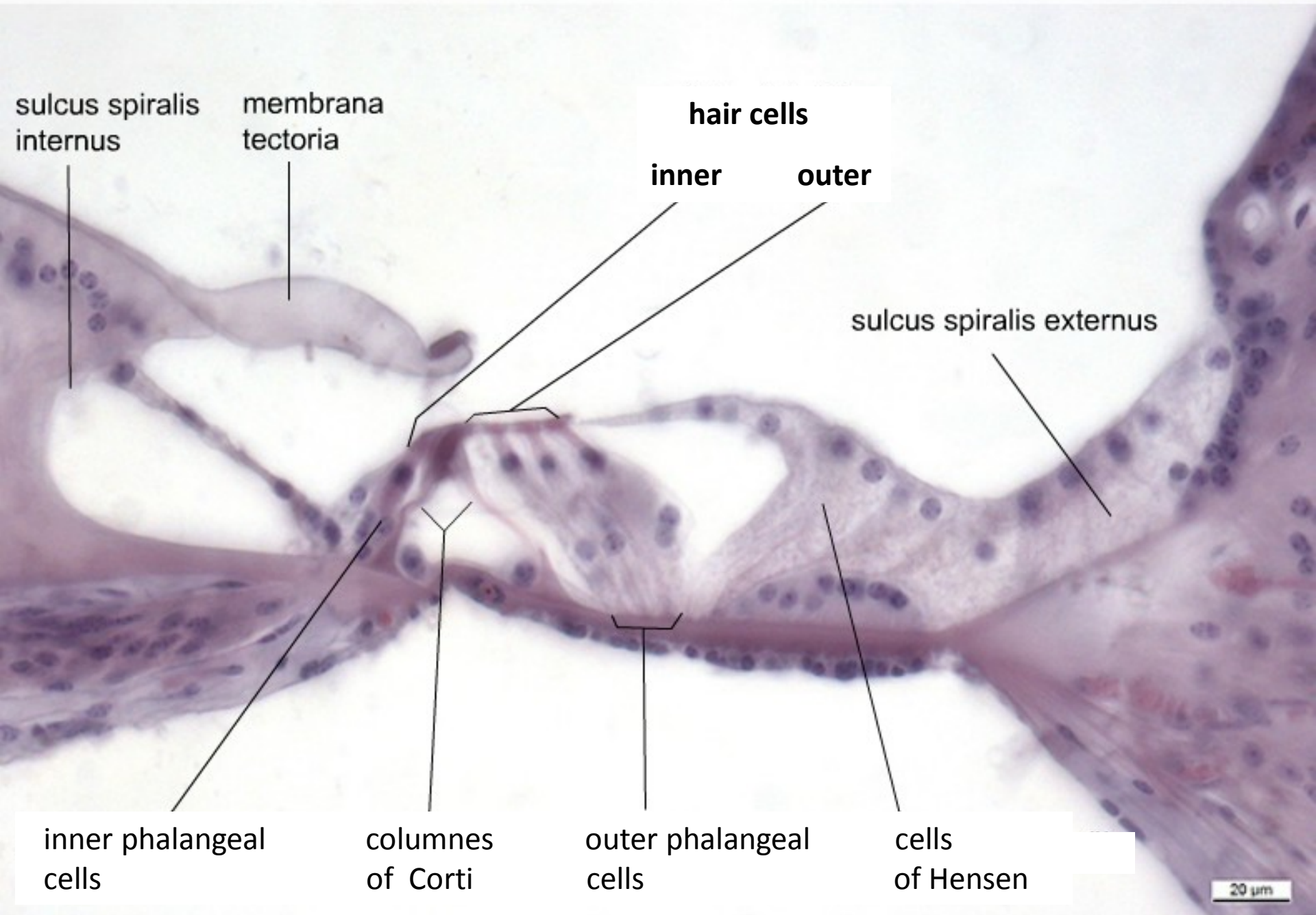
organ of Corti

membrana basilaris

scala tympani

limbus laminae spiralis $\left\{ \begin{array}{l} \text{labium vestibulare} \\ \text{labium tympanicum} \end{array} \right.$

Cochlea – organ of Corti



Auricle (auricula)

Elastic cartilage

Ear lobule

20 μ m





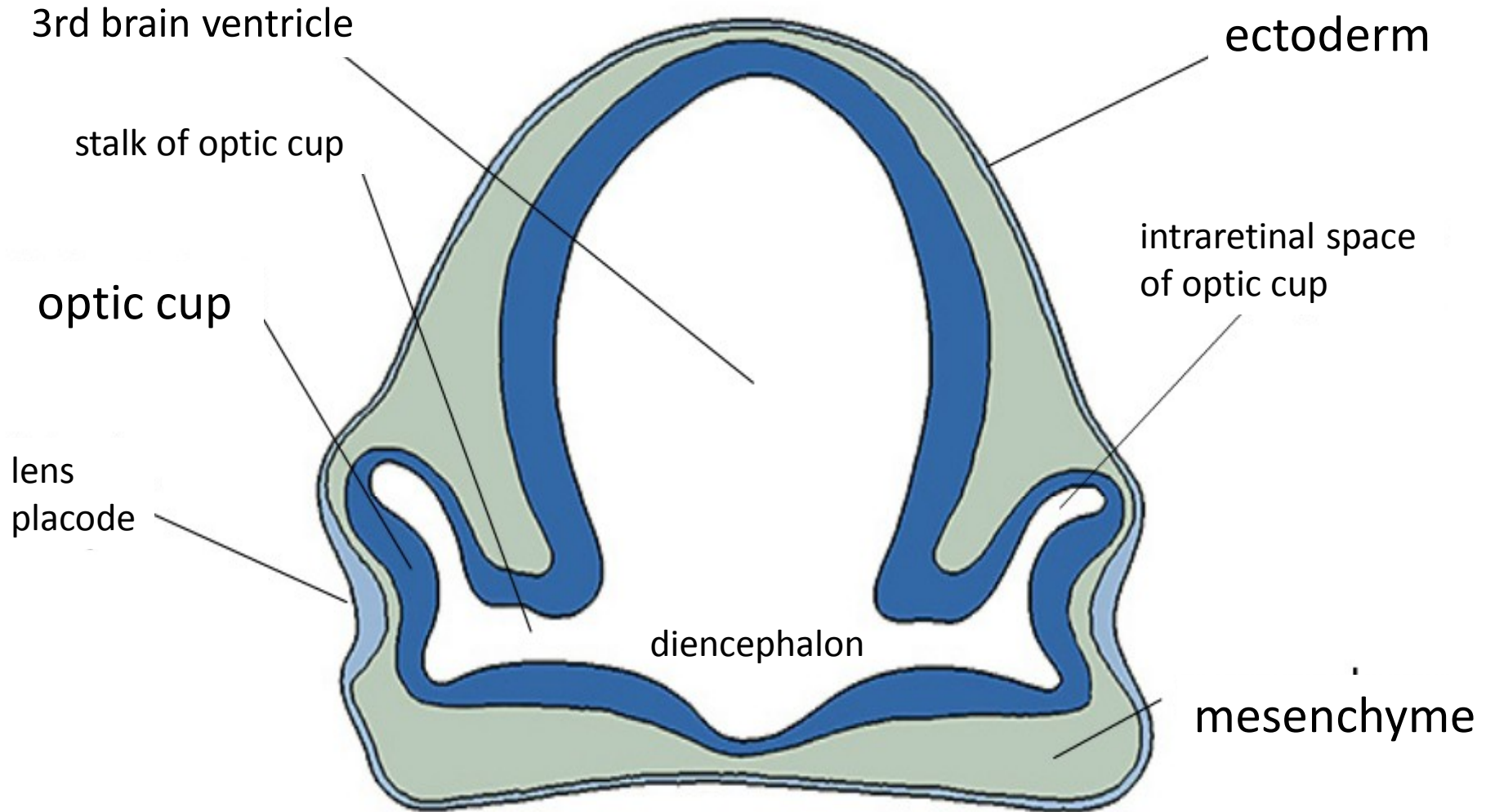
SENSORY ORGANS



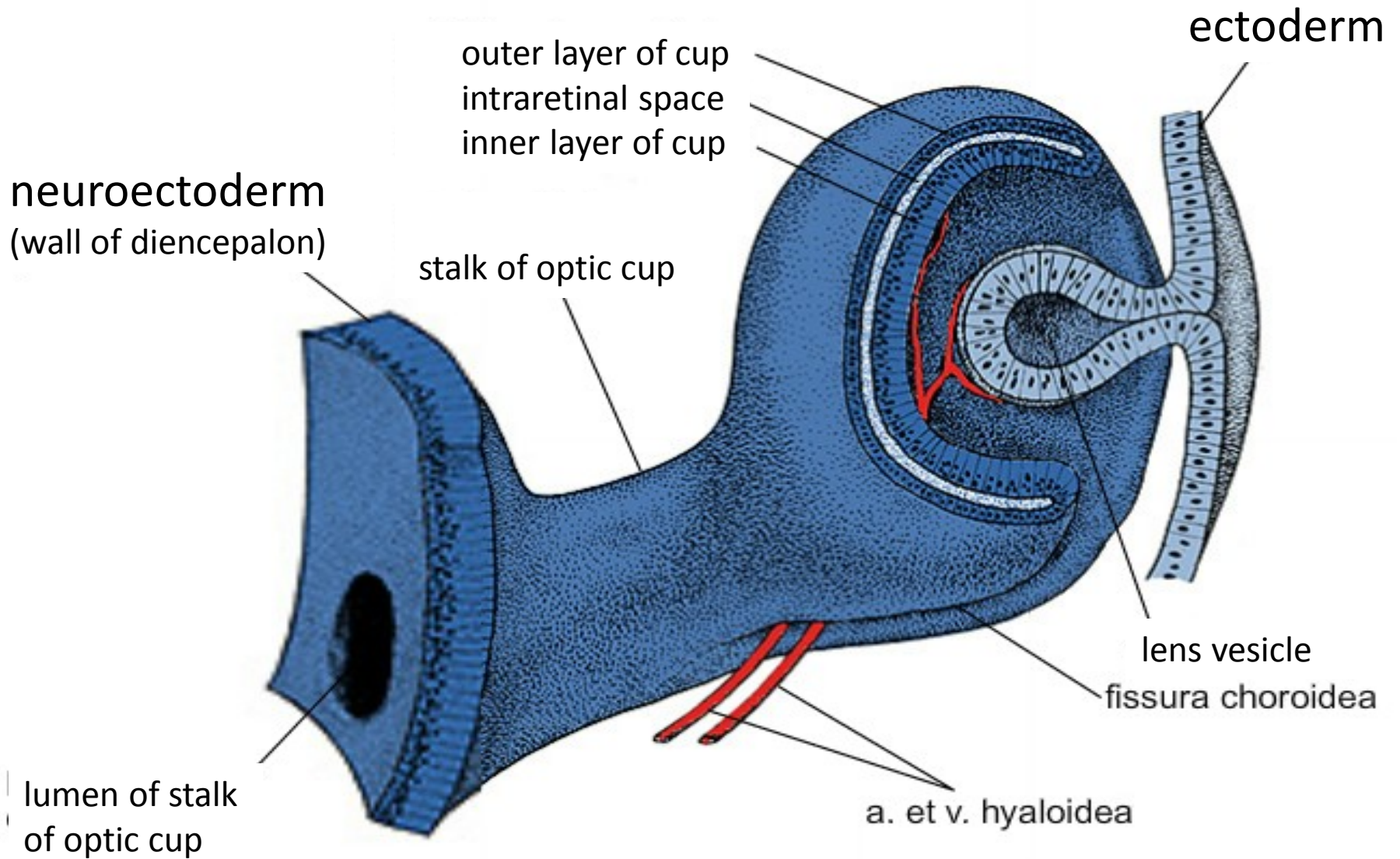
Slides:

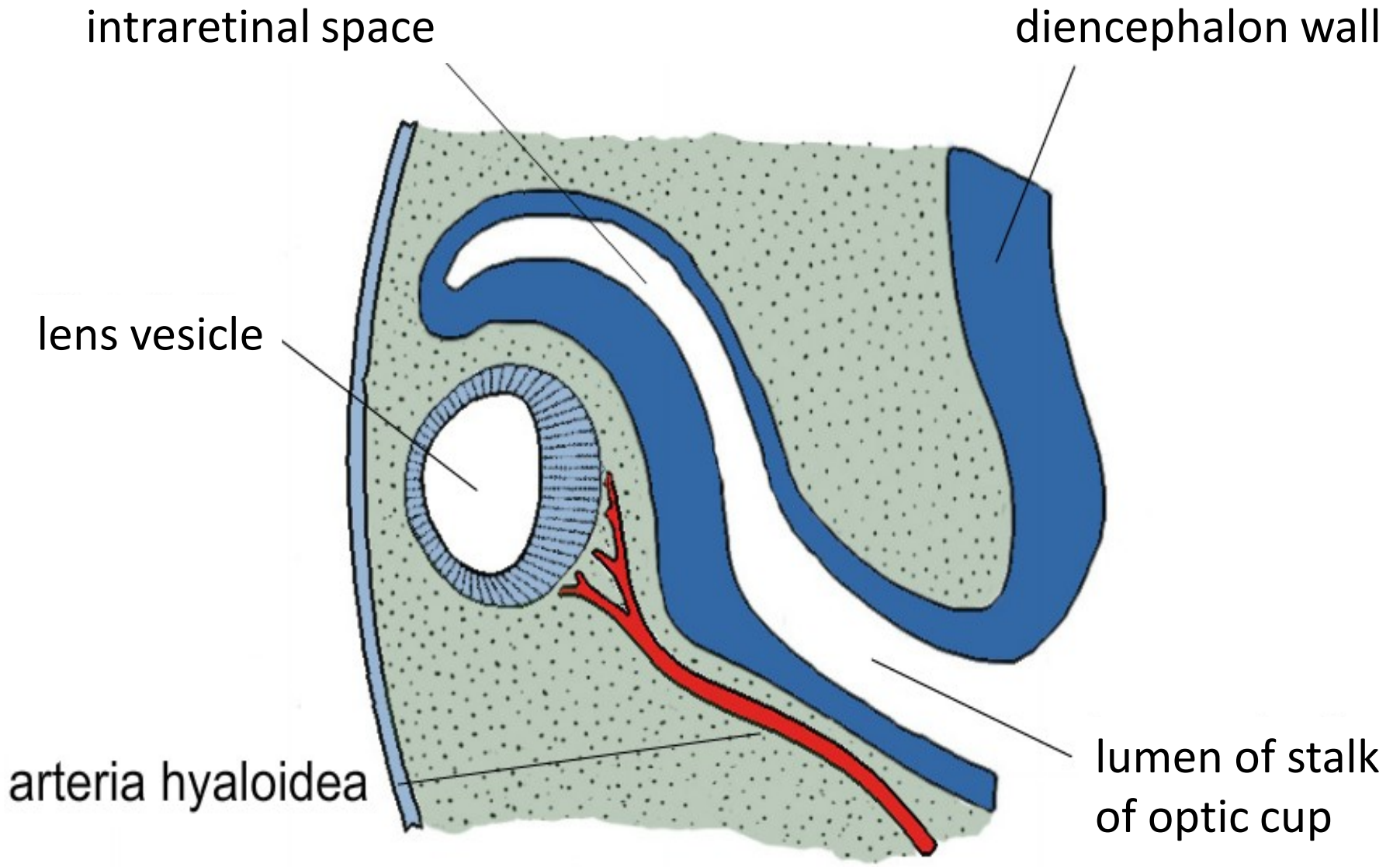
- 88. Anterior segment of the eye
- 89. Posterior segment of the eye
- 90. Fasciculus opticus
- 91. Palpebra
- 92. Gl. lacrimalis
- 93. Ductus cochlearis
- 94. Auricula

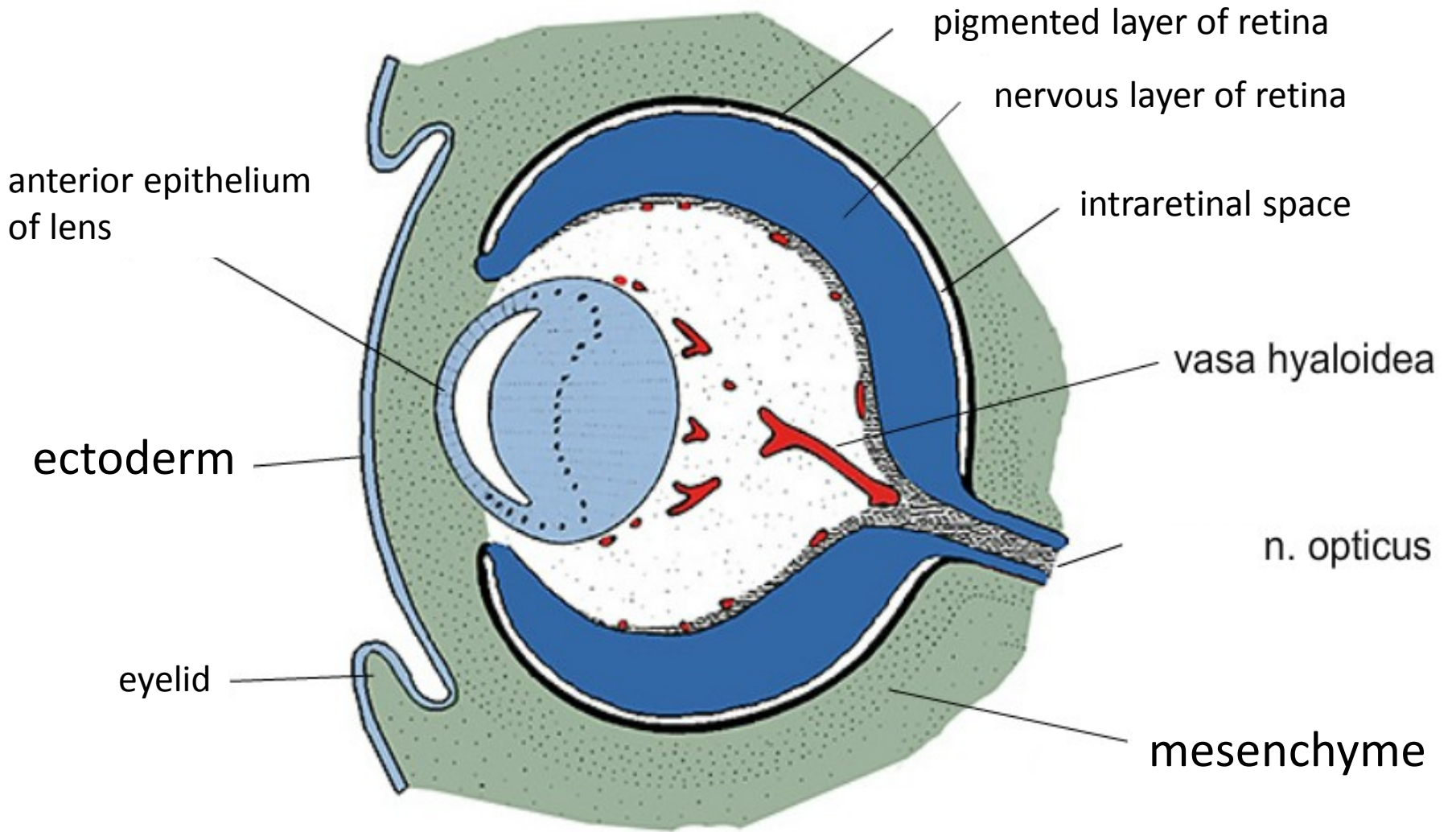
Development of eye

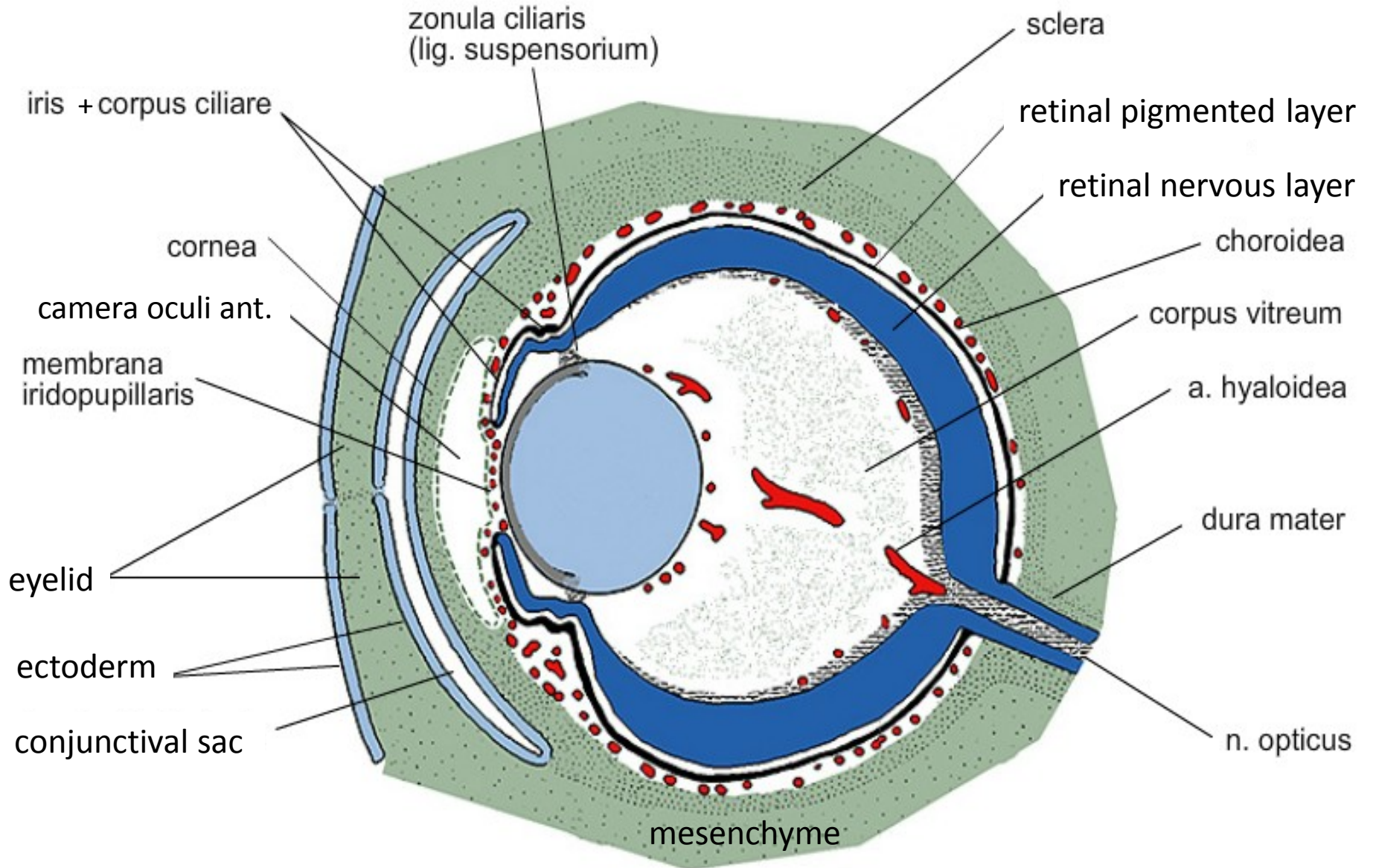


Development of optic cup and lens

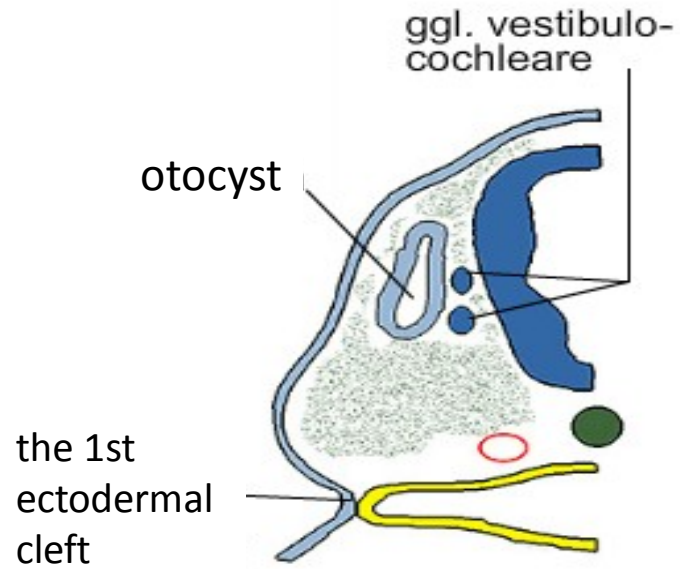
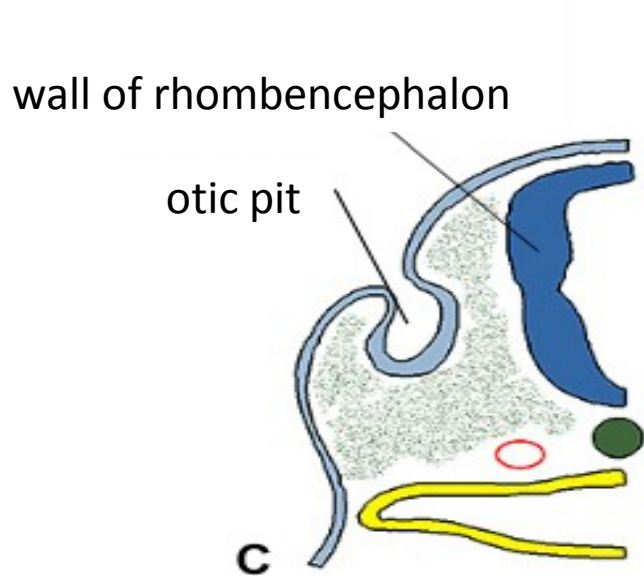
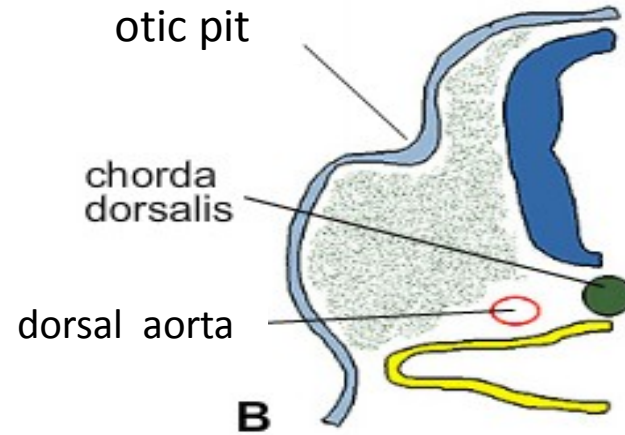
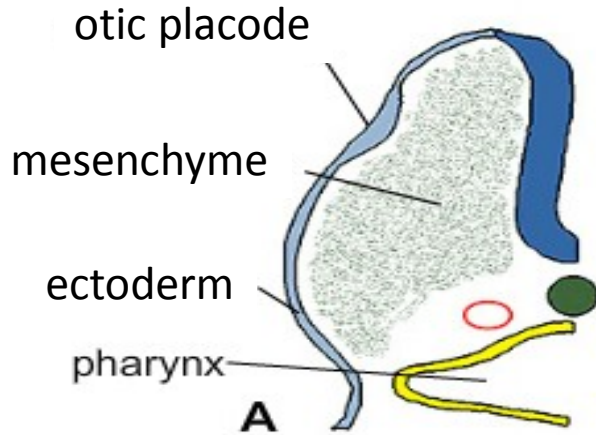




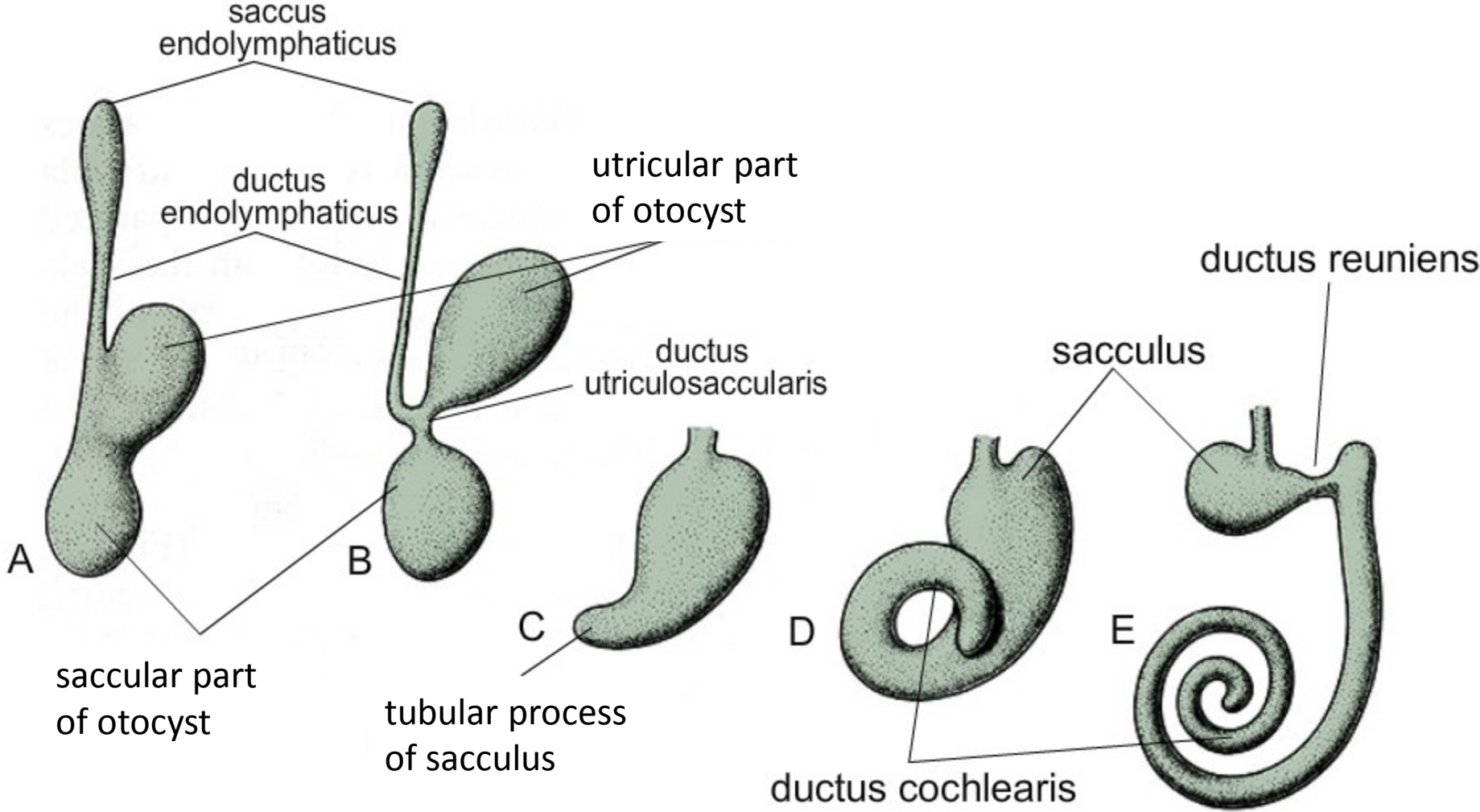




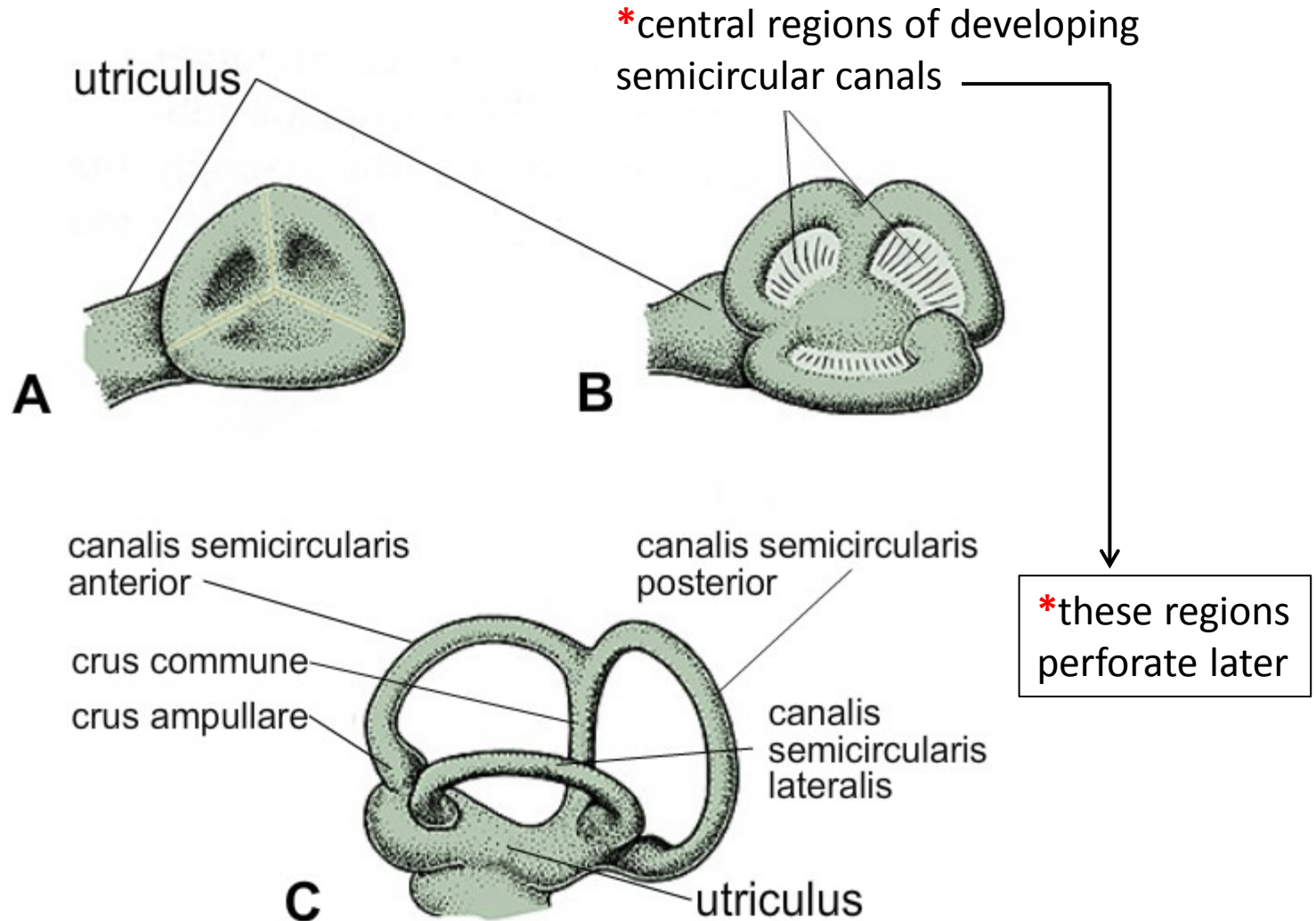
Development of inner ear



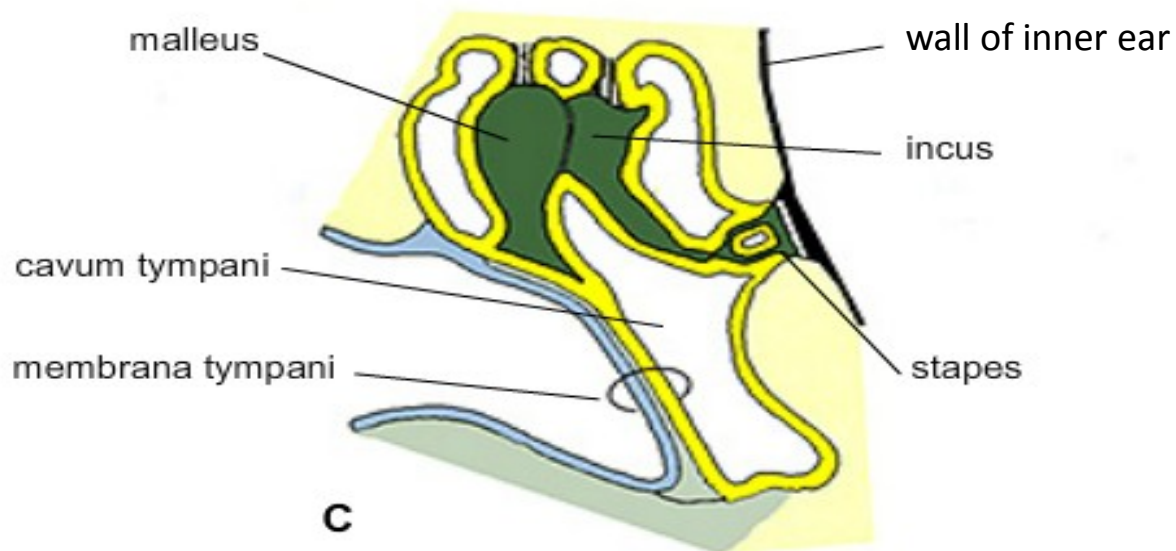
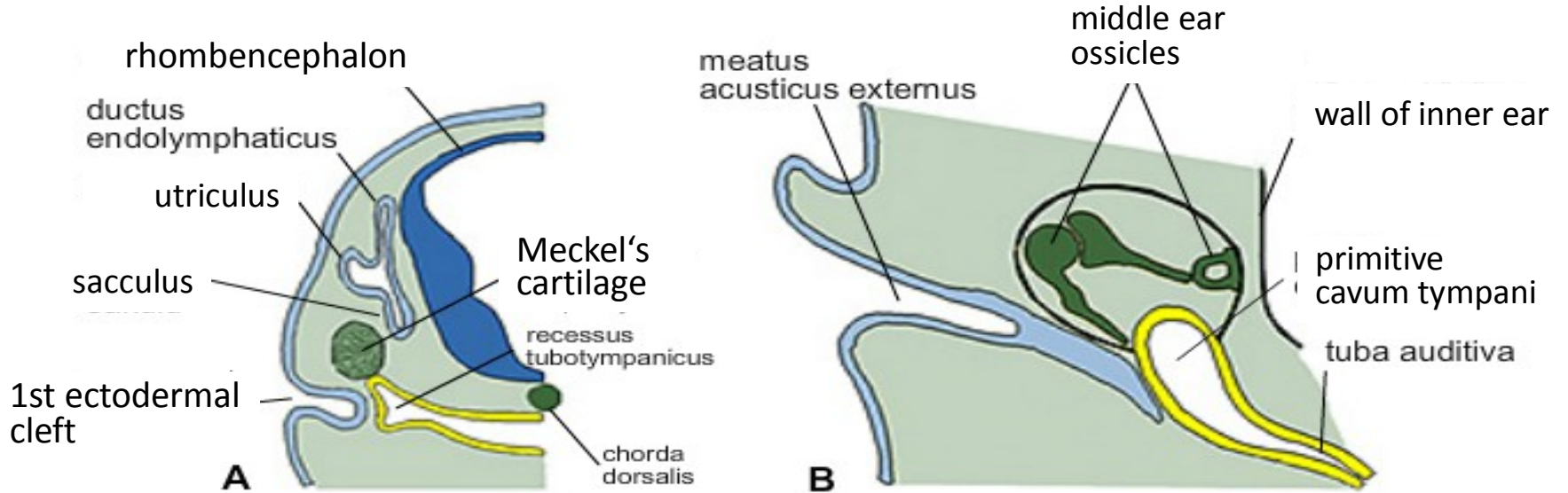
Development of membranous labyrinth



Development of semicircular canals



Development of middle ear



Development of external ear

