



# INTEGUMENTARY SYSTEM

- Skin
  - thin type
  - thick type
  
- Keratinized adnexa
  - hair
  - nail
  
- Nonkeratinized adnexa
  - small sweat glands
  - great sweat glands
  - sebaceous glands
  - mammary glands

**Skin (integumentum)**

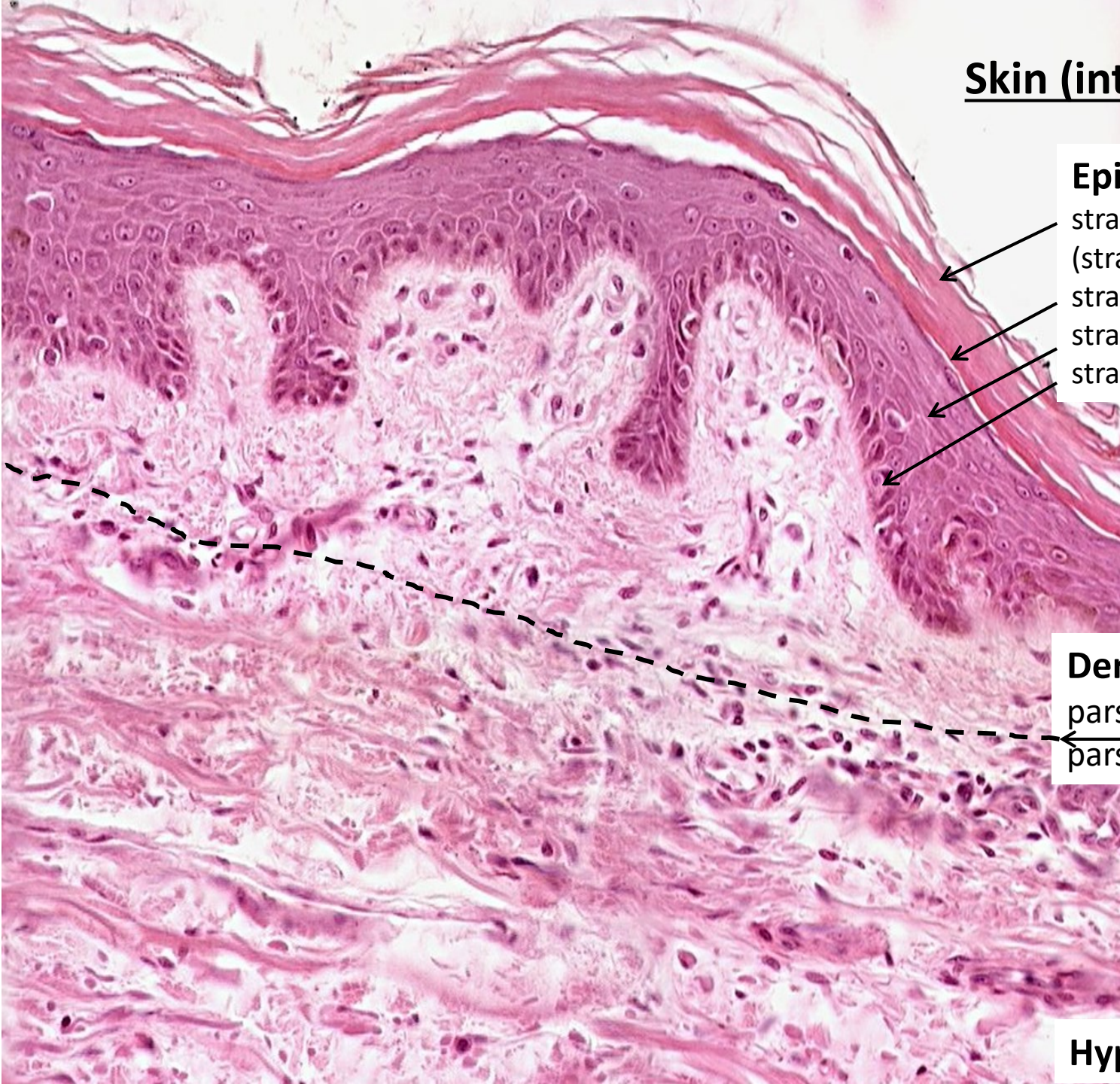
**Epidermis**

- stratum corneum proprium (stratum lucidum)
- stratum granulosum
- stratum spinosum
- stratum basale

**Dermis (corium)**

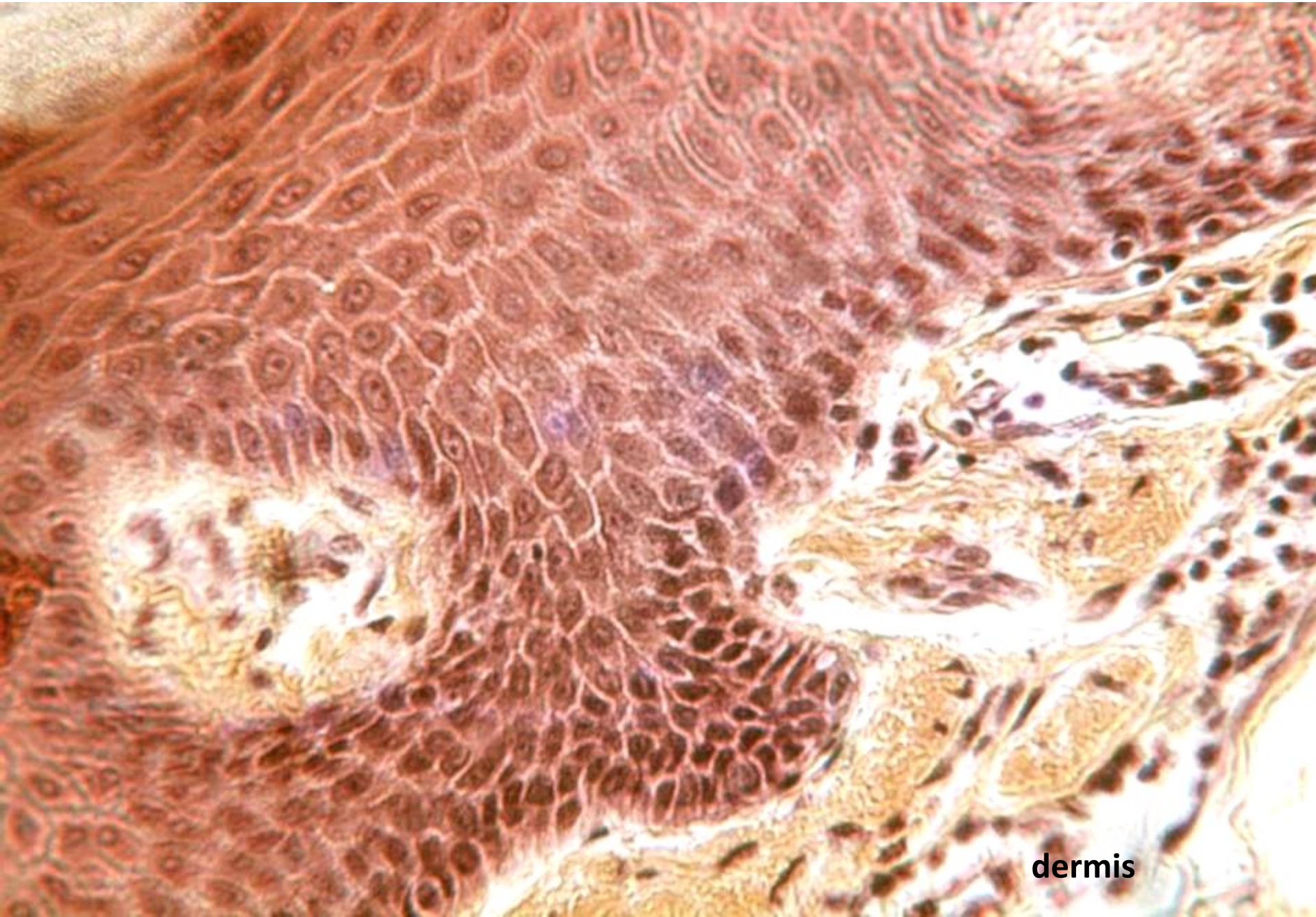
- pars papillaris
- pars reticularis

**Hypodermis)**

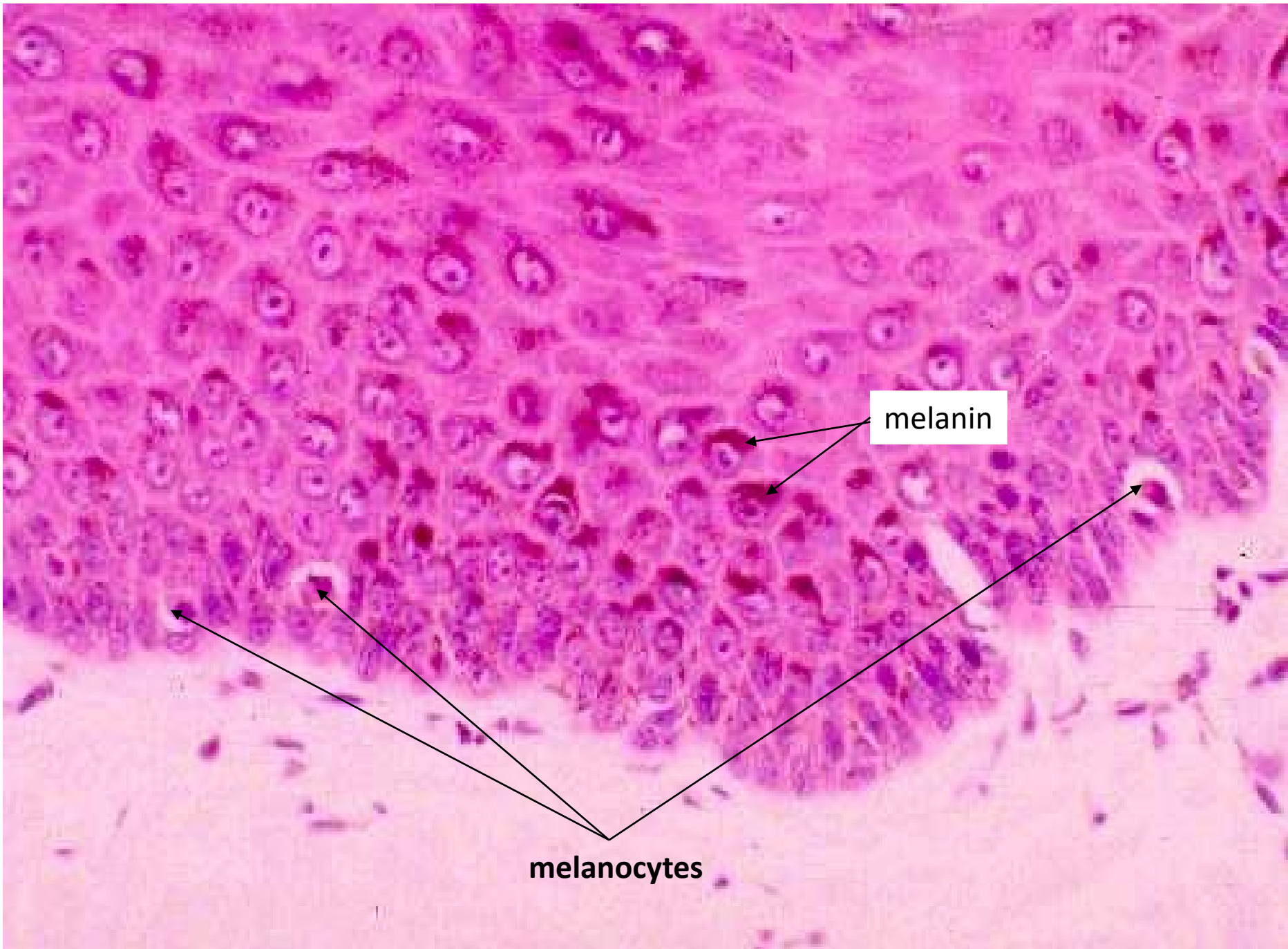




**Epidermis**



**dermis**

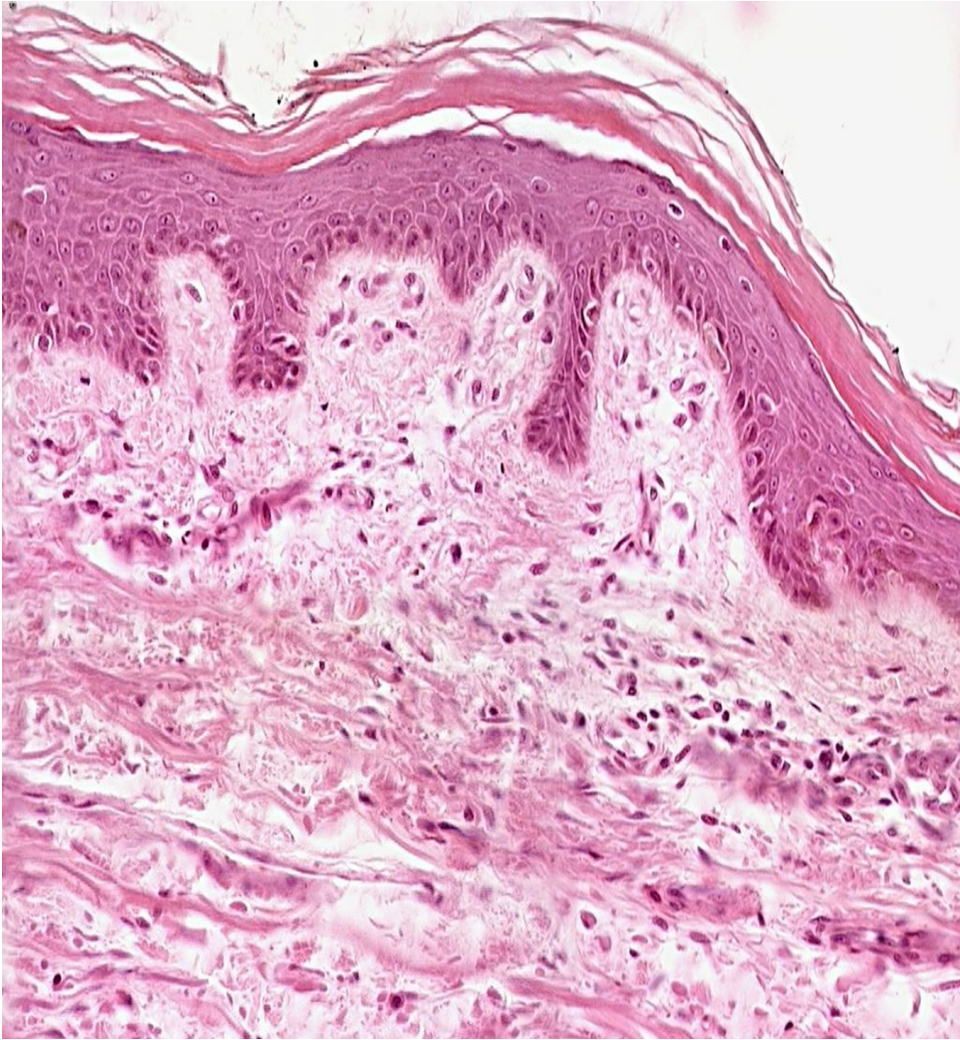


melanin

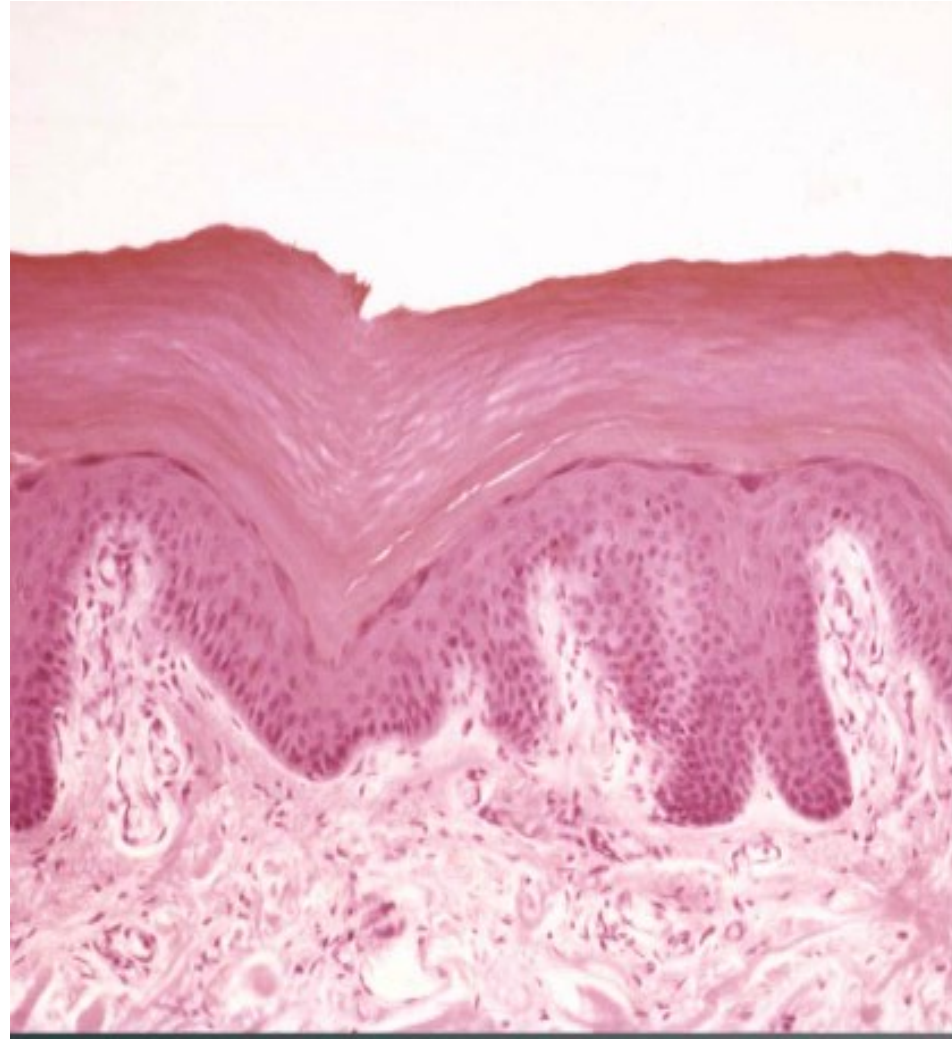
melanocytes



**Thin skin**



**Thick skin**

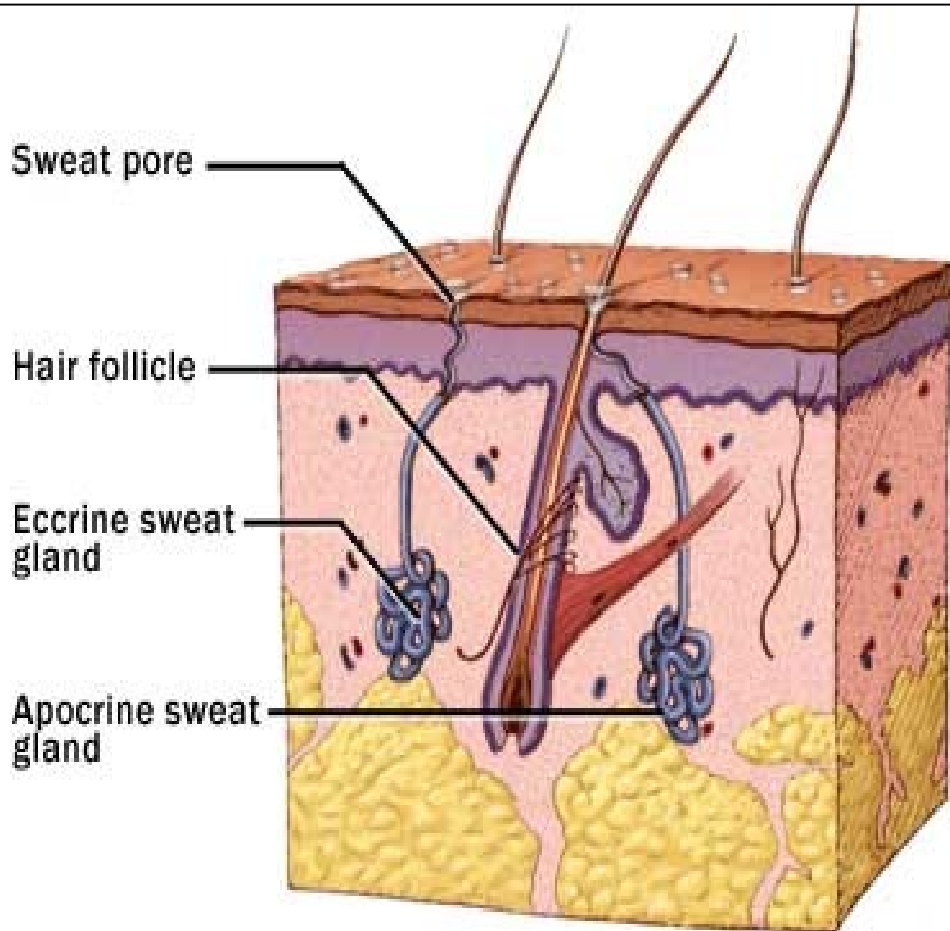


Occurrence: palma manus, planta pedis

# Skin glands

small sweat (eccrine)  
large sweat (apocrine)  
sebaceous (holocrine)

} Gll. sudoriferae  
Gll. sebaceae



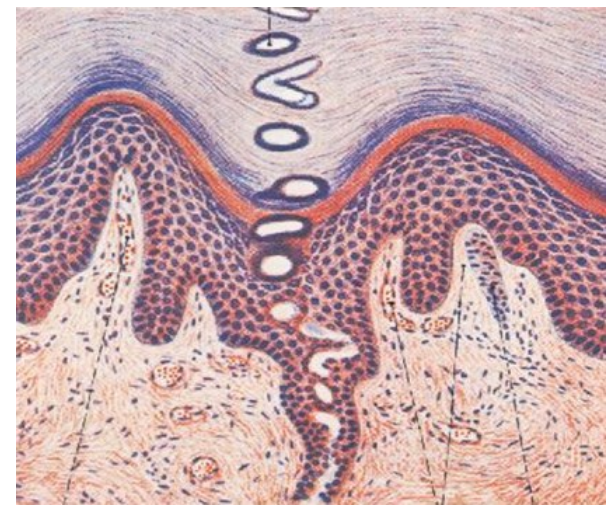
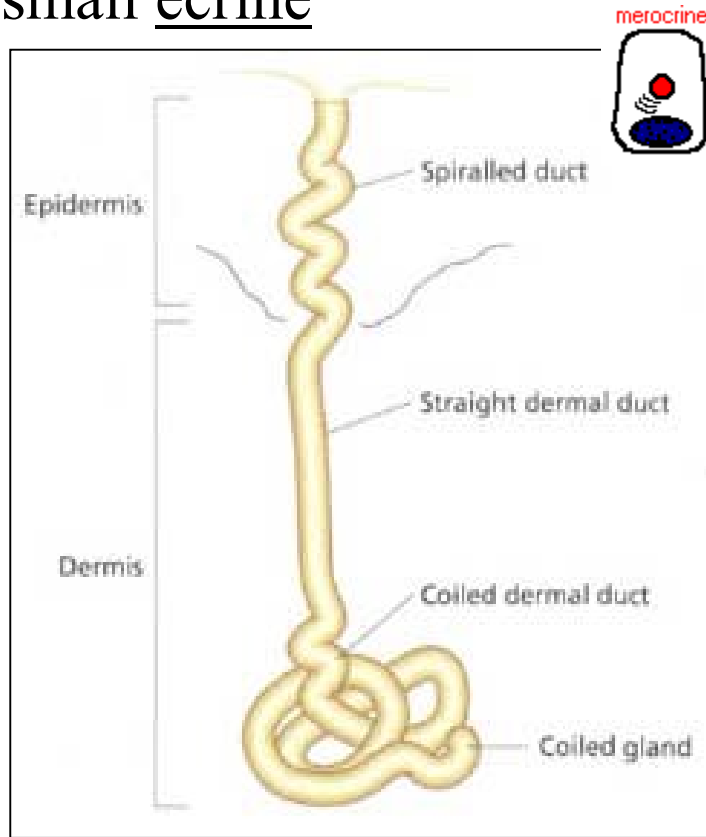
## General structure of glands:

- excretory portion (ducts)
- secretory portion
  - glandular cells
  - myoepithelial cells

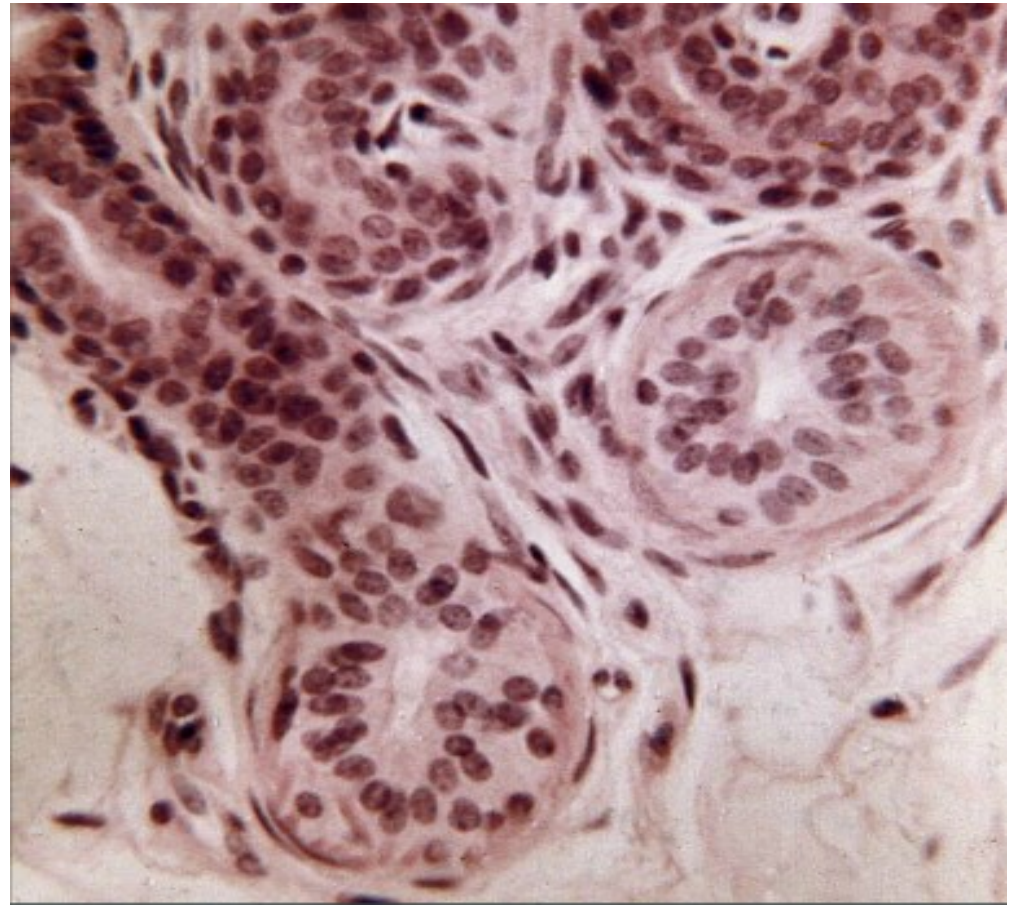


# SWEAT GLANDS (gll. sudoriferae)

small ecrine



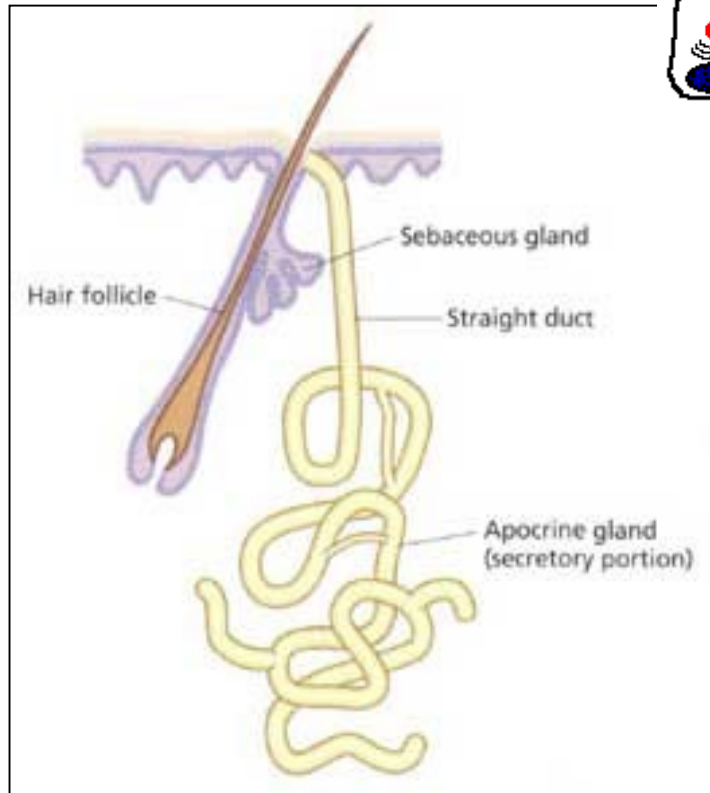
SWEAT –  $H_2O$ ,  $NaCl_2$ ,  $NH_3$ ,  
urea, uric acid, proteins



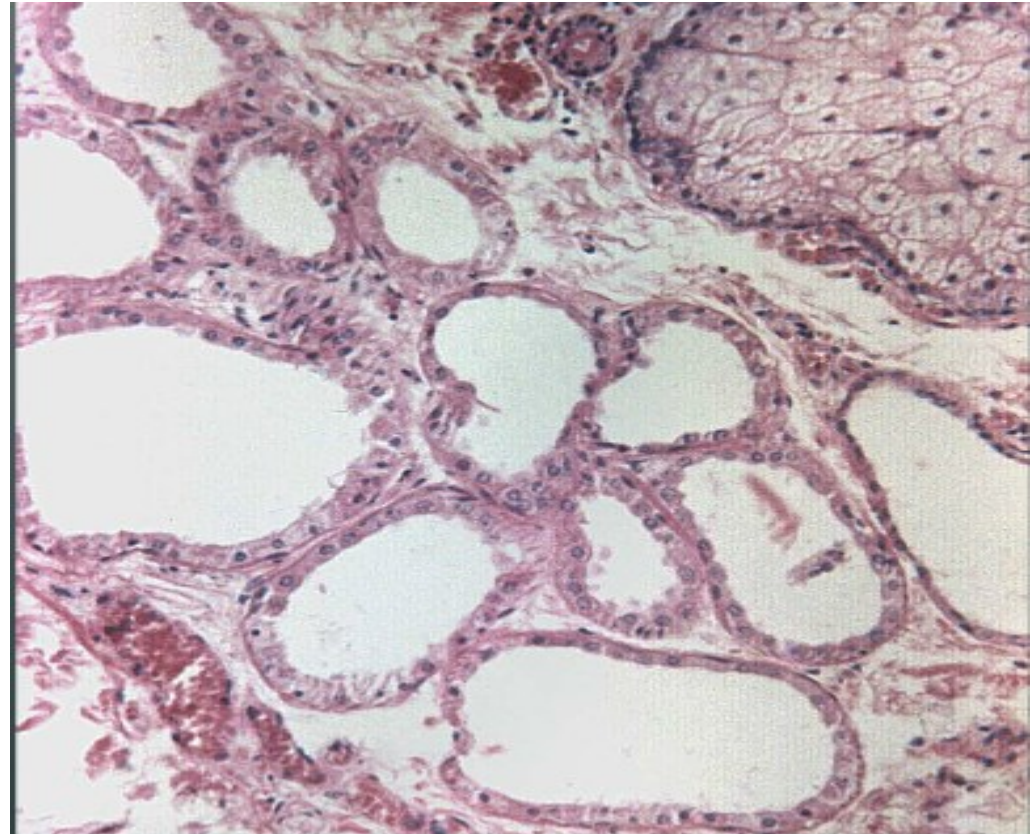
# SWEAT GLANDS (gll. sudoriferae)

## large apocrine

apocrine

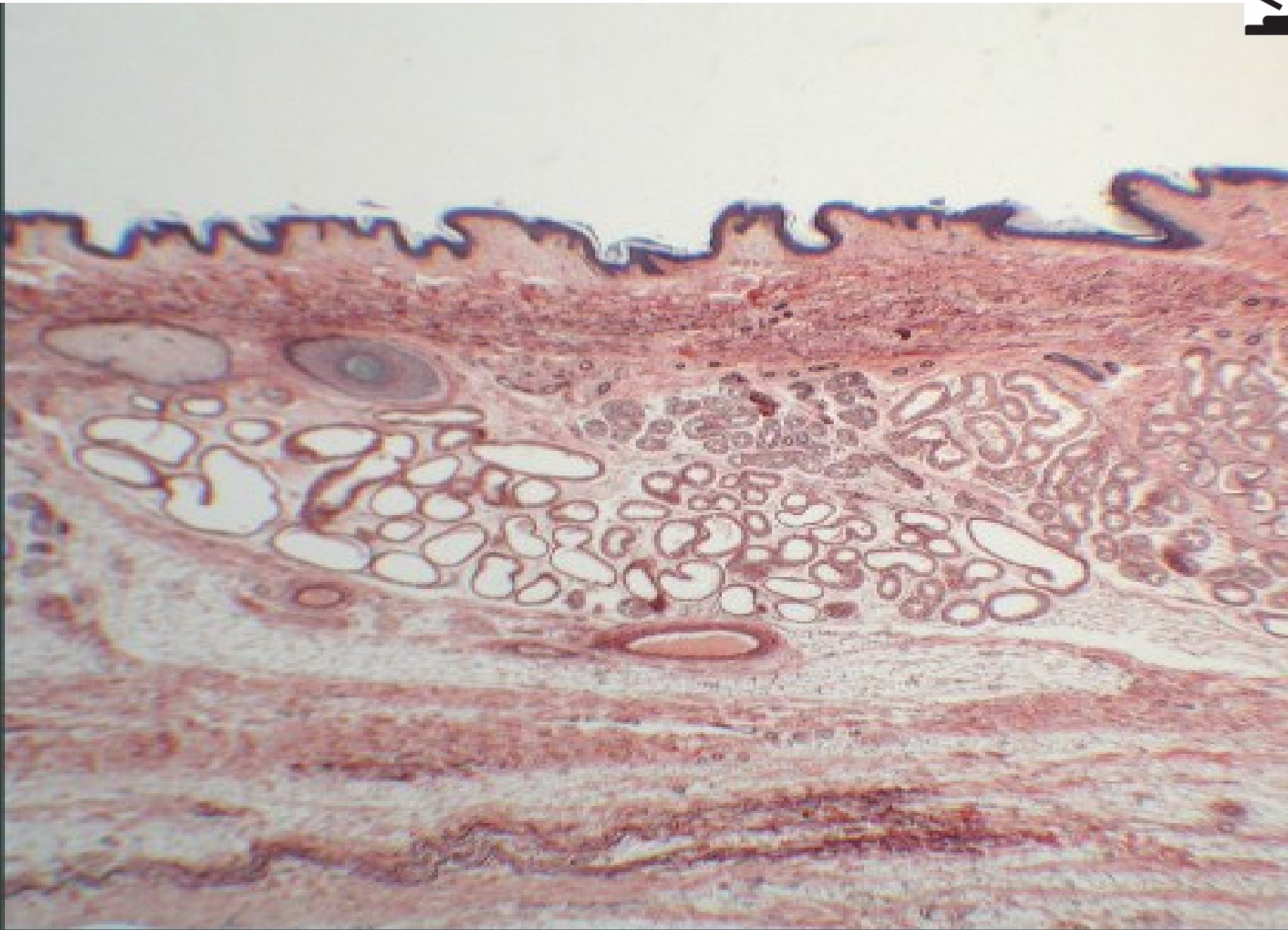


after puberty complete **sweat**  
–pheromones, fats, steroids;  
under hormonal influence





Skin from axilla – great sweat glands (apocrine, aromatic)

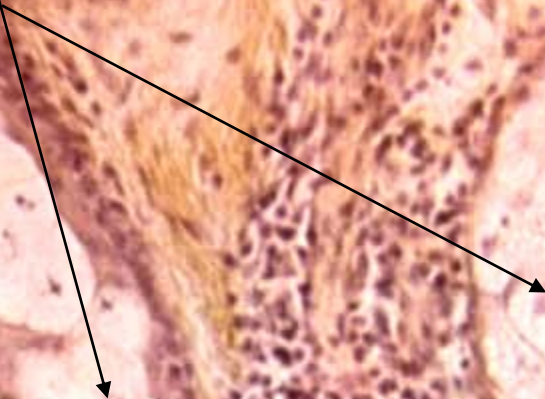


# Sebaceous glands (HES)



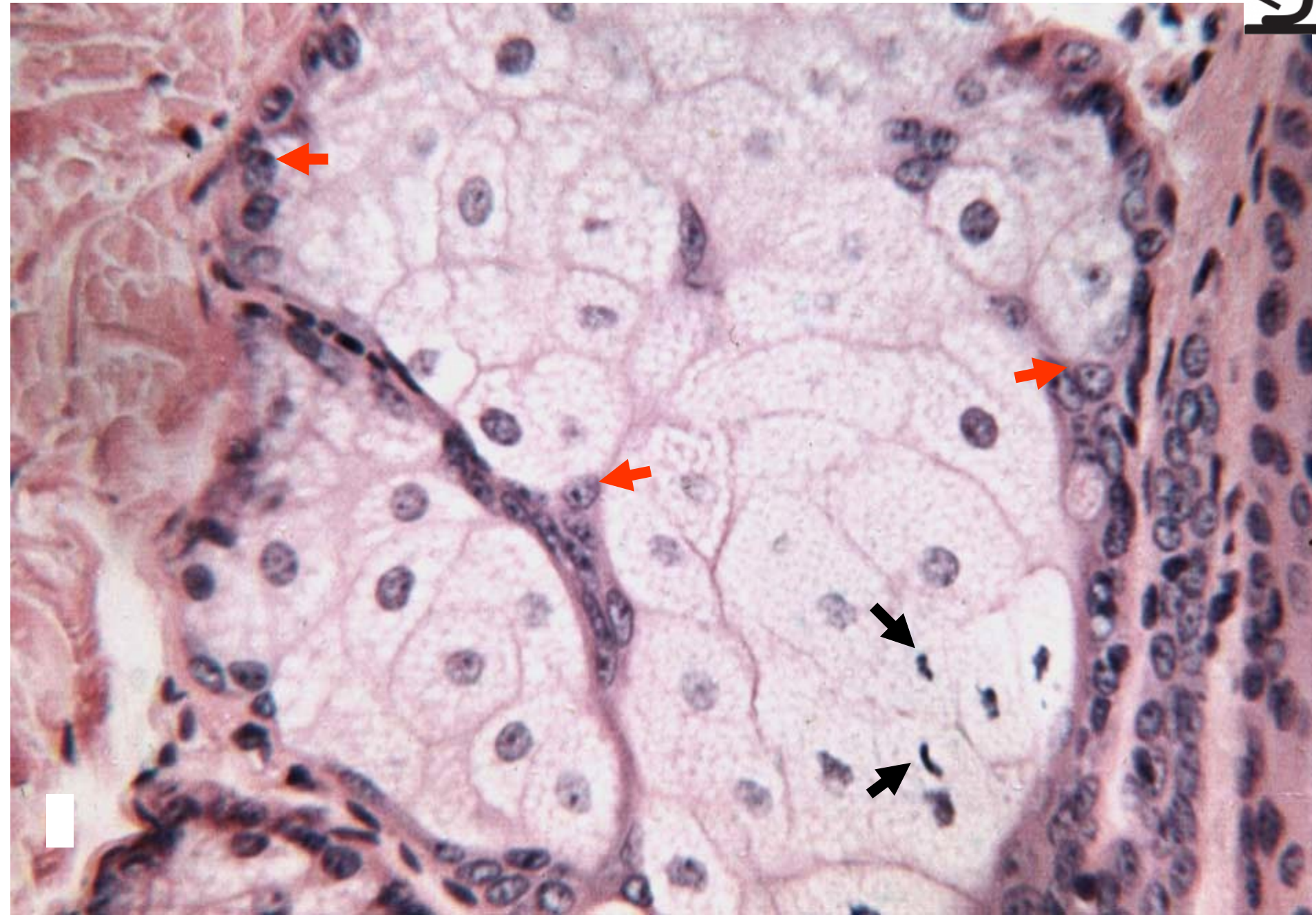
hair follicle

*m. arrector pili*

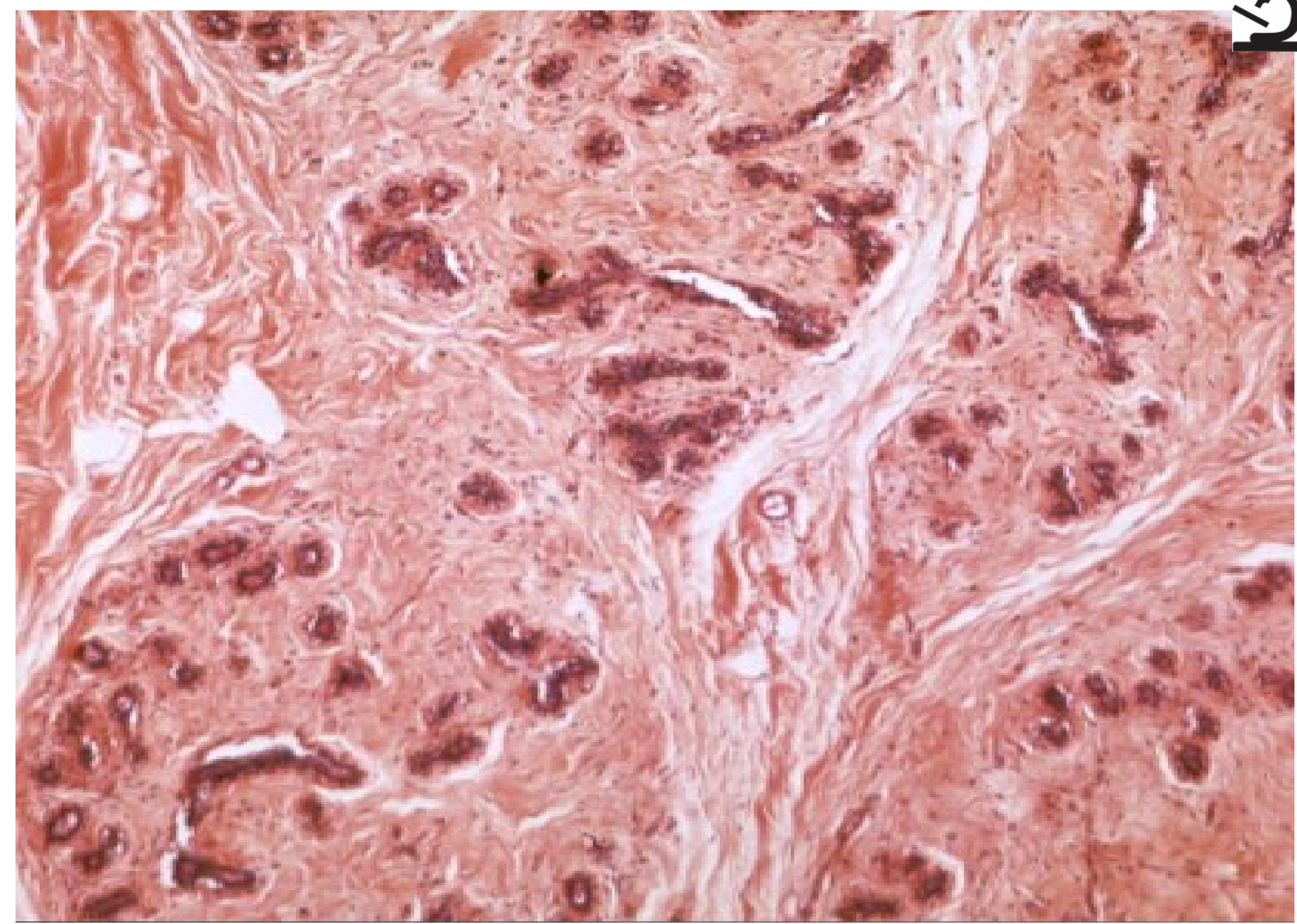




# Sebaceous glands (HE)

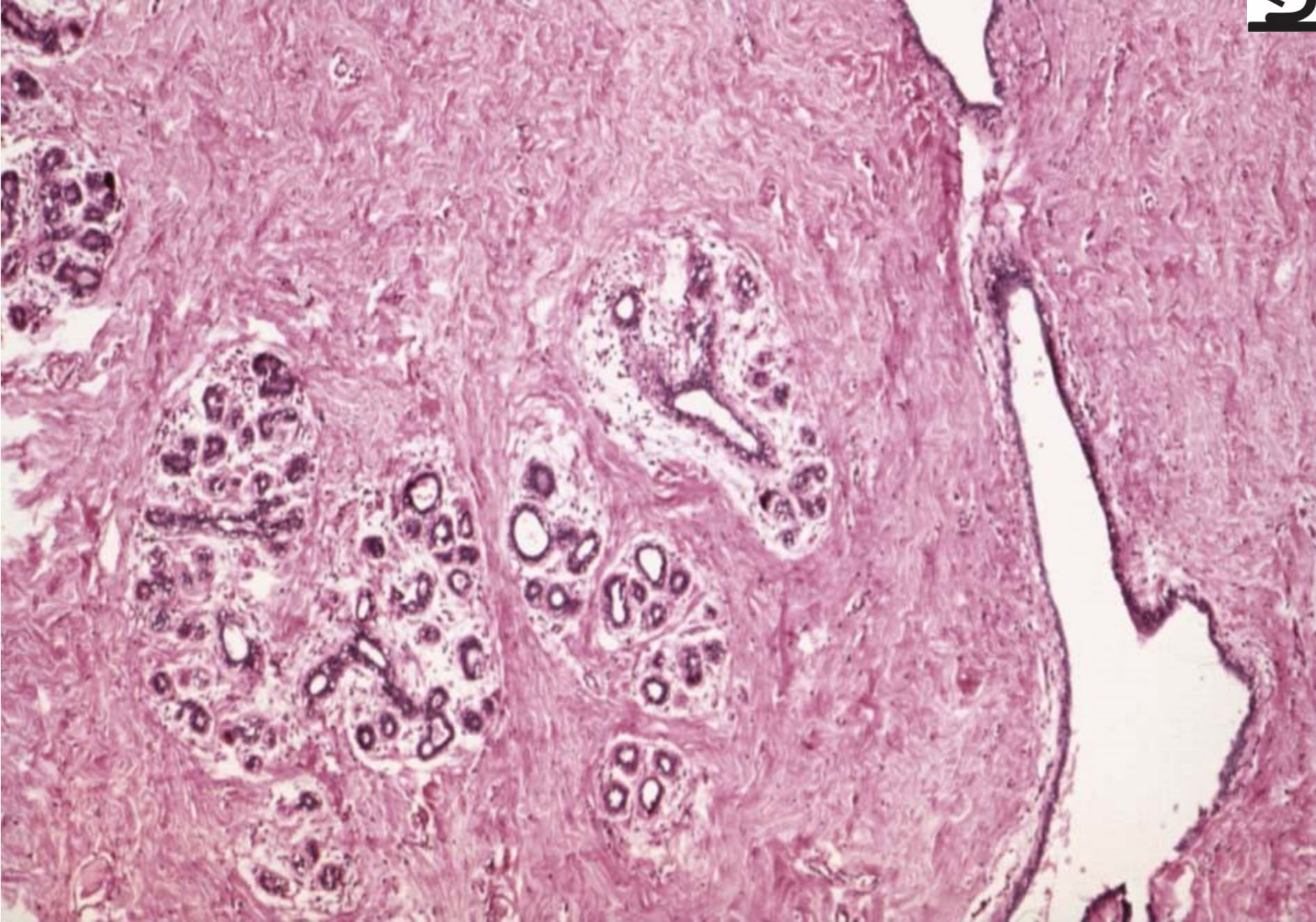


Mamma non lactans (HE)



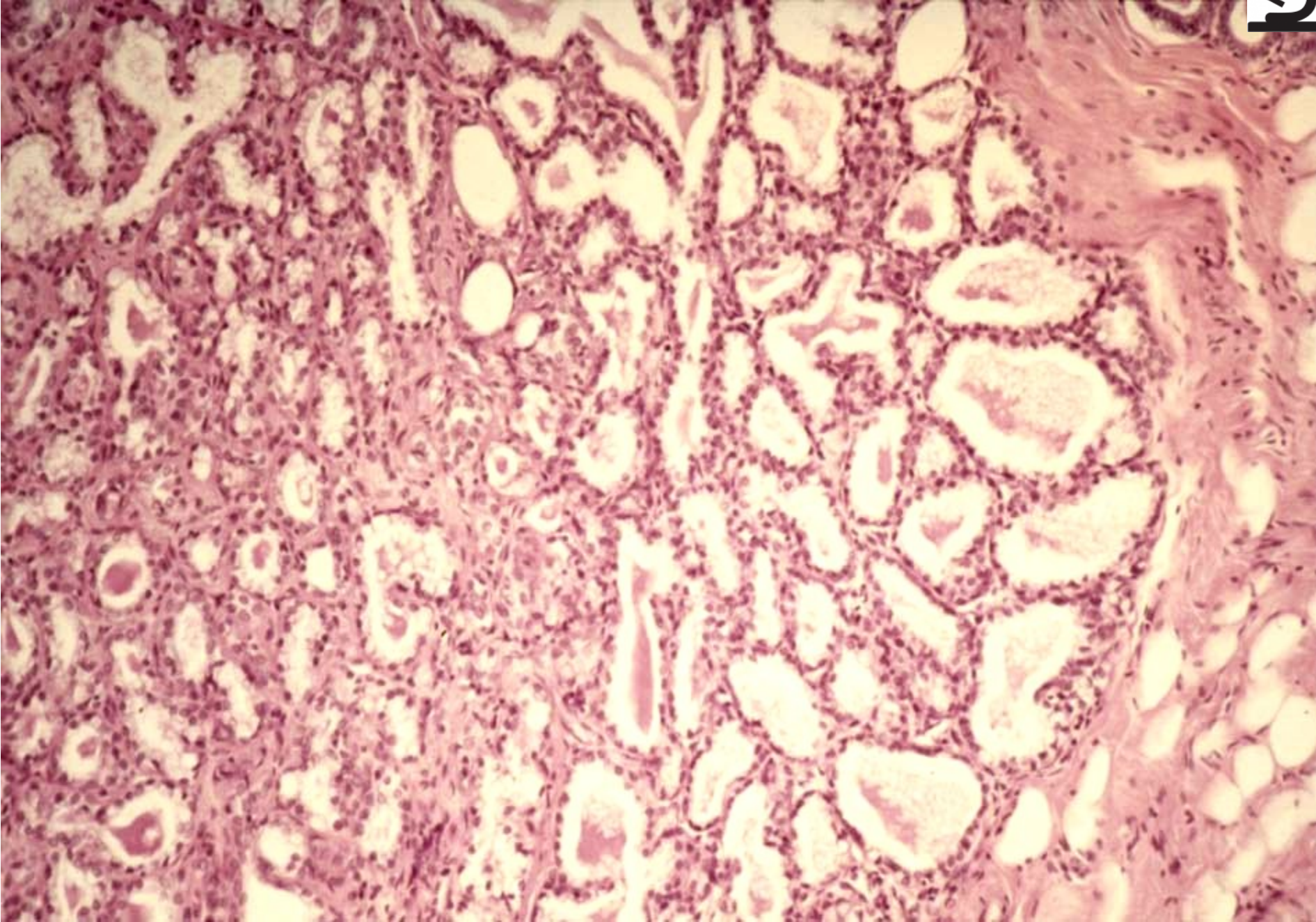


Mamma non lactans (HE)



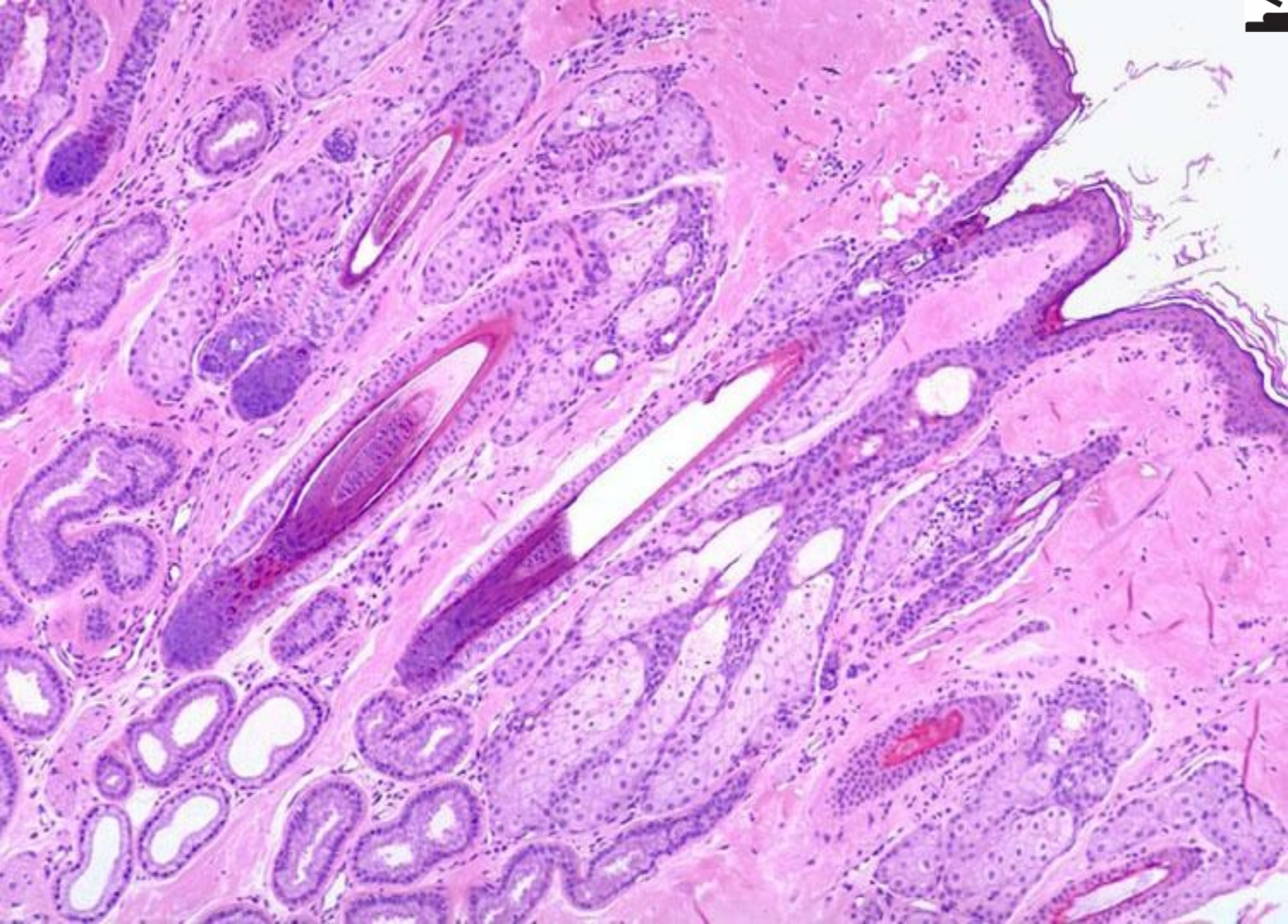


Mamma lactans (HE)





Skin from axilla with hair (HE)

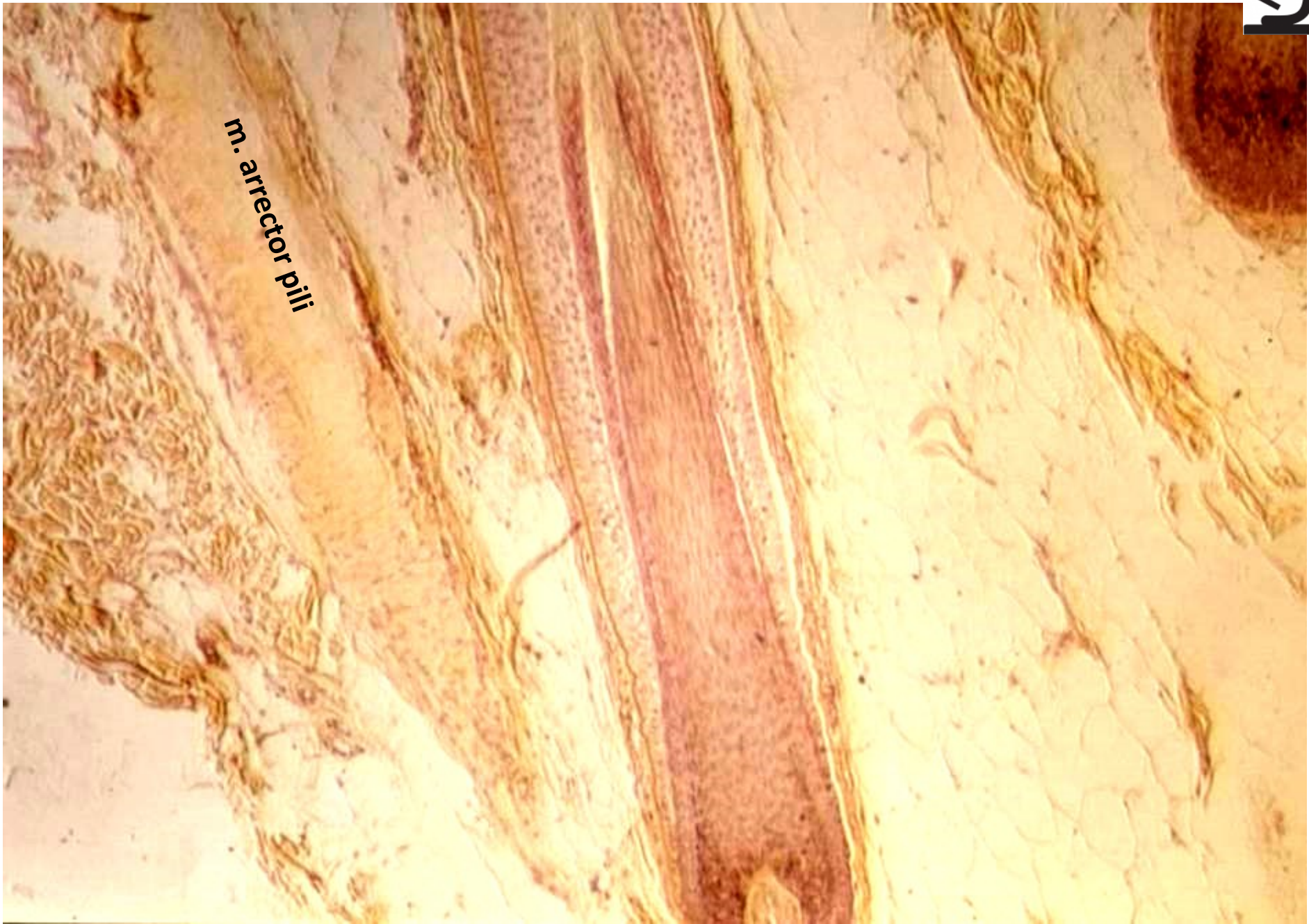




# Hair (HEŠ)

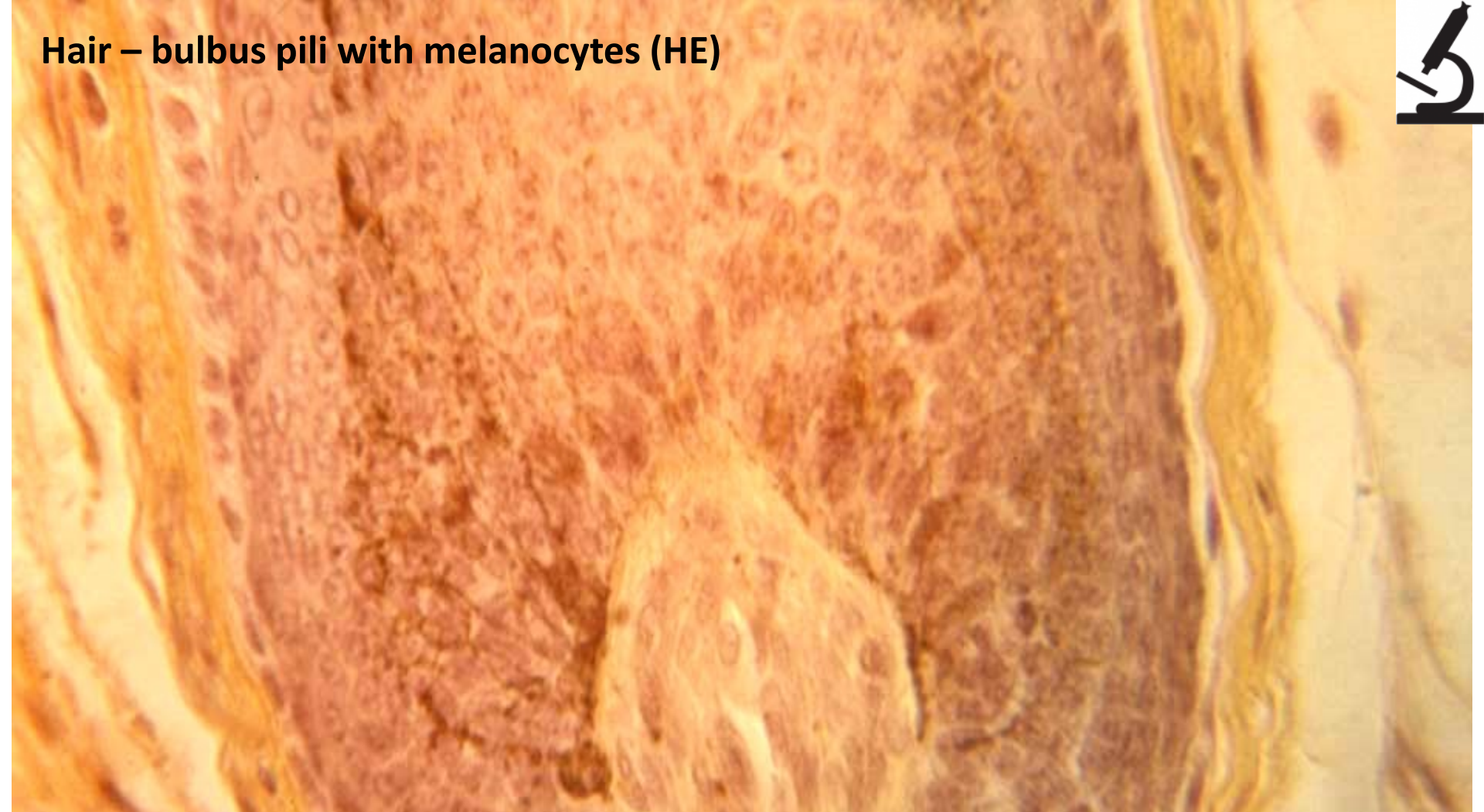


*m. arrector pili*



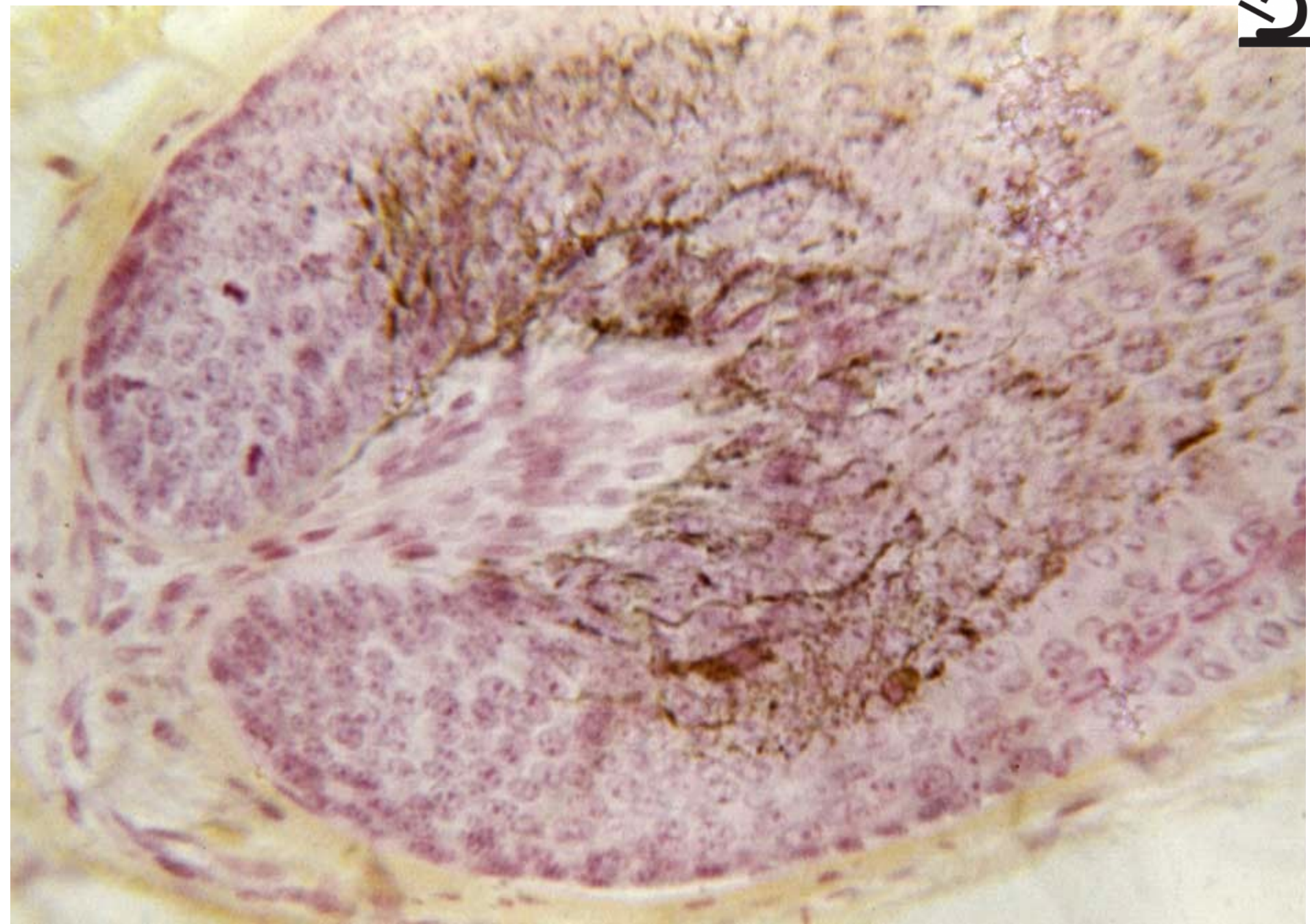


# Hair – bulbus pili with melanocytes (HE)



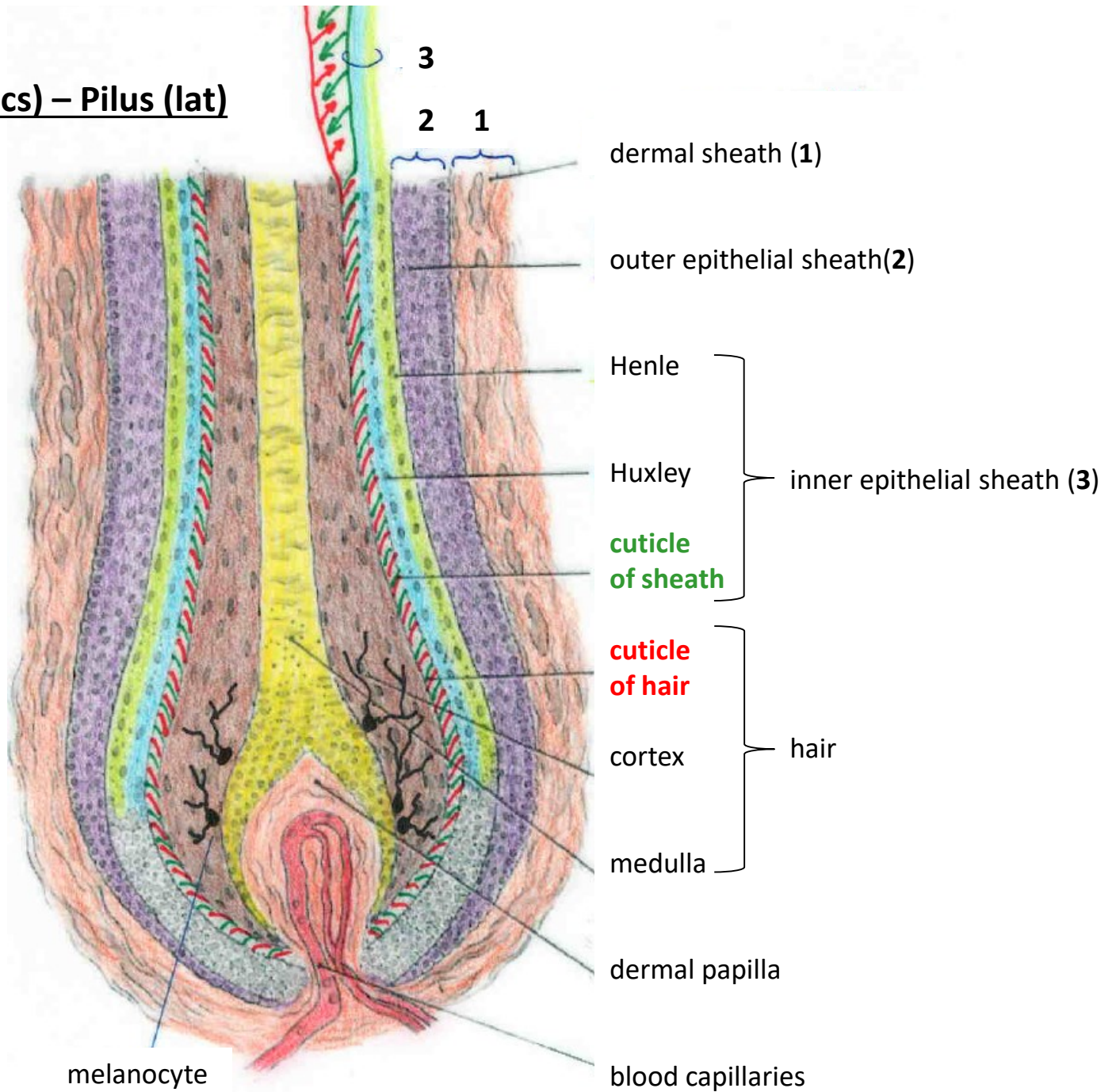


**Hair – bulbus pili with melanocytes, papilla pili (HES)**

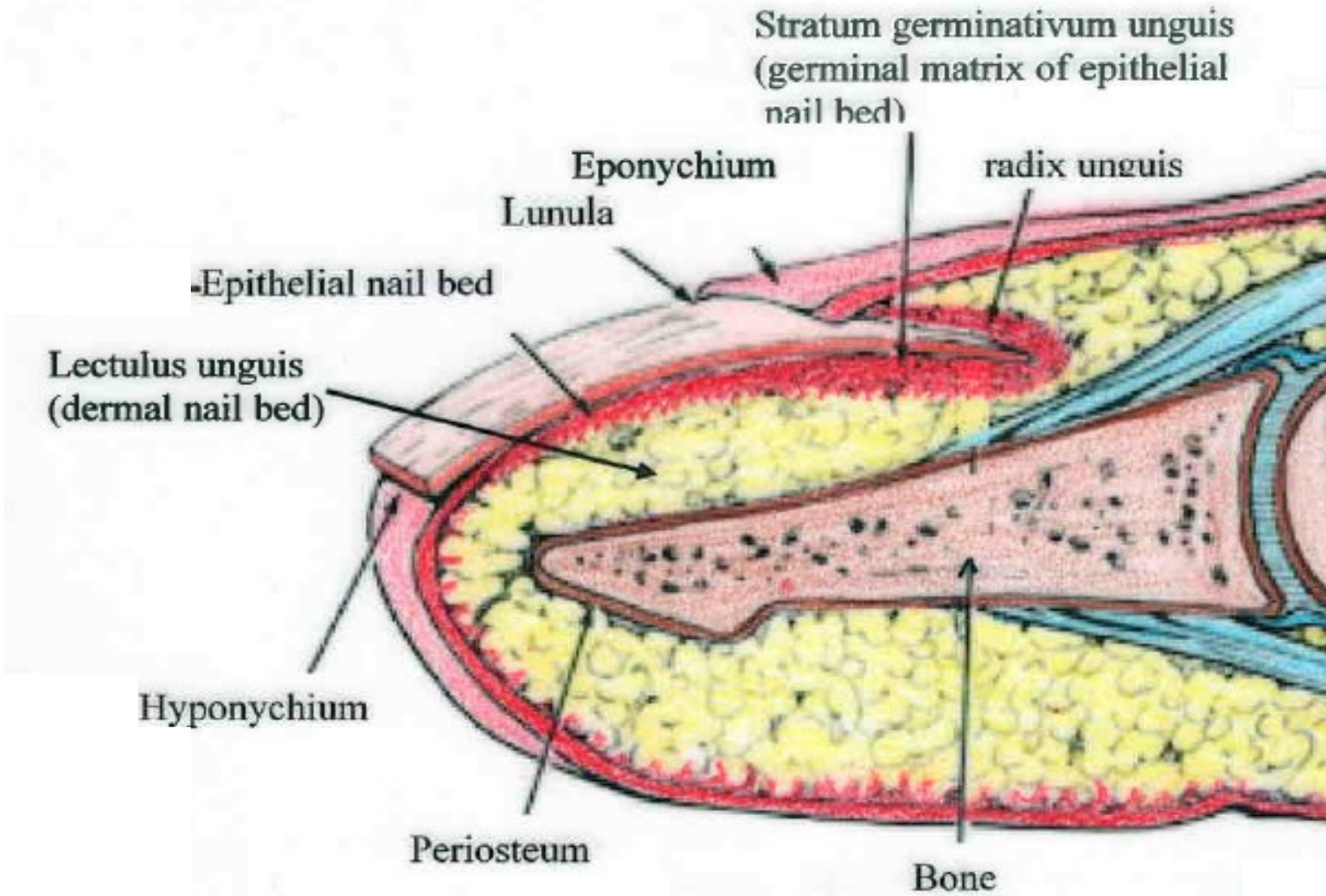




Hair (eng) – Vlas (cs) – Pilus (lat)



Nail (eng) – Nehet (cs) – Unguis (lat) – Onyx (gr)





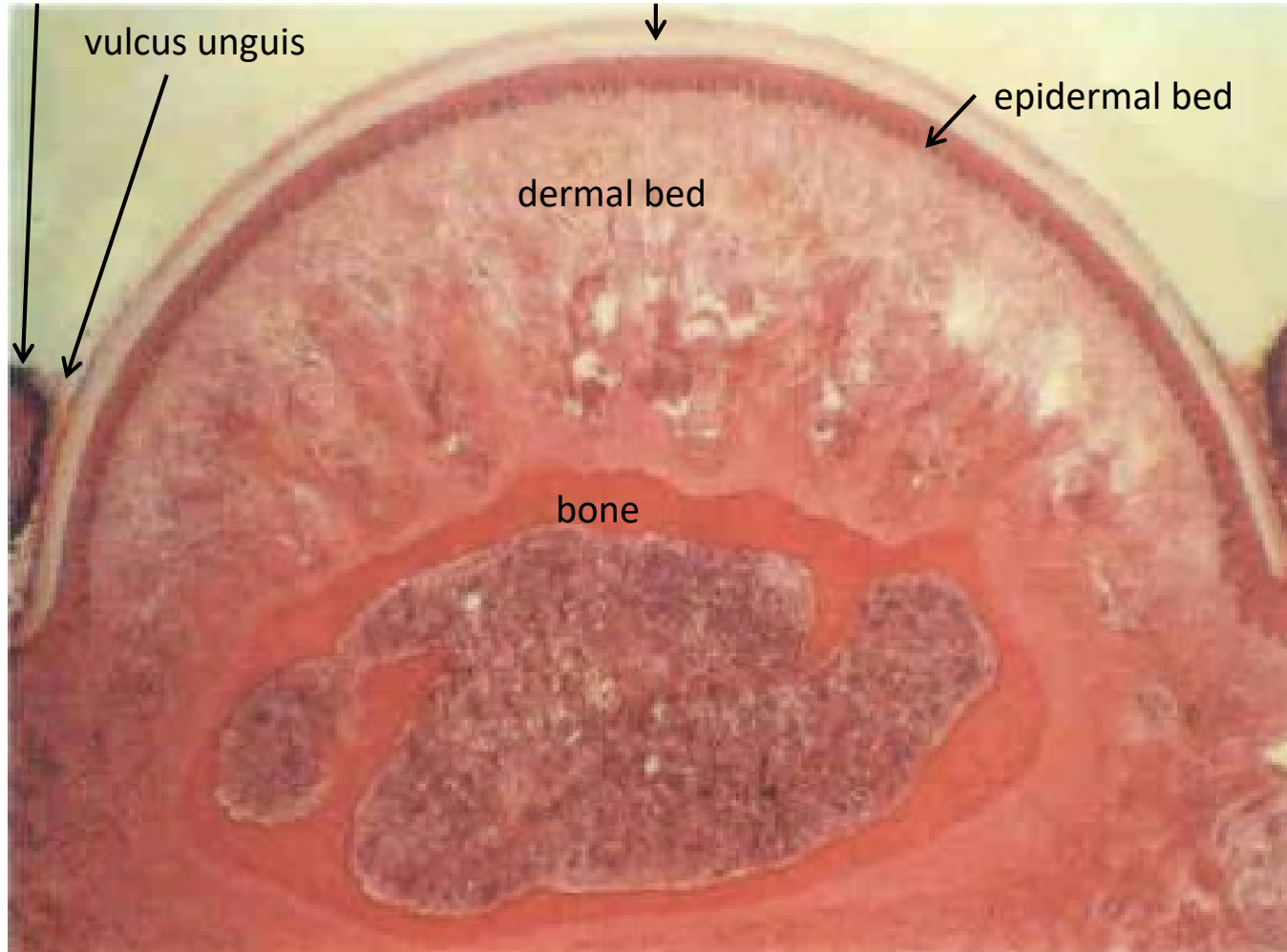
Nail (eng) – Nehet (cs) – Unguis (lat) – Onyx (gr)



Longitudinal section

vallum unguis

nail plate



vulcus unguis

epidermal bed

dermal bed

bone

Cross section



# INTEGUMENTARY SYSTEM

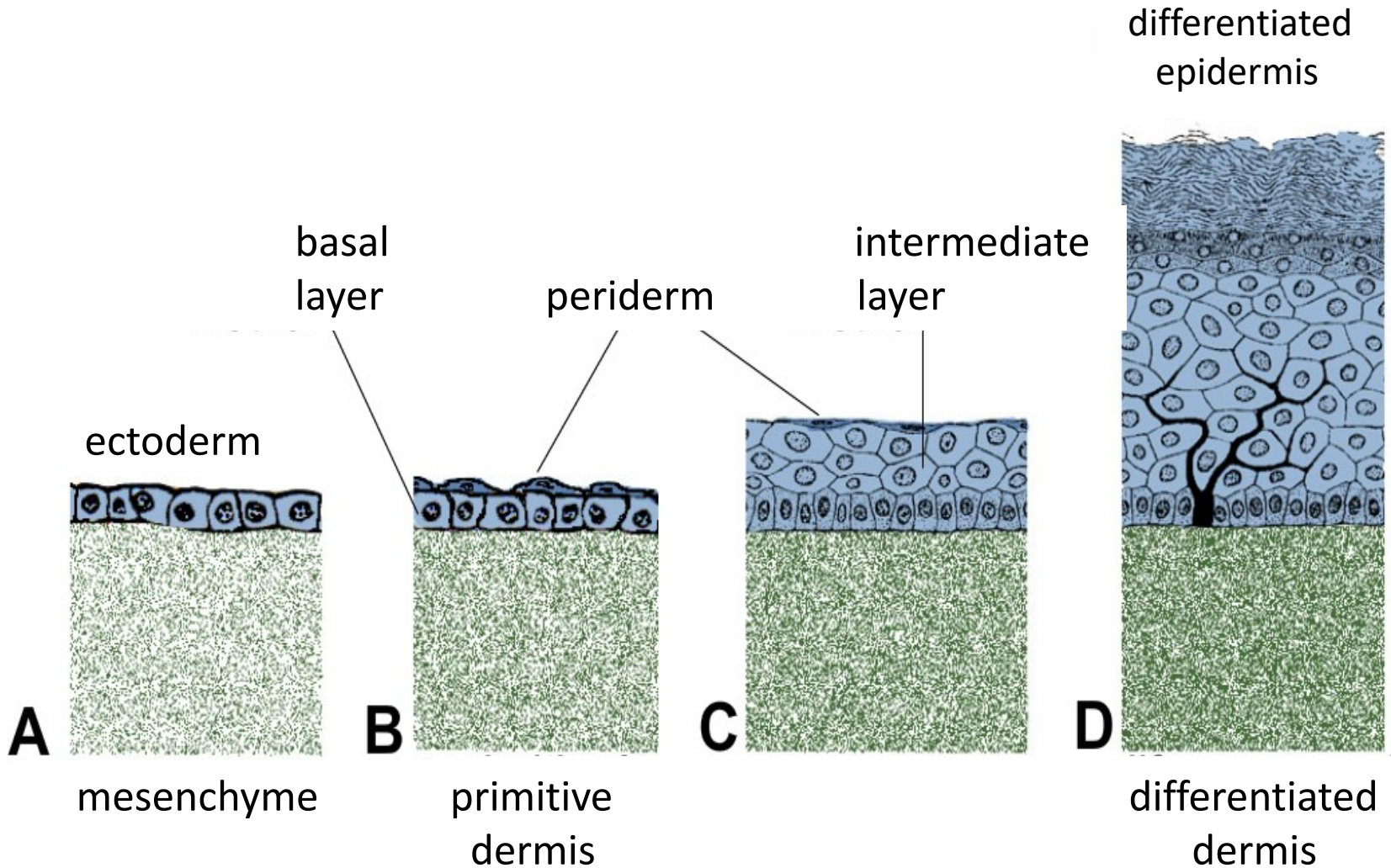


Slides:

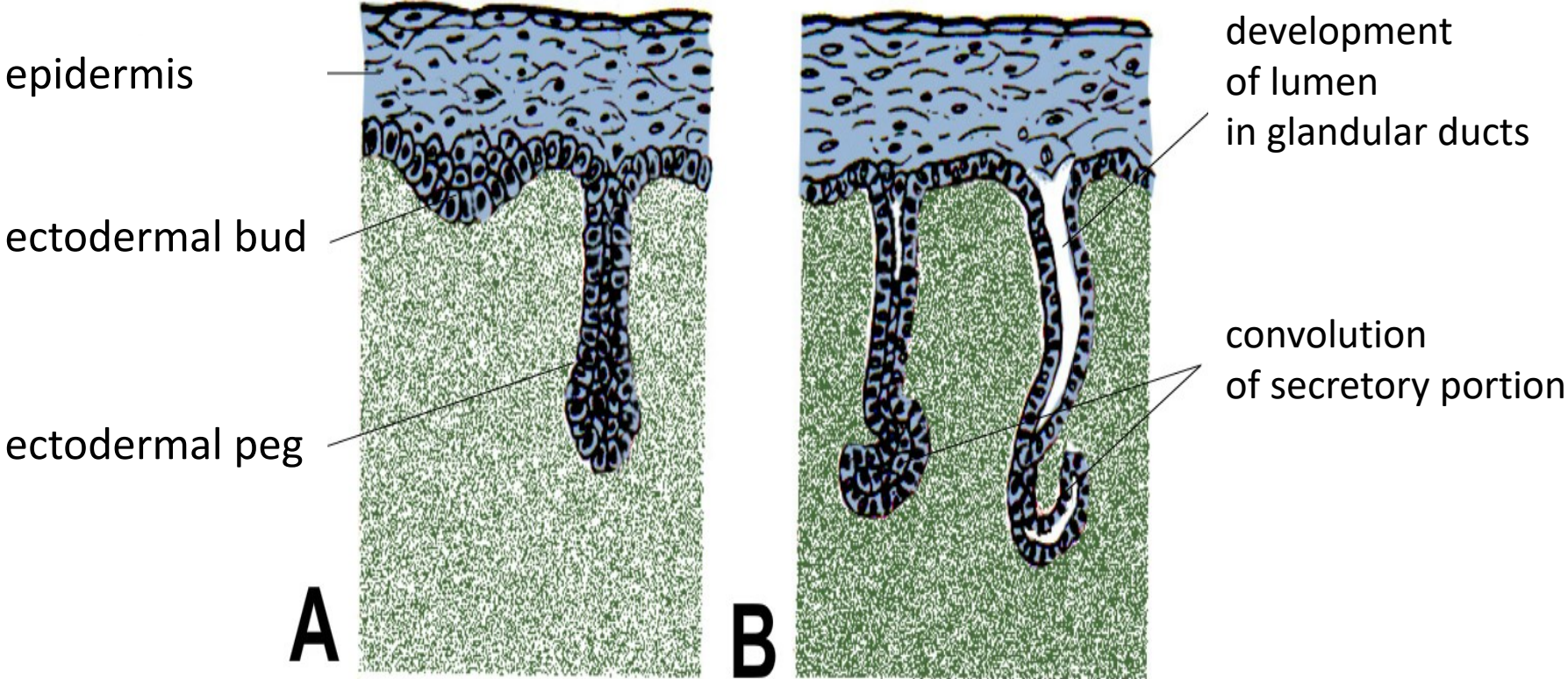
- 69. Skin from tip of finger
- 70. Skin from axilla
- 71. Skin with hair
- 72. Nail
- 73. Mamma non-lactans
- 74. Mamma lactans



# Development of epidermis and corium

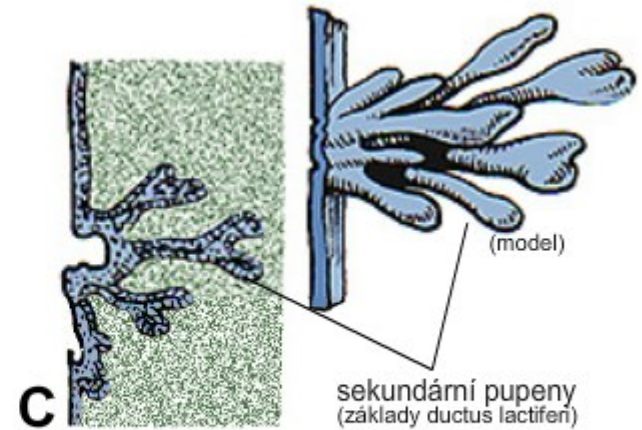
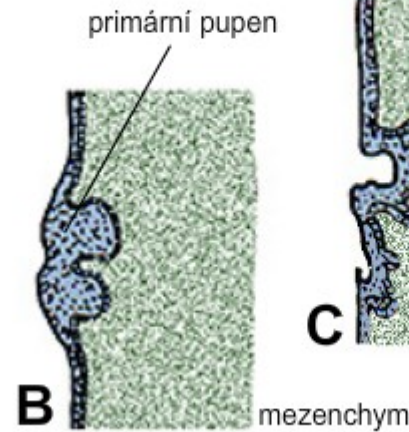
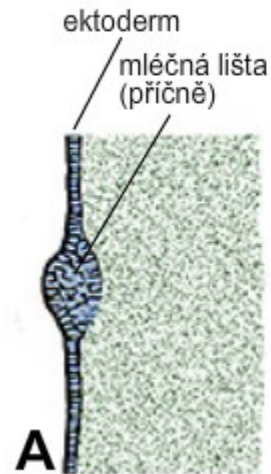
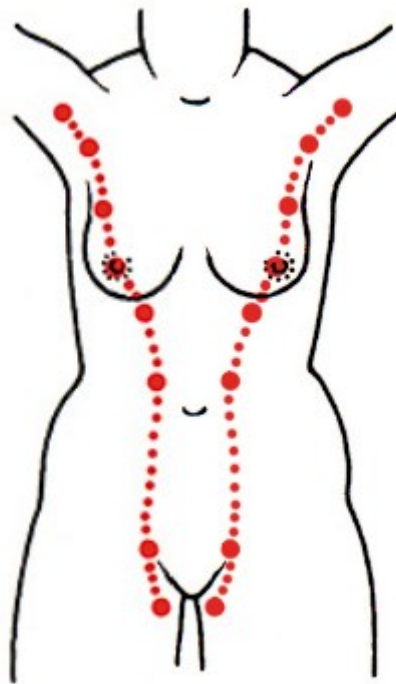


# Development of sweat glands





# Development of mammary line and gland



B, C: primary and secondary ectodermal buds ingrowth mesenchyme

# Development of hair and sebaceous gland

