

19th September, 2002



The background of the slide is a high-magnification electron micrograph of epithelial tissue. It shows a dense array of microvilli (finger-like projections) extending from the apical surface of the cells. The nuclei of the cells are visible as dark, electron-dense regions. The overall structure is highly organized and characteristic of a polarized epithelial layer.

*Electron micrographs
of epithelial tissue*

Squamous (pavement) epithelium

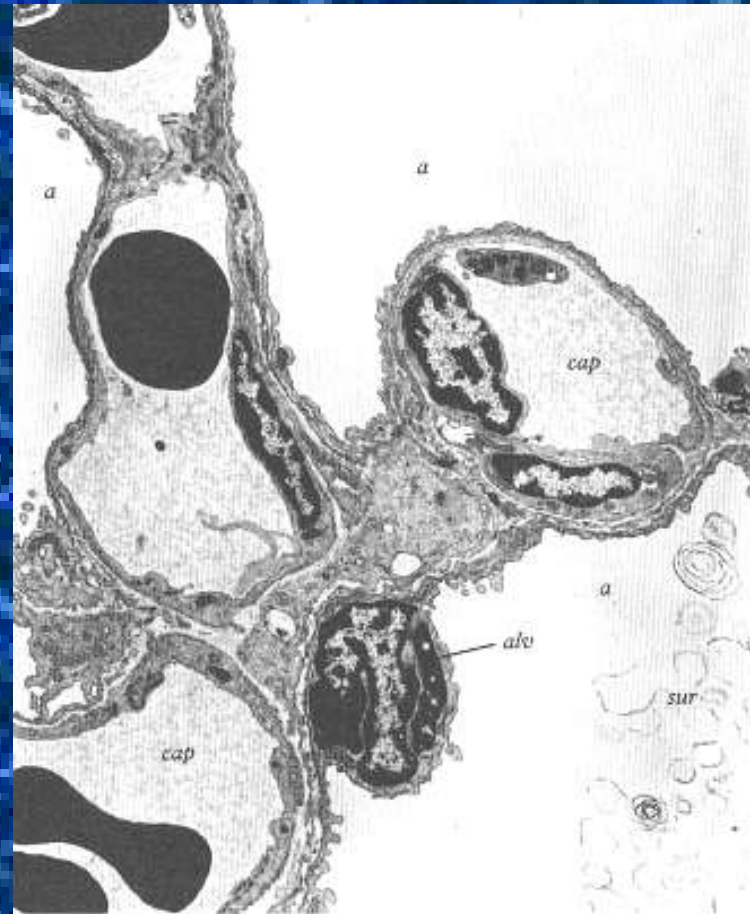
Alveoli of lungs

alveoli of lungs

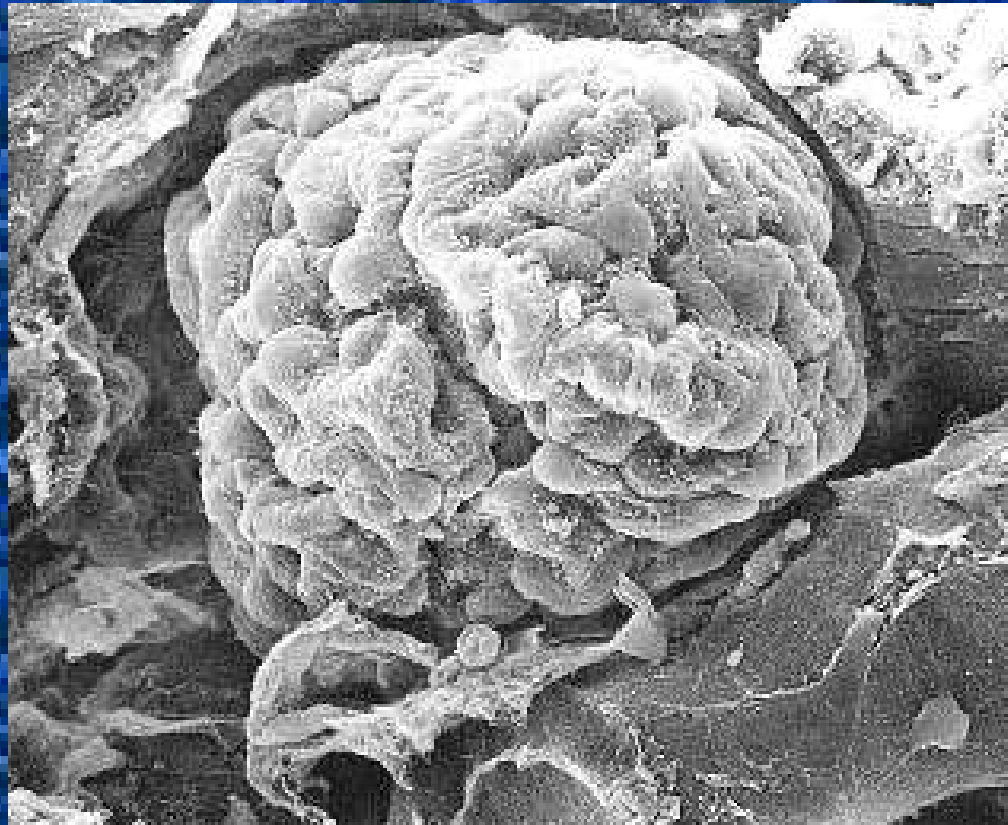
renal corpuscle

thin segments of
nephric tubules

inner ear

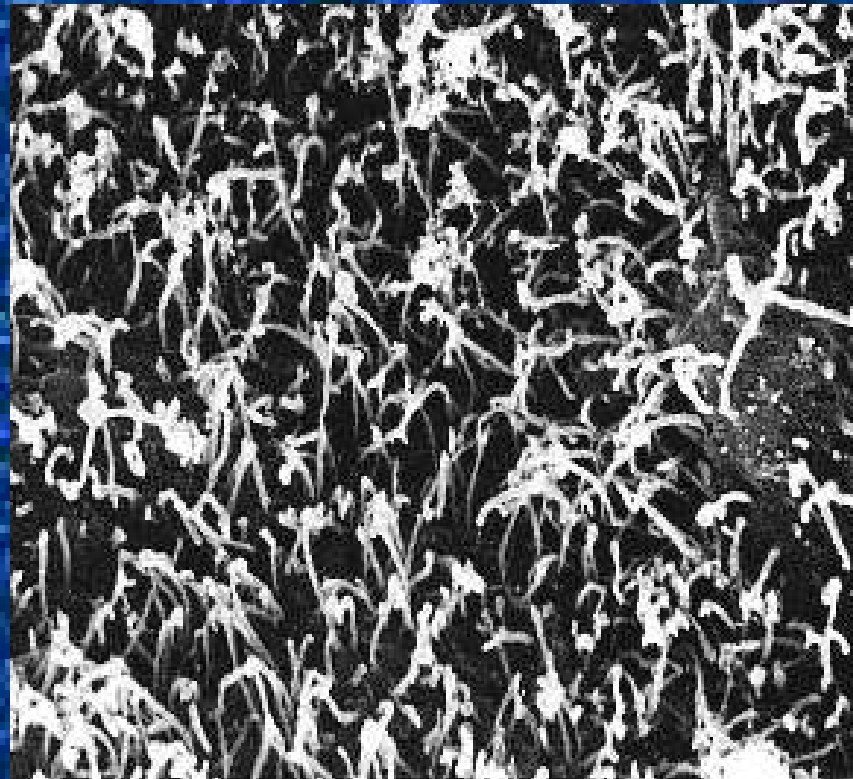


Renal corpuscle



* 1000

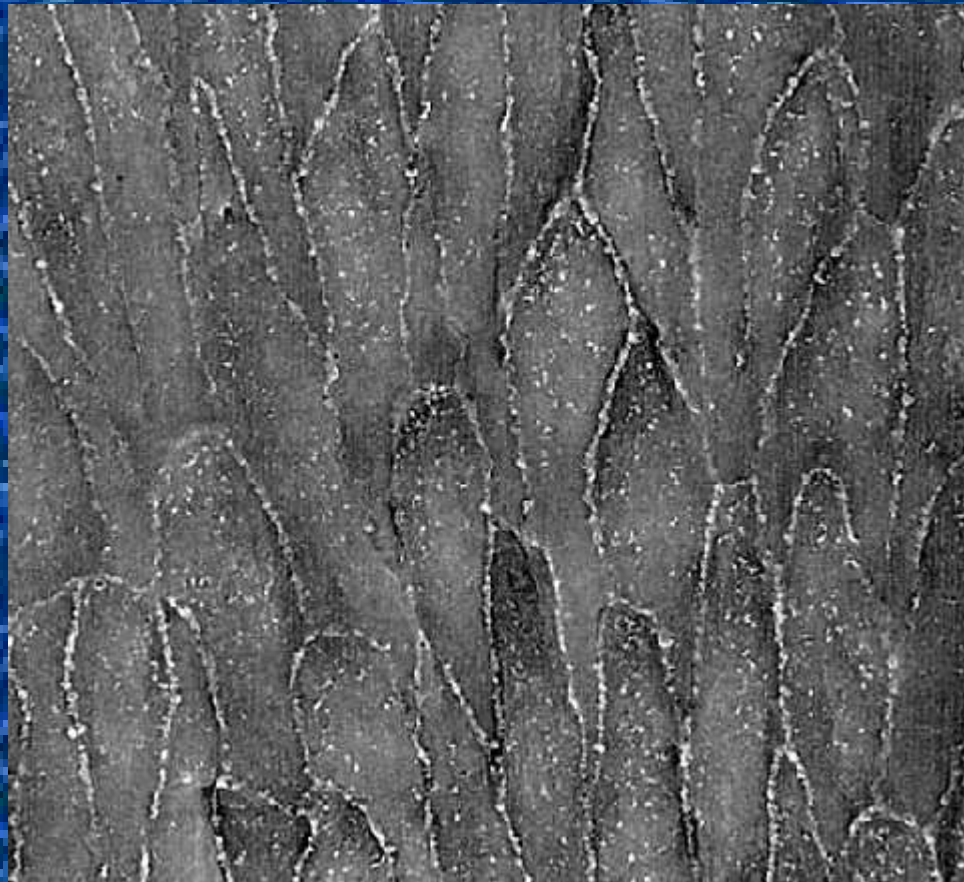
Mesothelium lining surface of murine pleura



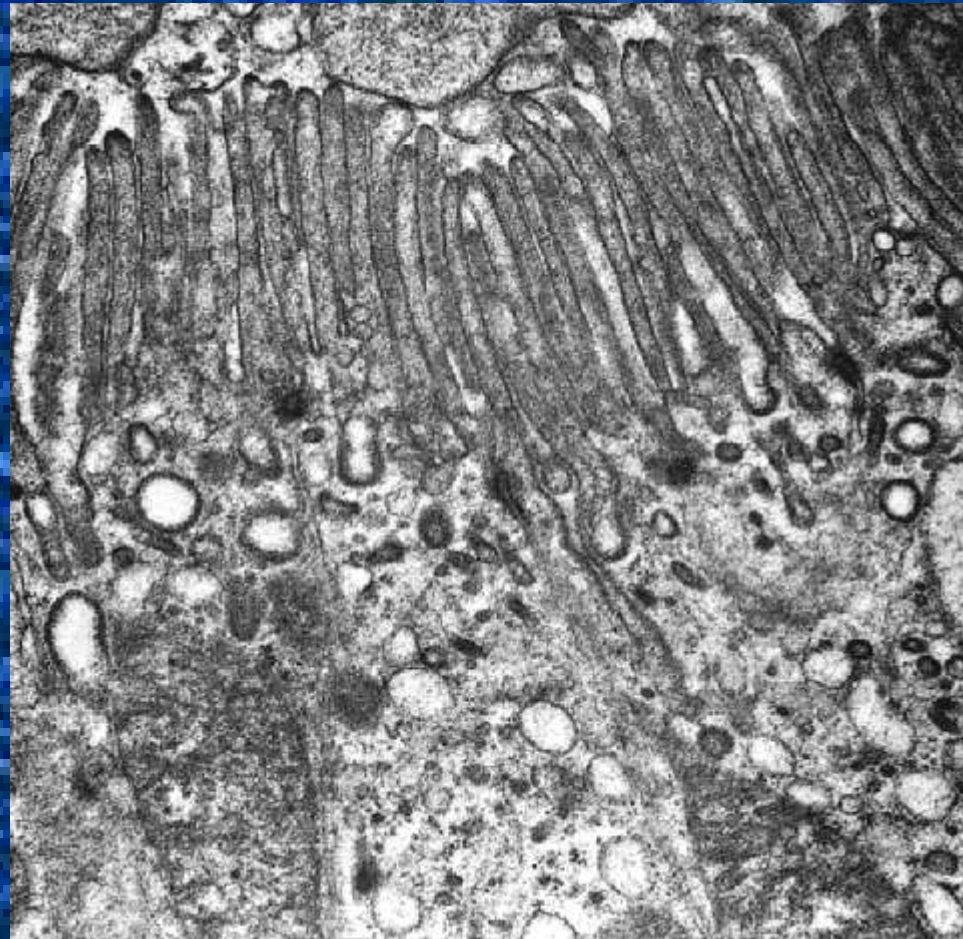
* 7000

Endothelium lining the inner aspect of blood vessel

prevents loss
of colloids,
ferritin,
HRP

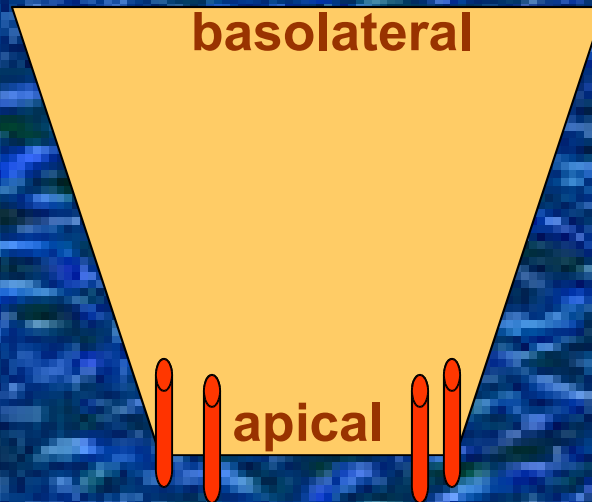


Simple cuboidal epithelial cells lining the proximal convoluted tubule



* 22000

Epithelial polarity



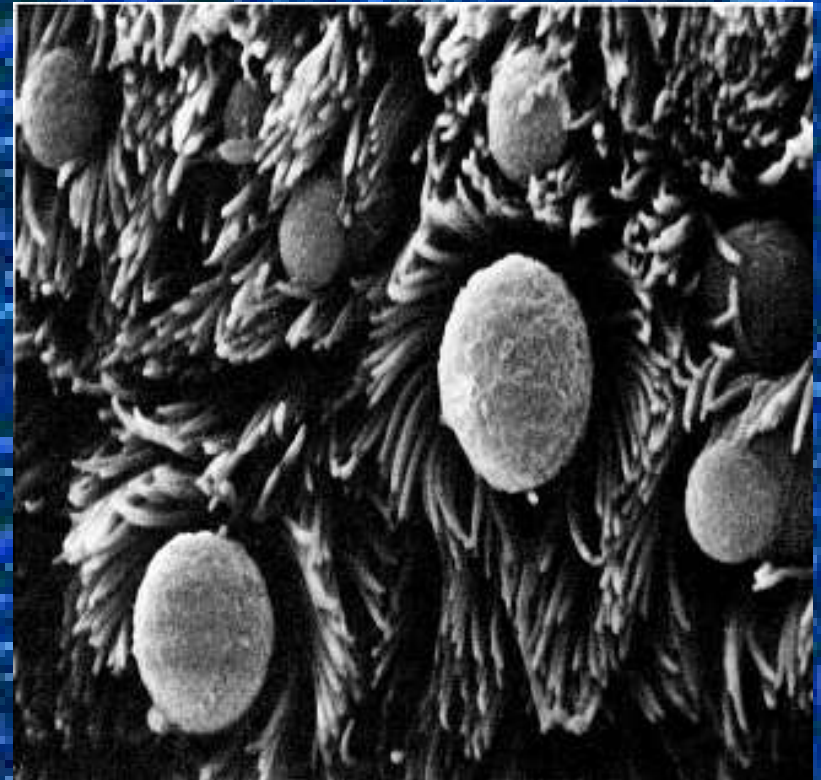
Cilium = eyelashes



Cilia overlying epithelium in trachea

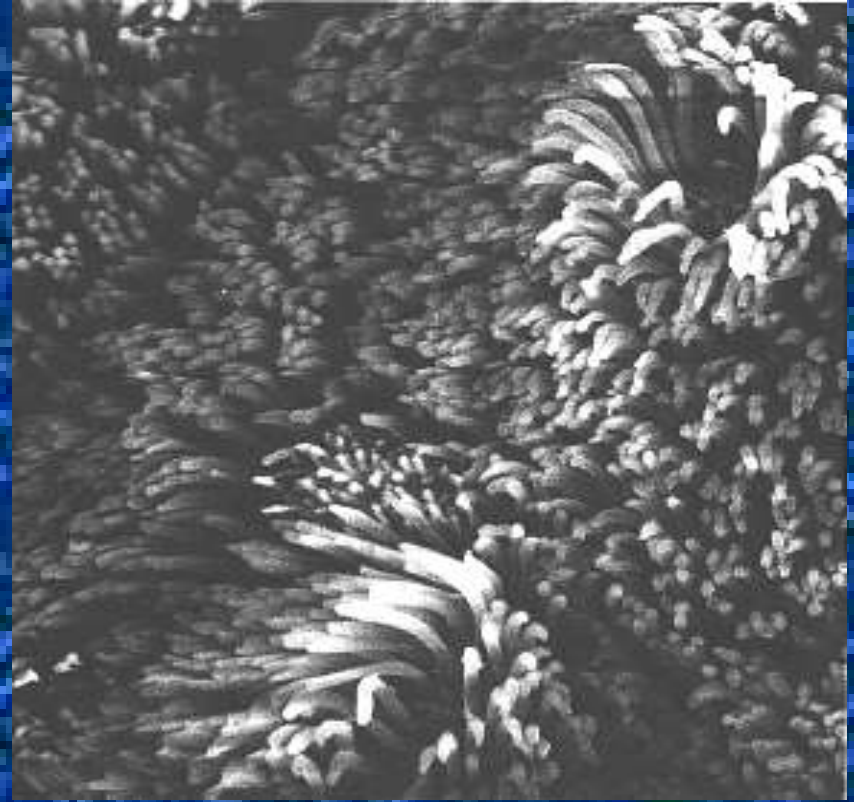
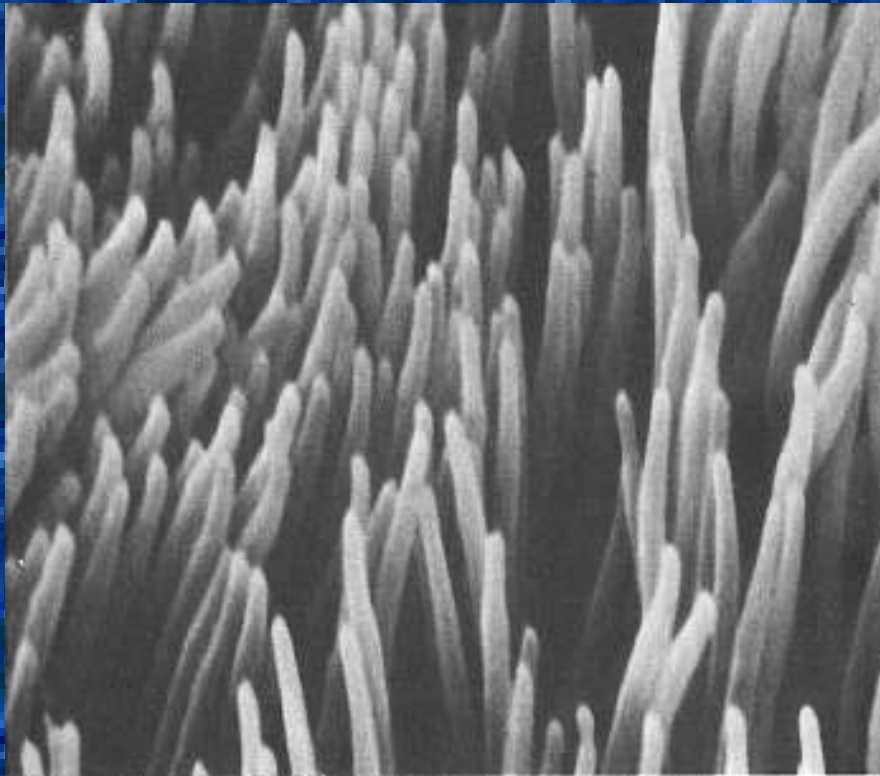


* 3000



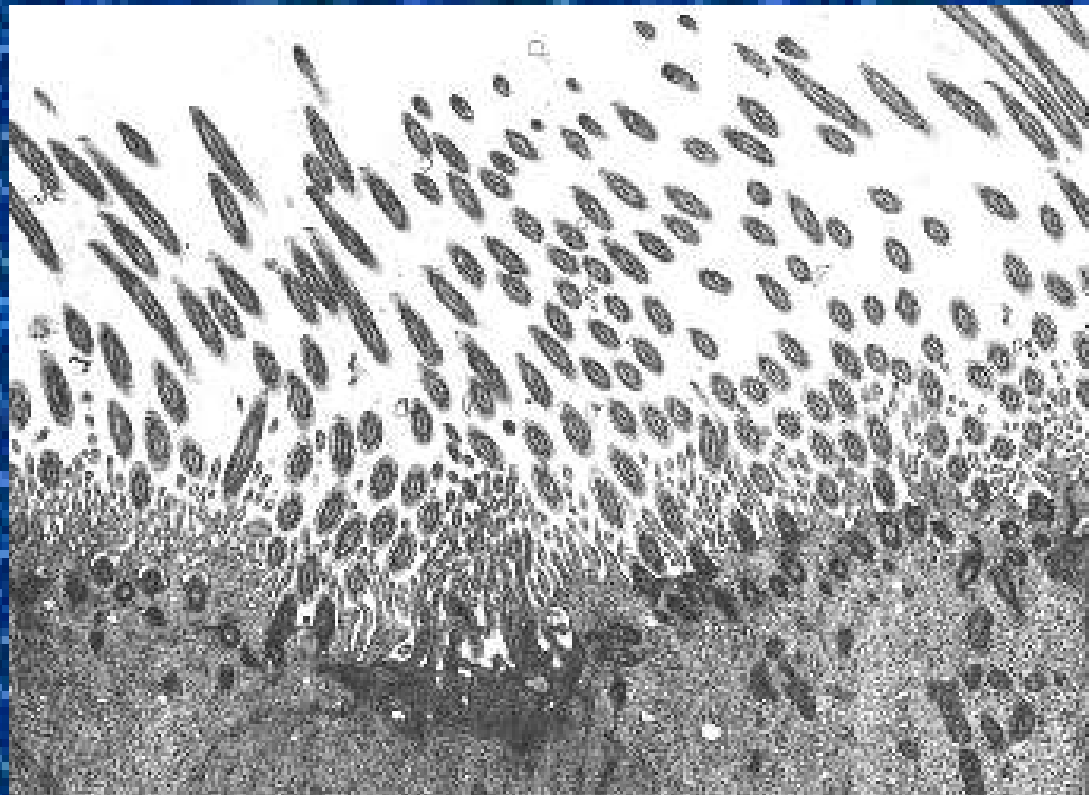
* 5100

SEM of cilia



* 10000

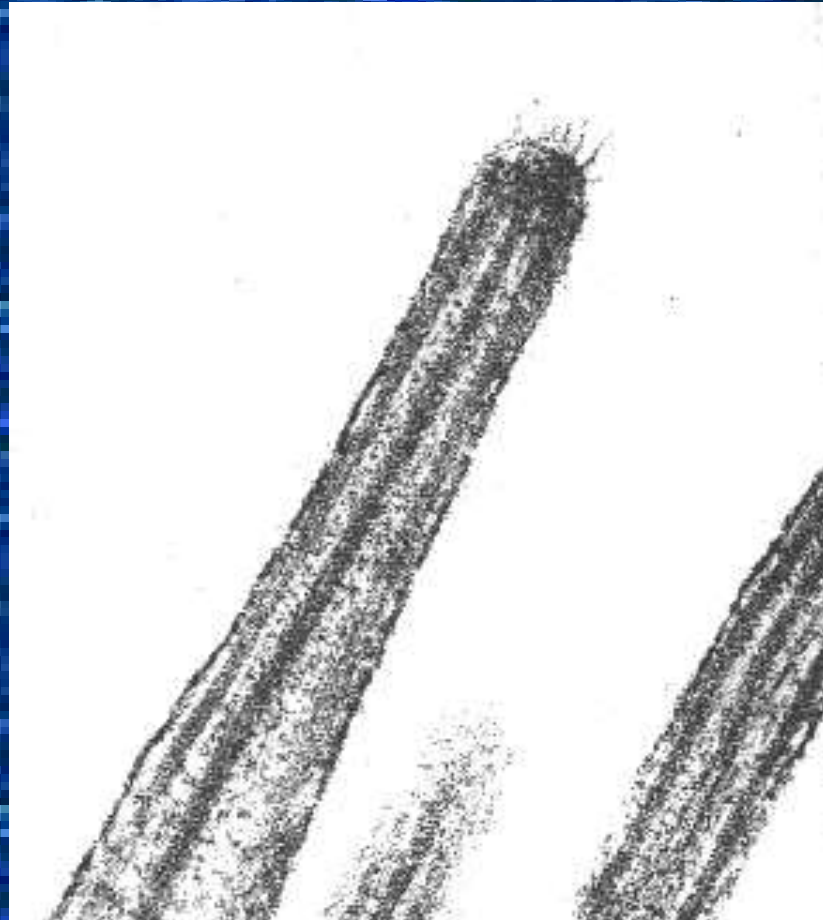
Cilia cut in various planes from upper respiratory tract



* 7500

Claw like processes in cilia from bronchial epithelium

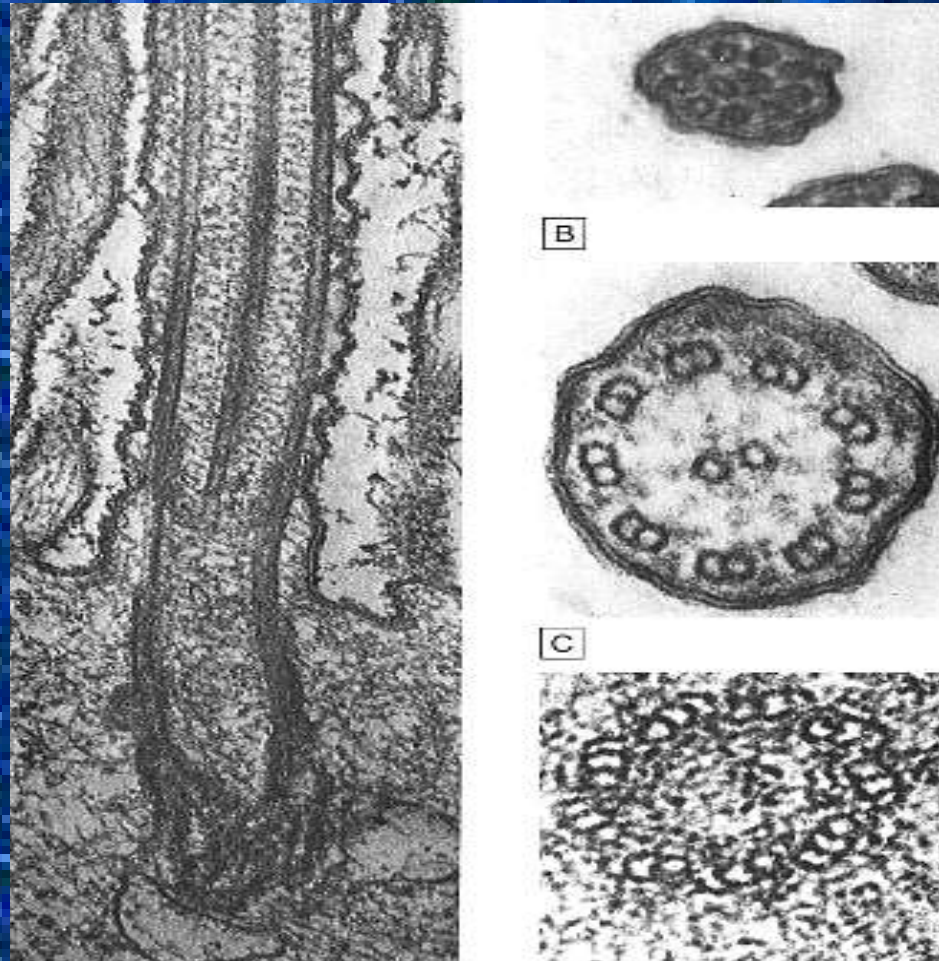
planar beat causes
metachronal wave



* 90,000

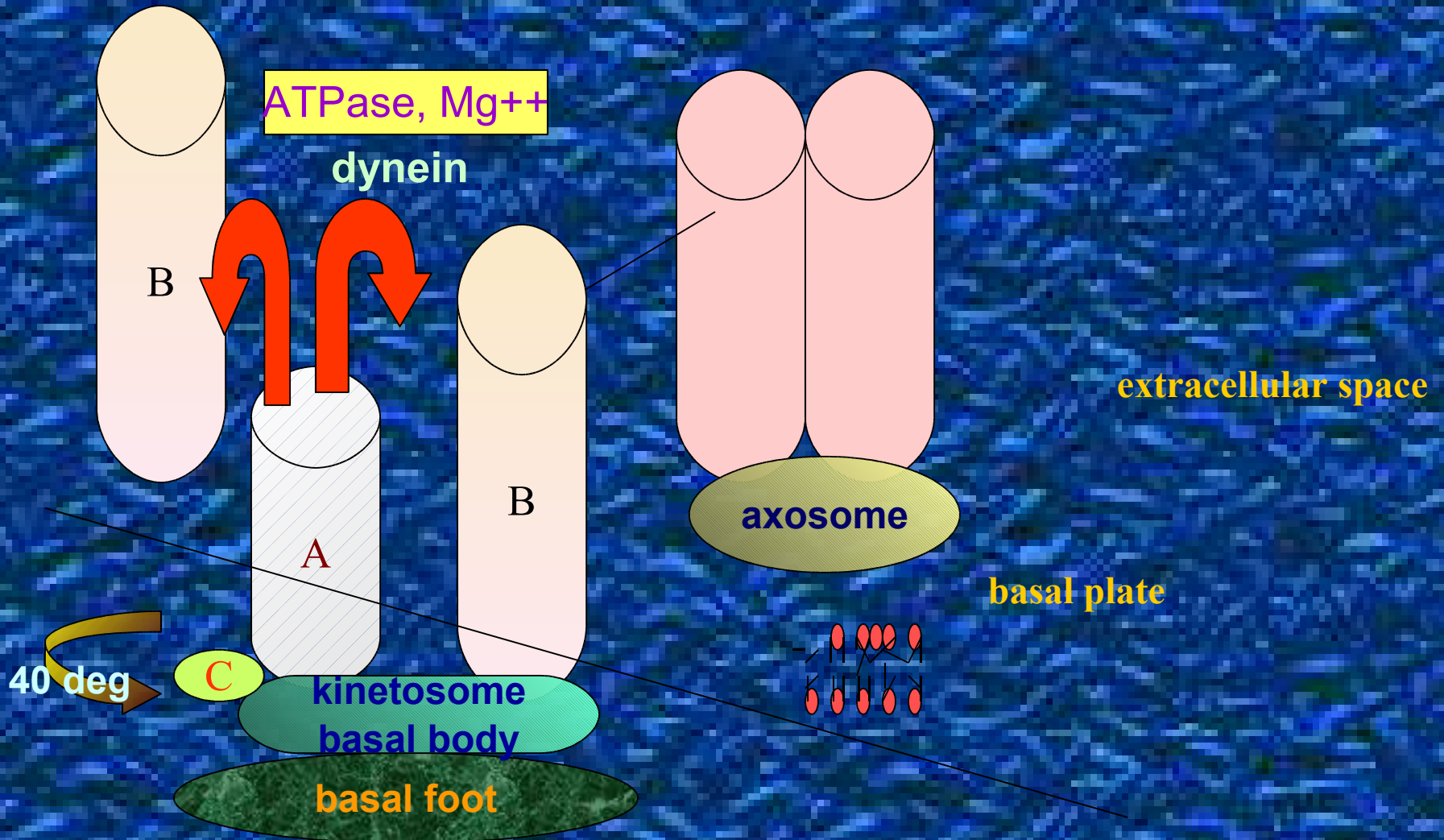
Section of cilia through tip, middle & base of shaft

* 50000

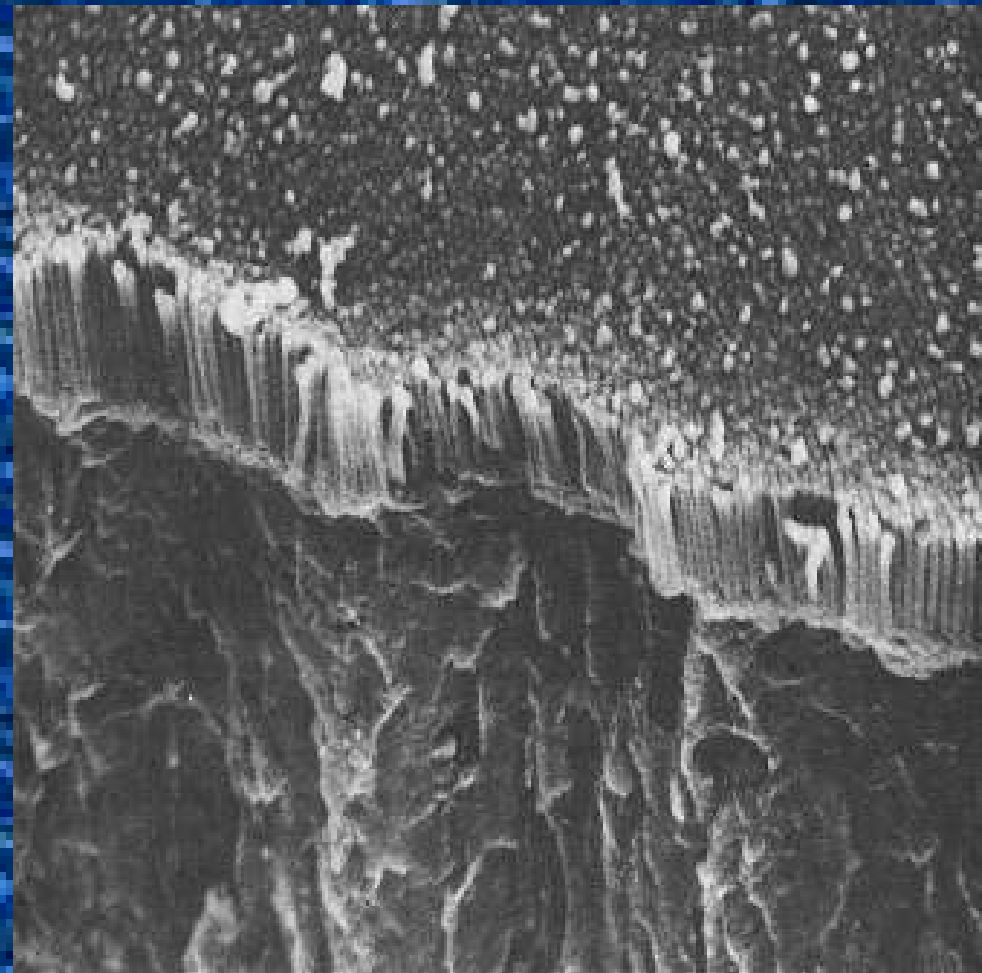


* 110000

Structure of cilia



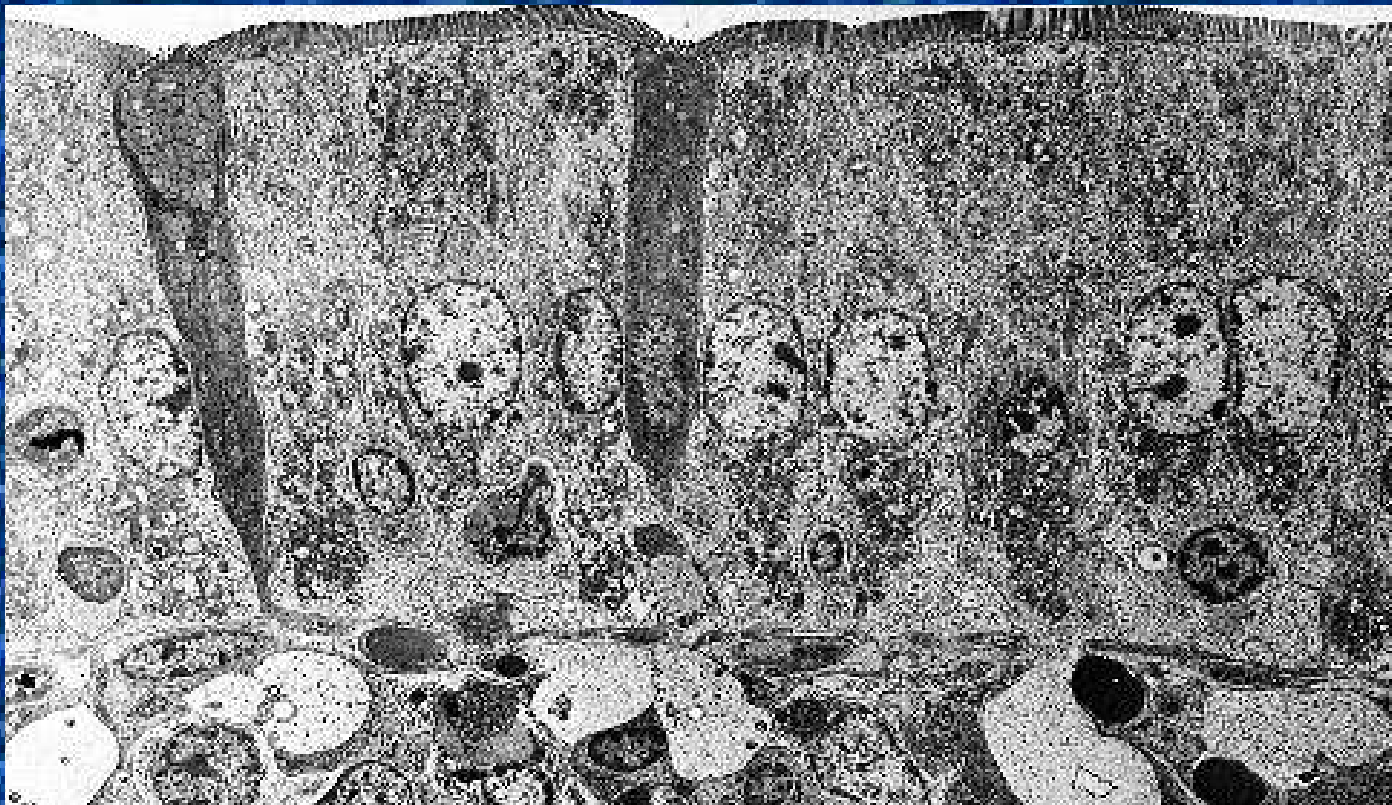
Microvilli in small intestine



* 6000

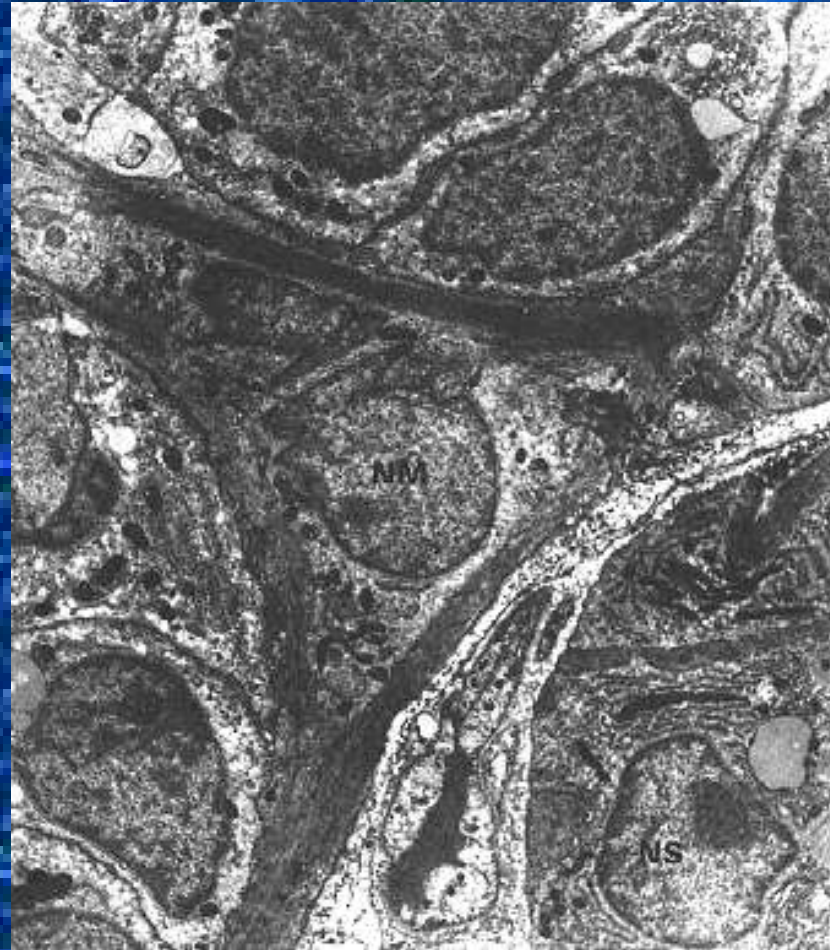
40 times
increased S/A

Low power micrograph from vertical section through simple columnar epithelium

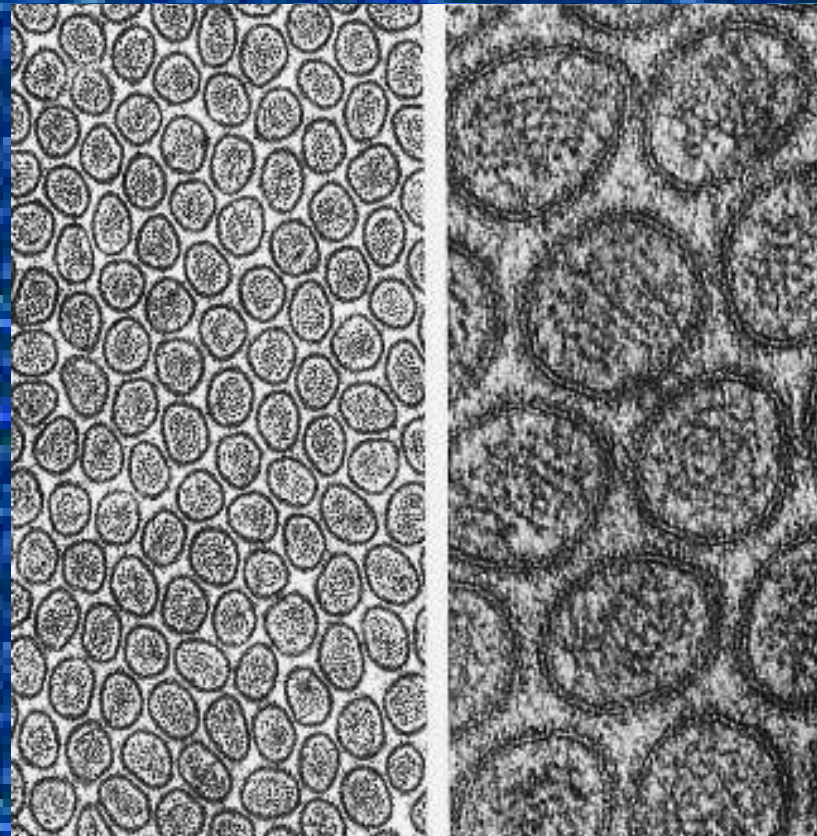


* 8000

Myoepithelial cell

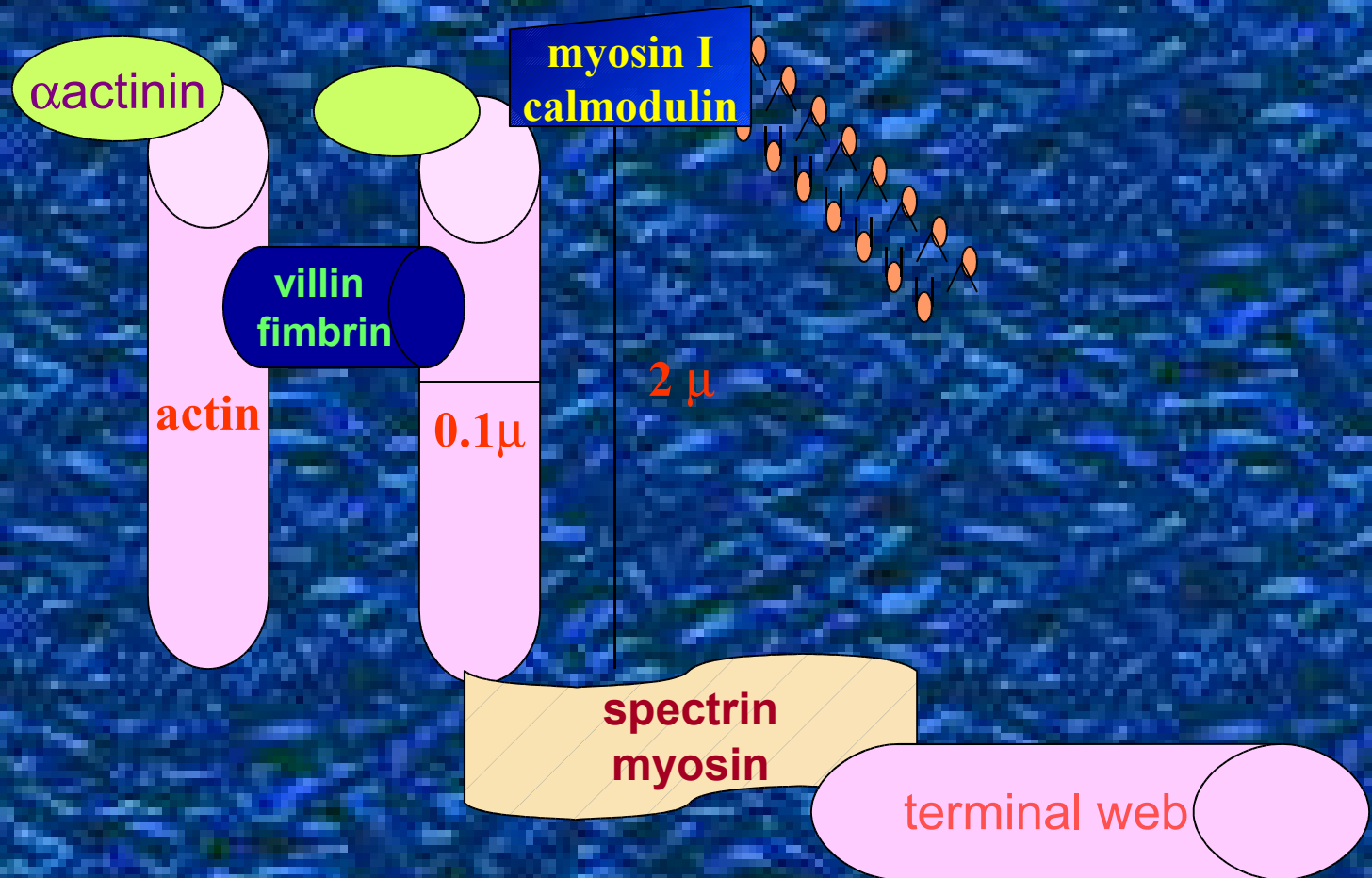


Section through microvilli

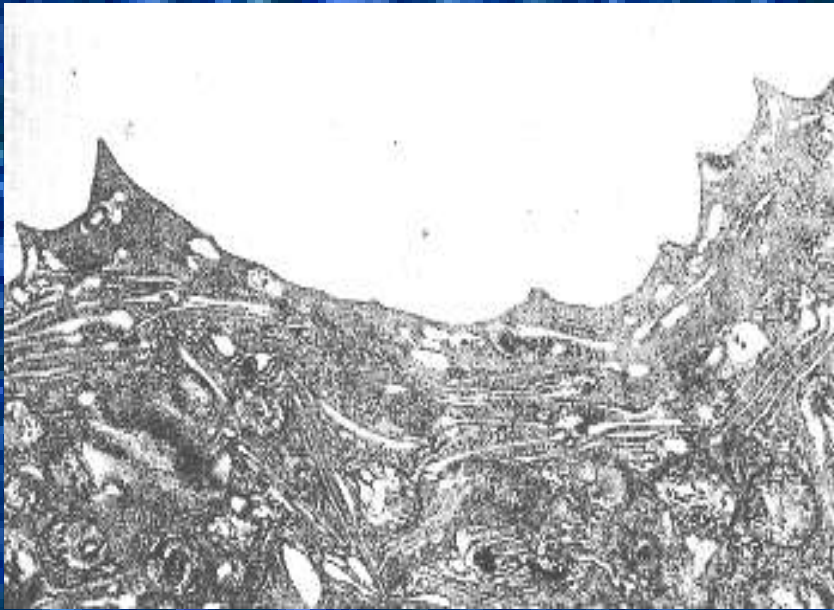


* 110000

Structure of villi

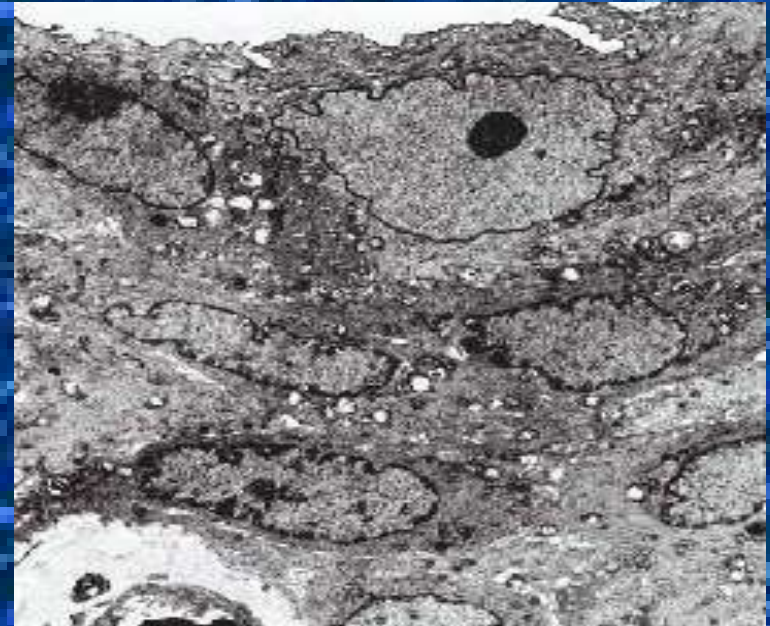


TEM of transitional epithelium



relaxed bladder

*** 15000**



murine ureter

*** 4000**

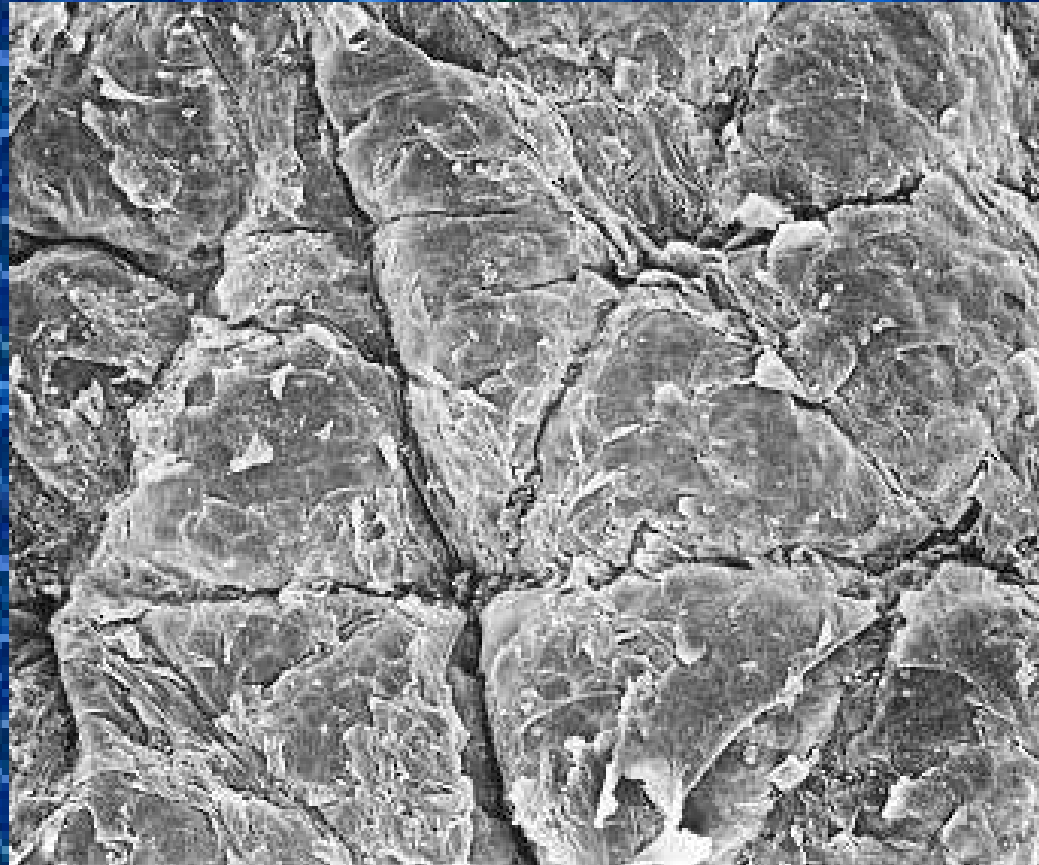
SEM of relaxed urothelial surface



plate like arrangement
of plasma membrane

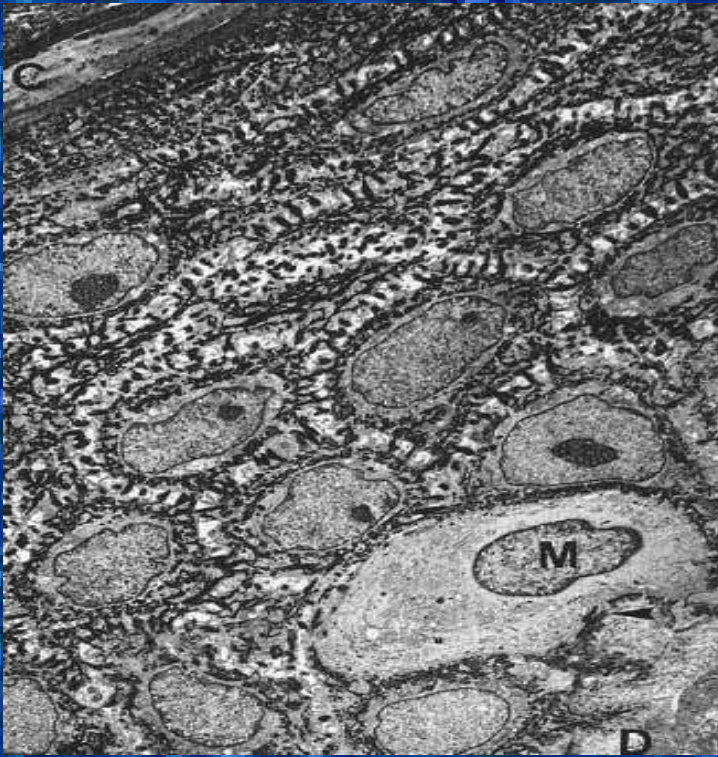
* 7000

SEM of thin skin

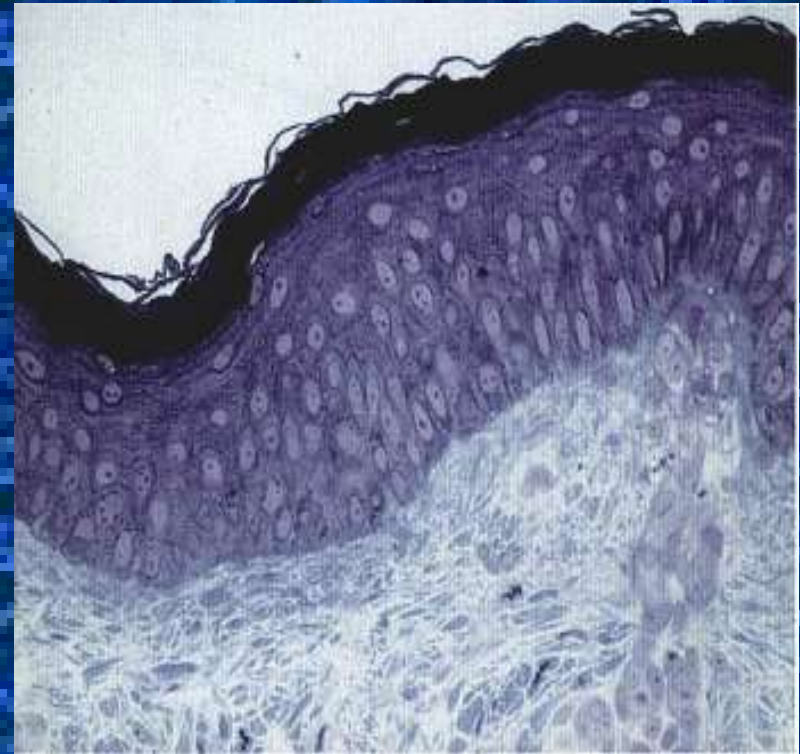


* 400

Stratified squamous epithelium keratinized

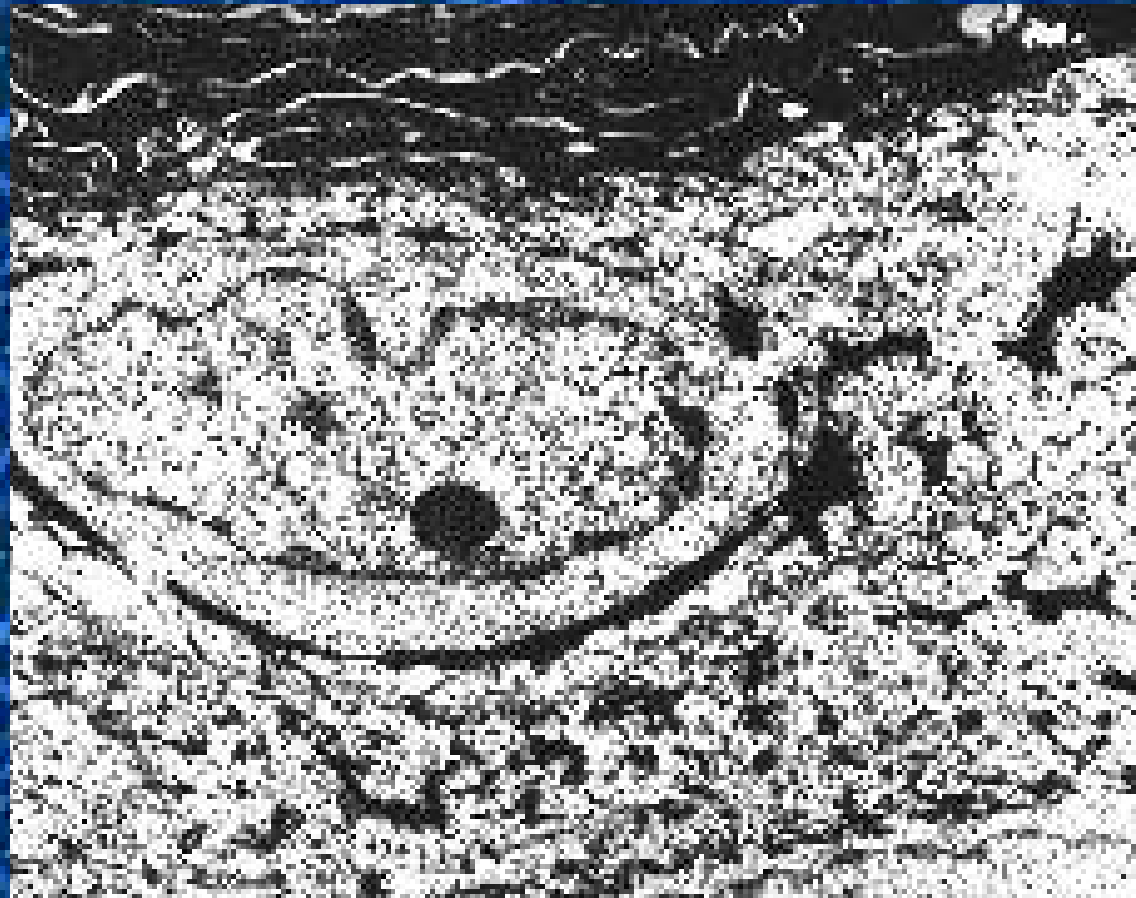


* 2560



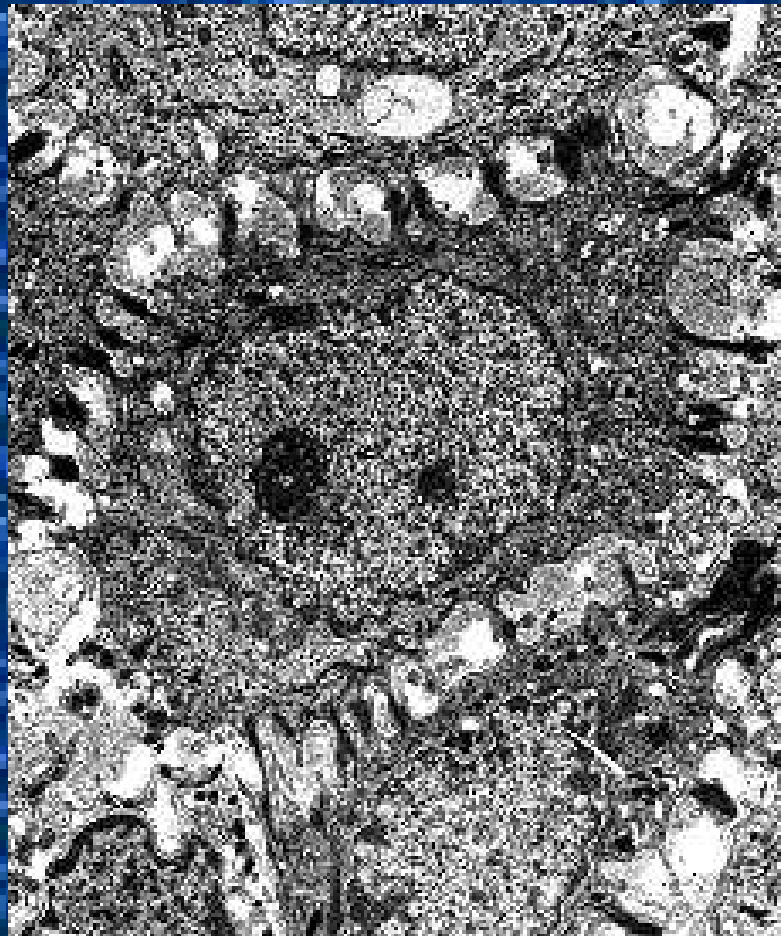
* 410

Why stratified?



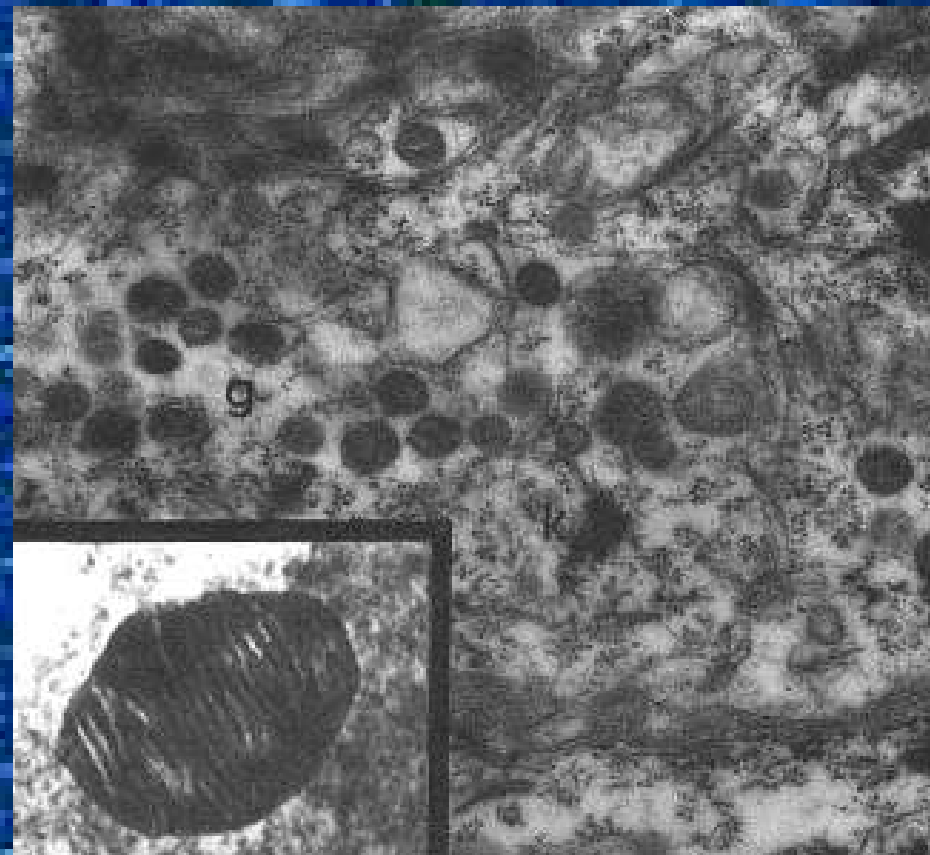
* 8000

Prickle cell in epidermis of skin



* 14000

Lamellar granules & keratohyalin granules



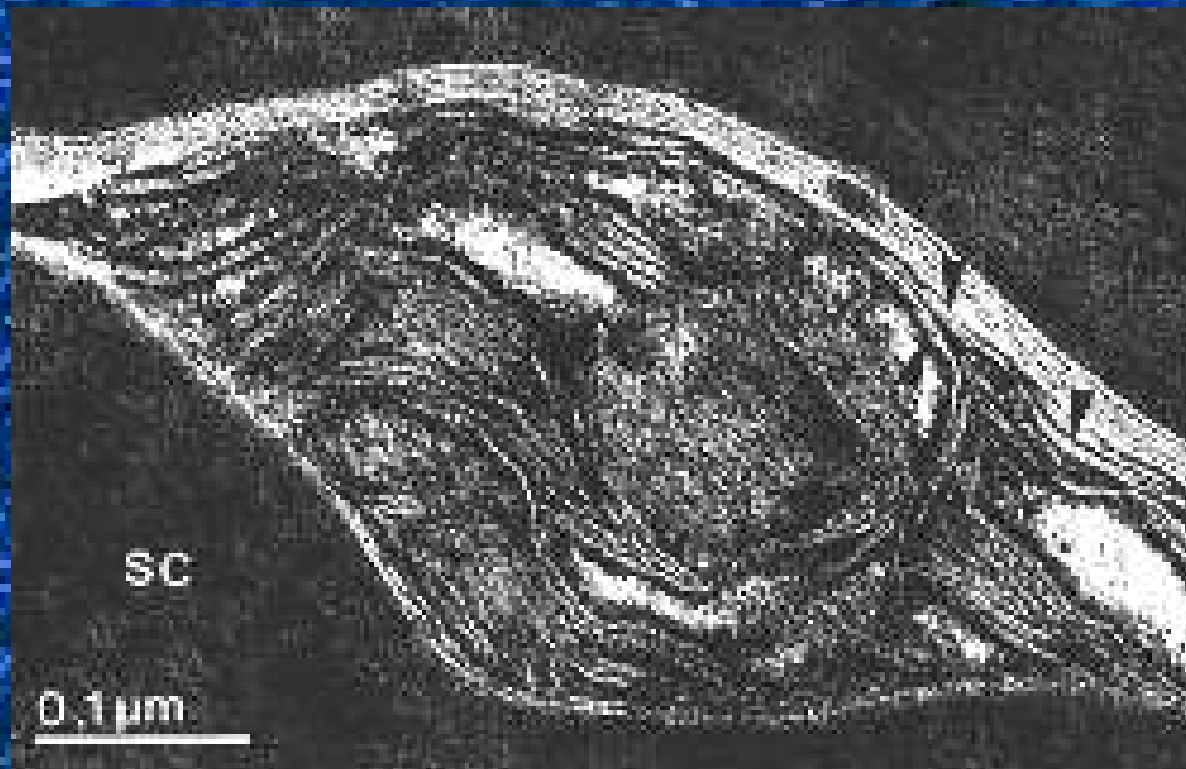
* 23625

osmium iodide

* 165000

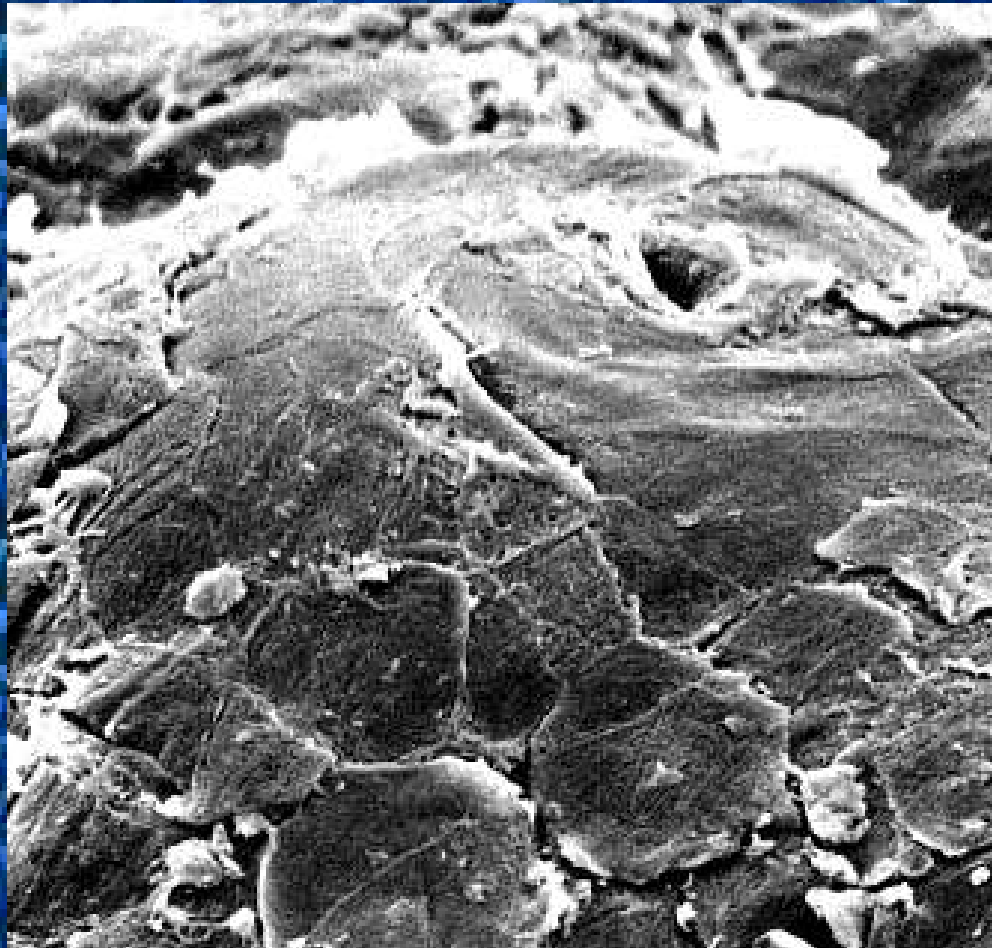
Uncoiling prelaminar lipid sheets from lamellar bodies

RuO₄



* 172500

Corneocytes lining the aperture of sweat gland

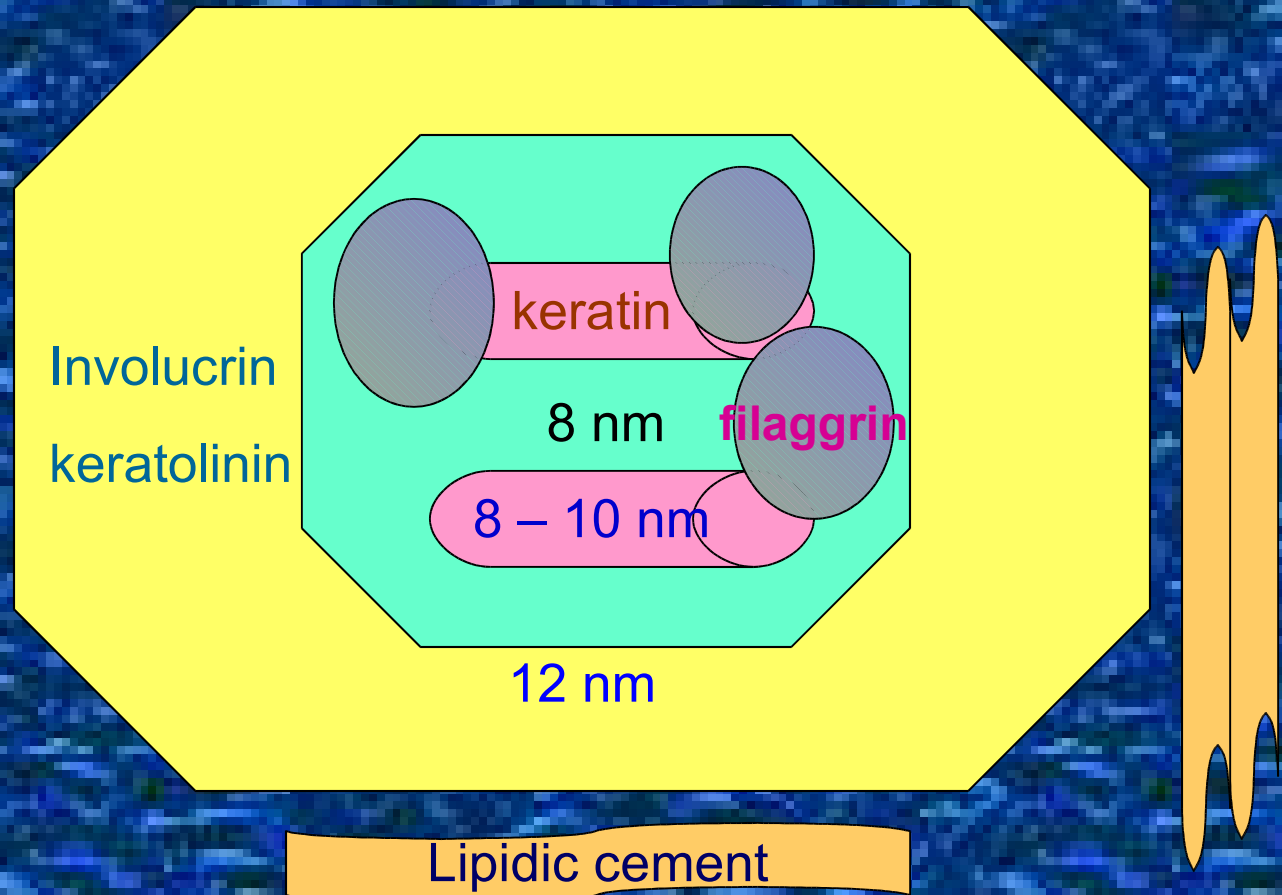


* 2000

Summary of cytokeratin

keratin polypeptide	Type 1 Acidic	Type 2 basic	Distribution
K 5	Y		basal keratinocyte
K 14		y	basal keratinocyte
1		y	suprabasal keratinocyte
10	y		suprabasal keratinocyte
8, 18, 7, 17, 19			smallest cytokeratin simple epithelia
3, 12			large keratin cornea
4, 13			non – keratinized str. squamous epithelium

Profile of a corneocyte





Thank you