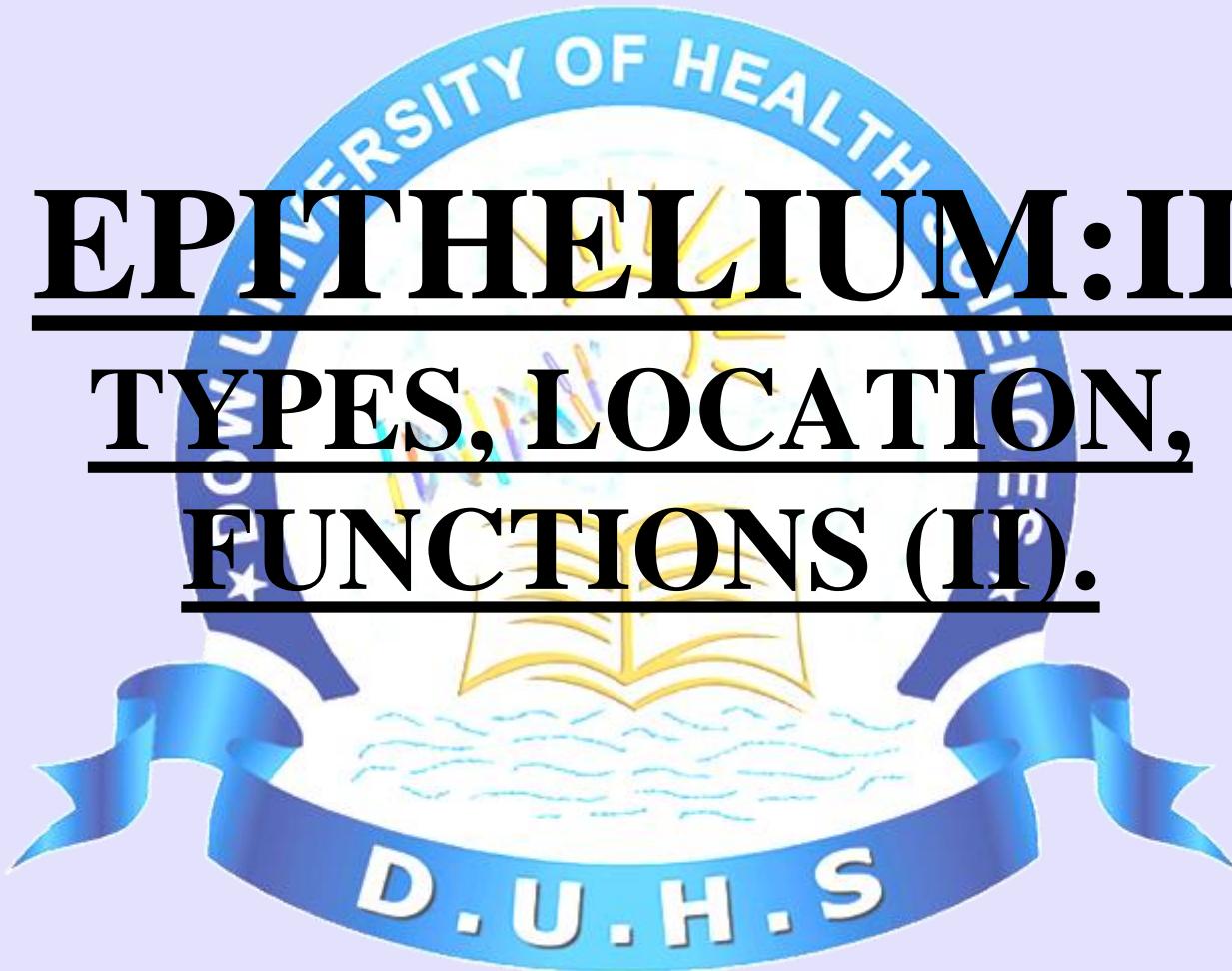


EPITHELIUM:II

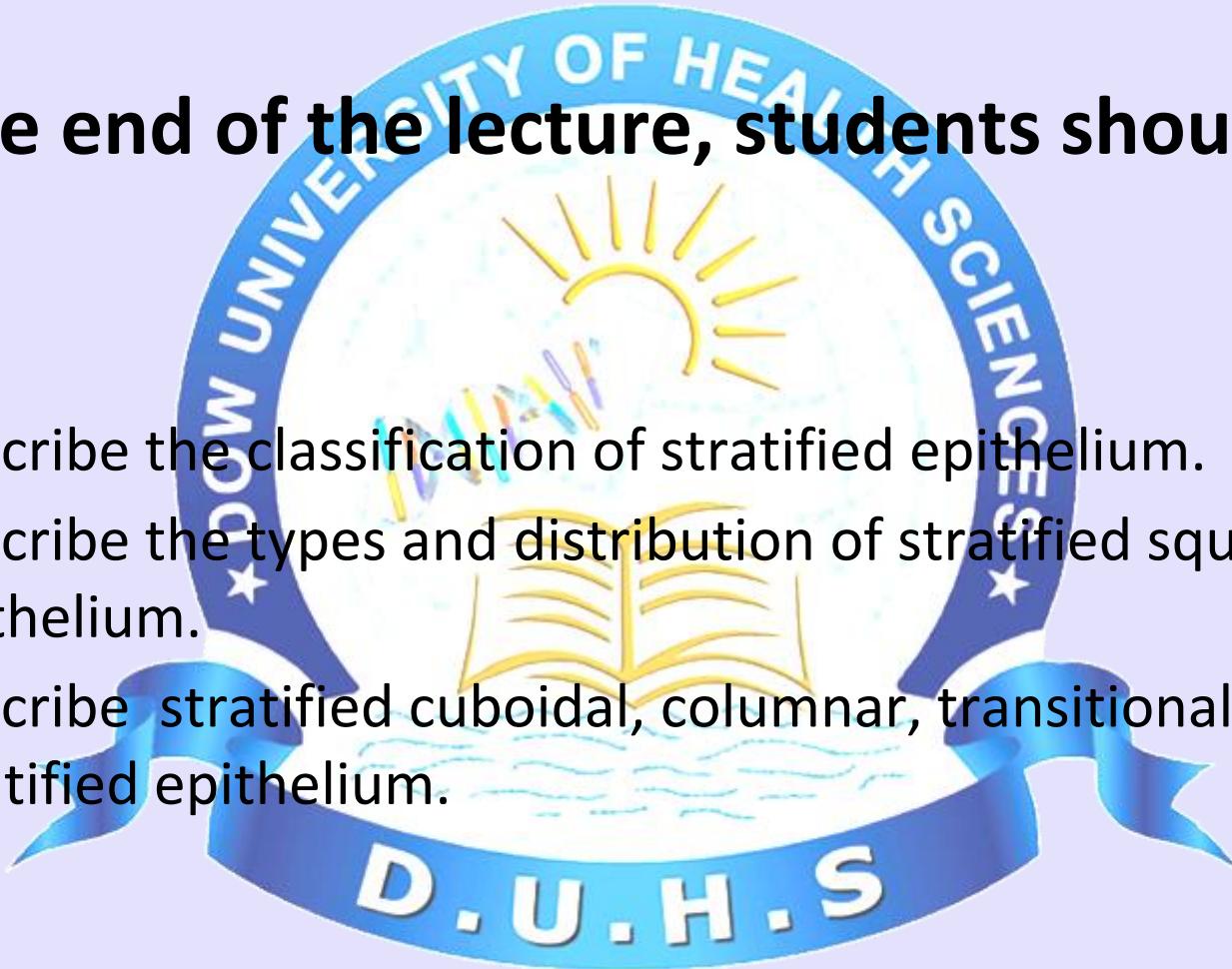
TYPES, LOCATION, FUNCTIONS (II).



LEARNING OBJECTIVES

➤ At the end of the lecture, students should be able to:

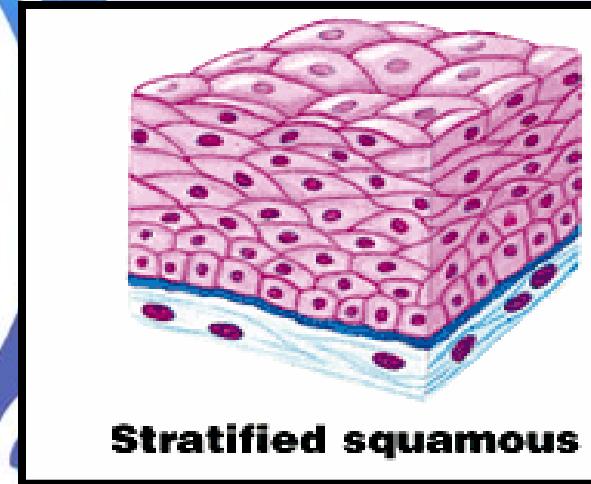
- Describe the classification of stratified epithelium.
- Describe the types and distribution of stratified squamous epithelium.
- Describe stratified cuboidal, columnar, transitional, pseudo stratified epithelium.



CLASSIFICATION OF STRATIFIED EPITHELIUM

According to the shape of the cells of its superficial layer, it can be classified into:-

1. Stratified Squamous Epithelium.
2. Stratified Cuboidal Epithelium.
3. Stratified Columnar Epithelium.
4. Transitional Epithelium.



STRATIFIED SQUAMOUS EPITHELIUM

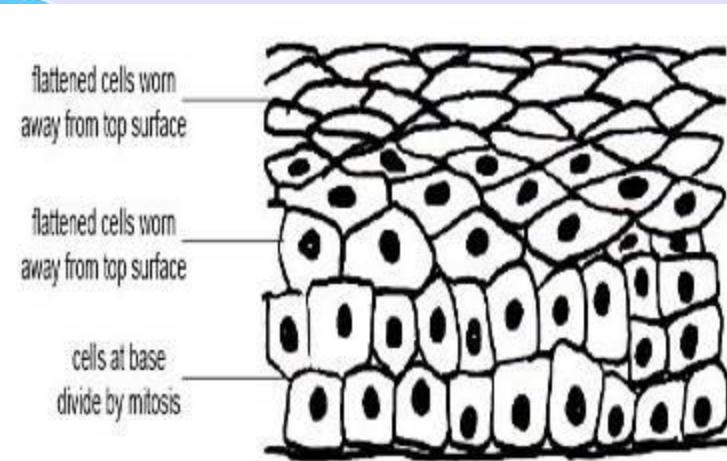
- Number of layers varies in different locations, but the shape and arrangement of the cells are quite characteristic.
- The deepest layer is formed by columnar cells, which rests on a basement membrane.
- Next few layers are of irregularly cubical or polyhedral cells.



Photomicrograph of a section of thin skin. The stratum corneum is thinner than that in thick skin, and the keratinized plates are organized in a more compact way.

STRATIFIED SQUAMOUS EPITHELIUM

- Then the cells gradually become flattened towards the surface, thus the most superficial layer consists of squamous (flat) cells.
- Mitosis is frequently observed in the basal layer of the epithelium.

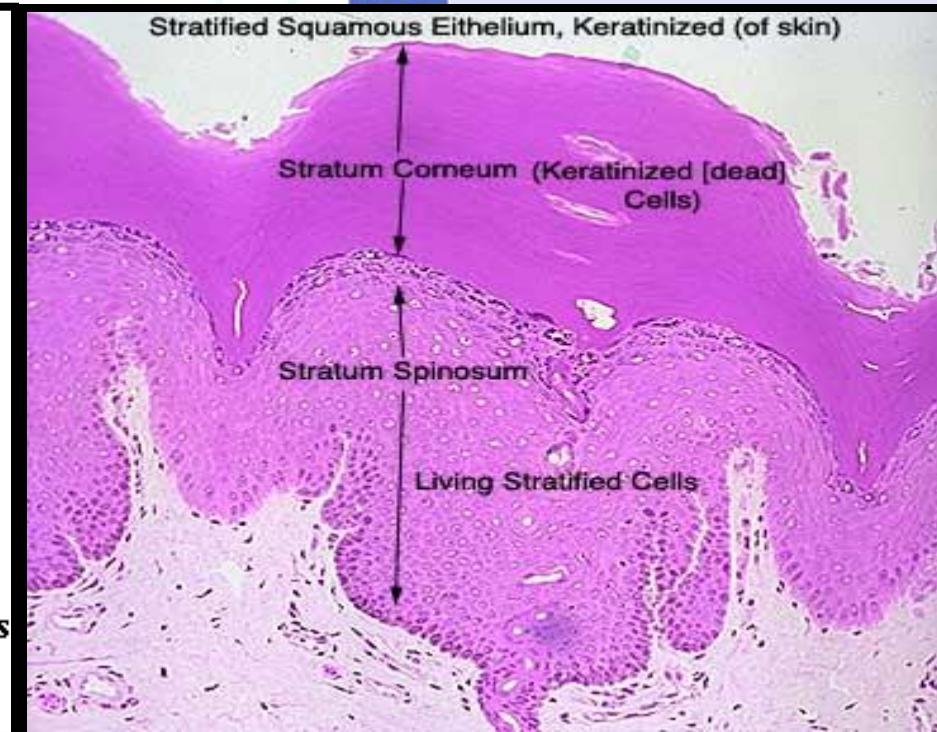
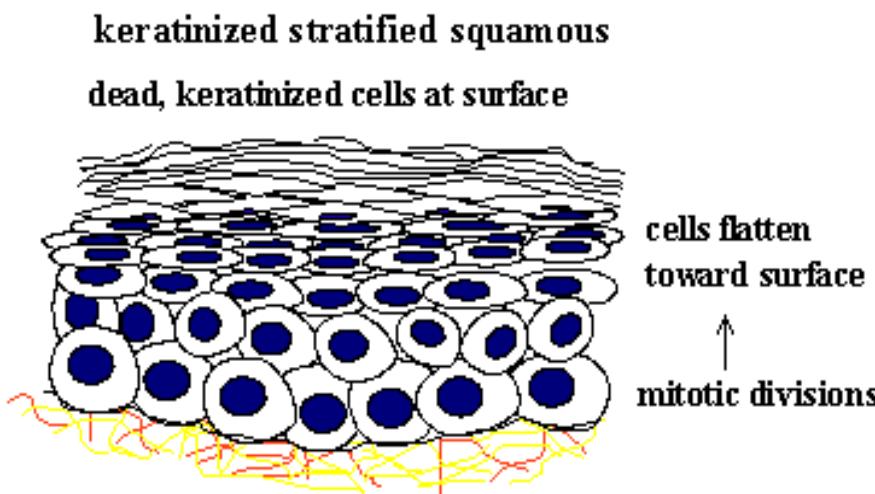
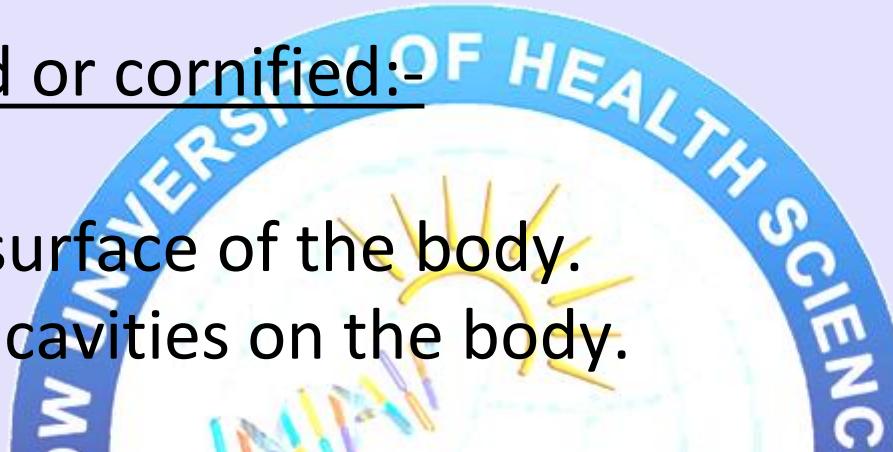


TYPES & DISTRIBUTION

STRATIFIED SQUAMOUS EPITHELIUM

(A) Keratinized or cornified:-

1. Entire free surface of the body.
2. Orifices of cavities on the body.

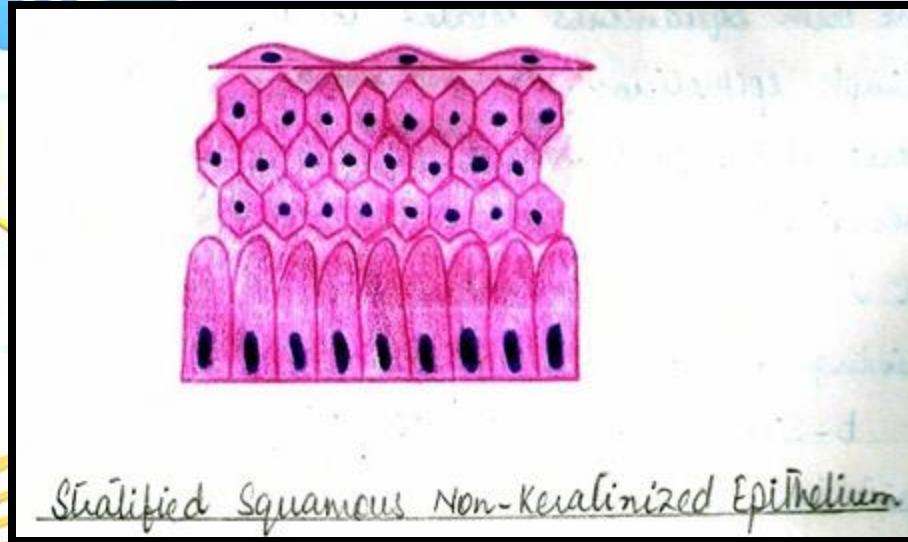


STRATIFIED SQUAMOUS EPITHELIUM

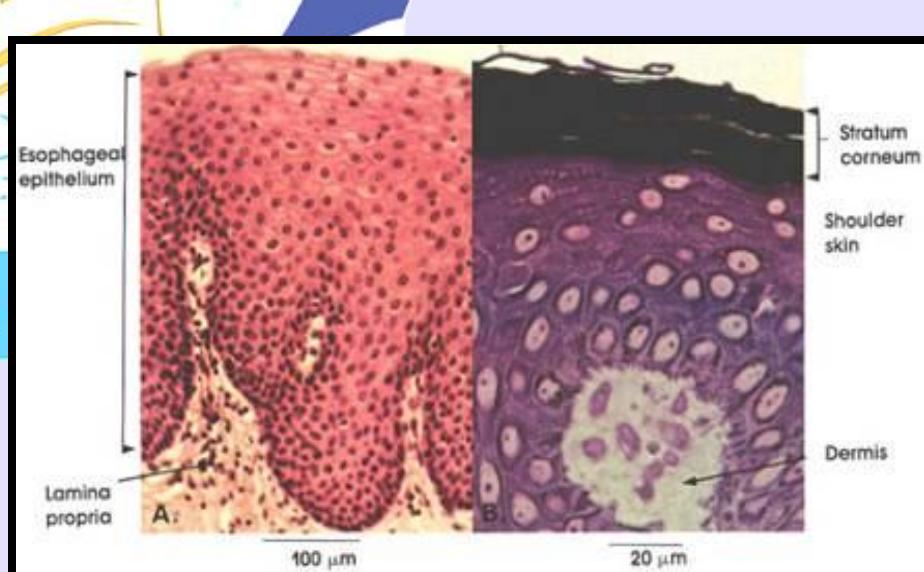
(B) Non-keratinized or non-cornified :-

It lines the mucous membrane of:

1. Oral cavity.
2. Pharynx.
3. Esophagus.
4. Vagina.
5. Some parts of male & female urethra.

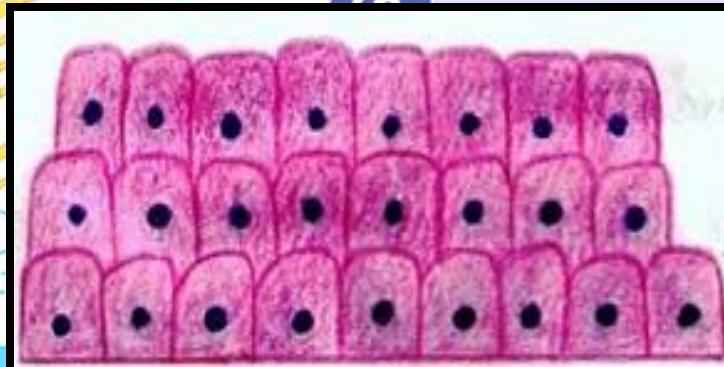
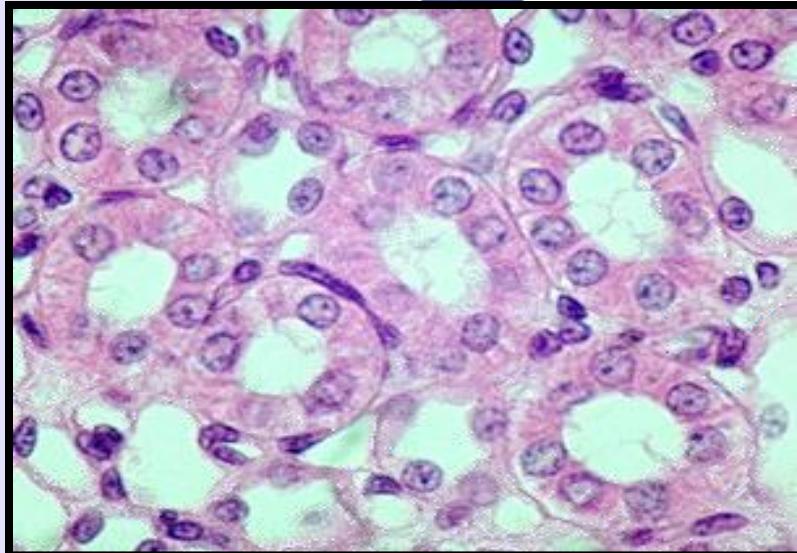


Stratified Squamous Non-Keratinized Epithelium



STRATIFIED CUBOIDAL EPITHELIUM

- Stratified cuboidal epithelia is a rare type of epithelial tissue.
- It is composed of cuboid shaped cells arranged in multiple layers.

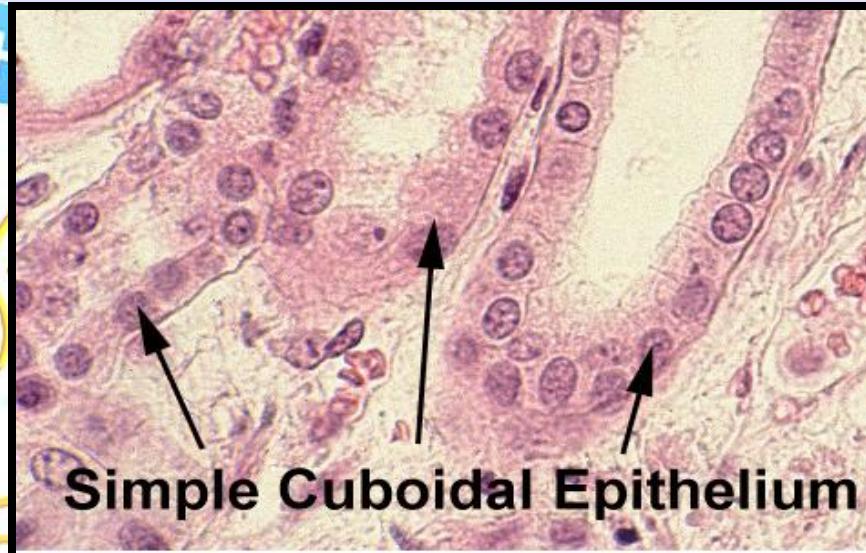
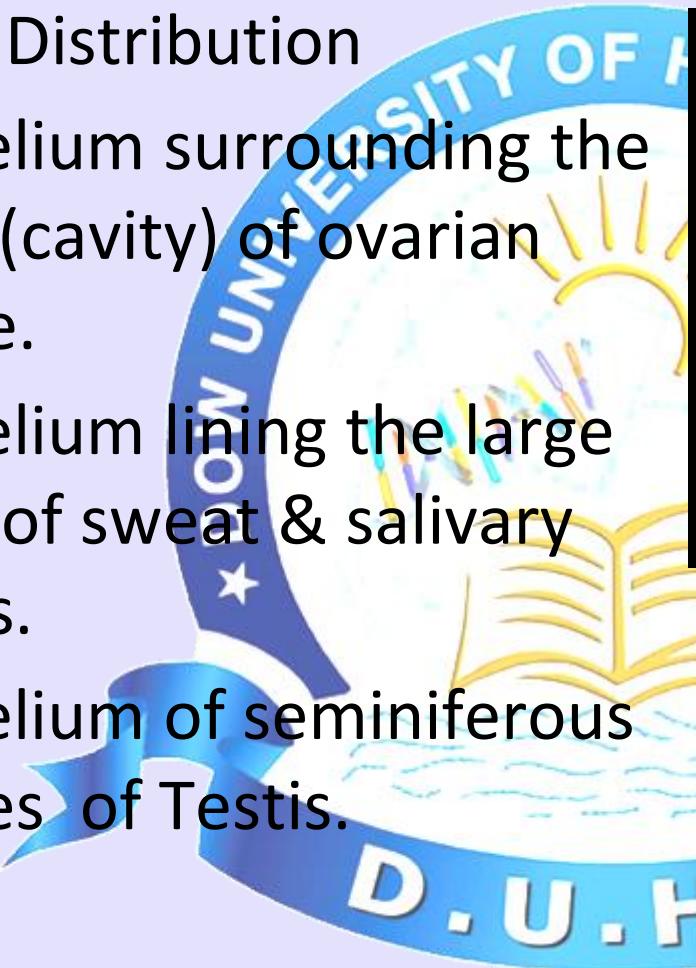


. Stratified Cuboidal Epithelium

STRATIFIED CUBOIDAL EPITHELIUM

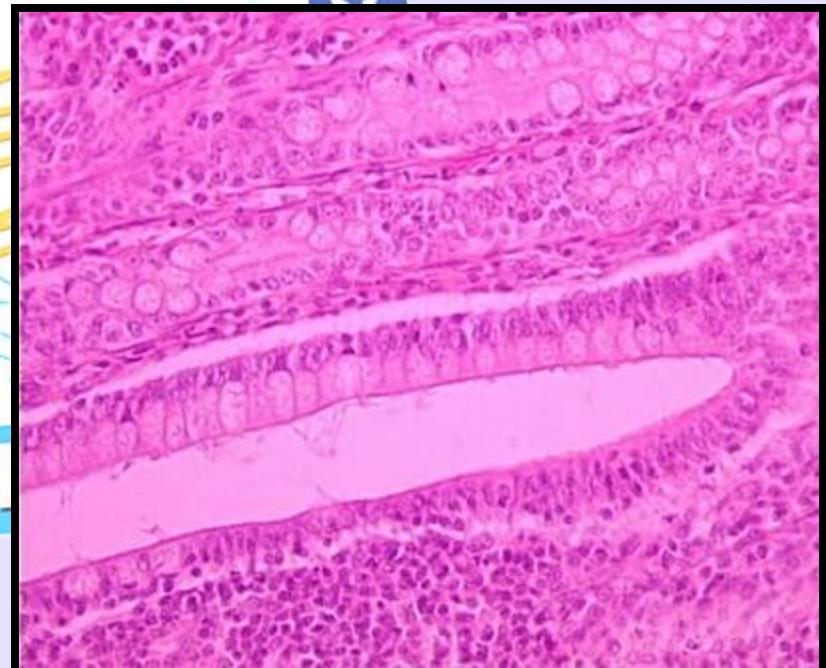
Distribution

1. Epithelium surrounding the antra (cavity) of ovarian follicle.
2. Epithelium lining the large ducts of sweat & salivary glands.
3. Epithelium of seminiferous tubules of Testis.



STRATIFIED COLUMNAR EPITHELIUM

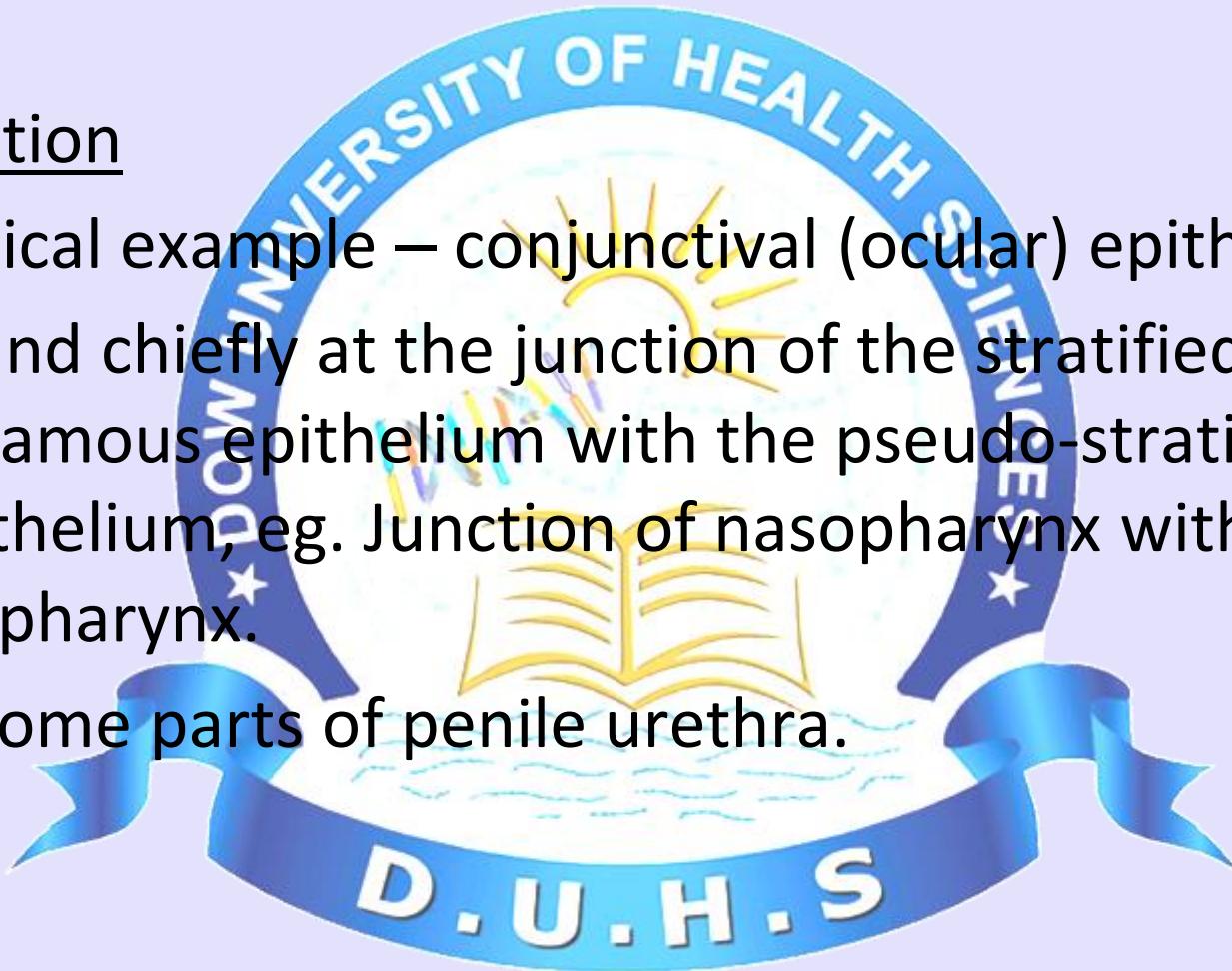
- It is rare in occurrence.
- Consists of columnar cells which rest on several layers of roughly cuboidal cells.



STRATIFIED COLUMNAR EPITHELIUM

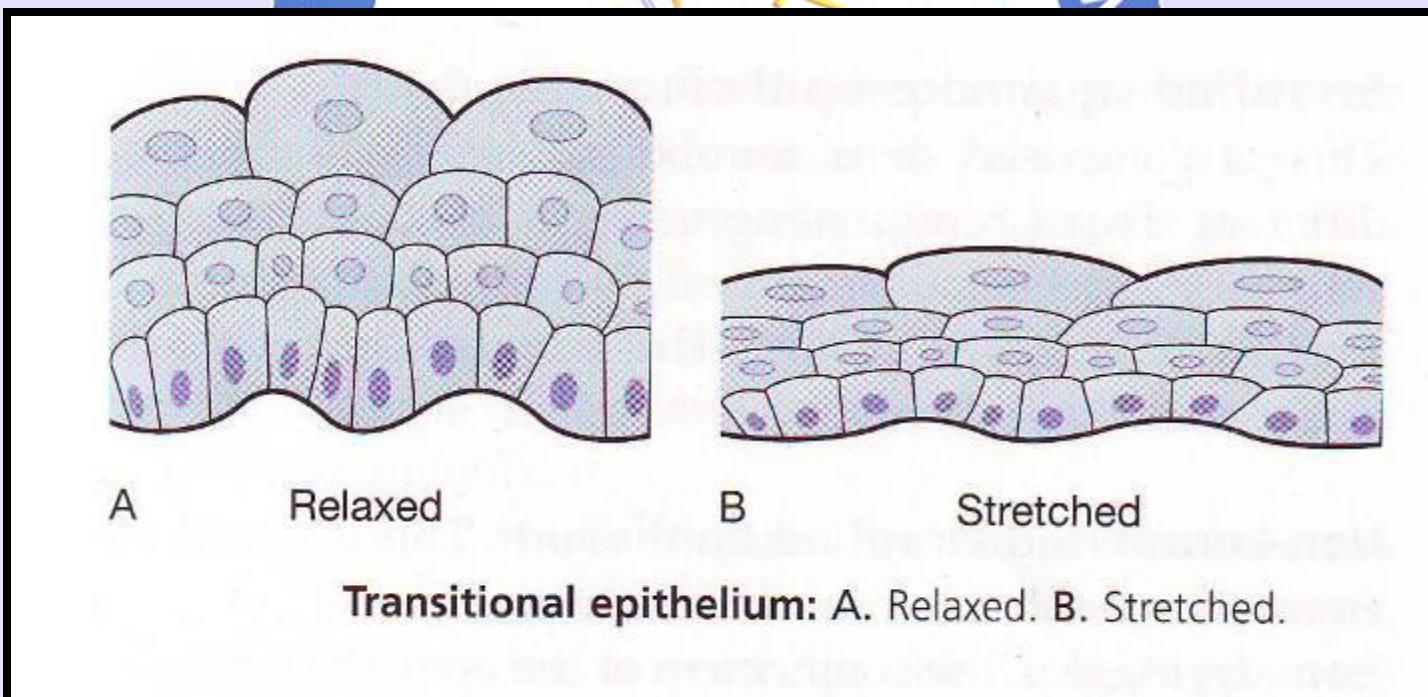
Distribution

1. Typical example – conjunctival (ocular) epithelium.
2. Found chiefly at the junction of the stratified squamous epithelium with the pseudo-stratified epithelium, eg. Junction of nasopharynx with oropharynx.
3. In some parts of penile urethra.



TRANSITIONAL EPITHELIUM

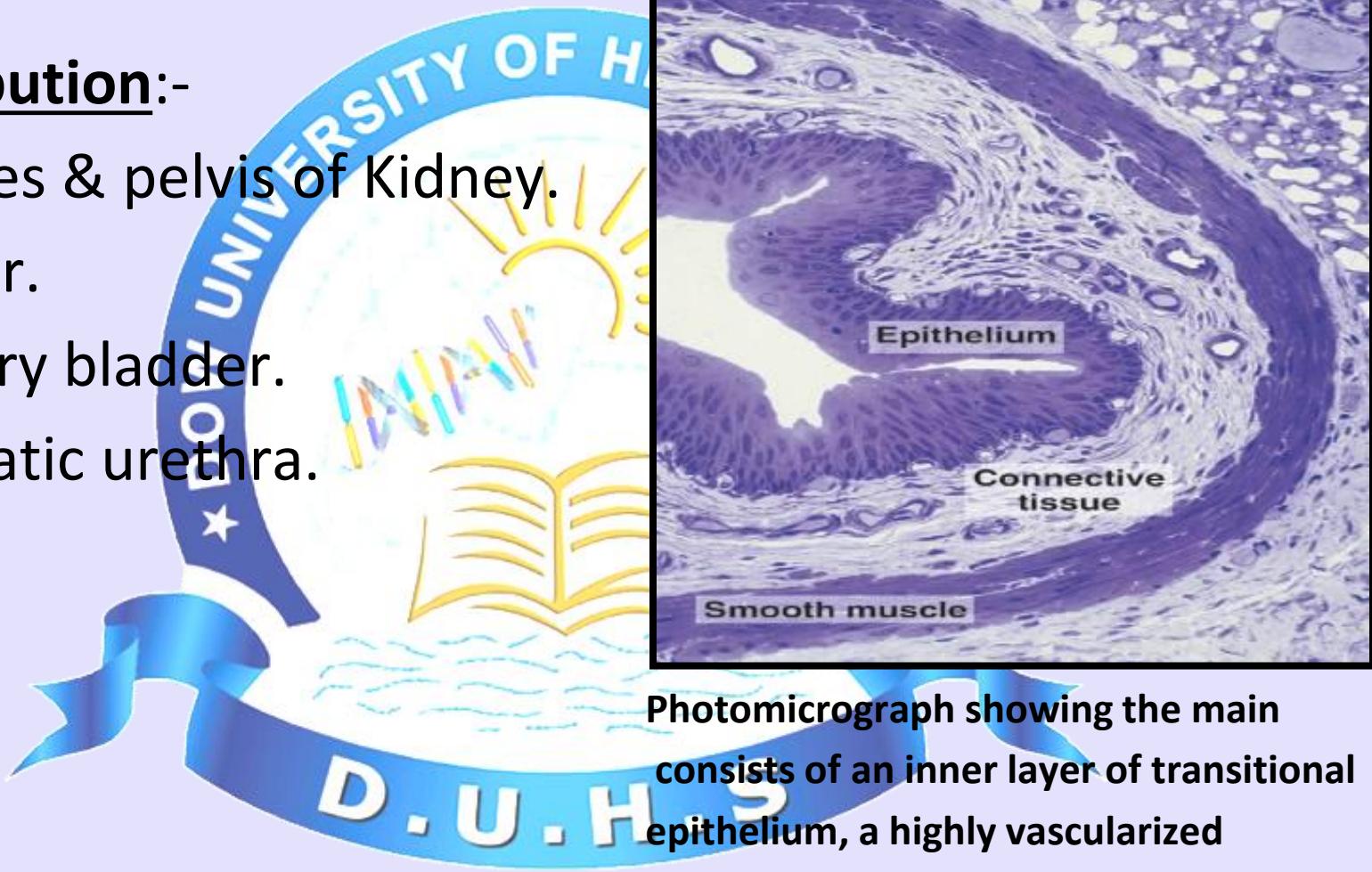
- It has a remarkable ability to increase or decrease the general surface area according to the degree of distention of the organ.



TRANSITIONAL EPITHELIUM

Distribution:-

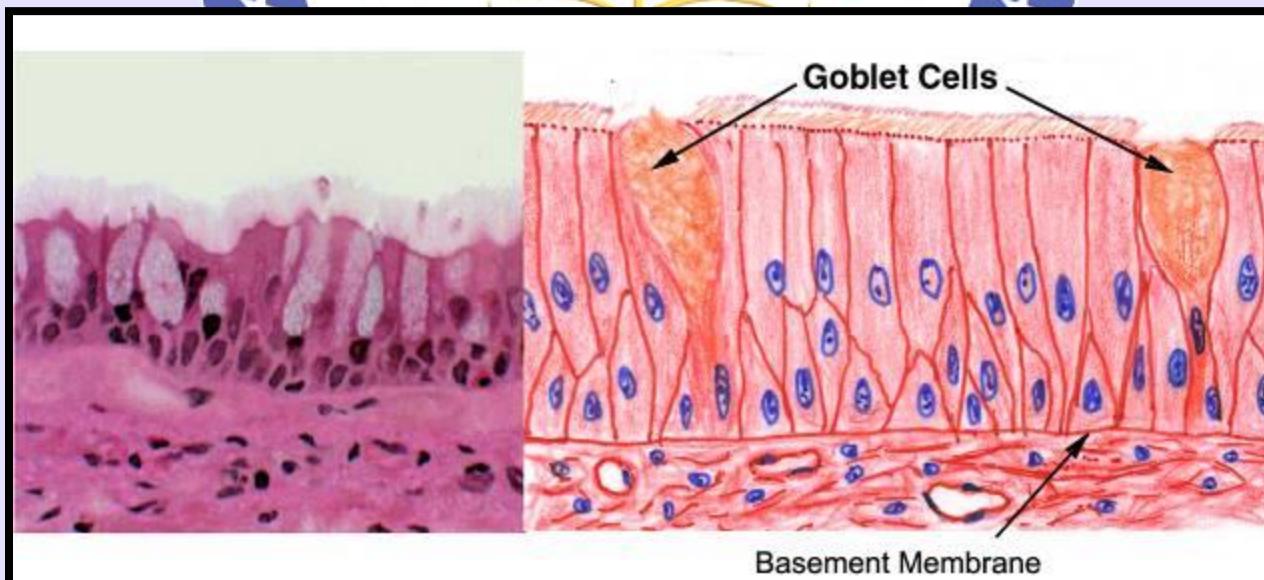
1. Calyces & pelvis of Kidney.
2. Ureter.
3. Urinary bladder.
4. Prostatic urethra.



Photomicrograph showing the main consists of an inner layer of transitional epithelium, a highly vascularized connective tissue, a smooth muscle layer, and an outer layer of connective tissue.

PSEUDOSTRATIFIED EPITHELIUM

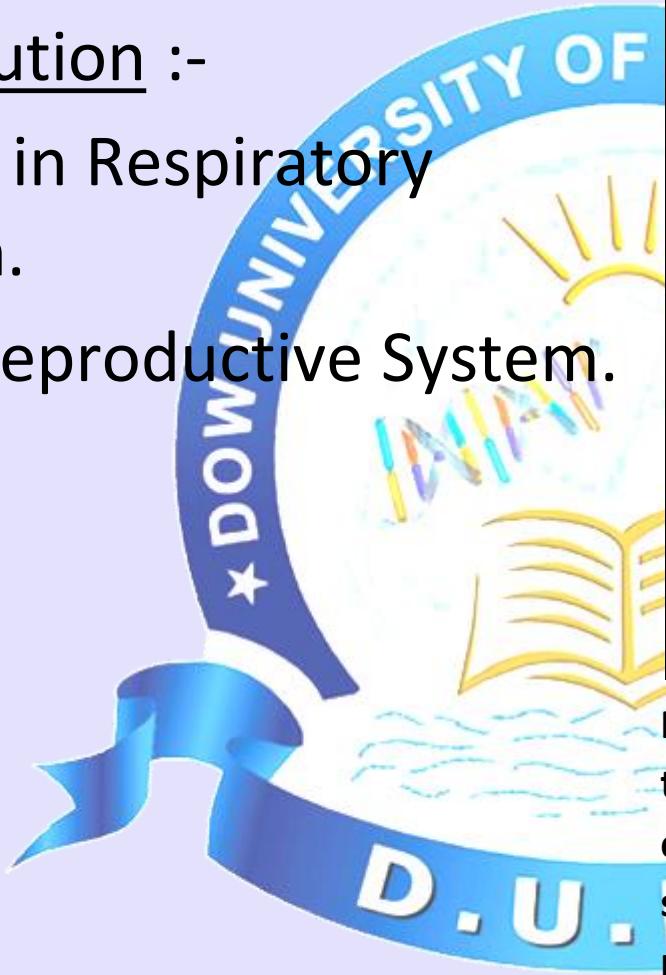
- It is actually a layer of single cells, but some cells are broader near the base and others are near the apex.
- Nuclei lie in the broader part of each cell, thus the nuclei lie at different levels, giving a false appearance of stratification.
- All cells are attached to the basal lamina but some cells do not reach the free apical surface.



PSEUDOSTRATIFIED EPITHELIUM

- Distribution :-

1. Mainly in Respiratory System.
2. Male Reproductive System.



Pseudostratified columnar epithelium of the trachea, formed by long and short cells. As some cells do not reach the surface of the epithelium their nuclei are present in different heights of the epithelial layer. Mucus-secreting cells, called goblet cells (arrow), intermingle with ciliated lining cells.

REFERENCES.

BASIC HISTOLOGY BY JUNQUEIRA

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