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Puspa Shrestha

EXPERIMENT NO: 1

NAME OF EXPERIMENT: TO STUDY TISSUES AND DIVERSITY IN SHAPES AND SIZE OF ANIMAL CELLS

COMMENTS ON SIMPLE SQUAMOUS EPITHELIUM

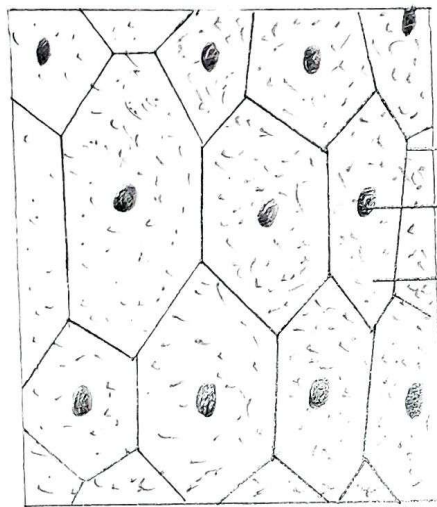
1. It is a single layered membrane composed of thin flat, hexagonal cells.
2. The cells are filled with granular cytoplasm and centrally placed large spherical nucleus.
3. All the cells are lightly fitted together by their edges as the tiles on the mosaic floor, so also known as pavement epithelium.
4. It is found on the lining at skin layer, cavity, blood vessels and inner lining of ducts.
5. It helps in protection, absorption, filtration and exchange of gases.

COMMENTS ON SIMPLE CUBOIDAL EPITHELIUM

1. It is made by cube like cells. The name simple cuboidal is derived from its square or cuboidal shape. The surface area of cells are roughly irregular and hexagonal.
2. Cells are filled with granular cytoplasm and centrally located large prominent spherical nucleus.

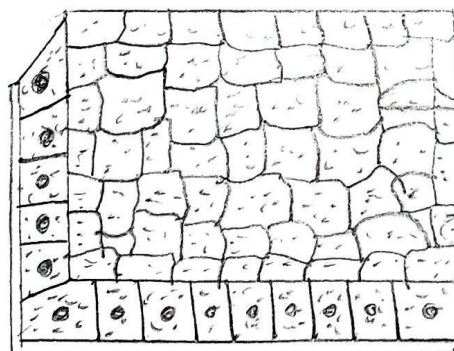
TO STUDY TISSUES AND DIVERSITY IN SHAPES AND SIZE OF ANIMAL CELLS

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Cell membrane
Nucleus
Cytoplasm

fig. Simple Squamous Epithelium



Cell membrane
Cytoplasm
Basement membrane

fig. Simple cuboidal epithelium

3. The tissue lie on the basement membrane living on kidney tubules, salivary glands gut lining, pancreatic ducts, urinate tubules and reproductive glands.
4. The cuboidal epithelium helps in ~~secretion~~, absorption and excretion.

COMMENTS ON ADIPOSE TISSUE

1. It is a modified areolar tissue formed for accumulation of fat so the cells are known as Adipocytes. When Adipocytes store large, single fat droplet and brown Adipocytes stores many small fat droplets.
2. The fat cells are large round with number of fat droplets which later fuse to form a large fat globule. Each cell bears a thin peripheral ring like layer of cytoplasm enclosing a nucleus at one side.
3. They are loose network of fibre which support the large fat laden cells.
4. They are confined below the skin, heart, blood vessels, bone marrow and eye orbit.

COMMENTS ON HYALINE CARTILAGE

1. It is a skeletal tissue. It is strong, flexible and elastic in nature. It is composed of homogeneous, translucent bluish semi-solid bearing many small

proteins called chondrins. The chondrins are embedded in delicate collagen fibres.

2. It is confined at trachea; larynx, connection between ribs and breasts bones.
3. It helps to connect bodily organs, protects the delicate vital organs from injuries.
4. The matrix encloses numerous single or small groups of cartilage cells called chondrocytes. The cells are surrounded by a fluid filled space called lacunas.

COMMENTS ON SIMPLE COLUMNAR EPITHELIUM

1. It is composed of many tall column or pillar like cells each placed side by side. They are taller than wide and stand on basement membrane.
2. Cells contain an oblong-nucleus embedded in granular cytoplasm towards base at different level.
3. It forms the lining of gut, gall bladder, stomach, intestine, ureter and uterine wall, some cells may specialize for sensory reception to be found in nose, ears and tongue.
4. It helps in protection, secretion, absorption and excretion.

COMMENTS ON AREOLAR CONNECTIVE TISSUE

1. It is composed of Jelly like matrix. It enclose mesh of fine fibre, fixed cells and wandering cells.

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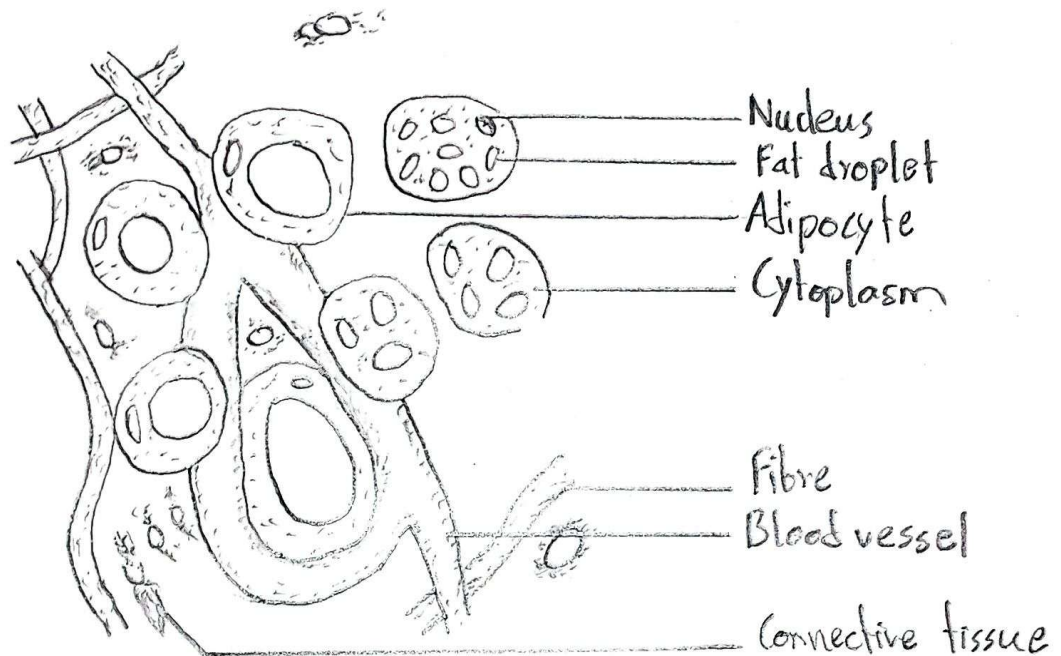


fig. Adipose Tissue

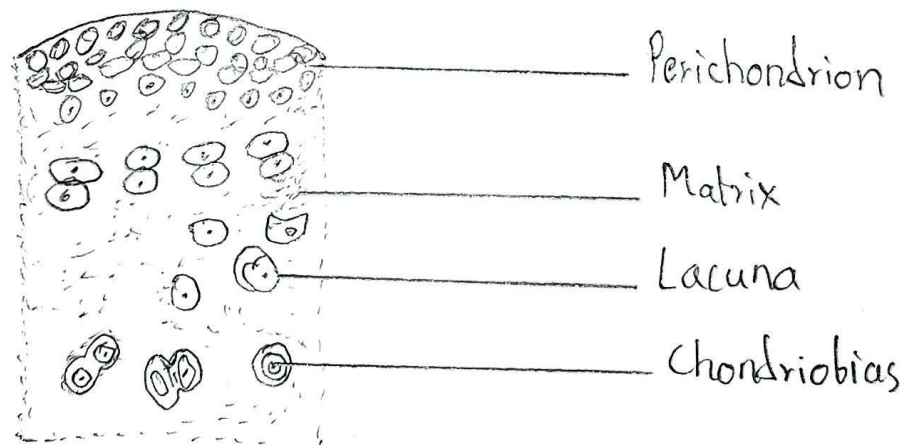


fig. Hyaline Cartilage

2. Fibres are of two types namely white collagen and yellow elastic fibres. The collagen fibres are tough and not elastic while the elastic fibres are thin and elastic in nature.
3. Tissue contains five types of cells. They are:
 - i. Fibroblasts tissues are large flat cells forming white and yellow fibres.
 - ii. ~~Mac~~ Macrophages are irregular shapes phagocytic cells. They digest bacteria and foreign materials.
 - iii. Most cells are large amoeboid cells present in blood.
 - iv. Lymphocyte cells produce antibodies to destroy foreign matters.
4. The tissue occurs in between the ~~visceral~~ organs so known as packing tissue because they pack space between the organs.

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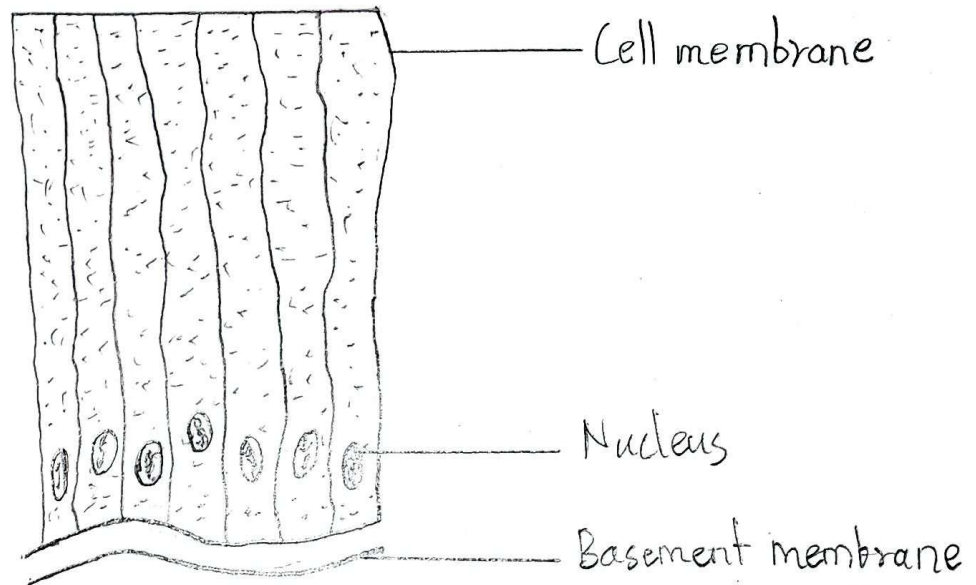


fig. Simple columnar epithelium

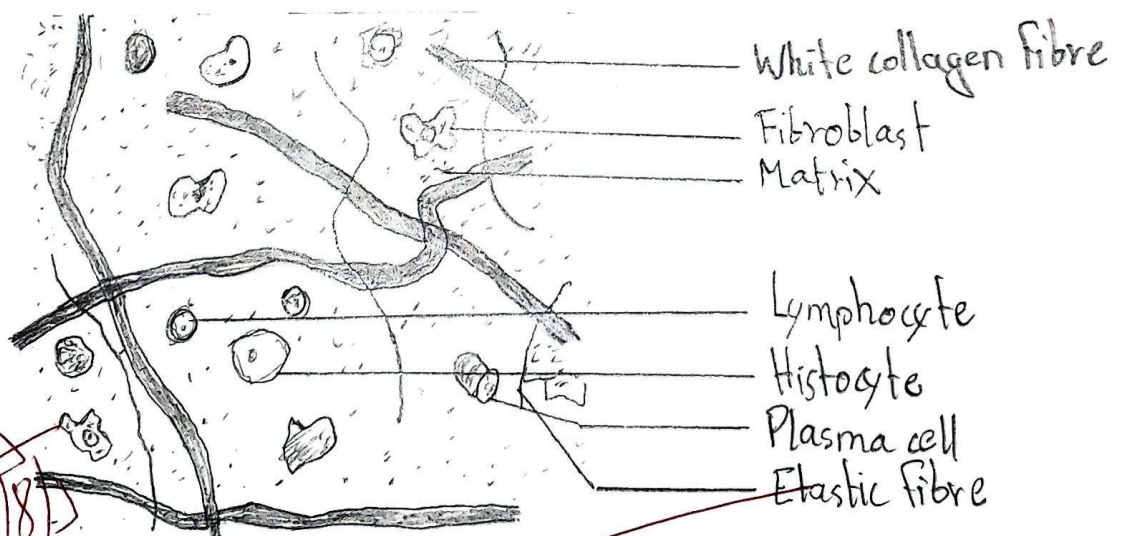


fig. Areolar Tissue