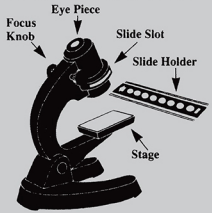
INSERT HERE

MICRO-SLIDE-VIEWER™



Face the Micro-Slide-Viewer so that as much light as possible falls on the white Stage.

Insert the numbered end of the Slide Holder into the Slide Slot of your Viewer, moving it from your right to left.

View with your eye close to the Eye Piece.

With Slide No. 1 in place, focus by turning the Focus Knob.

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6. ESOPHAGUS EPITHELIUM (340x)

This is a piece of the lining inside the gullet or esophagus (e-SOF-a-gus). The esophagus is the swallowing tube that starts at the back of the mouth and goes down behind the trachea to the stomach. Food moves through this passage (A).

The epithelium (B) lines the sides of the passage. Observe two things about this tissue: the top cells of the epithelium are flat, and it is several layers thick. Because of this it is called *stratified squamous epithelium* (stratified means layers; squamous means flat).

The duct (C) brings mucus from a gland to cover the flat top cells and give the lining of the esophagus a smooth surface. In spite of this smoothness, the passage of food wears away the top cells. Lower epithelial cells are constantly reproducing to replace the worn out cells at the surface.

7. SIMPLE SQUAMOUS EPITHELIUM (330x)

This is a section cut through the filter sac of a kidney. The areas (A) are clusters of very fine blood vessels. These clusters have a very thin protective covering (B) around them.

This slide was prepared by a special process which forced the cluster of fine blood vessels to shrink away from the protective covering, so we can see it clearly.

The lining (B) is only one cell thick and the cells are flat. This lining is called *simple squamous epithelium.*

8. THE URINARY BLADDER (125x)

The tissues around the urinary bladder have a special function to perform. As the bladder fills, the walls expand and become thicker again.

The cells are peculiarly adapted to take care of these changes.

Note that the cells in the top layer are rounder and have thicker membranes than most epithelial cells. You can actually see not only the dark spot, which is the nucleus, but also the outline of each cell.

These cells slide over each other to permit the epithelial layer to change in thickness.

Fibrous tissue can be seen at (L). Smooth muscles that pull in different directions are identified by (M) and (N). These muscles produce the pressure which expels the urine when the bladder contracts.

SET 50

ANIMAL TISSUES

EPITHELIUM AND CARTILAGE

All plants and animals are made up of tiny bits of protoplasm called cells. These cells are found in a great variety of shapes and sizes, due to the different functions they perform.

Cells work together, both with their own kind and with those which have different functions. A group of similar cells performing a similar function is called a *tissue.*

Our body has a great many different tissues. Special tissues protect surfaces and line all cavities. One tissue manufactures a useful substance and gets rid of waste materials. Another tissue gives support to certain organs.

This set includes slides showing tissues of the trachea, the esophagus, the kidney and the bladder.

The magnification given, for example, 50x for slide 1 - The Trachea - means that the microscope was set at that power when the photograph was taken.

1. THE TRACHEA (50x)

You can feel the trachea (TRAY-key-a) or windpipe, if you move your finger about half an inch down from your Adam's apple. The trachea is an organ in the form of a tube through which air passes from the throat to the chest.

The specimen shown in this slide was made by a cut across the wall of the trachea. The layers of cells perform different functions and, therefore, have different appearances.

At the top (A) is the clear air passage inside the trachea. The first layer of cells (B) is the lining of the trachea. At the bottom is the layer of cells (C) whose function it is to hold the trachea to the other organs near it. One of the hard rings you feel with your finger is the area marked (D).

At this magnification the individual cells are difficult to distinguish. The various groups of cells appear as layers of tissues.

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