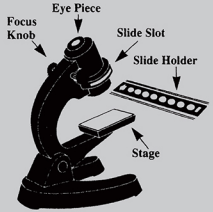
INSERT HERE

**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.**

**NATIONAL TEACHING AIDS, INC.**
**div. of American Educational Products, LLC**
**1-800-289-9299**

## 6 NERVE CELLS (300x)

This slide was made from part of the human brain that controls memory, thinking and learning. It shows several nerve cells, each of which has a thick main cell body and many long extensions. The stain used deposits a great deal of dark color in the cell. Unfortunately, the staining hides the nucleus and other internal structures of the cell body (see arrow).

We use this dark stain to bring out the many long fibers which extend from the main cell body. Some of these fibers make hundreds of connections with other nerve cells to control our behavior.

An entire brain cell cannot be seen here because the long fibers go far beyond the focus and field of the microscope.

## 7 BACTERIA (1500x)

The large oval bodies you see are bacteria from the scalp. They may be the cause of dandruff. Bacteria used to be classified as one-celled plants. They now are placed in a separate group called Monera.

At the high magnification used here, we can see the inner structure of the bacterial cell.

The granules which appear as dark round spots within the cell are of various kinds. Some of them are nuclear material. Unlike most other cells, the bacterium does not have a true nucleus.

Within this field you see several other kinds of bacteria. Thousands of varieties of bacteria have been recognized. The study of bacteria is a branch of Biology known as Bacteriology.

## 8 VIRUS (50,000x)

This is a photo of viruses attacking a bacterium. The large dark area is the bacterium and the viruses are the small dark spots indicated by the arrows.

Viruses are too small to be seen with the ordinary microscope. This photo was made with the aid of an electron microscope which is capable of magnifying even more than the 50,000x used here.

Whether or not viruses are cells is a question. They do not have a typical cell structure and the performance of life functions in viruses is very different from that of other living things.



**SET 58**

# CELL STRUCTURE

In the early part of the 19th century, scientists, after extensive studies of animals and plants under the microscope, concluded that all living things are made of cells.

These slides have been selected to enable you to study the principal parts of the cell. You will notice that the cells of different plants and animals have variations in their structure adapted to their special functions.

A knowledge of the basic characteristics of the cell is necessary for understanding all living things.

The magnification given, for example, 300x for Slide 1 - Cork - means that the microscope was set at that power when the photograph was taken.

## 1 CORK (300x)

This is a microslide view of a thin slice of cork. In the 17th century Robert Hooke made thin slices of cork and studied them with the crude microscope of his day. He was impressed by the box-like appearance of the material.

Hooke called these dark-walled boxes “cells.” The name has become one of the best-known scientific terms, although Hooke had no idea of the importance of this discovery.

The cells of this material are empty. This is because cork is a dead and dried out part of the tree.

The dark shadows, which seem to be within the cells, are actually the walls of other cells below.