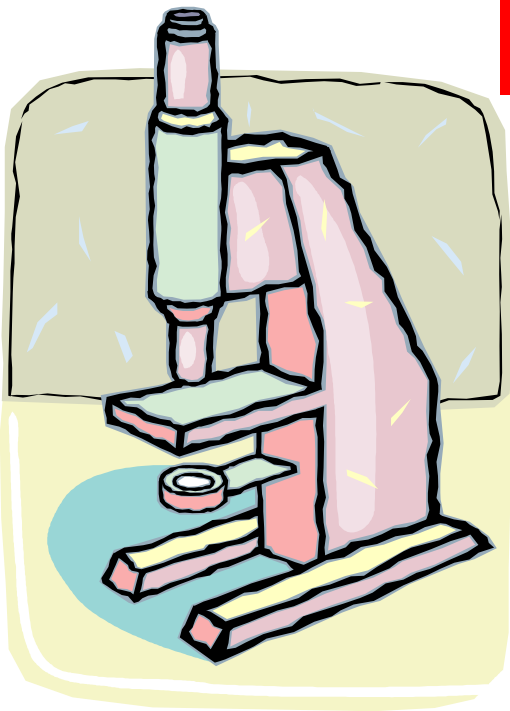
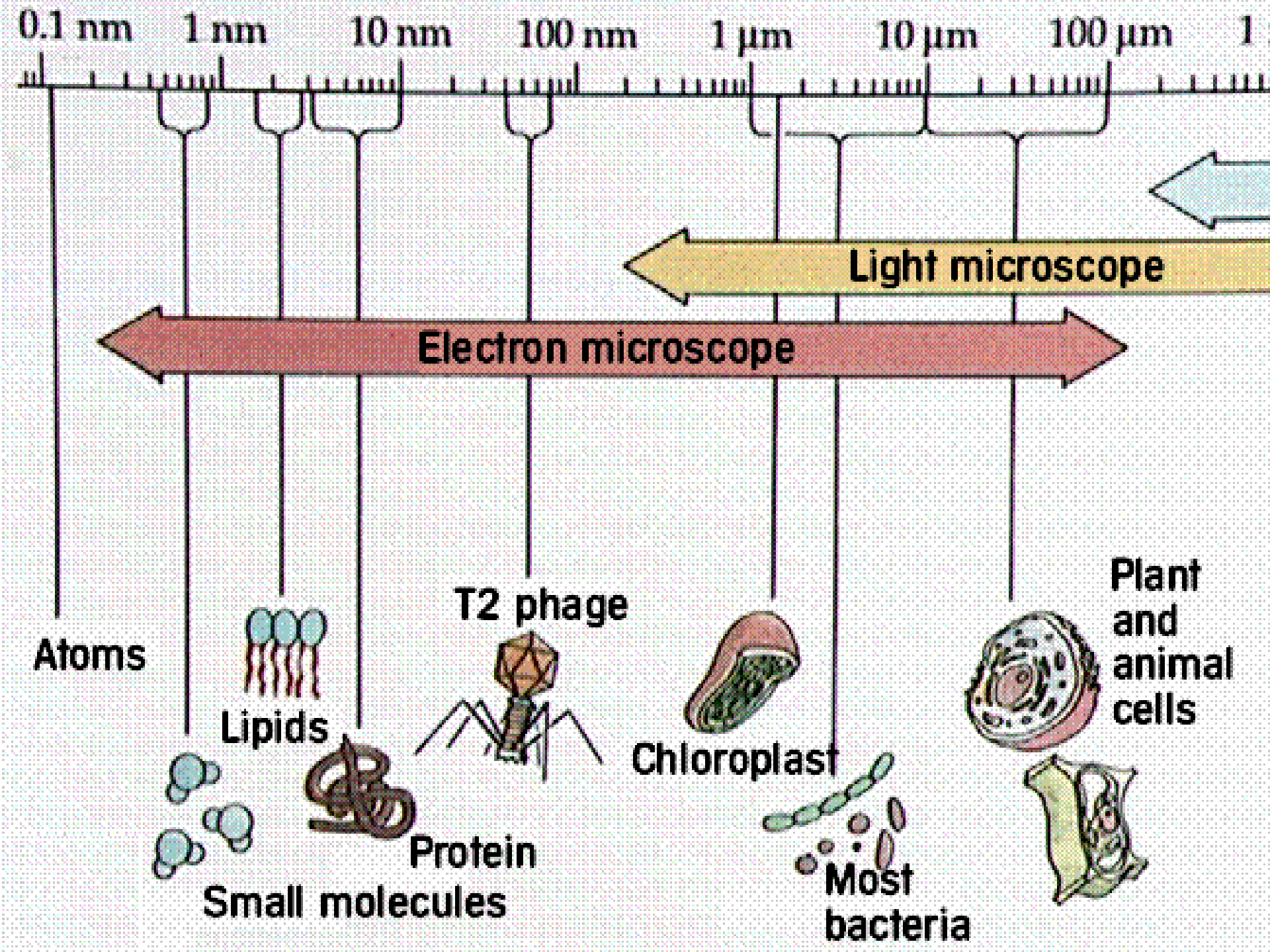


CHAPTER 1

Introduction to the Microscope





Types of Microscopes

- Light Microscopes
 - Simple Light Microscope
 - Compound Light Microscope
 - Phase-contrast microscope
 - Fluorescence microscopes
 - Scanning Confocal Microscopes
- Electron Microscopes

1) Simple Light Microscope

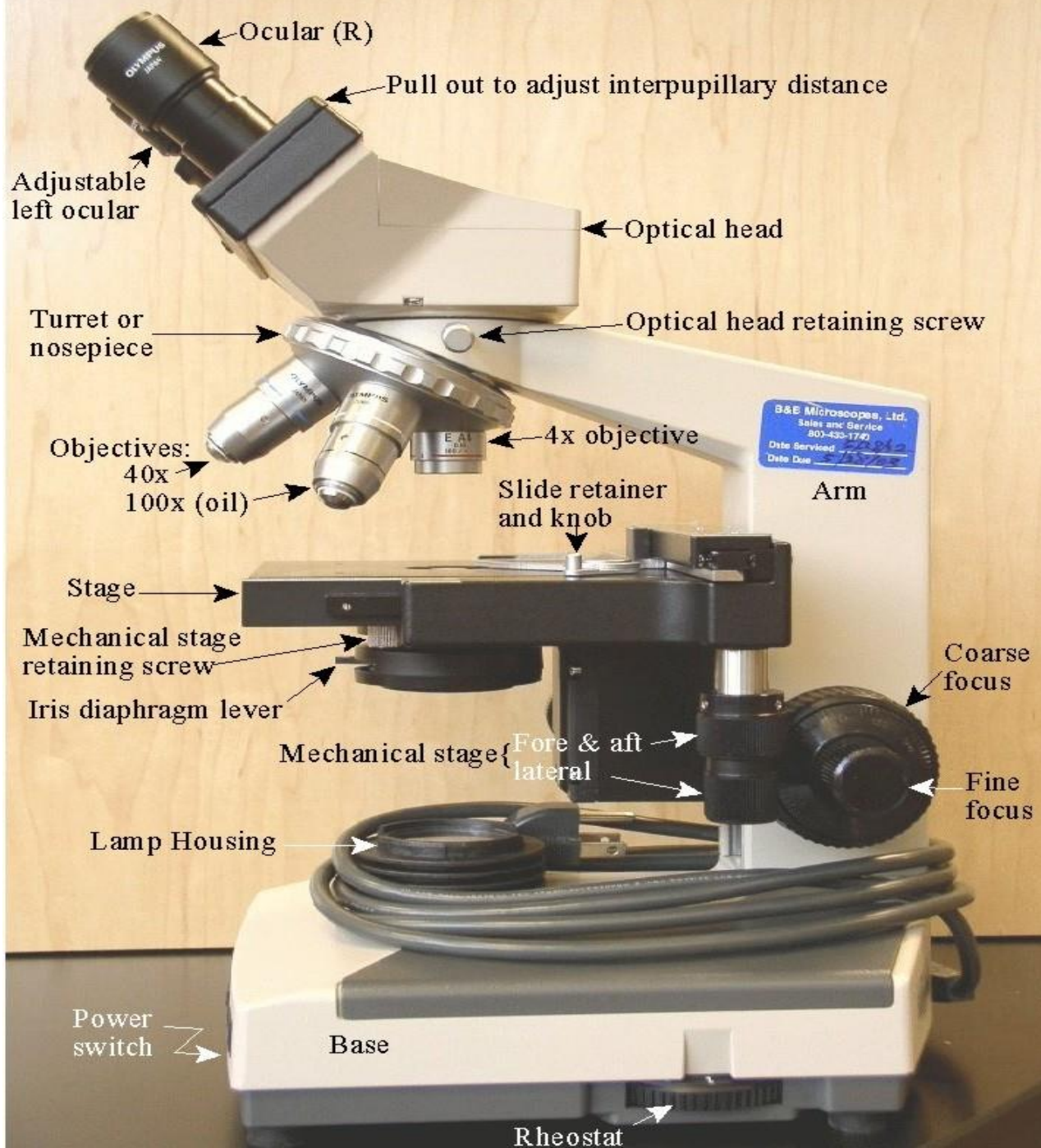
- Similar to a magnifying glass and has only one lens.



2) Compound Light Microscope

- Lets light pass through an object and then through two or more lenses.
- Can use oil immersion at high magnifications.
- Magnification = Eye piece lens x objective lens





Ocular (R)

Pull out to adjust interpupillary distance

Adjustable left ocular

Optical head

Turret or nosepiece

Optical head retaining screw

Objectives:
40x
100x (oil)

4x objective

Slide retainer and knob

B&E Microscopes, Ltd.
Sales and Service
803-630-1740
Date Serviced
Date Due

Arm

Stage

Mechanical stage retaining screw

Iris diaphragm lever

Coarse focus

Mechanical stage {
Fore & aft
lateral

Fine focus

Lamp Housing

Power switch

Base

Rheostat

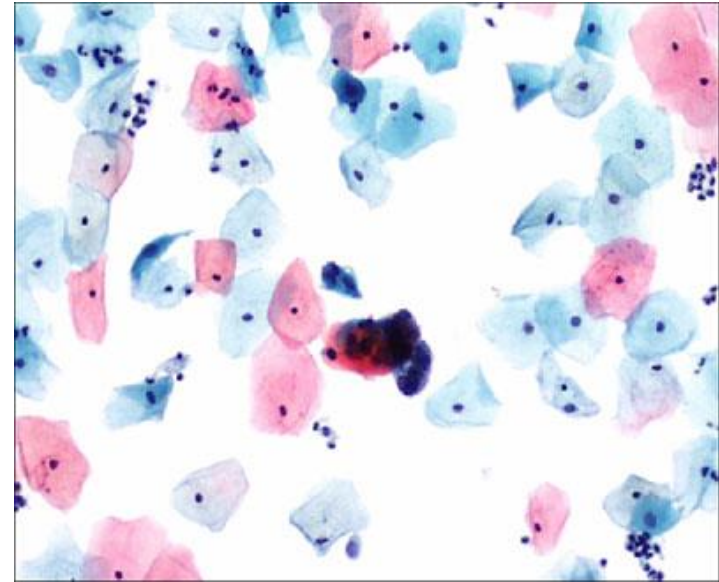
Microscope Care

- Always carry with 2 hands
- Only use lens paper for cleaning
- Do not force knobs
- Always store covered
- Keep objects clear of desk and cords



Preparation and Staining of Specimens

- increases visibility of specimen
- accentuates specific features
- preserves specimens





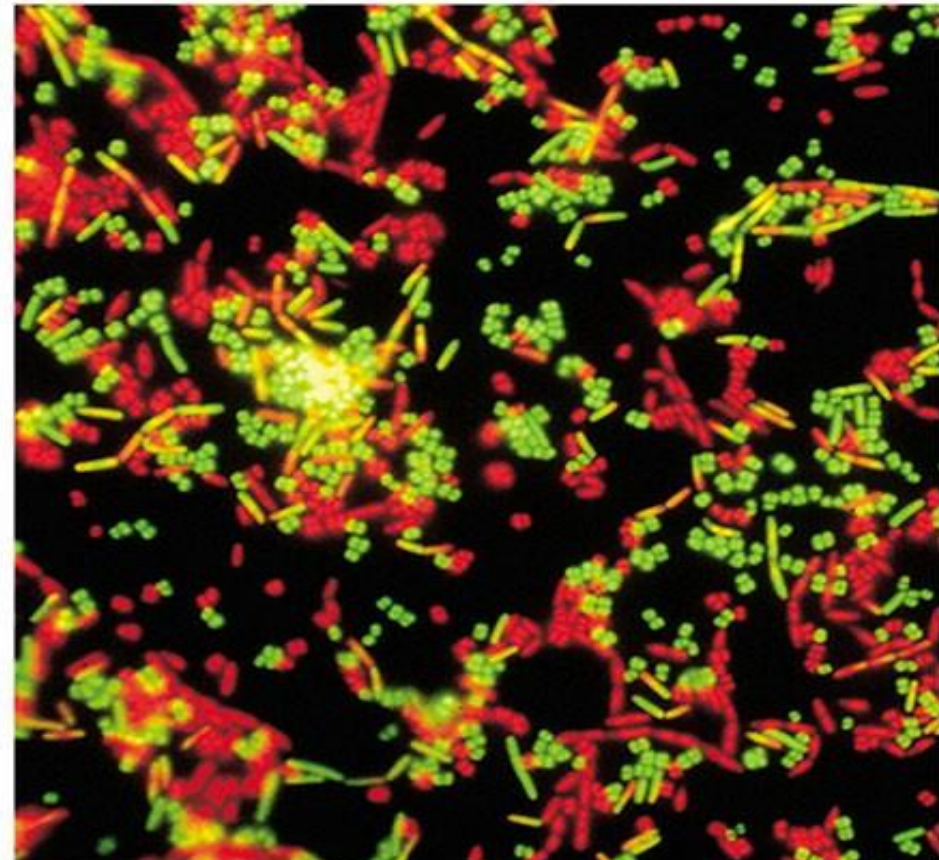
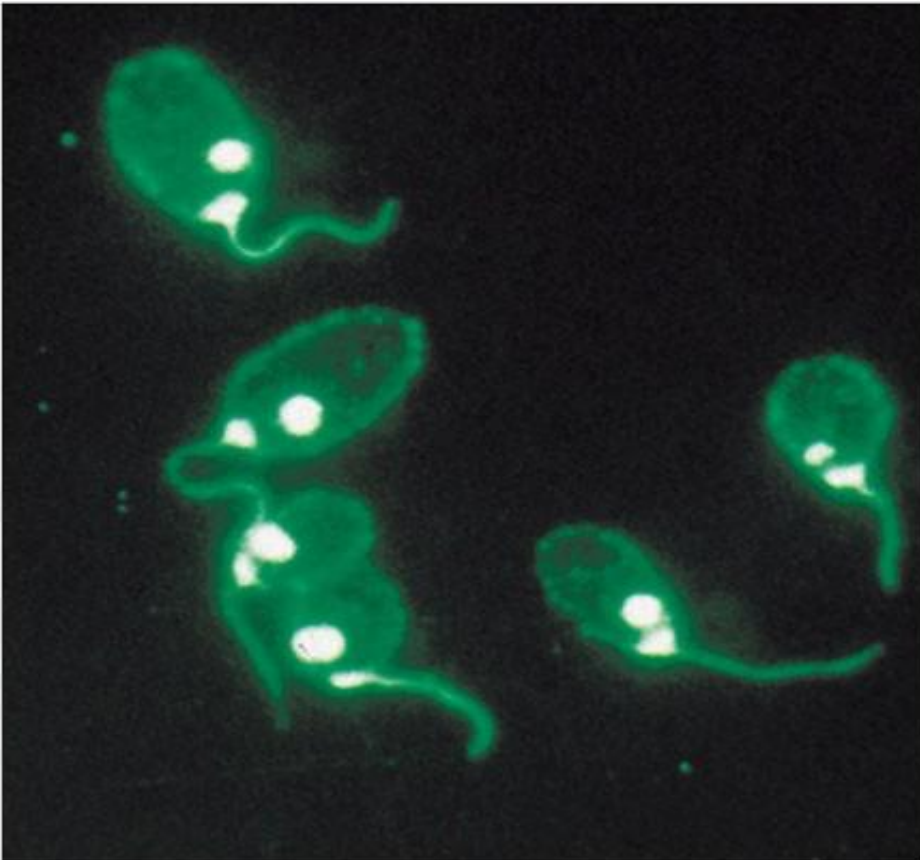
3) Phase-contrast Microscope

- Used to observe unstained living cells.
- enhances the contrast between intracellular structures having slight differences in refractive index



4) The Fluorescence Microscope

- exposes specimen to ultraviolet, violet, or blue light

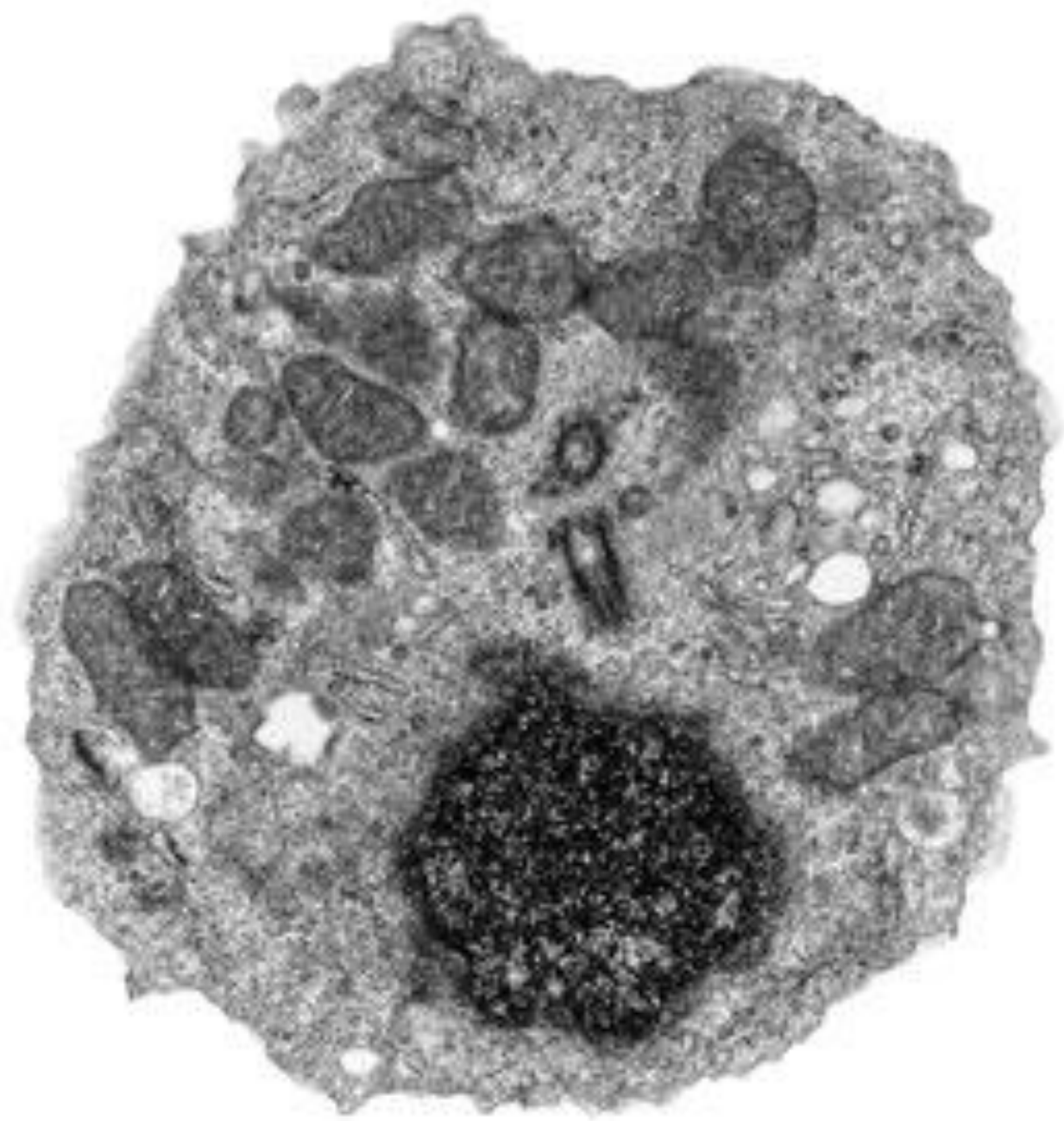


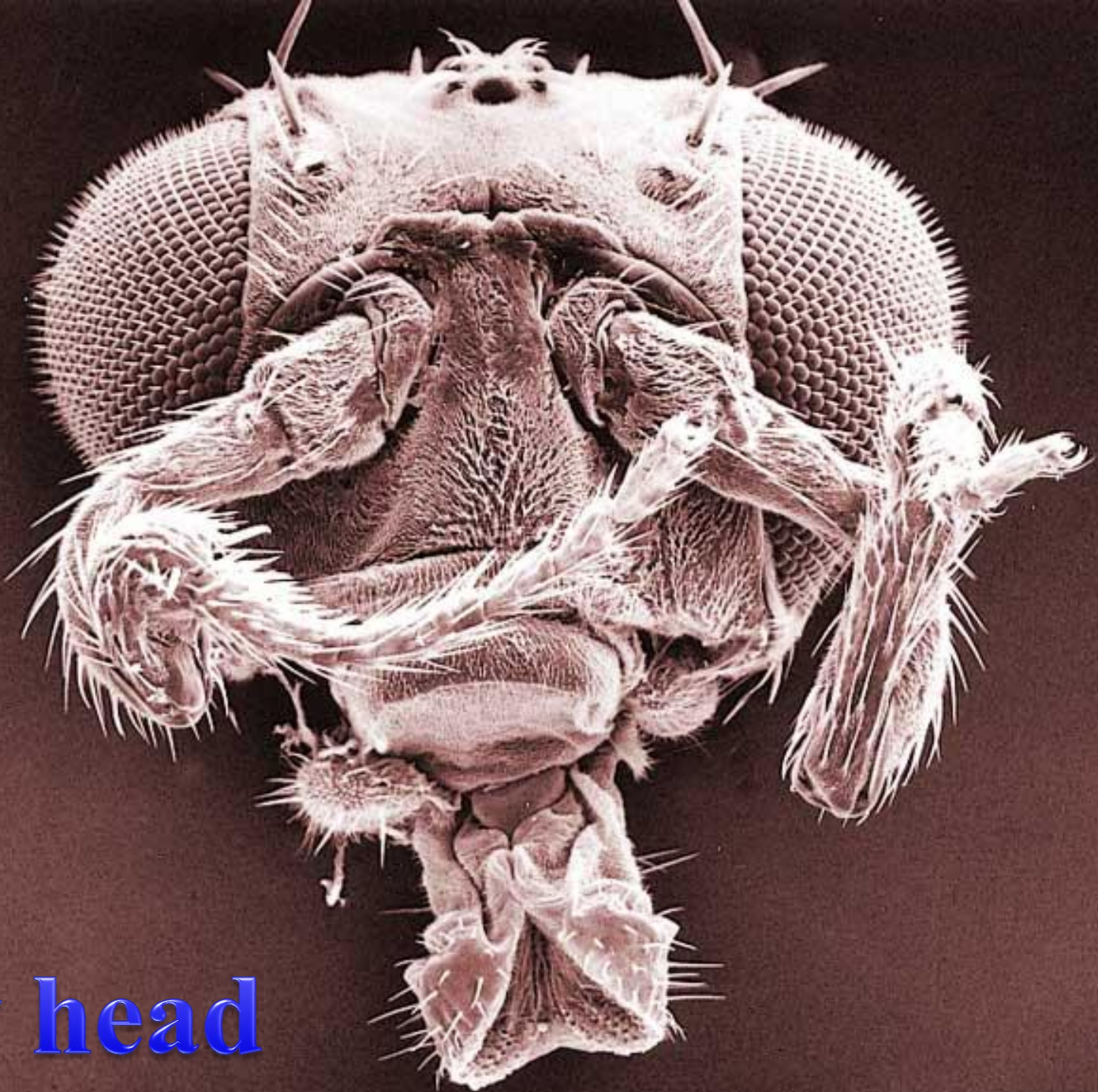




The very best light microscopes can magnify about 2000x. This is not enough to see some of the smaller parts of cells but, the images are in color and single celled organisms can be seen alive. ***Electron microscopes*** can magnify up to 2 000 000x.

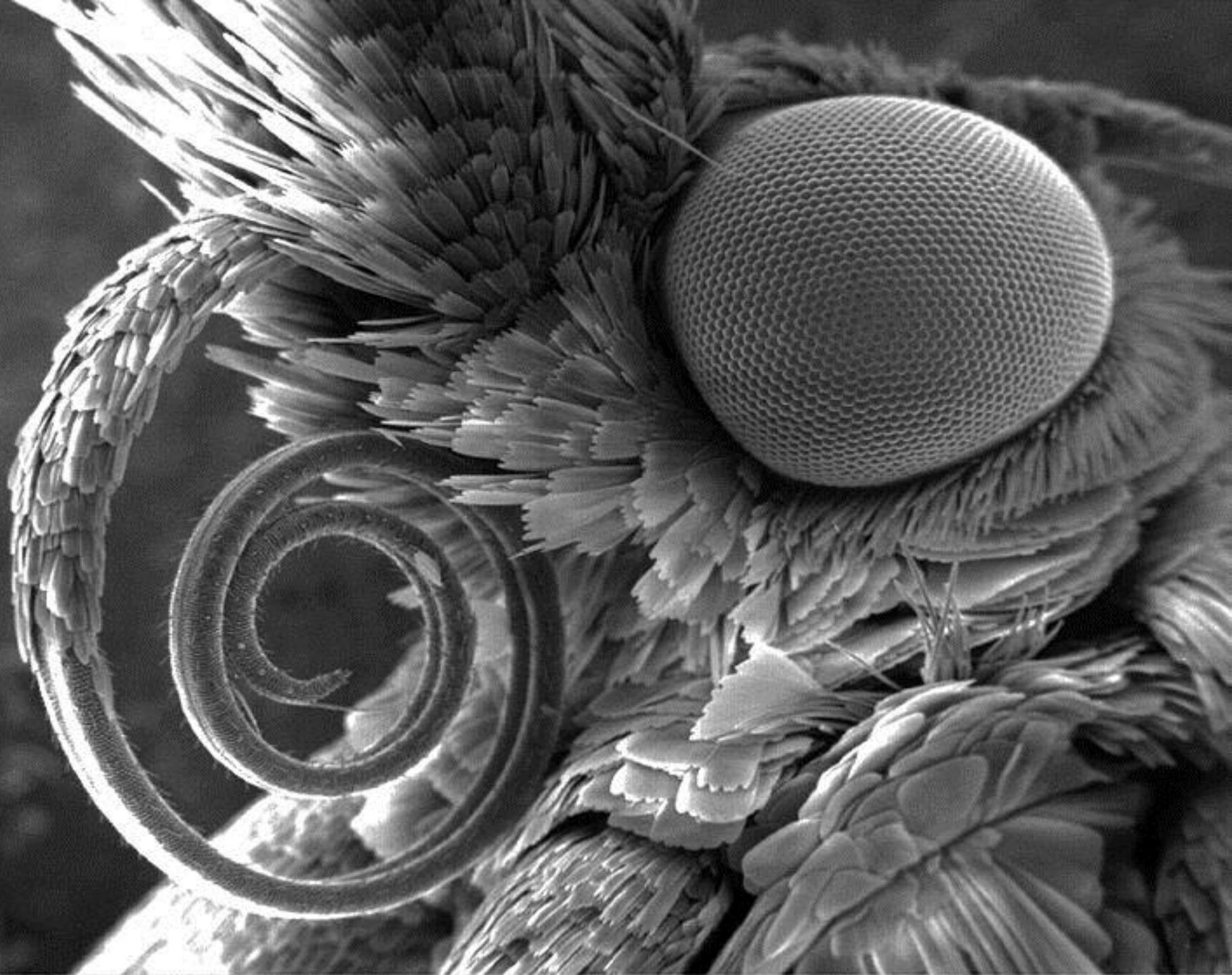
Electrons are passed and scattered off of objects and then recorded on a photographic plate. The images are black a white and kill the living objects being observed.





Fly head







Ebola Virus

Avian flu virus

