Department of Forensic evidence

Biology Lab

((Types of microscopes and Parts of the Microscope))

Lab/2

1 stage

By

Msc. Zahraa Jawad Kadhim

Type of microscopes

The Microscope:-

Micro: small, Scope: view, It magnifies the image of the object to be visualized through it. The resolving power of the light microscope under ideal conditions is about half the wavelength of the light being used.

Types of the Microscope:

1-Light Microscope

2-Bright field Microscope

3-Dark field the Microscope

4-Ultraviolet Microscope

5-Fluorescent Microscope

6-Phase contrast Microscope

7-Electron Microscope

Structural parts of a microscope and their functions

There are three structural parts of the microscope i.e. head, arm, and base.

1. **Head** – The head is a cylindrical metallic tube that holds the eyepiece lens at one end and connects to the nose piece at other end. It is also called a body tube or eyepiece tube. It connects the eyepiece lens to the objective lens. The light coming from objectives will bend inside this tube. In

binocular microscopes, they are adjustable so that the viewer can adjust the eyepiece for maximum visualization.

2. **Arm** – This is the part connecting the base to the head and the eyepiece tube to the base of the microscope. It supports the head of the microscope and is also used when carrying the microscope. Some high-quality microscopes have an articulated arm with more than one joint, allowing more movement of the microscopic head for better viewing.
3. **Base** – The base is the lowermost part of the microscope that supports the entire microscope structure. It provides stability for the microscope. Illuminators, light switches, and electrical wiring systems are fitted in the base.

Optical parts of a microscope and their functions

The optical parts of the microscope are used to view, magnify, and produce an image from a specimen placed on a slide. These parts include:

1. **Eyepiece** These lenses come in different magnification powers from 5X to 30X, but the most common ocular lenses are of 10X or 15X magnification. They magnify the image for the second time.
2. **Eyepiece tube**
3. **Diopter Adjustment**
4. **Nose piece**
5. **Objective lenses**
6. **The Adjustment knobs** types;
   a. Fine Adjustment Knob
   b. Coarse Adjustment Knob
7. **Stage**
8. **Stage Control Knobs**
9. **Aperture**
10. **Microscopic illuminator**

11. **Condenser Diaphragm**
12. **Condenser focus knob**
13. **Abbe Condenser**
14. **The rack stop**
15. **Light Switch**
16. **Brightness Adjustment**