

Fig.: Schematic diagram of compound microscope

Experiment No: 2: Study of cell Ultra-structure

Aim: To study about different types of cells and their structure..

PROCEDURE: The cell is the basic unit of organization or structure of all living matter. Loewy and Sickevitz (1963) defined the cell as a unit of biological activity delimited by a semi-permeable membrane and capable of self-reproduction in a medium free of other living systems. Cells will reproduce, assimilate, respire and respond to changes in environment and absorb water from internal and external sources. Cell consists of cell wall, cytoplasm, nucleus and cell organelles.

A. CELL WALL:

It is the membrane which converts the cell. It gives shape and structure to the cell. Protect the cell. It also provides mechanical support to the cell.

Structure:

The cell wall is complex in nature and is differentiated into middle lamella, primary cell wall and secondary cell wall. Middle lamella is the outer most layer of the plant cell wall and it connects the two adjacent cells. It is composed of calcium and magnesium pectate and does not contain any cellulose. Primary cell wall is thin and elastic and lies between middle lamella and secondary cell wall. It is mainly composed of cellulose. Secondary wall is the inner most layer of the cell wall and lies between primary cell wall and plasma membrane. Secondary cell wall is relatively thick and is primarily composed of microfibrils of cellulose. In some tissues, besides cellulose, lignin and suberin are also found in secondary cell wall.