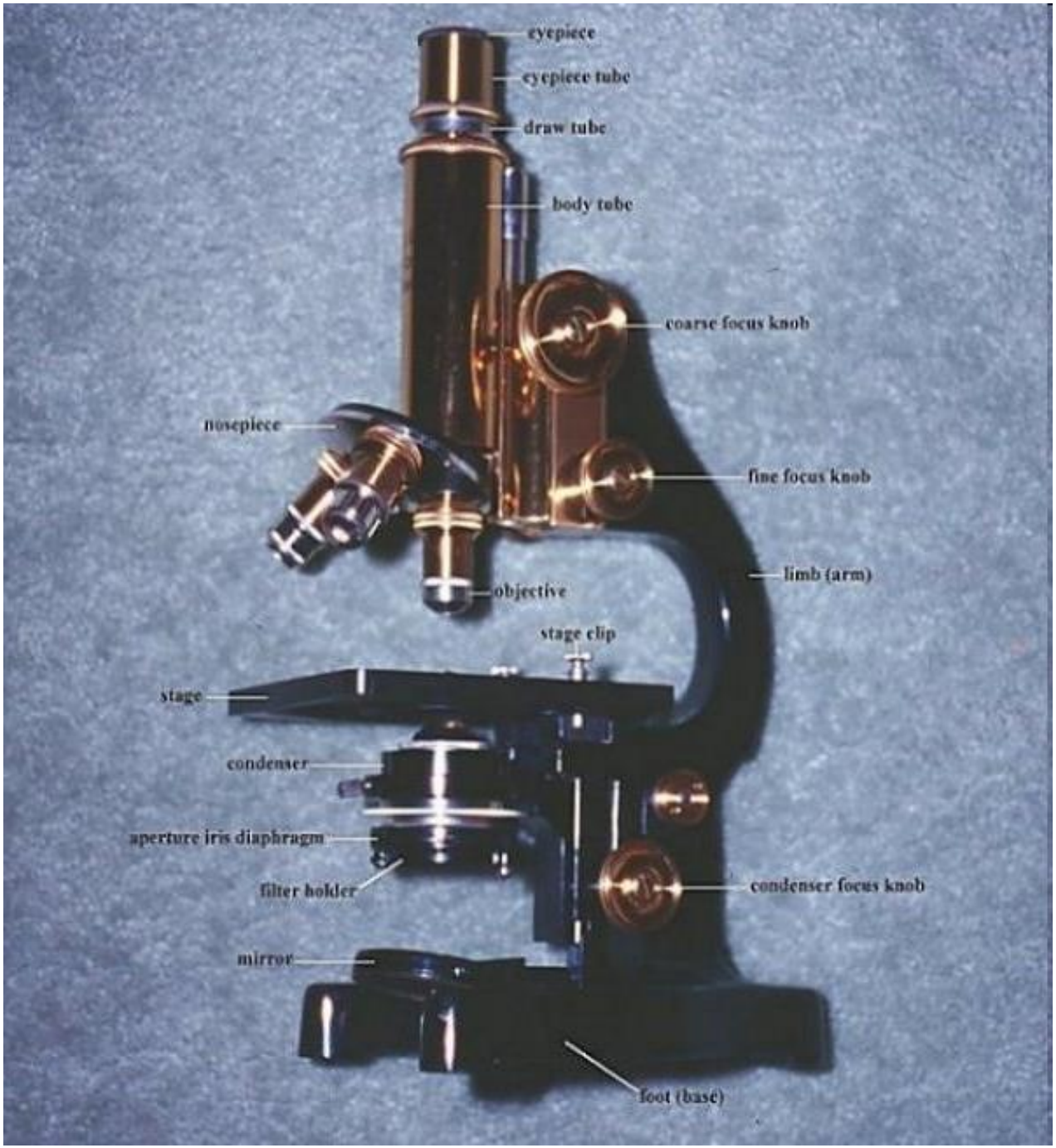
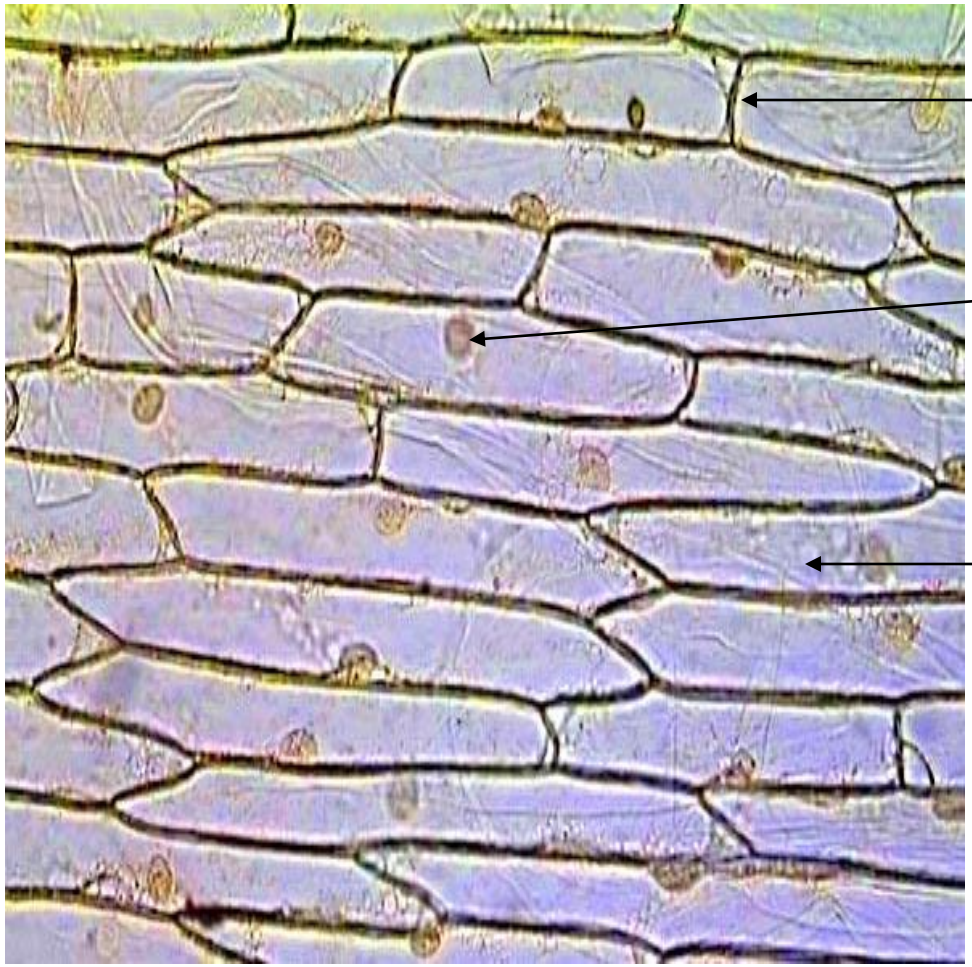
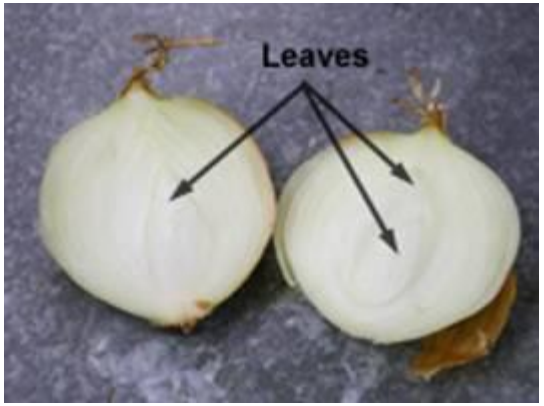
MINISTRY OF HEALTH
UNIVERSITY OF MEDICINE (2)
Department of Botany
PRACTICAL
LECTURER & HEAD
SLIDE SHOW
DAW MAY KYI WIN


eyepiece
eyepiece tube
draw tube
body tube
coarse focus knob
nosepiece
fine focus knob
limb (arm)
objective
stage clip
stage
condenser
aperture iris diaphragm
filter holder
condenser focus knob
mirror
foot (base)

The typical cells

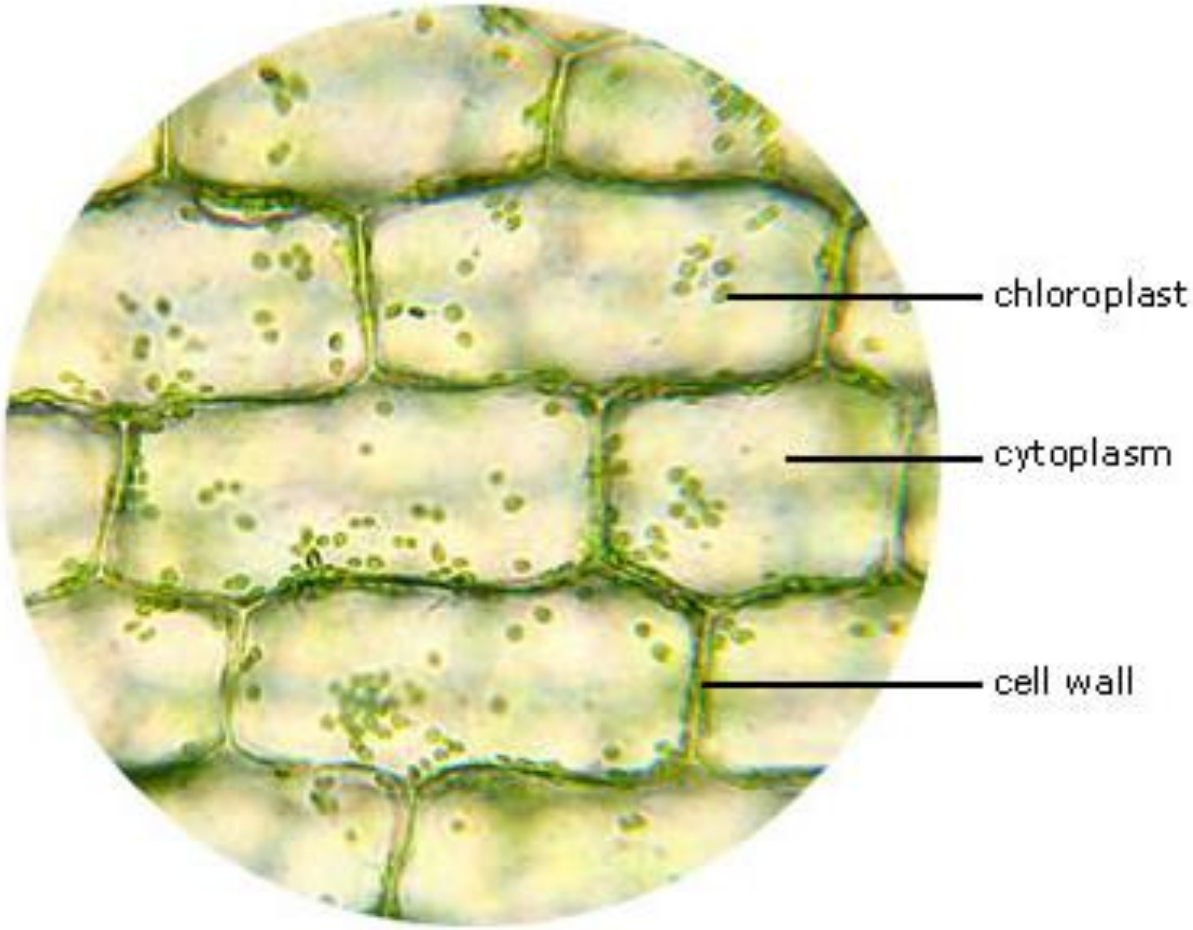
showing cytoplasm and nucleus eg. <u>Onion</u> scales





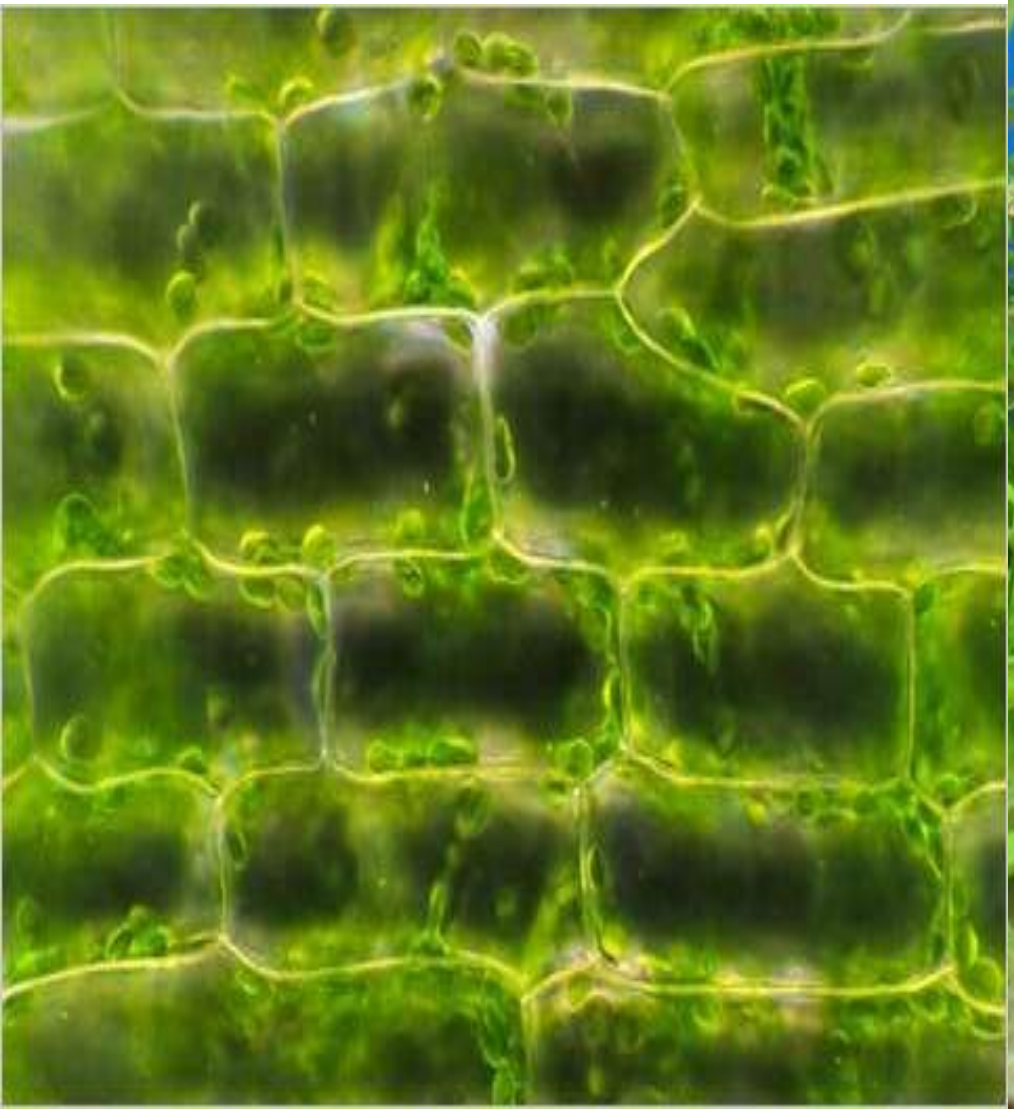
Plastids

Showing chloroplast eg., Elodea (W.M)



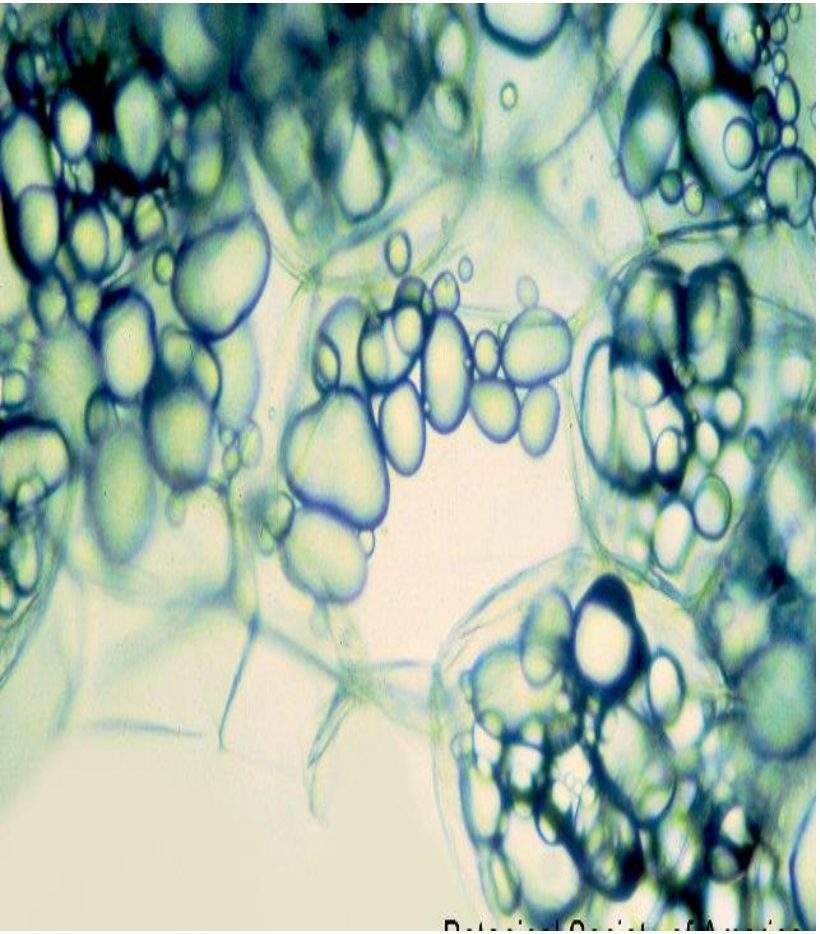
Movement of protoplasm and cyclosis

Eg. *Vallisneria* (W.M)



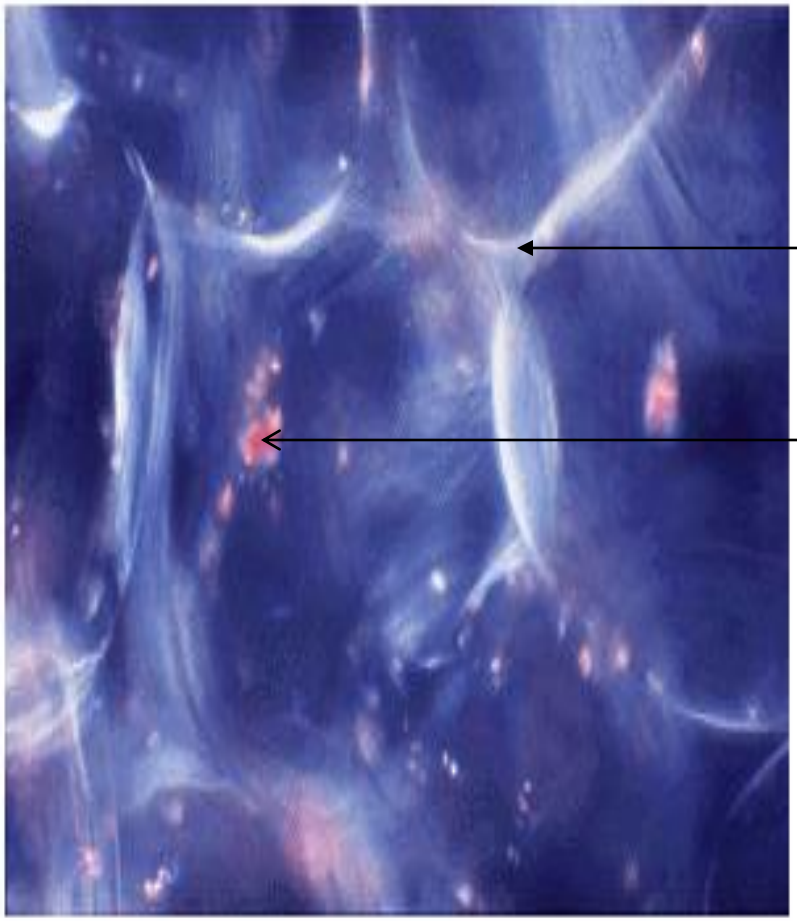
Showing leucoplast eg. <u>Potato</u> (W.M)

e.g. Potato tuber (T.S)



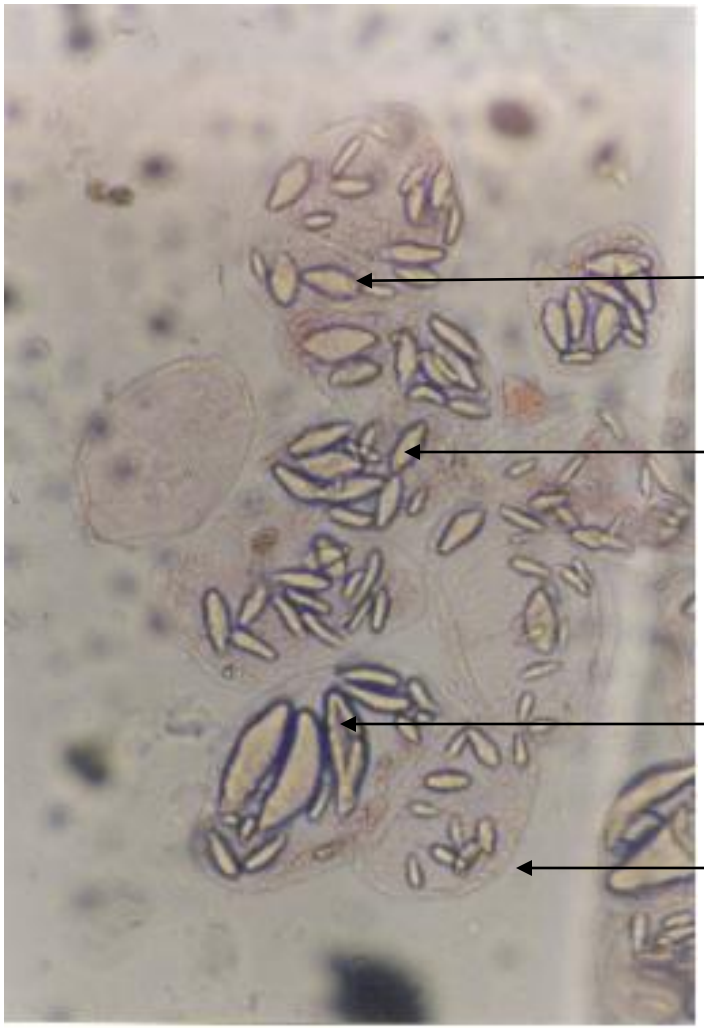
Showing chromoplast

eg. Ripe tomato (W.M)



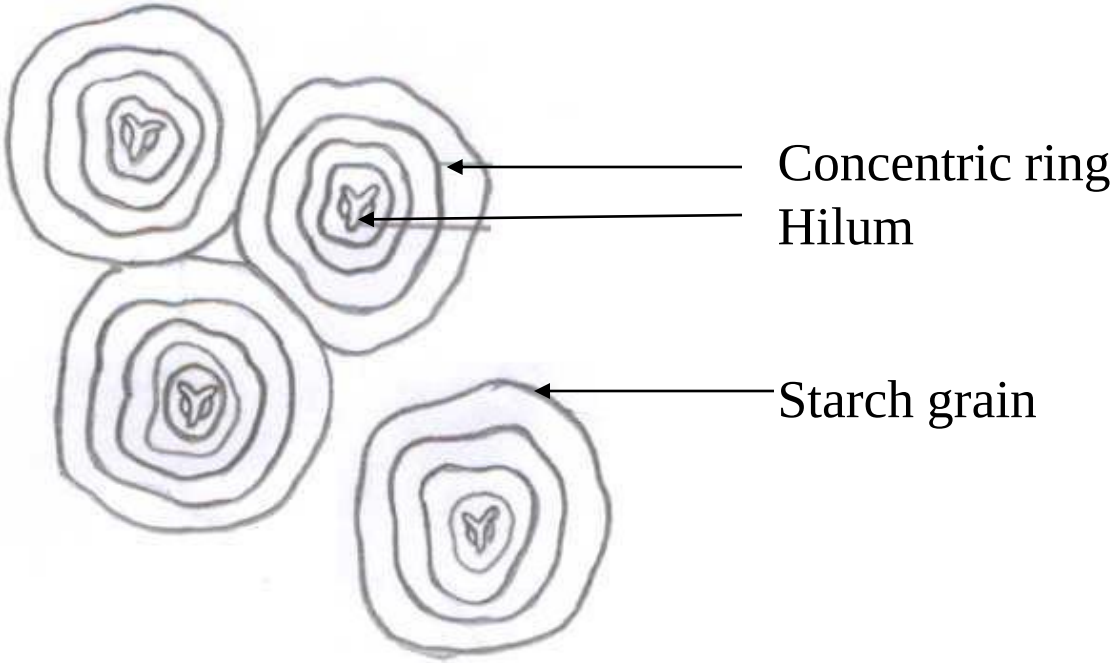
Starch grains

Showing simple eccentric starch grains eg. Banana (W.M)



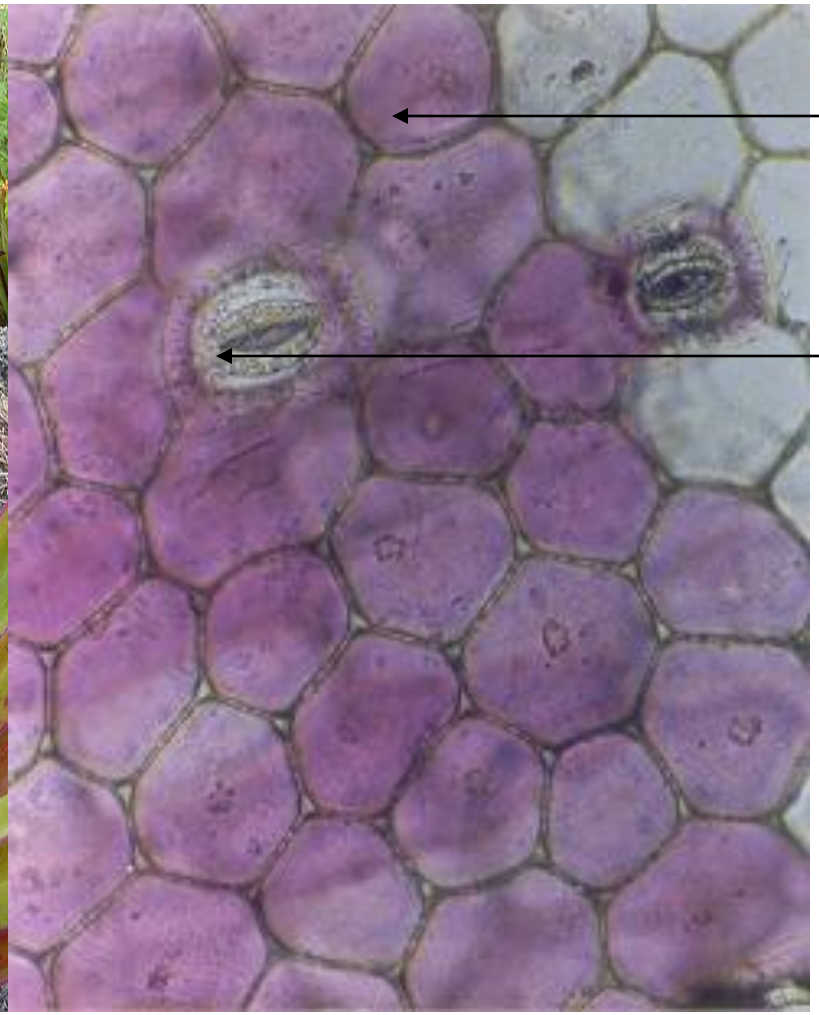
Showing compound & concentric starch grains

e.g. _Maize (T.S)

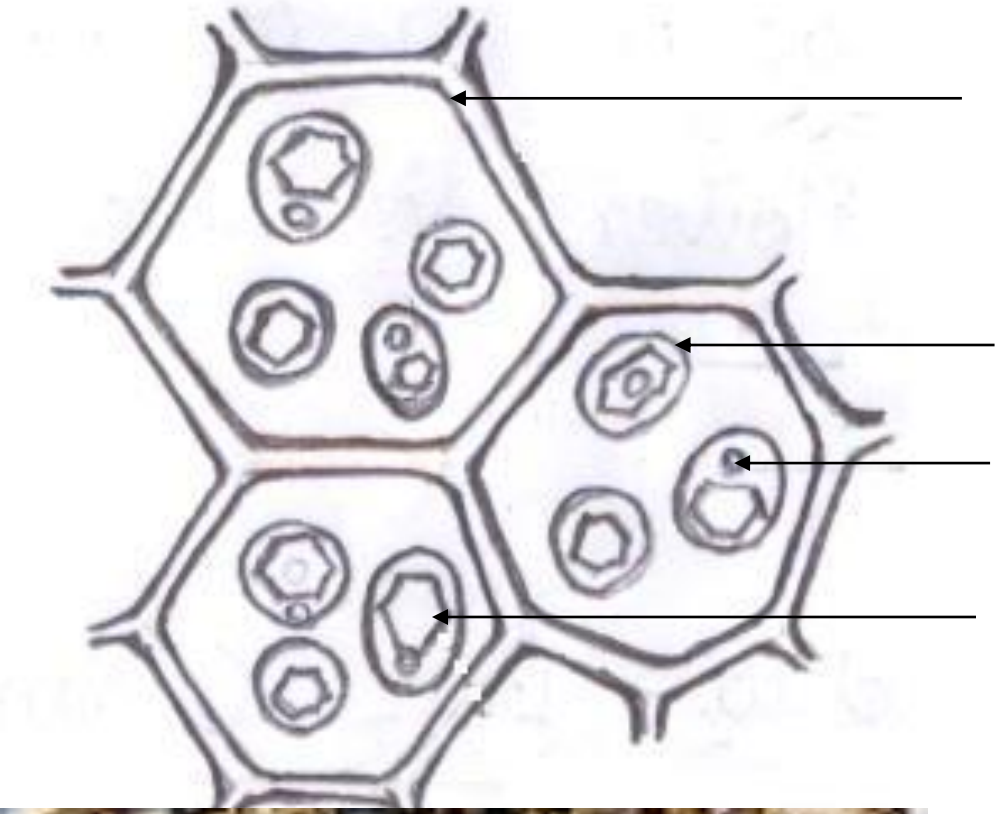


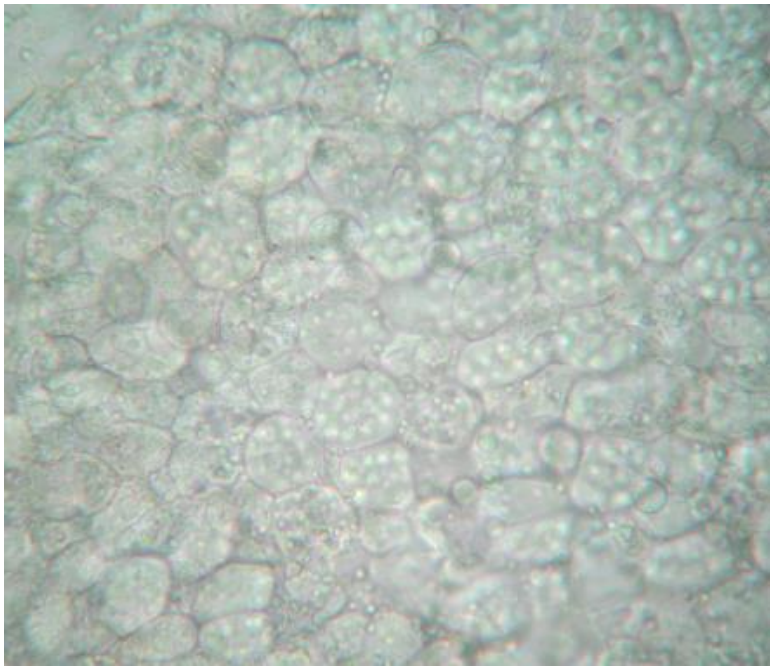
Pigment

Showing anthocyanin & stoma eg. ***Rhoeo*** leaf (W.M)

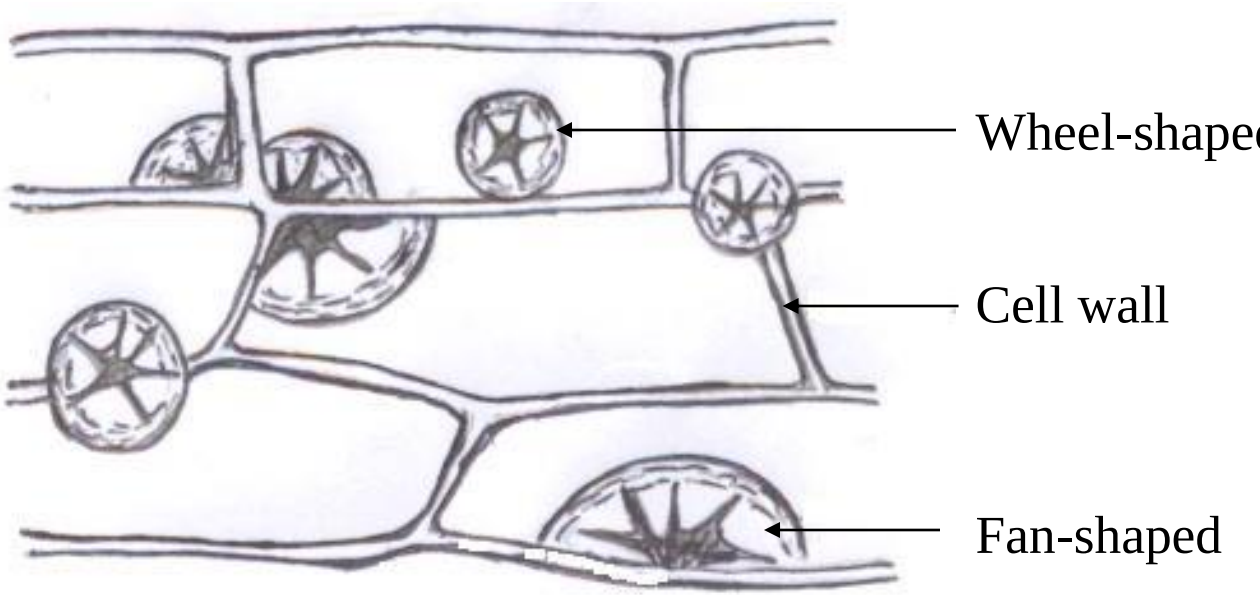


Showing aleurone grains eg. Castor seed (W.M)





Showing <u>Inulin</u> crystals eg. Tuberous root of <u>Dahlia</u> (T.S)



Latex

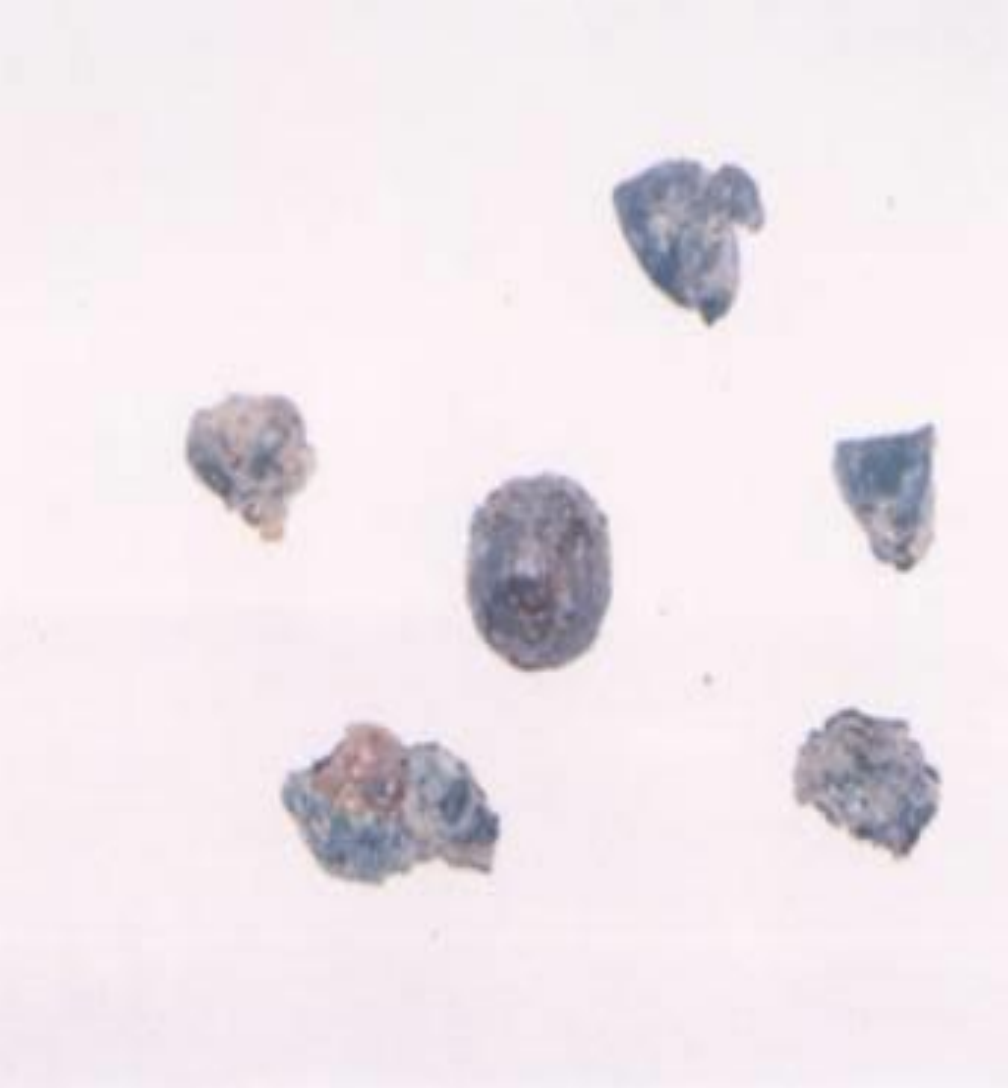
eg. **<u>Plumeria</u> <u>obtusa</u>** Linn (Tayoksaga-apya, A-Kyaw)

Essential oil

eg. **Jasminum** **decussatum** Wall

Gum

eg. **<u>Melia</u>** **<u>azadirachta</u>** Linn (Tama)



Calcium oxalate (waste products)

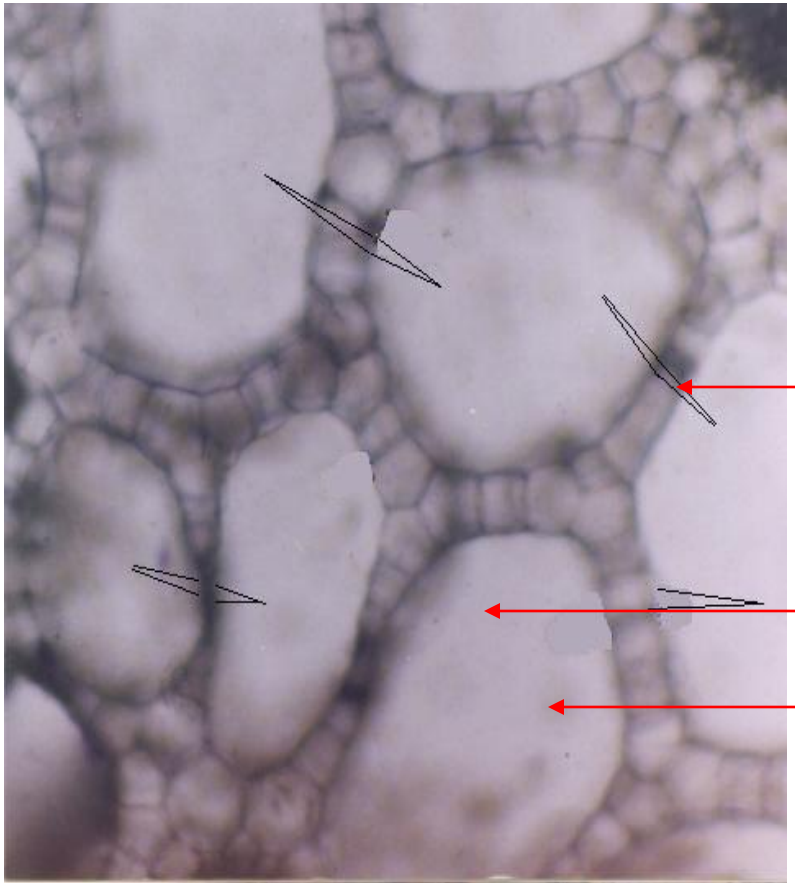
Raphides

Showing raphides in bundle eg. **<u>Colocasia</u>** petiole (T.S)

Calcium oxalate (waste products)

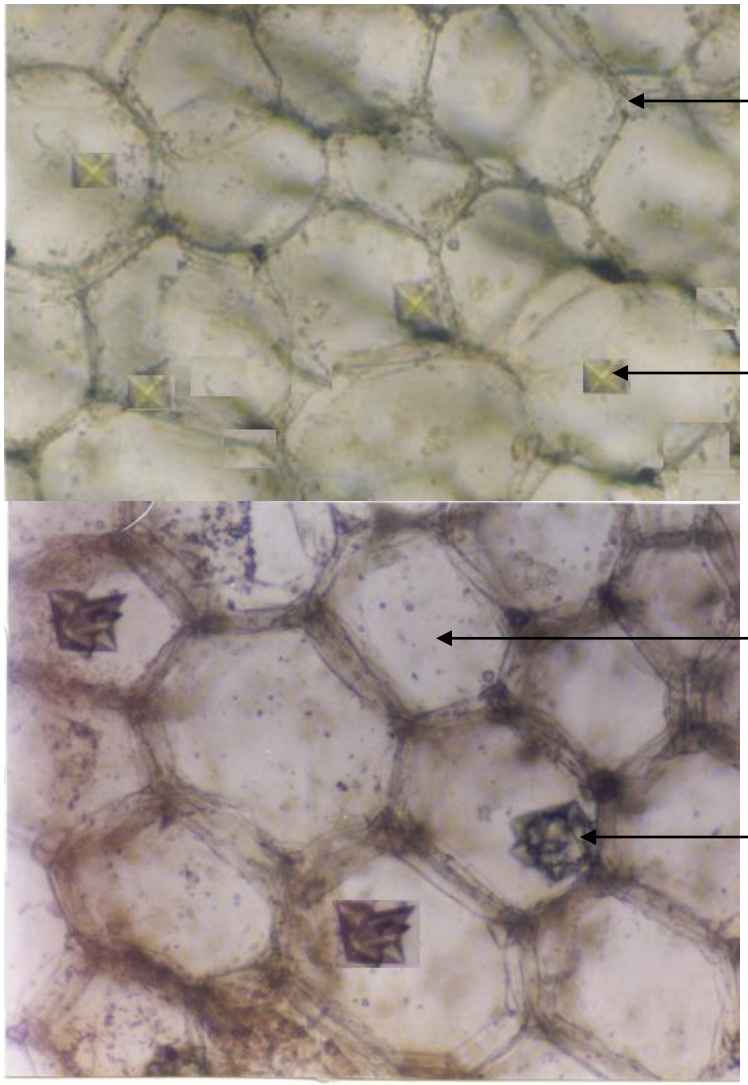
Raphides

Showing raphides in single eg. Water hyacinth petiole (T.S)

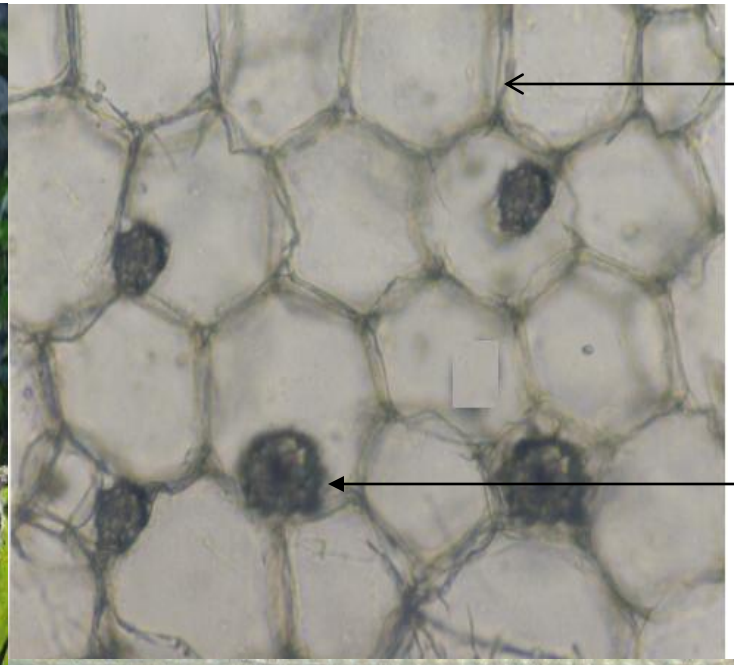


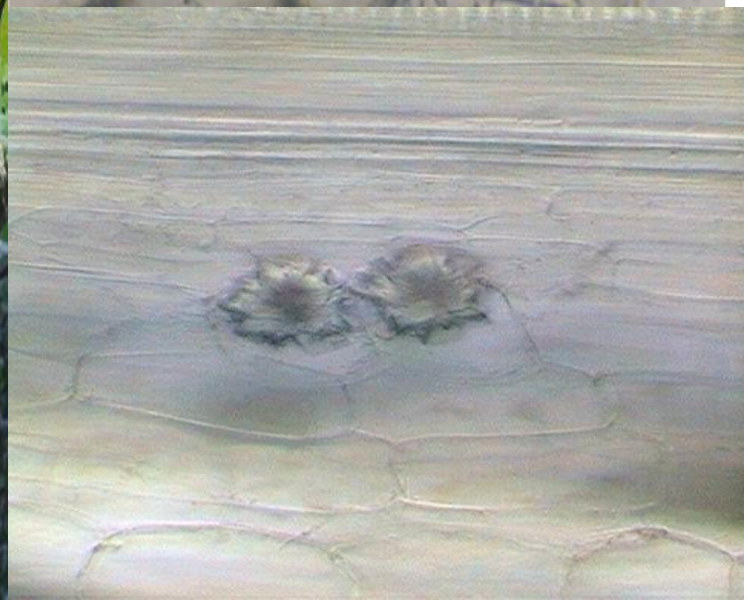
Congiomerate crystal or sphaero raphides

Showing Druses and Prismatic crystals eg. **<u>Begonia</u>** petiole (T.S)



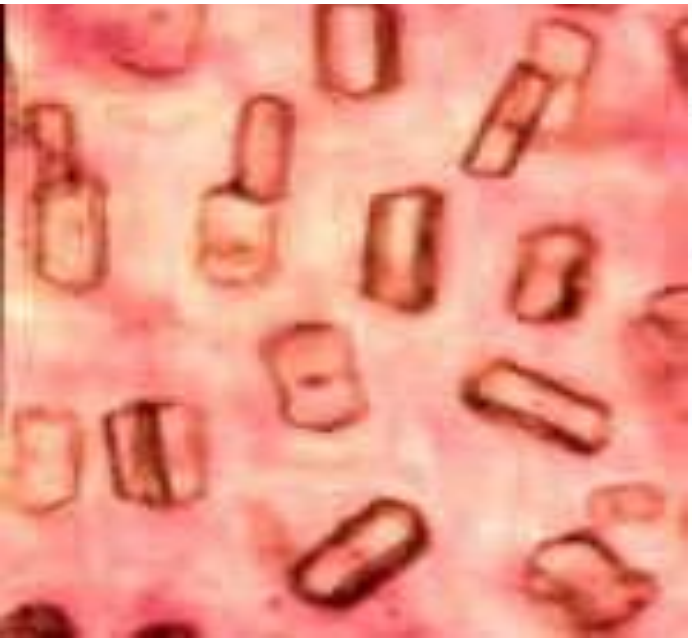
Showing Sphaero raphide eg. Carica papaya petiole (T.S)

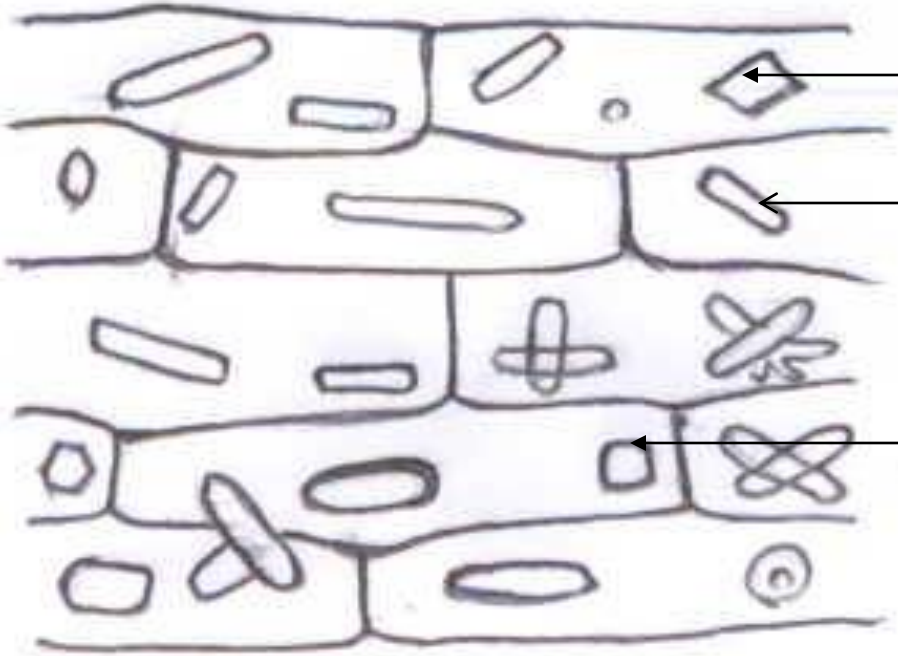




Octahedral, cubical, prismatic and rod-like crystals

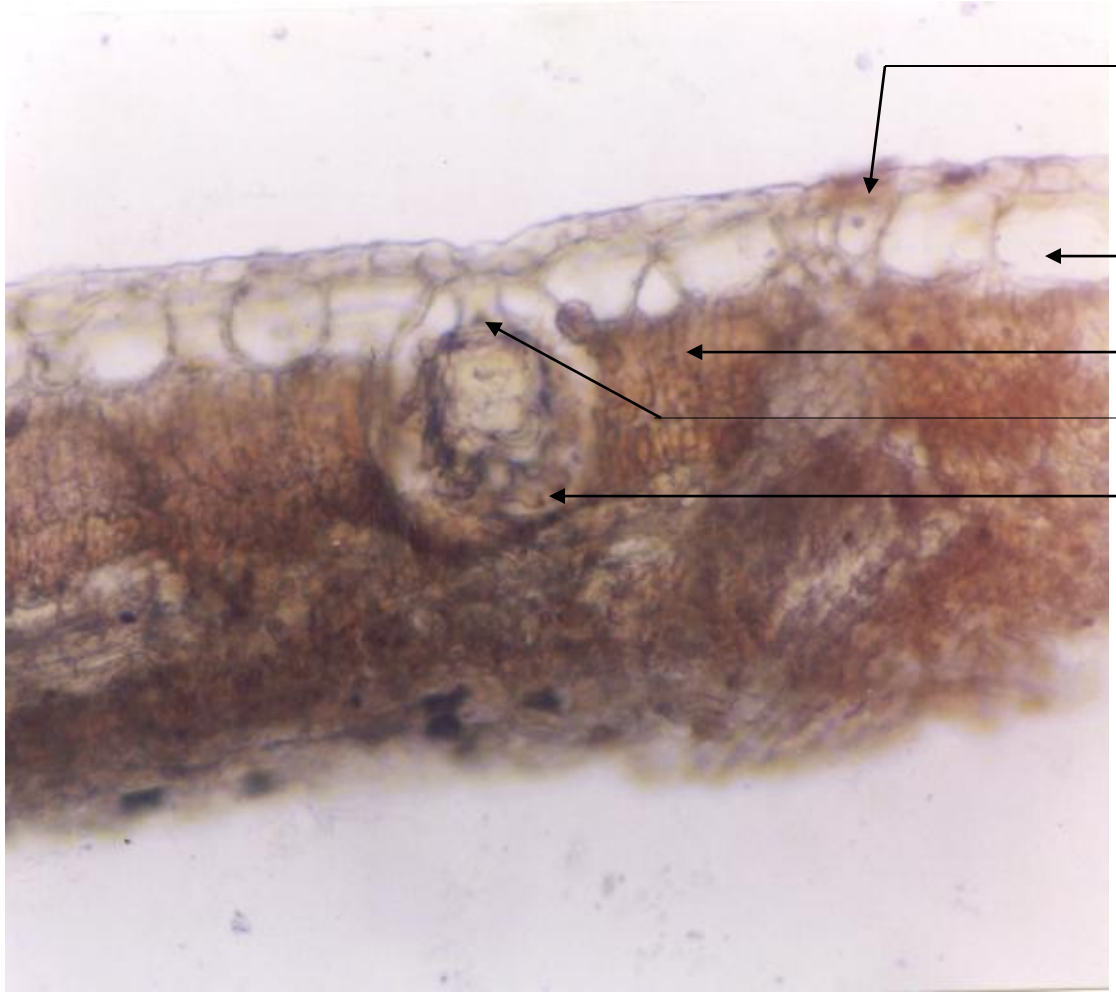
eg. Dry scales of onion W.M



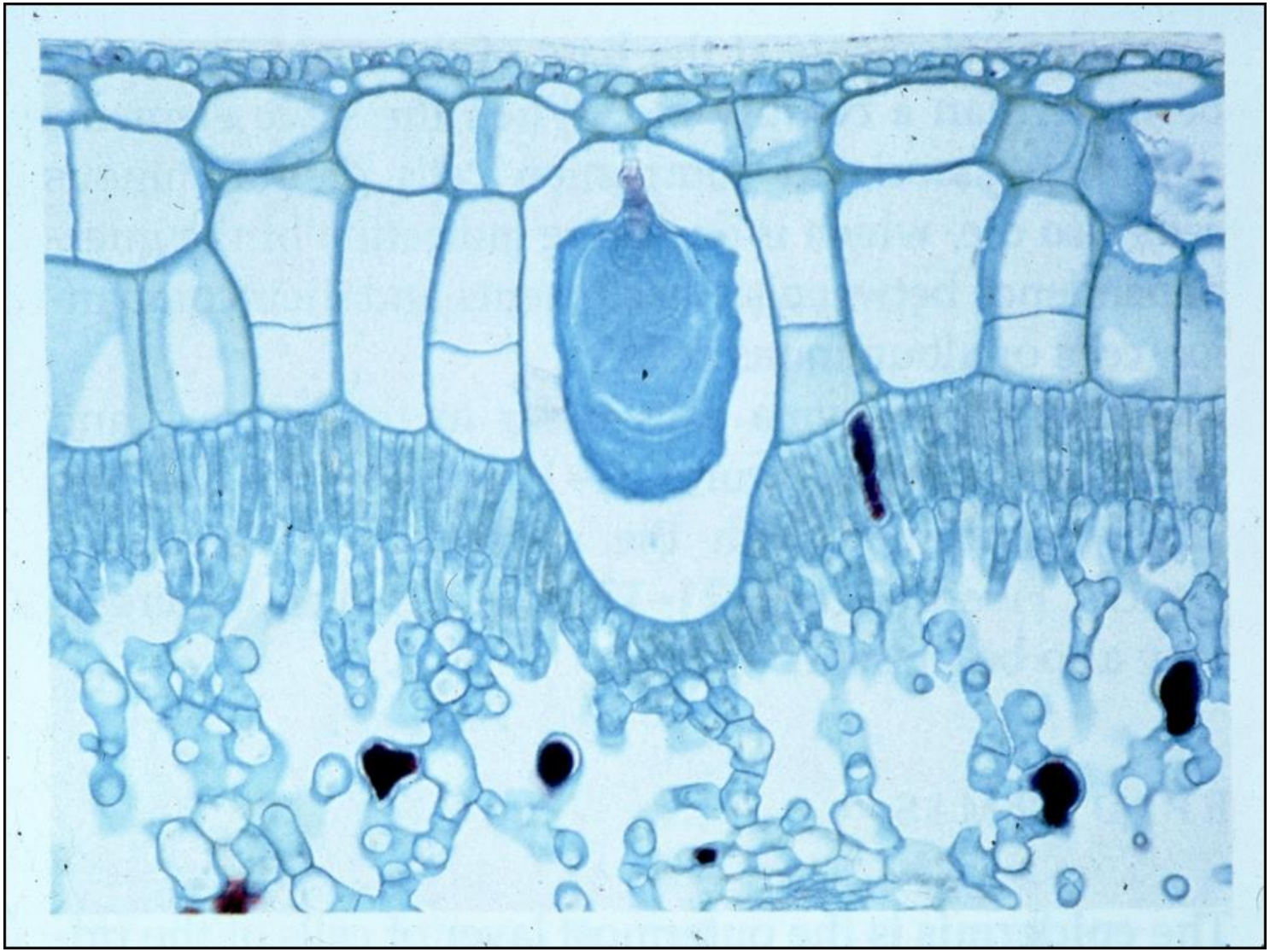


Calcium carbonate

Showing cystolith eg. Ficus leaf (T.S)

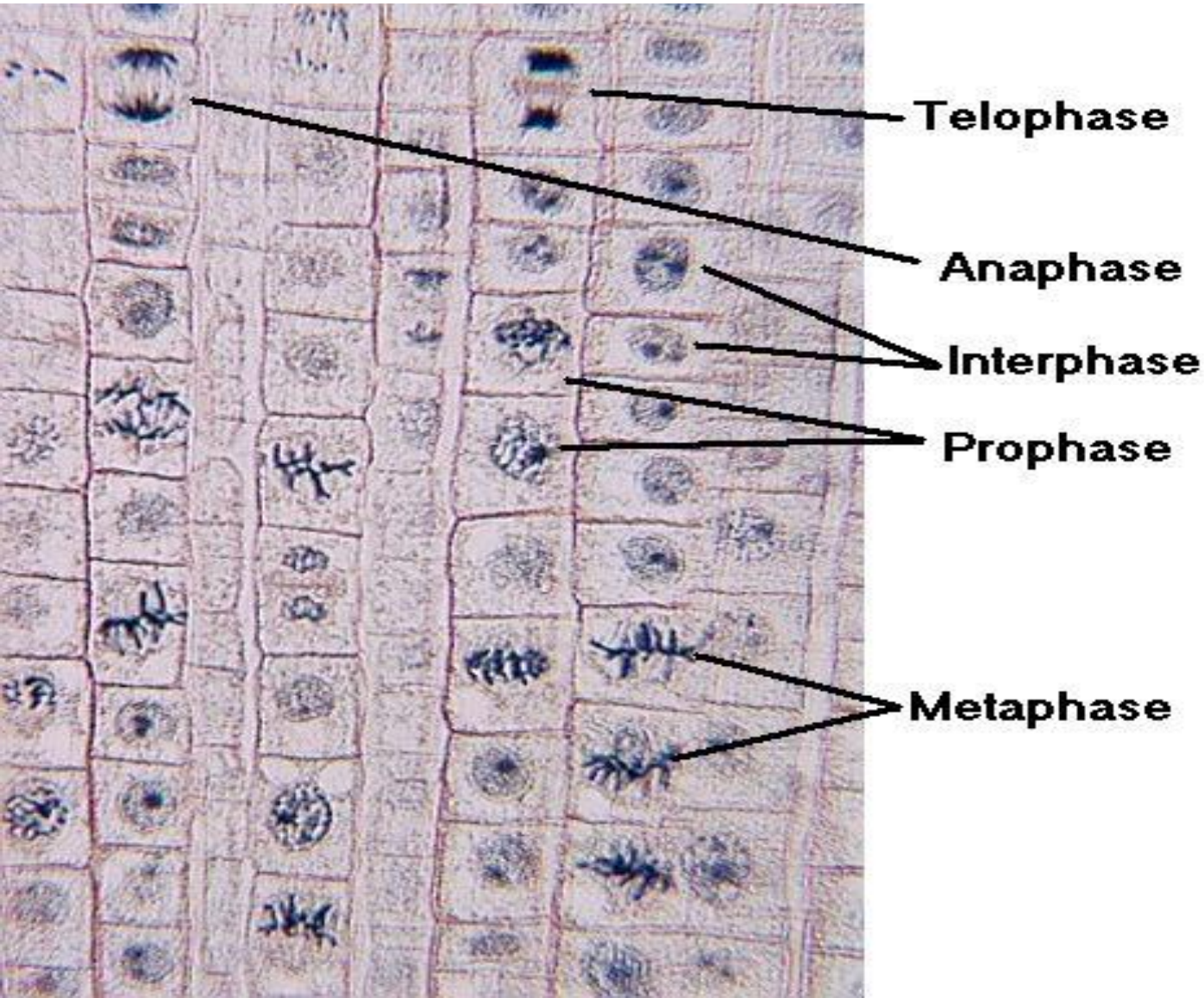


Eg. *Ficus* Leaf (T.S)



Mitosis cell division

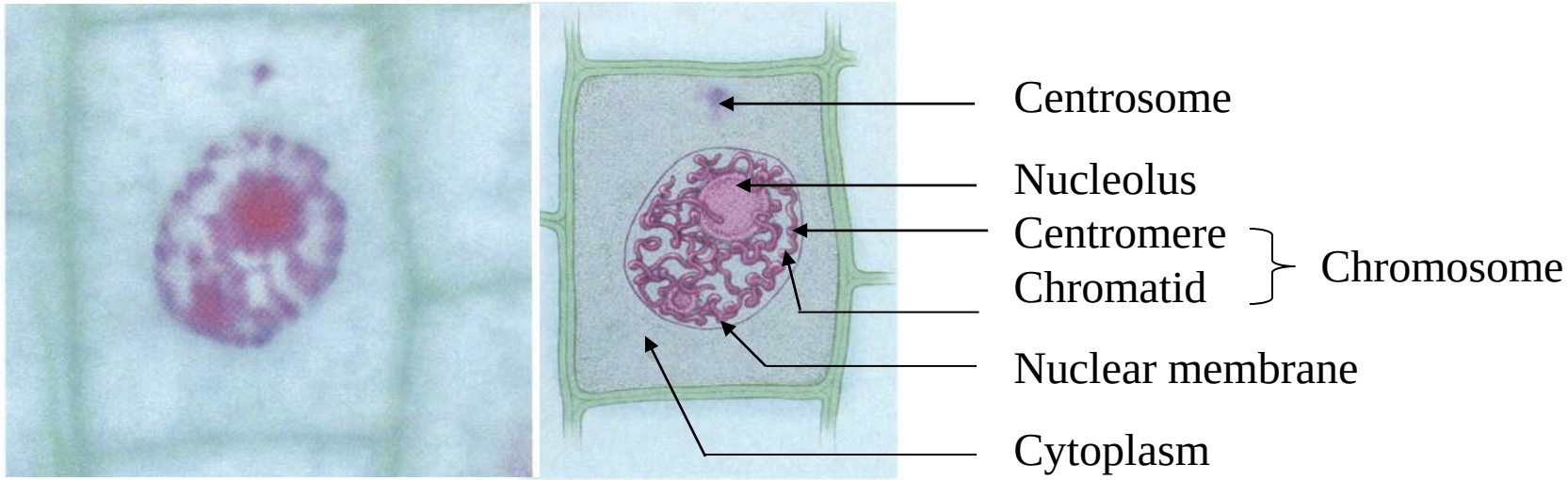
Eg. Pinus or Allium root tip (L.S) slide



Mitosis cell division

eg. Pinus or Allium root tip (L.S) slide

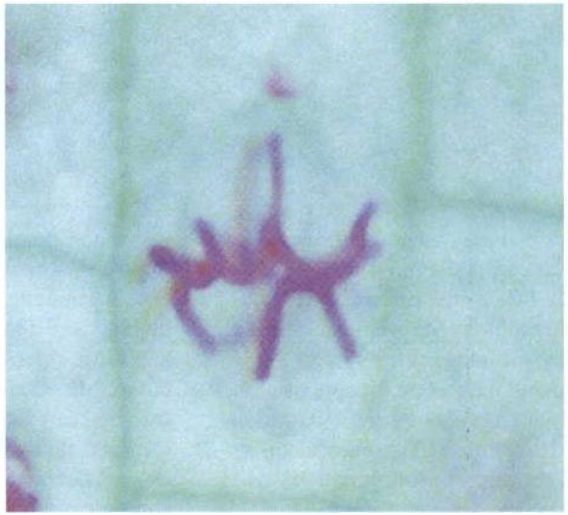
Prophase

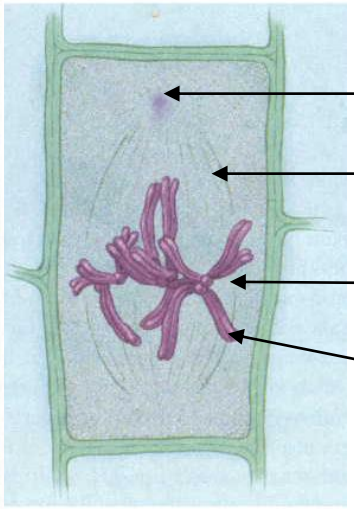


Mitosis cell division

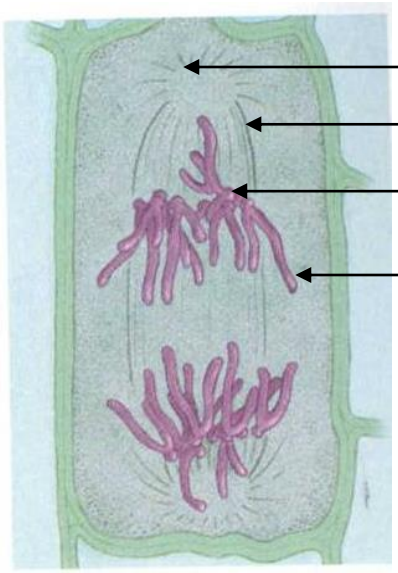
eg. Pinus or Allium root tip (L.S) slide

Metaphase

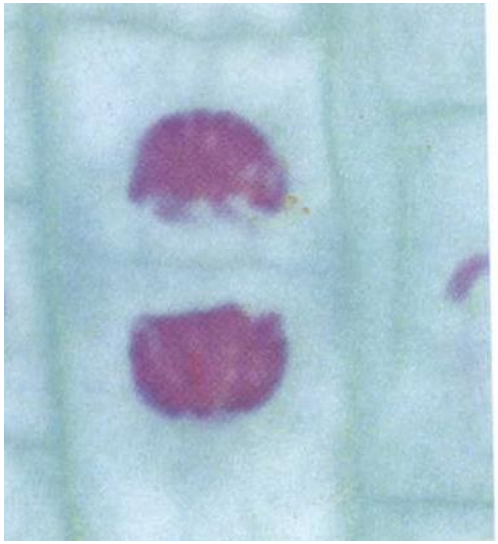


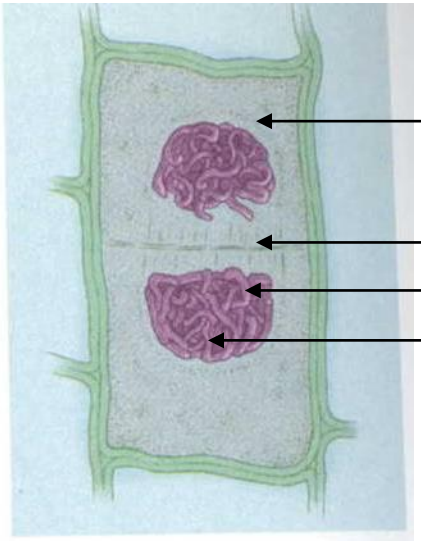


Anaphase



Telophase





Nuclear membrane

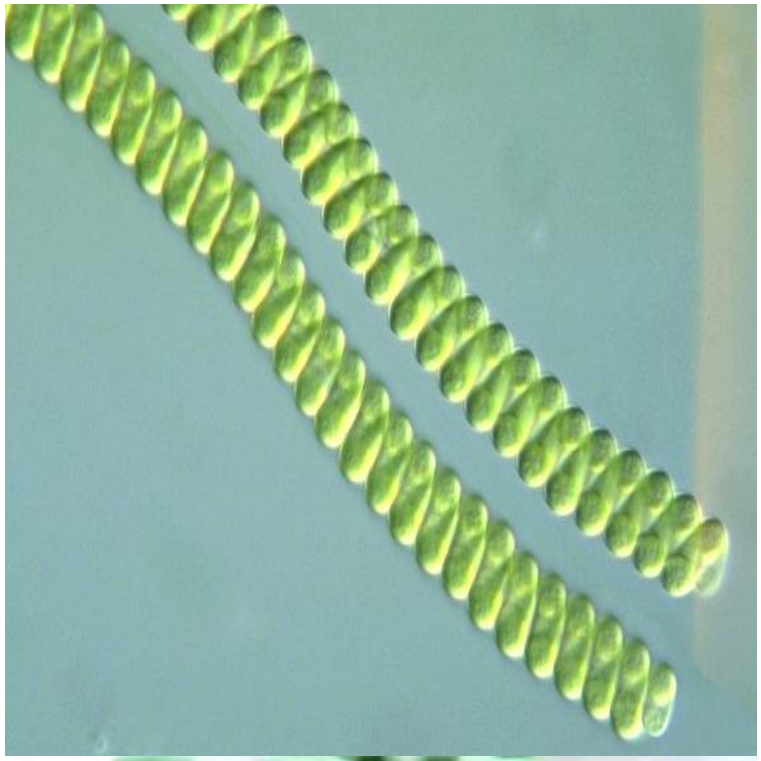
Delicate membrane (middle lamella)

Chromosome

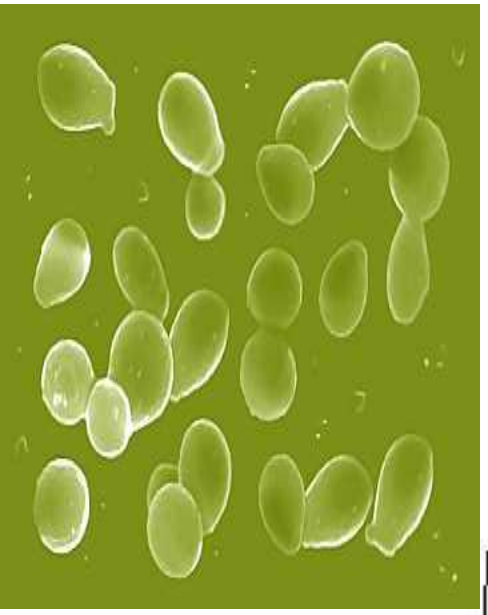
Nucleolus

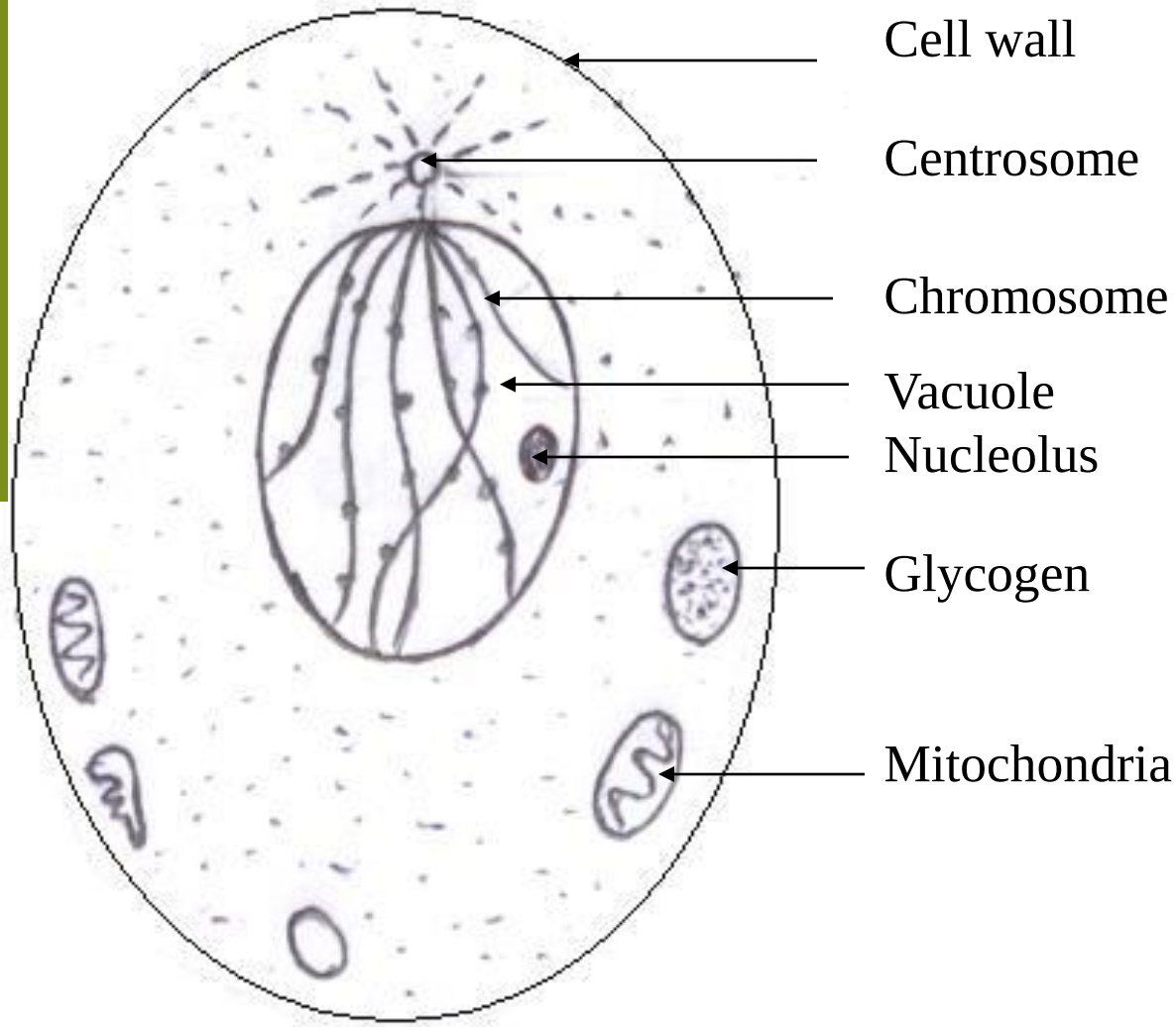
<u>Spirulina</u> vegetative structure (W.M)

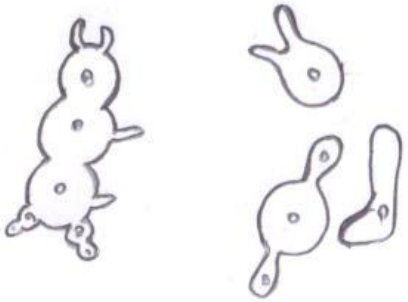
Blue-green algae or Cyanobacteria Morphology



<u>Yeast,</u> Vegetative Structure and Budding (W.M)







Budding

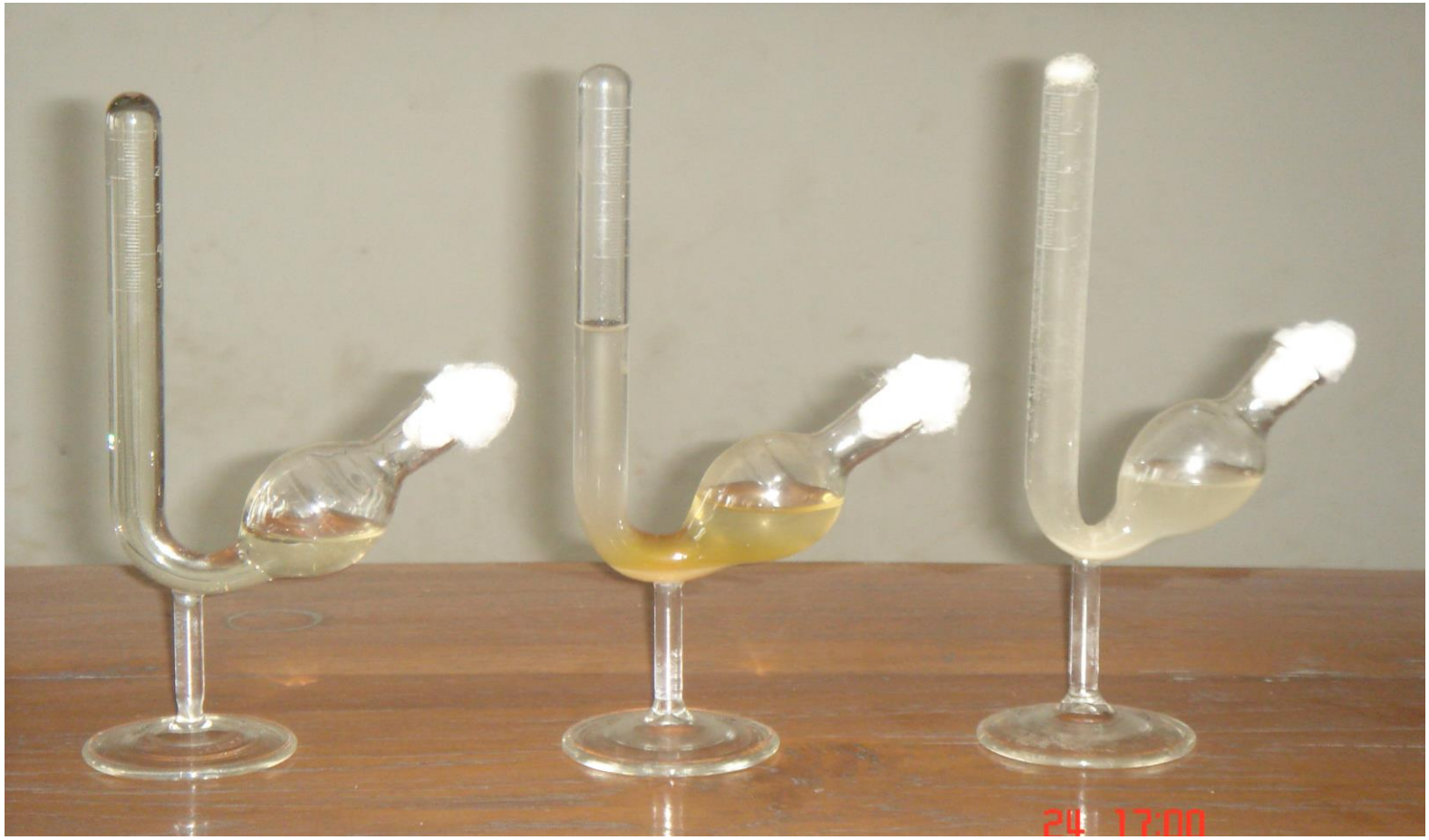
Respiration

Experiment (1) To demonstrate that anaerobic respiration by yeast or fermentation by yeast

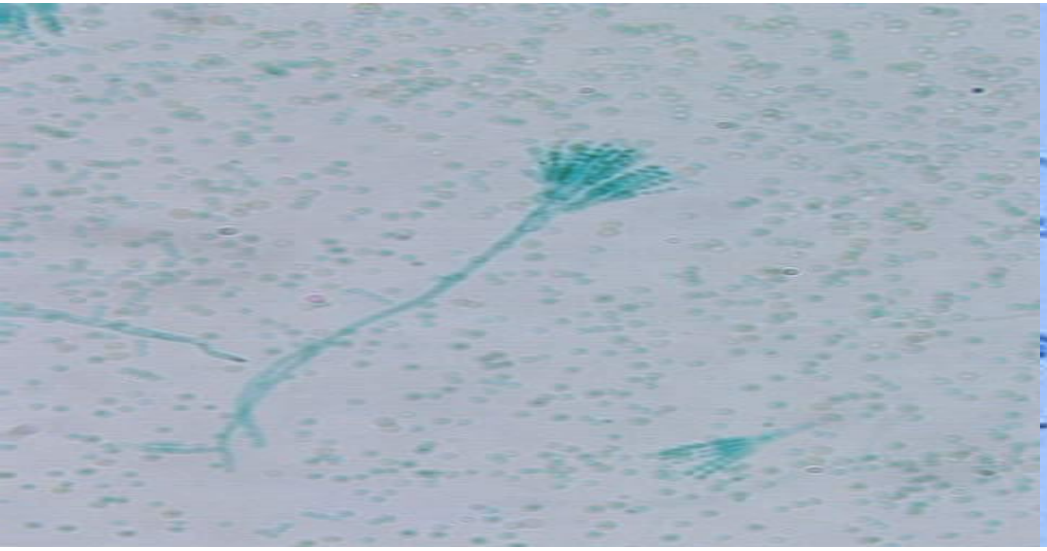
(1) A control tube without yeast

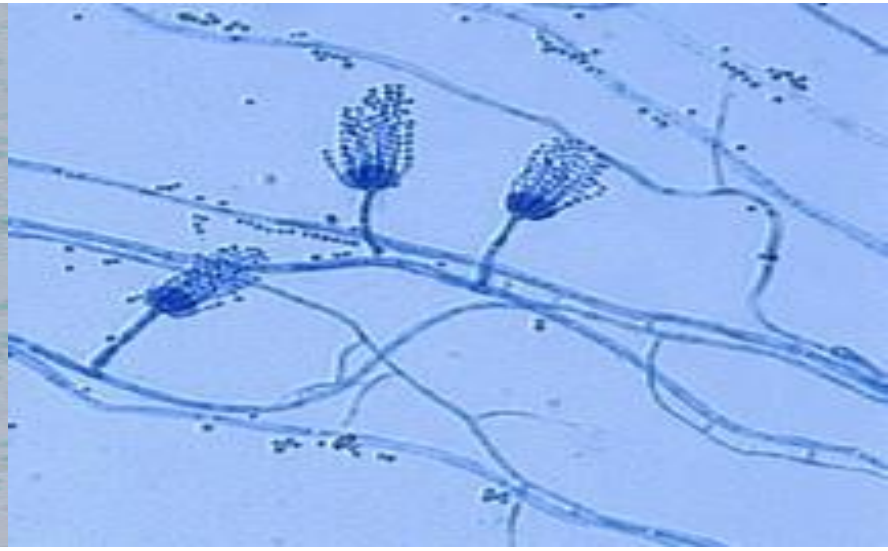
(2) A tube with yeast

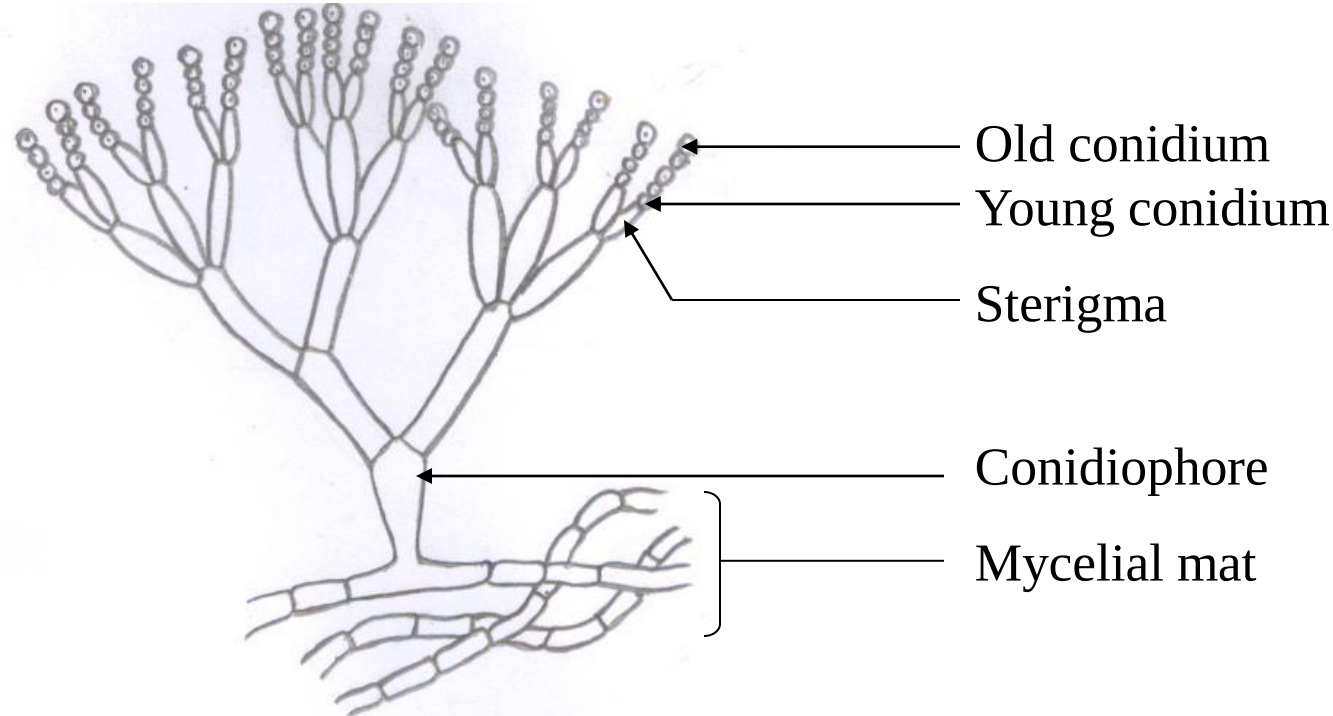
(3) A tube with yeast and KOH crystals and cotton-wool-plug with a smell of alcohol



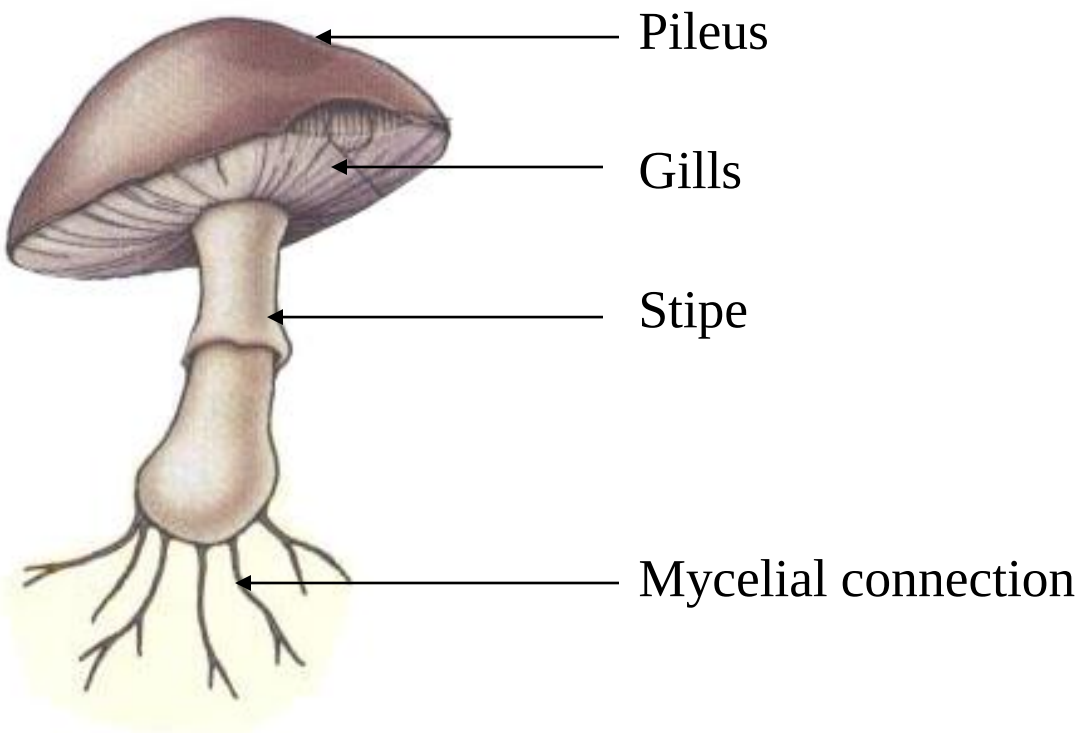
<u>Penicillium</u>, Vegetative Structure (W.M)







<u>Agaricus</u> (Basidiocarp)

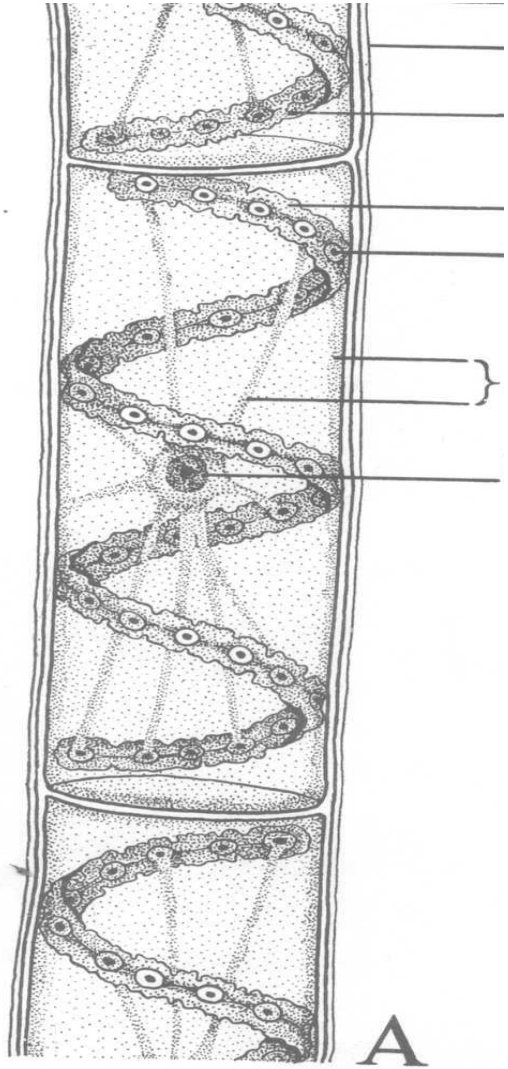


Mushroom

Toadstool

Spirogyra

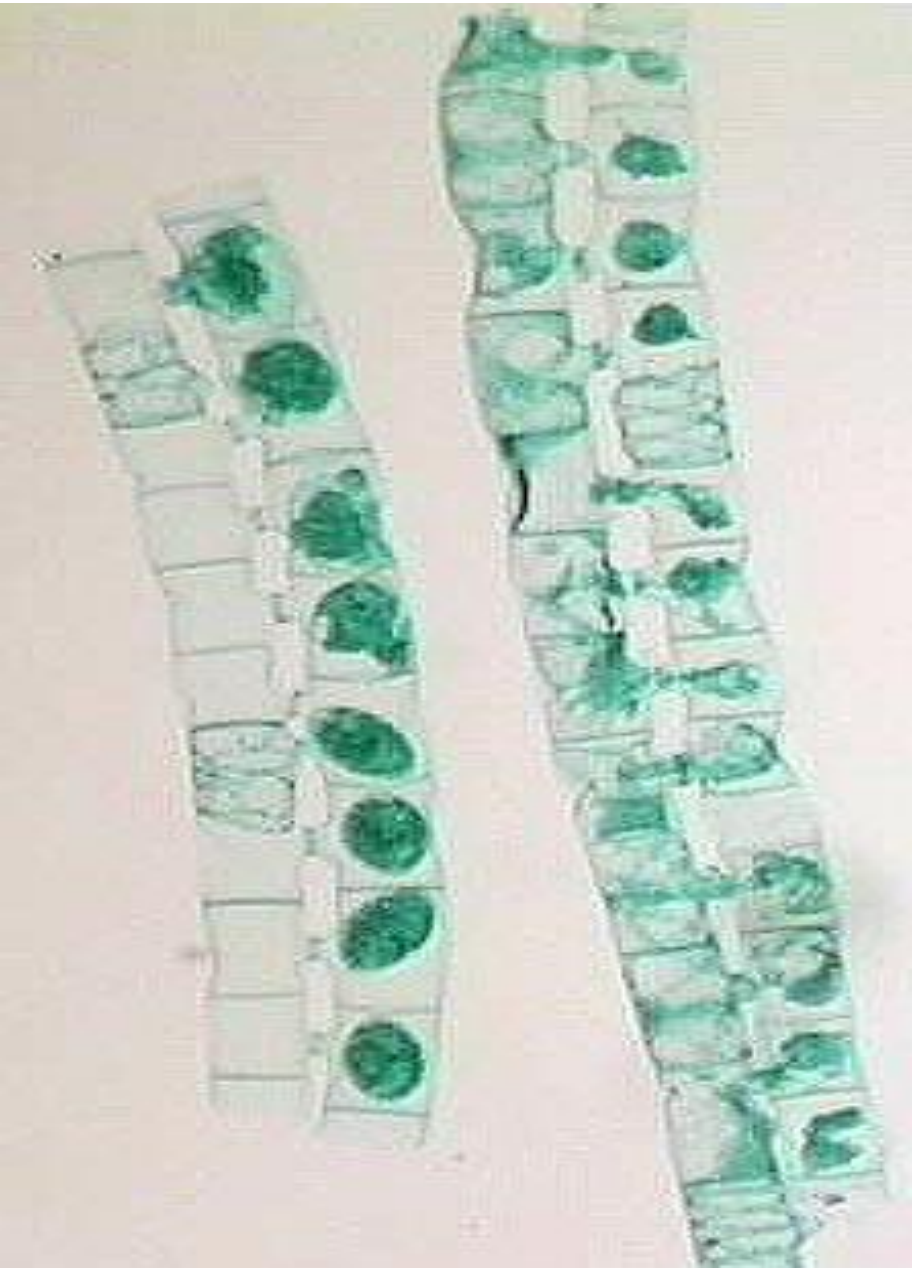
Vegetative structure (W.M)



Gelatinous sheath
Septate cell wall
Chloroplast
Pyrenoid
Strand of cytoplasm
Nucleus
Vacuole
Ridge

<u>Spirogyra</u>

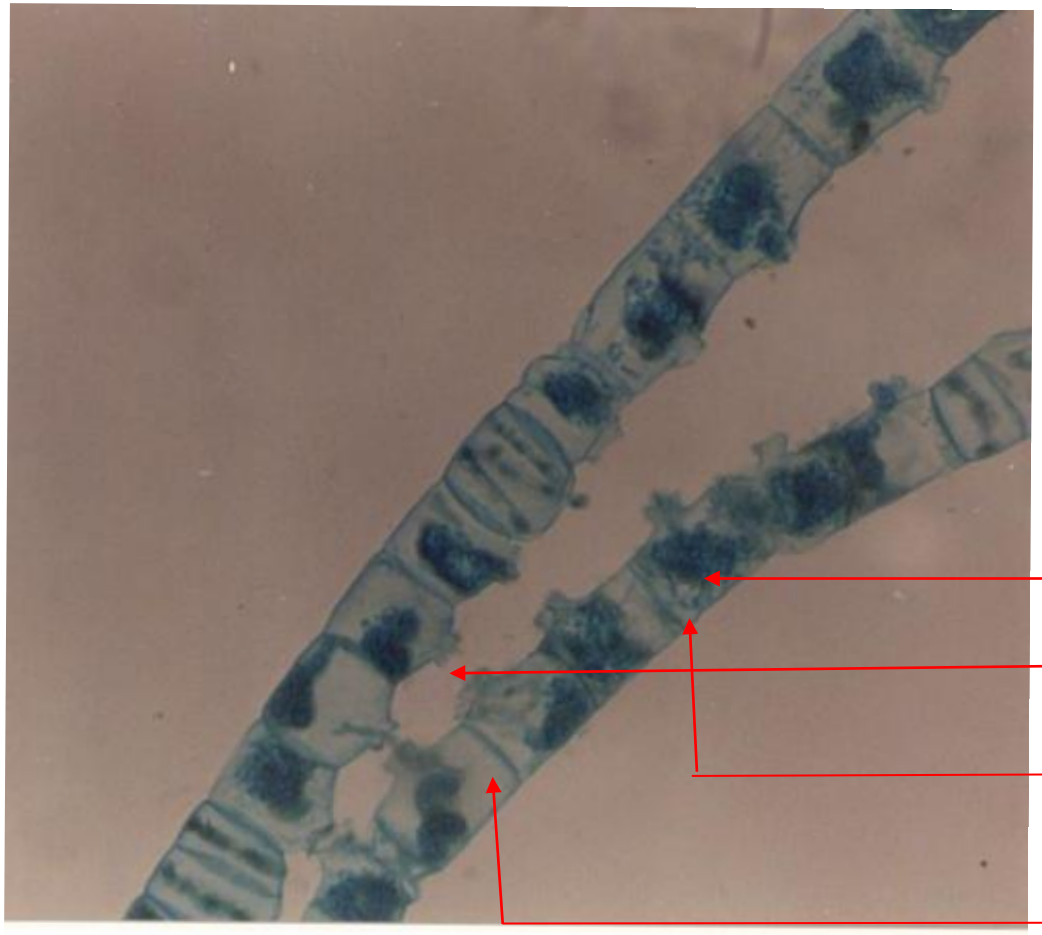
Scalariform conjugation (W.M)



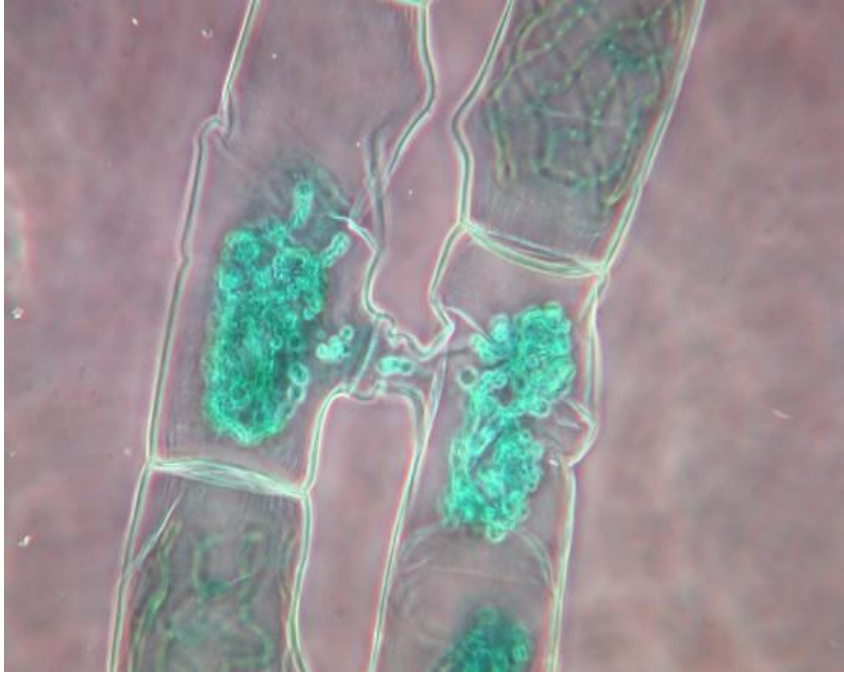
Spirogyra

Scalariform conjugation (W.M)

First stage



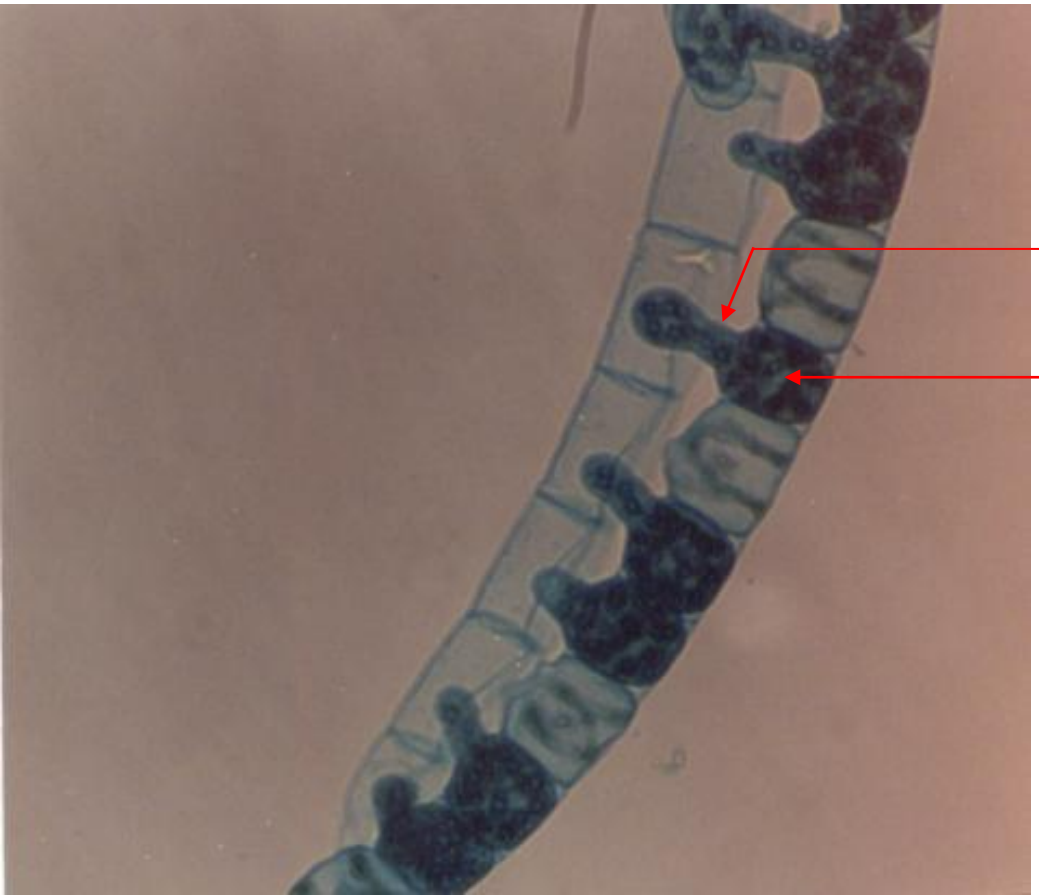
Second stage



Protuberance

Contracted cytoplasm

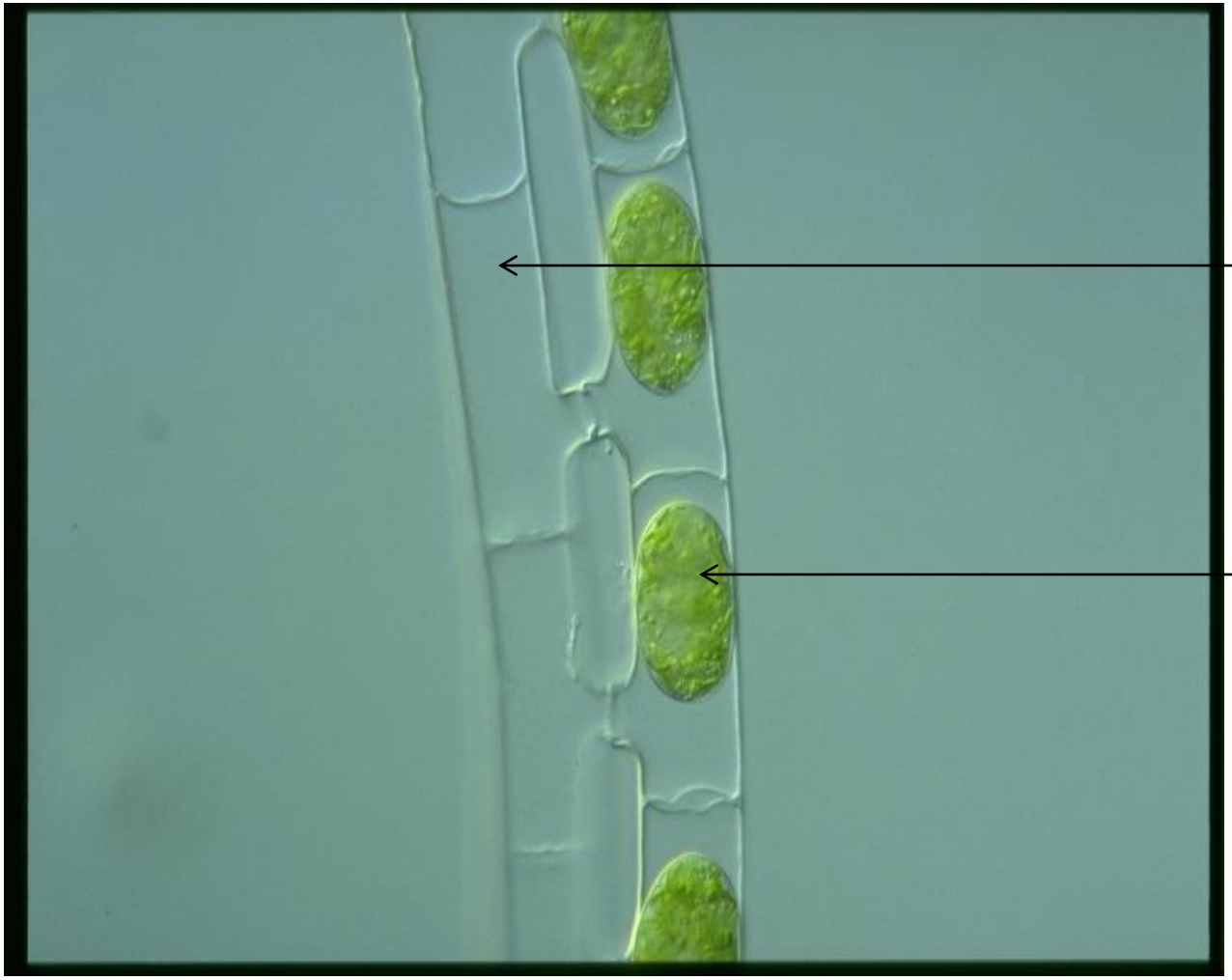
Third stage



Conjugation tube

Gametes

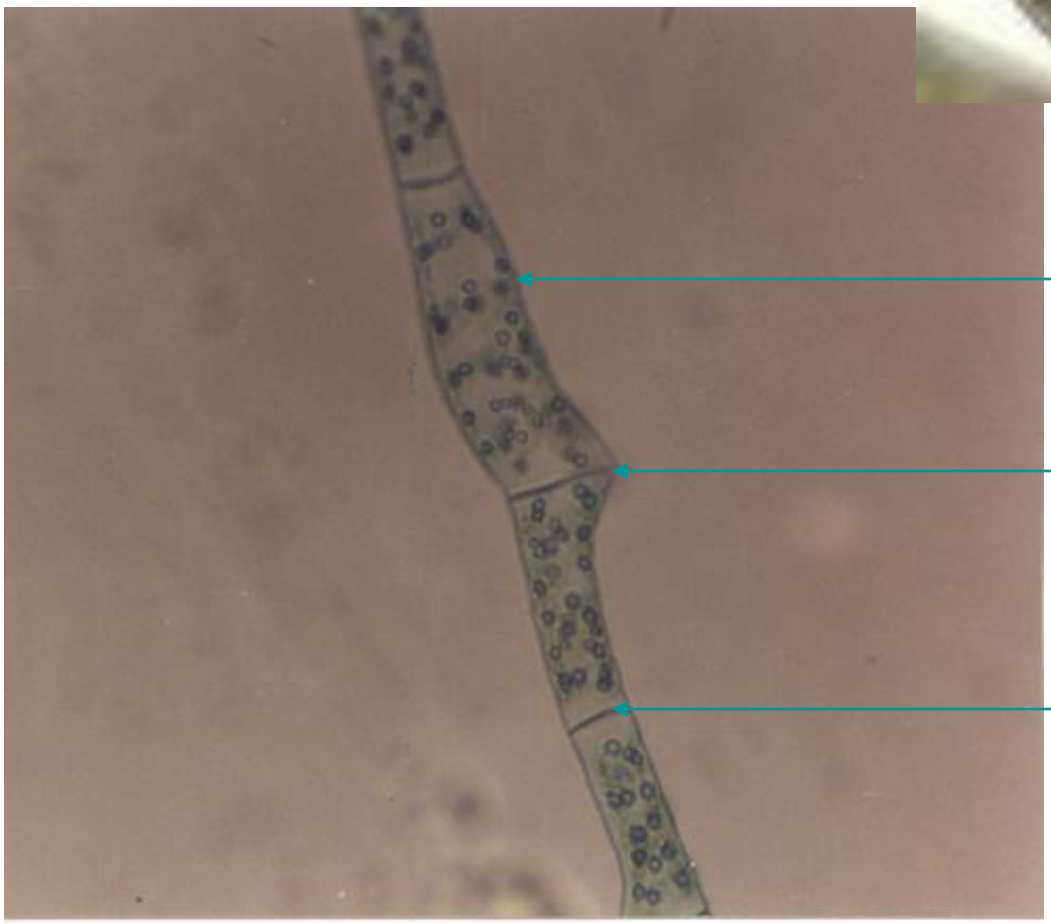
Fourth stage



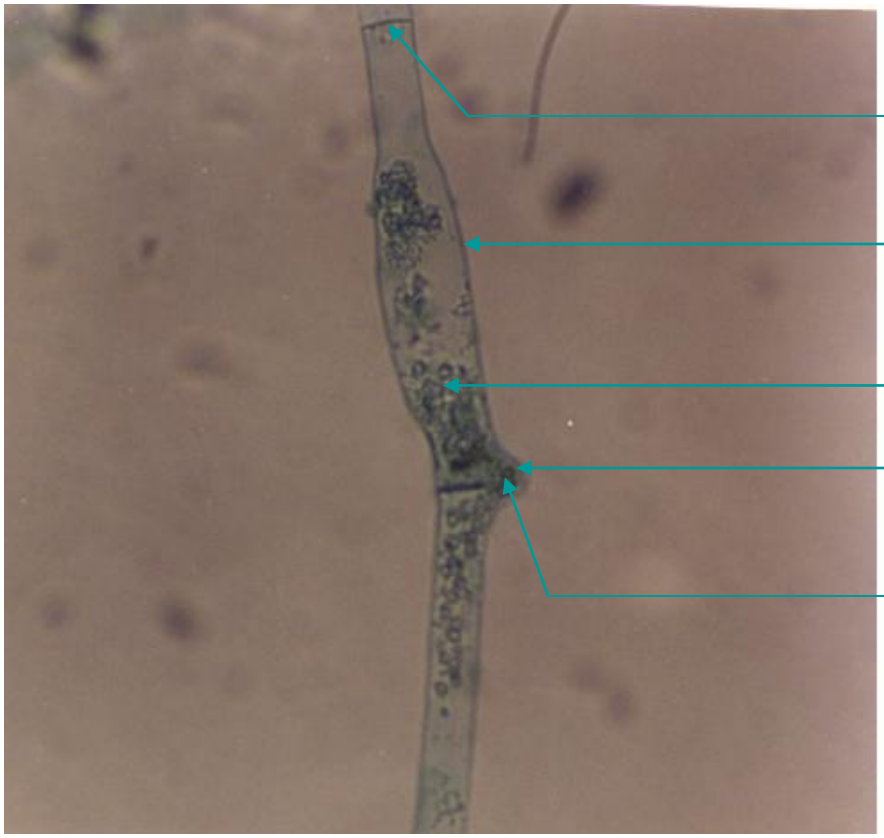
Spriogyra

Lateral conjugation (W.M)

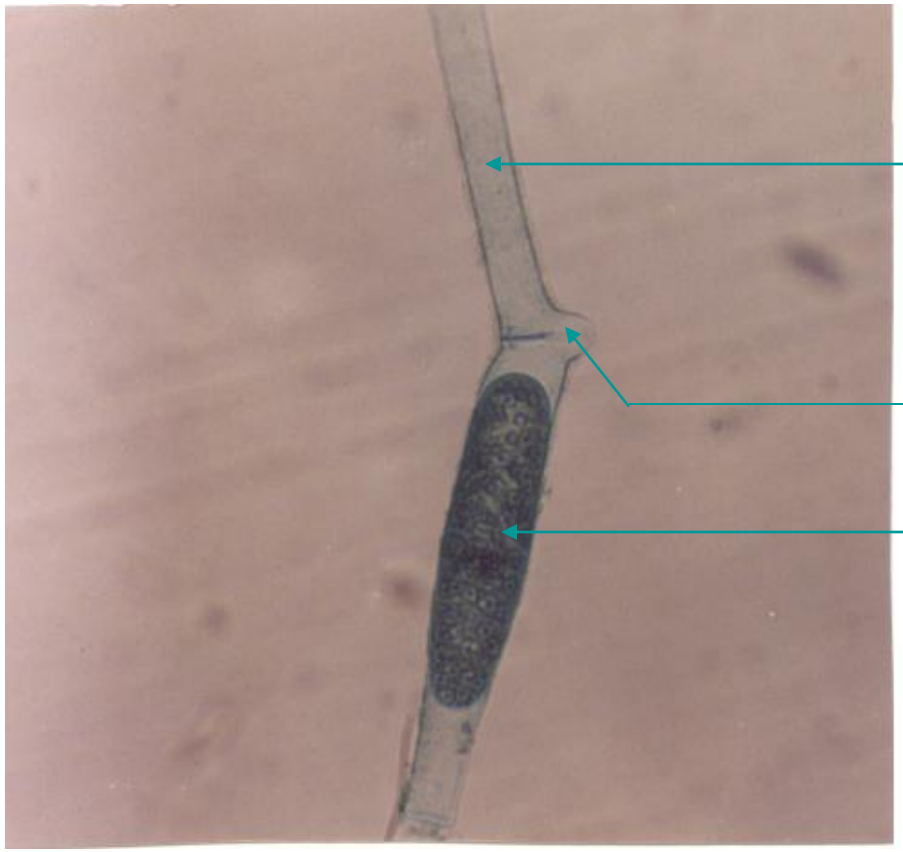
First stage



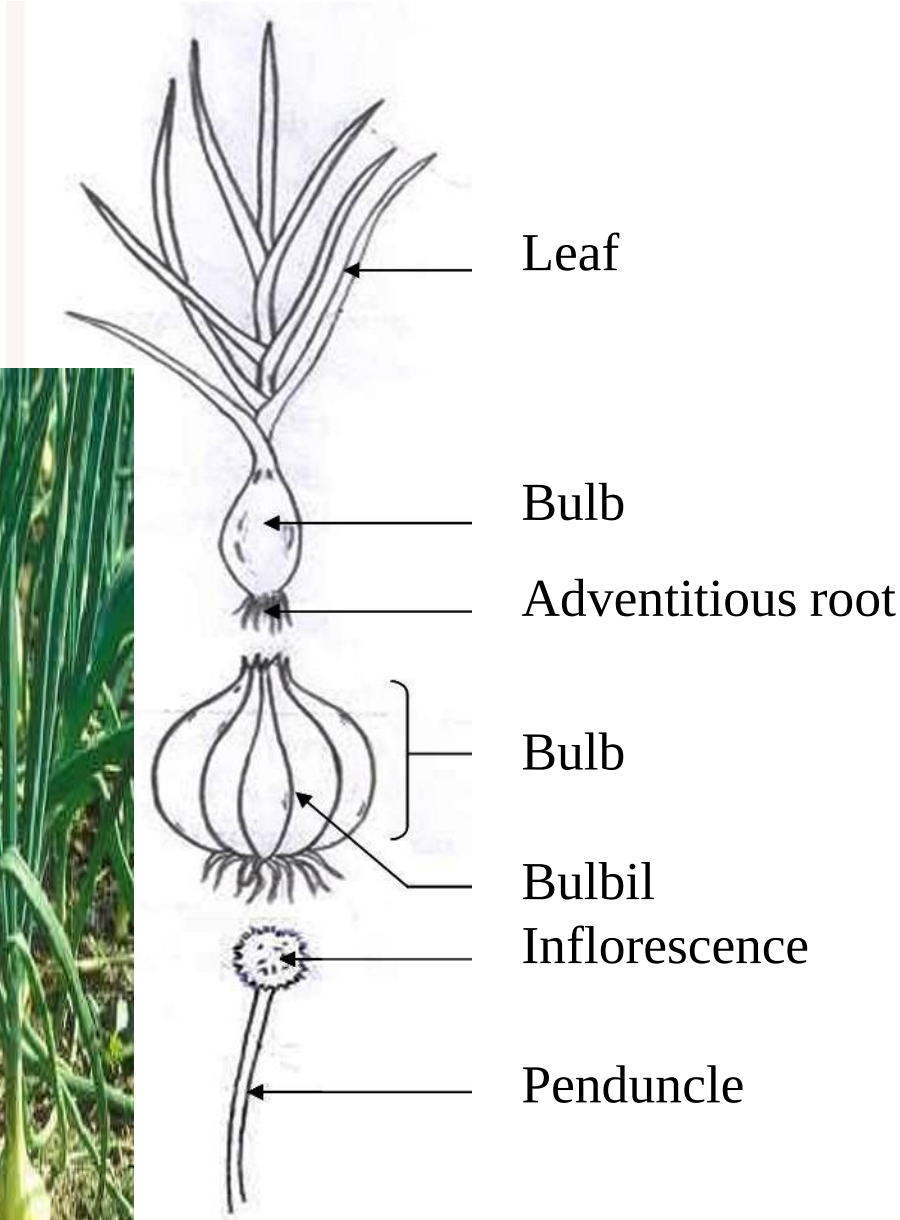
Second stage



Third stage



Allium sativum Linn.



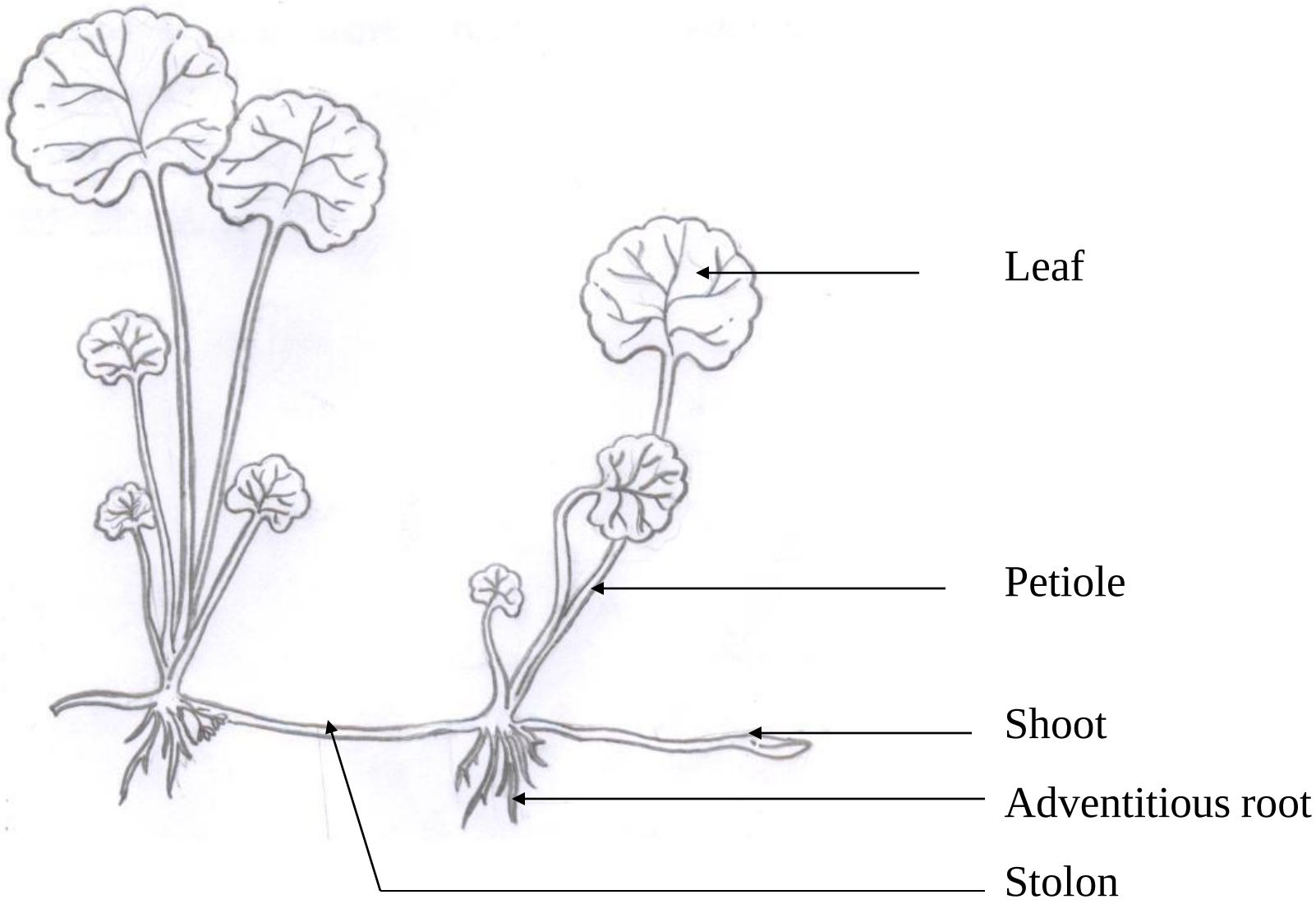
Aloe vera Linn.

Inflorescence

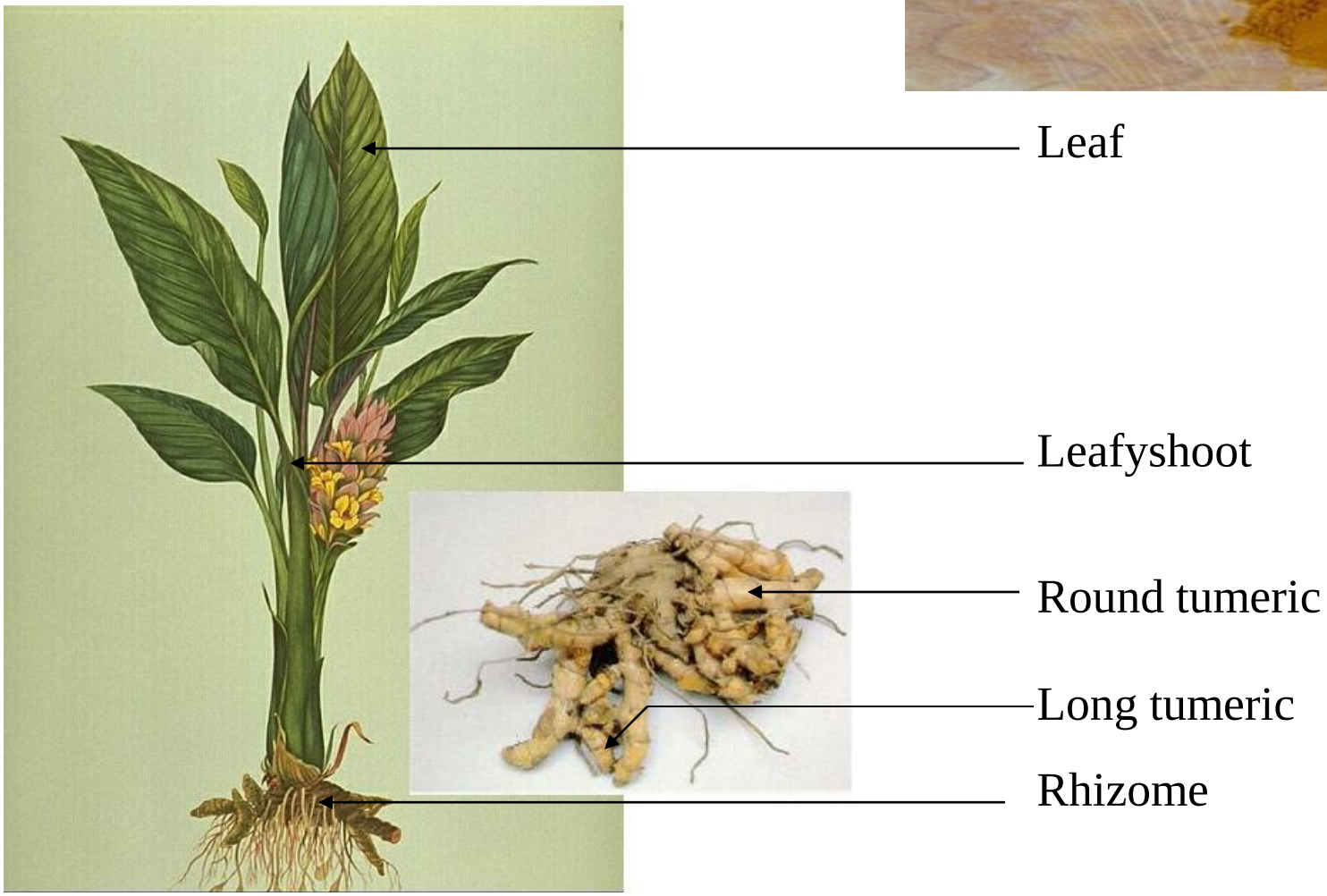
Fleshy leaf

Centella asiatica (L) Urban

Centella asiatica (L) Urban



<u>Curcuma</u> <u>longa</u> Linn.

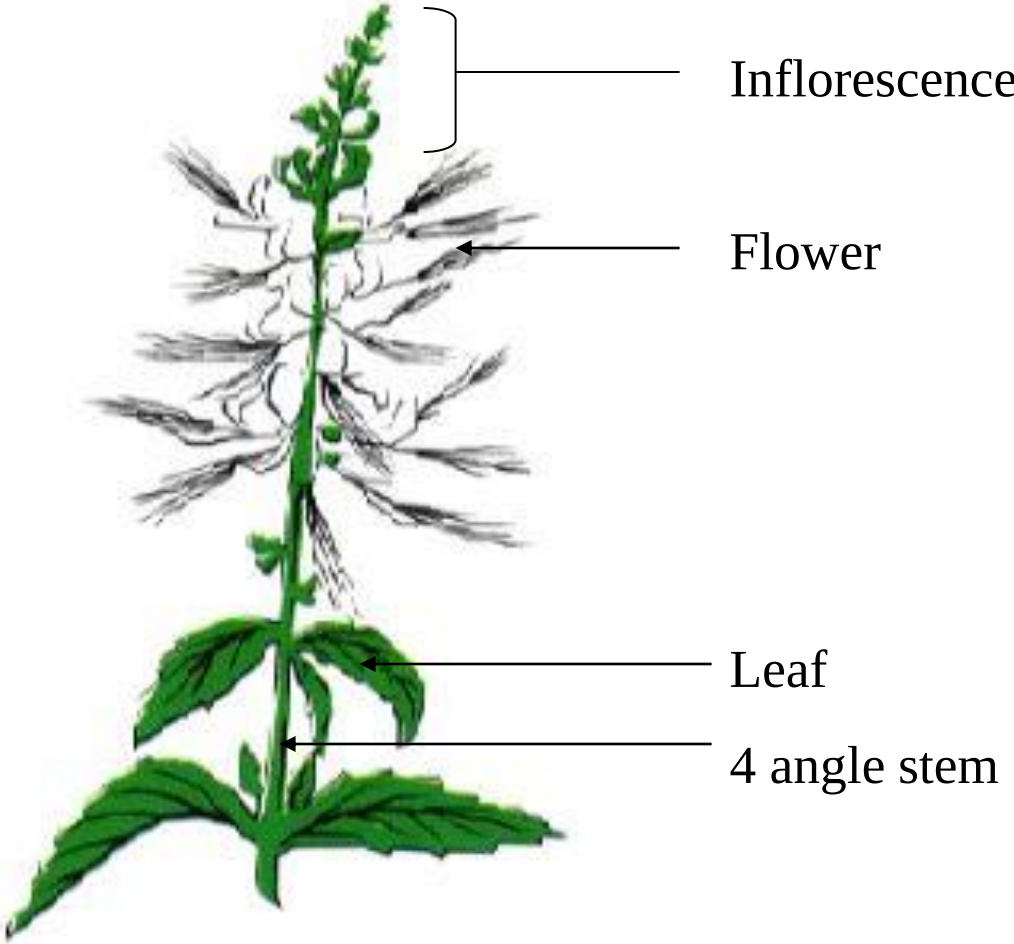


<u>Piper</u> <u>betle</u> Linn.

Leaf

<u>Andrographis</u> <u>paniculata</u> Nee.

Orthosiphon stamineus Benth.



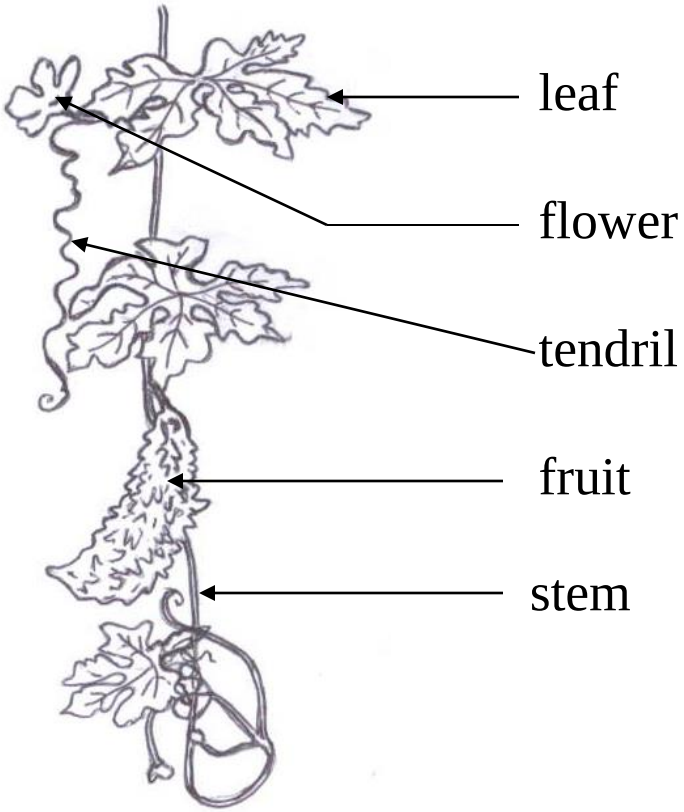
Moringa oleifera Lank.

Inflorescence

Pod

Leaf

Momordica charantia linn



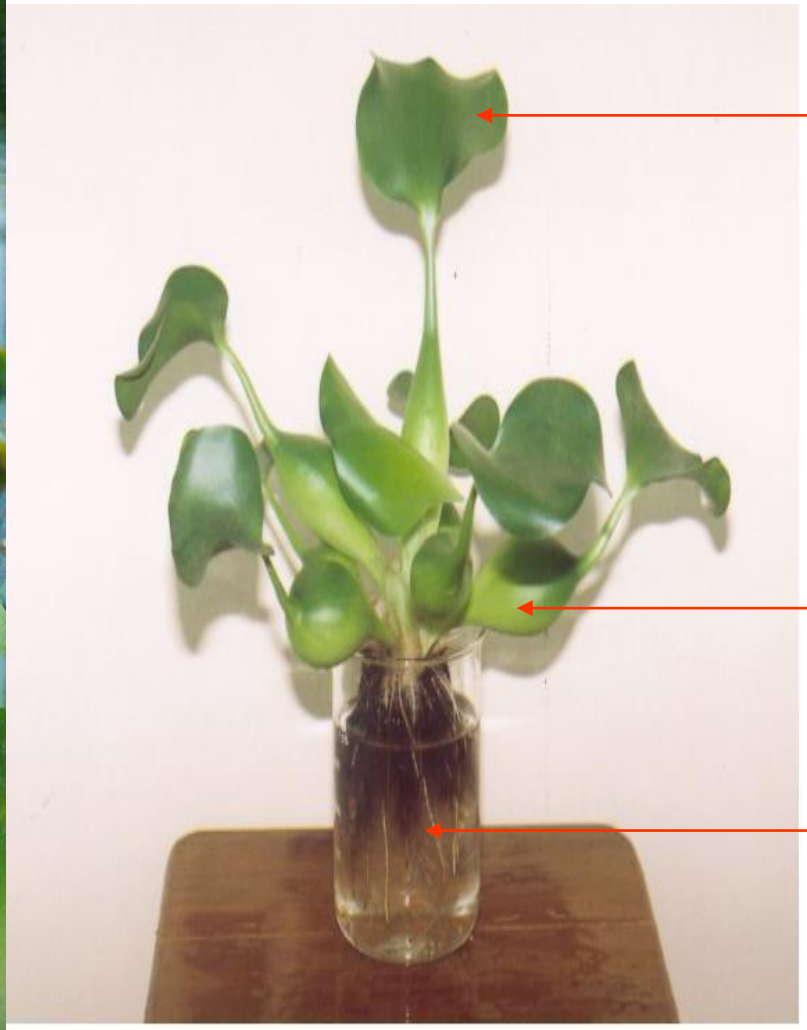
Morinda citrifolia Linn.

Ecological Plant Group

Ecosystem

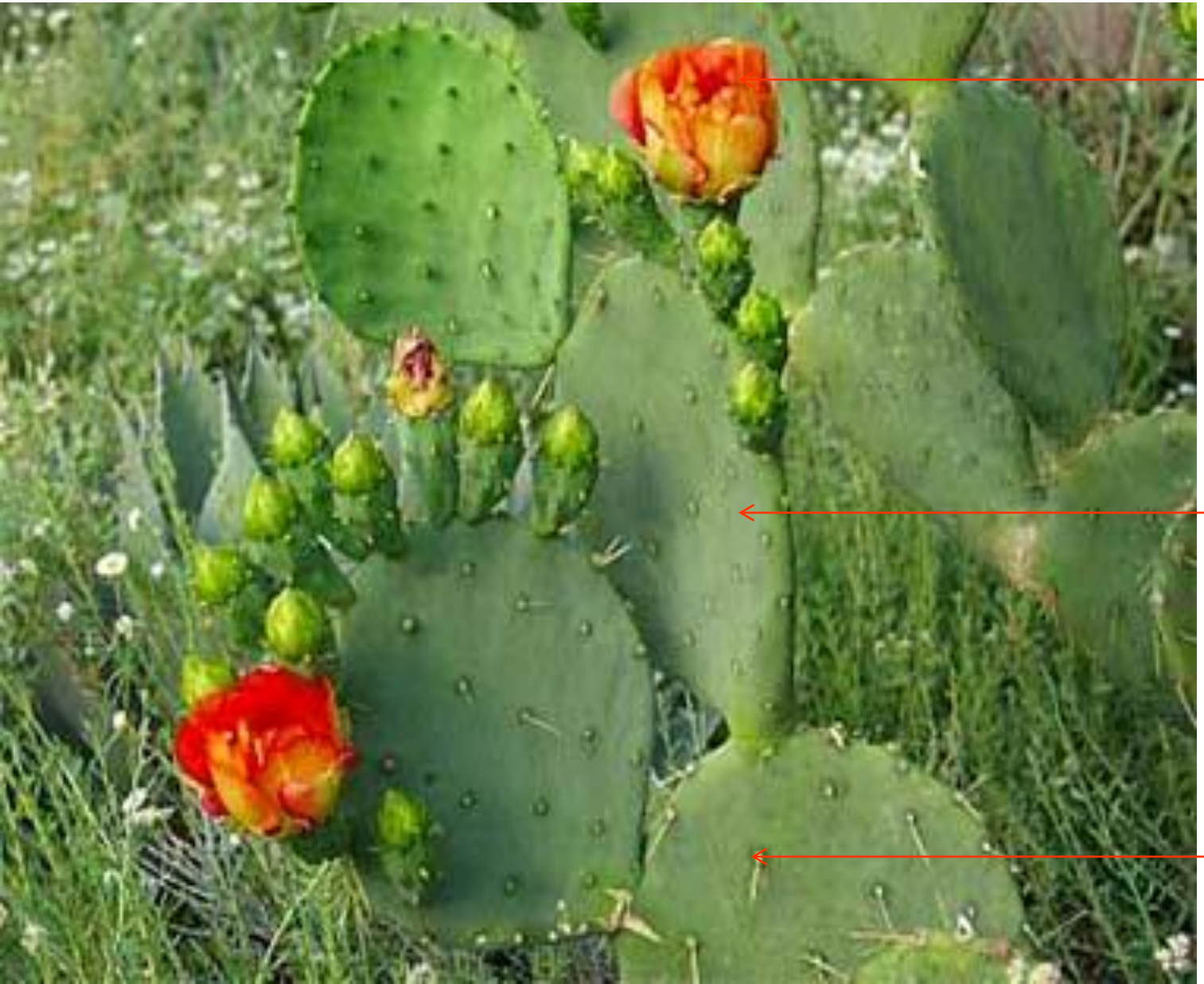
Hydrophytes

eg. Water hyacinth (<u>Eichhornia</u> <u>sp</u>)



Xerophytes

eg. Cactus (Opuntica sp)



Epiphytes

eg. Orchid (<u>Vanda</u> sp)

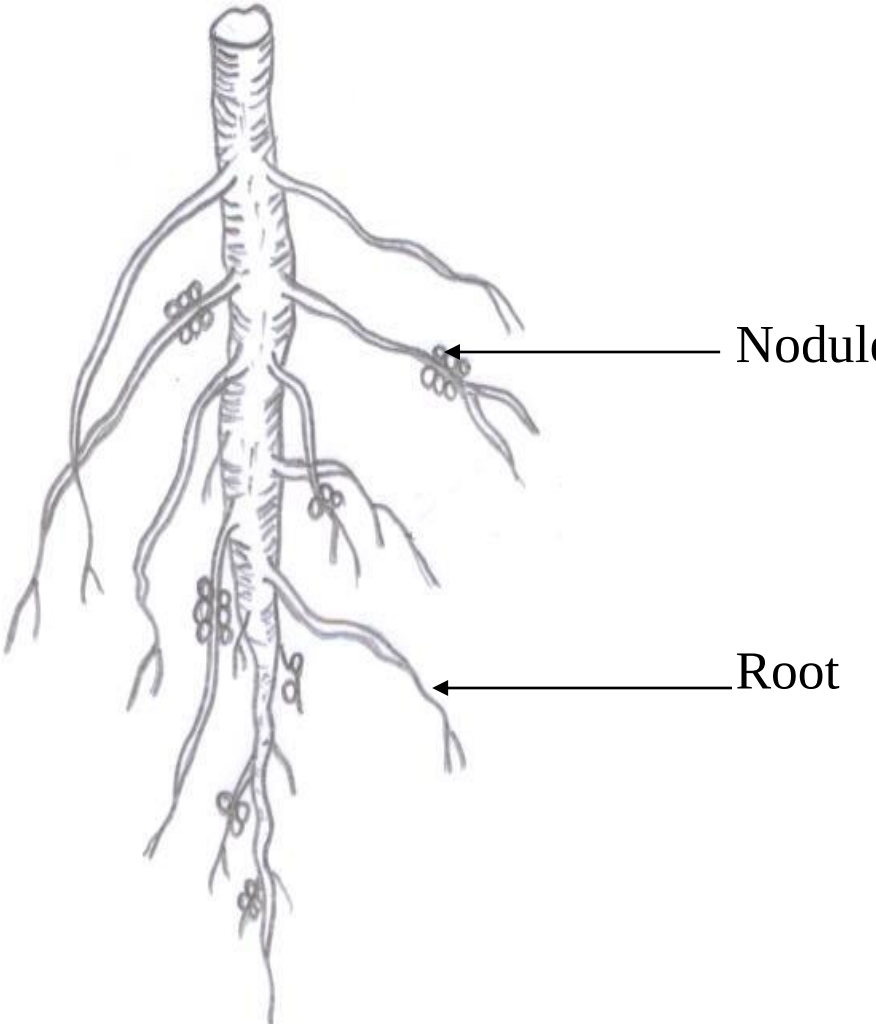
Leaf

Roots

Support

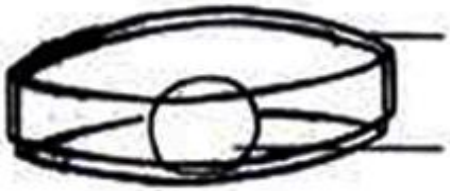
Symbiont

eg. Leguminous plants (<u>mimosa</u> <u>pudica</u>)

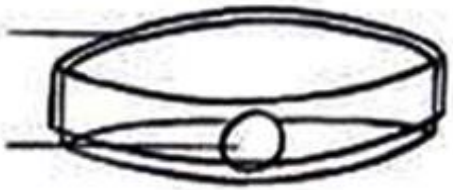


Diffusion

Experiment (1) Diffusion of solid into gas



(Before diffusion)

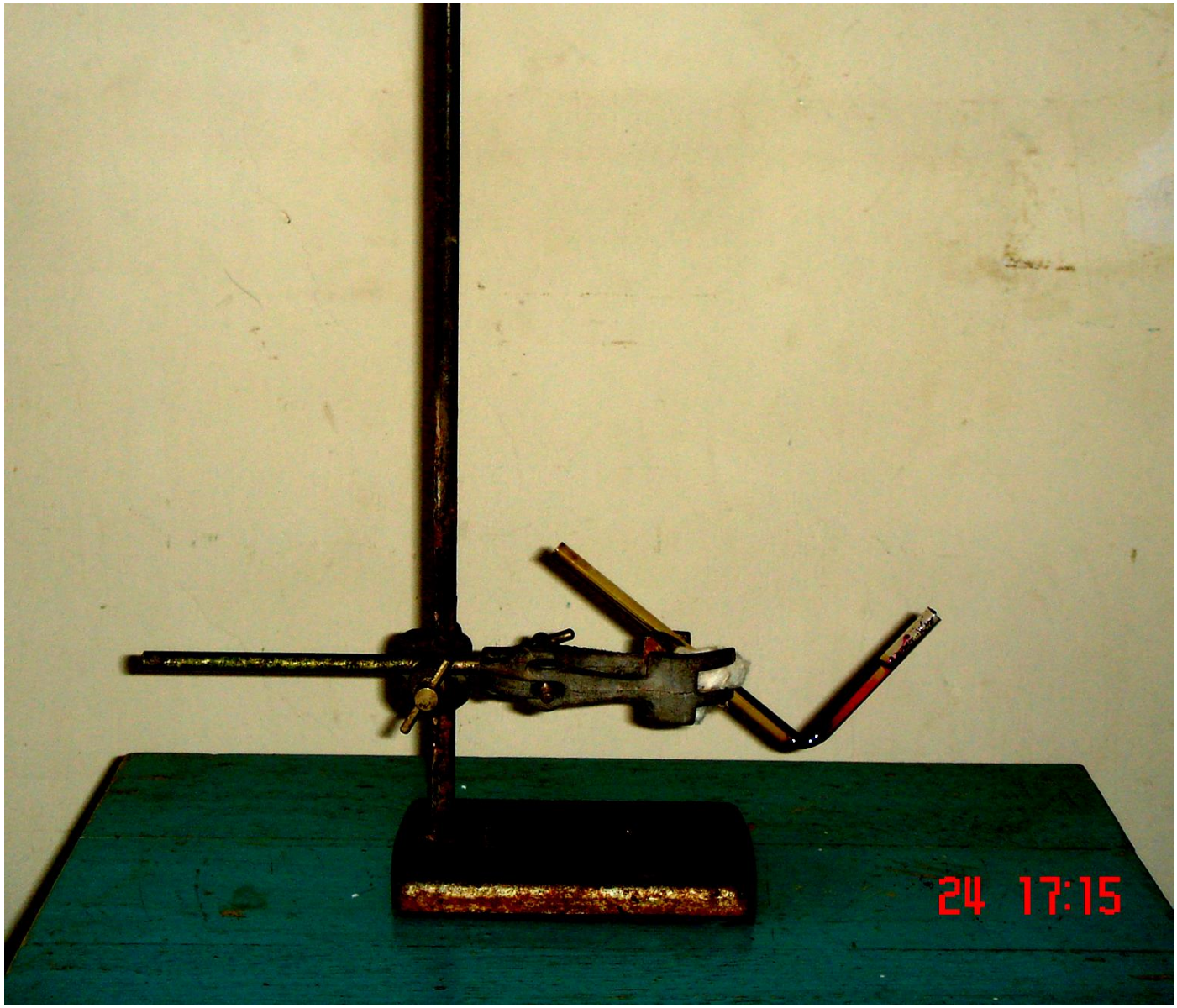


(After diffusion)

Experiment (2) Diffusion of liquid into gas

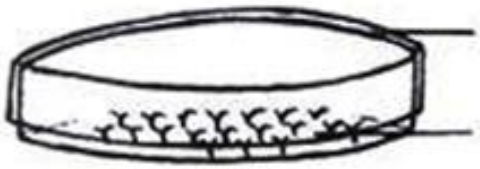
(Well soaked with petroleum)

Experiment (3) Diffusion of solvent (diffusion of solid into liquid)

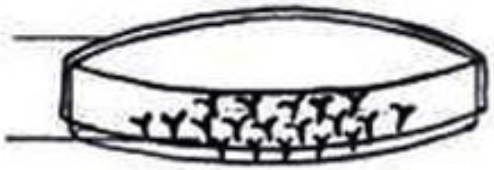


Imbibition

Experiment (1) (Agar or seaweed + water)

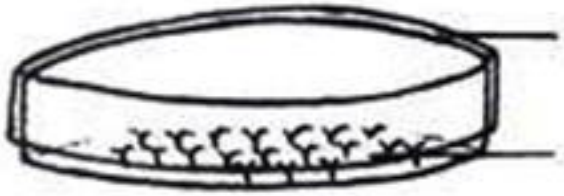


(Before imbibition)



(After imbibition)

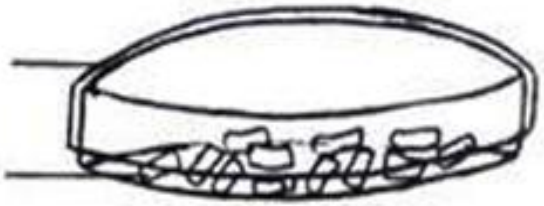
(Agar or seaweed +petroleum)



(No change + no imbibition)

Experiment (2) (Rubber + petroleum)

(Before imbibition)



(After imbibition)

(Rubber + water)

(No change + no imbibition)

Osmosis

Osmosis

Experiment (1) Endosmosis

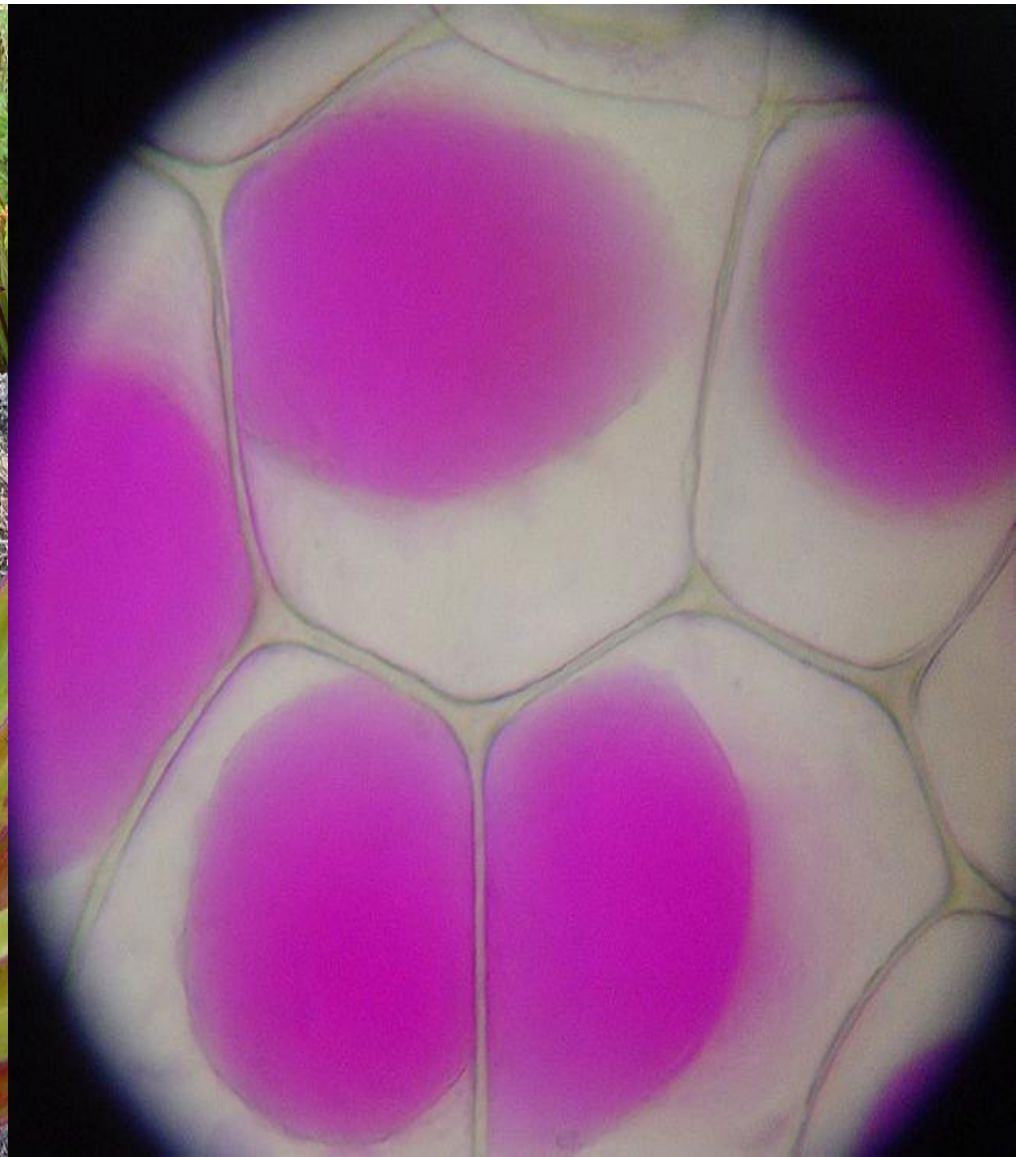
Experiment (2) Exosmosis

Photosynthesis

Experiment (1) To demonstrate that oxygen is produced during photosynthesis

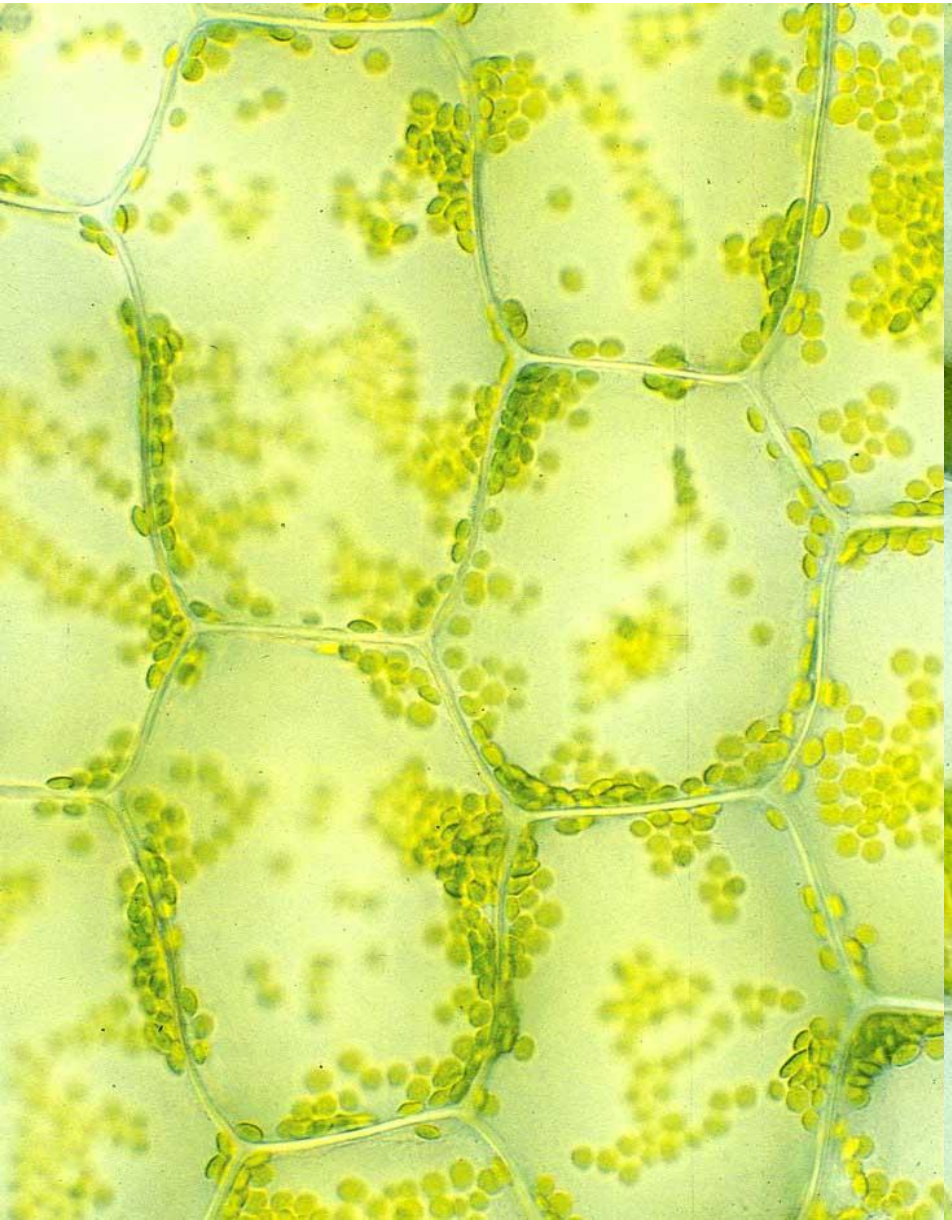
Experiment : Plasmolysis

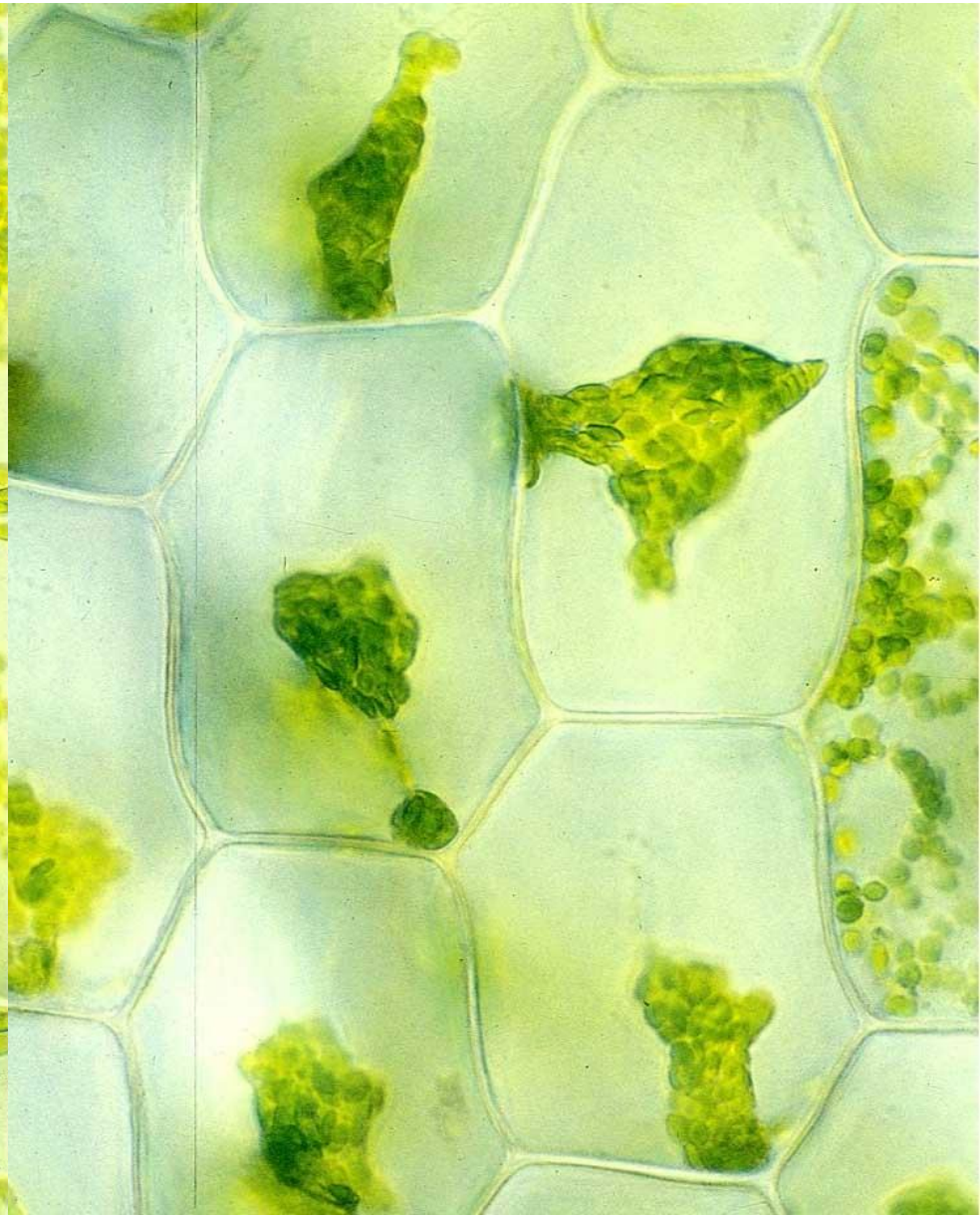
Eg. *Rhoeo* Leaf



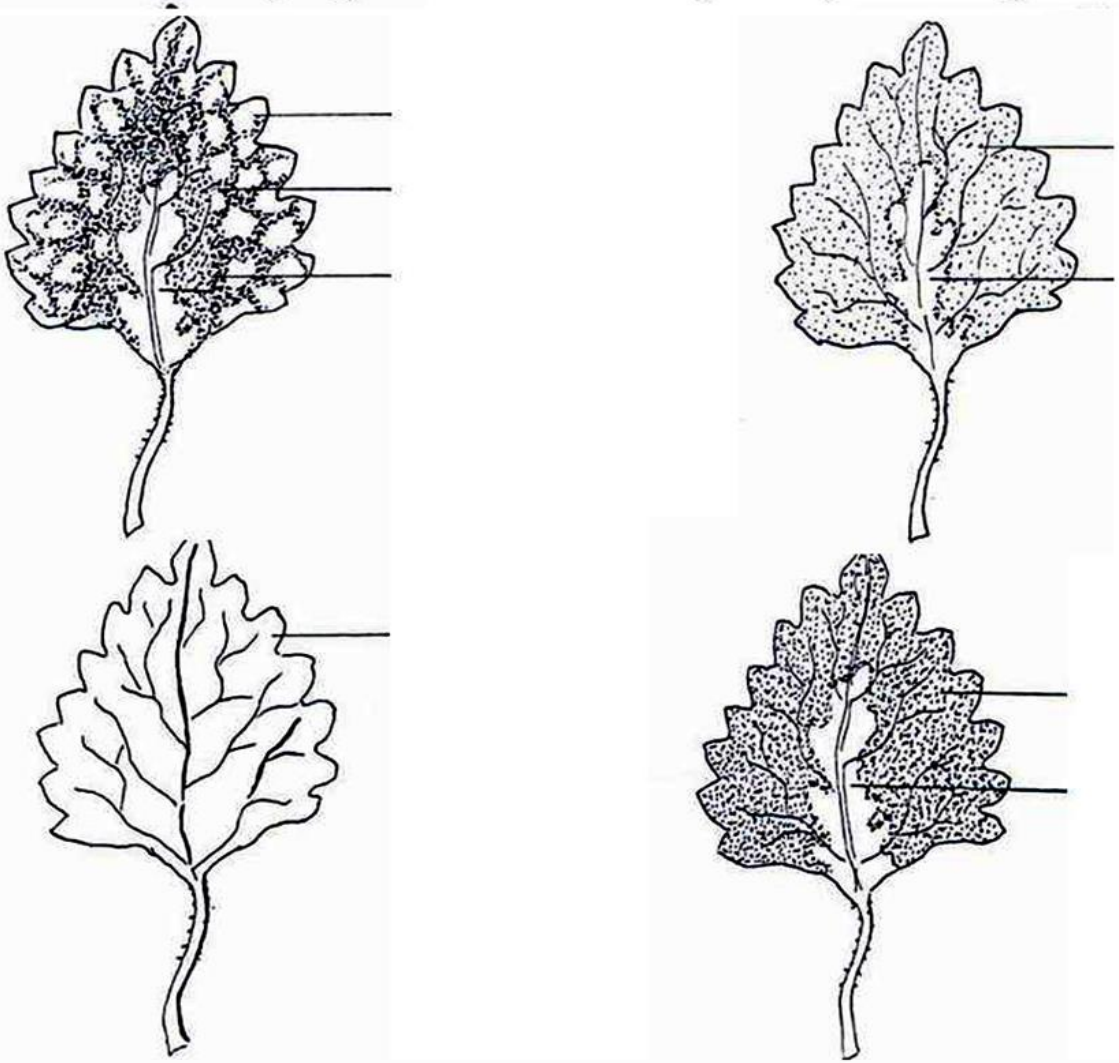
Plasmolysis

Eg. *Elodea*





To show that chlorophyll is necessary for photosynthesis



To show that CO_2 is necessary for photosynthesis

After starch test

Leaf inside the conical flask with water

Leaf inside the conical flask with KOH solution

To show that light is necessary for photosynthesis

Department of Botany