Division: Chlorophyta

General characters

1. This division include about 500 genera with 8000 species.
2. They contain chlorophyll a and **b** as well as carotenoid.
3. The chloroplast normally contains pyrenoids (A proteinaceous structure associated with algal chloroplast that often forms and store starch compounds).

4. Occurrence, approximately 10% are occurring in marine habitat and 90% occur in fresh water. They may found as plankton or benthic (**bottom dwelling; non-plankton**; attached to or resting on the substrate).

5. Organization of body plant

(form of Green algae)

1. Motile Unicellular and colonies.
2. Non motile Unicellular and colonies.
3. Filamentous branched or unbranched.
4. Membranous
5. Coenocyte and tubular.

Division: Chlorophyta (Green-algae)

Class: Chlorophyceae

Order1: Chlorococcales

Family 1: Chlorellaceae — ***Chlorella* sp.**

Family 2: Scenedesmaceae — ***Scenedesmus* sp.**

Family 3: Hydrodictyaceae: — ***Pediastrum* sp.** ***Hydrodictyon* sp.**

Division: Chlorophyta (Green-algae)

Class: Chlorophyceae

Order1: Chlorococcales

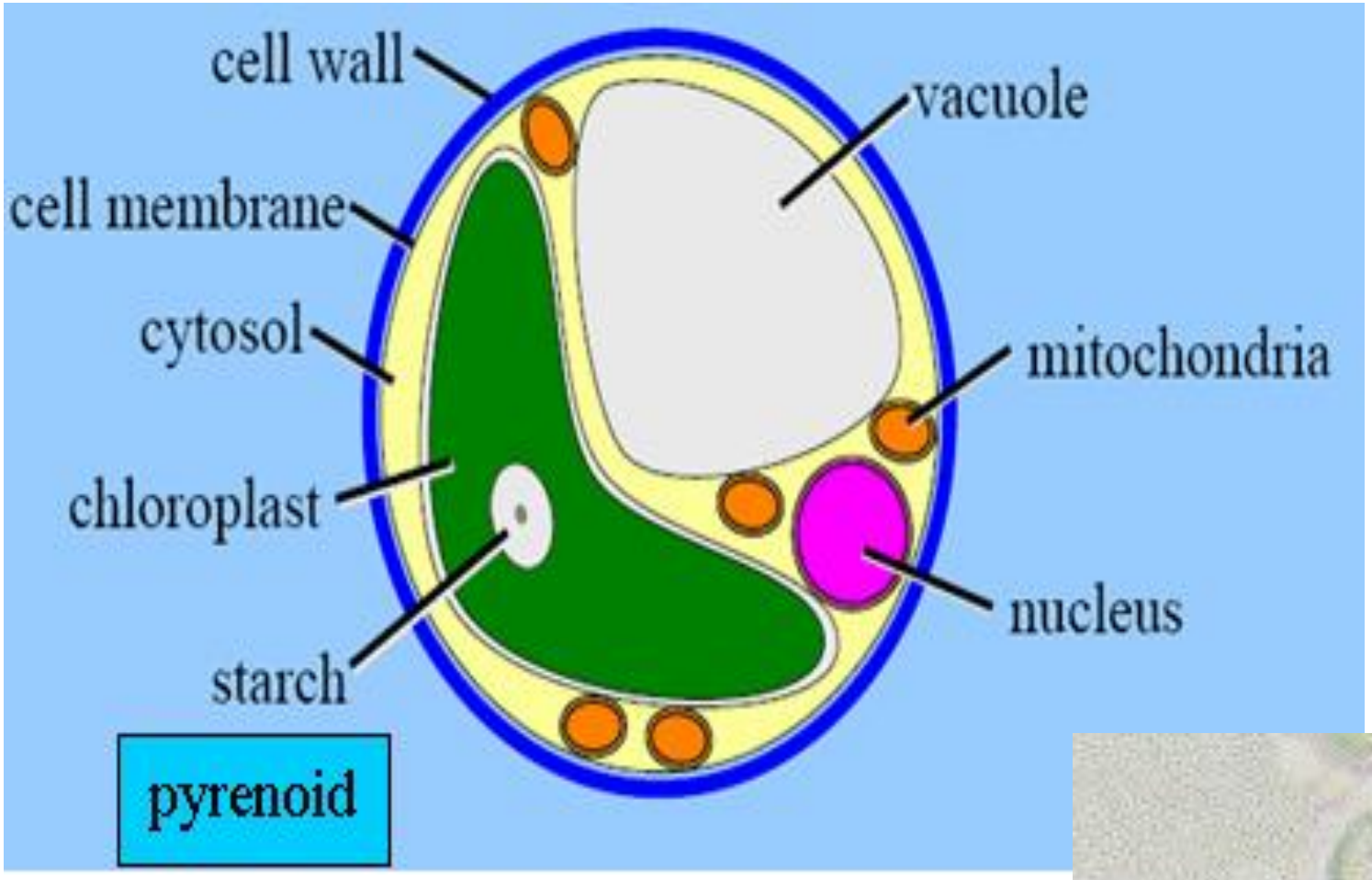
1. This order include non motile unicellular and colony.
2. The cell may be uninucleate or multinucleate.
3. Members of this order found in both fresh water and subaerial habitat.

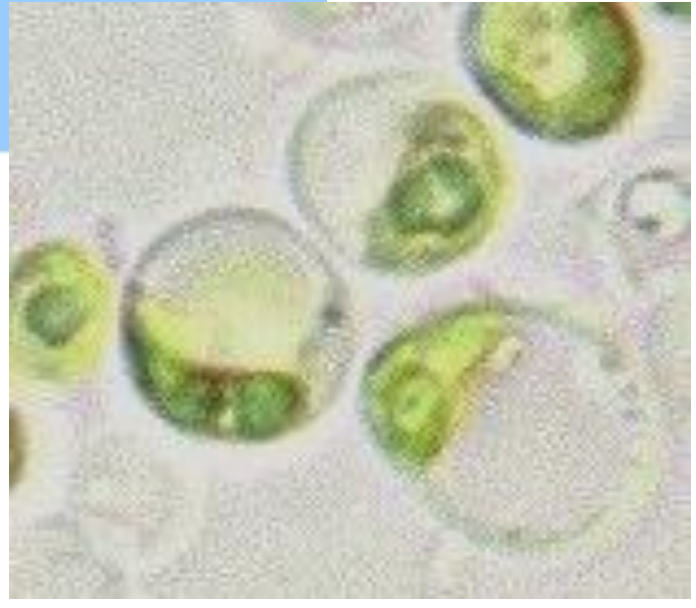
Family 1: Chlorellaceae

The members of this family are unicellular, and do not produce **zoospores**.

Genus: *Chlorella* sp. (small green)

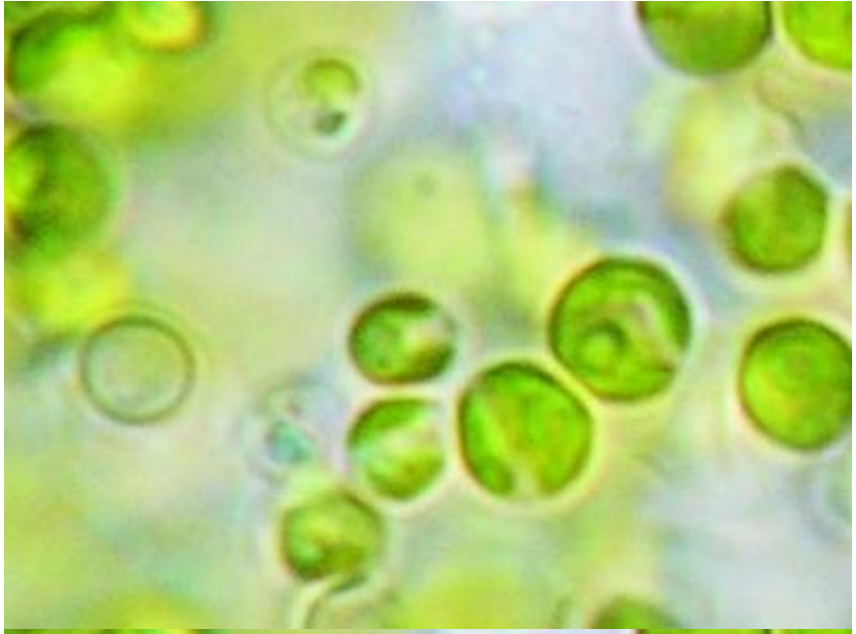
1. The cells are small 2µm, Spherical, uninucleate cells.
2. Centrally located nucleus.
3. Single cup-shaped chloroplast.

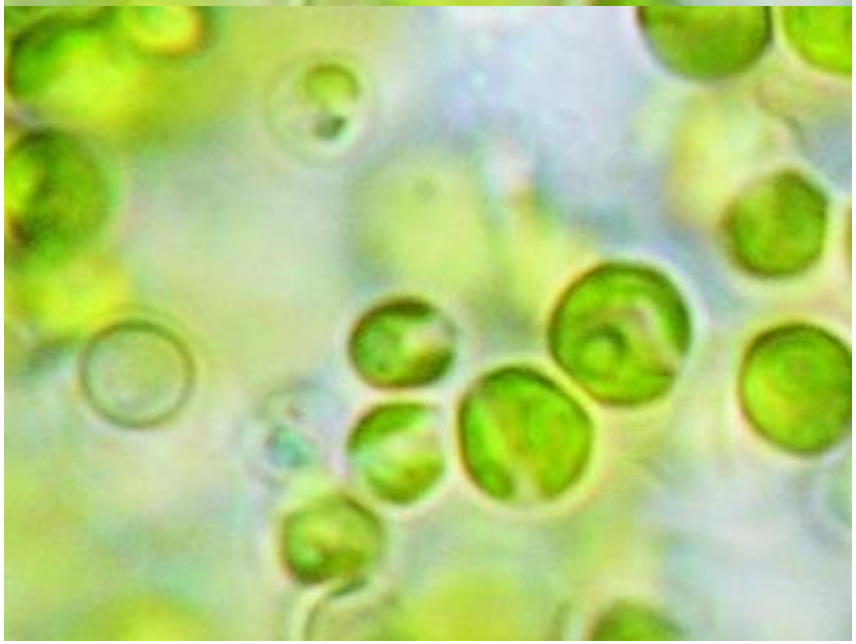

cell wall
vacuole
cell membrane
cytosol
mitochondria
chloroplast
nucleus
starch
pyrenoid



Chlorella


Chlorella sp.





Algae Practice- By Yadi O. Al-Barzinjy

TOP 7
CHLORELLA BENEFITS

1. Detoxifies Heavy Metals
2. Detoxifies Radiation and Chemotherapy
3. Supports Your Immune System
4. Promotes Weight Loss
5. Makes You Look Younger
6. Fights Cancer
7. Lowers Your Blood Sugar and Cholesterol

Dr. Axe

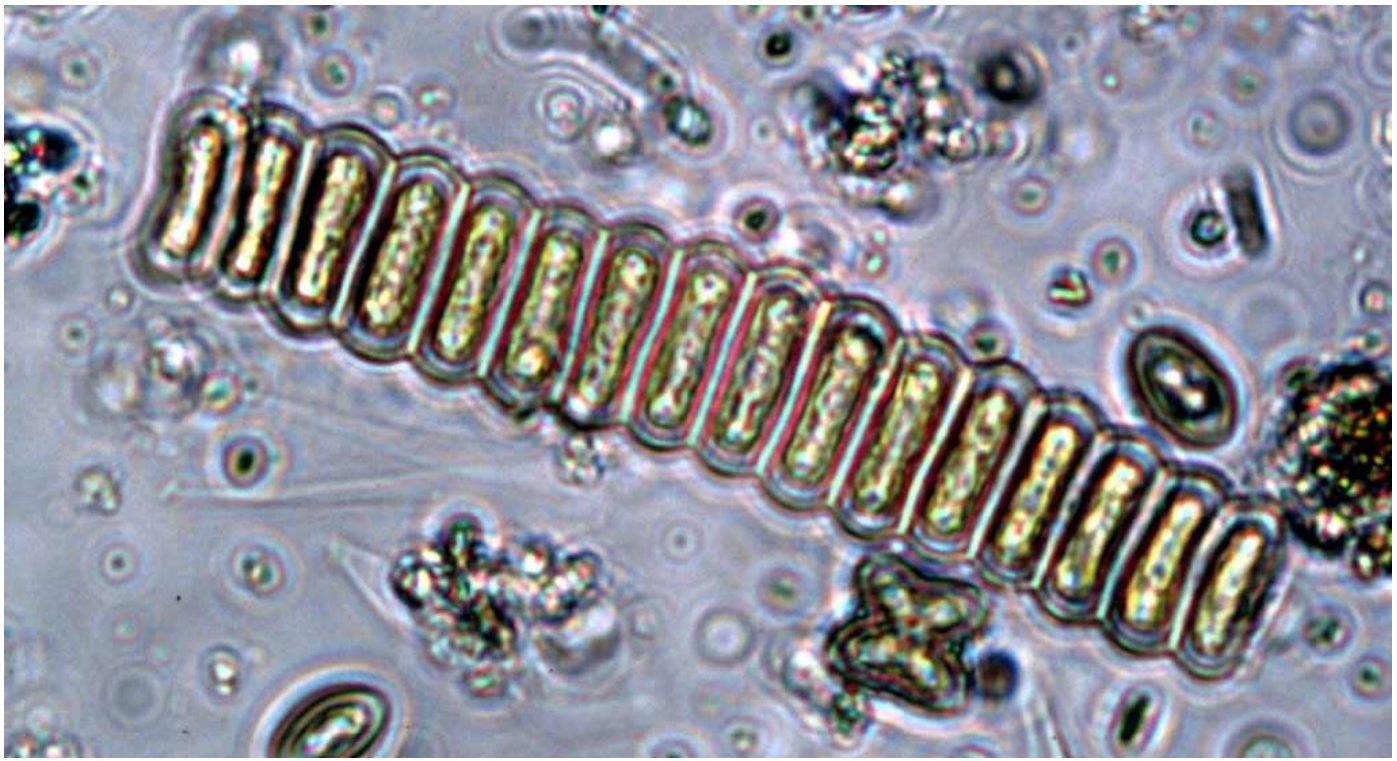
Family 2: Scenedesmaceae

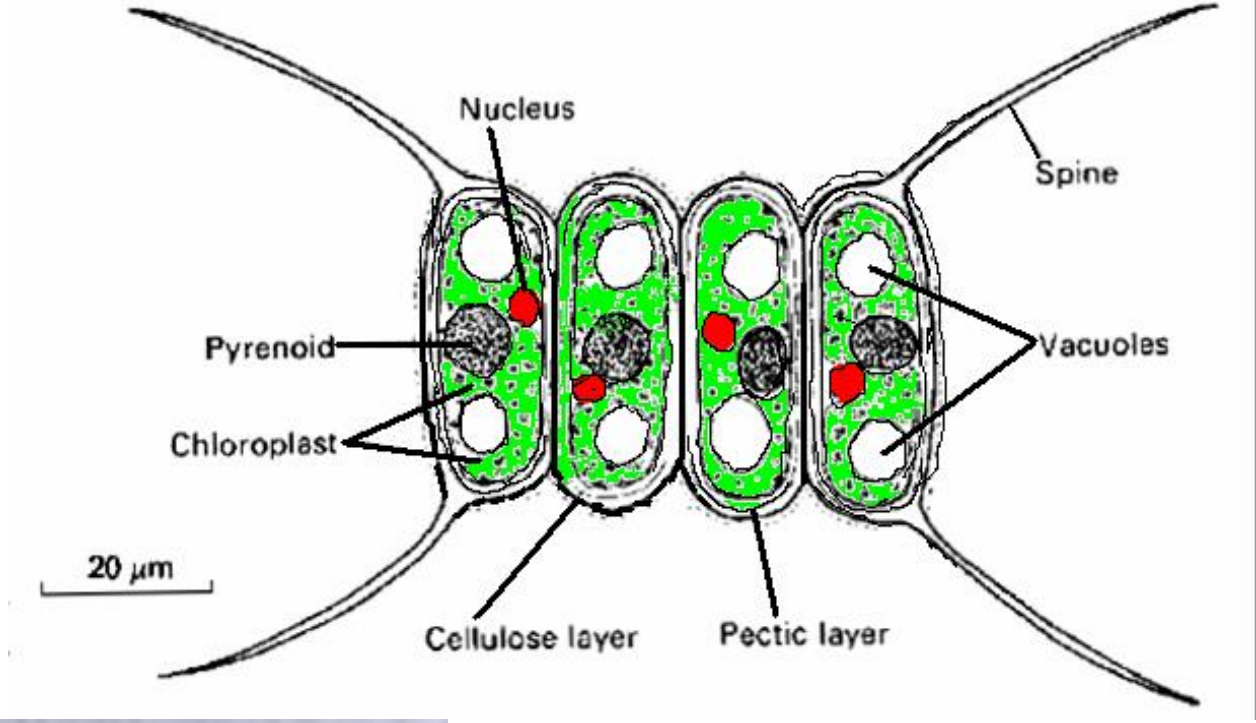
The members of this family are **coenobium** (**a colony in which the number and the shape of cells are fixed**) and occur in the plankton or they may be present in soil.

Scenedesmus sp. (Board bond).

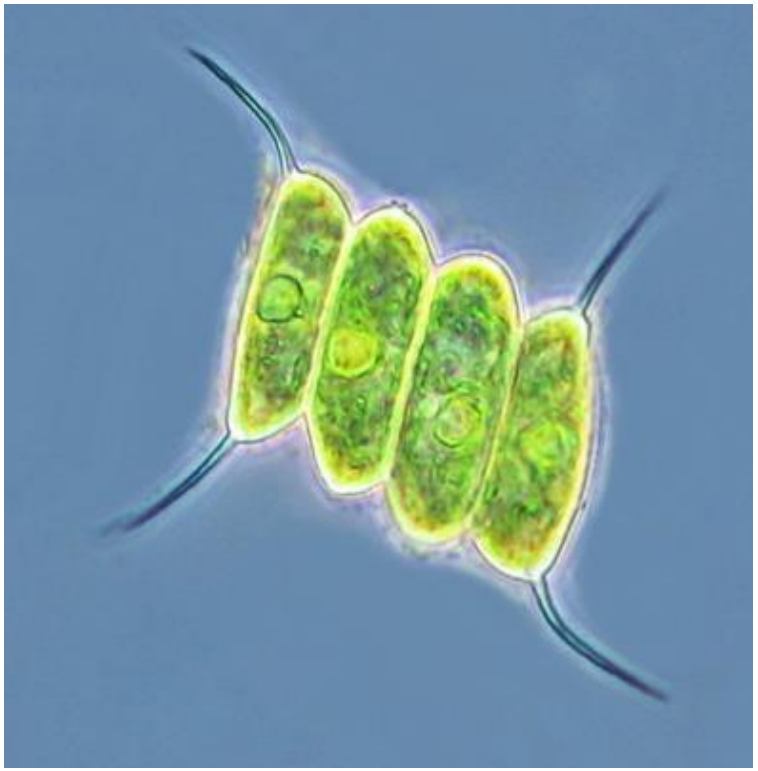
1. The colony is a flat plate of ellipsoidal to spindle-shaped cells.
2. Cells arranged in a single or double series with their along axis parallel to one another.
3. The number of cell is always a multiple of two and usually 4 or 8.
4. Each cell contains a parietal, plate like chloroplast and usually one pyrenoid.

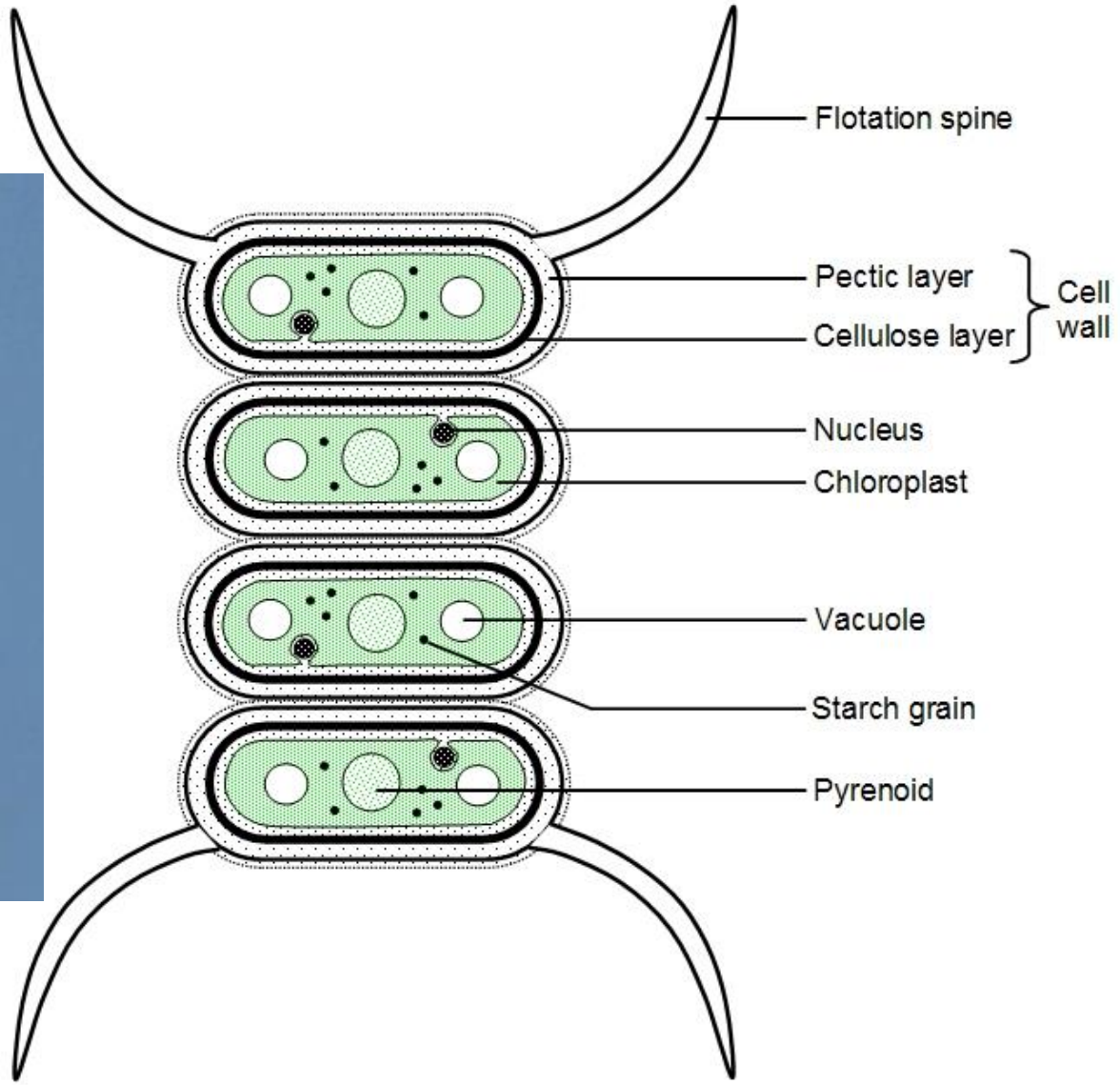
Scenedesmus, genus of about 70 species of colonial green algae, a common component of freshwater plankton. In sewage purification processes, the algae provide oxygen for the bacterial breakdown of organic matter and thereby help to destroy other harmful substances.




Nucleus
Spine
Pyrenoid
Vacuoles
Chloroplast
20 μm
Cellulose layer
Pectic layer


Scenedesmus





Scenedesmus

Family 3: Hydrodictyaceae:

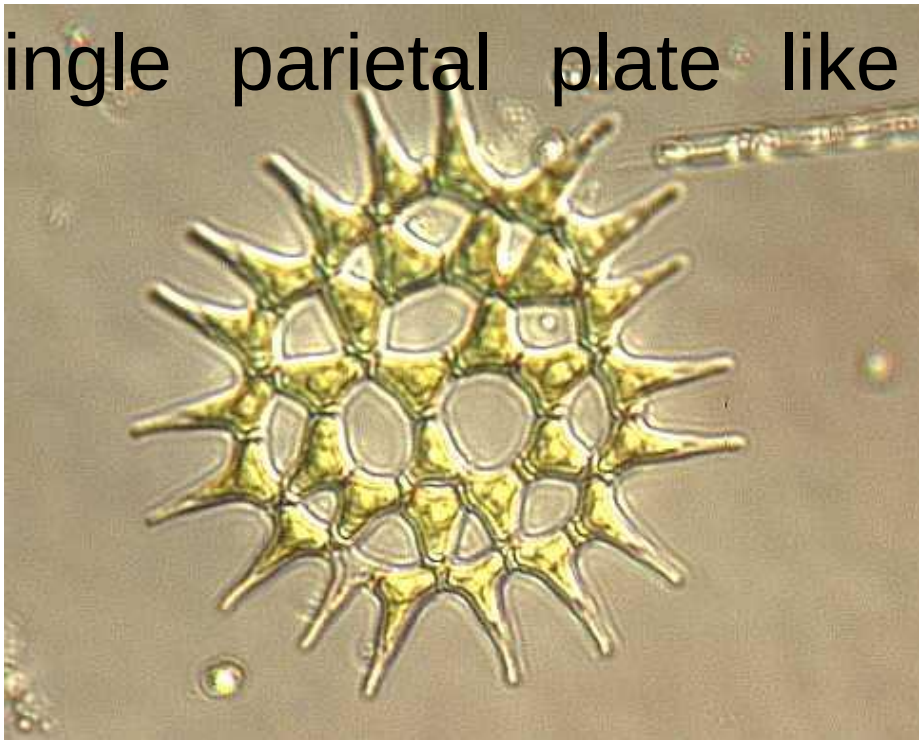
The members of this family are organized as coenobium colonies and occur in quite or slow moving waters.

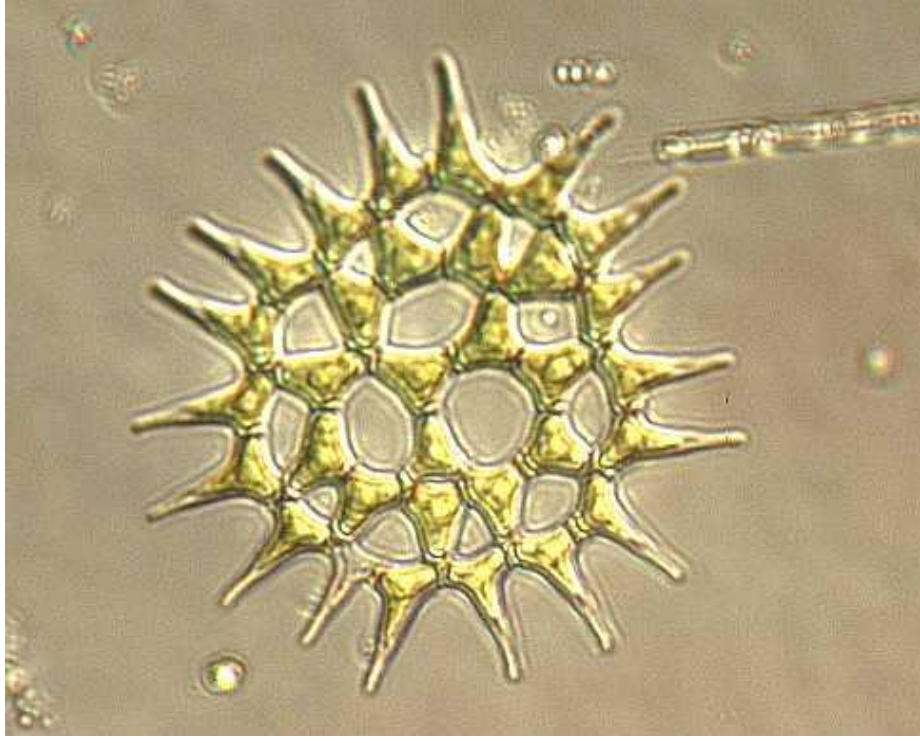
G. *Pediastrum* sp. (star disc)

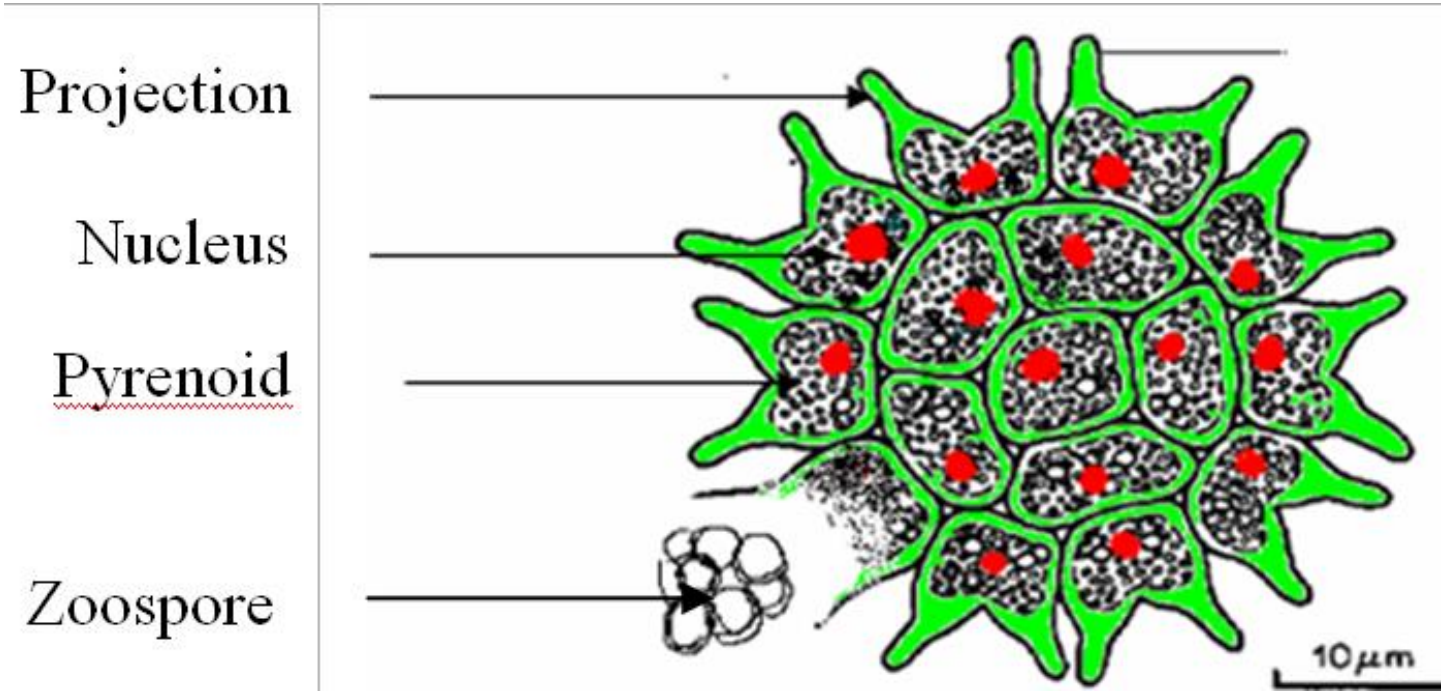
1- The colony of *Pediastrum* are free floating and with 2 to 128 polygonal cells.

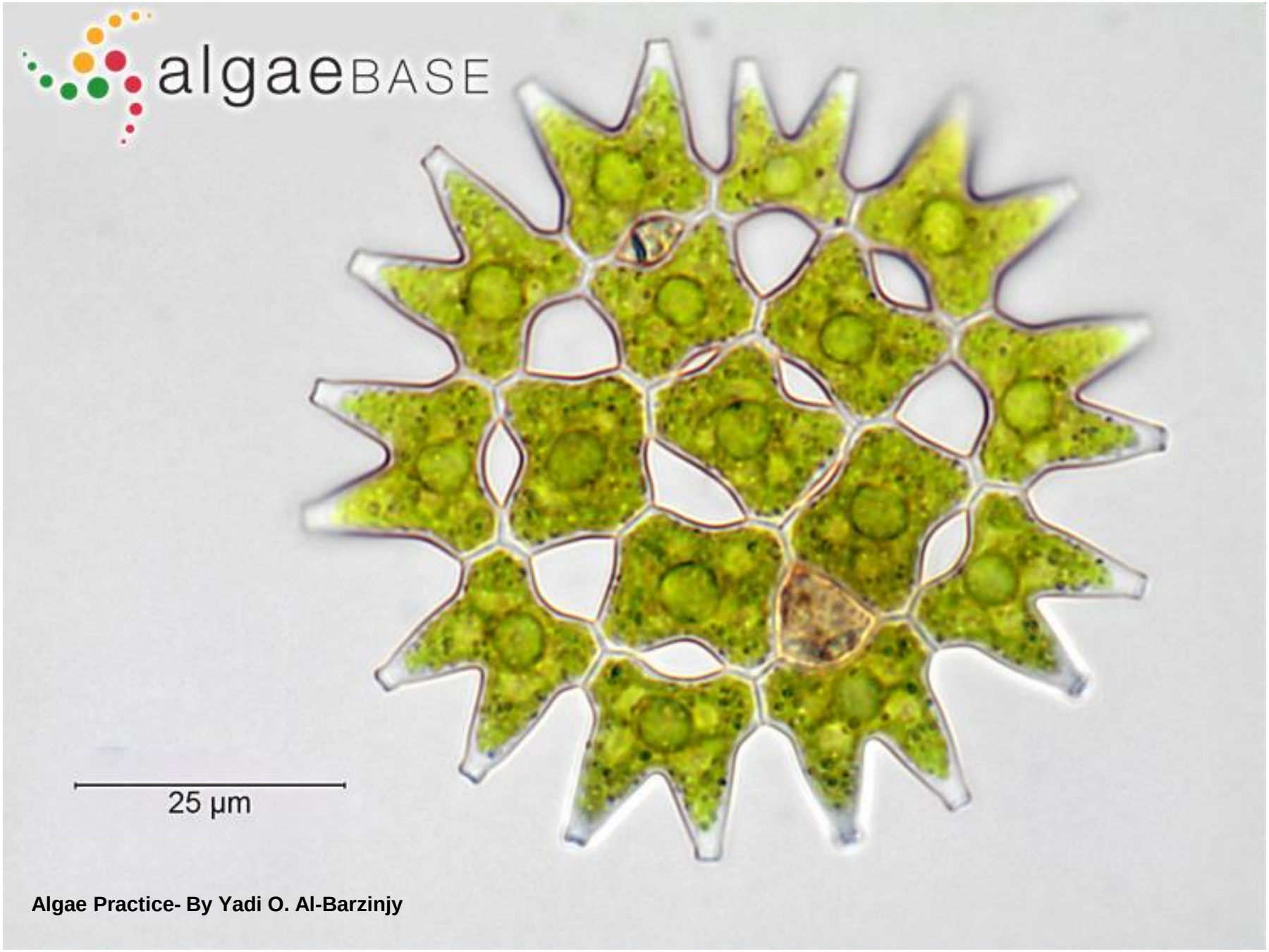
2- Cells are arranged in a stellate plate one cell in thickness.

3- Each cell has a single parietal plate like chloroplast






Projection
Nucleus
Pyrenoid
Zoospore
10µm



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G. *Hydrodictyon* sp. (Water net)

1. The colony of this alga has cylindrical cells united to form a mesh work in which most of the interspaces are bounded by five or six cells.
2. The cells are uni-nucleate when young but become coenocyte at maturity.
3. The Chloroplast is reticulate.
4. A mature coenobium may reach up to one or two feet in length.

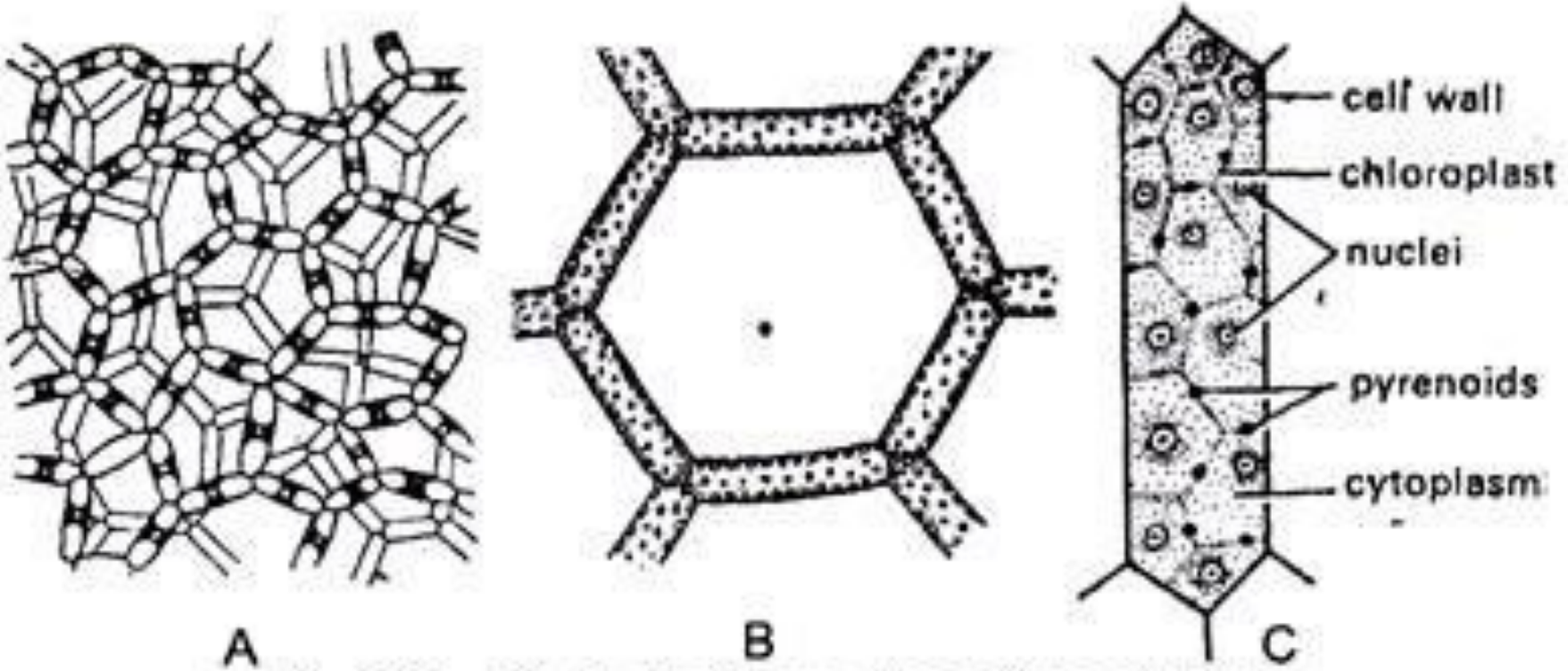
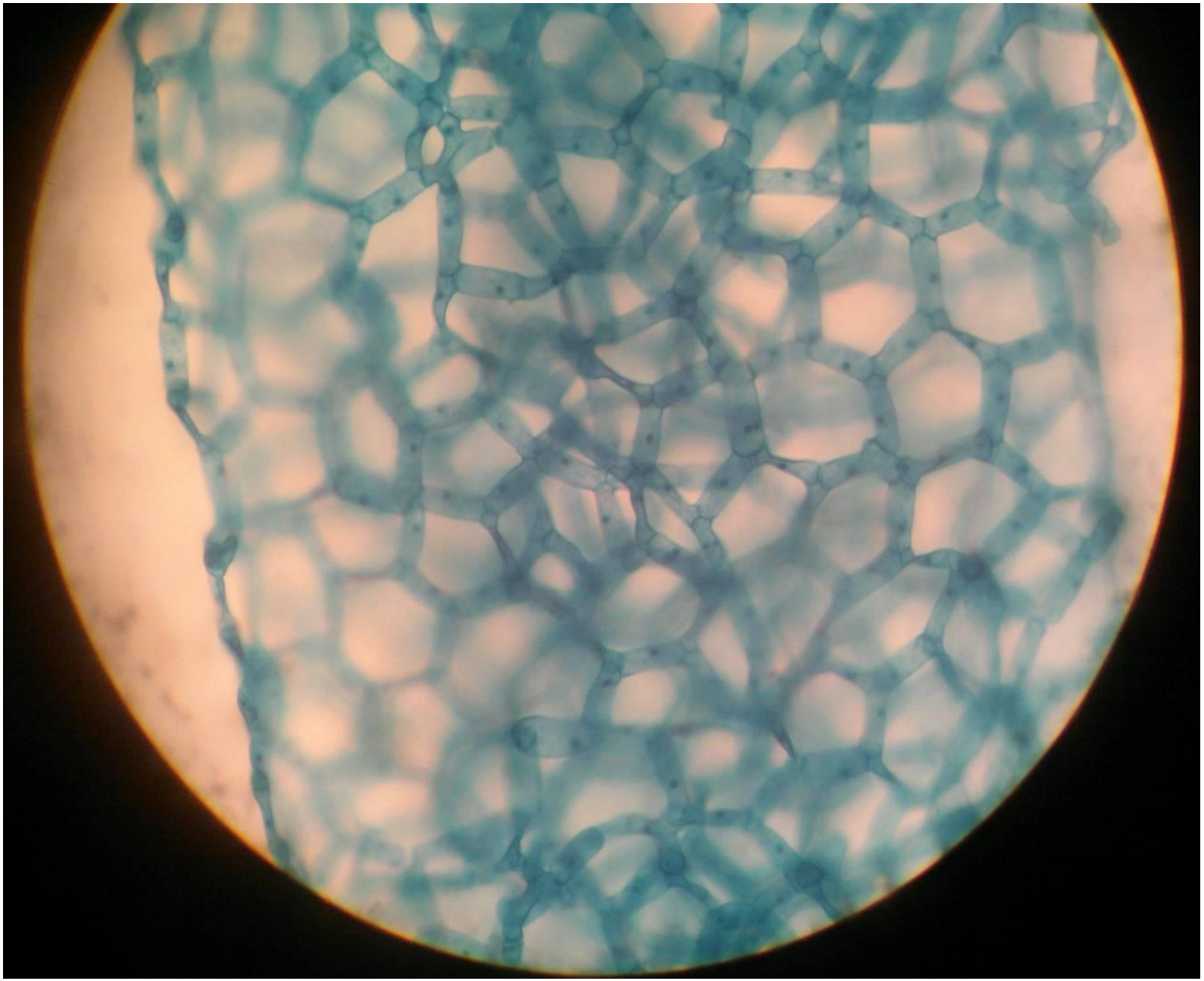
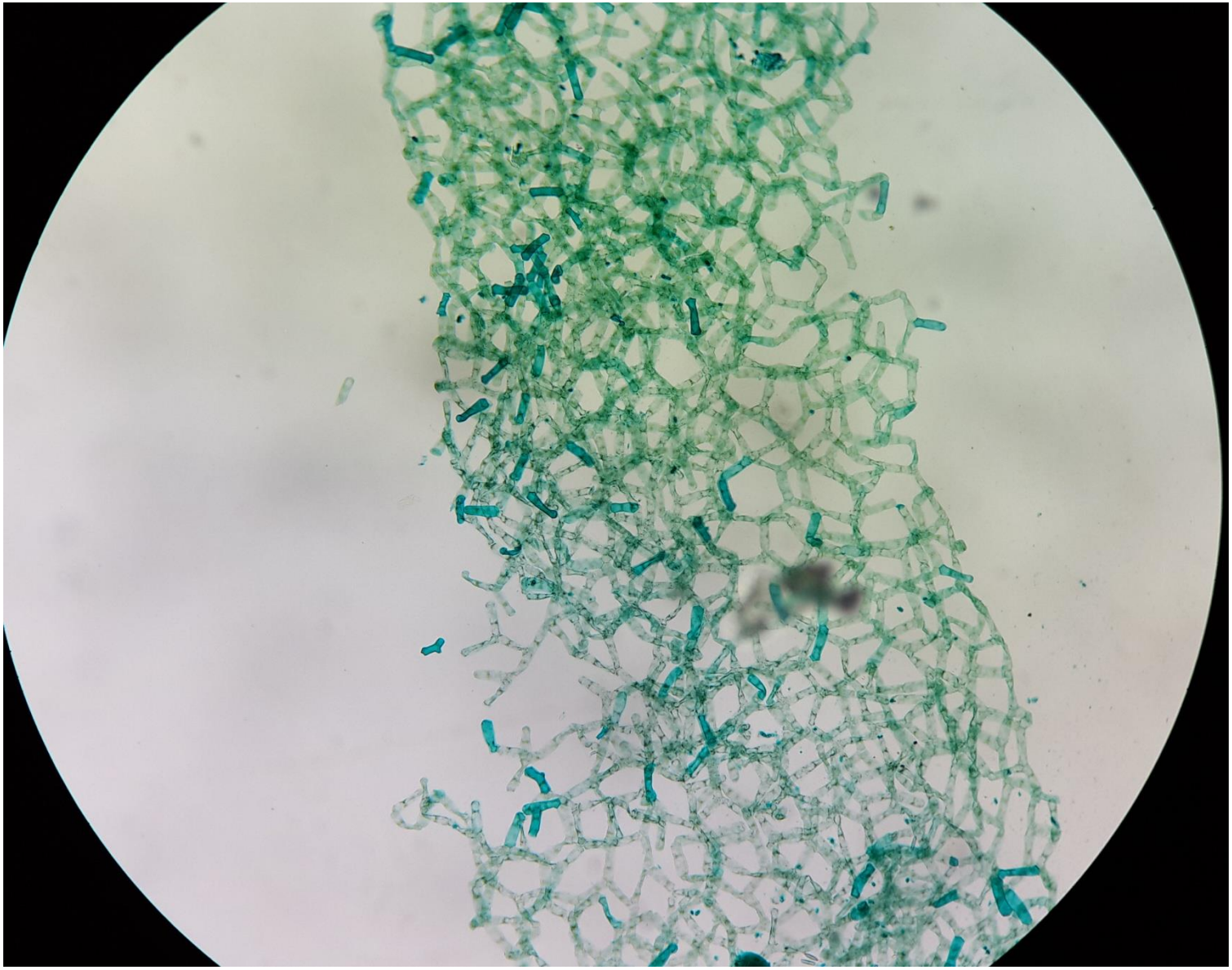
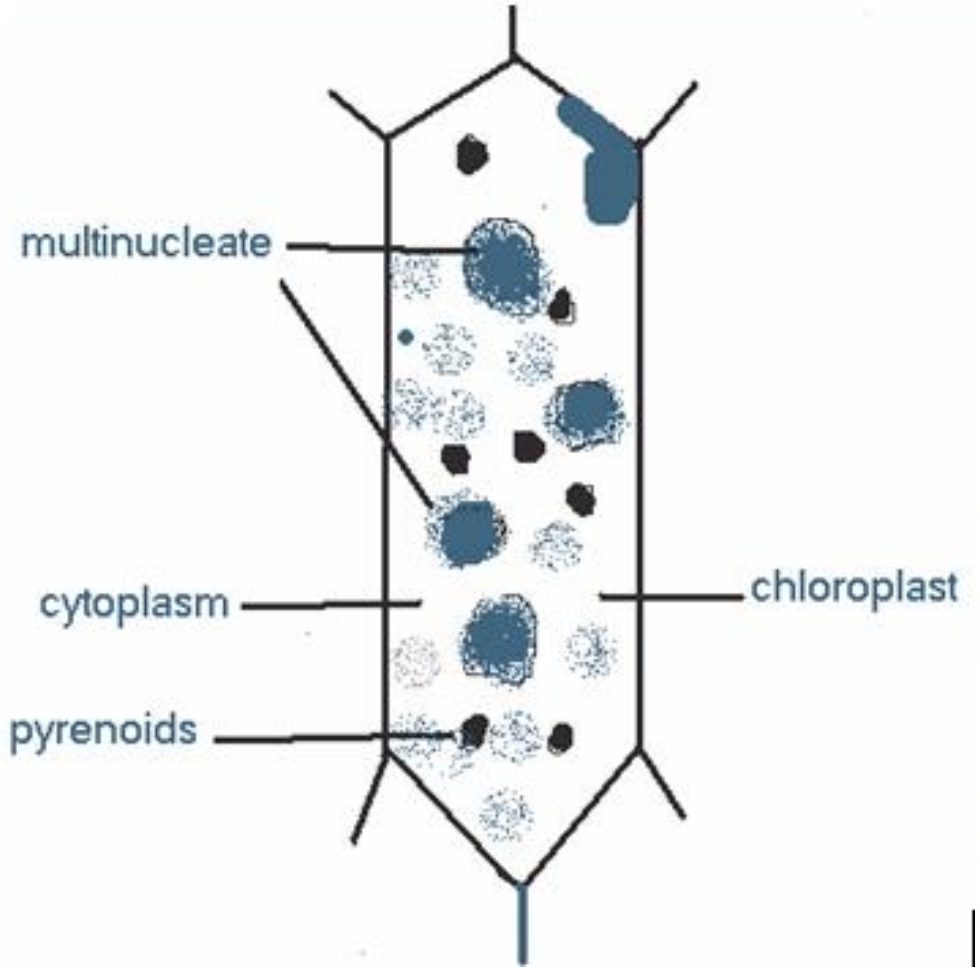


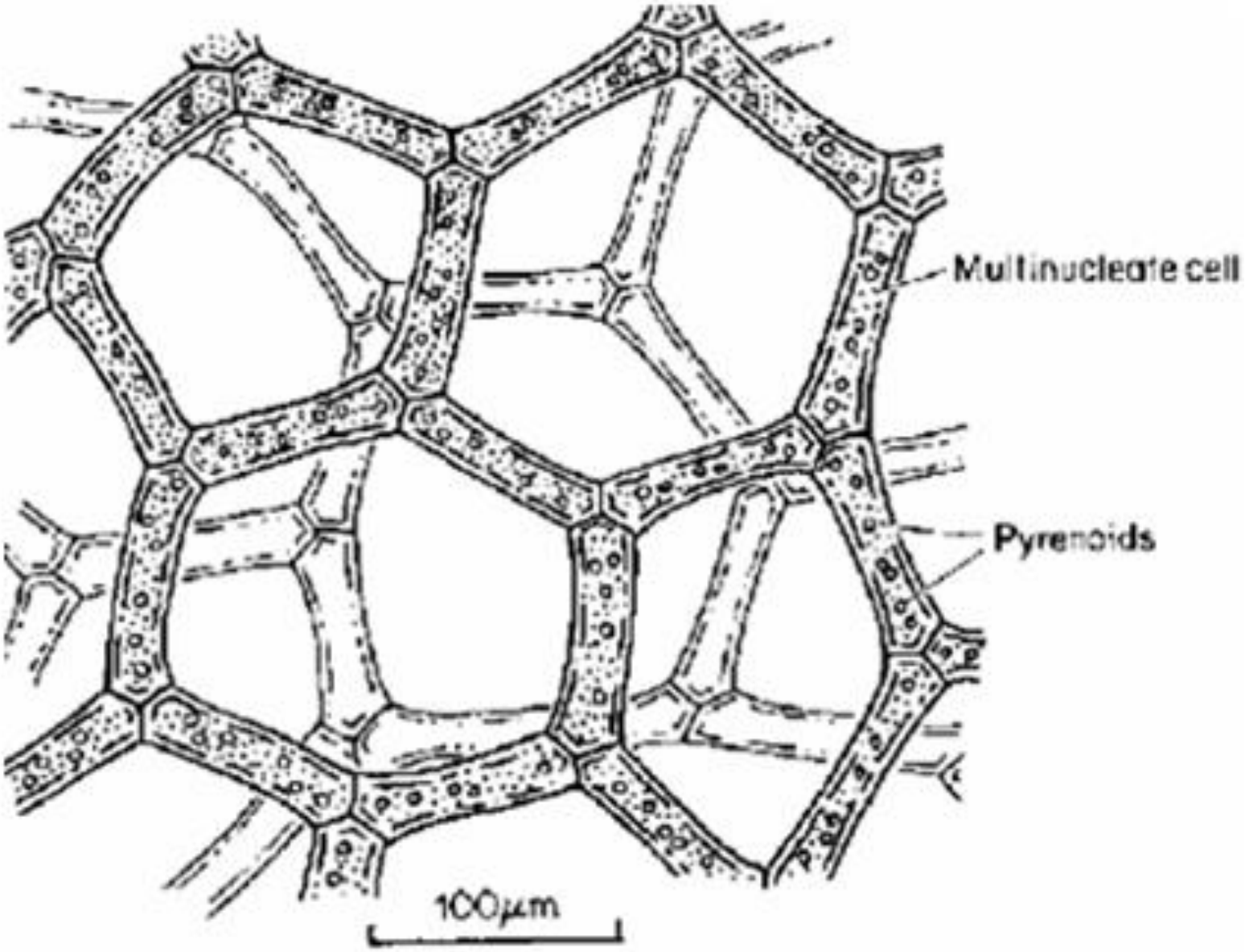
Fig. 2 (A—C). *Hydrodictyon*. Vegetative structure.
A. A part of the net; B. Hexagonal mesh; C. A cell.

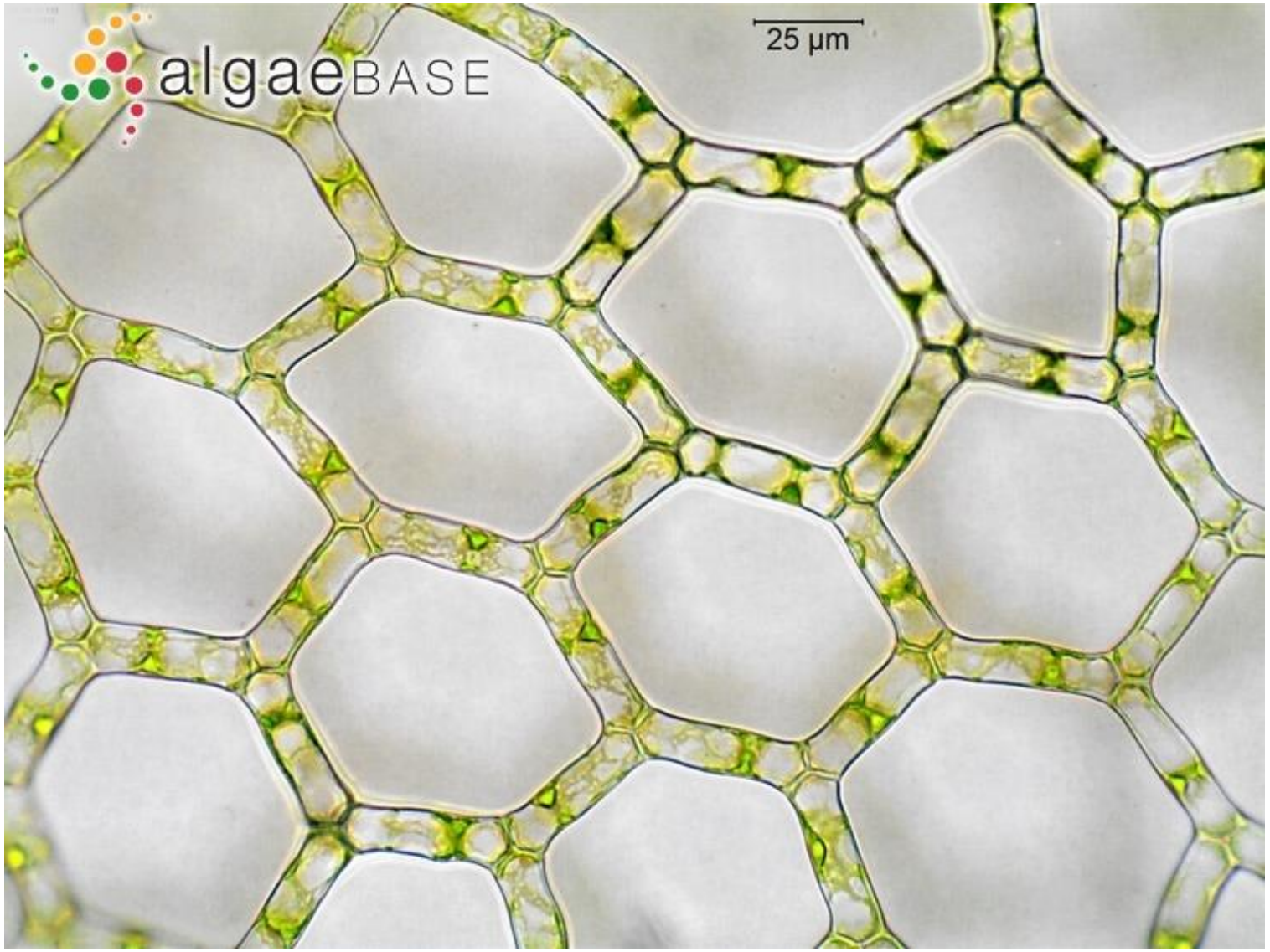






Hydrodictyon


Multinucleate cell
Pyrenoids
100μm


algaeBASE
25 µm