

Classification

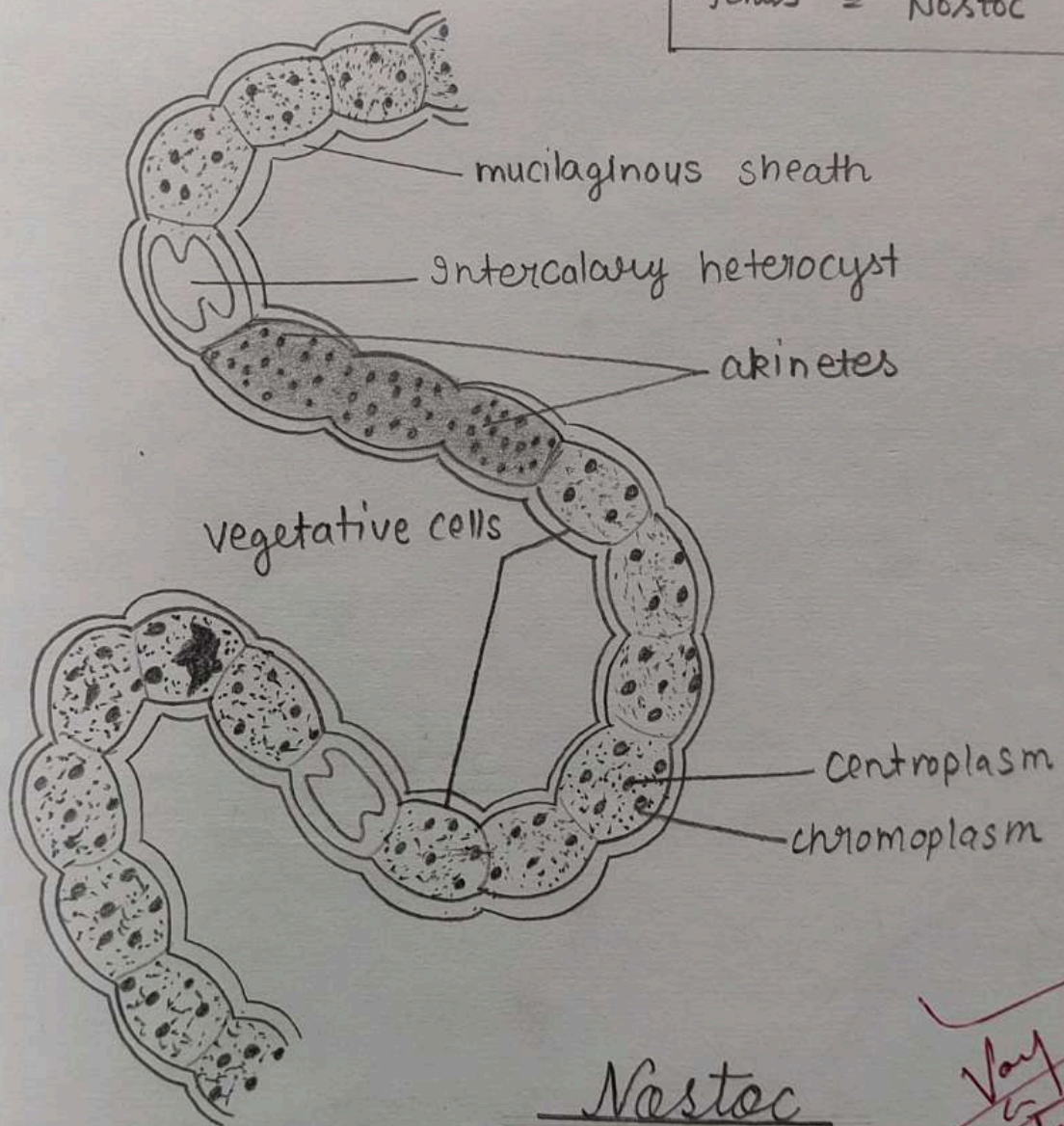
Kingdom = Plantae

Phylum = Cyanophyta

Class = Cyanophyceae

Order = Hormogoniales

Genus = Nostoc



Nostoc

Vay
26/9/23

Nostoc

Comments :-

Common Indian Species :- Nostoc commune, N. calcicola, N. hatei and N. sphaericum.

Common Occurrence :- It occurs commonly in fresh water pools, ponds, ditches etc. in the form of balls.

Thallus are present in the form of colony.

Ball - like colony is enveloped by a gelatinous sheath.

Each colony contains thousands of straight or twisted filaments or trichomes.

Each trichome is surrounded by its individual sheath and is called the filament.

Each cell is somewhat cylindrical or spherical in shape.

Classification

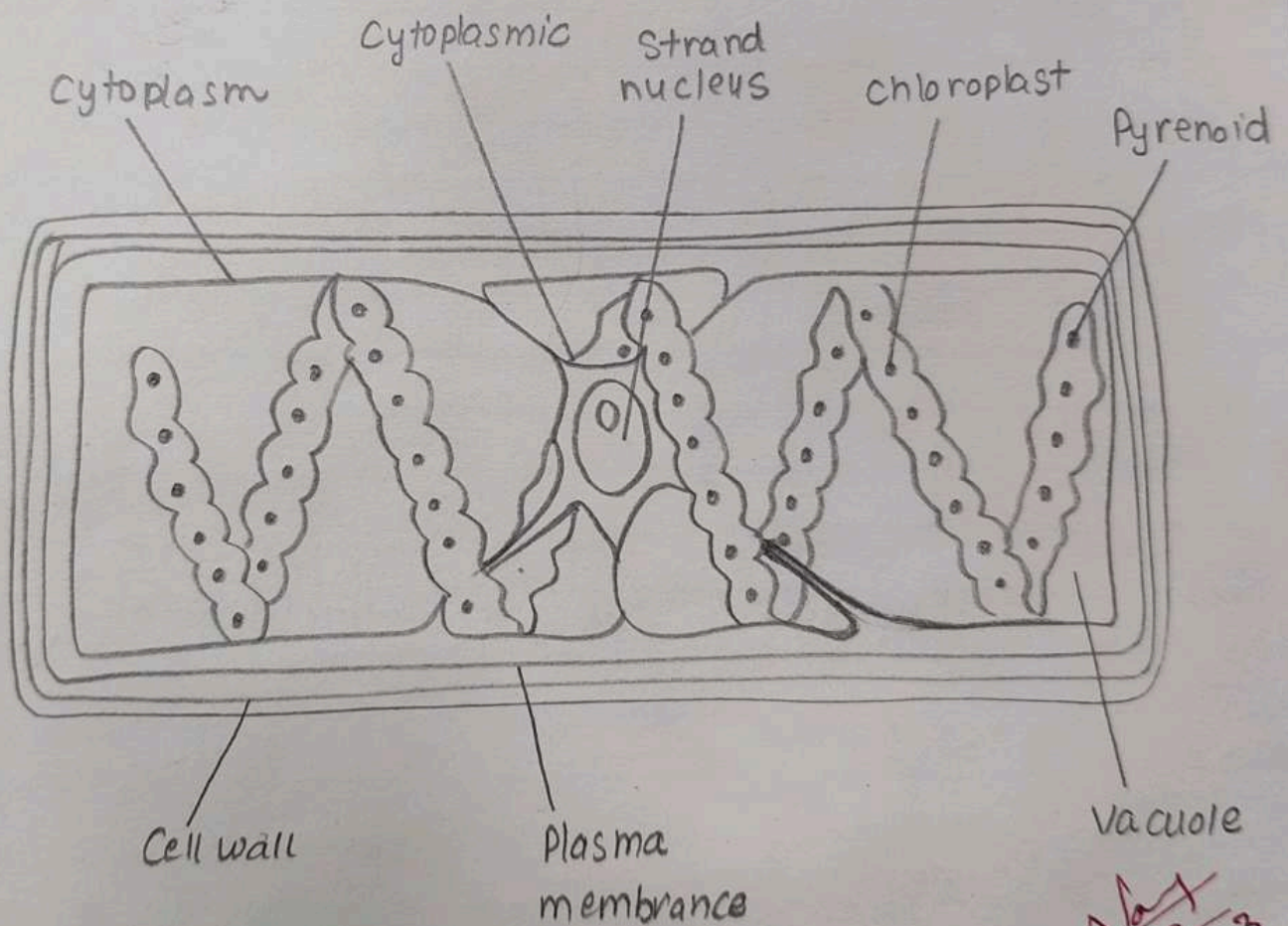
Phylum = Cyanophyta

Class = Cyanophyceae

Order = Spirulinales

Family = Spirulinaceae

Genus = Spirulina



Spirulina - A Single Cell

Day
26/9/23

Spirulina

- Spirulina is a filamentous micro - cyanobacteria and photoautotrophic.
- It is composed of cylindrical, cell arranged unbranched, helicoid trichomes.
- The inner thylakoid space is limited by the presence of transparent protein gas vesicles.

It is a type of asexual reproduction where inside the cell a division develops on the middle of organisms.

The division eventually divides the organisms in half and this is known as cytokinesis.

It is largely made up of proteins and essential amino acids and high iron content.

Classification

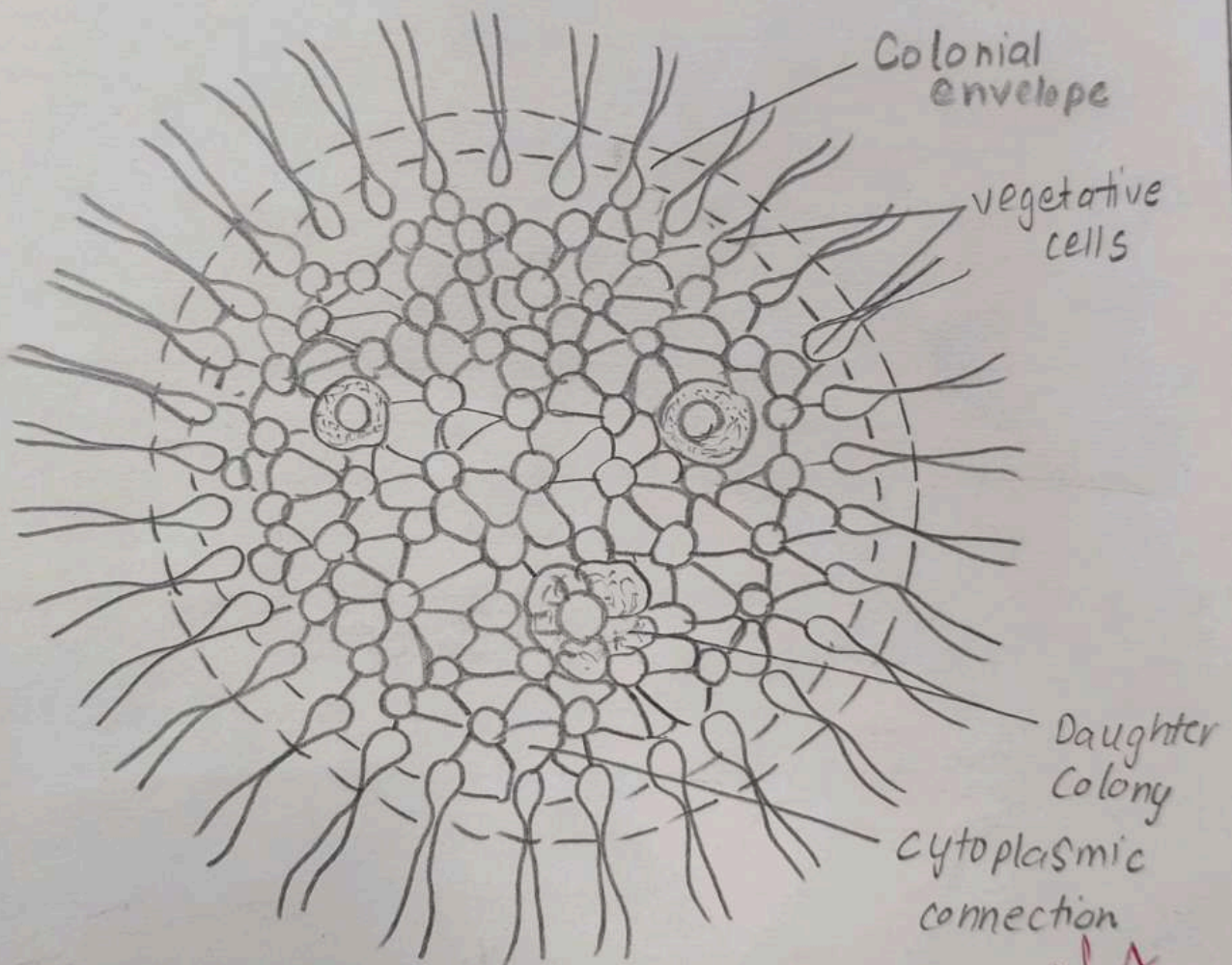
Kingdom = Plantae

Phylum = Chlorophyta

Class = Chlorophyceae

Order = Volvocales

Genus = Volvox



Volvox

~~Very~~
5/10/23

Volvox

(Volvere = to roll)

- Volvox commonly occurs in fresh water. They are found in ponds, pools, during rainy season.
- The thallus of volvox is colonial, motile and coenobial.

A colonies (coenobium) are spherical rounded or oval in shape.

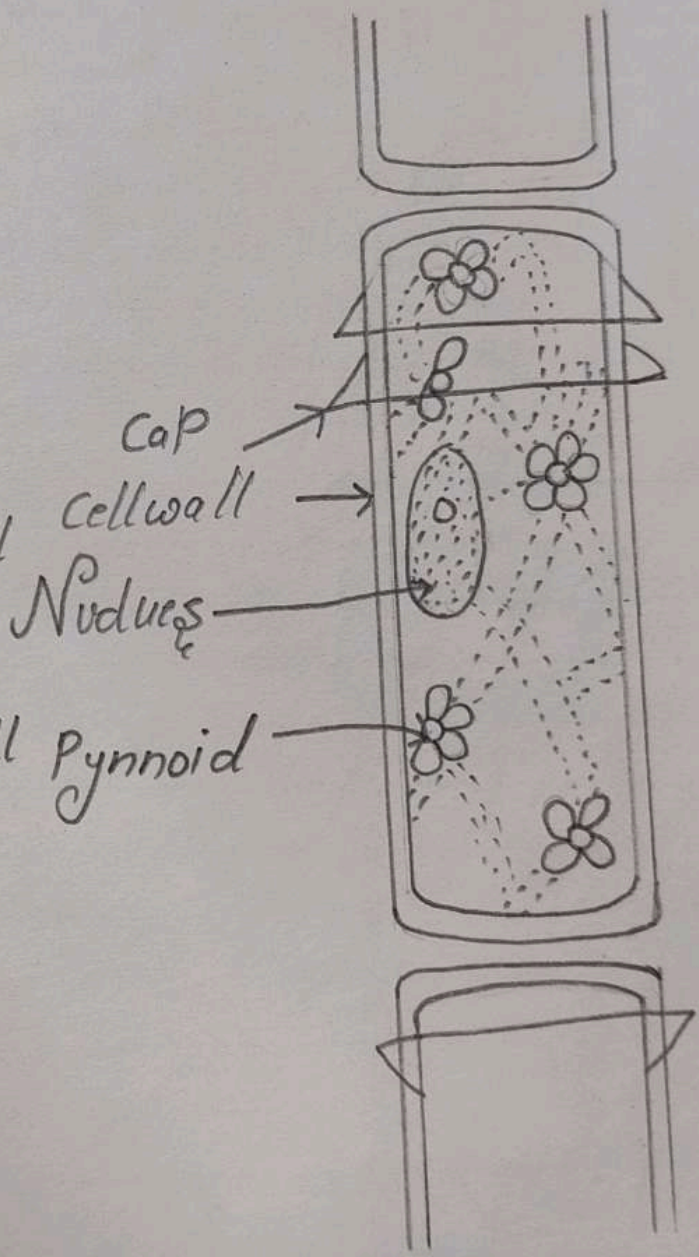
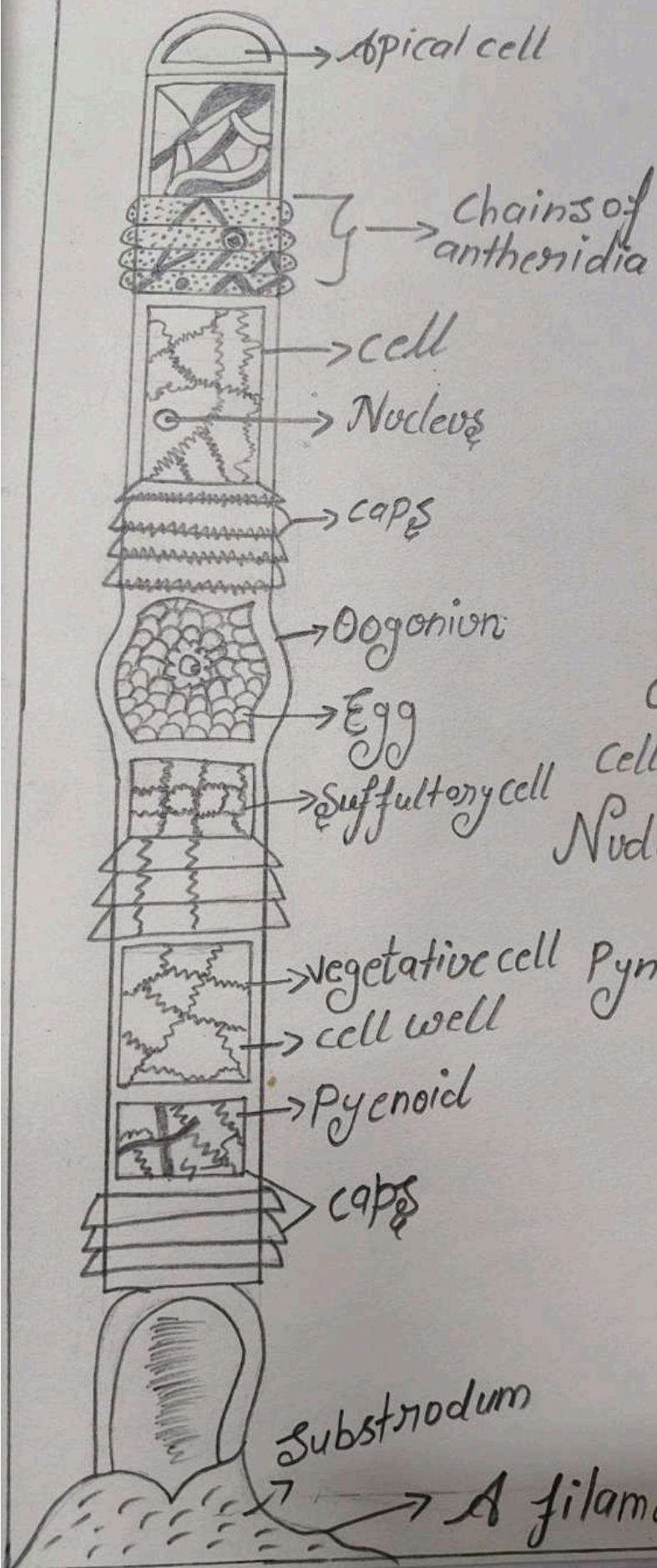
A colony is known as coenobium when number of cells is fixed and arranged in a definite number.

The number of cells in a coenobium varies from 512 to 65000. According to spring and 1500 - 20000 in *V. globator*.

The coenobium is hollow and filled with mucilage.

Volvox colonies are found in abundance, the whole water looks green in colour (water body).

Classification
 Kingdom → Algae
 Class → Chlorophyceae
 Order → Oedogoniales
 Family → Oedogoniaceae
 Genus → Oedogonium



A filament of Monoecious species

A Mature single cell

Var

Oedogonium

(Oedos = swelling ; gonas = fruit)

Comments :-

- Common Indian Species :- *Oedogonium sociale*, *O. intermedium*, *O. vaucheriaii*, *O. perfectum*.
 - Common Occurrence :- This fresh water alga occurs generally as epiphyte on many hydrophytic plants. It is not commonly found in running water.
 - Plant body consists of green, narrow, unbranched and multicellular filaments.
- Generally, young filaments are attached and the mature filaments are free-floating.
- Asexual reproduction mainly occurs through zoospores.
- Every cell has a nucleus present in it either in the centre or near the nuclear membrane.

Chara (Stoneworts)

Comments :-

- Common Indian Species :- *Chara canallina*, *C. zeylanica* and *C. wallichii*.
- Common Occurrence :- It is common in freshwater ponds. Some species prefer salty water.
- Macroscopic plant body is well - branched. It reaches upto 30 cm in length.
- Thallus is differentiated into many rhizoids and axis.

Rhizoids keep the plant attached in the mud.

Sex organs are also present on the nodes of primary laterals.

Nodes and internodes are also present on the branches.

These are small and green - coloured.

Classification

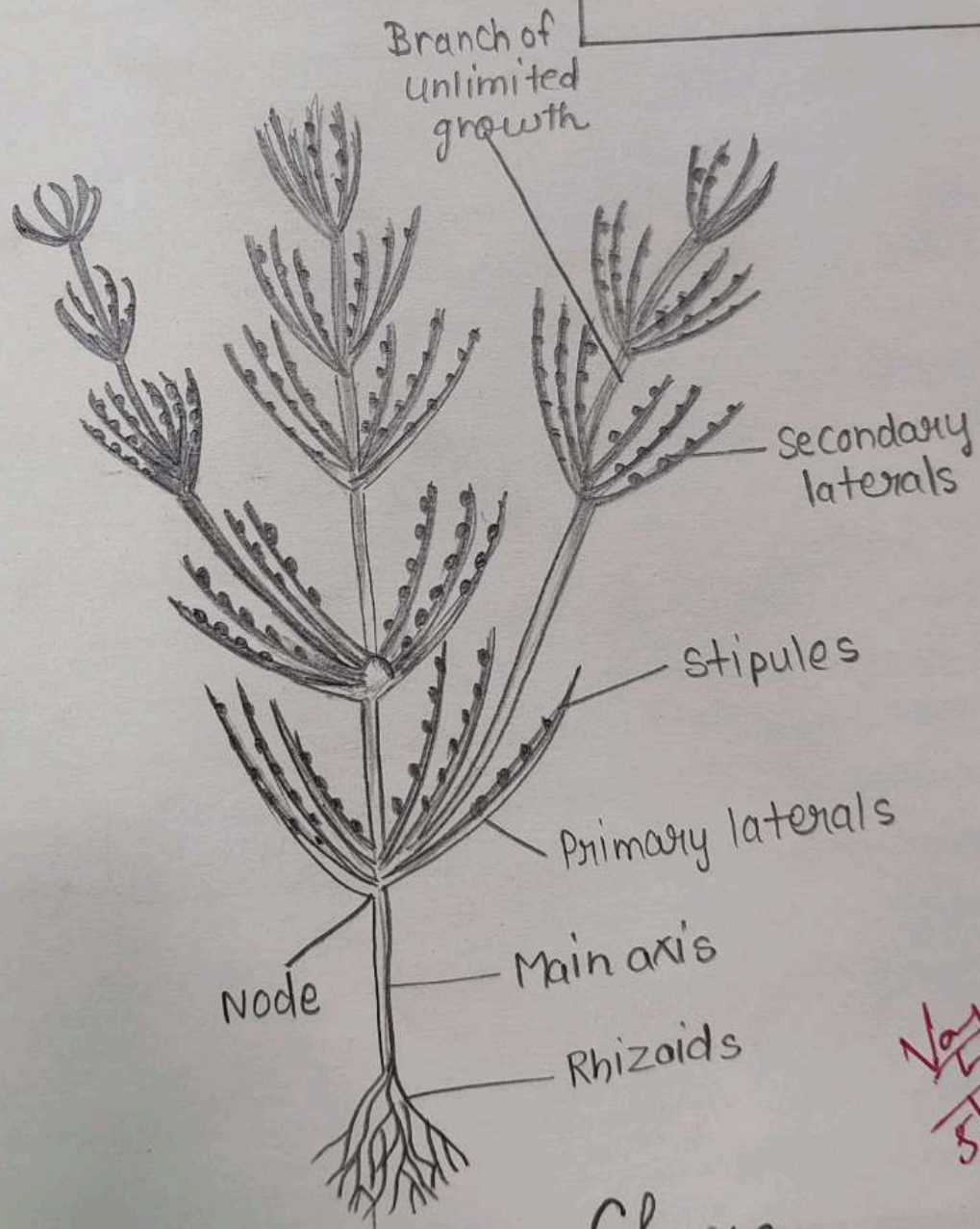
Kingdom = Plantae

Phylum = Chlorophyta

Class = Chlorophyceae

Order = Charales

Genus = Chara



Chara

Not
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Classification

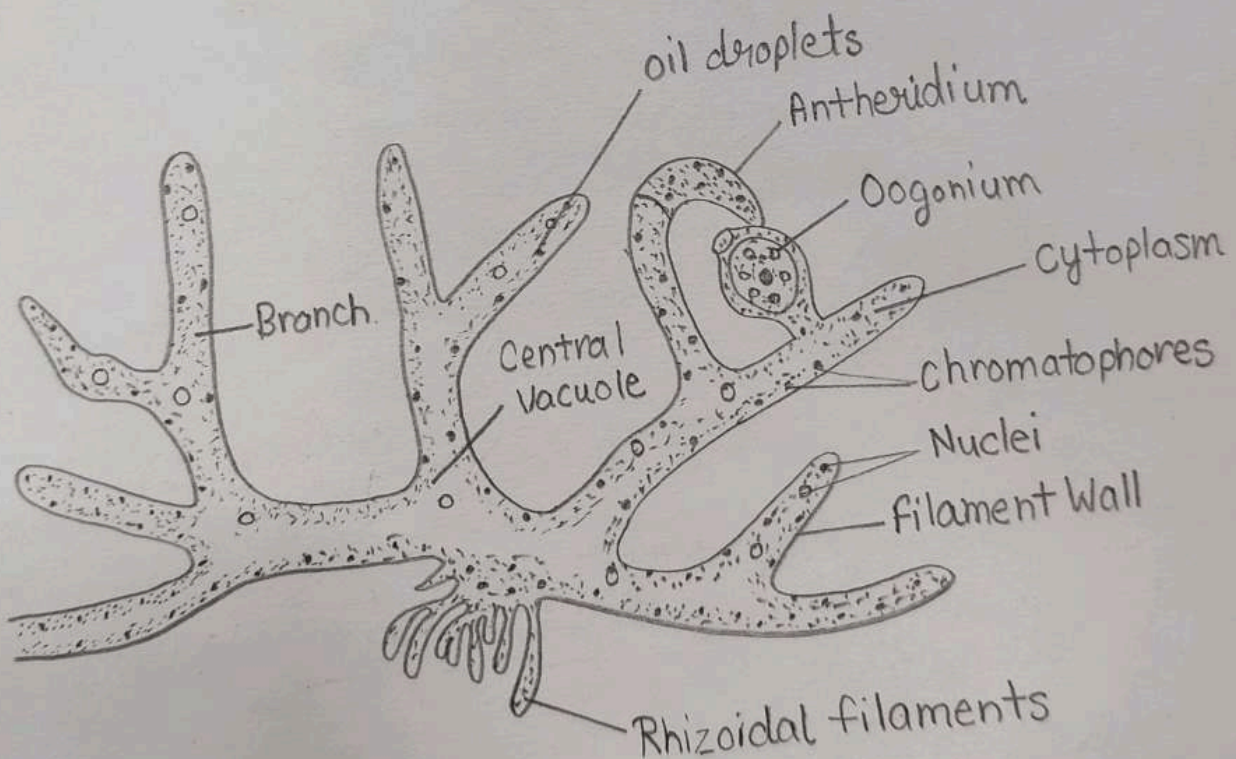
Kingdom = Plantae

Phylum = Xanthophyta

Class = Xanthophyceae

Order = Heterosiphonia

Genus = Vaucheria



Vaucheria

Not
26/9/23

Vaucheria

(Named after J.P. Vaucher)

Comments:-

- Common Indian Species:- *Vaucheria germinata*, *V. sessilis*, *V. uncinata*, *V. terrestris* and *V. walzi*.
- Common Occurrence:- It occurs in fresh water, on soil (terrestrial) and also in water. During winters, it occurs as green matty structure on damp soil.
- The plant body of *Vaucheria* is filamentous, branched, coenocytic and siphonaceous thallus.
- They are mostly aseptate in structure, but septa may form during injury or development of organs.

Inside the filament, a central vacuole is present.

It contains pigments, such as chlorophyll a, xanthophyll and carotenoids.

Pinnularia and Navicula

Comments:-

- Common Species:- *Pinnularia major*, *P. socialis*, *P. viridis*, *P. streptorhynchos* etc.
- Common occurrence:- Commonly present in fresh water.
- External morphology:-
 - Boat-shaped, unicellular thallus is present in isolated and colonial forms.
 - Colonial forms are surrounded with the mucilaginous sheath.

Cell wall:- Cell wall consists of pectin and silica compounds.

From the cell wall arise many pinnately arranged striations or striae. In the centre, a longitudinal raphe is present.

Classification

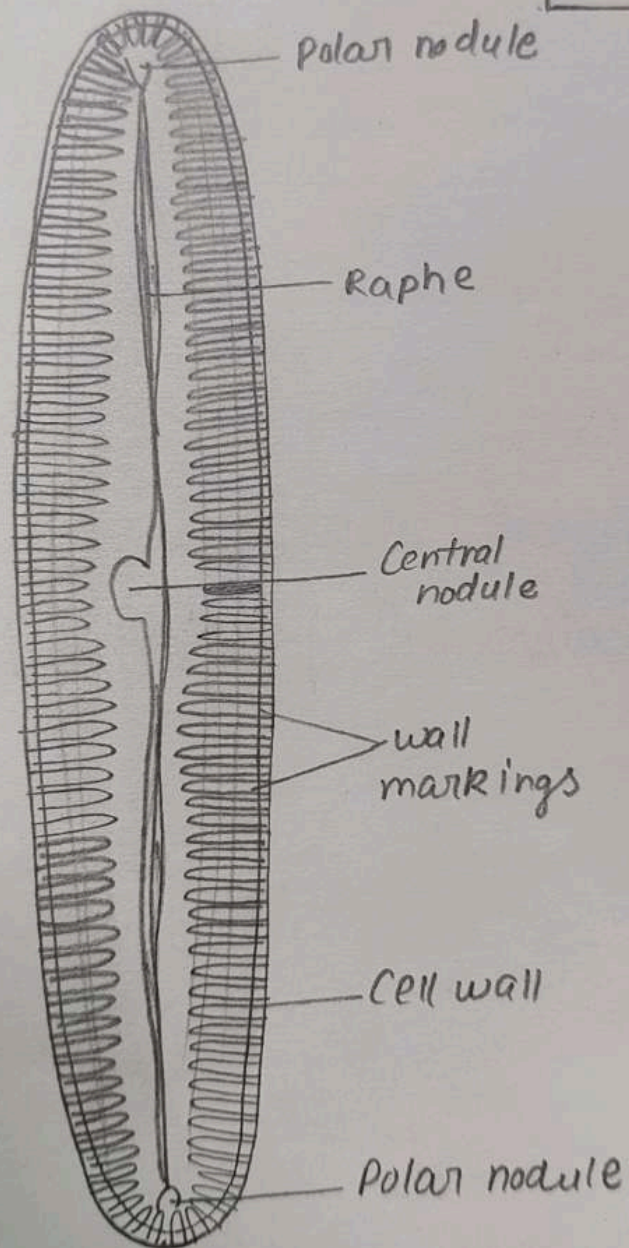
Kingdom = Plantae

Phylum = Bacillariophyta

Class = Bacillariophyceae

Order = Pennales

Genus = Pinnularia



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5/10/22

Pinnularia