

Taxonomy of Phytoplankton Chlorophyta

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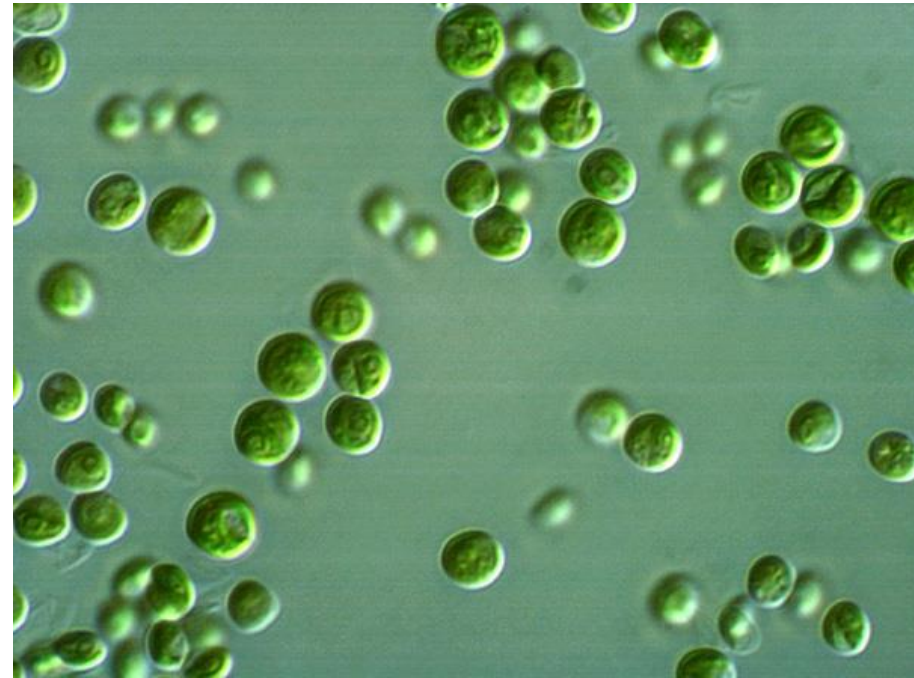
Classis : Chlorophyceae

Order: Chlorococcales (Immobile cell and colonies)

- Single cells or colony forming
- 1 nucleus, 1 chromatophore
- No flagellate in the vegetative period
- Immobile

Genus: Chlorella

- Cells are small or oval, single cells or group forming
- Size: 2-15 micron diameter
- Cells are immobile
- Pirenoid is unavailable.
- Chloroplasts parietal and horse shoe shaped
- Reproduction
- Asexually: They divided into 2-4 immobile cells and they stay in their cells walls.
- Dispersion Range: They exist in seas and ve fresh waters.
- They are consumed as food. Some species are rich in lipids and proteins.



Genus: Oocystis

- Cell: elliptical or lemon shaped
- Cell length: 5-20 micron
- 2, 4, 8 or 16 cells may stay inside the cell wall.
- Cell wall is thinner. Cell wall looks like gelatinous cover.
- Reproduction: Asexual (Dividing)
- Dispersion Range: Lakes, pools, slow flowing streams.



Genus: Micractinium

- Cell Shape: Round, 3-20 micron
- Each cell has 1-2 long round spine
- They are forming colony
- Reproduction:
 - Asexually
- Dispersion Range: Lakes, slow flowing streams.



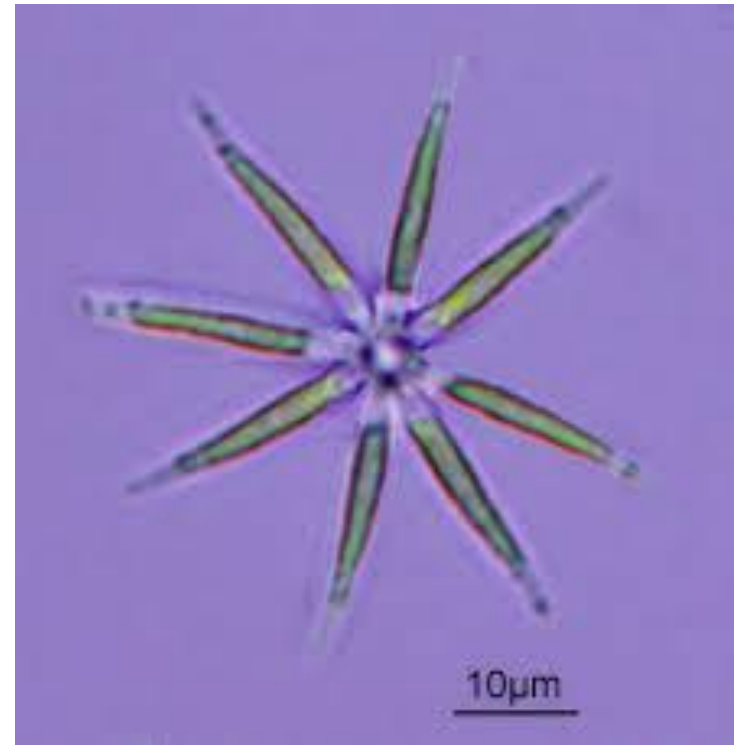
Genus: Scenedesmus

- Cell shaped oval-spindle shaped half moon, 5-30 micron
- Cell wall is flat, or 1-2 curved spine
- Chromotophore 1 piece
- Colony: 2-4, 8 cells are lined up smoothly in juxtapose position (lined) through the long edge
- Spines in the corners (some species).
- Pirenoid and nucleus, 1 piece
- Eye dot, no flagellat.
- Reproduction
- Asexually: Each cell in the colony are proliferated by dividing.
- Sexually
- Distribution Range : They exists in all kinds of waters.



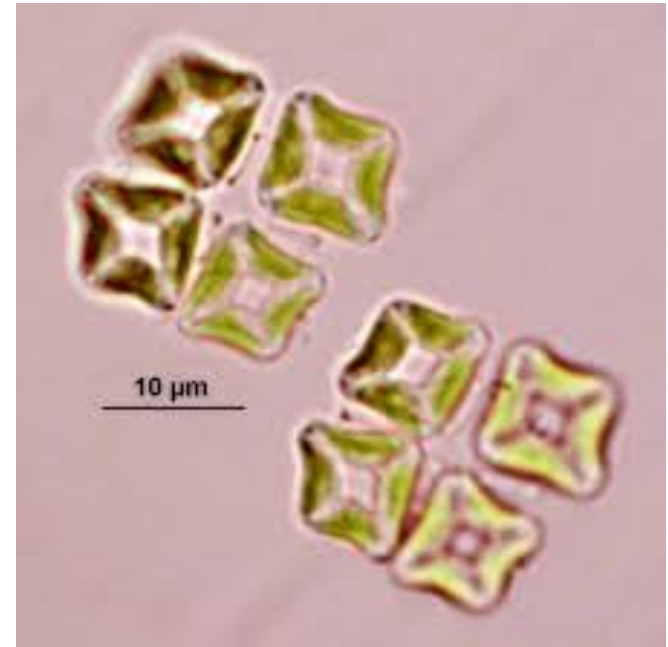
Genus: Actinastrum

- Cells are conical shaped
- 10-25 micron length
- Colony: 4-8 cells are merged radially
- Colony Shape: Star formation
- Reproduction
- Asexually: Dividing through the cell
- Range Dispersion: Pools, lakes, slow-flowing streams



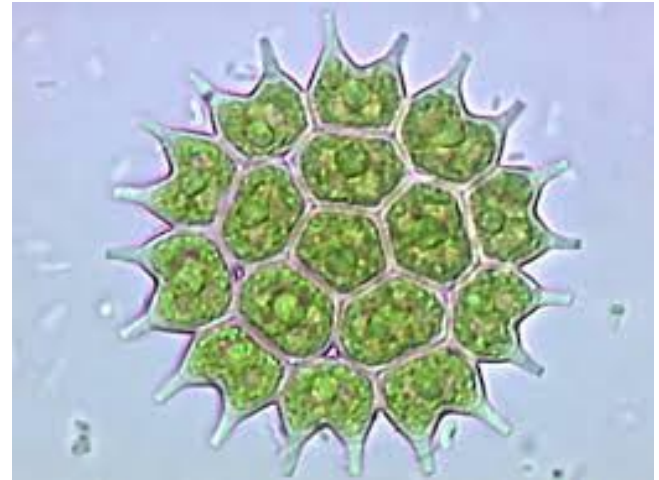
Genus: Crucigenia

- Cells curved plaque, oval, rectangle shaped
- 3-15 micron length
- 4 cells are merged together and creates square formation structure.
- Colony: Groups are merged together loosely side by side
- Reproduction
- Asexually: Dividing



Genus: Pediastrum

- Cell shped: Polygonal
- Colony: 4-32-64 or 128 celled curved disc, oval shaped colony
- Colony Size: 100 micron
- Reproduction
- Sexually: Isogamy
- Asexually: with Zoospore (Zoospore Numbers are equal to cell number in the colony).
- Distribution Range: Lakes, ponds, pools, slow-flowing streams.



Genus: Botryococcus

- Cell : Oval shaped, green cells
- Cell length: 5-10 micron
- Colony: Large number of cells
- Musilage is settled in the medium
- Musilage contains coffee and orange coloured lipid pigments
- Colony Colour: Coffee, yellow
- Red coloured one grows up to 0,5mm
- Forming floating layer on the water
- Reproduction:
 - Sexually, Asexually
- Distribution Range: Lakes
- This genus approximately contains %60 percent of lipids and potential of biodiesel production potential is high.



Genus: Monoraphidium

- Cell shaped: Straight, curved, spiral, needle
- 50 micron and more
- Colony: Sometimes formed in bundles
- Reproduction:
 - Sexually
 - Asexually
- Distribution Range:
 - This genus exist in fresh waters.



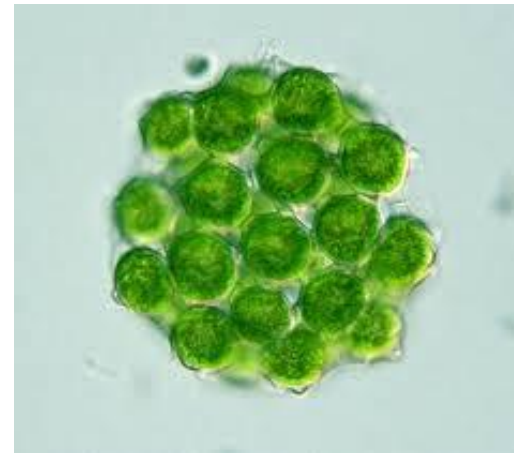
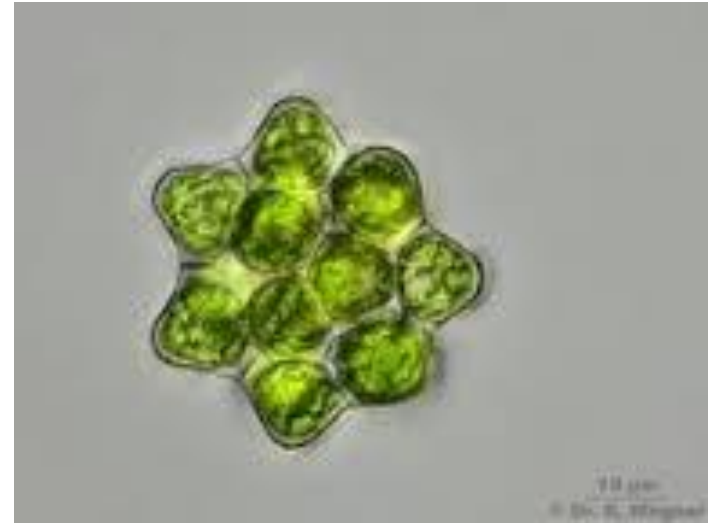
Genus: Tetrastrum

- Cell shaped: triangle or oval
- 10 micron length
- Colony : 4 celled, curved
- Each cells contains 1-2 spines.
- Reproduction: Asexually
- Distribution Range:
- Lakes, pools, dams and slow-flowing streams



Genus: Coelastrum

- Cell Shape: Oval,
- polygonal
- Colony: 4-8-16-64-128 celled
- 100 micron
- Reproduction: Asexually
- Distribution Range: Lakes, dams and slow flowing streams



Genus: Tetraedron

- Cell shape: cornered, triangle, polygonal, curved
- 5-20 micron
- Colony : 4 celled, curved (flat)
- Reproduction: Sexually, asexually
- Distribution Range:
- Lakes, dams and slow flowing streams

