

## **CLASSIFICATION OF ALGAE:**

**Felix Eugen Fritsch** (1935) classified the division algae into eleven classes on the basis of **coloured pigments, reserved food material and presence or absence of flagella, their number and position**. The different classes of algae are such as

- i) Class - Chlorophyceae.
- ii) Class - Xanthophyceae.
- iii) Class - Chrysophyceae.
- iv) Class - Bacillariophyceae.
- v) Class - Cryptophyceae.
- vi) Class - Dinophyceae.
- vii) Class - Chloromonadophyceae.
- vii) Class - Euglenophyceae.
- ix) Class - Phaeophyceae.
- x) Class - Rhodophyceae.
- xi) Class – Cyanophyceae.

### **Class – Chlorophyceae (Grass green coloured algae):**

- i) The coloured pigments like Chlorophyll, Carotene and Xanthophyll are present in equal proportion.
- ii) The reserved food material is in the form of typical starch.
- iii) The motile cells have usually two equal, smooth flagella.

The class - chlophyceae is divided into nine orders. One of the

important orders is the Order - Oedogoniales (e.g. *Oedogonium*)

**Class – Xanthophyceae (Yellow-green or golden coloured algae):**

- i) The coloured pigments like chlorophyll-a and chlorophyll-c and excess amount of xanthophylls in addition to carotene are present.
- ii) The reserved food material is in the form of fats, oils and leucosin granules.
- iii) The motile cells have two flagella of unequal length. (longer - tinsel type, shorter - whiplash type).

The class -Xanthophyceae is divided into four orders. One of the important orders is the Order - Heterosiphonales (e.g. *Vaucheria*).

**Class – Chrysophyceae (Brown orange coloured algae):**

- i) The yellow or brown orange coloured pigments are present.
- ii) The reserved food material is in the form of leucosin and fats.
- iii) The motile cells have two unequal flagella.

**Class – Bacillariophyceae (Variously coloured or ornamental algae):**

- i) The yellow or brown golden or variously coloured Chromatophores are present.
- ii) The reserved food material is in the form of volutin and fats.
- iii) The motile cells have single flagellum. The class is divided into two orders such as Order – Centrales and Order - Pinnales (e.g. *Pinnularia*)

**Class - Cryptophyceae (Brownish algae):**

- i) The brownish coloured chromatophores are present.
- ii) The reserved food material is in the form of starch and other carbohydrates.
- iii) Majority of the forms are motile.

**Class - Dinophyceae (Dark yellow brown algae):**

- i) Dark yellow, brown coloured chromatophores are present.
- ii) The reserved food material is in the form of starch and oil.
- iii) Most of the forms are motile.

**Class – Chloromonadophyceae (Yellowish coloured algae):**

- i) The coloured pigments are Xanthophylls.
- ii) The reserved food material is in the form of oil.
- iii) Most of the forms are motile.

**Class – Euglenophyceae (Pure green):**

- i) Pure green chromatophores are present.
- ii) The reserved food material is in the form of paramylon starch.
- iii) Most of the forms are motile.

**Class – Phaeophyceae (Brown algae):**

- i) Golden brown coloured pigments called the Fucoxanthine in addition to others are present.
- ii) The reserved food material is in the form of complex carbohydrates like Manitol, Laminarin etc.
- iii) The motile cells have two unequal flagella.

The class is divided into nine orders. One of the important orders is the Order - Ectocarpales (*e.g Ectocarpus*).

**Class – Rhodophyceae (Red algae):**

- i) Excess amount of red coloured pigments like Phycoerythrin and Phycocyanin are present.
- ii) The reserved food material is in the form of Floridean starch.
- iii) Flagella are absent

The class is divided into two sub-classes such as Subclass – Bangioideae and Subclass – Florideae. The Sub-class - Florideae is divided into six orders. One of the important

orders is the Order - Nematiales (*e.g. Nematostella*).

**Class – Cyanophyceae (Blue-green algae) :**

- i) The coloured pigments like Phycocyanin and Phycoerythrin in excess and Chlorophyll, Carotene etc. are present.
- ii) The reserved food material is in the form of glycogen granules and sugar.
- iii) Flagella are absent.

The class is divided into seven orders. One of the important orders is the Order - Nostocales (*e.g. Nostoc*).