CLASSIFICATION OF ALGAE (BY F. E. FRITSCH)

Introduction

- F. E. Fritsch (Frederick Ernst Fritsch) was one of the most influential botanists in the field of phycology (study of algae).
- F. E. Fritsch was a British phycologist, born in 1879 (some sources mention 1881) and died in 1954, who specialized in the study of algae.
- F. E. Fritsch was a pioneering phycologist whose book ***The Structure and Reproduction of the Algae*** and **classification system** greatly advanced the study of algae

classification system of algae

His classification divided algae into **11 classes**, widely used in traditional botany which is basically based on following characters:

- Pigments
- Reserve food
- Thallus organization
- Reproductive methods

Fritsch's Classification of Algae

Fritsch classified algae into 11 classes:

1. **Chlorophyceae (Green algae)**
    - Commonly known as green algae
    - Pigments: Chlorophyll a & b
    - Reserve food: Starch
    - Cell wall: Cellulose
    - Example: *Chlamydomonas, Spirogyra, Ulothrix*

2. **Xanthophyceae (Yellow-green algae)**

- Pigments: Chlorophyll a & c, xanthophylls
- Reserve food: Oil, leucosin
- Example: *Vaucheria*

3. Chrysophyceae (Golden algae)

- Pigments: Chlorophyll a & c, fucoxanthin
- Reserve food: Leucosin
- Example: *Synura*

4. **Bacillariophyceae (Diatoms)**

- Cell wall: Siliceous frustules
- Reserve food: Oil, leucosin
- Example: *Navicula, Pinnularia*

5. Cryptophyceae

- Pigments: Chlorophyll a & c, phycobilins
- Mostly unicellular, flagellated
- Example: *Cryptomonas*

6. Dinophyceae (Dinoflagellates)

- Two unequal flagella
- Cell wall: Theca (cellulose plates)
- Example: *Ceratium, Gonyaulax*
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7. Chloromonadineae

- Green, motile unicellular forms
- Primitive group
- Example: *Chloromonas*

8. Euglenineae (Euglenoids)

- No definite cell wall (pellicle present)
- Mixotrophic nutrition
- Example: *Euglena*

9. Phaeophyceae (Brown algae)

- Pigments: Chlorophyll a & c, fucoxanthin
- Reserve food: Laminarin, mannitol
- Mostly marine
- Example: *Sargassum, Laminaria*

10. Rhodophyceae (Red algae)

- Pigments: Chlorophyll a & d, phycoerythrin
- Reserve food: Floridean starch
- Example: *Polysiphonia, Gelidium*

11. Myxophyceae (Blue-green algae)

- Now known as Cyanobacteria
- Prokaryotic, no true nucleus
- Pigments: Chlorophyll a, phycocyanin
- Example: *Nostoc, Anabaena*

Key Features of Fritsch's System

- Based on **morphology, pigments, reproduction, and life cycle** .
- Includes both **prokaryotic (blue-green algae)** and **eukaryotic algae.**
- Considered a **natural system** for its time.