The Euglenophyta

Diversity – Size

Body Design – largely unicellular

A few colonial forms

Habitat

Habitat
Modes of Nutrition

- Osmotrophic
- Phagotrophic
- Phototrophic

Photosynthetic euglenoids
- Chlorophyll a and b
- Beta carotene
- Several Xanthophylls
  - Diatoxanthin
  - Diadinoxanthin
  - Neoxanthin

Storage Product
- Paramylon – a beta 1,3 glucan

Cell Surface – not cellulose; protein
The “Pellicle”

Movement
- “Metaboly”

Asexual Reproduction
reproduce solely by mitosis and
Asexual Reproduction

cytokinesis

Major freshwater photosynthetic genera

- Euglena
- Phacus
- Trachelomonas

Dinophyta = Dinoflagellates

Body Design – largely unicellular

Photosynthetic dinoflagellates

- Chlorophyll a and c₂
- Beta carotene
- Several Xanthophylls
  - Diatoxanthin
  - Diadinoxanthin
  - Dinoxanthin
  - Peridinin

Storage Product

- starch – alpha 1,4 glucan
Cell Surface = the theca

- Large vesicles lie under the cell membrane
  - Vesicles containing cellulosic plates = armored dinoflagellates
  - Empty vesicles = unarmored dinoflagellates

Asexual reproduction

- the cell divides and the parental thecal plates are shed
- each progeny cell synthesizes new plates

Sexual reproduction

- takes place by the fusion of gametes. The gametes form by simple division of a vegetative cell
- gamete fusion results in a planozygote that swims for a few days, and then encysts.

Sexual reproduction

- meiosis apparently takes place in the zygote; hence, all swimming cells are haploid.
- the encysted hypnozygote undergoes a short (days or weeks) period of dormancy

Freshwater Dinoflagellates

- Peridinium
- Ceratium