

Algae

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TRICHY-24

Characteristics

- Range in size from microscopic to single celled organisms to large seaweed
- Autotrophic
- Form the reproductive structures – gametangia or gamete chambers
- Aquatic and have flagella at some point in life
- Often contain **pyrenoids**, organelles that synthesis and store starch

STRUCTURE

- Thallus (haploid)
- Four types of algae
 - Unicellular
 - Colonial
 - Filamentous
 - multicellular

IDENTIFY THE TYPE OF ALGAE



CLASSIFICATION OF ALGAE

- SEVEN PHYLUM BASED ON
 - COLOR
 - TYPE OF CHLOROPHYLL
 - FOOD-STORAGE SUBSTANCE
 - CELL WALL COMPOSITION

REPRODUCTION

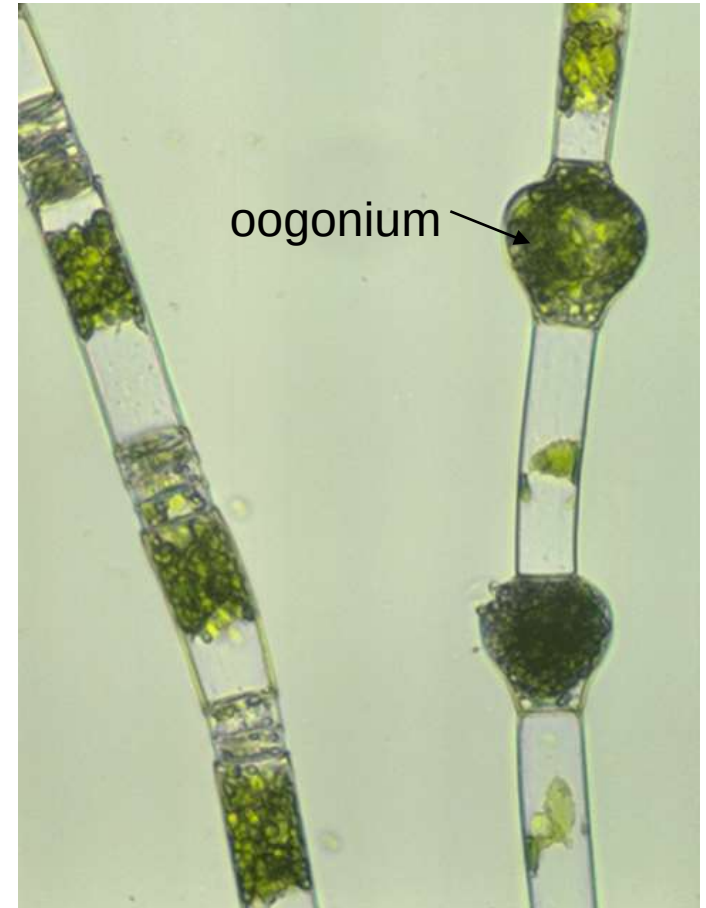
MOST REPRODUCE BOTH
SEXUALLY AND ASEXUALLY

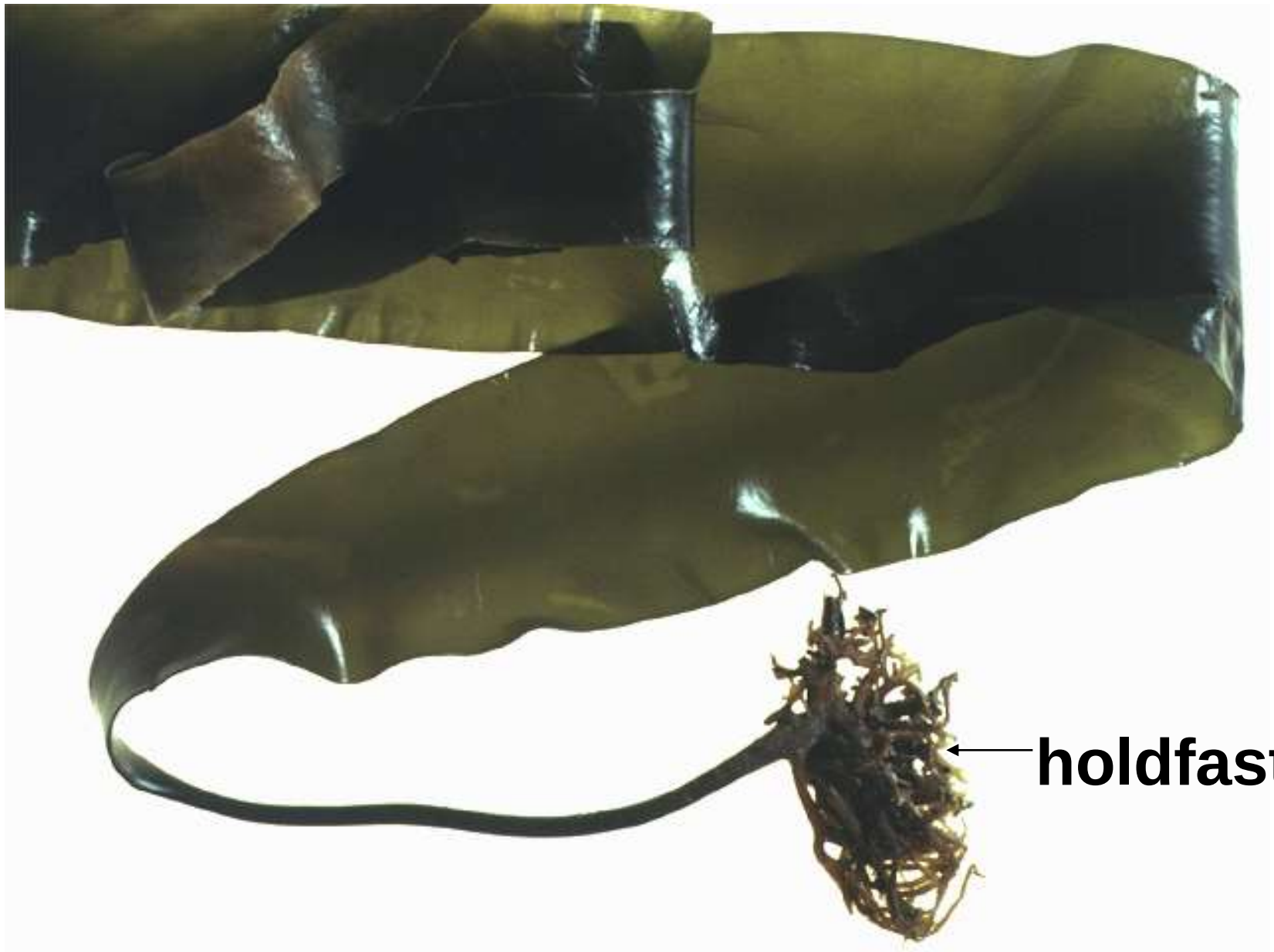
- Most sexual reproduction is triggered by environmental stress
- Asexual Reproduction
 - Mitosis
- Sexual Reproduction
 - Meiosis
 - Zoospores
 - Plus and minus gametes
 - Zygospore



Reproduction in Multicellular Algae

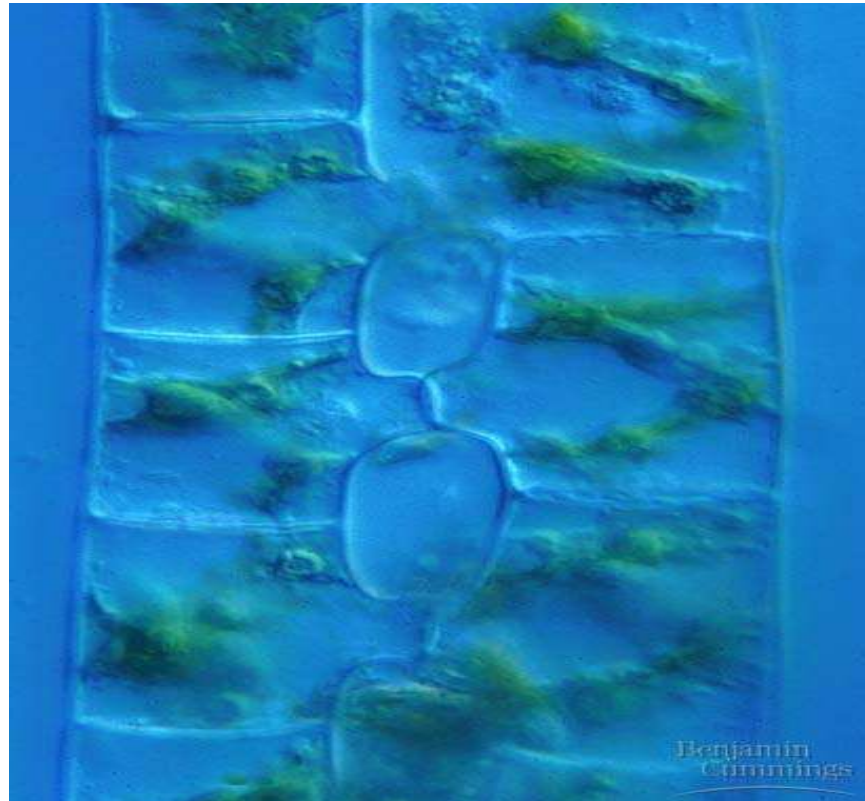
- Oedogonium reproduction
 - Antheridium-release flagellated sperm that swim to the oogonium
 - Oogonium-houses the zygote which is a diploid spore
 - The spore undergoes meiosis and produces 4 haploid zoospores. One of the four cells becomes a rootlike holdfast the others divide and become a new filament.





← holdfast

Spirogyra reproduce sexually by conjugation



Ulva Reproduces by Alternation of Generations

- Two distinct multicellular phases-one is haploid and the other is diploid
 - Gametophyte is haploid
 - Sporophyte is diploid

Phylum Chlorophyta

- **Green algae**
- 7000 diverse species
- Biologist reason that green algae give rise to land plants.
- Both green algae and land plants have chlorophyll a and B as well as carotenoids and store food as starch
- Both have walls made of cellulose

Phylum Phaeophyta

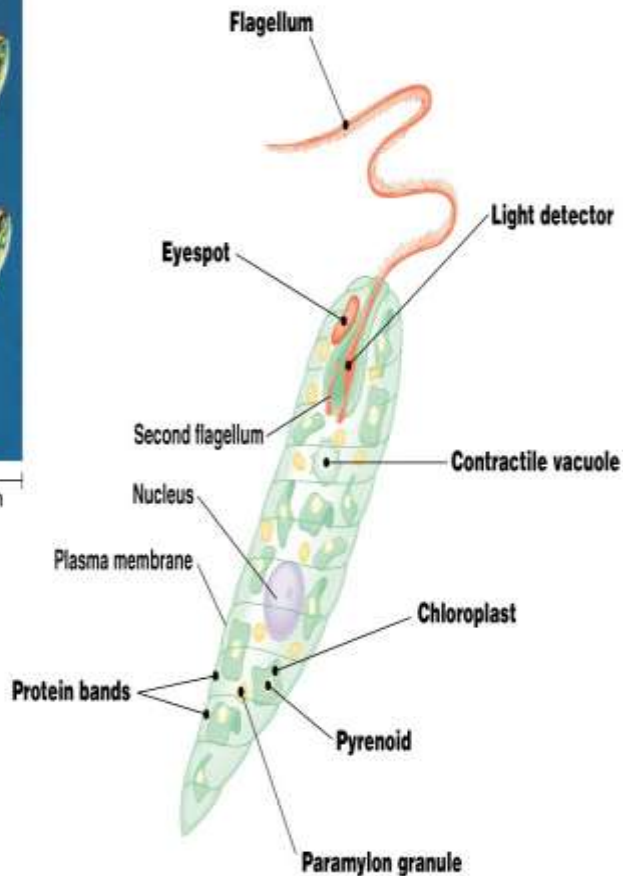
- 1500 species of **Brown algae**
- Mostly marine and include seaweed and kelp
- All are multicellular and large (often reaching lengths of 147 feet)
- Individual alga may grow to a length of 100m with a holdfast, stipe and blade
- Used in cosmetics and most ice creams



Phylum Rhodophyta

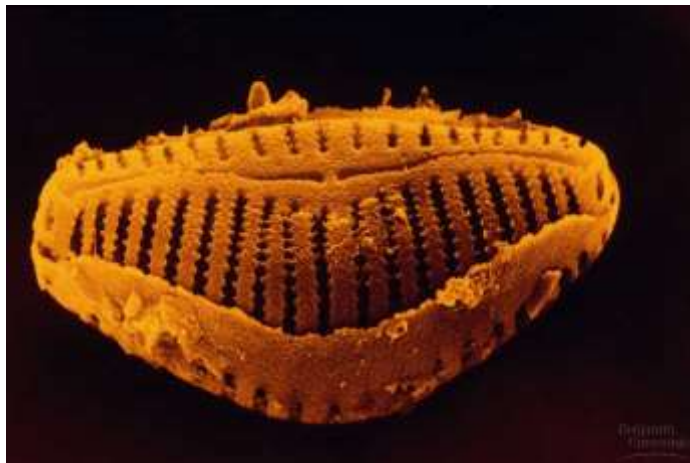
- 4000 species of **RED Algae**
- Most are marine
- Smaller than brown algae and are often found at a depth of 200 meters.
- Contain chlorophyll a and C as well as phycobilins which are important in absorbing light that can penetrate deep into the water
- Have cells coated in carageenan which is used in cosmetics, gelatin capsules and some cheeses

Phylum Euglenophyta



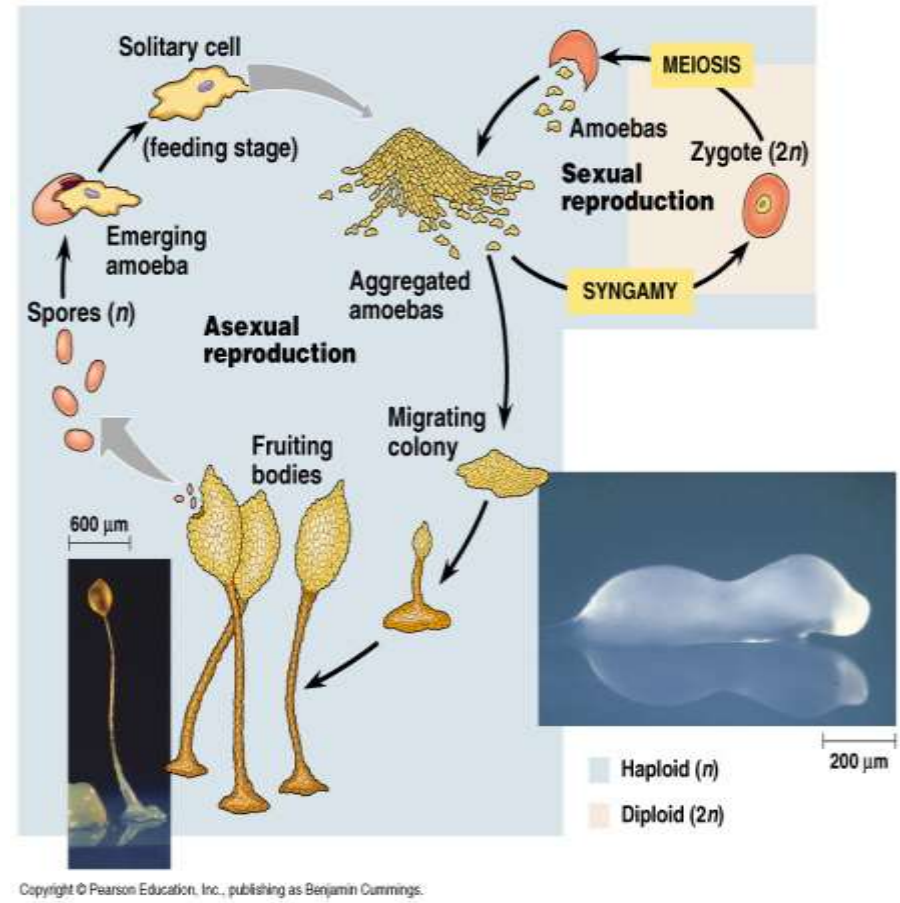
- 1000 species of Euglenoids
- Have both plantlike and animal-like characteristics
- Fresh water

Other Phylum Representatives



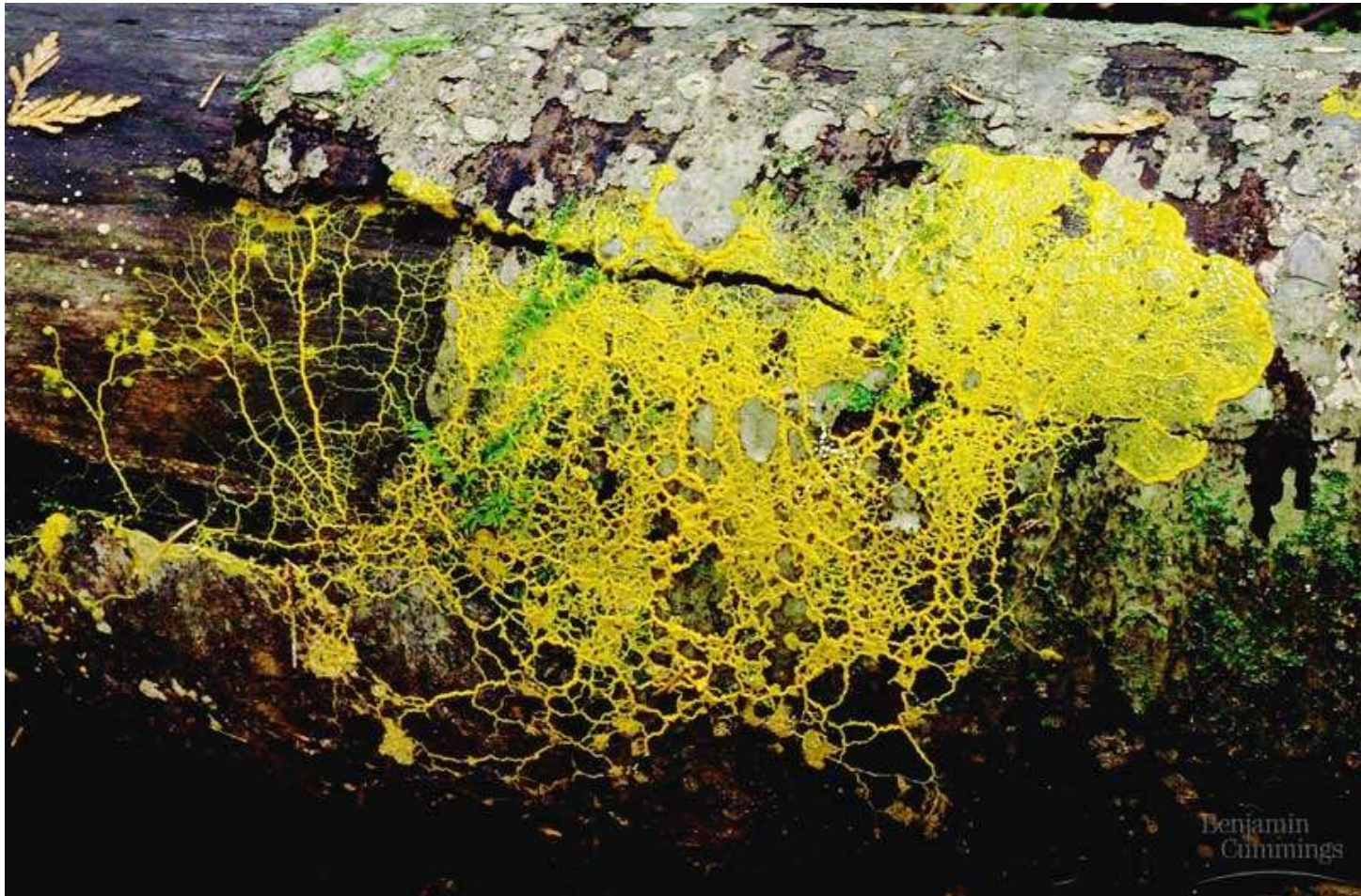
Important in the formation of petroleum products

Funguslike Protist



Cellular Slime molds

Plasmodial Slime Molds



Water Molds

