

- When people initially thought about them they divided them into 3 groups. [Chlorophyceae, Ulvophyceae and Charophyceae]
- Between Chlorophyceae and Charophyceae similarity is cytokinesis. There are similarities between the two of them. What happens is a formation of a phycoplast. If you have two cells dividing you get this furrow between the two cells where they will pinch and create two different new cells. Got nuclei on both sides and in the centre is what appears is the phycoplast and are microtubules that radiate out as part of the constriction furrow and form the phycoplast. Occurs in Chlorophyceae which is marine and aqueous. With Charophyceae, you don't get a furrow at all, you get a band that appears in the centre and the band is made up of a region where the cell wall is laid down and is called the **phragmoplast**. Microtubules play a role here as well because when you separate the two nuclei you will have microtubules that are present as well. however in the case of this organism, the separation is due to the cell wall that's laid down. This type of mechanism is also seen in higher plants. It may be a progenitor of higher plants because no furrow seen.

### Ulvophyceae

- The Ulvophyceae is in between the two and have other traits that are different from the other two. haploid is the multicellular form. Ulva- Sea lettuce will be either haploid where you get gametes that will form and create organisms that are diploid when they fuse.

### Siphonous Algae

- Ulvophyceae → Siphonous Algae as an Example.
- This particular organism is small. In a current they move as a wave. One that is very common in scientific research is known as *Acetabularia mediterranea*. Grown in marine tanks as well.
- The organization of the Siphonous Algae in particular the *Acetabularia mediterranea* are the rhizoids that hold it to the bottom of the pool, the long stalk. The rhizoids have nuclei associated with the but then the long stalk only has one nucleus which is usually located at the base. It will grow up and will form cysts at the top that will release motile stuff for sexual stuff. These things then undergo a standard life cycle. Have the stalk, the cap formation on the top. secondary nuclei appearing, releases, copulates and zygote being formed. All this time in this process, nucleus remains at the base.