



3rd High School of Acharnes
Comenius Mare Nostrum 2013-2015
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ALGAE BIODIVERSITY

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MARE NOSTRUM



What are the algae?

The algae are photosynthetic plant organisms without stems, leaves, roots, seeds, flowers or nuts like higher plants. Instead, they have primitive organization, which is very simple to lower taxonomic groups and more complex to higher groups. They form spores rather than seeds. Some of them have complex biological cycles. They are very different from the Spermatophyta of terrestrial and marine species. There are simple forms of unicellular, colonial, microscopic, filamentous to complex branched or not. Some look like tiny shrubs, with bunches of grapes, while there are others in the form of net etc. They grow almost everywhere, especially in sweet or salty water in lakes etc.

The types of algae

The algae are classified in several taxonomic groups of photosynthetic organisms that do not strictly belong to certain plant kingdom.

The algae and their subgroups are by definition in eukaryote organisms. According to the conventional rules of taxonomic classification, the definition of algae ends up to <<-phyta>> and the species to <<-phyceae>>. The most significant groups of algae in the monophyletic kingdom or sector are to follow:



Plants Kingdom



Chlorophyta



Charophyta

Sectors

Rodophyta

Glaukophyta

Alptophyta

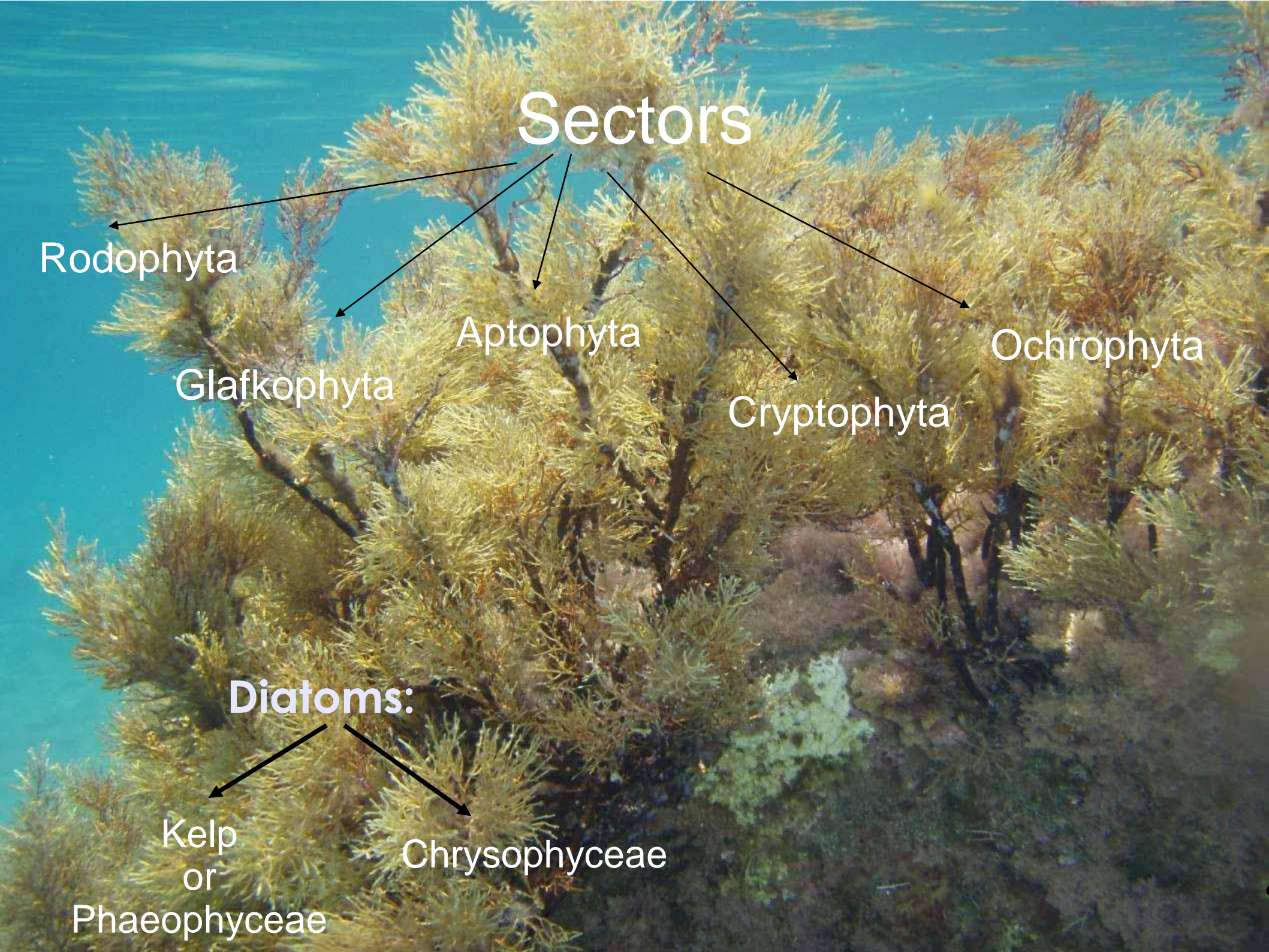
Cryptophyta

Ochrophyta

Diatoms:

Kelp
or
Phaeophyceae

Chrysophyceae



More Sectors

Euglenophyceae

Chlorarachniophyceae

Alveolar
Dinoflagellates
Or Dinophyta
Or Pyrrophyta

Excavata

Rhizaria

Protozoal
(non-photosynthetic)
organisms

flagellate
Protozoal
(non-photosynthetic)
organisms

amoeboid
Protozoal
(non-photosynthetic)
organisms

The best known species of algae

Chlorophyceae

Green algae which usually grow in shallow waters. They involve a typical photosynthetic substance, chlorophyll. Some of them, like the genus *Ulva* grow in high percentage in polluted waters. It is an indicator of polluted seawater.



Caulepra prolifera



Ulva Lactuca

Rhodophyceae

Algae, usually in red colour, which grow in both deep and shallow waters. The main photosynthetic colorant substance is the phycoerythrin. Many rhodophyceae are edible and grow in many countries in S.E. Asia.



Nemastoma algae



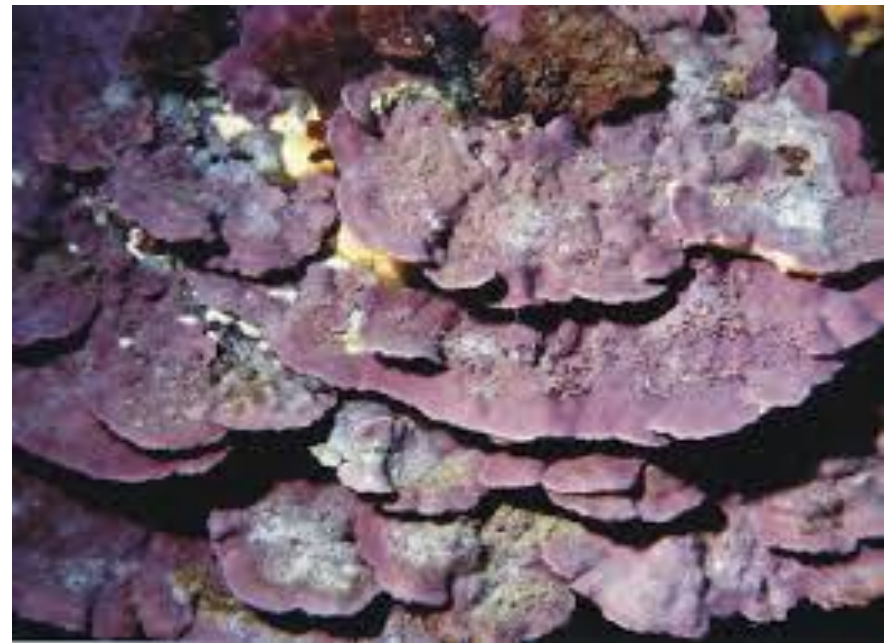
Peyssonelia squamaria

Calcified Rhodophyceae

The main feature of some rhodophyceae is the calcification of their thallus. They play an important role at coral reefs.



Amphiroa Rigida



Lithophyllum

Phaeophyceae

Algae, usually brown, can reach up to one meter of height in Greece. Their main synthetic colorant is the fucoxanthin. Phaeophyceae *Cystoseira* grow in clear seas opposite to chlorophyceae *Ulva*.



Colpomenia sinuosa



Cystoseira compressa

Water Angiosperms

They belong to the higher kinds of plants, in contrast with the algae, they have leaves, stems, roots, seeds and flowers. Most of them have similar morphology and thin leaves like blades.



Dainelu

www.delcampe.net

Poseidonia Oceanica



Halophila stimulea



Poseidonia

The poseidonia oceanica is formed at the bottom of the undersea forests where there are many kinds of fish, other small animals and plants.

It doesn't belong to the algae but it is a very important purity indicator of the sea environment.

Thank you very much
For your attention!

