Acetabularia is a genus of green algae, specifically of the Polypophysaceae family. Typically found in subtropical waters, Acetabularia is a single-celled organism, but gigantic in size and complex in form, making it an excellent model organism for studying cell biology.

The name, Acetabularia, derives from the Latin word acetabulum, a broad, shallow cup used for dipping bread; the upturned cap of Acetabularia resembles such a cup. For this reason, it is also sometimes called mermaid’s wineglass.[6]

Acetabularia was the first demonstration that genes are encoded by DNA in eukaryotes.

Cladophora is a genus of reticulated filamentous Ulvophyceae (green algae). The genus Cladophora contains many species that are very hard to tell apart and classify, mainly because of the great variation in their appearances, which is affected by habitat, age and environmental conditions.

Unlike Spirogyra the filaments of Cladophora branch and it doesn’t undergo conjugation. They have swimming gametes instead. There are two multicellular stages in its life cycle - a haploid gametophyte and a diploid sporophyte - which look highly similar. The only way to tell the two stages apart is to either count their chromosomes, or examine their offspring. The haploid gametophyte produces haploid gametes by mitosis and the diploid sporophyte produces haploid spores by meiosis. The only visible difference between the gametes and spores of Cladophora is that the gametes have two flagella and the spores have four.

Cladophora is an invasive species damaging the fishing industry and shoreline property values along the Great Lakes in the United States.

Chara species are multicellular and superficially resemble land plants because of stem-like and leaf-like structures. The plant body is a gametophyte. Species are found in fresh water, particularly in limestone areas throughout the northern temperate zone. They prefer less oxygenated and hard water and are not found in the waters where mosquito larvae are present.

The sea lettuces comprise the genus Ulva, a group of edible green algae that is widely distributed along the coasts of the world’s oceans. Sea lettuce is eaten by a number of different sea animals, including manatees and the sea slugs known as sea hares. Many species of sea lettuce are a food source for humans in Scandinavia, Great Britain, Ireland, China, and Japan (where this food is known as aosa). Sea lettuce as a food for humans is eaten raw in salads and cooked in soups. It is high in protein, soluble dietary fiber, and a variety of vitamins and minerals, especially iron. The only way to tell the two stages apart is to either count their chromosomes, or examine their offspring. The haploid gametophyte produces haploid gametes by mitosis and the diploid sporophyte produces haploid spores by meiosis. The only visible difference between the gametes and spores of Cladophora is that the gametes have two flagella and the spores have four.
Laminaria is a genus of brown algae (Phaeophyta), all sharing the common name "kelp". This economically important genus is characterized by long, leathery laminae and relatively large size.

The stem-like of all brown algae is termed a thallus, indicating that it lacks the complex xylem and phloem of vascular plants. They also have Holdfasts, Stipes and Lamina. Some species have berrylike gas-filled bladders which help keep the fronds afloat to promote photosynthesis.

Fucus is a genus of brown algae found in the intertidal zones of rocky seashores almost throughout the world. It has an alkali content of about 2.5%–5% that was mainly sodium carbonate (Na₂CO₃); alkali is essential to soapmaking, glassmaking, and other industries. The seaweed was also used as fertilizer for crop land in the same areas in which it was harvested.

Ephedra is a gymnosperm often used in medicine.

Marchantia is a genus in the family Marchantiaceae of the order Marchantiales, a group of liverworts.

These are simple plants without roots or vascular systems. They were once considered related to mosses and part of division Bryophyta, but more recently have been assigned their own plant division, Marchantiophyta.

Polypodium is a genus of 75–100 species of true ferns, widely distributed throughout the world, with the highest species diversity in the tropics. The name is derived from Ancient Greek poly (πολύ) "many" + podion (πόδιον) "little foot", on account of the foot-like appearance of the rhizome and its branches.
Ginkgos are dioecious, with separate sexes, some trees being female and others being male.

Ginkgos produce seeds.

The fertilization of ginkgo seeds occurs via swimming sperm.

Sphagnum is a genus of between 151 and 350 species of mosses commonly called peat moss, an important industry in New Brunswick.

Pinus sylvestris – Scots Pine. Popular as Christmas trees. It has male and female cones.

Larches are conifers in the genus Larix, in the family Pinaceae.

Although a conifer, the larch is a deciduous tree and loses its leaves in the autumn.

Larch is a wood valued for its tough, waterproof and durable qualities; top quality knot-free timber is in great demand for building yachts and other small boats.

Ricciocarpus natans a small leaf-like plant found floating on still water, often with duckweeds. It is an aquatic liverwort.
Dryopteris marginalis is known as the marginal shield fern or marginal wood fern. The marginal wood fern favors damp shady areas and is found throughout eastern North America.

The evergreen leaves reach a maximum length of 1 - 2 ft, with a single crown on each rootstock. The round sori are located on the margins of the leaf tissue, hence the common name. Just before the spore ripens, the sori turn an interesting blue-violet color.

Utricularia, commonly and collectively called the bladderworts, is a genus of carnivorous plants that capture small organisms by means of bladder-like traps.

Psilotum (whisk fern) is a genus of fern-like vascular plants. The name of the genus is from Greek psilos = naked, because it lacks organs, such as leaves, normally found in other ferns.

Phaseolus (Bean, Wild Bean) is a genus in the family Fabaceae of about fifty plant species, all native to the Americas.

At least four of the species have been domesticated since pre-Columbian times for their beans.
Lycopodium (from Greek lukos, wolf and podion, diminutive of pous, foot) is a genus of clubmosses, also known as ground pines or creeping cedar. They are not true mosses.

Chondrus is a relatively small red alga, reaching up to a little over than 20 cm in length. Its common name Irish moss, or carrageen moss. It makes an indigestible polysaccharide carrageenan that produces gels.

Sargassum is a large brown seaweed that can grow to several meters. The stem-like of all brown algae is termed a thallus, indicating that it lacks the complex xylem and phloem of vascular plants. They also have Holdfasts, Stipes and Lamina. Some species have berrylike gas-filled bladders which help keep the fronds afloat to promote photosynthesis.

Corallina officinalis is a calcareous red seaweed which grows in the lower and mid-littoral zones on rocky shores.

It is primarily found growing around the rims of tide pools, but can be found in shallow crevices anywhere on the rocky shore that are regularly refreshed with sea water.

It forms calcium carbonate deposits within its cells which serve to strengthen the thallus. These white deposits cause the seaweed to appear pink in colour, with white patches where the calcium carbonate is particularly concentrated, such as at the growing tips. The calcium carbonate makes it unpalatable to most rocky shore grazers.

Equisetum is a "living fossil", as it is the only living genus of the entire class Equisetopsida, which for over one hundred million years was much more diverse and dominated the understorey of late Paleozoic forests and a major source of food for dinosaurs. Equisetum sperm—like those of the rest of the ferns and fern allies—require an external film of water in which to reach the eggs.