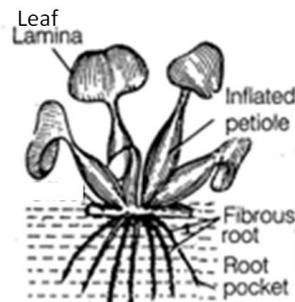


Aim: To study ecological adaptation in hydrophytes.

1) ***Eichhornia crassipes*** (Water hyacinth)

Family: Pontederiaceae

- 1) It is a free floating hydrophyte.
- 2) Roots are fibrous, dense bushy mass, floating with root pockets.
- 3) Petiole is bulbous, with lot of aerenchyma to help the plant to float on water surface (provide buoyancy).
- 4) The surface of floating leaves possesses waxy coating. Leaves are moderately strengthened by sclereids.
- 5) Stomata are present on both the surface of leaf.
- 6) Aerenchyma is present and well developed in leaf and stem.
- 7) Xylem is poorly developed.

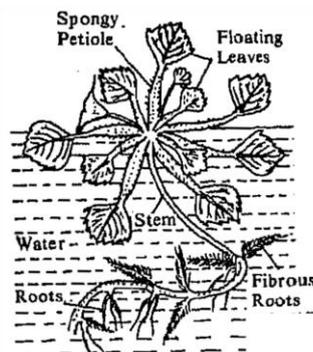


Eichhornia crassipes

2) ***Trapa bispinosa***

Family: Trapaceae

- 1) Floating but rooted hydrophyte.
- 2) Roots submerged, assimilatory, adventitious, fibrous, free floating.
- 3) Stem is long, stoloniferous.
- 4) Petiole is swollen with well developed aerenchyma to keep the plant floating.
- 5) Leaves are moderately strengthened by sclereids.
- 6) Stomata are present only on the upper surface of leaf.
- 7) Aerenchyma well developed in leaf and stem.
- 8) Xylem poorly developed.

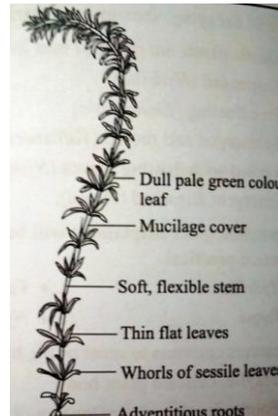


Trapa bispinosa

3) *Hydrilla verticillata*

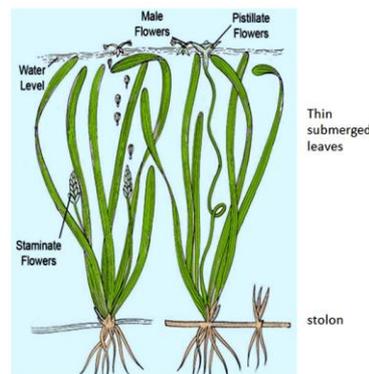
Family: Hydrocharitaceae

- 1) Anchored submerged hydrophyte.
- 2) Shoots submerged and considerably long. Stem is slender, flaccid with long internodes and frequently rooting from nodes.
- 3) Leaves are narrow, thin and without cuticle.
- 4) Stomata absent and gaseous exchange take place from general leaf surface.
- 5) Xylem very poorly developed or absent. Aerenchyma and air chambers are present.
- 6) Strengthening tissue absent. Phloem is comparatively well developed.

***Hydrilla verticillata*****4) *Vallisneria natans***

Family: Hydrocharitaceae

- 1) Anchored submerged hydrophyte.
- 2) These are completely submerged in water and rooted in soil.
- 3) Stem is stolon with long leaves.
- 4) Leaves are narrow, long, thin and ribbon shaped without cuticle.
- 5) Stomata absent and gaseous exchange take place from general leaf surface.
- 6) Aerenchyma profusely developed.
- 7) Strengthening tissue absent or very poorly developed.
- 8) Flowers especially adapted for water pollination. Plant is dioecious.
- 9) During pollination, Male flowers detach and float on water surface; female flowers carried to the surface on a long pedicel, the later coiling and bringing down the ovary (after pollination and fertilization).

***Vallisneria natans***