



Lecture No.:17

Date: 19th May, 2020

CORE CONCEPT OF
Group A - Bryophyta

SUB./GEN. - PART 1

MARCHANTIA

Taxonomic position -

Class - Hepaticopsida

Order - Marchantiales

Family - Marchantiaceae

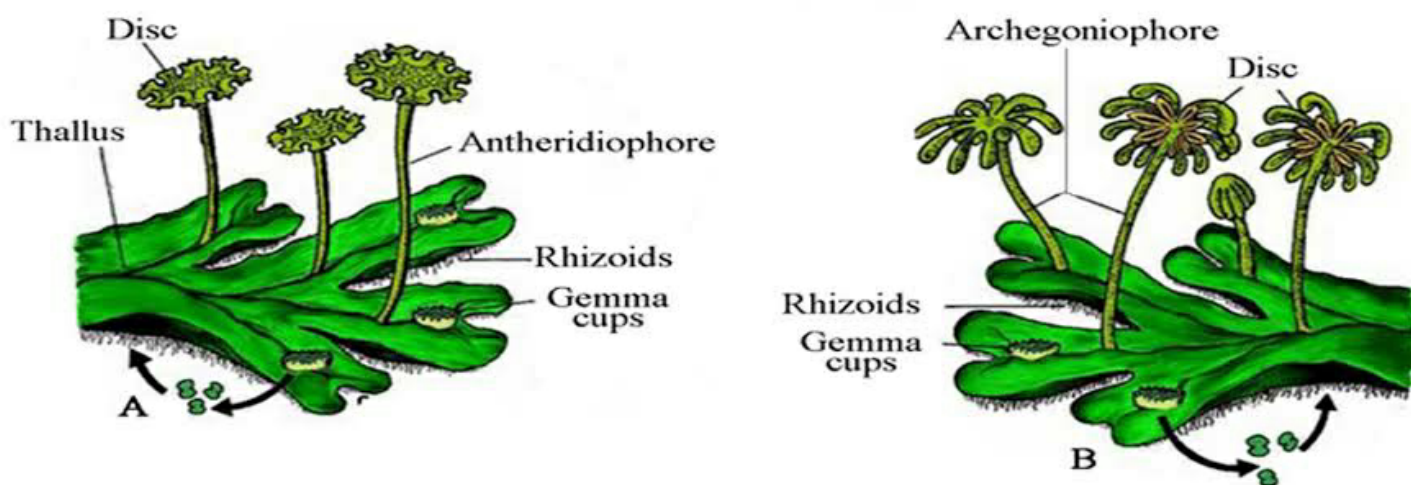
Genus - Marchantia

Occurrence - These are found growing on moist, cool and shady places. The sides of streams, walls of wells, damp soil and wet rocks are most suitable place for these liverworts. *M. Polymorpha* is the most common species.

Morphology - Plant body is dorsiventral with dichotomous branching. The dorsal surface bears specialized bodies along the median groove called



Gemma cups, while the ventral surface bears scales and rhizoids like Riccia.



Marchantia spp. (A) Male plant, (B) Female plant.

Reproduction -

A. Vegetative - By gemmae which are produced within gemma cup. The gemmae are multicellular discoid bodies having two lateral notches. The gemmae after detachment germinate to form two thalli from two lateral notches.

B. Sexual - *Marchantia* species are strictly dioecious.



Antheridia and archegonia are borne on erect branches called **antheridiophore** and **archegoniophore** respectively. Antheridiophore shows a stalk, bearing at its apex a 8-lobed disc.

Fertilization - It takes place in a manner similar to Riccia, and results into a zygote ($2n$).

Sporophytic generation - The zygote develops into the sporophyte while the venter wall develops to form a 2 to 3 layered calyptra. A ring of cells at the base of the venter forms one layered covering called **Perigynium**. Thus sporangium develop within three gametophytic coverings - calyptra, perigynium and perichaetium. The sporophyte consists of foot, seta and capsule. The capsule differentiates into an outer sterile layer (**amphithecium**) and an inner sporangenous layer (**endothecium**). Half of the sporangenous tissue develops into spore mother cells which undergo meiosis to form spore - tetrads and the other half



form elongated **elaters** with two spiral thickenings. Due to elongation of seta at maturity, the capsule comes out of calyptra perigynium and perichaetium. Elaters being hygroscopic help the release of spores which renews the gametophytic phase.

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