

Department of Botany

D. B. College, Jaynagar.
L.N.M.U. DBG.

Lecture No. 14

BY: DR. RANJANA.

ASSISTANT PROFESSOR

(GUEST)

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B.Sc. PART I

CORE CONCEPT OF BRYOPHYTA

Male + Female Reproductive organ of Marchantia:

In Marchantia female reproductive organ oogonium or archegonium is also called. which is located on the erect branches on the thallus which is called archegoniophore or Corpoccephala; is situated or borne on ~~the~~ a stalk. This species are strictly dioecious. Antheridia and Archegonia are borne on erect branched called Antheridiophore and Archegoniophore respectively. Antheridiophore shows a stalk, bearing at its apex a 8 lobed disc. Antheridia are borne in row on the dorsal surface of the disc. Each antheridium has a stalk and globular body consisting of a sterile jacket layer enclosing antherozoid mother cells which meiotically develop into biflagellate antherozoids.

Each archegoniophore also contains a stalk and a disc bearing 9 rays. Archegonia are borne on the dorsal surface of the disc but due to growth of the central region of the disc, archegonia are

inverted down to the lower side of the
 disc. One layered plate of tissue
 tissue called Perichaetium develops to
 enclose each row of archegonia.
 Archegonium consists of a swollen venter
 with an egg, a ventral canal cell and 4
 or more neck canal cells inside long neck.
 Fertilization or sporophytic generation: The
 zygote divides mitotically to form the
 sporophyte. The sporophyte or Marchantia
 is simplest represented only by a
 capsule (no foot and seta). Two to
 three layered venter forms the calyp-
 tra. The capsule wall surrounds
 numerous diploid spores mother cells
 and nurse cells. The spore mother cell
 divide meiotically to produce tetrads
 of haploid spores. The decay of calyptra
 and thallus liberates the spores
 which germinate to form new game-
 topytes.

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 venter forms one layered
 covering called perigynium. Thus
 sporogonium develop within three
 gametophytic coverings: Calyptra,
 Perigynium and perichaetium.
 Elaters being hygroscopic help the
 release of spores which renews the
 gametophytic phase.