 E-Study material

For 1st Semester Botany

General Elective

Biodiversity

(Microbes, Algae, Fungi, Lichen and Archegoniate)

**Unit 6: Bryophytes**

**Topic: General Characters of Bryophyta**

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**Topic: General Characters of Bryophyta**

The division Bryophyta (Gr. bryon=moss) includes over 25000 species of non-vascular embryophytes such as mosses, liverworts and hornworts.

Bryophytes are small plants (2cm to 60cm) that grow in moist shady places. They don’t attain great heights because of absence of roots, vascular tissues, mechanical tissues and cuticle. They are terrestrial but require external water to complete their life cycle.

Hence, they are called “Amphibians of plant kingdom”.

The fossil record indicates that bryophytes evolved on earth about 395 – 430 million years ago (i.e. during Silurian period of Paleozoic era). The study of bryophytes is called bryology. Hedwig is called ‘Father of Bryology’. Shiv Ram Kashyap is the ‘Father of Indian Bryology’.

**Salient features of Bryophytes:**

1. Bryophytes grow in damp and shady places.

2. They follow heterologous haplodiplobiontic type of life cycle.

3. The dominant plant body is gametophyte on which sporophyte is semiparasitic for its nutrition.

4. The thalloid gametophyte differentiated in to rhizoids, axis (stem) and leaves.

5. Vascular tissues (xylem and phloem) absent.

6. The gametophyte bears multi-cellular and jacketed sex organs (antheridia and archegonia).

7. Sexual reproduction is oogamous type.

8. Multi-cellular embryo develops inside archegonium.

9. Sporophyte differentiated into foot, seta and capsule.

10. Capsule produces haploid meiospores of similar types (homosporous).

11. Spore germinates into juvenile gametophyte called protonema.

12. Progressive sterilization of sporogenous tissue noticed from lower to higher bryophytes.

13. Bryophytes are classified under three classes: Hepaticae (Liverworts), Anthocerotae (Hornworts) and Musci (Mosses).