

CLASSIFICATION OF BRYOPHYTES. (ONLINE STUDY)

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Classification of Bryophytes

As per recommendations of I.C.B.N., bryophytes are divided into three classes -

- 1) Hepaticopsida (= Liverworts)
- 2) Anthocerotopsida (= Hornworts) and,
- 3) Bryopsida (= Moss).

1. Hepaticopsida:-

Features:- i) Thalloid as well as foliose type. If foliose, the lateral appendages are without midrib. Rhizoids are without septa.

ii) Thallus internally differentiated into tissues.

iii) Chloroplasts are devoid of pyrenoids.

iv) Aporous are of 3 types -

- Operculate - Targioniaceae
- Asteroporate - Athalamaceae.
- Composite - Marchantiaceae.

v) Sex organs are found embedded in dorsal surface

vi) Sporophyte may be simple as in Riccia where only capsule is found with spores, or complex divisible into foot, seta and capsule. (e.g. Marchantia, Pellia)

* classification of the class Hepaticopsida:-

It is a large group having 330 genera and 8000 species. All are divided into 6 orders -

- (2) * Orders -
- i) Marchantiales (Chambered - hepatics)
 - ii) Sphaerocarpales (Bottle - hepatics)
 - iii) Monocleales (Giant - thallose - hepatics)
 - iv) Metzgeriales (Multi-form - thallose hepatics)
 - v) Jungermanniales (Scale moss - hepatics)
 - vi) Calobryales (Moss like hepatics)

* Note - After discovery of sporophyte, Takaki is transferred from liverworts to mosses by Smith & Davidson, 1993.

(2) Class - Anthocerotopsida :- It is a small group with single order - Anthocerotales, family Anthocerotaceae with seven genera.

- * Features -
- i) Plant body simple, thalloid, thallus without internal differentiation
 - ii) Scales are absent in the thallus.
 - iii) Cells have single large chloroplast with pyrenoid.
 - iv) Sporophyte is cylindrical, partly dependent upon gametophyte for nutrition. It is differentiated into bulbous foot and cylindrical capsule. Seta is monistematic.

(3) Class - Bryopsida :-

- * Features -
- i) Gametophyte is differentiated into Protonema and an erect gametophore.
 - ii) Protonema are of different types -
 - a) Green disc shaped - Sphagnum
 - b) Green thalloid - Andrees
 - c) Mycelium like - Majority of mosses.

(3)

- iii) Rhizoids are multicellular with oblique septa.
- iv) Antheridia solitary or in groups, lateral or terminal.
- v) Archegonia terminal either on main stem or lateral branches.
- vi) Capsule with or without peristome, peristome has 4, 16 or large number of teeth arranged in one, two or more whorls. Teeth may be homo or heterogenous.
- vii) Staters are absent in capsule of sporangium.

Classification:-

It is a largest group having 700 genera and nearly 14,000 species. It shows seven distinct evolutionary lines as follows —

- i) Bryales - Joint-toothed mosses.
- ii) Archidiales - Large spored mosses.
- iii) Tetraphidales - Four-toothed mosses.
- iv) Polytrichales - Hair-cap mosses.
- v) Buxbaumiales - Bug mosses.
- vi) Sphagnales - Bog or peat mosses.
- vii) Andreaeales - Lantern-mosses.

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Note - In Polytrichales conducting system is found. But it has no lignification.