

### **Kingdom: *Plantae***

The Kingdom Plantae is composed of plants that are autotrophic, multicellular eukaryotes. Plant cells have cell walls made of cellulose. There are approximately 300,000 plant species that conduct photosynthesis. They include mosses (Bryophytes), ferns (Pteridophyta) and phanerogams (Gymnosperms and Angiosperms). Their leaves absorb sunlight and convert it to glucose and have a waxy coat on them to prevent water loss. Plants reproduce asexually and sexually.

### **Group: *Bryophytes***

Bryophytes, also known as mosses, is an informal group consisting of three divisions of non-vascular land plants and it includes approximately 20,000 species. Members of the group have no vascular tissue or wood to lend them structural support, nor do they have large leaves or showy cones or flowers. Bryophytes produce enclosed reproductive structures (gametangia and sporangia) and they reproduce by spores. The group contains 3 divisions; *Marchantiophyta*, *Anthocerotophyta*, and *Bryophyta*.

### **Division: *Marchantiophyta***

*Marchantiophyta*, commonly known as hepatics or liverworts, includes about 9000 species. Its members can be found in almost all terrestrial and freshwater environments. They have a gametophyte-dominant life cycle, have a photosynthetic gametophyte, usually with indeterminate growth that develops from a protonema and produce gametophores that rise from the protonemata and bear the gametangia, antheridia, and archegonia. The sporophyte is short-lived and determinate in its growth. have a photosynthetic gametophyte, usually with indeterminate growth that develops from a protonema. The division members produce gametophores that rise from the protonemata and bear the gametangia, antheridia, and archegonia. The sporophyte is short-lived and determinate in its growth.

### **Classification of The Division *Marchantiophyta***

**Class:** *Marchantiopsida*

**Order:** *Sphaerocarpales*

The order contains 2 families, 3 genera, about 30 species.

**Order:** *Marchantiales*

The order includes 12 families, 28 genera, about 200 species.

**Order:** *Monocleales*

The order contains 4 species within a single genus and family.

**Order:** *Ricciales*

The order contains 2 families, 3 genera and over 150 species.

**Class:** *Jungermanniopsida*

**Order:** *Haplomitriales*

The order contains 10 species within a single genus and family.

**Order:** *Blasiales*

The order contains 5 species within 2 genus and single family.

**Order:** *Treubiales*

The order contains 10 species within 3 genera and 2 families

**Order:** *Fossombroniales*

The order contains 4 families, 9 genera, 80 species.

**Order:** *Metzgeriales*

The order includes 7 families, 22 genera, about 300 species.

**Order:** *Lepicoleales*

The order includes 11 families, 21 genera, 110 species.

**Order:** *Jungermanniales*

The order contains 24 families, 183 genera, several thousand species.

**Order:** *Porellales*

The order includes 5 families, 97 genera, several thousand species.

**Order:** *Radulales*

The order includes a single genus and family, 150 species.

**Order:** *Pleuroziales*

The order includes 25 species within a single genus and family.

**Division:** *Anthocerotophyta*

Division *Anthocerotophyta*, also known Hornworts, includes about 150 species. The division is characterized by elongated horn-shaped sporophyte. As in mosses and liverworts, the flattened, green plant body of a hornwort is the gametophyte plant. The division contains two classes. Anthocerotopsida is the largest and best known of these, with two orders and three families.

**Classification of The Division Anthocerotophyta**

**Class:** *Anthocerotopsida*

**Order:** *Anthocerotales*

The order contains 2 families and 4 genera.

**Order:** *Foliocerotales*

The order contains a single family and genus.

**Order:** *Leiosporocerotales*

The order contains a single family and genus.

**Order:** *Dendrocerotales*

The order contains a single family and genus.

**Order:** *Anthocerotales (1 family, 5 genera)*

The order contains single family and 5 genera

**Order:** *Anthocerotales*

The order contains 2 families and 8 genera.

**Order:** *Notothylales*

The order contains a single family and genus.

**Order:** **Anthocerotales**

The order 2 families and 8 genera.

**Division:** *Bryophyta*

The division includes approximately 10,000 species, 700 genera, and about 110-120 families.

Its members can be found all around the world and inhabit diverse habitats. The conspicuous green leafy shoots are the gametophytes, haploid organisms, on which the diploid embryo develops into a mature sporophyte. The sporophyte is chlorophyllose and photosynthetic only in early stages of development, and it is mostly dependent on the gametophyte.

**Classification of The Division Bryophyta**

**Class:** *Takakiopsida*

**Order:** *Takakiales*

The order includes two species within the single genus and family.

**Class:** *Sphagnopsida*

**Order:** Sphagnales

The order includes between 100 and 300 species within the single genus and family.

**Order:** Ambuchananiales

The order includes only one species.

**Class:** Andreaeopsida

**Order:** *Andreaeales*

The order contains 100 species, within the 2 genera and single family.

**Class:** *Andreaebryopsida*

**Order:** *Andreaebryales*

The order includes only one species.

**Class:** *Polytrichopsida*

**Order:** *Tetraphidales*

The order includes 3 families, 4 genera, and about 50 species.

**Order:** *Polytrichales*

The order includes single family, 23 genera, and over 100 species.

**Class:** *Bryopsida*

The class consists of 16 orders, 107 families, 880 genera and approximately 12,000 species.

### **Importance Of Bryophytes**

Bryophytes play a vital role in being among the first colonizers of disturbed sites and they stabilize the soil surface, thereby reducing erosion, while at the same time reducing the evaporation of water, making more available for succeeding plants. Most Bryophytes are not of any direct economic importance, and none are a food source for humans. Sphagnum members are economically the most important mosses. The harvesting, processing, and sale of Sphagnum is a multimillion-dollar industry. Sphagnum is used in horticulture, as an energy source and, to a limited extent, in the extraction of organic products, in whiskey production, and as insulation.

### **REFERENCES**

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