

- (3) Antheridium of bryophytes as well as pteridophytes is surrounded by a jacket of sterile cells.
- (4) Antherozoids are flagellated.
- (5) Water is necessary for fertilization.
- (6) Zygote forms embryo.
- (7) The terminal sporangia with columella of Psilophytales are characterized by the presence of heteromorphic alternation of generations.
- (8) Both groups are characterized by the presence of heteromorphic alternation of generations.

[B] Differences between Bryophytes and Pteridophytes

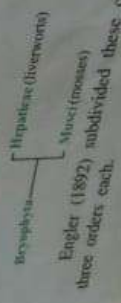
Bryophytes differ from pteridophytes in several features (Table 2).

Table 2. Differences between bryophytes and pteridophytes.

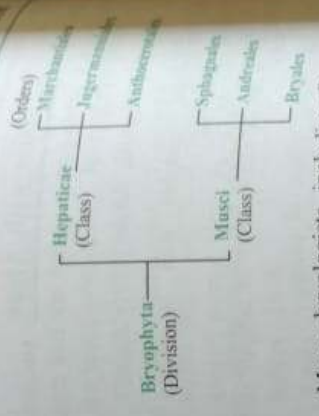
| Bryophytes | Pteridophytes |
|---|--|
| 1. Gametophyte is the dominant phase in the life-cycle. | Sporophyte is the dominant phase in the life-cycle. |
| 2. Plant body is thalloid or foliose. | Plant body is differentiated into root, stem and leaves. |
| 3. Vascular tissue is absent. | Vascular tissue is present. |
| 4. Sporophyte is completely dependent upon the gametophyte. | Sporophyte is autotrophic and independent. |

CLASSIFICATION OF BRYOPHYTES

The term Bryophyta was used for the first time by Braun (1864), who included algae, fungi, lichens and mosses in this group. In later systems of classification, algae, fungi and lichens were placed in a separate division Thallophyta, and liverworts and mosses in Bryophyta, and (1813) recognised the following two classes in the division Bryophyta.



Engler (1892) subdivided these classes into three orders each.



Many bryologists including Bessey (1911), Verdoorn (1932), Bower (1935), Wettstein (1935), Evans (1938), and Engler, Melchior and Werdermann (1954) have followed the basic classification proposed by Eichler and Engler. Howe (1899) considered order Anthocerotales, containing *Anthoceros* and other related genera, as quite distinct from other members of the class Hepaticae. Therefore, he suggested that the order Anthocerotales should be given the rank of a class. Howe's view has been supported by Carpel (1940), Takhtajan (1953), Smith (1955), Schuster (1958) and Wardlaw (1962). Thus the division Bryophyta was divided into three classes.



Takhtajan (1953), however, preferred to call Anthocerotales as Anthocerotae. Rotimäler (1951) and Proskauer (1957) although supported the above classification, following the International Code of Botanical Nomenclature they called the class Hepaticae as Hepaticopsida, Anthocerotae as Anthocerotopsida and Musci as Bryopsida. An outline of the classification of Proskauer is given below:

