Bryophyta

Paper – II A

Economic Imp. of Bryophyta

The bryophytes are also called a Liliputians amongest land plant, mostly occuring in moist shady places include liver worts (Hepaticopsida) having 300 genera & 6000 spp. Horn worts (Hepaticopsida) having 12 genera & 50 spp & Mosses (Bryopsida). Some bryophyte members like Peat moss (Sphagnum) cap hair moss (Polytrichum) & some liver worts (Marchantia) are not directly used to man kind they are often play in economic nature acids in soil convervation & play very imp. role in the development of vegetation.

[A]. Direct use in Bryophytes :→

(i) Sphagnum the peat → The pieces of dead vegetable matter partially decomposed by water & gradually composed carbonised under pressure of the late deposite i.e. called peat.

→ It is a brown & dark colour spongy substances.

→ Sphagnum is the main source of peat because dead remains of older part of this plant grow very rapidelly in each year which fill the ponds & lake.

→ Peat are cut into blocks and dried rich in carbon are used as fuel.

* Preparation of ethyl alcohol :→

Celluloase which is present in peat is broken down into sugar through formation it converts in to ethyl alcohol with the help of chemical treatment.

→ Production of gas from peat with the help of by product of ammonium sulphate.

→ They are also used in manufacture of paper and artificial wood.

(ii) Used in horticulture :→ Sphagnum & peat are also a great used in horticulture. when it added to soil (sandy) & other humus poor soil it improve the water holding capcity and serve as a source of organic matter.

→ Peat is used as packing material for fruits, cut vegetables, fish, egg, bulb & tubers. It protect against heat & cold.

→ They are used in industries such as acetic acid, methyl alcohol, humic carbonic acid, Paraffin are obtained from peat by different methods.

→ Stokes (1942) → Reported that peat mass a suitable material for use in surgical dressings.

(iii) Medicinal used in Bryophyta → Few sps of liver warts like marchantia polymorpha, Horn warts (Anthoceros) & mosses (Polytrichum) are used in medicine for the treatment of diseases.

→ Marchantia polymorpha is used in Pulmonary tuberculosis.

→ M. Polymorpha, M. Sellata & Polytrichum Cummune Posses antitumour properties.

→ Polytrichum Commune helps to dessolve stone of Kidney & gall blader.

→ Sphagnum is used in treatment of wound & cut.

(iv) Antibiotic activities of Bryophyta →

Antibiotic properties of bryophytes are reported by several scientists Hayer (1947) reported that some sps of mosses such as sphagnum

Portaricense and S. Strichum which inhibit the growth of Strophyloceus aureus and Pseudomonas acruginases.

→ Atrichium, Minum, Polytrichum & sphagnum shows pronounced antibiotic activity against the bacteria (Positive & Negative).

→ Two spp of mosses namely Barbula & Timella are antibiotically active against 33 bacterial spp which includes gram positive (+), gram negative (−) & acid fast bacteria, staphylococcus aurcus gram (+), Escheri coli, Salmunella typhi (−) Myco bacterium Phelei (acid fast bacteria

→ They are also effect the fungi such as Aspergillus ariges, Heminthosporium oryzoe & Curvularia bunta etc.

→ During last decate, several unsaturated Lipids, Flavonoids, triterenids, Phenolics & other chemical substances have been reported to be presents in bryophytes.

(v) Use of Bryophyte in experimented botany →

→ The liver warts and mosses have an imp. role as research tools in the various phases of botany such as genetics, experimented morphology & Physiology.

→ The mechanism of sex determination in plants was discovered for the first time in a liver warts (Shaenoearpus).

→ Berie (1964) made experimented studies on polypeptide in liver warts.

(vi) Bryophytes as a source of food →

The bryophyte does not directly used in human food. Sphagnum used as an ingredient in the preparation of brea

Some english birds used some masses as a small part of their regular diet.

(vii) Bryophytes as pollution indicators :→ Both aline and air dried masses particular sphagnum can absarb metals used as atmospheric and aquatic pollution indicators.

[B]. Indirect use of Bryophyte →

(i) As acids in soil conservation → The masses prevent sheet erosion of soil.

(ii) Formation of soil & development of vegetation cover. The lichen & mosses play an important role in soil formation. Both are slow but efficient soil former.

(iii) Bog succession → Weaver & clements remarked that masses play important role in bog succession from open water to climax forest.

(iv) Role of rocks builders → certain masses growing in association with other aquatic plants play remarkable role as rock builders.