

PLANT BIODIVERSITY-II
PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY

Unit-I: PTERIDOPHYTES

General features and origin of Pteridophytes. Classification of Pteridophytes (Reimer, 1954). Range of morphology, structure, reproduction and evolution of gametophytes and sporophytes of the following orders: Rhyniales, Psilotales, Lycopodiales, Selaginellales, Isoetales, Calamitales and Equisetales.

Unit-II: PTERIDOPHYTES

Range of morphology, structure, reproduction and evolution of gametophytes and sporophytes of the following orders: Ophioglossales, Marattiales, Osmundales, Filicales and Salviniales. Stellar evolution in pteridophytes, Heterospory and origin of seed habit. Structure, development and evolution of sorus in Filicales. Phyletic slide, spore germination patterns. Economic importance of Pteridophytes.

Unit-III: GYMNOSPERMS

A general account of the characteristic features of Gymnosperms. Origin of Gymnosperms. Classification of Gymnosperms (Sporne, 1965). General structure and interrelationships of Pteridospermales, Bennetitiales, Pentoxylales and Cordaitales.

Unit-IV: GYMNOSPERMS

A general account on the distribution, morphology, anatomy, reproduction and phylogeny of Cycadales, Coniferales, Ginkgoales, Ephedrales, Welwitschiales and Gnetales. Economic importance of Gymnosperms.

Unit-V: PALEOBOTANY

Concepts of Paleobotany, A general account on Geological Time Scale. Techniques for paleobotanical study.

Fossil types: Compressions, incrustation, casts, molds, petrifications, coalballs and compactions. Age determination and methods of study of fossils. Systematic and Nomenclature of fossil plants. Paloclimates and fossil plants. Role of fossil in oil exploration and coal excavation, Paleopalynology.

References

Pteridophytes

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