

C. – MARINE BOTANY & LIMNOLOGY

MARINE BOTANY

UNIT –I. The marine environment and its plants. Factors affecting Marine life – kinds of marine plants. Plants that grow in the sea : Bacteria, Fungi, Algae belonging to Cyanophyceae, Rhodophyceae, Phaeophyceae, Chlorophyceae, Chrysophyceae, Xanthophyceae, Dinophyceae, Bacillariophyceae.

Phytoplankton : Planktonic diatoms, dinoflagellates, Chrysophytes, Blue-greens and Greens – factors controlling phytoplankton populations, primary productivity of the sea.

UNIT II. Marine algal physiology – light relations, temperature relationships, response to osmotic changes, responses to pH. Mineral nutrition in the seawater environment, essential trace elements, micronutrients and growth substances. Pneumatocyst gases.

UNIT III. Marine angiosperms – their distribution in the World ; adaptations.

Uses of marine algae – food, feed, fodder, fertilizer, source of industrial chemicals (agar-agar, alginic acid and diatomaceous earth) and medicines.

LIMNOLOGY

UNIT IV, Physico-chemical properties of freshwater sources –Ecology and chemical characteristics of lotic and lentic habitats – Morphometric studies.

UNIT V. Phytoplanktonic and Phytobenthic organisms of lotic and lentic habitats –their adaptation. Periodicities –(succession, primary, secondary and manmade). Energy concepts and productivity. Aquatic flora.

REFERENCE BOOKS FOR STUDY

1. Dawson, E. Y. – Marine Botany – An Introduction – Holt, Reinhart & Winston, New York.
2. Desikachary, T.V. (1974)- Marine Plants.- N.C.E.R.T., New Delhi.
3. Chapman, V.J. (1970)- Seaweeds and their uses – Metheun , London. 287 pp.,
4. Dawes, C.J. (1981)- Marine Botany - John Wiley (Interscience) Publication, N.Y., Chichester. Brisbane. Toronto. Singapore.
5. Dring, M.J. (1982)- The Biology of Marine Plants –Edward Arnold, London.
6. Fincham, A.A. (1984)- Basic Marine Biology – British Museum (Natural History), Cambridge University Press, Cambridge, London.
7. Hansen, E. J., Packard, E. J., & Doyle, T. W. (1981)- Mariculture of Red seaweeds- A California Sea Grant College Program Publication, Univ. Calif., La Jolla, Calif.
8. Leeper, E.M. (1976)- Seaweed Resource of 21st Century? – Bioscience 26: 357-358.
9. Levring, T., H. A. Hoppe & O. J. Schmid (1969) Marine Algae. A survey of Research and Utilization, Cram, De Gruyter, Hamburg.
10. May, J. (1963) There is adventure in Marine science. Bailey Bros. & Swinfen Ltd., London.

11. Meadows, P.S. & Campbell, J.L. (1978)- An Introduction to Marine Science- Blackie, London.
12. Medlener, J.C. (1967) Seaweed – a Growing Industry- Pacific Search, Seattle, Wash.
13. Prema Santhanakrishnan, (Mrs.) – Algae of Indian Coasts(in Tamil) – Tamilnadu Text-Book Society, Madras.
14. Raymont, J.E.E. (1963)- Plankton and productivity in the oceans, Oxford.
15. Russell, I. (1982)- Wild life- the seashore- David & Charles, North Pomfret , Vermont, U.S.A.
16. Wimpenny (1966) The plankton of the sea. Faber & Faber Ltd., London.
17. Wood, E.J.F. (1965)- Marine Microbial Ecology- Reinhold, New York.
18. Zobell, C.E. (1947) - Marine Microbiology- Chronica Botanica, Waltham, Mass.

Limnology

1. Charles, R., J.A.Goldman & Horne, J. (1983)- Limnology -McGraw Hill Intern. Publications, N.Y.
- 2.FAO -(1996)- Simple methods for Aquaculture – Management for freshwater fish culture – ponds and water practices – (U.N. O.)F.A.O., Rome.
- 3.Malan , T.T., (1980) - Freshwater Ecology – Longmans, London.
- 4.Moss, B. (1982) – Ecology of freshwaters – Blackwell Sci. Publications, London.
- 5.Williams, W.D. (1983) – Life in inland waters – Blackwell Scientific Publications, London.