

PREFACE TO THE FIFTH EDITION

The frontiers of ecology and environmental biology are not east or west, north or south, but wherever one looks for them—and it is gratifying to note that many different persons, including scientists, sociologists, politicians, economists, and geographers, who have some concern for the quality of our environment, are now attempting to seriously look at these frontiers in a holistic perspective from diverse angles. This book is based on recent views, ideas, and contributions of some of the world's leading ecologists, with special reference to environmental pollution and to the more important unifying concepts of modern ecology. Such exciting—and sometime still controversial—hotspots of current interest as homeostasis, resilience, stability and diversity of ecosystems, ecosystem management and optimization, predator-prey relations, inter- and intra-specific competition, and the niche concept have been explained briefly so as to highlight some recent trends in the subject.

In the fifth edition I have attempted to give a somewhat wider coverage to tropical ecology than in the earlier edition because of the following two important reasons: (1) the greatest concentration of plant and animal species and their functional diversity occurs in the tropics; and (2) tropical ecosystems are being destroyed fast and without sufficient conservation of representative vegetation, wildlife, and of genetic resources. Some recent estimates indicate that about 1.5 million kinds of living organisms have been identified and named so far, and that there probably remain at least twice as many still to be named. Of these about two-thirds of the estimated 1.5 million are of temperate regions; in contrast, only about one in five of those in the tropics have been named. In fact, many of the two million or so tropical species of plants and animals which have never been catalogued or named scientifically may well become extinct before they are collected once.

A separate chapter is devoted to community and population ecology and in this I have attempted to bring out the interfaces between animal and plant ecology and to cover the various aspects in an integrated manner. In writing this chapter I have perforce had to

depend heavily on work done in temperate countries (especially on animal ecology and on animal-plant interactions) because of the woeful paucity of reliable and authoritative data from tropical countries, including India

A selected set of some important contributions to our knowledge of ecology (especially grasslands and forests) in some developing countries, including India, is presented in one chapter. As far as possible, the more authoritative contributions only have been mentioned and much of the work relates to the northern, central and western parts of India since comparatively very little ecological study of grasslands and forests, etc., has been made in south India.

In view of the fact that environmental pollution constitutes one of the most important areas of applied ecology and has direct relevance not only to ecology but to science, engineering, and everyday-life, the two chapters devoted to water and air pollution have been further expanded and enlarged while still maintaining the physico-chemical, biological, and engineering perspectives.

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