



ECOLOGY WORKBOOK

R. Misra

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PREFACE

It gives me pleasure to place **ECOLOGY WORKBOOK** in the hands of students who have waited long for it.

The publication of 'Indian Manual of Plant Ecology' in 1955 clearly demonstrated big gaps in our knowledge for want of ecological data from the tropical countries. Since then many more students in India have shown interest in the subject. Meanwhile, the preparatory phase of the International Biological Programme has emphasized the writing of standard field and laboratory manuals.

With a view to make India's participation in the International Biological Programme effective I invited twentyfive selected University teachers in April, 1966 to join a three week 'School on Plant Ecology' held in October-November, 1966. This gave me six months' time to provide the school with the material for trial in the field and the laboratory. I looked to ten of my colleagues and students for help which was offered generously. They prepared much of the original draft manuscript, backed by their experience of teaching and research. Hence, I am thankful to all of them viz., Dr. K. C. Misra, Dr. R. S. Ambasht, Dr. S. S. Ramam, Dr. H. R. Sant, Dr. R. S. Tripathi, Dr. S. M. Mukherjee, Dr. K. P. Singh, Dr. J. S. Singh, Dr. R. R. Das and Dr. S. B. Pandey. Further, the last two persons helped me in preparing the manuscript in the final form. My wife and Sri Brij Gopal assisted me in the correction of the proof.

The 'School on Plant Ecology' was held with the financial assistance of the University Grants Commission. The participants of the school gave valuable suggestions for improving the text and I am thankful to all of them.

It is hoped that the exercises presented in the workbook will lead to better comprehension of the concept of ecosystem. They are likely to reveal the biological basis of organic productivity. With this background many of the biologists will find interest in the International Biological Programme which concerns with the biological basis of production and human welfare.

The workbook presents a series of exercises for understanding and evaluating the flow of energy and cycling of water and minerals in the three major plant ecosystems viz. grass, forest and freshwater. The exercises are given separately for each of the three ecosystems. It begins with grass since most of the University centres and laboratories have easy access to it. A practice of the exercises first in the grassland and

the laboratory is likely to equip the worker with knowledge and confidence to move on to the forest or the freshwater areas for study. It has, therefore, been found convenient to use identical decimal numbering of the exercises for corresponding topics of the three ecosystems. This method has the advantage of comparing and bringing together data from the record books, for appreciating the structural and functional differences between the ecosystems. Lists of the flora of Varanasi giving habit and phenology of the species, are included in appendices A, B and C of the book corresponding to grass, forest and freshwater communities. It is hoped that these model lists will be replaced by appropriate ones for their own areas, by the workers.

I shall be grateful for suggestions for further improvement of the workbook in its future editions.

Varanasi (India)
July 20, 1968

R. MISRA

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