Preface

In the pages of this unique book, Professor David Moore and his colleagues have made a timely and valuable contribution that will be of interest to readers throughout the world. The authors have brought together in one volume an authoritative and attractive account of the history, structure, and distribution patterns of the Earth's vegetation. There is nothing directly comparable, and the book should be read with profit and enjoyment by many.

All life on Earth, including our own, ultimately depends upon the energy-capturing activities of approximately 300,000 species of green land plants and algae. In view of this, nothing is more critical for human prosperity than a proper understanding of these organisms and the ways in which they are distributed over the surface of the Earth. The properties of plants, the ways in which they have evolved, and the kinds of communities that they comprise—all are of fundamental interest.

We live at a time when the human population of the globe has already exceeded 4,500 million and is expected to reach at least 8,000 million during the first half of the next century. By that time, some two-thirds of all the people on Earth will be living in the tropics, where their activities will have largely eliminated undisturbed tropical vegetation as we know it today.

Virtually all of the land on Earth that can be cultivated on a sustainable basis, using the technology that we now possess, is already being utilized, and unless a significant advance is made in the near future, much of the land that is being cleared in the tropics will simply be abandoned after a few years or decades of productive use. In addition, many authorities believe that the widespread clearing of tropical forests, coupled with the difficulty many plants and animals have in reproducing outside undisturbed forest, will lead to the extinction of perhaps a quarter of all the kinds of organisms on Earth during the next few decades. Only a greater knowledge of the world's green plants, to which this book makes such a valuable contribution, can provide a basis for either conserving or utilizing these species, and thus helping to alleviate the problems of hunger that already beset at least a tenth of the people on Earth and threaten many more.

We derive some 85% of our food from no more than 20 species of plants at present. About most of the remainder, we know virtually nothing. There are doubtless many plants that would be of great value to human welfare if we understood their properties; only a greater appreciation of this fact by educated people throughout the world will lead to an appropriate acceleration of our inventory of their relevant characteristics. The permanent alteration of many types of vegetation and widespread extinction that are taking place highlight the urgency of these matters. Nothing comparable has occurred in the history of life on Earth at least since the end of the Permian era, some 230 million years ago. In fact, as this book develops in more detail, the human population has now reached the level where it is permanently restructuring the global ecosystem for its own purposes, and it badly needs the tools to do this properly, so that total productivity may continue or be increased in the future. Increased knowledge of the green planet described in the following pages is essential if these tools are to be developed with due regard for Man's aspirations and the plant cover of the world.

PETER H. RAVEN
(Director, Missouri Botanical Garden, St. Louis, USA)

Opposite Various environmental factors are at work in this savanna landscape in the Serengeti Plains, Tanzania. Browsing by ungulates and a prolonged dry season with fires restrict the tree cover. Here, a thunderstorm is about to end the dry season, bringing the rains that sustain the savanna grassland.