

Dipterocarp biology, ecology, and conservation

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Abstrak

Asian tropical forests are among the most diverse on the planet, a richness that belies the fact that they are dominated by a single tropical tree family, the Dipterocarpaceae. Many other families contribute to Asia's natural diversity, but few compare to the dipterocarps in the number and variety of species that occupy the forest canopy. Understanding the ecology and dynamics of Asian forests is, to a very great extent, a study of the Dipterocarpaceae. This book synthesizes current knowledge on the dipterocarps. The family is explored through ecological, evolutionary, and biogeographic perspectives. The variety of dipterocarp forest formations in both the ever-wet and seasonal tropics is described, with due consideration given to the poorly known African and South American dipterocarp species. The considerable progress on the phylogeny and biogeography of the family is synthesized. A chapter on dipterocarp reproductive ecology, and particularly masting behaviour, reflects the considerable research interest attributed to this subject and its importance in shaping the ecology of Asian lowland rain forests in particular. Ecophysiological responses to light, water, and nutrients, which underlie mechanisms that maintain dipterocarp species richness, are addressed in separate chapters. At broader scales, dipterocarp responses to variation in soil, topography, climate, and natural disturbance regimes are explored from population and community perspectives in two additional chapters. The book concludes with a consideration of the economic values of dipterocarps and the recent and ongoing threats to dipterocarp forests. Looking to the future, a scientific foundation is required to capitalize on opportunities for conservation and restoration, and it is this to which this book aims to contribute.