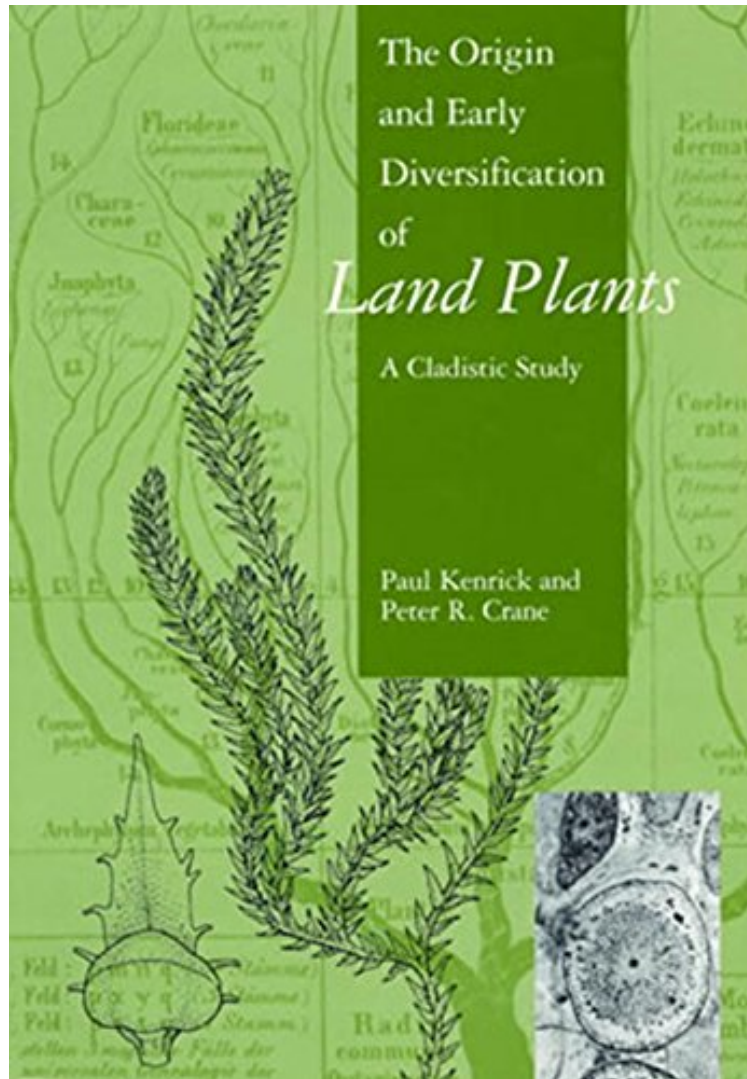


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The Origin and Early Diversification of Land Plants - A Cladistic Study (Smithsonian Series in Comparative Evolutionary Biology)

KENRICK PAUL, Peter R. Crane
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KENRICK PAUL, Peter R. Crane : The Origin and Early Diversification of Land Plants - A Cladistic Study (Smithsonian Series in Comparative Evolutionary Biology) before purchasing it in order to gage whether or not it would be worth my time, and all praised The Origin and Early Diversification of Land Plants - A Cladistic Study (Smithsonian Series in Comparative Evolutionary Biology):

The appearance of land vegetation on Earth 450 million years ago marked a period of unparalleled innovation in plant evolution. The transition from algae to the first land plants---the transition from water to air---entailed adaptations that gave rise to many of today's major plant groups, including mosses, liverworts, lycopsids, and ferns. An understanding of early land plant relationships is critical to a full-scale appreciation of phylogenetic patterns in the plant kingdom. The first comprehensive application of cladistics---a system of defining taxa by shared characteristics to infer evolutionary relationships--- to the massive body of data on both living and fossil plants, this book clarifies phylogenetic patterns within and among basal groups of land plants. Summarizing the morphological and molecular evidence available, the authors critically explore the distribution of characters such as stem branching, leaves, and heterospory. Their specific phylogenetic hypotheses make explicit previous morphology-based studies, and their inclusion of fossils clarifies relationships among extinct groups. The book contributes significantly to current ideas on the homology of land plant structural features and supports the monophyly of vascular plants as well as the early divergence of lycopsids from other tracheophytes. Illustrated with line drawings and complete with appendices detailing the morphology of early fossil plants and their living relatives, *The Origin and Early Diversification of Land Plants* discusses the implications of its phylogenetic conclusions for understanding the evolution of land plant structure, life cycles, the appearance of groups in the fossil record, biogeographic patterns, and related geological events. In its detailed analysis of the patterns and processes underlying the origin of land plants, the book sheds light on central questions surrounding the initial assembly of terrestrial ecosystems.

[R]emarkable . . . a treasure of organized information about specific taxa and characters; well-posed phylogenetic questions addressed by the analyses of taxa and traits whose choices are carefully justified; syntheses of molecular and morphological evidence; evolutionary scenarios explaining biogeographic patterns, morphological variation, and life history patterns -- in short, a reference book with a point of view. . . . An important guidepost for future comparative studies in botany. (*Quarterly of Biology*) This excellent and detailed book stands as a model for how to approach the study of evolution, and is an essential addition to the bookshelves of anyone interested in the scope and diversification of life. (*Nature*) [T]he style and precision with which the information is presented and illustrated is beyond reproach. . . . [T]his book is, without a doubt, a major contribution to the literature of plant science, both as a source of information and as a challenge to future generations of plant scientists. (*Tree*) [T]his volume will become a landmark in the literature on land plant evolution and remain so for many years to come. . . . The authors do a good job of bringing order to a chaotic field. (*Science*) This book is a must for professional botanists, but weekend naturalists should read it as well, just to get a feel for the true wonders that lie out there, behind what is immediately visible. Seek it out and buy it -- it will set you on a new plane of inquiry. (*New Scientist*)

About the Author Paul Kenrick is a researcher in the Department of Paleontology at the Natural History Museum in London. Peter R. Crane is the director of the Royal Botanic Gardens, Kew.