

starts with a description of developmental targeting of an *Agrobacterium*-derived cytokinin biosynthetic gene, *IPT*, under the control of a senescence-responsive promoter, creating an auto-regulatory loop to retard senescence. This is followed by a detailed analysis of current understanding of *cis*-acting elements involved in abscisic acid- and auxin-responsive gene expression.

Overall, *Inducible Gene Expression in Plants* provides a useful reference book for the researcher wishing to exploit transcriptional mechanisms to regulate gene expression in plants and draws attention to the complexity of plant gene regulation. Throughout the book the potential applications of the fundamental studies which are described are emphasized. However it would have been useful if the introductory chapter could have placed transcriptional regulation within the context of other mechanisms such as post-transcriptional and post-translational systems that plants employ to control gene expression.

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Cladistic Biogeography — Interpreting Patterns of Plant and Animal Distributions (2nd edn). Christopher J. Humphries and Lynne R. Parenti. Oxford University Press, Oxford. 1999. Pp. 187. Price £35.00, hardback. ISBN 0 19 854818 4.

For more than two centuries, biologists have tried to understand geographical distributions of plants and animals. De Candolle (1820) was the first author to propose that the current geographical distribution of living organisms depends upon both ecological and historical parameters. The influence of historical parameters can be assessed via historical biogeographic studies. Cladistic biogeography (or phylogenetic biogeography) is a method for inferring historical biogeography that combines phylogenies with distribution patterns.

The first chapter of this book presents a review of the history of biogeography going back to the eighteenth and nineteenth centuries, and citing prestigious biologists such as Linnaeus, Buffon, De Candolle, Wallace and Darwin. The second chapter, much more technical, deals with methods. At the end of these two chapters, and with the help of the glossary, the reader not specialized in historical biogeography should be sufficiently familiar with the jargon used by biogeographers to understand the two next chapters. Using both real and hypothetical examples, chapter three surveys some practical problems one might face in carrying out a

biogeographic analysis. Finally, in the last chapter, the authors have attempted to provide their own explanation for both antitropical (taxa present in boreal and austral zones, but absent from the tropics) and austral distributions.

I would recommend Humphries and Parenti's book as a key reference text for any biologist interested in biogeography. This book represents an easy way to gather together all the concepts and methods concerning historical biogeography, and to immerse oneself in a research field that is relatively isolated as a result of its peculiar vocabulary. Nonetheless, I was expecting to obtain some feeling about what will happen in the few next years in historical biogeography. This was not the case. The book gives a very precise view of the past, but does not provide any clues for imagining new directions. Furthermore, when reading the book, I had the impression that very few recent references were cited. I decided to carry out a more precise assessment of this feeling. First, it appears that almost 30% of the cited references are older than 1980, which is not surprising considering that biogeography interested scientists two hundred years ago. Secondly, 66% of the cited references are between 1980 and 1995, clearly corresponding to the golden age of historical biogeography with 14 citations per year on average. Finally, less than 4% of the references come from the last years (only 12 between 1996 and 1999!). How might one explain such a decrease in the number of papers dealing with historical biogeography? This is very surprising because new methods for inferring area cladograms (relationships among geographical regions) were developed early in the nineties, and many reliable phylogenies are now available thanks to the development of molecular phylogenetics. A possible explanation is that the authors missed many recent papers, but undoubtedly this is not the case. An alternative explanation could be that classical historical biogeography is close to extinction, and that the field is now moving towards intraspecific phylogeography (Avise *et al.*, 1987). Humphries and Parenti's book does not deal with this area.

References

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