

Preface

This volume is derived from the Annual Symposium of the British Ecological Society on 'Speciation and Ecology' which was held at the University of Sheffield, 28–30 March 2007. The idea for this Symposium arose during a previous meeting in the series, the 2002 'Macroecology: Concepts and Consequences' meeting organized by Tim Blackburn and Kevin Gaston. The 2002 meeting concentrated on large-scale diversity patterns. Many speakers acknowledged the role of speciation in generating diversity and influencing patterns of diversity. Although there was some discussion of the factors that determine rates of speciation, it was striking how little contact there seemed to be between the discipline of macroecology and the large and active field of research into mechanisms of adaptive divergence and speciation. 'Ecological speciation' has been an area of research growth in recent years, asking how ecological drivers influence the speciation process. However, the opposite direction of effect, how speciation processes impact on ecological patterns, has been studied less. Therefore, we proposed a meeting whose central objective was to foster dialogue between these two fields.

The meeting had an unusual mix of participants but we hope that they managed to communicate effectively with one another! The chapters in this book reflect the range of topics discussed and we hope that they will help to continue the conversations that were started in Sheffield. In our introduction, we try to set the scene by considering mechanisms of speciation and their potential impacts on biodiversity, both in terms of species' geographical distributions, and their interactions within ecological communities. In particular, speciation mechanisms can be divided into those that generate ecologically distinct species and those that do not, for example because reproductive isolation is driven by sexual conflict. These two classes of speciation mechanism may contribute to diversity in different ways, adding to either local diversity or beta diversity, for example, or affecting levels of within-species functional diversity. We also introduce the problems surrounding the estimation of speciation rates, an essential preliminary to understanding the factors that influence those rates.

We have not subdivided the book because we are reluctant to separate parts of a spectrum. However, the chapters are ordered in a progression, similar to that used at the Symposium, which begins with the nature of species, how we count the units of biological diversity and some of the limits on diversity; considers mechanisms of speciation and adaptation; and then looks at rates of speciation both from the perspective of molecular phylogenetics and that of the fossil record. We hope that readers will see some logic in this arrangement and will find the book stimulating and enjoyable.