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0521839963 - Macroecology: Concepts and Consequences - The 43rd Annual Symposium of the
British Ecological Society held at the University of Birmingham, 17-19 April 2002

Edited by Tim M. Blackburn and Kevin J. Gaston

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Macroecology: Concepts and Consequences

*The 43rd Annual Symposium of the British Ecological Society
held at the University of Birmingham*

17–19 April 2002

EDITED BY

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History of the British Ecological Society

The British Ecological Society is a learned society, a registered charity and a company limited by guarantee. Established in 1913 by academics to promote and foster the study of ecology in its widest sense, the Society currently has around 5000 members spread around the world. Members include research scientists, environmental consultants, teachers, local authority ecologists, conservationists and many others with an active interest in natural history and the environment. The core activities are the publication of the results of research in ecology, the development of scientific meetings and the promotion of ecological awareness through education. The Society's mission is:

To advance and support the science of ecology and publicize the outcome of research, in order to advance knowledge, education and its application.

The Society publishes four internationally renowned journals and organizes at least two major conferences each year plus a large number of smaller meetings. It also initiates a diverse range of activities to promote awareness of ecology at the public and policy maker level in addition to developing ecology in the education system, and it provides financial support for approved ecological projects. The Society is an independent organization that receives little outside funding.

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Preface

The past decade has seen the flowering of a bold and distinctive research programme in ecology that is concerned with thinking big. It is the ecology of wide expanses of space, long periods of time and large numbers of taxa. In a word, coined by Jim Brown and Brian Maurer, it is the discipline of macroecology.

Briefly (more detail is given in Chapters 1 and 21), macroecology is a way of studying relationships between organisms and their environment that involves characterizing and explaining statistical patterns of abundance, distribution and diversity. It aims to identify general principles or natural laws underlying the structure and function of ecological systems, expressed in the patterns of distribution and abundance of the entities that make up those systems. Macroecology explores the domain where ecology, biogeography, palaeontology and macroevolution come together. Although many of its concerns have a long and venerable history, stretching back over almost 200 years, it is an appreciation of the pervasive importance of large-scale effects on ecological systems at all scales, and the attempt to describe the fundamental principles underlying those effects, that mark out the macroecological approach as distinctive and new.

Following some initial misplaced scepticism, the macroecological research programme has been embraced enthusiastically by a growing band of ecologists. It was inevitable that this growth eventually would lead to the desire for an opportunity for practitioners to meet and discuss their interests in a dedicated forum. That opportunity came in April 2002 at the 43rd symposium of the British Ecological Society, held in Birmingham, UK, the first international symposium dedicated to macroecology. This volume is born of that meeting.

It appeared to us, as admittedly partial observers, that the development of interest in macroecology was not being matched by any development of unanimity within the field. Quite divergent opinions existed, and still exist, in the literature about the likely answers to a number of key questions. We think there are three primary reasons for this. First, the largely non-experimental approach necessitated by the scales of concern to macroecologists means that it is difficult, although far from impossible, conclusively to dispatch macroecological hypotheses. Thus, disagreements persist. Second, different workers couch the solution to macroecological questions in terms of different theoretical frameworks, such as speciation/extinction dynamics, energetics, niches or population dynamics. Different frameworks will lead to different conclusions, and so to disagreements. Third, people just plain disagree over the evidence. This is not peculiar to macroecology, or even science.

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PREFACE

A BES symposium seemed to us to present the perfect opportunity to stimulate a dialogue amongst macroecologists about those questions that appeared to have generated the most, or most severe, disagreement in the discipline. With that aim, we planned the format of the meeting as a series of sessions, each one with speakers invited to talk on different perspectives on major questions of interest in macroecology. These questions are retained as section headings in this book.

Authors have taken a variety of approaches to the remit presented to them. Some sections and chapters more directly address the questions as a review of a certain perspective. Others use their chapter as an opportunity to present new ideas or analyses. The chapters are thus a stimulating mix of genesis and synthesis. Our principal concern (albeit one with which we would happily have dealt!), that the questions around which we based the symposium might have been conclusively answered between its inception and its execution, was not realized. The explicitly stated aim of the symposium was a reconciliation of different perspectives on macroecological questions. At the meeting, most of the sessions were marked by a degree of coming together of views, albeit that in some sessions this coming together was more in collision than union. We leave it up to the reader to decide the extent to which any reconciliation is achieved by the chapters herein.

The success of a symposium, and of the volume to which it subsequently gives rise, depends on much hard work by a dedicated group of people. Particular thanks are due to Hazel Norman and Richard English of the British Ecological Society, for organizing the symposium with a maximum of efficiency and, sensibly, a minimum of effort required by us. The vast majority of the praise for the meeting we received from the participants should rightfully have gone to them, and so we formally pass it on now. Their job was greatly eased by the assistance of Donna Willmetts, Julie Zacaroli and the conference support staff at the University of Birmingham and Chamberlain Hall. We would also like to thank Andy Dolman, Harprit Kaur and Claire Tyler for volunteering their help during the meeting to make it run smoothly, further relieving the burden on us.

No amount of organizational prowess will elevate a symposium if the scientific contributions are dull. We were lucky again. From start to finish, the invited speakers both stimulated and entertained the audience. Most of the remaining praise we received for the meeting is theirs, and that of those who so ably chaired the sessions. Thank you all. The symposium also benefited from the enthusiasm and interest of the other participants, and the fact that a high proportion of them took the time and trouble to present their research in poster form. It is a shame that there is no space here even to summarize those fascinating contributions, and that demands on our time during the meeting meant that we could talk to only a small fraction of the people that we would have liked to (particularly those who had travelled long distances to be there). Special thanks are due to Professor John Lawton for his contribution to the symposium. We were delighted and flattered that he took time out of his busy schedule as Chief Executive of NERC to be guest of honour at the formal conference dinner, and to regale the assembled diners with a speech of characteristic erudition and humour. John has been an incomparable influence on both our careers, as he has

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been on those of many ecologists around the world, and the meeting would not have been complete without his presence.

We believe that the quality of the symposium presentations has translated into the quality of the associated chapters in this volume. We thank the authors for the hard work they put into ensuring that this was the case, and for keeping up with the exacting schedule for preparation and submission of their written contributions. This process was aided by the willingness of the referees for these chapters to respond quickly, and constructively, to our requests for reviews. T.M.B. would also like to thank Pat Johnson for her assistance in the days before final manuscript submission. As always, it has been a pleasure to work with Blackwell Publishing, and we particularly thank Katrina McCallum, Delia Sandford and Sarah Shannon for their assistance with the production of this volume.

Finally, we would like to thank those people who make life outside work worthwhile too. T.M.B. particularly thanks Joanna for helping to build his fat reserves with fine food and wine, and Margareta for everything. K.J.G. particularly thanks Sian for her apparently boundless support of a globe-trotting obsessive, and Megan for her love of wild places.

*Tim M. Blackburn
Kevin J. Gaston*