

Preface

Simply defined, biogeography is the geography of life. Biogeographers study an impressive and sometimes overwhelming diversity of patterns in spatial variation of Earth's life forms, from molecular variation among populations of the same species, to geographic variation in productivity and diversity of ecosystems, and distinctiveness of entire biotas among the continents and ocean basins. Today, the field is enjoying a modern renaissance, although its roots extend back to the earliest efforts of humans to understand the geography of nature.

Indeed, biogeography must be one of the most ancient human endeavors. A knowledge of spatial variation in numbers and types of organisms across areas inhabited by our aboriginal ancestors was vital to their survival as they searched for particular kinds of animals and plants to use for food and shelter, and, more generally, as they adapted to a heterogeneous but geographically predictable environment. Explorers and naturalists of the seventeenth and eighteenth centuries greatly expanded our understanding of the geographic variation of the natural world, as their interests and experiences expanded from local and regional scales to a global one. They discovered that organisms and biological communities varied in a highly regular fashion along geographic gradients of latitude, elevation, isolation, and habitat area, and they learned that different regions of the globe—even those with similar climates and environments—were inhabited by different assemblages of species and higher taxa. These very general biogeographic patterns challenged the prevailing views which held that the Earth's diversity was relatively limited and that its continents, oceans, climates, and species were immutable—having changed little since the origin of the planet. Thus, the fascinating geographic signatures of nature would ultimately lead to paradigmatic shifts in our understanding of the origins, spread, diversification, and extinction of life. From these scientific revolutions would emerge entire new disciplines focusing on the dynamics of the Earth (geol-

ogy and, in particular, plate tectonics theory), interactions among organisms and their environment (ecology and environmental biology), and heritable changes in the characteristics of populations and species (evolutionary biology).

Ironically, despite its long and distinguished history and its central role in development of other disciplines, biogeography was not widely recognized as a major discipline in its own right until the latter decades of the twentieth century. The very reasons responsible for its great insights and promise—its holistic and integrative nature—also posed great challenges. Few scientists could master the many fields relevant to the diversity of patterns and processes biogeographers study. Indeed, up until the 1980s, the most comprehensive works in biogeography were those written many decades earlier by the “fathers” of the field, including those by Alfred Russel Wallace, Charles Darwin, and Joseph Dalton Hooker. Few universities offered a course in biogeography and many of us, including two authors of this textbook, never had the opportunity to take a course in the subject.

In order to address the need for a modern, comprehensive textbook in *Biogeography*, James H. Brown and Arthur Gibson published the First Edition of *Biogeography* in 1983. For many of us, Brown and Gibson's text was our first comprehensive introduction to the field, and it fundamentally transformed our careers. Soon other authors followed suit, new biogeography journals were launched, more and more universities and colleges began offering courses in the subject, and a growing number of scientists began referring to themselves as “biogeographers.”

Recognition of the heuristic interest and applied relevance of the field of biogeography continued to grow at an accelerating rate. By the 1990s it was clear that this textbook required a complete revision. The Second Edition of *Biogeography* emulated the original text in its balanced coverage of the entire breadth of the discipline, its integration of ecological and evolu-

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tionary approaches, and its emphasis on general concepts richly illustrated with empirical examples drawn from a wide variety of organisms, ecosystems and geographic regions. We were pleased to see that, in addition to continuing as a popular textbook, the Second Edition became a general reference and frequently cited source in the primary literature.

Although 15 years passed between the publication of the First and Second Edition of *Biogeography*, after only five years it was clear to us that another revision was required. With the addition of Brett Riddle to our team, we again set out to provide a comprehensive and integrative account of the entire field, restructuring the text and updating it with over 1000 new publications from the most exciting frontiers of biogeography. We hope that the Third Edition of *Biogeography* will contribute to this modern scientific renaissance, and that it will soon be necessary once again to update and revise our text with emerging advances in our understanding of the geography of life. That will be a sign that the field is still healthy, relevant, and advancing.

In addition to those who contributed to the previous editions, many additional people—far too many to rec-

ognize individually—have helped to revise, update, and improve this book. We are especially indebted to Douglas Kelt for his careful reading and insightful comments on the chapters in this book, and to other colleagues including Rob Channell, Paul Giller, Larry Heaney, David Perault, Christopher Scotese, and Robert J. Whitaker for their comments on topics discussed in particular sections of the book. Many readers of the previous editions provided suggestions and corrections that we have incorporated here, and we thank them for their assistance. We also thank Andy Sinauer, Kathaleen Emerson, Christopher Small, Janice Holabird, David McIntyre, Suzanne Lain, and the other editors and staff at Sinauer Associates for their unfailing professionalism and Herculean efforts to produce a high-quality book on a tight schedule. Finally, we are indebted to all biogeographers and other scientists, from the earliest workers to our contemporaries, for their contributions to the discipline. It is their individual, collaborative, and cumulative contributions that make biogeography so exciting to teach and study.