

Preface to the Fifth Edition

The 20 years that have elapsed since the first edition of this book have seen major changes in biogeography, which are reflected in this new edition. Some of these have involved the appearance of new techniques of analysis, such as the Theory of Island Biogeography, or the varied (and competing) techniques of interpretation of the data of historical biogeography. As well as increasing the range and detail of established types of data, such as range changes during the Ice Ages, some areas of information have increased to a point at which they are now beginning to make a major contribution to our understanding. For example, the use of computer models in palaeoclimatology is now not only allowing us to understand the interactions of known geological or geographical changes in affecting the world's climatic patterns, but also to make predictions as to what changes might have been expected – even if sometimes these predictions do not seem to conform to what appears to have actually happened.

With increasingly detailed information, we are now also beginning to understand the complicated interactions between plate tectonics, sea-levels and ocean currents, climate and evolutionary change, or for example between plate tectonics and the early spread of flowering plants. Increasingly, the prime factors of biogeography can now be seen as, on the one hand plate tectonics, expressing itself as varied changes in the physical world, and on the other hand the response of the biological world, by means of evolutionary change.

But the most fundamental change is probably in our focus of attention. We are now beginning to realize the extent to which the present-day biogeography of almost every part of the world is already permeated and altered by the activities of humankind. In the first edition of this book, a few pages were devoted to biological conservation and to the alteration of habitats by human activity. At that time, there was still little understanding of the depth of the threat that we pose to our planet's biota and climate, and the 'greenhouse effect' was still mainly a concern for horticulturalists rather than a worry for the whole planet. Now, the science of biogeography can be seen as central to our understanding of the interactions between the physical world and the living world, and of our impacts on both of those. If we cannot understand present-day biogeography and its historical roots, we shall have little hope of ensuring that the biogeography of our world in the future is beneficial, rather than disastrous, for all species. That concern with the implications of biogeography for our own activities and future is now central to the approach of this new edition.

Preface to the First Edition

Biogeography lies at the meeting-point of several fields of study. To understand why a particular group of organisms is found in a specific area requires knowledge of the organism's ecological relationships — why it is associated with this soil, this temperature range, or this type of woodland. To understand why it is found in particular areas of a continent may require knowledge of the climatic history, which may have led to the isolation of scattered, relict communities. Finally, to understand why it is found in some continents and not in others involves knowledge of the evolutionary history of the group itself and of the geological histories of the land-masses, as the processes of continental drift transported them across the globe, splitting them asunder or welding them in new patterns.

As the impact of man upon the earth's animals and plants increases dramatically, we have become more aware of the need to control the effects of our social and industrial habits. Biogeographers and conservationists therefore now also need to understand how man's present relationship to his environment has come about, and the ways in which he has altered, often radically, the structure of the ecosystems he inhabits or uses.

Despite biogeography's connections with ecology, geography, geology, evolutionary history and economic anthropology, it is usually studied in conjunction with only one or two of these disciplines. Our intention here has been to provide enough of the basic elements of all these approaches, so that a student who specializes in only one of them may nevertheless be able to understand the way in which all of them interact to produce the apparently bewildering array of patterns of distribution of life.