

FOREWORD

Every once in a while a gathering of scholars discuss and debate a particular topic that stands out as a guidepost and significant turning point for an entire field. I believe that this book chronicles the results of just such an event. I deeply regret that I was not present to listen to the obviously stimulating and provocative presentations at the November 2008 symposium in Stellenbosch that gave rise to this book. Fortunately, they have been captured in a comprehensive manner for those of us who were not there. The contributors to this volume are certainly the leaders in this field and have laid its foundations, including the organizer of this remarkable event, David Richardson.

The theme that held this meeting together was a retrospective examination of the field of invasion biology, using the 50th anniversary of Charles Elton's landmark book *The Ecology of Invasions by Animals and Plants* as an anchor for the discussions. What makes the results of this meeting so special to me are that they celebrate Elton's seminal contributions to the field. I read Elton's book as a graduate student. Its messages certainly resonated with me because it called to attention an issue of great significance to society as whole and one where ecological science could contribute to understanding the nature and consequences of what was happening. He underscored the issue in penetrating language: 'We must make no mistake, we are seeing one of the great historical convulsions in the world's fauna and flora'. Although I did not get swept into studying this major phenomenon in my early career, Elton's striking words and global assessment of the issue stayed with me, which brings me to the second reason I regretted missing the meeting. It was held in the lovely town of Stellenbosch, South Africa. In the surrounding countryside of Stellenbosch, which had undergone a major transformation due to invading species, my colleague, Fred Kruger, and I were prompted to initiate, in 1980, a post-Elton global assessment of the status of invasive species under the auspices of the Scientific Committee for Problems of the Environment (SCOPE). This project initially updated

the current status of biological invasions globally. Subsequently, with new partners, IUCN and CABI, it took on the larger issue of what factors were driving this phenomenon, and the options for stemming the tide (Global Invasive Species Programme, GISP). This third stage, with the GISP name continuing, focuses on control strategies and methods.

The explosive development of the science of invasion biology in recent years is the subject of this book. It is a critical examination of the rapid progress that has been made. It reveals the extraordinarily richness and complexity of the field, where we have come to a common understanding and where there are still major disagreements. Can we say the field is now maturing because it is attracting the attention of philosophers? Two contributions in this book offer their interesting and debatable viewpoints, and highlight that invasion biology has major social dimensions, including ethical values, and hence warrants deep analysis and scrutiny. Given the social dimensions of the field it is evident that more branches of the social sciences need to become engaged in this area, as noted by several contributors to the volume. At the same time, more of the players of the major driving forces of biotic change, such as globalized trade (for example, the World Trade Organization), have yet to become engaged in a serious manner in discussions, rather than, as at present, often being distant observers.

In addition to the conceptual advances in the field, which so are well outlined in this book, the power of some new investigative tools are discussed, such as the development of comprehensive databases developed by Pyšek and his colleagues, where they are able to document the patterns of introductions and spread through time. These data indicate that the rates of new introductions are accelerating, although not as fast as the current publication rate on invasive species! Then, the remote sensing inventories of invasive species, as chronicled by Vitousek, might help shift us away from sole concern about the end-points of long processes, such as extinctions of a species, to the dynamics of

population-size changes of both native and introduced species as they interact.

The chapters in this book call for the development of new directions for the field, building on the founding platform of community ecology, which it so well summarizes. They look to the many other relevant disciplines – such as biosecurity, economics, ecosystem ecology, epidemiology, institution building, risk assessment, sociology, to name a few – that are so crucial for calling attention to the issue of invasive species and that can bring about policies that will mitigate against detrimental trends to human well-being and enhance those that are favourable. The book then chronicles the results of the initial dramatic explosion of knowledge of the past three decades and the beginnings and

even bigger burst of new knowledge on one of the great drivers of change, biotic homogenization, which ranks alongside global warming as a major transformative agent of the biotic base that supports human society.

In short order, as this field becomes larger, and more dimensions are explored and integrated, the job of tracking the literature will become even greater and will call for just the kind of overall synthesis that David Richardson has so ably orchestrated in this volume. Let us hope he is ready for another round, which certainly will be called for in a shorter time than the 50-year landmark that stimulated this book.

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