

An overview of this book includes the delimitation of four major sections: two chapters on single population considerations; four chapters on simple population interactions, principally predation and competition; three chapters on community level phenomena (i.e., relationships among a number of populations); and four chapters which are only marginally related to the normal subject matter of theoretical ecology. The first three sections (nine chapters) may be taken as a fair introduction to the most recent events in what might be called the MacArthur school of population ecology, the construction of broad "strategic" models whose purpose is to capture only the qualitative essence of various population and community level phenomena—the sacrifice of "precision" in favor of "reality" and "generality". In a multi-authored work, one always expects a bit of unevenness, and indeed, one is not disappointed here, although frequent interchapter references indicate an honest attempt to present the material as something of a coherent whole. The presentation ranges from brilliant (e.g., May's introductory summary of single population models) to adequate, and consequently these first nine chapters can be taken as a reasonable if not excellent introduction to this school of theoretical population ecology.

The last four chapters, according to professor May, "deal with areas on the edge of mainstream ecology". Three of the four are fascinating reading, if somewhat further from that edge than a casual reader might at first be led to believe. Perhaps it was the editor's intention to suggest broadening the limits which define that edge, and in that sense three of those four chapters seem quite appropriate, although certainly not representative of the subject matter that other ecologists would have chosen (my own choices would have been somewhat different). The fourth chapter in this section is on sociobiology, a reiteration of much of the reasoning that used to pass as a scientific justification for Social Darwinism. Its inclusion without some comment as to its controversial nature and the possibilities of misapplications is irresponsible. Its inclusion at all represents a misjudgement, for it clearly does not belong under the heading of theoretical ecology. In my opinion, it does not belong even on "the edge of mainstream ecology". Nevertheless, as it is the only chapter which is of doubtful significance and representative of only a small fraction of the book, it does not detract from the book's overall appeal.

According to the editor, this volume has three purposes: (1) "to review and to draw together some... (recent) theoretical insights", (2) "to show how they can shed light on empirical observations", and (3) "to examine some of the practical implications". It is my judgement that in the first purpose the book is an outstanding success, although the reader must remember that the actual subject matter was chosen with "a certain amount of bias". The degree of

success of the second purpose is somewhat more difficult to assess. Although an impressive number of "examples" from the real world are marshalled in support theory, much (not all) of that support is qualitative, sometimes almost cavalier. If one expects rigorous experimental verification of theoretical predictions, one will be immensely disappointed. Rather, one must be satisfied with something like "the theory says that big things should be pretty much over there and little things over here and indeed, when we look over there, we pretty much see big things and when we look over here, we pretty much see little things—isn't that interesting?" Such is the heritage of this school of population ecology, a heritage with admittedly important precedents. Although such qualitative assessments are sometimes abused, it seems to me that we still have much to learn from the study of general qualitative patterns in support of qualitative predictions. But I also suspect that the reader who is more accustomed to rigorous experimental procedures as the only method for testing theoretical predictions will be somewhat disappointed with this particular attempt to couple the real world with theory.

In its third purpose (the practical implications), the book clearly falls short. The attempts at tying theory to practical problems are minor at best. For example, in the chapter on "Island Biogeography and the Design of Natural Reserves", a great deal is said about the theory of island biogeography but really very little about the design of natural reserves. Indeed, the summary of the theory is one of the best I've read, but the suggestions about nature reserve design (the few that are there) are the sorts of suggestions I've heard many times from naturalist friends who never heard of island biogeography theory. The two chapters that explicitly relate to practical problems (*Schistosomiasis: a Human Host-Parasite System*, and "Man versus Pest"), although excellent in their own right, make very little reference to the principles discussed in the first nine chapters.

Lest the above sound too negative, let me hasten to reiterate that, in its first purpose, the book is an outstanding success. It is worth reading for that alone. Had Professor May not included his second and third purposes in his introduction, this review would be much shorter.

In a book such as this, one is tempted to voice the usual laudatory comments deserving of such an obviously well put together volume (which I have done), following with the more or less mandatory small points of disapproval which, in any case, do not detract significantly from the book's overall quality. Indeed, it is a very well put together book with an average number of fairly obvious flaws. But there is something more that is wrong with this book, something that should not be too bothersome for anyone familiar with the literature in theoretical ecology, but something of which the more naive reader should be aware. The book is excessively optimistic. The book makes it appear that the science of theoretical ecology is much further along than is generally accepted by the ecological scientific community. Much has been written about theoretical ecology in the last ten years, some of which is included in this book. Most ecologists question whether or not all this recent activity has actually helped us understand nature. Reading this book (with some obvious exceptions) may give the reader

the opposite impression. Indeed, casual reading might suggest that the book was put together to represent a sort of paradigm shift, though the editor clearly never makes such an immodest claim. My own feeling is that, while this book represents a clear exposition of some of the more popular current trends in theoretical ecology, it certainly does not represent anything other than Kuhn's notion of "normal" science.

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