

# Book Reviews

## Awkward Reminders

**Models in Ecology.** J. MAYNARD SMITH. Cambridge University Press, New York, 1974. xii, 146 pp., illus. \$10.50.

In the first sentence of his preface, Maynard Smith notes that "ecology is still a branch of science in which it is usually better to rely on the judgement of an experienced practitioner than on the predictions of a theorist." Having thus primed our biases, he proceeds with a valiant effort to present ecological theory in simple terms, vigorously opposing himself at almost every turn with awkward reminders of simplifying assumptions and exceptions. This conflict is particularly apparent in chapter 8, which reviews attempts by Kerner and Leigh to construct a statistical mechanics of populations. The equations are derived (or merely presented), and then destroyed with a discussion of the weaknesses of the equations to predict and of unrealistic assumptions behind their derivations. The reader is left with mixed feelings—with a better understanding of a few complicated problems but mostly with an insight into our inability to understand populations.

Maynard Smith uses his inimitable skill of reducing problems to their most basic form in a heroic, and I believe, largely successful, attempt to bring the semimathematical ecologist to an awareness of the awesomely hairy state that population ecology is now entering. But this skill does not generally leave the reader with a better understanding of the concepts; I find the book slightly depressing in that the author's staunch support of the value of simple models is largely undermined by his own examples.

A wide range of topics is covered beginning with predator-prey interactions without consideration of age structure, and then incorporating breeding seasons and age effects. The form of the basic equations and causes of oscillations and their stability are discussed. Age structure per se is not mentioned, however.

Competition, largely from a classical

viewpoint, but again with a treatment of population fluctuations and their stability, is the subject of another chapter.

Short-range migrations—that is, the dynamics of dispersion—are explored, and a particularly nice account is given of the effects of such movements on predator-prey stability.

Much of the book is devoted to the question Is stability a consequence of complexity? Complexity both within and between trophic levels is considered and some interesting conclusions are reached. The main conclusion seems to be that complexity encourages instability if the values of the population interaction coefficients ( $\alpha$ 's) are randomly distributed. Since, in general, stability appears to be greater in more complex systems, we conclude that the alpha values are nonrandom—in fact, that certain patterns in alpha value distribution are likely. That these patterns might be predictable from considerations of selective advantages to individuals seems obvious. Unfortunately selection pressures on alphas are discussed only very briefly and indirectly (chapter 11 on coevolution).

The final chapter discusses territoriality. This chapter is something of an enigma in that neither its inclusion nor its conclusions are clearly tied to the bulk of the material in the book. We are left with little beyond the observation that territoriality should stabilize (note: "stabilize," not "limit") populations. An additional but undiscussed conclusion is that density of breeding colonies can be tripled if the members simultaneously shuffle their territories about (as population pressures force an approximate solution to the packing problem) before settling down. Could this somehow be related (via kin selection) to the perplexing synchrony of nesting behavior in some birds? Is mating synchrony *not* the important fact, but merely a consequence of the shuffling process?

As with any book, this one has its annoyances: chapter headings occasion-

ally are misleading, an occasional conclusion is made the derivation for which is either nonexistent or given much later (with no forewarning), and some of the mathematics is rather opaque. But, on the whole, the book is well organized and written. The only disappointment is that there is a paucity of the insights that characterize most of Maynard Smith's writing. Maybe this reflects the complexity of the material; perhaps, in spite of the author's protests, population dynamics of multiple-species systems is simply not amenable to treatment with simple, general models.

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## Wellsprings of Anthropology

**Encountering Aborigines. A Case Study.** Anthropology and the Australian Aboriginal. KENELM BURRIDGE. Pergamon, New York, 1973. xii, 250 pp. Cloth, \$12.50; paper, \$6.95. Pergamon Frontiers of Anthropology Series.

It has often been suggested that the ethnographic experience, the experience of trying to comprehend the world as construed by a people culturally alien to the observer, is an important prelude to understanding the patterning of one's own culture. It should be a matter of some interest, then, when a man with such an extensive background in field ethnography as Kenelm Burridge undertakes the task of putting anthropology in its cultural context. Although the title of the book might suggest it is a review of the accumulated anthropological knowledge of the Australian Aborigines, that is not the case. Rather, it is concerned with the way the anthropological enterprise has been shaped by the context of Western civilization, as that enterprise is revealed through its praxis among the Aborigines.

Burridge begins, in the manner of an ethnographer who has access to historical materials for the group under study, by relating the existence and character of anthropology to the intellectual and moral heritage of Western civilization. Members of other cultures have engaged in the collection of observations on peoples alien to themselves, but it is only people who participate in the Western cultural heritage who have developed an intellectual discipline based on these observations. More specifically, Burridge sees the

fact that anthropologists ask the questions "What is man?" and "Whence his coming, becoming, and going?" as related to the particular combination of "rational objectivity" and "participatory oneness" achieved through the Greco-Christian synthesis. Thus, while not ignoring the essentially destructive consequences of European expansionism for the Australian Aborigines, among others, he sees the development of anthropology not as solely, or even primarily, related to this form of imperialism, but rather as related to what he calls the "search for otherness." This contemplation of cultural otherness was born out of participatory values, as exemplified in the Pauline injunction to go out among the peoples of the world with understanding, and rational values, as exemplified in Plato's *Republic*, which utilizes logic to construct a cultural alternative. Burridge sees it as producing intellectualizations concerning the question "What is man?" rather than the question "Who am I?" and as encouraging the exploration of the self through comparison with other, unlike selves rather than through "received tradition and personal insights." As he puts it (p. 232):

The opposition between rational objectivity and participation in oneness has always informed the substance of anthropological thought and investigation. Given the Christian synthesis, the lineaments of God were to be sought in those whom He had made in His image. Attempting to "save the data" by seeing it as God—the epitome of the rational—might have seen it, through the device of a rationally objective intellectual construct, has always been qualified by the exhortation to engage the participatory values.

Burridge encourages us to look to the early and continuing dialectic interplay between rational objectivity and participatory oneness, rather than to a lineal descent from the scientism of the Enlightenment, for an explanation of the "European signature" distinctive of anthropology. He further argues that were anthropology a product only of the imperialistic and rationalistic trends in Western civilization it would not be characterized by the assumption of a moral imperative in the relationship between observer and observed which exhorts us to preserve each kind of cultural otherness and to value and understand it in its own terms. This imperative is, in Burridge's view, rooted in the Christian tradition.

After delineating these ideas in an initial chapter, Burridge explicates them

utilizing familiar problems in anthropology posed by the Australian materials. The second chapter begins with a historical survey of the published material on the Aborigines, then moves to a discussion of the general character of Aboriginal life which builds toward characterizing certain "themes" or aspects of world view inherent in this kind of life. This view depicts Aboriginal man as like everyman in the moral and practical problems he faces except as his options for solution are shaped by cultural and natural circumstances. The third chapter addresses the question "What kinds of relationships do Aborigines and their cultures bear to other kinds of people and their cultures, and how do we express them?" (p. 85). Unlike the preceding chapter, it focuses on those studies informed by the assumption that Aboriginal life is different from other kinds of human life, and examines problems in the task of attempting to conceptualize the differences. This provides Burridge with a context for discussing some of the problems inherent in various classificatory and evolutionary frameworks that have characterized anthropological thought at various times. His critique of evolutionary theory is particularly interesting in terms of his general thesis. He objects to much of the work done under the evolutionary banner as disengaged from the moral imperative, and so from the reach into otherness, and as motivated by professionalism and careerism. The fourth chapter takes its departure from studies of Aboriginal social organization, but more importantly addresses the issue inherent in the fact that the way a human society is seen to be organized is a function of the assumptions held by the observer concerning the purposes of such an organization. He compares the impasse reached in the so-called Murngin controversy by contemporary social anthropologists to that reached by Medieval angelologists concerning the spatial properties of angels in that both stemmed from failure to examine basic assumptions and were only further confused by appeals to rationality and empiricism. The fifth and sixth chapters, on religion and culture change respectively, similarly point to difficulties in understanding these phenomena which have arisen from a failure to fully embrace the "otherness" of the Aborigine because of a dependence on our own logicity.

Burridge is not sanguine about the future of anthropology. He sees its

distinctiveness being gradually eroded by professionalism rather than humanism, by incursions of scientific technique in place of intellect, and by a loss of concern for the distinctive quality of other cultures through mathematically based structural descriptions. Since he believes our intellectual progress to be moved by the alternating swings of a dialectic, however, there is some hope that the field might yet be saved as current trends run their course, and Burridge can count the book a success insofar as it moves its reader into a greater awareness of whence he came intellectually and where, possibly, he might go.

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## Wartime Scientific Efforts

**OR in World War 2.** Operational Research against the U Boat. C. H. WADDINGTON. Elek Books, London, 1973 (U.S. distributor, British Book Centre, New York). xvi, 254 pp., illus. \$7.25.

This firsthand account of the British antisubmarine operations research effort during the second World War was written in 1946. The book was set in type, but, in Waddington's words, it

... turned out to be a ghost edition. Change in the political climate, the fall in temperature towards the Cold War, led the Security Authorities to withdraw permission for publication. Their reasons were not, of course, explicitly stated, but so far as I can recollect our correspondence, they did not object to the publication of any of the particular factual data mentioned. ... They had come to the conclusion, however, that the way in which these facts had been synthesized into an account of a coherent scientific study, of all the factors which contribute to the effectiveness with which part of the military forces perform their tasks, would itself be of potential value to other military forces.

This book would have been much more valuable if it had been released for publication in 1946. If it could have been published in 1951, it would have been a valuable adjunct to Morse and Kimball's *Methods of Operations Research*, published that year. Now, of course, its publication can have little effect on the development of operations research, though it adds greatly to the history of that early period.

Certainly, as a detailed report on the use of operations research in antisubmarine warfare, it is of considerable historic interest, since it expands and