Book Reviews

The Population Biology of Man

The Demographic Evolution of Human Populations. R. H. WARD and K. M. WEISS, Eds. Academic Press, New York, 1976. xii, 158 pp., illus. Paper, $12.25.

It is hardly necessary to point out that human evolutionary studies have been extraordinarily successful in that genetic variability within and between a wide variety of human populations has been amply demonstrated. In addition, some plausible mechanisms for maintenance of this variability have been proposed in a few cases. Without intending to belittle these accomplishments, however, one may call attention to a certain similarity among the population surveys and among the various measures of differentiation that make up the bulk of the literature published during the past half decade. There are a number of reasons, some of which are legitimate enough, for these similarities; but one can be led to the impression that current theoretical models have been rather thoroughly exploited without having raised questions that are thought to be answerable.

It seems to me that despite the apparent stasis in the field terminal pessimism is not warranted. There are at least two fundamental questions which are crucial for our understanding of human evolution and which are at the same time tractable: first, given present data and methods, what are the limits to what we are likely to be able to know? That is, what kinds of models are likely to be testable in human evolutionary studies? Second, in what ways and to what extent is human evolution different from evolution in other organisms? Both of these questions lead quite naturally to the development of evolutionary models which incorporate demographic and social structures that are typical of human populations.

Many of the contributors to this collection of ten papers, which has also been published as volume 5, number 1, of the *Journal of Human Evolution*, are known for their efforts toward these ends. Some of the papers included are of interest chiefly because they suggest methodologies for investigating demographic aspects of evolution (Wobst on locational analysis; Swedlund *et al.* on demographic patterns in colonial New England; Skolnick *et al.* on genealogical reconstruction in the Parma valley), or demonstrate demographic effects on the evolutionary process (Roberts and Mohan on "gene-independent" fitness on Fiji; Ward and Jacquard on the genetic effects of the demographic transition).

Of particular interest, however, are four chapters which, taken together, provide an excellent theoretical justification for the inclusion of demographic parameters in models of human evolution, and in effect propose some general strategies for their construction. The first of these, by Ward and Weiss, is, like the volume itself, somewhat ambiguously entitled "The demographic evolution of human populations." A more precise title might be "Demography and the evolution of human populations." In the chapter, the authors argue convincingly for the incorporation of demographic parameters into evolutionary models, describe the constraints on estimation of these parameters in the populations of interest to anthropologists, and outline some of the evolutionary implications of demographic changes that are thought to have occurred in our past. Because this chapter was prepared as an introduction to those which follow, it does not stand well by itself. It is, however, a very good essay indeed.

In the second chapter, Howell asserts that *Homo sapiens* early evolved a basic biological pattern that has remained largely unchanged to the present. It is thus possible to take information from large modern populations and apply it to the smaller, often nonliterate populations which are of primary interest for evolutionary studies. My only reservation has to do with her heavy reliance on the somewhat questionable "critical fat hypothesis" (a threshold ratio of fat volume to lean body weight) as setting lower limits on age of fertility. Nonetheless, this is one of the best and most explicit statements I have seen of a fundamental assumption which, after all, gives us the justification for constructing human evolutionary models.

Weiss and Smouse present a model that shows that small populations which have high growth potential but whose size is regulated by feedback ("fertility damping" or "mortality damping") do not exhibit the magnitude of stochastic distortions in the age structure that is predicted by nonregulation, low-growth models. This is an encouraging result, because it implies that in some cases the statistics of small populations may be more reliable than was previously thought.

Finally, Jorde and Harpending suggest a fertility-damping mechanism that could lead to the result predicted by Weiss and Smouse, and, more important, they present a technique by which such a mechanism might be measured. The authors have adapted spectral analysis to show the relationship of periodicities in seasonal rainfall and fertility. Unfortunately, those readers who are unfamiliar with the technique and its terminology are likely to find that the intuitive justifications of the method in the paper are less than illuminating. The possibilities of the method are very rich, however.

The significance of this volume lies not so much in the presentation of novel concepts as in the general, highly productive approach to human evolutionary studies. There is much work to be done in genetic and evolutionary demography, and we will no doubt see an increase in effort and in publication in this area. This collection should provide considerable challenge and stimulation to those who are interested in human evolution, and in particular to those who will construct and test more realistic models.

BENNETT DYKE
Department of Anthropology, Pennsylvania State University, University Park

Social Interactions

Nonverbal Communication of Aggression. Proceedings of symposium, Missisauga, Ontario, March 1974. PATRICIA PLINER, LESTER KRAMES, and THOMAS ALLOWAY, Eds. Plenum, New York, 1975. x, 196 pp., illus. $17.50. Advances in the Study of Communication and Affect, vol. 2.

This is the second volume of what could be a very useful series. The title of the volume, however, is rather misleading, since only four of the eight chapters are actually about aggression—"Nonverbal communication of affect and interpersonal attitudes" would be more accurate. Each chapter reports a small number of studies by its author, most of them previously published; the result is that there is a somewhat random sampling of