Coastal Cultures

Prehistoric Maritime Adaptations of the Circumpolar Zone. Papers from a congress, Chicago, 1973. WILLIAM FITZHUGH, Ed. Mouton, The Hague, 1975 (U.S. distributor, Aldine, Chicago). x, 406 pp., illus. $29.50. World Anthropology.

Maritime Adaptations of the Pacific. Papers from a congress, Chicago, 1973. RICHARD W. CASTEEL and GEORGE I. QUIMBY, Eds. Mouton, The Hague, 1975 (U.S. distributor, Aldine, Chicago). x, 320 pp., illus. $28.50. World Anthropology.

Although the oceans occupy over 70 percent of the earth's surface and the human species has lived along their shores for many millennia, anthropologists have, collectively, devoted surprisingly little effort to the study of maritime cultures. These two volumes go some way to redress the balance. The editors look upon maritime anthropology as an emergent subdiscipline of great potential significance: as contemporary as urban anthropology, in the view of Casteel and Quimby; comparable to the anthropological study of agricultural adaptations, according to Fitzhugh.

Both books were spawned when anadromous anthropologists converged on Chicago for the eleventh International Congress of Anthropological and Ethnological Sciences, but the conception of *Prehistoric Maritime Adaptations of the Circumpolar Zone* appears to have been more deliberate than that of *Maritime Adaptations of the Pacific*. Thus whereas Fitzhugh's main aim was "to reassess the circumpolar diffusion question from the new perspective of maritime adaptations from both a historical and comparative basis," Casteel and Quimby sought no such thematic focus. Instead they assembled a diverse batch of contributions by specialists working at many different locations in and around the Pacific. This difference reflects more than just the predilections of the editors. It is also a function of the differing states of anthropological inquiry in the two regions.

Ethnological and archeological research in the high-latitude lands surrounding the Arctic Ocean has a pedigree that reaches back at least as far as Boyd Dawkins's suggestion, in 1874, that the Eskimos represented a relic of European Paleolithic hunting cultures. From the start, circumpolar research has fed on the data and theories of both ethnology and archeology. Sweeping hypotheses—notably Gjessing's concept (1944) of a Circumpolar Stone Age—have been proposed and challenged by the "fraternity of northern specialists" who meet from time to time to review progress. In a valuable introduction to this latest colloquy Fitzhugh looks back over the first century of circumpolar research and identifies three major themes that have dominated it. He finds most influential and persistent the idea, epitomized in Gjessing's hypothesis, that east-west diffusion produced a relatively uniform band of arctic cultures adapted to the icebound margins of the polar sea. By 1960, he suggests, this concept had begun to disintegrate in the face of accumulating contradictory archeological evidence (assisted, he might have added, by the general disrepute into which diffusionist thinking has fallen). Attention has now shifted to the study of contacts between northern hunting and fishing cultures and agricultural societies to the south, especially in Scandinavia. Such contacts follow coastlines from the temperate to the arctic zone along continental margins, and also, in the Soviet Union, major river systems that transect the boreal forest (taiga) and tundra.

The third theme is comparative study of northern cultures. Interest in this approach arises particularly from the apparent lack of historical contact between such cultures in Scandinavia, northeastern North America, and the North Pacific area. It offers the attractive prospect of investigating convergent and divergent patterns of cultural adaptation to similar circumpolar environments. Two patterns of adaptation appear to be dominant, both of which relate to major natural ecotones: that of coastal cultures and that of certain inland peoples, such as the ethnographically known Tungus, Yukaghir, and Chukchi of Siberia, whose traditional territories overlapped the taiga-steppe boundary. This theme led directly to the 1973 symposium. Fitzhugh, whose own research focuses on coastal Labrador, wished to compare his findings with those of Simonsen and others in the comparable environment of northern Scandinavia. This concern broadened to include other fishing and seamammal hunting cultures of subarctic and arctic coasts and archipelagoes, and the present book resulted.

Twenty-two scholars contribute to it (from North America Aigner, Broadbent, Clark, Dumond, Fitzhugh, Grabert, Larsen, Laughlin, McCartney, Taylor, and Tuck; from Scandinavia Christiansson, Gjessing, Malmer, Moberg, Møllenhus, Simonsen, and Welinder; from the Soviet Union Arutiunov, Sergeev, and Vasilievsky; from Japan Ohyi). Their papers are grouped into three regional clusters, and there is a fourth section containing two comparative papers. The first section, on Scandinavia, includes seven papers and is notable for an emphasis on the seasonal and secular interdependence of coastal fishing and sea-mammal hunting, inland hunting, and even agricultural economies (although the evidence for farming in the Scandinavian Stone Age is based almost exclusively on pollen analysis). The second section brings together seven papers on the North Pacific and Bering Sea region. Here the emphasis is more on the origins and adaptation to specific coastal ecosystems of varied human groups distributed geographically from Hokkaido through the Aleutian Islands to the Pacific coast of North America south to Puget Sound. The third section focuses on the Northwest Atlantic and contains only two papers, one concerned with the coastal Archaic cultures of Maine and New Brunswick and the other with the demography and subsistence of 18th-century Eskimo groups in the eastern Labrador-Ungava peninsula. The volume as a whole admirably assesses the role of maritime adaptations in circumpolar prehistory. Perhaps the most interesting generalization that emerges, explicitly in some papers, implicitly in others, is the regularity with which coastal cultures afford evidence of greater sedentism, larger populations, and more elaborate economic and social systems than is found in the simpler, more mobile inland cultures.

Supporting evidence for this generalization can also be found in *Maritime Adaptations of the Pacific*, but this book lacks the firm regional and chronological framework of its companion volume. It suffers from the fault of so many congress collections: bittiness. Nor is the lack of integration compensated for by an introduction setting Pacific maritime anthropology in its scholarly context. In their introduction the editors classify the papers, contributed by 13 scholars (from North America Anderson, Clark, Landberg, Maddox, Nason, and True; from Australasia Coutts, Pollock, and Shawcross; from the Soviet Union Taksami and Vasilievsky; from Japan Nishimura; from Britain Cram), into three categories: ethnographic (six papers), archeological (five), and combined ethno-archeological (two). This classification is not followed in the body of the book, however, and in any case it is more convenient than conceptually valuable. The topics covered range so widely—from stone tidal weirs in Japan to Chinese fishermen in Hong Kong and Malaysia, and

from prehistoric fauna in the Solomons to dietary change in the Marshall Islands—that it is difficult to discern any common themes. This is partly a function of the underdeveloped state of cultural anthropology in the Pacific. But a more deliberately selective approach to the symposium could have advanced understanding of some of the major problems in Pacific ethnology and prehistory more effectively. The book does include individual papers of great interest, such as Shawcross's general discussion of the relevance of animal population dynamics to archeological reconstruction, but these would probably have achieved wider circulation if published in appropriate journals. The feeling of bittiness is enhanced by the inclusion of two papers (by Clark and Vasilievsky) identical to those by the same authors published in Fitzhugh's volume.

Despite the unequal quality of these two books they do mark a new awareness among anthropologists of the important role that seas and coasts have played in the cultural history of mankind. For that reason alone they deserve a warm welcome. They also have much to offer specialists studying human life, past and present, along Pacific, Arctic, and North Atlantic shores.

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Regulation of Viruses

Control Processes in Virus Multiplication. Papers from a symposium, London, Apr. 1975. D. C. BURKE and W. C. RUSSELL, Eds. Published for the Society for General Microbiology by Cambridge University Press, New York, 1975. x, 450 pp., illus. $27.50. Society for General Microbiology Symposia, 25.

The editors asked the contributors to this book not only to consider the biosynthetic events that occur during virus replication, but also to discuss the regulation of these processes. This attempt to come to grips with regulation of synthesis is what gives this book its greatest value. Bacterial viruses have provided the most precise knowledge of regulatory processes, and the findings concerning these viruses are described, though in a highly condensed form. The greater part of the book is concerned with animal virus systems, and there is an attempt to identify the unique regulatory mechanisms that function in eukaryotic systems. Almost all the contributions in this volume effectively present current knowledge of biosynthetic events within infected cells. The papers by Burke and Russell, "Control of nucleic acid replication in cells infected with animal viruses," and by A. E. Smith, "Control of translation of animal virus messenger RNA," are particularly effective summaries. The paper by N. J. Dimmock, "Transport of virus macromolecules in infected cells," is of considerable interest, not because of the remarkable advances that have been made in this area, but because the subject is usually ignored. Dimmock's paper effectively pulls together data on membrane structure and information on the transport of macromolecules and illustrates the advantages of recognizable viral proteins and nucleic acids in the study of transport. Also valuable is Showe and Kellenberger's discussion of control mechanisms in virus assembly. Although solid progress has been made in research on these mechanisms, particularly with T-4 bacteriophage, very few studies have been carried out with animal viruses.

Overall, the book makes good reading and does a creditable job of presenting the biosynthetic pathways that function in the synthesis of viral macromolecules. The book also includes a brief description of some of the well-defined regulatory processes that have been described in elegant studies in bacteria. Although one purpose of the book is to describe control mechanisms, it is clear that animal virologists have amassed very few data on regulatory mechanisms either in infected or in uninfected cells.

Animal virology has made remarkable advances during the past ten years through the use of techniques, such as nucleic acid hybridization, that enable the investigator to examine viral processes separately from cellular processes. If virologists hope to understand the regulation of viral processes, however, they will have to deal with cellular processes instead of treating them as background noise. In future symposiums on control mechanisms, it is likely that there will be a heavier emphasis on the cell and the interactions of viruses with cells.

A deficiency of the book is that only a few figures or tables are used to present data or illustrate models. This approach may be appropriate, however, for readers who are working in the broad field of virus multiplication. This is also a good book for someone who is thinking of working with animal viruses and wants to know where the field now stands.

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Drug Actions in Bacteria

Microbial Drug Resistance. Papers from a symposium, Tokyo, Oct. 1974. SUSUMU MITSUHASHI and HAJIME HASHIMOTO, Eds. University Park Press, Baltimore, 1975. xvi, 566 pp., illus. $42.50.

The majority of the 47 papers in this volume are by scientists from Japan, where the phenomenon of transferable antibiotic resistance was first discovered in 1959. In the 15 or so years since the initial discovery that plasmid-determined antibiotic resistances are transmissible in matings between bacteria, the field has expanded by leaps and bounds. The editors, who have been in the field from the start, have organized the book in a useful way.

The first of the three sections deals with the genetics and molecular biology of these transmissible antibiotic resistance factors (R plasmids). R. H. Rownd and his coauthors have contributed two papers that analyze the unusual behavior of R plasmids in *Proteus mirabilis* and show how the extraordinary capacity for alteration of the plasmids in this organism, specifically the capacity to increase the number of copies of the drug resistance genes, produces increased resistance levels in the host cells. In another paper in this section, T. Arai describes the characterization of multicopy mutants of an R plasmid found in *Escherichia coli* that may be useful as tools for the genetic analysis of R factor genomes. Such multicopy mutants were detected because their *E. coli* hosts exhibit higher resistance levels attributable to gene-dosage effects similar to those described by Rownd and co-workers in *P. mirabilis*. In other papers, N. Datta presents the criteria by which R plasmids are classified into compatibility groups and Hashimoto *et al.* report the isolation of a miniplasmid similar to that recently described by Stanley Cohen and colleagues and suitable for use as a vehicle in recombinant DNA experiments. The paper by R. Curtiss III on bacterial conjugation in minicells, which because they lack DNA can serve as useful receptacles for transferred plasmid DNA, presents useful tricks of the trade of molecular genetics, as do many of the papers.

The second section of the book deals with the epidemiology of plasmid-mediated drug resistance. The introductory paper by Tanaka *et al.* surveys the types of R plasmids isolated in Japan over the last nine years. A series of seven papers covers a variety of investigations involving *Pseudomonas aeruginosa*, an im-