cial organization to allocate work tasks to individuals. Productive resources such as land have a physical form and a cultural meaning, which are organized socially by institutions. A single dimension, such as the physical, includes all three processes: production can be analyzed as the expenditure of calories for work, distribution as the physical distance traveled by goods, and consumption as the intake of caloric energy [p. 270].

Though this rather simplistic schema may make economies readily comparable, it is at least probable that one will end up not knowing a good deal more for having compared them. But since the universal matrix and, for the most part, Polanvi himself, can be ignored for most of the 200-odd pages between the introduction and the conclusion, it may not matter. (Somewhat more distracting to this reader was yet another tripartite typology in the conclusion, this time of peasant political economies, one of which turns out to be what is called "the commercial plantation type." Some of the problems implicit in calling plantation wage-earners "peasants" should have become clearer by now, at least to readers of Polanyi.)

Fourteen selections (five of which, by Neale, Chayanov, Mitchell, Orlove, and Parsons and Price, are somewhat mysteriously reprinted or adapted from other publications) make up the rest of the book. They are held together by being about the economic life of rural people in various places (mostly in Mexico and the Andes), but by too little else. This reviewer found Brush's critique of the concept of rural underemployment, Léons's sketch of an Andean politicocommercial broker, Derman's overview of Fulbe serfdom, and Smith's classification of Guatemalan market systems instructive. But these contributions truly do not share data, theory, method, or even a revealed interest in Polanyi's work.

This collection, then, cannot add much to the reputation or understanding of Karl Polanyi. Most of the essays bypass the issues that concerned him or invoke him only in rather perfunctory fashion. Polanyi, after all, made some very penetrating observations about both economies and economics. Though not of the stature, perhaps, of either a Lévi-Strauss or a Chomsky, Polanyi, by bravely questioning the received wisdom, put many scholars in his debt, meanwhile provoking the same nervous envy and petulance as have these other, probably grander, thinkers. If the book makes any clear and concrete contribution, it is not to our appreciation of Polanyi so much as to our understanding of certain problems in the study of contemporary peasantries. In at least a few of the articles, good data and good ideas are combined in enlightening fashion for the benefit of students of peasant economies.

Yet such is hardly adequate grounds for so miscellaneous a collection these days. Most disturbing, perhaps, is the realization that there is relatively little here to make any economist think twice about his or her approach to understanding any of the situations analyzed by the writers. Polanyi, after all, tried very hard to make a difficult point clear; coming from economic history, he taught anthropologists why their subject matter could be more illuminating than they themselves had realized. Anthropologists (the reviewer, of course, included) ought to be trying harder now to reteach Polanyi's assertions to economists. Regrettably, this book shows we have a long way to go. SIDNEY W. MINTZ

Department of Anthropology, Johns Hopkins University, Baltimore, Maryland 21218

## **Subsistence** Activities

Human Activity System. Its Spatiotemporal Structure. HITOSHI WATANABE, Ed. University of Tokyo Press, Tokyo, 1977 (U.S. distributor, International Scholarly Book Services, Forest Grove, Ore.). xii, 260 pp., illus. \$33.50.

In the realm of the physical sciences Japanese researchers freely interact with the international scientific community. This is because the points of analysis, the methods, and the vocabulary of the "hard" sciences are relatively well established, facilitating international communication. Japanese social scientists, on the other hand, have had little impact outside their own country. The barrier of the Japanese language has generally made the results of their research unavailable to their non-Japanese colleagues. Furthermore, they have been set apart by the distinctive methods and approaches created and in turn reenforced by their isolation. Human Activity System is an attempt by one group of Japanese anthropologists to make their thoughts on human behavior and the results of their work available to researchers in other countries. The book consists of 11 papers by seven anthropologists from the University of Tokyo. All the papers are available in other English-language sources, but they are presented again here in an attractive, readable form.

The papers describe a number of the

activities of modern Japanese fishermen, coastal gatherers, and hunters. Separate papers also describe Ainu ecology and Papuan horticulture and hunting. Together they form a neat package because the authors have a similar theoretical orientation. In fact, the editor, Hitoshi Watanabe, says that describing this orientation and showing its relevance to the study of human behavior is one of the goals of the volume. A second stated goal is to illustrate the techniques Watanabe and his colleagues have developed for recording and describing human activities.

Watanabe opens the volume with a sweeping critique of all previous studies of human behavior. I doubt that American anthropologists will find his criticism compelling, for it rests on a view of culture that few are likely to accept. Watanabe sees culture not as humankind's extrasomatic means of adaptation but rather as "social heredity." By taking this narrow and now obsolete view he is able to argue that cultural analysis does not offer a means of understanding the relationships among various human activities. He proposes that the "scientific study of human life" requires that human activities be viewed as entities systemically related to one another and to the environment. Rather than using the term culture, he calls this the "human activity system." To Watanabe the most important part of this system is its "spatiotemporal aspect," or the way in which human activities are meshed with the distribution in time and space of environmental features. To him and his colleagues elucidation of this aspect of human activities is a necessary first step in any attempt to study human ecology or to understand the operation of culture.

Most of the papers are concerned with the scheduling of human activities to coincide with environmental stress or potential. Watanabe's groundbreaking study of Ainu ecology is the clear model for most of the studies. By describing in detail the behavior of people engaged in fishing, hunting, and gathering, these papers provide insights into the application of some basic subsistence techniques. Since the emphasis is on the application of the techniques, potentially important ethnographic information is omitted and the cultural milieu of the activities is not treated in detail. A more telling criticism may be that the studies are aimed at describing covariation between cultural and environmental phenomena. A causeand-effect relationship seems to be assumed but is never demonstrated.

The nature and importance of individual differences in skill and physical po-SCIENCE, VOL. 200 tential are a second theme dealt with in several papers. Again this is an issue Watanabe identified some years ago, in a paper that is reprinted here. All these studies come to the conclusion that vigorous skilled workers are more proficient than their young unskilled or aged counterparts. This conclusion is hardly counterintuitive, but the studies now give it explicit substantiation.

The group most likely to find Human Activity System useful and interesting is "ethnoarcheologists" who realize that an understanding of the archeological record requires in-depth knowledge of primitive artifacts and technical knowledge. Their goals are unlike those of Watanabe and his colleagues, but they will find the data and techniques presented in these papers worthy of study. PETER BLEED

Department of Anthropology, University of Nebraska, Lincoln 68508

## Oaxacans

**The Zapotecs.** Princes, Priests, and Peasants. JOSEPH W. WHITECOTTON. University of Oklahoma Press, Norman, 1977. xiv, 338 pp., illus. \$14.95. The Civilization of the American Indian Series.

Joseph Whitecotton has undertaken the ambitious task of providing a coherent culture history of the Zapotecs of Oaxaca, south central Mexico. The book is the first comprehensive culture history of the Zapotecs in the English language and a worthy successor and companion to the collection of papers entitled *Los Zapotecos*, edited by Lucio Mendieta y Nuñez, which appeared in 1949.

The book reflects the approach of "anthropological history," Mexican wherein all types of data-archeological, historical, ethnographic, and linguisticare utilized. The author has relied on several dozen modern studies, in particular the researches of Oaxacanists Alfonso Caso, Wigberto Jiménez Moreno, Ignacio Bernal, and John Paddock, as well as numerous published documents, among them native pictographic manuscripts, the geographical relaciones commissioned by King Phillip and completed between 1579 and 1581, the great Cordova Vocabulario of 16th-century Zapotec, and the Geográfica descripción of Fray Francisco de Burgoa. He has made little use of unpublished material. The book is more a synthesis of existing studies than a marshaling of new evidence or a new analysis or reinterpretation of the evolution of Zapotec culture.

The story begins about 1000 B.C., in

the Formative period, and concludes with a brief consideration of the Zapotec as modern Mexican peasants. The first two chapters deal with the early settlement and origins of agriculture in the Oaxaca Valley and with the Classic period of state building and urbanization. The Classic period was the time of the florescence of Monte Albán, and the author discusses what can be inferred about the social and political organization of that center. The Post-Classic period, when Monte Albán was abandoned and smaller communities and towns proliferated in the valley, is then considered, with sections on documentary sources, Mixtec-Zapotec relations in the valley, the Aztec conquest of the valley, and the Zapotec tributary state. This is followed by a detailed chapter, probably the best and most useful part of the book for the social anthropologist, on Zapotec social organization on the eve of the Spanish conquest. This chapter contains the best description of the Prehispanic Zapotec class system available in any language. Religion is briefly considered.

In the chapter "Zapotec elites and peasants in New Spain'' Posthispanic developments in technology, population, the cacique class, local political organization, colonial administration, land tenure, tribute and labor, and church organization are considered. Unfortunately, the attention given to social organization in Prehispanic times is not matched in the account of the Colonial period. Rather, the author presents an all too brief account derived from the Oaxaca studies of William Taylor and the more generalized historical works of Charles Gibson and François Chevalier and makes little or no use of the abundant archival resources from Mexico and Spain that would shed light on such topics as class structure, intergroup relations, marketing and trade networks, multilevel political organization, and law.

The concluding chapter, "The Zapotecs in modern Mexico," is overly brief and overly general and places too much emphasis on events and rhetoric from the national political scene during the 19th century. The reader is left with the impression that nothing much happened in Oaxaca or that as the nation went so went Oaxaca. A lot did, in fact, happen in Oaxaca in the 19th century. It was the most important period of reformulation of Oaxaca society since the decades immediately following the Spanish conquest and was a truly formative period for modern Zapotec society and local and regional economic development. To deal with the tumultuous and climactic period from 1800 to 1930 by brief references to La Reforma, the pronouncements of Benito Juárez, the deeds of Porfirio Díaz, or the "social movement" ideology of the early-20th-century Revolution (much of it ex post facto) simply does not do justice to the intricate dynamics of social change in Oaxaca during those momentous years. In this, however, the author is simply following accepted practice in the anthropological literature of Mexico.

I would have preferred that the author take a stand on some of the existing controversies, that he examine fresh documentary sources, that he get involved in the archeology of the area, that he do extended ethnographic research in Oaxaca, that he examine such topics as evolving patterns of social stratification, multilevel politics, intergroup relations, trade, ceremonialism, or ideology-in short, that he move us beyond our present state of knowledge and understanding of this great, dynamic, and adaptively persistent culture. But the requirements of a single reviewer do not reflect the needs of the world at large. The Zapotecs is a fine book for most readers with an interest in Mexican, Oaxacan, and Zapotec culture history. It is well written, well documented, well illustrated, and, as has come to be expected of University of Oklahoma Press books on American Indians, beautifully produced. It can be recommended for classroom use, and it stands as an example of the kind of longterm or regional culture history that anthropologists and historians should be doing. One hopes it will provide impetus for regional and local culture histories for other areas of Mexico and Latin America and elsewhere.

**RONALD SPORES** 

Department of Sociology and Anthropology, Vanderbilt University, Nashville, Tennessee 37235

## **A Region of Recent Interest**

Nubia under the Pharaohs. BRUCE G. TRIG-GER. Westview Press, Boulder, Colo., 1976. 216 pp., illus. \$18.75. Ancient Peoples and Places, vol. 85.

Nubia: Corridor to Africa. WILLIAM Y. ADAMS. Princeton University Press, Princeton, N.J., 1977. xxvi, 798 pp., illus. + plates. \$35.

Neither fully Mediterranean nor African in its geography, culture, or ethnic relationship and only occasionally independent of strong outside influences, Nubia—that land lying above Aswan and extending southward along the Nile to the Fourth Cataract in the Sudan—has