

AMAZONIA AND THE PROGRESS OF ETHNOLOGY*

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AMAZON ECONOMICS: THE SIMPLICITY OF SHIPIBO INDIAN WEALTH. By ROLAND W. BERGMAN. (Syracuse, N.Y.: Syracuse University Press, 1980. Pp. 249. \$18.25.)

THE PANARE: TRADITION AND CHANGE ON THE AMAZONIAN FRONTIER. By PAUL HENLEY. (New Haven: Yale University Press, 1982. Pp. 263. \$32.50.)

FROM THE MILK RIVER: SPATIAL AND TEMPORAL PROCESSES IN NORTHWEST AMAZONIA. By CHRISTINE HUGH-JONES. (New York: Cambridge University Press, 1980. Pp. 302. \$29.95.)

THE PALM AND THE PLEIADES: INITIATION AND COSMOLOGY IN NORTHWEST AMAZONIA. By STEPHEN HUGH-JONES. (New York: Cambridge University Press, 1980. Pp. 332. \$29.95.)

DIALECTICAL SOCIETIES: THE GE AND BORORO OF CENTRAL BRAZIL. Edited by DAVID MAYBURY-LEWIS. (Cambridge: Harvard University Press, 1979. Pp. 340. \$25.00.)

NATURE AND SOCIETY IN CENTRAL BRAZIL: THE SUIYA INDIANS OF MATO GROSSO. By ANTHONY SEEGER. (Cambridge: Harvard University Press, 1981. Pp. 278. \$27.50.)

When Patricia Lyon published her anthology *Native South Americans* in 1974, she subtitled it *Ethnology of the Least Known Continent*. Although the bibliography of South America at that time was large, when compared with those on other world regions, it suffered from sizable gaps in the ethnographic record (the field studies of ethnic and social groups). These lacunae were especially characteristic of the ethnology of "lowland" (non-Andean) native societies. Some of them were barely known, while other groups had been described only in single monographs based on one-year stints of field research. Some of these studies were of high quality and great interest, but many were theoretically barren and methodologically weak. Ethnohistorical studies had barely begun, and the prehistory of "lowland" South America was even less

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known. Also lacking in most of the lowland South American literature were major theoretical debates. Nonspecialists therefore had reason to consider lowland South America as an ethnological backwater when compared to such areas as Africa.

Even as Lyon's book appeared, new studies were underway in South America, particularly in the Amazon Basin, studies that were to transform South American ethnology. Now an anthology of studies on the lowlands could hardly refer to the "least known continent" because since the early seventies, scores of new articles, monographs, and books have appeared in English, French, Spanish, and Portuguese. These studies represent years of highly focused, theoretically informed field research carried out by well-trained ethnographers. In a few specific regions, such as Central Brazil (and the Upper Xingu Basin in particular), the Upper Vaupés Basin, the Upper Orinoco, and Eastern Peru, a "critical mass" of ethnographers have studied and restudied different aspects of a number of societies inhabiting similar habitats and sharing many features of culture. The stage thus has been set for more informed debate on issues of broad concern to anthropology. Among these issues are the relationship between environment and warfare, the nature of the acculturative process, the nature of leadership in egalitarian societies, the function of descent in kinship and social relations, and the question of "dualism" in South American culture. In a few areas, notably Eastern Peru, the quantity and quality of archeological research has improved, but this area of studies has lagged considerably behind ethnology.

Several factors account for the expansion of knowledge of lowland South America. One is the increased number of anthropologists. In North America, the proliferation of graduate programs in the 1960s produced graduate students needing thesis topics, some of whom had prior experience in South America as Peace Corps volunteers. In South America, universities and other institutions provided increased support for professional ethnological research and training, especially in Brazil, Peru, and Venezuela. In addition to institutional developments, a number of theoretical developments influenced the course of South American studies and stimulated new field research.

One major stimulus was the ecological and evolutionary theory developed by Leslie White and Julian Steward in the United States and by Julio Tello and Darcy Ribeiro in South America. The thrust of this body of theory, which has become known as cultural materialism, is that the major outlines of social formations are determined historically through a process of adaptation to the natural, technological, demographic, and social environments. Ecological theory was introduced to lowland South American studies largely through the work of Betty J. Meggers, whose seminal 1954 article proposed an explanation for the

lack of complex societies in the Amazon Basin. Her suggestion, which was based largely on her archeological studies at the mouth of the Amazon, provoked a response from Robert Carneiro (1961), who used field data on the Kuikuro of the Upper Xingu Basin. Subsequent studies suggested that dietary protein, rather than good agricultural land, was a major limiting factor on the size and permanence of settlements and consequently on social complexity in Amazonia (Lathrap 1968; Gross 1975; but see Beckerman 1979 and Roosevelt 1980). A recent review cites nearly fifty titles published since 1975 that present new data and views on this issue (Hames n.d.).

Aside from cultural materialism, the work of French ethnologist Claude Lévi-Strauss had an extraordinary agenda-setting effect on South American studies. Although virtually all his results have been revised by later, more systematic research (for example, Price 1972), the theoretical perspective he introduced has endured. Structuralism demands that the ethnologist go beyond the surface features of social relations observed in the field. At this level, the investigator is dealing not with the particular observations made in the field but with a construct built up by the investigator "after" the empirical reality. According to this view, structure is enduring and contains a timeless set of relationships, while human thought and action reveal only partial and ephemeral aspects of structure as they unfold in time.

A third line of analysis, one of increasing importance that is not yet endowed with a theoretical framework comparable to the schools of structuralism and cultural materialism, is that line represented by studies of acculturation and social change. Some of these studies pursue mainly historical goals in attempting to document the trajectory of societies or particular features of societies over time. Some of these studies were motivated by the Boas-inspired concern with ascertaining the history of a culture in order to "clear up" the history of particular groups as a prelude to eventual comparison. Other studies have sought to support the struggle to ensure the survival of indigenous minorities in South America. A number of books published during the 1970s were written to expose the mistreatment, exploitation, and "ethnocide" that have characterized Indian relations with the national populations of the republics of South America (Aborigines Protection Society 1973; Davis 1977; Fuerst 1972; Hanbury-Tenison 1973; Junqueira 1973; Survival International 1971). Several of these works, particularly Davis's, are also indictments of the pattern of development that is a leading cause of current maltreatment. Although there are major issues of concern to anthropological theory here, no major theoretical paradigm has yet emerged to guide these studies. Robert Cardoso de Oliveira's model of interethnic friction (1972), which is based on modern anthropological

views of ethnicity, is a valuable beginning, but the theory has not been developed, perhaps because it is still not widely known.

This brief overview is offered as an introduction to the studies considered in the present review, all of which fit into what I call the "new generation" of South American studies. They are highly focused studies based on original data collected during long periods of residence in the field by professional ethnographers, often doctoral candidates. The greatest promise of the new generation is the possibility of addressing major theoretical issues in ethnology with South American data.

All of the studies under consideration are ethnographic monographs, with the exception of the Maybury-Lewis collection of essays by different authors. In comparing the organization of these studies with those of earlier monographs, one notes that earlier studies generally attempted to cover a fixed set of topics deemed fundamental by the anthropological profession. Typically, these studies began with a brief overview of the history of the group and its relationship with outsiders, then proceeded to discuss the subsistence system, social relations, ideology, and occasionally patterns of change.

Several of the newer studies reviewed here depart from this tradition. Some of these monographs are organized around concepts that are significant primarily to the group under study. This approach reflects the peculiarities of the particular society under consideration. For example, Anthony Seeger devotes a chapter to "The Classification of Animals and Plants by Odor," a topic not part of a universal culture pattern, but a distinctive feature in the Suya classification of both the social and natural domains (the following chapter is entitled "Sex, Age, and Odor"). Like Seeger, Christine Hugh-Jones and Stephen Hugh-Jones are concerned with presenting the societies they studied in all their self-perceived uniqueness, thus stressing those aspects that the societies themselves regard as important in establishing their identities. Organizing a study around native concepts involves a trade-off, however. Cross-cultural comparisons are more difficult to carry out because the data language itself may have been relativized to fit the specific local situation. While the resulting language may be truer to the ethnographic reality, it may also tend to obscure similarities between societies.

None of the other studies considered here was anticipated with as much interest as *Dialectical Societies*, a collection of eight essays on Gê-speaking and Bororo societies in Central Brazil edited by David Maybury-Lewis. Before Maybury-Lewis began his work, the most significant research on these Central Brazilian societies had been undertaken by the self-trained German ethnographer Kurt Nimuendaju dur-

ing the 1920s and 1930s. Maybury-Lewis carried out extended field research with the Xerente and Xavante peoples during the 1950s, and he wrote the definitive ethnography of the Xavante (Maybury-Lewis 1967).¹ In the early 1960s, he organized the Harvard Central Brazil project involving Brazilian and U.S. ethnographers. The project was intended to provide a controlled comparison of several societies of Central Brazil who share many features of culture and speak related languages.

The aspect of Central Brazilian culture that fascinates ethnologists is its elaborate social organization, which is based on circular village plans with matrilocal households around the circumference, a men's house or meeting space at the center, and a plethora of ceremonial corporations, cross-cutting dual divisions (moiety), kinship groups, sports competitions, and elaborate ceremonies. These villages may be considerably larger (up to fifteen hundred people) than typical Amazonian villages, but paradoxically, Central Brazilian leadership is as egalitarian as in groups whose villages are smaller (Gross 1979). Early students of Central Brazilian ethnology found it anomalous that these groups depended heavily on hunting and gathering (several spending more than half of each year trekking through the *cerrados* of Central Brazil, living on wild plants and animals) because their social complexity seemed characteristic of a more sedentary society. This anomaly was addressed by suggesting that they represented either a devolved form of a complex society or a whimsically elaborate form of a primitive society. But neither these studies nor the earlier ones by Nimuendaju support an interpretation of these societies as decadent or archaic (Gross 1979).

The remarkable elaborateness of Central Brazilian social structure, the frequent appearance of dual divisions at both symbolic and organizational levels, and the differences from one society to the next seemed tailor-made for structural analysis. Basing his work mainly on Nimuendaju's data, Claude Lévi-Strauss wrote several essays whose method consisted of abstracting a number of elements from the behavior and ideology of a society, juxtaposing them so as to create a model, then demonstrating the purely mathematical or logical relationships among these elements. For the Central Brazilians, the possibility seemed to exist of revealing a "deep structure" that could be shown to underlie all the surface manifestations of social organization in particular societies. As Lévi-Strauss suggested in an influential essay, "the various types of groupings found in [Central Brazilian] societies . . . do not represent . . . so many functional groups. They are, rather, a series of expressions, each partial and incomplete of the same underlying structure, which they reproduce in several copies without ever completely exhausting its reality" (1967, 126).

The underlying reality that Lévi-Strauss claimed to have uncovered—triadic structures, as opposed to dualism—was later shown by Maybury-Lewis to have been based on faulty and incomplete data (1958). From his earliest attempts at constructive comparison, then, Maybury-Lewis appears to have abandoned the search for a structural Rosetta stone for Central Brazilian societies. The efforts of the contributors to *Dialectical Societies* were directed instead at revising Lévi-Strauss's inspired, but uninformed, theories and Nimuendaju's thorough, but misguided, field data. Readers expecting a systematic comparison of these remarkable societies will be disappointed in this volume. Its essays do not systematically treat the same themes, and only a few of them have a comparative focus. Each one is preceded by a thumbnail historical sketch by Maybury-Lewis, which leaves the contributors free to leap into their selected themes.

The lead essay by Jean Lave offers important new insights into aspects of Central Brazilian society from the perspective of the Krikati, part of the Timbira language group. It focuses on the decline of the age set as an organizing institution and the rise of personal name transmission in its place. Among the Krikati, naming is a highly formalized institution that accentuates the distinction between the domestic, kin-oriented sphere and the public, ceremonial sphere of Gê society. This distinction, which Roberto Da Matta stresses in the essay following Lave's, seems to be important in all Gê groups. The relationships and obligations entailed by participation in the public, ceremonial sphere have important effects on every aspect of life including socialization, religion, subsistence, warfare, and exchange. Lave's observation that "the Krikati are unusual in using naming relationships rather than kin ties as the basis for establishing social continuity through time" (p. 30) has important consequences for the study of Central Brazil and for tribal societies in general. Although anthropologists have long subscribed to the belief that tribal society is regulated primarily by kinship institutions, the Krikati may be an important exception to this alleged universal.

Elsewhere I have suggested that the use of naming as a basis for social interaction, as opposed to blood and marriage ties, may be related to requirements for integrating relatively large, but unstable, groups of people in an egalitarian context (Gross 1979). Central Brazilian social organization may reflect an adaptation to environmental and political conditions that favored the seasonal formation of relatively large population aggregates, too unstable to support hierarchical leadership but too large to permit stable relationships in an aggregate consisting of numerous core domestic groups. The mutual obligations established between name-givers and name-receivers added to the three sets of ceremonial moieties to which name-set holders are assigned con-

stitute precisely the kind of non-kin-based system of social relations that was suggested by my model. In conjunction with other social institutions, they set up cross-cutting loyalties by creating loyalties among individuals (namesakes) who might otherwise be in occasional conflict, thus possibly vitiating the unity of any conflicting alliances that might be formed. Although Lave's model does not stress the possible adaptive functions of the Krikati naming system, its clarity allows for such interpretations.

Lave's study is also noteworthy for its stress on change. Most of the other contributors to *Dialectical Societies* seem content to refer to a presumably changeless period in the past when tradition ruled supreme. They describe present-day institutions in terms of how much of the "traditional" system remains intact. Apart from the dubiousness of some of their reconstructions, such a view downplays the creative and adaptive aspects of culture, leaving the reader to infer that unless disturbed by Western influence, native culture is immutable. Lave shows how malleable traditions are and implies that researchers should be concerned with the historical trajectory of institutions as well as with their structural properties.²

The essays by Julio Cezar Melatti and Roberto Da Matta deal extensively with the relationship system (kin terms) of two other northern Gê groups, the Kraho and the Apinaye respectively. Melatti shows that the Kraho system is influenced not only by the genealogical relationships between persons, but also by the social identities conferred with the transmission of names. This observation parallels Lave's findings with regard to the closely related Krikati. A similar point is stressed by Da Matta, who emphasizes the opposition between the public and domestic spheres. The Kraho kinship system resembles the Crow-type nomenclature that is almost always associated with an ideology of descent through females (matriliny). Curiously, the Kraho are basically a bilateral society who lack defined descent groups or a matrilineal ideology. They are, however, uxorilocal, meaning that households are formed of groups of related females, in-marrying males, and their children. When households split up, they remain close to one another, and these clusters of matrilineally related households occupy a definite portion of the village circumference. Households are also exogamous, which means that individuals seek spouses who speak a different language. Thus Kraho households function as matrilineages in all but name. Melatti does not entertain the possibility that matrilineal succession may once have been an important feature of Krikati society (see W. Crocker 1979). Da Matta explicitly rejects such an interpretation, stating that "terminological equations which override generational contrast can be produced by a system which has nothing to do with unilineal descent groups. . . . Such a system can be satisfactorily eluci-

dated in terms of two fundamental principles: the opposition of the sexes and the passage of the one generation to another" (p. 123).

Thus Lave, Melatti, and Da Matta reach similar conclusions in their consideration of northern Gê social identity in essays of great novelty and technical brilliance. Nevertheless, I was disappointed that their essays did not ask what could have generated social systems with the particular kinds of oppositions and equations expressed in these societies. Of the three, only Lave provided any historical perspective.

In the first of two essays, Terence Turner develops his theory that the relationship between a male household head and his daughters constitutes the core of Gê and Bororo societies. Male authority is presumably undermined by the female-oriented lines of cooperation and coexistence established by uxorilocality. Balance is achieved through the organization of the annual foraging trek, which theoretically follows male-oriented lines of organization. Turner's theory inverts the usual relationship of core to superstructure by subordinating a subsistence institution to a feature of social organization (this approach is tantamount to suggesting that military regimes are common in Latin America because troops and weapons are so important to independence day parades). More recent work establishes the economic benefits of trekking; specifically, Dennis Werner shows that the rate of meat capture is significantly higher when the Kayapó are on trek than when they are in their base villages (Werner 1978, 1983). Turner's contention that Kayapó society is not environmentally constrained is weakened by recent evidence showing that Kayapó subsistence activities involve considerable exertion as well as careful scheduling of activities and movement in adjusting to the seasonal and spatial fluctuation of resources (see Flowers et al. 1982; Gross et al. 1979; Gross 1983; Werner et al. 1979; Werner 1978, 1983).

Joan Bamberger's essay takes a different direction in asking why Kayapó villages are so likely to fission into smaller segments, a process that has continued in recent times. She rejects the "Helen of Troy" explanation offered by the Kayapó themselves that village splits are caused by fights over women, and she also rejects the ecological explanation that smaller villages are better adapted to the tropical forest environment than larger ones. She suggests, following A. O. Hirschman, that political leadership and progressive change were weakly developed among the Kayapó precisely because of the ready opportunity to express disagreement by leaving. Now that Brazilian settlements, roads, and reservation boundaries are encroaching on the vast areas where the Kayapó once freely roamed, this group is developing an alternative of progressive political leadership, possibly in a form that will allow the Kayapó to respond more vigorously to the threats posed by encroachment from outside. In this regard, it is interesting to note that two

Kayapó groups, the Gorotire and the Txukarramãe, recently participated in bloody actions involving lands they regard as their own. These actions may reflect the development of such leadership (Gross 1981). Bamberger's essay unfortunately does not clarify when or under what circumstances such leadership may be expected to appear nor how the Kayapó differ from other societies in their political organization.

In his principal contribution, David Maybury-Lewis presents a model of Central Gê (Xerente and Xavante) social structure that offers an explanation of some of the contrasts between these two groups and the northern Gê (Kayapó and Timbira). Among the latter, dual divisions are complementary and balanced, but not antagonistic. Factionalism is restricted to the domestic sphere, that is, to the village periphery. Among the Central Gê are found exogamous, patrilineal descent groups that are rivalrous and antagonistic. One such group tends to be dominant in each village, while the other or others form the opposition. Antagonism and rivalry are thus suppressed at the domestic level. But is this difference attributable to formal features of Central Gê structure as opposed to Northern Gê structure? Or could the difference be explained in terms of historical factors such as acculturative influences? Maybury-Lewis does not pose the question in a fashion that would allow for a test of these alternative hypotheses. Instead, he presents a classification of Gê and Bororo groups based on regionally shared features. Maybury-Lewis concludes with the suggestion that it is erroneous to attempt to construct formal models of kinship based on the fundamental features of human mating systems and that attention should be shifted to social theories or sociologies, which is what kinship systems are. Maybury-Lewis, the leading Gê scholar of his time, has no suggestions to make about the distinctiveness of Gê culture or about the distribution of its variable features.

J. C. Crocker's contribution to *Dialectical Societies* explores the principal differences and similarities between the Bororo and the Gê-speaking societies arrayed to the east. He points out the relatively weak development of age sets and of cross-cutting moietylike organizations among the Bororo, who have what appears to be a classical system of direct exchange (of spouses) between matri-moieties and a "harmonic" system of matrilocal postmarital residence. Crocker reviews Bororo social structure in detail, finally determining that their similarities to the Gê ultimately outweigh the differences. His conclusions lead him to propose a revision of "some of the basic assumptions of social anthropology. In the Bororo case, the traditional understanding of 'lineality' . . . becomes an obstacle to the comprehension of their social dynamics. . . . It is my thesis here that Bororo perception of [the differences between natal and conjugal households] provides one basic generative force in their social dialectics" (p. 292). I was disappointed

that the author did not choose to complement his structural analysis with a causal analysis. For example, he does not consider the suggestion that matrilocality together with matriliney represent an adaptive response to conditions of chronic warfare in an uncentralized society (Ember and Ember 1971). Thus even though Crocker may demonstrate at a structural level just how Gê and Bororo social structures may be similar, he still does not show why they should be similar.

Although most of the contributors to *Dialectical Societies* touch on the question of similarities and differences among Central Brazilian groups, they have restricted themselves to the level of underlying structure. They do not consider the possibility that the convergence of the Central Brazilians may be due to parallel adaptation to similar conditions. One could attribute the similarities among the Gê and Bororo primarily to historical relatedness, but this explanation would beg the question of how the common features of their social pattern came into being. It would also leave open the question of the resemblance between the Gê and Bororo on the one hand and several non-Gê-speaking societies in the same region on the other. There are several groups in Central Brazil such as the Mundurucu, the Tapirape, and the various "tribelets" of the Upper Xingu Basin who speak languages from different families. These societies share circular village plans, men's houses in the center, multiple societies, uxorilocal residence, institutionalized sex antagonism, and intense ceremonialism with the Gê and Bororo. What are the factors that led to the convergence of these societies, both those speaking Gê and those not speaking Gê? Why are these societies generally found in the cerrado region of Central Brazil and not in the evergreen forests of the Amazon Basin? What are the different historical experiences of these groups and how have they affected their convergence or divergence? These are questions that take scholars out of the area of "structure" and into the realm of history; they also raise issues of adaptation. Such matters, except in Lave's piece, are relegated to short introductory sections written by the editor.

As a result, *Dialectical Societies* poses another troubling opposition, the implicit one raised by the contributors between the structural features they stress in their articles and "real world" features of resource availability, competition with other groups, and internal and external politics. There is a tacit assumption that Gê and Bororo cultures had an unchanging "traditional" phase, one that may be reflected in their inner structures, despite acculturative changes. The lack of attention to possible modification over time of the structural templates of native culture implies that Gê culture had no origin in real time and must have been created whole cloth by some ancient genius.

Anthony Seeger's approach in *Natives and Society in Central Brazil: The Suyá Indians of Mato Grosso* shares a great deal with that of the

contributors to *Dialectical Societies*, but he succeeds in communicating much more about the people who are his subject. The Suyá are a Gê-speaking society closely related to the Kayapó and Timbira, who now are reduced to a single village of 140 people living in the Xingu National Park. Seeger's central contention is that the opposition between nature and society is fundamental to understanding Suyá culture. He goes beyond the usual "two-column" treatment in applying a structural principle to many different aspects of Suyá culture that demonstrate the ramifications of this principle in cognition and classification. Despite the formalism of Seeger's account, one can still observe the workings of a society badly buffeted by the contact experience and struggling to maintain itself under drastically altered conditions.

Seeger sets a difficult task for himself because the very concept that he suggests is central to Suyá society (the distinction between nature and society) is derived not from an exegetical analysis of Suyá society *qua* text, but from the pages of Lévi-Strauss's *Mythologiques*. How then is Seeger to convince the reader that this opposition is something inherent in Suyá culture rather than in the mind of the ethnographer? Seeger demonstrates the relevance of this contrast for the Suyá themselves by referring to the concentric model of Suyá space, which is organized in nested levels of contrast. At the very center is the "epitome" of society, the men's house, where initiated men conduct their affairs; at another level, uninitiated boys and women are considered "society" in contrast to people beyond the village (enemy Indians and animals); and at another, still higher level, all Indians are contrasted with animals. Temporal metaphors also display this contrast in the distinction between the mythological past, when people had no gardens and ate rotten wood, and the present, when gardens and garden goods represent levels of socialized nature. The two domains have a dynamic relationship that is at times antagonistic and at others, interpenetrated. Music, for example, provides a means for weaving elements of nature into the social fabric during ceremonial occasions.

Seeger's analysis is persuasive in that these items do seem to go together in the fashion that he argues, and the transformation of nature into society may certainly be a leitmotif of Suyá culture. But unlike Lévi-Strauss, Seeger does not suggest that he has uncovered universal patterns of human thought. He seems content to leave these intriguing parallels as he arranges them: fascinating artifacts of a native culture that presents interesting contrasts to other cultures.

I am struck with the possibility that this pervasive dichotomy, and similar dichotomies in other Central Brazilian groups, may reflect a common adaptive problem that they all have attempted to resolve. The problem may be that of integrating a number of disparate social units, possibly bandlike foraging groups that are based on kinship and live

apart for months or years at a time, into a single village aggregate capable of cultivating gardens, defending itself, socializing its young, engaging in trade, and performing ceremonies (see Gross 1979). I should add that while ceremonialism may be an end in itself from the native point of view, anthropologists might think of it primarily as a means for integrating the unusually large village aggregates formed during the harvest season. One could amass a series of anecdotes from the natives that are consistent with this view. Such an explanation would help to explain why ceremonialism is more elaborate in this region than in nearby lowland areas.

It seems to me that Seeger is dealing with another version of the dichotomy, one familiar to all students of Central Brazil, that between the domestic sphere (identified with kinship relations, biological or corporeal ties, factional struggles, and subsistence activities) and the public domain (identified with ceremonialism, villagewide activities, inter-village sodalities, the education of the young, and related matters). It is particularly interesting that the various "transformations" described by Seeger are those involved in "socializing" nature, such as preparing young men for adulthood (young men are more closely identified with nature than initiated men). Similarly, in his analysis of myths, society is enhanced by obtaining fire, garden maize, and personal names. All these things are captured from subhuman beings or animals.

The concern for presenting native culture in its own terms is found again in a pair of books written by two ethnographers who spent over twenty-two months among the Barasana, a society living on a tributary of the Apaporis River in the Columbian part of the Vaupés-Rio Negro drainage area. Like Central Brazil, this region has attracted the attention of a number of ethnographers in recent years. In her preface to *From the Milk River: Spatial and Temporal Processes in Northwest Amazonia*, Christine Hugh-Jones states, "My aim is to present Pira-parana society as an integrated system" (p. xv). Like other structuralists, she divides all Barasana history into "the present" and "traditional" eras. Hugh-Jones minimizes the influence of outsiders even as she outlines the unprecedented violence and dislocations caused by the penetration of the region by the rubber trade and missionaries. "I demonstrate that 'social structure,' 'kinship and marriage,' 'the life cycle,' 'politics,' 'economics' and 'religion' are ideologically integrated just as they are also inextricably bound up in behavior" (p. 2). Squarely in the tradition of idealist anthropology, her study displays little concern with behavior. Indeed, reading it is difficult because it rarely focuses on individuals. The work is comprised instead of pages and pages of description, surmise, and analysis of how Barasana culture ideally is, or ideally once was, put together. These suppositions take the form of a model that is "pieced together from a muddling mass of statements that Indians

make. . . . Inevitably, my account of Vaupés society and ideology hovers between the observed present and Indians' idealized version of the past with which they give meaning to the present. Without confining myself to simple ethnographic description, I can see no way round this. The best I can do is give some general idea about the applicability of my model, which belongs to this imaginary past-and-present, to the situation on the ground during my field work" (p. 13). Unfortunately, the author never succeeds in comparing her model to behavior.

The societies of the Upper Vaupés Basin are unusual in that they are multilingual and, in a sense, multiethnic (compare Sorensen 1967; Jackson 1976). Language groups are maximal descent units, and each of them is exogamous. The Barasana believe that each exogamous group above the sib level is descended from an anaconda ancestor who lived at the mouth of the Milk River (possibly a reference to the turgid waters of the Amazon). Ideally, the exogamous groups are collections of sibs (or subunits of sibs) arranged hierarchically (following the birth order of their ancestors) into chiefs, dancers, warriors, shamans, and servants. This model of five interdependent specialized roles is contradicted by a comparison with contemporary society, in which only dancers, chanters, and shamans can be found. But Christine Hugh-Jones's analysis proceeds just as if the five specialist roles existed in the ethnographic present. The difficulties with such reconstructions are legion, and they are compounded in this case by junctures where it is unclear whether certain leaps have been made by informants or the author. In some places, the author admits to supplying ideas where it seems plausible, such as in regard to the theory of conception. "People say that female children are made of their mother's blood and male children of their father's semen No one actually said that the mother's blood creates the flesh of the child, although according to the logic of the system set up by the other statements this would appear to make sense" (pp. 115–16).

In chapter six, Christine Hugh-Jones develops a complex argument concerning production and consumption that incorporates themes from all the other chapters. After a fairly straightforward description of manioc production, an analysis follows that makes use of ideal sex roles, parts of myths, and logical surmise to construct a kind of transformational scheme: "I claim that the technologically essential elements refer metaphorically to the processes of reproduction of social groups. . . . The evidence suggests that the manioc process is seen as a female counterpart of the male Yurupary rites" (p. 182). Her analysis further suggests that there are tangible analogies among such diverse aspects of culture as the production of manioc by women, the process of the passage of food through the alimentary canal, elimination, sexual

procreation, birth, nurturance, maturation, death, putrefaction, burial, and rebirth.

After this rhetorical tour de force in which virtually everything becomes a metaphor for everything else, Christine Hugh-Jones admits, "I am sure it seems that I am having it all ways, but I would argue that Indian ideology has it all ways too, for I am simply following the implications which it contains" (pp. 190–91). But these implications are patently based on her own surmise, on "explicit comparisons made by the Indians," and on the "logic of the system." Her interpretation does not appear to be derivable from a single corpus of mythic or other material (none is presented), nor is there evidence that this interpretation has been compared with the understandings of native informants. Hugh-Jones might argue that no native would be capable of constructing the entire system, but such an admission would seriously vitiate her claim that her account is faithful to the natives' view of their world. Hugh-Jones's desire to present the system as "integrated" led her to substitute her own logical processes for those of her informants. I judge this approach to be a highly dubious exercise in exegetical construction, one that renders Barasana culture in such an idiosyncratic manner as to make it virtually useless for comparison. The result is also just plain hard to read.

Stephen Hugh-Jones conducted a field study simultaneously with Christine Hugh-Jones, but he presents a more grounded study that can better serve the requirements of comparison. The principal focus of *The Palm and the Pleiades: Initiation and Cosmology in Northwest Amazonia* is the secret Yurupary men's cult that revolves around sacred musical instruments and excludes women and children. Such cults are well known in South American societies like the Xinguanos and the Mundurucu, and a study focusing on them in the Northwest Amazon region is therefore welcome. The study makes use of informants' accounts, direct participant observation, and material from myths. An appendix provides abridged versions of most of the myths treated in the text. The main body of the book consists of an intricate, contextualized symbolic analysis of the principal elements of ritual and myth, including a running "dialogue" with Lévi-Strauss as to the meaning and structural significance of these aspects. While his method is structuralist, Hugh-Jones is careful to state that his intention is to use myth to elucidate the organization of ritual within a single cultural context, not to perform cross-cultural analysis or to uncover universal structures.

The argument developed by Stephen Hugh-Jones leads to the conclusion that the ritual of Yurupary provides the ideological underpinning for the correct roles of men and women. Founded in a myth

that the women once held political power (through control of the He instruments) and that men once were the cultivators of manioc, the ritual symbolically deprives mothers of their sons through an act in which the adult men "give birth" to the initiates (p. 132). Hugh-Jones summarizes the Yurupary viewpoint in his conclusion: "Material birth is distinguished from spiritual birth. Women give birth to children, but only men give birth to men. In this perspective, women and children are spiritually unborn, and only initiated, reborn men are truly spiritual beings. Men, through ritual and through the possession of cultural symbols such as the He instruments and the gourd of beeswax, seek to dominate and control the He world. At a social level, this involves the dominance of men over women; at a more general level, it involves the dominance and control over the cosmos through shamanic activity" (p. 251). The ascendancy of men over women in ritual, myth, and politics is commonly observed in South America, although at least some authors have questioned whether men actually rule over women (Murphy and Murphy 1974). Is the phenomenon of sex antagonism simply an upwelling from the deep springs of the human psyche, or should researchers seek an explanation for its appearance at this time in this form? Stephen Hugh-Jones would like to set the Barasana case into ethnographic perspective, at least in the region of the Northwest Amazon. He suggests that because "the basic details of Yurupary rites and myths are broadly similar for all the groups of the Vaupés-Icana region, they clearly should be treated as variations or transformations of one another." But neither his book nor any other by the structuralists takes more than a baby step toward achieving such a comparative perspective. First of all, the appropriate cross-culturally relevant categories have not been suggested. Second, no suggestions are made about how to account for the variation encountered. The question of sex antagonism is a case in point. What is it that distinguishes South America from other parts of the world in this respect, and what accounts for the differences within South America?

The founder of anthropological structuralism viewed it as a way of getting behind the superficial features of social organization and myth to the hidden structures of human thought. The aims of the ethnographers reviewed here are far less ambitious. They use the structural approach as a way of analyzing the specific societies they studied, a way of reducing the welter of ethnographic data to manageable proportions. This use of structuralism is probably a more defensible one, but from lowered expectations inevitably come more modest results. The studies reviewed here all contribute to our understanding of the cultures in question. They bring order to their parts, although it is not entirely certain whether that order is the one the natives would provide. But these works do not provide explanations in the conventional

natural science sense, and even the comparisons they allow have only an edifying, rather than a predictive, value. Anthony Seeger suggests that the value of the structural analysis he made is that it enables us to see ourselves more clearly. I am perplexed about just how that goal is to be achieved. The gap between structuralism and empiricism has not been narrowed by the higher ethnographic standards employed by neo-structuralists.

Although he was trained at Cambridge just after Stephen and Christine Hugh-Jones, Paul Henley has written a book that differs markedly from theirs, *The Panare: Tradition and Change on the Amazonian Frontier*. Henley's study is a general ethnography of the Panare that primarily focuses on how their culture is changing under conditions of increasing involvement with Venezuelan national society. He explains his choice of subject: "The recent history of Amazonia has made one so accustomed to the idea that the indigenous societies of the region are doomed to disintegrate at the first brush with industrial civilization that the resilience of the Panare stands out as an exception worthy of explanation" (xv). Henley then proceeds to offer a sensitive and highly detailed refutation of this promise of doom. After four chapters on ecology, economics, and social organization, Henley devotes three entire chapters to changes in the Panare environment, assessing the ways in which each feature has influenced change among the Panare. When viewed in the context of the Gê and Bororo, with their richly elaborated social structures, the Panare appear to be paupers by comparison. Panare social identity seems tied up almost entirely with the individual's conjugal family. Initiation and other ceremonies require the participation of elements outside the nuclear family and the settlement itself, but not as members of constituted groups. Henley concludes that while internal solidarity has contributed to the persistence of the Panare cultural identity, the factors most responsible for its persistence today are external to Panare society. In large areas of the Peruvian, Colombian, and Brazilian Amazon, the national frontier expanded to the detriment of Indians as rubber traders, prospectors, and missionaries exploited Indian labor, Indian land, and Indian women. Venezuelan frontier expansion in the Panare area was relatively benign because only one major extractive product was found there. *Sarrapia*, a forest fruit used in toiletries and cigarettes, can be collected in a few weeks per year during the dry season.

But the uncentralized nature of the Panare economy, together with the conjugal family as the primary unit of production and reproduction, renders this almost leaderless society highly vulnerable to changes on the horizon. Henley also stresses the relatively unorganized and opportunistic use of resources as if they were unlimited. The Panare have gradually migrated from their upland villages to locations in

a large valley near missions or *criollo* settlements in order to have access to trade goods. This tendency inevitably produces higher rates of exploitation and a potential scarcity of resources. Henley observes that the extensive pooling of food by the Panare tends to break down under conditions of scarcity. The increased use of resources by Panare and their non-Panare neighbors thus threatens to break down the communal nature of their society. The planned development of a large bauxite mine in their vicinity is a major threat, one that will severely test the effectiveness of Venezuelan institutions designed to conserve the autonomy and resources of native groups. Such institutions have been effectively implanted in few areas of South America, but Henley is optimistic nonetheless. Perhaps Venezuela's long tradition of liberal democracy will permit greater state control over those interests (mining, forestry, petroleum, ranching) that threaten the lives and livelihoods of many indigenous groups.

Henley's account has a more functionalist than structuralist flavor to it, and it seems well grounded empirically. He does not fall into the trap of presuming the functional unity and integration of all aspects of Panare culture. One would hope that the integration of a holistic ethnography with a thoroughgoing treatment of social change is the beginning of a trend in ethnography. Nevertheless, little emerges from this study that can be transferred to the study of other societies, and consequently, it contributes little to the development of a theory of social change among stateless peoples in the modern world.

Roland Bergman's *Amazon Economics: The Simplicity of Shipibo Indian Wealth* also presents a contrast to the structurally oriented studies reviewed above. Although this book attempts to present a holistic account of Shipibo culture in Peru, it is rooted in cultural ecology. *Amazon Economics* contains one of the most complete accounts of the relationship between a lowland South American native society and its environment yet to be published in monographic form. Bergman's approach, and his concern with measurement, derives from a natural science tradition in anthropology.

The structural studies under review present charts depicting the structural relationships of elements in a timeless frame, while Bergman's monograph bristles with tables based on his extensive quantitative field research. For over a year, Bergman monitored time allocation, garden hunting and fishing production, food intake, and other variables. The result of Bergman's diligence is the quantification of an impressive number of variables that have been measured in very few societies at any technological level. Two samples will best convey the extent of the data:

The diet is excellent Agriculture, fishing, and hunting provide an average of 1,665 kilocalories and 67 grams of protein per capita daily. Agricul-

ture supplies 84 percent of the kilocalories and fish and game supply 72 percent of the protein. . . . Men average 3.4 hours of work per day, 47 percent of which is for food procurement. . . . Women average 4.4 hours per day, 7 percent of which is for food procurement, with 59 percent of their work spent in processing and preparation. The average hour of work in agriculture produces 7,711 kilocalories and 109 grams of protein. This includes inefficiently produced minor crops of maize and beans. Bananas, the principal carbohydrate source . . . yield 13,785 calories per hour of work versus 1,240 kilocalories per hour for maize and 2,271 for beans" (p. 204).

Bergman's monograph addresses the question of intensification, a matter of great concern in ecological anthropology. The question it asks is, what are the conditions under which people begin to work harder, spending more time to exploit the subsistence base? For Amazonia, there are the additional issues of whether or not Amazonian habitats are capable of supporting dense human populations, and if so, under what technological conditions. There is also the question of whether or not the availability of resources has an effect on the structure of societies in the region.

It is curious that despite having collected some of the most complete data on Amazonian subsistence available, Bergman did not utilize the data to test some of the leading hypotheses concerning intensification. For example, with regard to the notion that contemporary hunter-gatherers do not plant because they can earn their living just as easily by foraging, Bergman warns against overstressing "economic motivations" in explaining behavior. His own data, however, appear to support the interpretation that the Shipibo maximize the return on labor for dietary protein and calories.

TABLE Costs and Benefits of Principal Shipibo Subsistence Activities

Activity	Preference Rank	Energy Yield per person-hr kcal	Protein Yield per person-hr grams	Contribution to diet % kcal	Contribution to diet % protein	Time spent per capita hr/year*
Hunting	1	975	185	3	14	18.2
Fishing	2	914	162	13	59	85.0
Agriculture	3	7711	109	84	27	64.0

Source: Based on data in Bergman, *Amazon Economics*.

*It should be noted that food-processing time is not included.

The table I have constructed from Bergman's data indicates some of the costs (in time) and benefits (in nutrients) of the three principal Shipibo subsistence activities. The bulk of the calories in the diet clearly

comes from swidden horticulture, especially from bananas and maize. But crops contribute only about a quarter of the daily protein ration of 73 grams per adult. The remainder of the dietary protein is supplied principally by fishing, an activity that is primarily male but requires greater overall time expenditure than planting. Bergman states that the Shipibo prefer hunting and fishing to agriculture (he is probably referring to male preferences because women do no hunting and little fishing). While fishing is slightly less efficient than hunting as a source of protein and energy, it is far more reliable. One might wonder why the Shipibo bother to hunt at all when the risk of failure is higher and the overall contribution to the diet is small. It may be, as Bergman suggests, that they enjoy hunting and prefer red meat, but it is also plausible that hunting provides vital nutrients contained in fat and muscle tissue that are lacking in the other foods consumed by the Shipibo (compare Gross 1975). The total time spent hunting is relatively small, which reflects its small contribution to the diet. It can be argued that intensification of hunting—as opposed to fishing—would result in rapidly declining productivity per unit effort (compare Gross 1981).

The Shipibo undoubtedly require many other items for their subsistence and well-being, such as building materials, firewood, dyes, and other decorative materials. Their subsistence regime and time allocation is probably adjusted to meeting those needs as well. But the allocation of time reported in Bergman's careful accounting is consistent with the hypothesis that the Shipibo allocate time in such a way as to produce a diet with sufficient protein and energy for normal growth and maintenance with a minimum expenditure of effort. Unfortunately, Bergman does not really test hypotheses concerning optimization with the excellent data that he collected.

The discovery that behavior and ideology are constrained by specific features of the natural environment in a particular part of the world is an important one because it indicates the limits beyond which even the most creative cultural tradition cannot go. Bergman's study and others like it (for example, Gross et al. 1979; Johnson and Behrens 1982; Flowers et al. 1982; Beckerman et al. 1983; Hames and Vickers 1983) help to show why complex civilizations, like those that arose in the Andes, did not emerge in the Amazon Basin. This discovery in no way diminishes the fantastic variety and rich texture of native Amazonian culture.

The studies reviewed here attest to the enormous strides made over the past decade in describing and analyzing native societies of South America, especially in Amazonia. They promise a great deal for future scholars because they document patterns that are changing rapidly and they offer new avenues of interpretation. These works lay the groundwork for badly needed comparative studies, but they also reveal

the inadequacy of the theoretical and methodological tools utilized so far in South American studies. Although the neostructuralists brought higher empirical standards to South American studies, their work is unlikely to have theoretical impact because it does not sustain the sweeping generalizations about the nature of human thought that characterize structuralism.

Studies dealing with culture change have great significance for both theory development in anthropology and policy development in national and international institutions seeking to achieve humane, workable policies toward tribal minorities. But such studies are still in their infancy, perhaps because their theoretical basis is still so undeveloped. It is to be hoped that ecological studies are about to enter a new phase. The number of highly sophisticated field studies demonstrating a quantum increase in well-documented ecological measurements is very encouraging.³ But this wealth of data must now be utilized to test propositions cross-culturally and to deal with areas of behavior not directly related to subsistence. Anthropologists working in South America and elsewhere have discovered the importance of obtaining accurate knowledge about behavioral formations from the past in order to understand properly the present. But ethnohistorical and archeological studies in South America are still seriously lacking.

Perhaps most telling of all is the fact that there are several different schools of analysis of South American culture whose findings do not articulate with one another. Major questions have been raised in the context of lowland South American ethnology, questions that have important implications for the nature of society itself, the relations between the sexes, the role of ritual in social life, the varieties of kinship systems, and the issue of whether modern society is capable of allowing culturally different minorities to survive in its midst. All of the schools of anthropology discussed in this review have something to contribute; however, the major obstacles to greater collaboration are the reluctance of some ethnologists to state their hypotheses in testable form and the resistance of others to applying their data to socially and historically significant issues. Nonetheless, the latest harvest of published studies provides grounds for cautious optimism that South American studies will eventually make major contributions to the growth of ethnology.

NOTES

1. Maybury-Lewis spelled their name "Shavante," while I have adopted the orthography that came into general use after his study was completed, in which the "sh" sound in English is rendered as x, hence Xavante.
2. One of the few other studies of Central Brazilian peoples that shows how change occurred within the structure is Lux Vidal's 1977 work on the Kayapó-Xikrin.
3. See Hames and Vickers 1983.

BIBLIOGRAPHY

- ABORIGINES PROTECTION SOCIETY OF LONDON
1973 *Tribes of the Amazon Basin in Brazil, 1972*. London: n.p.
- BAMBERGER, JOAN
1971 "The Adequacy of Kayapó Ecological Adjustment." *Verhandlungen des XXXVIII Internationalen Amerikanistenkongresses, Stuttgart and Munich, 12–18 August 1968*, 3:373–79. Munich: Klaus Renner.
- BECKERMAN, STEPHEN
1979 "The Abundance of Protein in Amazonia: A Reply to Gross." *American Anthropologist* 81:533–60.
- BECKERMAN, STEPHEN, RAYMOND HAMES, WILLIAM T. VICKERS, JAMES BOSTER, AND ANTHONY STOCKS
1983 "Does the Swidden Ape the Jungle?" *Human Ecology* 11, no. 1:1–102.
- CARDOSO DE OLIVEIRA, ROBERTO
1972 *A Sociologia do Brasil Indígena*. São Paulo: Editôra Tempo and Editôra Universidade de São Paulo.
- CARNEIRO, ROBERT
1961 "Slash-and-Burn Cultivation among the Kuikuro and Its Implications for Cultural Development in the Amazon Basin." *Antropológica Supplement no. 2: The Evolution of Horticultural Systems in Native South America*, edited by Johannes Wilbert, 47–67. Caracas.
- CROCKER, WILLIAM
1979 "Canela Kinship and the Question of Matrilineality." In *Brazil: Anthropological Perspectives*, edited by M. Margolis and W. Carter, 225–49. New York: Columbia University Press.
- DAVIS, SHELTON H.
1977 *Victims of the Miracle*. Cambridge: Cambridge University Press.
- EMBER, MELVIN, AND CAROL R. EMBER
1971 "The Conditions Favoring Matrilocal versus Patrilocal Residence." *American Anthropologist* 73, no. 3:571–94.
- EITEN, GEORGE
1972 "The Cerrado Vegetation of Brazil." *The Botanical Review* 38, no. 2:201–341.
- FLOWERS, NANCY M., DANIEL R. GROSS, MADELINE L. RITTER, AND DENNIS W. WERNER
1982 "Variation in Swidden Practices in Four Central Brazilian Indian Societies." *Human Ecology* 10, no. 2:203–17.
- FUERST, RENE
1972 *Bibliography of the Indigenous Problem and Policy of the Brazilian Amazon Region (1957–1972)*. Geneva and Copenhagen: International Work Group on Indigenous Affairs.
- GROSS, DANIEL R.
1975 "Protein Capture and Cultural Development in the Amazon Basin." *American Anthropologist* 77, no. 3:526–49.
1979 "A New Approach to Central Brazilian Social Organization." In *Brazil: Anthropological Perspectives*, edited by M. Margolis and W. Carter, 321–42. New York: Columbia University Press.
1981 "In the Xingu: A Shattered Peace." *Geo* 3, no. 4:26–34.
1983 "Village Movement in Relation to Resources in Amazonia." In *Adaptive Responses of Native Amazonians*. See HAMES AND VICKERS, 429–49.
- GROSS, DANIEL R., GEORGE EITEN, NANCY M. FLOWERS, M. FRANCISCA LEOI, MAD-

ELINE LATTMAN RITTER, AND DENNIS WERNER

- 1979 "Ecology and Acculturation among Native Peoples of Central Brazil." *Science* 206:1043–50.

HAMES, RAYMOND

- n.d. "The Wild Protein Quest in Amazonia." Manuscript.

HAMES, RAYMOND, AND WILLIAM VICKERS, EDITORS

- 1983 *Adaptive Responses of Native Amazonians*. New York: Academic Press.

HANBURY-TENISON, ROBIN

- 1973 *A Question of Survival for the Indians of Brazil*. New York: Scribner's.

JACKSON, JEAN

- 1976 "Vaupés Marriage: A Network System in an Undifferentiated Region of the Northwest Amazon." In *Regional Analysis*, Vol. 2: *Social Systems*, edited by C. Smith, 65–93. New York: Academic Press.

JOHNSON, ALLEN, AND CLIFFORD A. BEHRENS

- 1982 "Nutritional Criteria in Machiguenga Food Production Decisions: A Linear-Programming Analysis." *Human Ecology* 10, no. 2:167–89.

JUNQUEIRA, CARMEN

- 1973 *The Brazilian Indigenous Problem and Policy: The Example of the Xingu National Park*. Geneva and Copenhagen: International Work Group on Indigenous Affairs.

LATHRAP, DONALD

- 1968 "The 'Hunting' Economies of the Tropical Forest Zone of South America: An Attempt at Historical Perspective." In *Man the Hunter*, edited by R. B. Lee and I. Devore, 23–29. Chicago: Aldine Press.

LEVI-STRAUSS, CLAUDE

- 1961 *Tristes Tropiques*, translated by John Russell. New York: Atheneum.
1967 "Social Structures of Central and Eastern Brazil." [1952] In *Structural Anthropology*, translated by C. Jacobson and Brooke Schoepf, 116–27. New York: Doubleday.

LYON, PATRICIA J.

- 1974 *Native South Americans: Ethnology of the Least Known Continent*. Boston: Little Brown.

MAYBURY-LEWIS, DAVID

- 1958 "Kinship and Social Organization in Central Brazil." *Proceedings of the Thirty-Second International Congress of Americanists*, Copenhagen, 123–36.

- 1967 *Akwẽ-Shavante Society*. Oxford: Clarendon Press.

MEGGERS, BETTY J.

- 1954 "Environmental Limitations on the Development of Culture." *American Anthropologist* 56, no. 5:801–24.

MOREY, N., AND R. MOREY

- 1975 "Relaciones comerciales en el pasado en los llanos de Colombia y Venezuela." *Montalban* (Caracas) 4:533–64.

MURPHY, YOLANDA, AND ROBERT MURPHY

- 1974 *Women of the Forest*. New York: Columbia University Press.

PRICE, PAUL DAVID

- 1972 *The Nambikwara of Central Brazil*. Ph.D. diss., University of Chicago.

ROOSEVELT, ANNA C.

- 1980 *Parmana: Prehistoric Maize and Manioc Subsistence along the Amazon and Orinoco*. New York: Academic Press.

SORENSEN, ARTHUR

- 1967 "Multilingualism in the Northwest Amazon." *American Anthropologist*

69:670–84.

VIDAL, LUX B.

1977 *Morte e Vida de uma Sociedade Indígena Brasileira: Os Kayapó Xikrin do Rio Catete*. São Paulo: Editôra Hucitec and Editôra da Universidade de São Paulo.

WERNER, DENNIS W.

1978 "Trekking in the Forest." *Natural History* 87, no. 9:42–54.

1983 "Why Do the Mekranoti Trek?" In *Adaptive Responses of Native Amazonians*. See HAMES AND VICKERS, 225–38.

WERNER, DENNIS W., NANCY M. FLOWERS, MADELINE L. RITTER, AND DANIEL R. GROSS

1979 "Subsistence Productivity and Hunting Effort in Native South America." *Human Ecology* 7, no. 4:303–15.