Mayo Ethnobotany is as an important contribution to the growing body of research on arid lands ethnobotany and I recommend it for people working in northwest Mexico who want to learn about its plants and people. The text would also be useful as a preliminary case study for human–plant systems undergoing major ecological transitions.

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Fire, Native Peoples, and the Natural Landscape. Thomas Vale (ed.). Island Press, Washington, D.C. 2002. Pp. 238, maps. $50.00 (cloth) ISBN 1-55963-888-5; $25.00 (paper) ISBN 1-55963-889-3.

With a nod towards environmental determinism, the geographers who have contributed chapters to this book set out, in the word chosen by the editor, to "demythologize" the variably emphasized claims that hunting-gathering societies made significant impacts in using fire in much of the American West. The stated aim of the book as presented by Vale in the first chapter is reasonable enough: to achieve a "middle ground" between the polar positions that North America was an "untouched wilderness" and the counter claims that it was a "humanized landscape."

The outcome, however, is something quite different from a middle ground, and worse, the overall analysis is flawed. The authors conclude that except for the very limited areas of agriculture in the Southwest, indigenous people made little impact on the "natural landscape." As Vale states in the final sentence of the concluding chapter, it was "an American wilderness—a natural landscape—[that] greeted the first Europeans." This is quite different from what Thomas Bonnicksen, an acknowledged authority on forest ecology, concluded in his recently published book, *America's Ancient Forests: From the Ice Age to the Age of Discovery* (2000: 259): "Native Americans helped to create and sustain the ancient forests that Europeans found beautiful enough to set aside in national parks."

Vale, in making his claim against what he calls the "arm-waving, careless generalizations" made by "anthropologically minded observers," is apparently unaware that few anthropologists know about, much less would support, the idea that hunter-gatherers increased the abundance and influenced the distribution of natural resources. As taught to anthropology students, environmental manipulations do not occur until people take up farming.

Indeed, the seminal thinking about hunter-gatherer uses of fire comes out of Vale's own discipline, and only later influenced anthropologists like Omer Stewart. Stewart took seminars from the geographer, Carl Sauer, during the 1930s while

a graduate student at the University of California, Berkeley, and on the subject of foragers and fires, went on to become a maverick in anthropology. In this respect, it was geography-minded observers who initiated the "arm-waving, careless generalizations" that concern Vale and his colleagues.

Carl Sauer wrote extensively about the importance of human uses of fire; but his works are scarcely mentioned by Vale and his colleagues. Also, and continuing on that aspect of Sauer's work, the geographer William Denevan has written a great deal about the significance of native people and their uses of fire in both North and South America; and neither he nor Sauer is all that "anthropologically minded." It may well be that Denevan's important 1992 article, "The Pristine Myth: the Landscape of the Americas in 1492," was the motivation behind Vale's charge to "demythologize" the opposing view.

Thus, instead of taking the high middle ground, Vale attempts to resurrect and spruce up the alternative myth that Native Americans lived in essentially passive relationship to nature, seemingly content to wait for natural fires to do for them what they somehow couldn't figure out and do for themselves. Contrary to this view, Stephen Pyne (1982:71) points out that without the knowledge and the will to use fire in ways significantly different from natural fire regimes, "most Indian economies would have collapsed." Collapse they certainly would, had they depended upon disruptive natural fires. Fortunately, they knew how to use fire to help manage local habitats, and in some cases whole regions (e.g., the North American Plains), at preferred stages of ecological succession.

Thus, more appropriate than merely asking why hunter-gatherers set fires, and knowing what we now know about the ecology of fire, it makes more sense to ask why not? Why on earth wouldn't hunter-gatherers have employed such a readily available and easily understood tool, given the resources they sought and their understandings of the complex environments in which they lived? Though we wouldn't be here if our hunter-gatherer ancestors had not been successful foragers, most of us haven't the slightest idea of how to live off the land. But that doesn't stop some of us from claiming to know all about the ecology of hunting and gathering adaptations.

In his opening discussions, Vale makes the claim that the interpretations (two chapters of which are his own) derive from the "wisdom that guide[s] the final words" of the authors. This aggrandizing would be off-putting enough, even if the authors had supported their claims with new evidence, either archival or from field studies. Instead, they criticize and selectively use the work of others (e.g., opting for the lowest population estimates for Native Americans); ignore or overlook a considerable number of relevant publications that do not fit their assumptions; and, worst of all, they fail to include (or even note) any comparisons from what has been written about the uses of fire by indigenous people elsewhere in the world—South America, Asia, Africa, and (most studied of all) Australia. Perhaps most egregious is their omission of any reference to William Cronon's (1983) major work on Native American uses of fire in New England, an area inhabited by people who fall outside their limited view of "native."

As someone who has researched and written a fair amount on the topic of anthropogenic fires, it is disappointing to have so few of my publications cited, the materials selectively used, and the conclusions heavily criticized. Though Aus-

tralian Aborigines are not within the book's narrow purview of native people as being only those in western North America, in Lewis (1973) and other venues, I have published several items that go to the heart of what some of the authors argue (for example, Lewis 1977, 1980, 1991). The most important not included in their criticisms ("How to Burn a Boreal Forest: Yards, Corridors and Mosaics," Lewis and Ferguson 1988) is applicable to a number of chapters in the book, and could have actually been used to strengthen their arguments, particularly Vale's conclusions that "mosaics" are a feature of the "natural" landscape.

Expressing a typical criticism, one author dismisses the value of historical and ethnographic evidence because of "biases inherent in oral and written accounts." Without question, however, the authors accept the quantitative evidence presented in "tree-ring-based fire history studies" as if there are no biases in the way fire scars are measured and interpreted, or in the way researchers extrapolate data to create whole regional histories of fire. Were it only a question of evaluating the advantages and disadvantages of quantitative vs. qualitative research or, better yet, how such approaches might complement each other, the book could serve as a starting point for a real debate of the topic and not simply a one-sided polemic. In no way does this book represent a definitive argument about the importance of "Native Peoples" and their uses of fire.

Admittedly, historic and ethnographic data are rarely useful for quantitative analysis. Nevertheless, anecdotal evidence is frequently consistent with ecological paradigms, thereby helping to validate such data. In this respect, the ecological effect of hunter-gatherer uses of fire has been widely "tested" by comparing the practices of culturally distinct groups within regions and also of those living in widely separated regions or even on different continents. Most important for scientific verification, however, are the comparisons that can be made with conclusions from ecology, which takes historical and ethnographic accounts ("anecdotal evidence") and converts them into scientific data. Cross-cultural, particularly intercontinental, comparison is anthropology's main claim to scientific credibility; it is our way of getting beyond more parochial kinds of generalization derived from particular sites or even regions—as Vale and colleagues argue for the American West.

History is a messy business, full of "oral and written accounts"; whether social or natural, historical evidence is properly considered, corrected, accepted, or rejected in terms of its overall fit and coherence within larger contexts. Some geographers, like Sauer and Denevan, express this clearly in their writings. Unfortunately, that perspective is largely missing from this book. As I wrote three decades ago in my first publication on indigenous uses of fire ("Patterns of Indian Burning in California," 1973:49–50), "It is not the individual facts nor the total number of such facts that is significant but, rather, how the information fits an ecological system of knowledge that has been gained from the actual study of fire in field situations."

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Trekking Through History: The Huaorani of Amazonian Ecuador. Laura M. Rival. Columbia University Press, New York. 2002. Pp. xiii + 257. Illus., tables, index. $60.00 (cloth). ISBN 0-231-11844.

Rival's *Trekking Through History* is an ethnographic account of the Huaorani of Ecuador contextualized through a historical ecological approach. Although the Huaorani use domesticated plants, she describes them as primarily nomadic trekkers, engaged in a hunting and gathering mode of subsistence. In part, this book is a critique of William Balée's agricultural regression model of Amazonian foraging, which posits that foraging in some Amazonian groups likely arose as a postcontact adaptation, with loss of knowledge of how to cultivate being one consequence of colonization (e.g., Balée 1994). Rival argues that Huaorani nomadic trekking is not necessarily a postcolonial adaptation, but instead is more likely a long-standing tradition that represents a political choice to trek rather than to cultivate. Although the two views would seem opposed at first glance, I believe they are complementary, for they are addressing different questions. Balée's work places more emphasis on ecological change, critical historical events, and the loss of indigenous cultural knowledge, while Rival's work places more emphasis on environmental perception, historicity, and ontology.

Balée has addressed the question of why the Guajá foragers of eastern Brazilian Amazonia do not know how to propagate domesticated plants. Based on the presence of linguistic artifacts of domesticates in their language, ethnohistorical evidence, and their adaptation to anthropogenic forests, Balée's work has provided a convincing case that the Guajá were formerly a horticultural people. He places the likely time for their loss of indigenous horticultural knowledge subsequent to the devastating and chaotic circumstances following European colonization. Guajá foraging involves exploiting dominant palm colonizers of old fallow fields, the fruits of which serve as a caloric staple. Further, his model pro-