and to proceed to use, or coin, more appropriate terms for specifying what we mean in a modern scientific context.

David B. Wake
Department of Integrative Biology and Museum of Vertebrate Zoology, University of California, Berkeley, CA 94720, USA

■

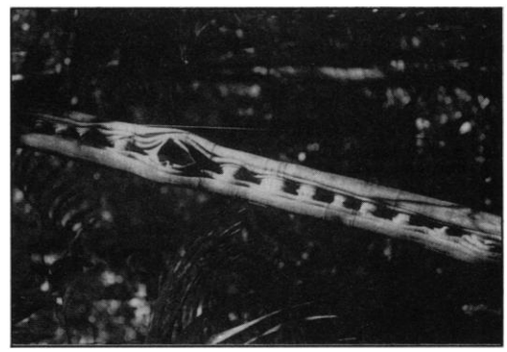
A Patch of the Tropics

La Selva. Ecology and Natural History of a Neotropical Rain Forest. LUCINDA A. McDADE, KAMALJIT S. BAWA, HENRY A. HESPENHEIDE, and GARY S. HARTSHORN, Eds. University of Chicago Press, Chicago, IL, 1994. x, 486 pp., illus. $90 or £71.95; paper, $28.95 or £23.25.

In 1970, when I began a study of the population ecology of tropical rodents, getting to Finca La Selva from San Jose, Costa Rica, involved a tedious four-hour drive along a mountain road followed by a pleasant 15-minute boat ride up the Rio Puerto Viejo. The field site, recently purchased by the Organization for Tropical Studies (OTS), consisted of about 580 hectares of primary lowland rain forest and a single two-story field station that provided plenty of room for a handful of scientists studying hummingbirds, tree demography, and leaf-litter invertebrates.

Today, only the forest remains the same at La Selva. The La Selva biological station now encompasses about 1500 hectares, including large tracts of early successional pastures and second-growth forest where manipulative studies can be conducted. The physical plant has expanded enormously and now includes air-conditioned laboratories in which increasingly sophisticated research is being conducted. A paved road now brings hundreds of scientists and visitors to La Selva's doorstep, and communication with the rest of the world is easy. Whereas about 12 papers, dealing mostly with systematics and species and community ecology, from La Selva were being published annually in 1970, now about 80 papers covering a much wider array of topics are published annually by La Selva researchers.

This volume summarizes what is currently known about the biology of the La Selva flora and fauna, which, along with Barro Colorado Island, Panama, and Los Tuxtlas, Mexico, is one of the most intensively studied patches of lowland tropical forest in the northern neotropics. The book contains 26 chapters written primarily by North American scientists and eight appendixes describing how OTS administers the field station and listing the flora and fauna. The chapters are placed in five sections dealing with the abiotic environment and ecosystem processes, the plant community, the animal community, plant-animal interactions, and the human environment around La Selva. The editors instructed the authors to set their chapters in as broad a context as possible while reviewing the La Selva data. Most successfully met this challenge. As a result, the book could serve as a textbook in tropical ecology. It contains very thorough reviews of many areas of tropical ecology, especially those dealing with plant-animal interactions, and is full of ideas and suggestions for future research. Graduate students will find a wealth of potential research projects in these chapters.



"The strikingly braided stem of the 'monkey-ladder' vine (*Bauhinia guianensis*, Caesalpinoideae) makes it easily recognizable vegetatively; other morphologically distinguishable lianas at La Selva remain unidentified for lack of reproductive material." [From D. A. Clark's paper in *La Selva*; R. Marquis]

"A colony of four white bats, *Ectophylla alba*, roosting in a tent cut from a *Heliconia* leaf. The bats typically hang curled in tight clusters from the midrib. Details of the cut side veins and interconnected tissues may be seen along the midrib of the leaf. The holes in the leaf were made by the bats' claws. Tents such as this one may be used for several weeks. *Ectophylla* roosts only under leaves that it modifies as tents." [From R. Timm's paper in *La Selva*; Barbara L. Clauson]

"Researchers C. Pringle (right) and F. Triska (left) at work on stream insects in a tributary of the Rio Santo Domingo at ca. 2000 m elevations in Braulio Carrillo National Park behind La Selva. In the tropics, roots that grow into the flowing water of streams can provide important habitats for many benthic organisms." [From *La Selva*; G. Dimijian]

Two issues of special concern emerge from many chapters. The first is how limited is our knowledge of the natural history of most species of plants and animals at La Selva and elsewhere in the tropics. Despite hundreds of person-years spent working at La Selva, we have detailed knowledge about the lives of only one species of frog, one lizard, one bird, and one rodent among the vertebrates, an especially well-studied group at this field station. Several authors go against current ecological fashion and make a strong plea for more natural history studies. According to Philip de Vries, " 'Natural history' is twentieth-century organismal biology and continues to provide the new data to be used by present and future biologists. Meaningful comparisons of species diversity, seasonality, unpalatability, or mutualisms depend on knowing, not guessing, what species occur where and when and what they do for a living."

In a final synthesis chapter, Gordon Orians highlights the second major concern: the importance of a "comparative tropical ecology." He points out that answering questions about the adaptations of tropical organisms and factors that produce and maintain high species diversity, the hallmark of most tropical ecosystems, requires detailed knowledge about the biology of different floras and fauna, knowledge that for the most part does not yet exist. To this end,

he urges scientists working at different tropical sites to address common questions using common protocols. He also points out that in order to have any flora and fauna left for comparative studies, tropical biologists need to become more involved in conservation and political action.

Finally, as an indication of how socioeconomic realities affect the study of tropical organisms, three chapters by Butterfield and Montagnini describe the human events that have led to the "peninsularization" of La Selva in a sea of pastures and how La Selva scientists and OTS can contribute new knowledge to agroecology and forestry. Costa Rica is currently prepared to spend millions of dollars on reforestation projects. Timber and fuelwood screening trials that began at La Selva in the 1980s will contribute important new data about the performance of native and exotic tree species that are needed for such projects. This information is critical for preventing forest reserves such as La Selva from disappearing under the relentless expansion of the Costa Rican human population.

Theodore H. Fleming
Department of Biology,
University of Miami,
Coral Gables, FL 33124, USA

■

The Columbian Exchange

Ethnohistory and Archaeology. Approaches to Postcontact Change in the Americas. J. DANIEL ROGERS and SAMUEL M. WILSON, Eds. Plenum, New York, 1993. xvi, 237 pp., illus. $35. Interdisciplinary Contributions to Archaeology.

The Columbus quincentenary in 1992 stimulated an enormous amount of research about the political, economic, cultural, ecological, and demographic impact of European expansion across the Americas. This volume, which evolved out of a 1988 Society for American Archaeology symposium, represents one strand of these efforts. It reflects the attempts by many anthropologists to grapple in a theoretically and methodologically sophisticated fashion with one of the most dramatic conjunctures in human history. Populations that had been biologically and culturally isolated for 12,000 years suddenly collided, with creative as well as catastrophic results. In order to study that conjuncture, social scientists have had to combine disciplines, or forge new subdisciplines, to analyze what biological historian Alfred Crosby calls the Columbian Exchange.

Among anthropologists, two of the most contemplated combinations are ethnohistory and archeology. Yet, as many of the chapters in this volume make clear, that collaboration is an uneasy one, fraught with epistemological problems and unrealized possibilities. Co-editor Wilson notes that archeologists generally focus upon large-scale processes that yield "gross evidence for changes in social relationships" and that "may take several generations, or even hundreds of years to make themselves apparent in the archaeological record" (p. 22). Historians immerse themselves in microprocesses, or "culture change under the magnifying glass," that reveal "the role of chance—extraordinary personalities, unusual conjunctures of events, droughts, personality conflicts, botched assassinations, and other unpredictable occurrences."

The trick is to integrate the two—a task the 12 anthropologist contributors attempt in widely varying degrees as they explore how indigenous societies from Central America to Lake Superior responded to European influences. They note the catastrophes of conquest, particularly the devastating impact of Old World diseases, but they also concentrate on how these societies manipulated their changing worlds to pursue their own goals and reinforce their own cultural values, particularly through trade. "A metaphor for the view of Native Americans as passive recipients of European culture has been the myth of European traders exchanging worthless trinkets of their own choosing for the commodities the New World peoples controlled," the editors note in their introduction. "As many of the chapters in this volume and elsewhere demonstrate, the desirability of different classes of European goods within native cultures was highly variable and culturally determined."

The selectivity of Native Americans is a major theme; so too is the importance of indigenous symbolism, status, and social stratification. Among societies as far away from one another as the Narragansett of modern Rhode Island and the Creek confederacy of Alabama, copper had sacred significance and conferred prestige and perhaps power upon its possessor. Among the Creek, Waselkov observes, "The sudden widespread availability of this formerly scarce commodity, now in the form of sheet brass, must have created a crisis in the social hierarchy. Combined with other processes (such as population decline, military defeats by DeSoto's army, and the discrediting of the priesthood through lack of effectiveness against new diseases), devaluation of the metal's sacred content probably contributed to the decline in chiefly authority that evidently occurred during the protohistoric period."

Ethnohistory and Archaeology is most successful in demonstrating the complexity of culture change among the peoples of North America after contact. Authors like Waselkov on the Creek, Perttula on the Southern Caddo, and Turnbaugh on the Narragansett skillfully document the ways in which Native Americans played off European powers against one another, imposed their own meanings on European trade goods, and developed innovative political and economic responses to demographic decline and foreign intrusion. In many cases, they were fighting a losing battle, but they fought it well.

The contributors are less successful at another of the volume's stated aims—to "weld the methodologies of archaeology and historical research within the framework of anthropological theory to produce a view of the past not solely dependent upon the biases of one." Several contributors utilize only archeological or documentary evidence but not both. Many others employ archeological data to test patterns of social and cultural change glimpsed first in the historical record. Their results are intriguing, but, as the editors themselves admit in their thoughtful afterword, they do not yet represent a true welding of the two methodologies.

Moreover, the documentary record itself is rarely subjected to the rigorous scrutiny ethnohistory demands. Several authors, particularly Rogers, critique acculturation theory while building upon its contributions and insights. Yet even though the editors stress the need to explore the indigenous meaning as well as material consequences of both artifacts and culture change, that meaning often remains elusive or secondary to more processual anthropological concerns. As ethnographers William Merrill and Edward Spicer have pointed out for the Rarámuri (Tarahumaras) and Yoemem (Yaquis), respectively, however, not only artifacts but religious rituals of European origin, such as the celebrations of Holy Week, have been interpreted within a fundamental Uto-Aztecan rather than European philosophical framework. This is not acculturation, or even syncretization, but something far more profound. Native Americans did not substitute European forms or meanings for indigenous ones. Nor did they fuse them. On the contrary, they transformed European elements and gave them radically new meanings even as those elements were transforming or destroying their societies.

Thomas E. Sheridan
Arizona State Museum,
University of Arizona,
Tucson, AZ 85721, USA