

## BOOK REVIEW

**Ethnobotany of the Waimiri Atoari Indians of Brazil.** William Milliken, Robert P. Miller, Sharon R. Pollard, and Elisa V. Wandelli. Kew, UK: Royal Botanic Gardens. 1993. (£15.00) (softcover). Pp. 146. ISBN 0-947643-50-8.

The Waimiri Atoari are a Carib-speaking indigenous group located about 200 km NW of Manaus, Brazil, on black-water tributaries of the Rio Negro. This study was conducted as part of a program of compensation for the loss of a sizeable portion of their reserve to a hydroelectric project. Two approaches to ethnobotanical research were employed: the traditional qualitative approach and the recently developed quantitative approach. The quantitative portion of the study duplicates the methods utilized by Balee (1986, 1987) with the Ka'apor and Tembe of Brazil and Boom (1987, 1990) with the Chacobo of Bolivia and the Panare of Venezuela. Those studies found that 77, 61, 79, and 49 percent, respectively, of *terra firme* trees (dbh greater than or equal to 10 cm) were attributed useful properties (not counting firewood or game animal food species). A similar study conducted by Pinedo-Vasquez et al. (1991) in a *ribereno* (acculturated, mixed blood) community in north-east Peru found that 60 percent of forest trees were used.

The book begins with a concise history of relations between the Waimiri Atoari and settlers, the military, government officials, a military road-building team, and a mineral development company. This account provides a very useful context for understanding the conditions and implications of the study. It suggests the extreme processes of acculturation and deculturation which the group is likely to have been undergoing. These processes are likely to have caused the loss of a significant portion of the Waimiri Atoari's forest utilization and management knowledge. This book also outlines the mechanisms whereby the group's forest resource base has been reduced over the past 200 years. An understanding of these mechanisms is essential for the future management and protection of the Waimiri Atoari Reserve.

The Waimiri Atroari defense of their territorial integrity has resulted in a number of brutal military reprisals. Their original 1971 reserve was dismantled after ten years in order to make way for tin mining. The ecologically and economically disastrous Balbina hydroelectric project inundated a portion of the reserve. Grenades, machine guns, and bombings are reported to have been employed against the group during the construction of the highway linking Manaus with Roraima State. The group's population dropped from about 3000 in 1968 to about 330 in the mid-1980s.

The 24-page section describing aspects of Waimiri Atroari plant use includes chapters on cultigens and on plants used for hunting, craft, adornment, transport, medicine, fuel, ritual, commerce, and miscellaneous. This is followed by a 56-page section, organized by plant family, which gives the scientific and common names of the trees and lianas found in the one hectare study plot, and of a few shrubs and herbaceous plants. The uses of these plants by the Waimiri Atroari and other South American groups are given. Extensive references are provided.

The final section reports the results of the quantitative study. Two hundred tree species and 14 liana or strangler species were recorded. One hundred and seventy five, or 81%, were said to be useful. The inclusion of species which provide indirect benefit by attracting game animals and of firewood species would raise the percentage of useful species in the plot to 92%.

Twenty-two well-reproduced color photographs are included which illustrate the forest, river, village, and cattle pasture environments as well as several plant uses. Appendixes provide information on Waimiri Atroari use categories, scientific and Waimiri Atroari names for forest animals, a list of medicinal plants arranged according to application, and an index of botanical names.

The authors conclude that "The Waimiri Atroari are heavily dependent upon the *terra firme* forest for every aspect of their physical, cultural and spiritual lives. In order to retain an adequate supply of the plants which they need (many of which are present in very low densities on account of the diversity of the flora), and of the animals which they hunt, extensive tracts of forest are clearly required" (p. 119). They point out the well-established incompatibility of Amazonian *terra firme* forest with cattle ranching and advise against the ranching project which has been operating on the reserve since 1983. The authors emphasize the importance for the cultural survival of the Waimiri Atroari of maintaining the integrity of the current reserve boundaries against continued interest in exploiting the minerals which lie beneath the forest.

This well written and well organized book makes an excellent contribution to the study of Amazonian ethnobotany. It provides ethnobotanical and historical material of great interest for understanding the contemporary relationship between indigenous Brazilians and their botanical environment. It makes a strong and well informed statement with regard to the importance of maintaining access to large tracts of forest for the Waimiri Atroari and other lowland Amazonian indigenous groups.

## LITERATURE CITED

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Bret Blosser  
Department of Anthropology  
Tulane University  
New Orleans, LA 70118