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## Review of Cultural Forests of the Amazon: A Historical Ecology of People and Their Landscapes by William Balée

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***Cultural Forests of the Amazon: A Historical Ecology of People and Their Landscapes* by William Balée, 2013. Tuscaloosa: University of Alabama Press. 268 pp., illustrations, tables, references, index.**

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This book consists of a collection of publications over the past twenty-five years revised for this volume by William Balée with the addition of Chapters 1 and 11, which are newly written for the present work. Balée, one of the pioneers of the area of historical ecology, marshals quantitative data on the Amazon's floristic composition and uses linguistic evidence and historical reconstruction of landscapes to shed new light on the cognitive aspects of language and traditional knowledge (TK) of the region's indigenous people. The reference to "cultural forests" in the book's title refers to the proposition that the particular diversity of Amazonia has been influenced for centuries by its indigenous inhabitants. They can be distinguished from industrial societies whose extractive activities are destroying much of this anthropogenic landscape. Although indigenous people have left the actual biota as their legacy, some are also responsible for today's environmental catastrophes.

Balée's book is divided into four parts: Landscape Transformation, Contact and Attrition, Indigenous Savoir Faire, and Dimensions of Diversity. The remainder of the review covers these topics in the order of their presentation and ends with a few concluding thoughts regarding Balée's overall argument.

Anthropogenic forests are perceived by indigenous people as cultural landmarks with which they identify, for they recognize them as the creation of their forbearers, other humans and animal inhabitants, and as the result of other natural ecological dynamics (p. 20). In 1989 Balée estimated the percentage of anthropogenic forests originating in human activities to be *at least* 11.8 percent of Brazilian Amazonian upland forest (*terra firme*). In the present book, the author emphasizes the qualifier "at least" to avoid misinterpretation, since the actual percentage is difficult to establish with accuracy (p. 32).

In order to measure the impact of indigenous management practices floristic inventories were carried out within fallows of 40–100 year duration and high forests, sites that have gone unused for agricultural purposes for two or three hundred years or perhaps have never been used in this manner. There were no significant statistical differences between the two kinds of forest. The greatest statistical difference related to the presence of ecologically important species, since people favor "the abundance of certain desirable plant species" (p.61). These results enable us to identify the thirty ecologically most important species in fallows as indicators of past human disturbance. The first chapter presents recent research on the domestication of the Brazil nut tree (*Bertholletia excelsa* Bonpl.), one of the oldest and most important botanical legacies of Amazonia's ancient inhabitants.

In Amazonia environmental knowledge evidenced in swidden agriculture and fallow forest management practices is the link between human activity and its transforming effects on the landscape. On page 91, Balée notably argues that intensive agriculture and horticulture are not necessarily associated with distinct political systems, since nonstratified systems may employ intensive agricultural techniques.

Nonetheless, historical contingency forced some societies to experience a process of *agricultural regression*, the abandonment of agriculture in favor of a more nomadic lifestyle. Sociopolitical pressures forced peoples to make this shift, as epidemics, warfare, and particularly the European invasion impinged on their lives (p. 87). Balée aims to clarify some of the misunderstandings with which this theory has been received. In response to critics, Balée states that some fail to distinguish between the idea of "regression" and

that of “devolution.” While both terms are not entirely satisfactory, the concept of “regression” perhaps best explains the trajectory of some lowland South American societies after the arrival of Europeans.

Agricultural abandonment is associated with the loss of knowledge of plant domestication and is reflected in changes in the human impact on the landscape. The vestiges of agriculture among societies that have had to adopt a mobile lifestyle and have lost any memory of its practice are manifested in cognates that persist in their languages that indicate the former use of crops and agricultural practices. A comparison between Awá-Guajá<sup>1</sup> and Ka’apor plant nomenclature clearly showed that the latter are a horticulturalist society and named more wild and domesticated plants (p. 96).

Crops, fruits trees, and palms are considered to be “artifactual resources of foragers.” An artifact is distinguished as “entailing no necessary consciousness on the part of human actors” (p. 79). An example is the Awá-Guajá’s use of babaçu groves (*Attalea speciosa*). These groves are the successional vegetation stage of swiddens created by their historical enemies, the Ka’apor. The bellicose relations between these peoples helps to explain the artifactual nature of babaçu groves. Linguistic analyses of the pattern of plant nomenclature among Tupi-Guarani languages (p. 106) contribute evidence in support of the theory of agricultural regression.

Amazonian languages comprise essential evidence for the study of indigenous people’s environmental knowledge. In this regard Balée enumerates four working analytical principles: (1) Amazonian languages indicate that people recognize biotic diversity endogenous within their region. The classification of folk species is characterized by overdifferentiation. This is evident among staple crops, such as manioc, that are subdivided in many folk species. The contrasting alternative is underdifferentiation, where all the varieties of a biological species are grouped under one term. (2) Ethnobiological systems of classification are unique to each society and accord with economic activities undertaken in the forest and the native point of view. (3) In addition, Amazonian languages and cultures possibly encode more comprehensive knowledge of the environment. Common ritual practices among Tupi-Guarani people during menarche and menstruation periods served to explain the management of animals near the villages (pp. 140–143). Cultural traits seem to persist over time as cosmological, mythological, sociological, as well as ethnobotanical knowledge and associated practices, and give indications of empirical local knowledge. (4) Since prehistory people have transformed landscapes by creating anthropogenic forests that are recognized as such by later inhabitants.

Moreover, the encounters between Europeans and native Amazonians induced transformations of local interpretation and knowledge of Amazonian landscapes. Balée develops this point around a native fruit tree, cacao (*Theobroma cacao* L.), which serves as an example of how social relations influence plant names. Cacao is a word that apparently has its origin in a Mesoamerican language (pp. 148–150). Ka’apor imported the word *kakáu* when they participated in eighteenth-century commerce established by the Jesuits. It is speculated that the borrowing of language associated with a plant previously known and planted may be done in order to garner prestige within the sociopolitical dynamics of commerce. The case of chocolate and its commercial demand in Europe is an example of this.

The concept of *contingent diversity* applies to human-mediated environmental disturbances. Indigenous people recognize the anthropogenesis of the landscape and this information is codified in traditional Amazonian knowledge systems (p. 163). Balée seeks to distinguish his understanding from the interpretations of Amazon societies generated by means of the widely used perspectivist approach that assumed that indigenous people are motivated by spiritual criteria. Although Balée may find himself in agreement with some perspectivist interpretations of Amazonian societies’ points of view, he considers himself a materialist who studies the relation between people and plants through the conceptual procedures that focus on that which is perceived, named, classified, and sometimes nurtured in material and physical manifestations.

In order to understand Amazonian landscape history, two concepts are proposed in this volume: primary landscape transformation and secondary landscape transformations (pp. 170–171). *Primary landscape transformations* are those where human intervention alters the biotic and abiotic features of a landscape to a point where the original features can no longer be recognized. *Secondary landscape transformations* are partial changes of the biological features that do not alter the substratum. The concept of secondary landscape transformation helps us understand the sense in which forests are considered

anthropogenic.

Balée's analysis relies on observable variables encoded in TK that allow him to measure species diversity within and between sites but do not give information regarding species turnover and the process of crop domestication, and this is the reason he refrains from using the concept of "landscape domestication" (pp. 176–177). Since wild and domesticated species coexist within a site, Balée considers the establishment of landscape scale to be problematic. In this case, one cannot assume that the total floristic composition of a determined landscape is the result of human past activities. The meta-analyses of the "disturbance indicator" species in anthropogenic forests in Malesia (a region that spans a broad swathe of Pacific islands), Africa and Amazonia shows that indicator species of human disturbance are often the same at the genus or family level because such plants serve analogous subsistence needs. Across these areas members of the palm family are used for thatch and the *Cannarium* genus provides edible nuts, for example (pp. 181–183).

The work elucidated in Balée's research enables the reader to appreciate the evolution of his reasoning. Balée states that people and their landscapes need to be studied as a dialectic and dynamic interaction taking into account the influence of historical episodes, cultural practices, and subsistence strategies. He reiterates that we are living in a period of rapid changes and loss of traditional knowledge. He argues that it is important to register and study landscape formation and its relation with people in order to document the empirical knowledge itself and that this can be useful for ecological restoration and crop domestication and to address contemporary problems by harnessing pre-Columbian management practices. His interesting (but not all-so-new) conceptual framework furnishes the basis for generating an interdisciplinary dialogue, particularly with scholars and practitioners not convinced that Amazonian diversity is in great measure a human-made phenomenon. Moreover, as he discusses in the volume, he provides a materialist tool for cultural anthropologists to explain the concept of forests vis-a-vis personhood.

Even though, Balée's theory of agricultural regression is proposed as the best approach to explain changes in landscape and traditional knowledge accompanying the collapse of prehistoric societies, he did not consider the information provided by other researchers, such as Cormier (2003), Rival (2007), and Zurita-Benavides (2014), who proposed that some foraging societies choose their way of life and subsistence independently of any external pressure from Western society. According to these peoples, forest landscapes carry identifiable marks of their ancestors and to wander in the forest is the means to keep relations with their forbearers alive as well as means by which contemporary relations and territorial aspirations may be registered.

Furthermore, Balée's reasoning is based on the distinction between the traditional knowledge of horticulturalist and forager societies, mainly between Ka'apor and Awá-Guajá. The latter have been reduced to opportunistic strategies of subsistence and have a limited vocabulary of domesticated and non-domesticated plants. Nevertheless, in order to respond to questions raised by historical ecology regarding different relations between people and plants, attention must be paid to indigenous cultural criteria. In other words, if the Awá-Guajá do not differentiate between folk generic names, it may be that they use all varieties of a species for a single purpose and have no need to distinguish between varieties. It will prove valuable to contrast the linguistic evidence with the subsistence activities of the Awá-Guajá, particularly activities that transform plants for food and other staples.

In addition, it is problematic that Balée focused the bulk of his discussion on the action of planting, while disregarding all other management practices, such as tolerating, transplanting, gathering, that enhance agrobiodiversity and the agroforestry process that he defends.

## Notes

<sup>1</sup> Since Balée's work among these people their ethnonym has undergone revision. The current literature refers to them as Awá-Guajá, a compound composed of their self designation (Awá) and their state-designated name (Guajá).

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