

# **Seeking a Richer Harvest**

*The Archaeology of Subsistence Intensification,  
Innovation, and Change*

# *STUDIES IN HUMAN ECOLOGY AND ADAPTATION*

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## SEEKING A RICHER HARVEST:

*The Archaeology of Subsistence Intensification, Innovation, and Change*

Tina L. Thurston and Christopher T. Fisher (Editors)

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*The Archaeology of Subsistence  
Intensification, Innovation, and Change*

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## PREFACE

Since the Enlightenment, research on technological change has served as the foundation upon which an archaeological discipline could be built that is scientific and comparative and able to resist being a tool of nationalist propaganda (e.g., Sherratt 1989). In response to a phase of nationalist archaeology after the 1890s, scholars such as V. Gordon Childe, for example, in his *Man Makes Himself* (1936), brought comparison and materialism back into archaeology. He identified those key innovations that brought what he called the Neolithic and Urban Revolutions, including technologies allowing for an increase in subsistence production such as the domestication of plants and animals, plowing, and irrigation. Following Childe's lead, later in the 20th century there was an explosion in the quantity and quality of theory-building and research along these lines, and it is this outpouring of work that forms the backdrop to the chapters in this volume. During this creative period, Esther Boserup, Julian Steward, Marvin Harris, and Karl Wittfogel, among others, proposed grand theories that aimed to explain the causes and consequences of agricultural intensification, and it is these ideas that are evaluated at length in this volume.

This is an appropriate time to evaluate what we know about agricultural intensification. Archaeologists are busy rethinking intensification, in part because theories developed during the mid to late twentieth century have not always held up well under research scrutiny. Also, we have found reasons to question the global predictions of grand but perhaps overly deterministic and often simplistic causal theories. Archaeologists, and anthropologists more broadly, are engaged in the development of a research epistemology that, while not abandoning theory and comparison, can better accommodate local history and culture and the strongly contingent and variable outcomes of human strategic action. For example, the causal connection Wittfogel and others drew between irrigation systems and the development of centralized political institutions generally has not been found, a topic addressed in some of this book's chapters. What is more commonly found is that irrigation management, even in complex societies with states, often is carried out primarily at the scale of local-level village organizations or irrigation associations governed by leaders whose behavior must be accountable to their local populations, and whose detailed knowledge of

local conditions and personalities makes it possible for them to monitor and control the behavior of "rational" but selfish social agents (e.g., O'Connor 1995: 975, 976). Examples of largely local management under conditions of intensive agricultural production, and in which the managerial role of the state is comparatively small, include Bali (e.g., Christie 1992: 16), Ming Dynasty China (Bray 1984: 109), and Tokugawa Japan (Toshio 1991: 488-95, 501-2).

Interestingly, in the latter two cases, Ming China and Tokugawa Japan, some of the most important crops had primarily social and symbolic value, especially, in both cases, cotton. This points to what I see as a limitation in contemporary intensification theory that analyzes primarily the production of food surpluses, and that understands pre-modern complex societies in terms of an economy of surplus production (of food) that is appropriated by a governing elite (e.g., the "Tributary Economy" of Eric Wolf [1982: 79-82]; cf. Harris 1979: 101). We will require a more broadly-conceived theory of agricultural intensification that can incorporate symbolic as well as caloric production. A step in this direction is found in the present volume, when, for example, Feinman, Nicholas, and Haines make the important point that Meso-american archaeologists have devoted too much of their attention to the primary food crop, maize. I agree, and would point out that, in addition to their Oaxaca example, some of the most notable phases of agricultural intensification in prehispanic Meso-america involved crops suited primarily to the display and negotiation of social standing, such as cotton, dyes, and cacao (chocolate).

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## REFERENCES

- Bray, Francesca, 1984, Agriculture. Part 2 of *Biology and Biological Technology. Science and Civilization, Volume 6*. Series Editor, J. Needham. Cambridge: Cambridge University Press.
- Childe, V. Gordon, 1936, *Man Makes Himself*. London: Watts and Company.
- Christie, J. W., 1992, Water From the Ancestors: Irrigation in Early Java and Bali. In *The Gift of Water: Water Management, Cosmology, and the State in South East Asia*, edited by J. Rigg, pp. 7-25. London: University of London School of Oriental and African Studies.
- Harris, Marvin, 1979, *Cultural Materialism: The Struggle for a Science of Culture*. New York: Random House.
- O'Connor, Richard A., 1995, Agricultural Change and Ethnic Succession in Southeast Asian States: A Case for Regional Anthropology. *Journal of Asian Studies* 54: 968-96.
- Toshio, Furushima, 1991, The Village and Agriculture During the Edo Period. In *The Cambridge History of Japan, Volume 4, Early Modern Japan*, edited by J. W. Hall, pp. 478-518. Cambridge: Cambridge University Press.
- Wolf, Eric. R., 1982, *Europe and the People Without History*. Berkeley: University of California Press.



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