

OTHER

Biodiversity in Agriculture: Domestication, Evolution and Sustainability

By Paul Gepts, Thomas R. Famula, Robert L. Bettinger, Stephen B. Brush, Ardeshir B. Damania, Patrick E. McGuire and Calvin O. Qualset (editors). 2012. Cambridge University Press, Cambridge, United Kingdom. 630 pages. 70.95 CAD. Paper.

The publisher's summary describes this book as "Bringing together research from a range of fields including anthropology, archaeology, ecology, economics, entomology, ethnobiology, genetics and geography, this book addresses key questions relating to agriculture ... A synthesis of the most recent research results and implications for the origin of crops and domesticated animals". It's unfortunate that they do not mention in any of the advertising that this is in fact the proceedings of a conference. Given the advertising, I was expecting a high-level, multi-disciplinary review of the origin and development of agriculture. What we get instead is a collection of research articles, some of which are the promised synthetic reviews, while others are more narrowly focussed papers that remain within the bounds of a single discipline.

This book is the result of the Harlan II Symposium held in California in 2008. It contains 27 contributions in five sections. The first provides archaeological perspectives on the development of crops and farming in prehistory. The second and third sections address biological issues in the domestication of animals and plants, respectively. The fourth section presents the management of biodiversity in various cultures. The book concludes with a section on current and future development of agricultural biodiversity.

One of the highlights is the first paper, in which Jared Diamond presents a case for the biological pre-requisites for the development of agricultural societies. He argues that only a small subset of plants and animals are amenable to domestication, and the traits that make them good candidates arise in response to environmental pressures. Consequently, only humans living in ap-

propriate environments had the biological materials available to develop agricultural economies. Diamond's argument is only 10 pages, and quite accessible to the general reader.

From here we move into a series of more detailed archaeological papers. I found the topic fascinating: how did we move from foraging to agricultural societies? The subject is illustrated with several regional case studies. However, the detail was overwhelming at times. That is to be expected if your audience is professional archaeologists. But as a reader coming from another discipline in search of a synthetic review, I don't have the context to understand the significance of the difference between bifacially shaped tools and polished axes in 7500 year old societies. Since the authors don't provide this context, I assume they're writing for people that don't need it.

Thinking I might be missing the point, I jumped ahead to the plant papers. As a botanist, I should have the background to properly appreciate this work. Indeed, the genetic characterization of Brazilian crop systems presented in chapter 15 was familiar territory for me. That said, I wonder if the archaeologist that appreciates the extensive data presented in the first section would also have the training to make sense of the dendrograms and molecular variance analysis in this section. This is not to say that these tools aren't useful beyond the people that use them. Rather, due to the focus on the data rather than the larger context, these chapters were clearly directed towards readers in the same discipline.

The last two sections of the book provide less technical material that will be more accessible to general readers. I particularly enjoyed the chapter on aquacul-

ture. Most of the book focuses on our efforts to unravel our agricultural past using imperfect archaeological and biological data. Since aquaculture is really just beginning, we will be able to study the domestication process as it happens, rather than be left trying to infer what happened in retrospect. This promises to provide a valuable counter-point to our understanding of terrestrial systems.

On the whole, if this book had been advertised as the proceedings of an important conference on the topic of evolution and diversity in agriculture, I would recommend it unreservedly to researchers in related fields. Most of my misgivings arise from the poor description, rather than the actual content of the volume. At a list price of \$70.95, I don't think this is good value for a general audience.

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