Clark's investigations are described as "an example of what can be achieved by asking new questions and examining new classes of data" (p. 18). These volumes fittingly uphold his legacy. Milner, Conneller and Taylor set a precedent for the capabilities that a forensic-level of archaeological investigation can achieve, and use this to interpret life in the Early Holocene on a truly human scale.

References

Clark, J.G.D. 1954. *Excavations at Star Carr: an Early Mesolithic site at Seamer near Scarborough, Yorkshire*. Cambridge: Cambridge University Press.

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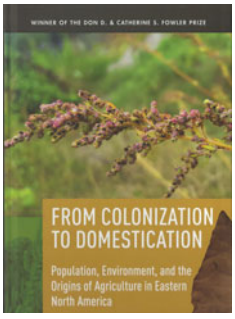
D. Shane Miller. 2018. *From colonization to domestication: population, environment, and the origins of agriculture in eastern North America*. Salt Lake City: The University of Utah Press; 978-160-7816-17-1 $55.



This volume, winner of the Don D. & Catherine S. Fowler Prize, is based upon the author's dissertation research. It showcases an innovative approach to understanding the 'deep history' of eastern North America from initial colonisation to the beginnings of food production, using models developed within the field of behavioural ecology. This approach allows the author to explore the economic implications of different strategies of tool manufacture and maintenance in an environmental context. He is able to identify correlations between the frequency of tool replacement, hunting success, projectile point form and major changes in resource availability. The topic of the book then shifts to explaining how this correlation broke down as cultivation of weedy annuals took the place of broad-spectrum hunting as a response to resource scarcity.

Miller adapts the marginal value theorem, originally developed to predict the optimal time to spend foraging within a resource patch, to the problem of artefact manufacture and use. This 'artefact as patch' model predicts that a projectile point (for example) should remain in use until a better rate of hunting returns can be obtained by investing time in fashioning a new tool. One important implication of this model is that as long as returns from hunting remain relatively low, hunting tools will be maintained rather than replaced. After illustrating the utility of this model by applying it to two archaeological case studies, Miller turns to an analysis of projectile point size and shape during the Palaeoindian and Archaic periods in his study area in central Tennessee. He finds that periods of rapid tool replacement (indicated by metric proxies for the frequency of resharpening and maintenance) correlate with major environmental shifts that would have affected the availability of game, particularly whitetail deer. The Middle Holocene climatic optimum, for example, is associated with relatively large points that were discarded when they still had considerable use life remaining, an efficient strategy because hunting yields were high enough to offset the costs of tool manufacture. No evident environmental change marks the increase in biface size observed for the Late Archaic period, however. Miller argues that stone-tool manufacture had by this time become uncoupled from resource abundance as regional population growth placed limits on mobility. A strategy of intensification (including cultivation of weedy annuals and their eventual domestication) replaced the pursuit of less profitable or more distant prey as a response to declining foraging efficiency. The take-home message of the book is that population growth was an important factor driving initial food production in eastern North America.

The argument Miller presents here is convincing on many counts. It is an innovative approach that ignores (in a good way) the methodological and theoretical divides that often isolate specialists in archaeology. The book champions the use of behavioural ecology models, effectively illustrating their ability to advance knowledge in ways that the simple contemplation of data is unlikely to replicate. Unfortunately, the impact of this research is lessened somewhat by a suite of issues that often plague the transformation of dissertations into books. While the sequence of chapters is logical, the connections between them are sometimes difficult to grasp, as is the case for the end of Chapter 4. Its final paragraph alludes to plant domestication

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and population pressure as key players in Miller's proposed explanation for historical changes in hunting and technology. This statement does not fully prepare the reader to launch into Chapter 5, however, which applies the ideal free distribution model to interpret population density estimates within the study area. Also distracting from the flow of argument are a few sections whose level of detail and recitation of facts seem more a demonstration of knowledge than an attempt to provide context for the central theme of the book. One example of this tendency is the lengthy discussion of chipped stone projectile point types, which is possibly of interest to only a subset of the book's probable readers. Raw data presented in tables might be better placed in an appendix, and some passages of verbal description could have been converted to tables for greater economy.

Miller does a fine job for the most part of recounting the history of research into agricultural origins in eastern North America, but the pattern of citation is somewhat uneven. For example, in Chapter 6 the timing of plant domestication in the region and the suite of plants involved are said to have been 'firmly established' by a number of researchers. The list of citations that follows omits several important works (including those by Nancy Asch, David Asch and Wes Cowan, although their contributions are acknowledged elsewhere in the book). Richard A. Yarnell, who spent his career promoting, conducting and compiling research on pre-maize domesticates in the Eastern Woodlands, receives only one citation—to a 1978 publication that is absent from the bibliography.

Spelling errors, missing references and skewed accounts of research history are unfortunate distractions from the insightful analysis that Miller's book offers. His perspective artfully applies behavioural ecology models to address questions about long-term subsistence change. The linkage established between prey size, hunting success and projectile point form by the 'artefact-as-patch' model has considerable potential to be applied across a wide range of contexts. That this correlation breaks down with the advent of plant domestication is intriguing, and Miller uses the ideal free distribution model effectively to argue that population density placed limits on mobility that would have made intensification (in the form of food production) an attractive option. Miller's conclusions about the role of demographic expansion in the adoption of food production are a timely challenge to the claim that initial plant domestication arises only in conditions of resource abundance. Perhaps even more importantly, this study illustrates the utility of theoretically derived general models for understanding long-term subsistence change. For these reasons, this book is a worthwhile investment for researchers interested in archaeological applications of behavioural ecology, the evolution of technology and the origins of food production.

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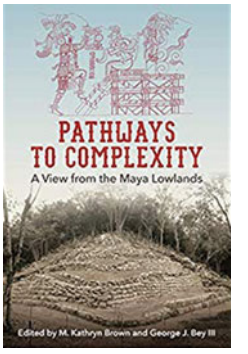
M. Kathryn Brown & G.J. Bey III (ed.). 2018. *Pathways to complexity: a view from the Maya lowlands*. Gainesville: University of Florida Press; 978-0-8130-5484-1 $100.



Pre-Columbian Maya myths tell of a world that is variously created and destroyed—sometimes the end is caused by a cataclysmic flood, sometimes by monstrous beasts, sometimes by animated and furious grinding stones and cooking pots. Cosmic recreation ensues. Maya origin stories, however, are at odds with those in *Pathways to complexity*. This volume does not tell of fits and starts. Rather, the 16 chapters gathered here offer richly detailed linear narratives, inevitable progressions that, as the editors write, "culminated in the state among the ancient Maya" (p. 10).

In their Introduction, the editors state that participants in the symposium from which the book arose more than 10 years ago (at the 2004 American Anthropological Association meetings) were "asked to emphasize the empirical data from their recent research" (p. 10). Their invited contributors acquiesced. Lengthy discussions about radiocarbon dates, excavation contexts, architectural features and ceramic types and varieties underscore both the rapid accumulation of new archaeological evidence and major gaps that remain to be filled. The wealth of evidence offered throughout the volume allows the reader to follow its internal debates.

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