

antique firearms. Besides extensive archaeological information, there are biographical sketches here of these four individuals who began archaeology in Kansas and carried it forward with such success. Much of this information came from the extensive archives at the University of Kansas. Histories of archaeology in other states would be welcome and this one can serve as a demonstration of how much can be done when the original documentation has been preserved.

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*The Tainos: Rise and Decline of the People Who Greeted Columbus*, by Irving Rouse, Yale University Press, New Haven. 1992.  
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by

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There are few people who can claim to command as much knowledge of the prehistory of the Caribbean as Irving Rouse. Professor Rouse began his field work in the Caribbean in the mid-1930's; this book is his synthesis of the vast amount of information he has accumulated on the region in the half century that has elapsed since that time. In order to accomplish the tremendous task of interpreting nearly 6000 years of the region's prehistory, Rouse focused this book on the culture history of the Native American group known as the Tainos, the name given to the people who occupied much of the Caribbean upon the arrival of Europeans to the area in the 15th century A.D.

Professor Rouse utilizes an evolutionary approach to construct his culture history of the Tainos and their ancestors that is based upon the tenets of cultural ecology, e.g., "Classic Taino culture appears to have been evolving toward full civilization..." (p. 19), "To what extent these resemblances are the result of interaction or of parallel adaptation to similar ecological conditions remains to be determined" (p. 21). His analysis proceeds from the argument that there were three distinct ethnic groups inhabiting the Caribbean at the time of contact, the Guanahatebeys in western Cuba, the Island-Caribs in the south-western islands of the Lesser Antilles, and the Tainos themselves in the Greater Antilles and the Bahamas. This argument (presented in the introductory chapter) is based on Rouse's analysis of ethnohistorical information provided by the 15th and 16th century chroniclers of the Caribbean region and corroborated by the available archaeological evidence.

In Rouse's model, ethnic groups and subgroups are distinguished by their cultural, linguistic and biological heritages. He seeks to define these heritages and thus to form a culture history for the peoples of the Caribbean by considering their archaeological, linguistic and biological records. The resulting culture history, based primarily on ceramic analysis, suggests that the ancestors of the Tainos originally migrated into the Caribbean from the Orinoco Valley of mainland South America at about 2000 B.C. eventually assimilating and/or replacing groups that had migrated through the region several thousand years earlier; he suggests that the scarcer linguistic and skeletal evidence corroborates this theory of Taino ancestry, as well as subsequent migrations through the Caribbean.

The middle three chapters of the book, chapters III, IV and V, present Rouse's culture history of the Caribbean. He uses a taxonomic system to distinguish between groups and subgroups of people, which is based primarily on ceramic sequences and augmented by other classes of material culture. His scheme must be commended for its comprehensive spatial and temporal coverage; however his presentation of the culture history sequences can be difficult to follow at times. For example, someone not well-versed in Caribbean prehistory could easily confuse the Casimiran Casimiroid, Courian Casimiroid and Corosan Casimiroid subgroups. Such complexity would not necessarily be a problem, except that Rouse states in his preface that the book "is addressed not only to...colleagues in academia but also to the interested public" (p. xi). Someone with no background in taxonomy or ceramic analysis could find this section of Rouse's book extremely challenging to follow. Similarly, his presentation of Archaic Age and subsequent Ceramic Age migrations could have easily been made more lucid by the inclusion of maps outlining the migratory schemes he proposes.

In the sixth and final chapter of the book, Rouse presents his version of the European conquest of the Caribbean, which he calls "the second re-peopling." While his chronology of events surrounding the voyages of Columbus is solid, I must disagree with his conclusion that the genocide of the Tainos in the 15th and 16th centuries "resulted from circumstance." Rouse takes exception to revisionist scholars of the Caribbean who blame Columbus and the Spanish conquistadors for causing the genocide of the Tainos (e.g., Konig 1976; Sued-Badillo 1992a, 1992b). Rouse maintains, rather, that the genocide of the Tainos "resulted from circumstance; all the parties to the event had to adapt to the natural, cultural, and social conditions in which they lived" (p. 139). While this interpretation of the events of the late 15th and early 16th centuries does try to elevate the Tainos from the role of passive victims, it naturalizes the violent demographic crisis initiated by the Europeans. It would not be a far leap to suggest that because the Tainos were unable to adapt to conditions of slavery and widespread violence, it was only natural that they should become extinct. Although based in cultural ecology, such an interpretation dangerously resembles social Darwinism. Furthermore Rouse equates the depopulation caused by the European colonization of the Caribbean, which took decades, with the cultural expansion of the Saladoid peoples, which took centuries.

*The Tainos* is an historically important book. It is the culmination of half a century of research on a region whose archaeological complexity is compounded by the complexity of its political, social and linguistic diversity. Furthermore, its publication date, 1992, makes this book an significant addition to the body of literature published to commemorate the momentous events which resulted from the Spanish landfalls in the Caribbean. Unlike many contributions to that body of literature, this book explicitly attempts to construct an understanding of the long history of those Native American populations which felt the first blows of European socio-economic expansion into the New World.

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*Radiocarbon After Four Decades: An Interdisciplinary Perspective*, edited by R(oyal) E. Taylor, Austin Long, and Renee S. Kra, Springer-Verlag, New York xviii + 596 pp. ISBN 0-387-97714-7. \$89.00 (Cloth).

by

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Topics of the 35 papers included in this volume from the June 1990 conference cover a wide range of areas germane to archaeology. Some are exclusively technical, some review the most recent state of the art for a disciplinary area, and others, of most interest to the readers of this *Bulletin*, provide historical insights into the development of the field.

Paul E. Damon suggests a five phase model for the development of radiocarbon assays. Phase I was the first measurements of natural C-14, and the first published date list in 1951. Phase 2 was the addition of seven more labs between 1952 and 1955. Phase 3 covers 1956 to 1962, with the determination of a more precise half-life, and the first recognition that the secular variation of radiocarbon would require calibration of the radiocarbon time scale to convert radiocarbon ages to calendar years. For Damon, Phase 4 covers from 1962 to 1986, with the first attempts to develop calibration curves, and the concerted effort to understand the root causes of secular variation. Phase 5 begins in 1986 and continues to the present, defined by the addition of AMS dating, and the coordination of labs for defining a single calibration curve back to the last glacial period.

Damon's first phase is covered by the paper by James E. Arnold and Robert L. Schuch, which offers a glimpse of the initial demonstration of the viability of radiocarbon dating in Willard F. Libby's lab from 1946 to 1948. As of 1946, we discover that the half-life of radiocarbon was extremely poorly identified, being surmised to be somewhere between 1,000 and 25,000 years; estimates of the cosmic flux which produce atmospheric radiocarbon were at best poor; and the distribution of the isotope in the natural world was unknown. The National Science Foundation had not yet been established, so getting funds to investigate proved difficult. James Arnold was a post-doc in Libby's lab; when he went home at Christmas of 1946, he mentioned the need for some test samples. By the time Arnold returned from Christmas break, his father had arranged for 10 Egyptian samples to be provided by a friend, Ambrose Lansing of the Metropolitan Museum in New York. The next year, Libby picked up a new Ph.D student, Ernest Anderson. Libby assigned Anderson the Ph.D. problem of verifying the specific activity of radiocarbon in living things around the world. Anderson subsequently was responsible for bringing Robert Schuch into the effort as senior lab technician. "Libby was a stern believer in the principle now known as "if it ain't broke, don't fix it." (Arnold and Schuch, p.7). Thus much of the early apparatus was cumbersome at best, often of dubious reliability. Schuch re-engineered the equipment, permitting Arnold and Anderson to conduct the first practical demonstration of the validity of the method, which up to that point had been theoretical. In the summer of 1948, the first radiocarbon assay was run on a sample of wood from the step pyramid of Zoser at Sakkara.

Hans E. Suess picks up the Damon's next stage, in a paper discussing early attempts to set up new labs in the 1950s, utilizing techniques other than solid carbon. Suess established an acetylene lab for the United States Geological Survey in 1953, and in 1954 moved west and established a similar lab at La Jolla. Suess employed acetylene to avoid the problems of carbon dioxide sensitivity to electronegative impurities. This early work solved some of the problems with the solid carbon method of Libby (solid carbon being also used at that point at new labs at Yale and Columbia Universities). More importantly, by dating redwood (*Sequoia gigantea*) samples, Suess was able to show that there was a need to calibrate "Libby" radiocarbon ages to reach true calendrical ages.