

between archaeologists and representatives of the natural sciences. As Zvi Goffer writes in the Preface: "The inception of this dictionary came from realization that there is a growing need for more interdisciplinary communication between scholars (...): it was written to provide succinct definitions of the materials in the technologies used to produce, modify, and shape materials in the past (...)."

The dictionary provides explanations of terms and definitions of several scientific fields including physics, chemistry, geology, biology, ecology, paleontology, etc. The range of covered terms and definitions extends from descriptions of the basic properties and characteristics of materials and the productions of artificial materials, to methods for dating them, establishing their geological or geographic origin and ascertaining their authenticity. The user will find here definitions of the materials and technologies used to produce, modify and shape materials in the past and concise introductions to the scientific concepts and techniques now used to identify, characterize and date materials and the technologies from the past.

Do we need science in archaeology? Sometime ago I heard an archaeologist crying that the carbon dates obtained for a certain region do not match the chronological sequence established according to the seriation of local pottery. Therefore, the archaeologist concluded, the carbon dates must be wrong and the whole dating method is not reliable. Several entries in the dictionary explain how carbon dating works and why it is considered the most accurate method. No doubt the dictionary has a considerable educational value and both professional archaeologists and students will greatly benefit from it.

This comprehensive and well-organized dictionary is addressed to specialists interested in archaeology, ancient art, and the natural sciences. Its intentions may be identified as multi-directional: to bridge the existing gaps in communication between various scientific fields, to inform about most significant results of research in different fields, and what is especially significant to those of us who like to read literature in other languages - to inform specialists of different fields what words correspond in other languages to terms and definition of the English language. Overall, the dictionary is meant for archaeologists to better understand the natural sciences and for natural scientists to find out how their knowledge contributes to better comprehend the past.

Zvi Goffer did an excellent job by putting together terms and definitions from several scientific fields that do relate to modern archaeological practice. Among these scientific fields are: chemistry, geology, physics, biology, ecology, and paleontology. The merge between archaeology and science is getting wider and it materializes especially strong in the development of new methods and techniques that archaeologists utilize today. These methods are designed to make our job easier and more accurate and the dictionary has been fashioned to better understand the methods which make our job so exciting.

Personally, I favor publications which offer multilingual translations of terms or definitions mostly because they help me in reading professional publications in other languages. To other archaeologists, antiquarians, art historians, conservators, museum curators, and natural scientists this dictionary will be a compact and convenient source of valuable information.

Expanding the View of Hohokam Platform Mounds: An Ethnographic Perspective. Mark E. Elson. Anthropological Papers of the University of Arizona Number 63. The University of Arizona Press, 1998. XI+145 pp., 33 figures, 8 tables, 1 appendix, references, index. Price: \$16.95 (paperback) ISBN: 0-8165-1841-6.

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This monograph is not only relevant to Southwestern and Hohokam specialists but will also be of interest to those studying the evolution of sociopolitical complexity. The author strives to resolve the controversy of Hohokam platform mound function in the American Southwest, specifically the Tonto Basin. Previous research used the same sets of data to develop conflicting interpretations of function. One interpretation interprets Hohokam platform mounds as residential features used by and benefiting a socially ranked or stratified society. The other view sees the platform mounds as largely vacant, unused ceremonial features used by groups of limited social differentiation, i.e. egalitarian organization. In order to understand the relationship of mound construction and social complexity, Elson examines ethnographic and ethnohistoric data of mound using groups in Micronesia, Polynesia, South America, and the southeastern United States.

Chapter 1 provides a general overview and history of platform mound research in the American Southwest. Various models used to interpret platform mounds are discussed.

Chapter 2 examines ethnographic and ethnohistoric data for mound-using groups in Micronesia and Polynesia (Ifaluk, Yap, Somoa, and Marquesa along with supplementary data from Tonga and Hawaii), South America (Mapuche), and the southeastern United States (the ethnohistoric Choctaw and Natchez). The author examines environmental data, population size, sociopolitical organization, economic systems, and religious practices relative to the types and functions of platform mounds in these societies.

Chapter 3 synthesizes these data to determine any regularities in human behavior, platform mound function, and sociopolitical organization. This chapter is the meat of the monograph, as well as being the most thought provoking.

Elston found that the societies in the study shared the following attributes: 1. They had a designated chief or headman that provided leadership; 2. Each group had a system either of individual and group ranking or of stratification; 3. Rank or class was inherited; 4. They had a structured redistribution of resources and feasting.

The study also showed that there is no relationship between platform mounds and types of descent systems, marriage practices, or postmarital residence rules. There probably was no relationship with tribute collection, full or part time specialization, or clans.

The study indicates that ethnographic platform mounds cannot be grouped into functionally homogenous categories. Most archaeological interpretations are too simplistic. However, Elson found that mound construction and use in these middle-range groups had several common attributes:

1. Platform mounds were multifunctional and can encompass a number of different functions at any given time or sequentially. They are used most commonly as residential, temple, burial, and community mounds.

2. Mound-using groups were ranked or stratified with a designated chief or leader, e.g. socially complex groups with institutionalized hierarchical social organization. Except for small residential mounds, platform mounds were associated with some control of community labor and resource distribution.

3. The greater the diversity of mound types and the larger the size of the mounds, the greater is the social complexity and the authority of the chiefs or religious leaders. The greater the energy investment in mound construction, the greater is social complexity. Also, the control of resources by chiefs or highly ranked individuals is greater. Feasting and redistribution were common features.

4. Platform mounds were associated with a specific descent group or a group considering themselves to have a common ancestry (household, lineage, clan, or tribe). Platform mounds are often used to glorify the corporate group and are probably associated with some form of ancestor worship.

5. If the territory is still occupied by the descent group, platform mounds will take on a different function once they are abandoned. They often serve as a mythical home of descent group ancestors. Except for small residential mounds, all platform mounds were re-used, so sequential use is a common characteristic.

In Chapter 4, Elson turns his attention to the Tonto Basin and examines the debate over prehistoric settlement in this area. In reviewing the research in the Tonto Basin, he focuses on a single local settlement system in the eastern Tonto Basin that contained 5 platform mound sites and 39 other sites. The primary debate concerns the nature of the occupation: is it indigenous or was it the result of settlement by Hohokam, Mogollon, or Anasazi groups or some combination of these. Implicit in the debate are assumptions about the nature of the social complexity of groups in the Tonto Basin that produced the Roosevelt Phase platform mounds.

Those that see a Hohokam affiliation argue that the platform mounds are the result of peer-polity emulation or the migration of elite members of Hohokam groups in the Phoenix Basin. The platform mounds are viewed as marking upper tier sites in a hierarchical settlement system and functioned in the administration of irrigation systems, land tenure, and/or trade networks. The institutionalized elite then lived on top of the platform mounds or they served as redistribution centers the integrated a dispersed community exploiting a number of different resource zones.

Researchers that espouse Mogollon-derived models attribute significantly less social complexity to the platform mound builders. There are no elite leaders or elite residences. These groups were egalitarian. The Tonto Basin platform mounds functioned solely as nonresidential ceremonial structures that integrated kinship/clan segments or small residential units through ritual. Like the Hohokam model, the platform mounds functioned to organize labor, land tenure, and community organization and to redistribute resources but doing so within an egalitarian system. The difference is not so much

in the functions of the mound as in the social complexity as it is in the degree of social complexity required for these functions and construction of platform mounds. Did ritual organization or elite control have the primary role?

In Chapter 5, Elson examines the eastern Tonto Basin settlement system in light of his ethnographic model. From this study, it is clear that mound-using groups are either ranked or stratified with some form of inherited leadership. Moreover, the degree of complexity is correlated with the size and diversity of platform mounds. The most highly ranked and stratified societies had the largest (by volume) and the greatest number of functionally different mounds. This information indicates that the Roosevelt phase mound-building groups were ranked and had ascribed leadership with ranking between individuals and groups. However, given the moderate size and limited diversity of types of mounds, they probably were not stratified.

The crux of Elson's model is the correlation between social complexity and energy expended by a group in construction. The more energy that was expended the more complex social organization has to be to mobilize and direct a work force. Mound size and diversity are proxy measures for the amount of energy expended in construction. Elson demonstrates this relationship in his ethnographic and ethnohistoric study of platform mound-using groups. However, I am intrigued by the idea of a general relationship between social complexity and the energy required for construction projects. Elson's research begs for a study beyond platform mounds that would examine this relationship in a more general sense. Could it be that the Great Kivas of the "egalitarian" Mogollon required similar energy expenditures, suggesting a similar level of complexity?

Chapter 6 examines Hohokam platform mounds in general. There are seven major clusters of platform mounds in the Hohokam region. Platform mounds within any cluster are more similar in form and, presumably, function within clusters than between any clusters. This suggests that platform mound function was locally oriented rather than regionally oriented. More importantly, there are more and larger platform mounds in the Phoenix Basin cluster than in any other cluster; the smallest Phoenix Basin platform mound is larger than the largest platform mound of any other cluster. This suggests that models for the Phoenix Basin are not applicable to other clusters.

Lastly, Elson lists the Roosevelt Project reports and papers by producing firm (Desert Archaeology; Statistical Research; and the Arizona State University Office of Cultural Resource Management) in an appendix. This is a laudable attempt to make the gray literature of contract work more visible.

Determining Geologic Sources of Artifact Copper: Source Characterization Using Trace Element Patterns. George (Rip) Rapp, James Allert, Vanda Vitali, Zhichuan Jing, and Eiler Henrickson. University Press of America, Lanham. 2000. xi + 156 pp., 24 figures, 41 tables, 2 appendices, glossary, index, bibliography. ISBN 0-7618-1688-7.

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